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Medical student learning during longitudinal clinical placements in under-served, deprived, community areas: A qualitative study

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Abstract

Background

There are national UK general practitioner (GP) shortages, particularly in deprived areas, and an insufficient number of medical students intend to become GPs. Medical students currently have limited exposure to settings which provide care for deprived communities. This research investigates student learning during the Difficult and Deprived Areas Programme (DDAP), an innovative pilot programme which places fourth year students in general practice and community placements in under-served, post-industrial, deprived areas for 14 weeks.

Method

A systematic review investigating the efficacy of undergraduate community placements in under-served areas was completed. A qualitative approach was used collecting data from: DDAP students (n=9) before, during, and end of placement; GP supervisors (n=14), and patients (n=12). Comparison data was collected from peers taking alternative placements to the DDAP (n=16) and students taking an established rural programme (n=6). Semi-structured interviews were conducted to collect data. Data were analysed using framework analysis and the Experience Based Learning theory.

Findings

In total, 85 interviews were conducted over a two and a half year period. The DDAP experience enhanced student knowledge about psychosocial determinants of health, developed compassion, and reinforced clinical skills. Learning was facilitated through independent time with patients, which promoted deeper learning about the role of the doctor. The integrated and immersive DDAP structure gave students an understanding of delivering healthcare for patients with

complex deprivation issues. Comparative placement experiences highlighted the importance of having a nurturing supportive supervisor and having an active role delivering healthcare within a community team.

Conclusions

There is increasing evidence on the value and importance of clinical placements in rural and remote communities, but little in regard to other under-served, deprived areas. This research explored medical student learning during an innovative placement in such a setting. The thesis provides evidence of the value of these placements and puts forward a model explaining why these placements are effective, and why they may help to create better doctors for the future.

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List of Terms

AMEE: An International Association for Medical Education

ANOVA: Analysis of Variance

ASME: Association for the Study of Medical Education

BMA: British Medical Association

BMJ: British Medical Journal

CCC: Comprehensive Clinical Clerkship

CCG: Clinical commissioning group

CIC: Cambridge Integrated Clerkship

CoP: Communities of Practice

DDAP: Difficult and Deprived Areas Programme

DH: Department of Health

ExBL: Experience Based Learning

FY1: Foundation Year 1 doctor

GMC: General Medical Council

GP: General Practitioner

HEE: Health Education England

HENE: Health Education North East

LIC: Longitudinal Integrated Clerkship

LPP: Legitimate peripheral participation

MCAT: Medical College Admission Test

NBME: National Board of Medical Examinations

USMLE: United States Medical Licensing Examination

OCEP: Onkapringa Clinical Education Programme

OSCEs: Objective Structured Clinical Examinations

PCT: Primary Care Trust

PRCC: Parallel Rural Community Curriculum

RCGP: Royal College of General Practitioners

RPAP: Rural Physician Associate Program

SCCT: Social Cognitive Career Theory

SCT: Social Cognitive Theory

SHA: Strategic Health Authority

WHO: World Health Organisation

Statement of Copyright

The copyright of this thesis rests with the author. No quotation from it should be published without the author's prior written consent and information derived from it should be acknowledged.

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Thank you to all the participants for their generous cooperation with my research.

Dedication

I dedicate this work to:

My Mum, Clare, Gemma, friends and family.

Rachael Muirhead and her family. It’s an understatement to say I was devastated by her loss.

My Dad. I know how proud he would have been to see what I have accomplished.

Dissemination

Publications

Crampton P.E.S., McLachlan J.C., Illing J.C. (2013). A systematic literature review of undergraduate clinical placements in underserved areas. *Medical Education*, 2013; 47; 969-978*.* *doi:10.1111/medu.12215*

Crampton P.E.S., Hetherington J. McLachlan J.C. & Illing J.C. Clinical learning in underserved UK areas: a novel approach. *The Clinical Teacher* (in press)*.*

Impact

My literature review was selected by the Editor-in-Chief of *Medical Education* to be the subject of a thought-provoking commentary, written by Australian researchers:

> Perkins, D. and Daly, M. (2013), What is the evidence for clinical placements in underserved areas? *Medical Education*, 47: 958–960. doi:10.1111/medu.12271

The review was also featured as the subject of an extended Review in *The Clinical Teacher:*

> Kostov, C. (2014). Planning ahead: students in underserved areas. *The Clinical Teacher*, 11: 152–153. doi:10.1111/tct.12197

In addition, the review was the basis for the second ever E-Journal club hosted by the *Medical Education* journal. The lively hour-long conversation (held: 10/12/13) involved over 140 Tweets with participants from UK, USA and Australia. Much of the discussion focused on the benefits and challenges of placing medical students in underserved areas. A summary of the discussion is on the *Medical Education* blog and full details are on storify:

https://storify.com/anujavjain/second-medical-education-twitter-journal-club

Conferences

Crampton P., Newbrook, S, McLachlan J., & Illing J. *An extended undergraduate placement in general practice and community settings in under-served, deprived areas*. Poster presented at the Health Education North East (HENE) careers conference, Newcastle upon Tyne, UK, Oct 2014.

Crampton P., McLachlan J., & Illing J. *An innovative GP, community placement in difficult and deprived, UK areas.* Poster presented at AMEE, Milan, Italy, Sep 2014.

Crampton P., McLachlan J., & Illing J. *Analysing the educational value of an innovative extended GP community placement in deprived areas for medical students.* Talk presented at the Society for Academic Primary Care (SAPC), Northern Annual Conference, Kendall, UK, Nov 2013.

Crampton P., McLachlan J., & Illing J. *Student clinical learning in under-served, GP community areas*. Electronic poster presented at AMEE, Prague, Czech Republic, Aug 2013.

Crampton P., McLachlan J., & Illing J. *Addressing workforce shortages in deprived areas: A Durham University undergraduate pilot programme.* Poster presented at the Royal College of General Practitioners (RCGP) Annual Conference, Harrogate, UK, Oct 2013.

Crampton P., McLachlan J., & Illing J. *Reviewing theoretical frameworks for learning during under-served, difficult and deprived area medical student placements.* Poster presented at the North East Learning and Teaching conference hosted by Newcastle University, Newcastle upon Tyne, UK, Mar 2013.

Crampton P., McLachlan J., Illing J. *A systematic literature review investigating undergraduate exposure to underserved, difficult and deprived areas.* Talk presented at ASME (Association for the Study of Medical Education) ASM (Annual Scientific Meeting), Brighton, UK, July 2012.

Colloquia

Crampton, P., McLachlan, J., & Illing, J. *Shortages of doctors in under-served areas: The Difficult and Deprived Area Programme (DDAP) Research.* Talk presented at Durham-Teikyo Joint Symposium, Tokyo, Japan, Oct 2013.

Crampton, P., McLachlan, J., & Illing, J. *What is the evidence for student clinical learning in under-served areas?* Talk presented at Durham-Teikyo Joint Symposium, Tokyo, Japan, Oct 2013.

Crampton, P., McLachlan, J., & Illing, J. *Exploring learning opportunities for medical students during an innovative difficult and deprived area placement*. Talk presented at Wolfson Research Institute, inaugural Research Colloquia, Stockton-on-Tees, UK, Apr 2013.

Crampton P., McLachlan J., Illing J. *Exploring learning opportunities for medical students during an innovative difficult and deprived area placement*. Hild Bede College Postgraduate Colloquia, Durham, UK, Feb 2013.

Travel & networking grants

2014 Durham University: Visit to Harvard University (Boston, USA), to discuss the Cambridge Integrated Clerkship (CIC) and continuity research.

2014 The John Simpson Greenwell Memorial fund, Hild Bede college (£585): To attend the AMEE International Medical Education conference, Milan.

2014 Wolfson Research Institute: To convene a seminar at Durham University Queen's Campus (Stockton-on-Tees) by an international guest speaker - Dr Sarah Mahoney, The Onkapringa Clinical Education Programme (Flinders University, Australia).

2013 The Great Britain Sasakawa Foundation (£3,500): Visit to Teikyo University (Tokyo, Japan), to address underserved area healthcare (co-applicant).

2013 The John Simpson Greenwell Memorial fund, Hild Bede college (£550): To attend and present at the AMEE International Medical Education conference, Prague.

2013 Wolfson Postgraduate dissemination grant (£250): To attend and present at the RCGP conference, Harrogate.

2012 Durham University: Visit to Flinders University (Adelaide, South Australia) to collect data from an established rural, community programme.

Award

Crampton P., McLachlan J., Illing J. (2011). *Exploring the impact on medical students of extended exposure to General Practice in inner-city, difficult and deprived areas*. Poster presented at the Wolfson Research Institute Postgraduate Poster Competition. Poster won *first* prize.

1 Chapter 1 Introduction

1.1 Chapter outline

This chapter provides the background of the research to establish why it was undertaken. The Difficult and Deprived Areas Programme (DDAP) an innovative initiative to increase medical undergraduate exposure to general practice and community settings, is then described. Finally, an overview of the thesis is presented.

1.2 Background

1.2.1 Deprived, under-served areas

Many people encounter multiple socio-economic disadvantages affecting their health, which are exacerbated by doctor shortages[1-4]. Disadvantaged communities including people who are unemployed, disabled, or from racial and ethnic minorities, all suffer poor health outcomes across their life span[5].

Disadvantaged communities are less likely to get the preventive care they need to stay healthy, as lower socio-economic status and lower education level are risk factors for delayed presentations of symptoms[3, 6]. Subsequently, when these communities get sick, they are less likely to access the healthcare they need and suffer increased risk of further morbidity and mortality[5].

These health inequalities are worsened by living in particular areas[3]. The onset of multiple illnesses *(also known as co-morbidities or multi-morbidities)* occurs 10 to 15 years earlier in people living in the most deprived areas compared to those living in affluent areas[4]. This is particularly important given the ageing United Kingdom (UK) population, increasing the number of co-morbidities and chronic illnesses that will be present in the future[7]. These illnesses will put even more pressure on health services provision, particularly in community settings[8].

The types of geographical locations or characteristics of deprived communities vary across the world. In Australia, people living in rural and remote areas tend to experience greater poverty, higher prevalence and incidence of illness, and have shorter lives, than those living in metropolitan areas[9]. In the UK, areas of poverty have been classified using five main types: inner London, areas with inner-city characteristics, coastal industry, coalfields, and manufacturing[10]. These types of areas have been associated with poor health outcomes as such populations suffer disproportionately from diseases related to poverty, substance abuse, sexually transmitted diseases, and the exacerbation of mental illness related to living in a deprived environment[5].

Most deprivation indicators are composites of different variables which often include measures of unemployment, income, housing, education, and health. The measurement of 'deprivation' is relative and has to be contextualised within any given population.

The definition of a 'deprived community' which is under-served *(or under-doctored)* by health service provision is often synonymous with rural and remote areas. Rural under-served areas are often defined in relation to the number of healthcare professionals per person, geographical remoteness, or the amount of time it takes to access a healthcare professional[11]. An under-served area is often geographically isolated but this is not always the case. Under-served populations have been defined as those who lack access to health services because of geography, socio-economic status, or disadvantage based on ethnicity, culture or caste[12, 13].

Even the term 'healthcare community' in the field of medical education research has different meanings in different countries. For example, in Australia and Canada it means rural and remote areas, in the United States of America (USA) it often refers to urban areas, and in the UK it mainly relates to general practice.

1.2.2 Healthcare provision in deprived UK areas

In the UK, general practices play a key part in providing healthcare for most users of the National Health Service (NHS)[14] and particularly for disadvantaged communities. However, there are national General Practitioner (GP) shortages which are intensified in particular areas of deprivation including urban, inner-city, and post-industrial areas[1, 15-17]. Elsewhere, in the USA, there is an estimated shortfall of over 8,200 primary care doctors needed in rural and inner-city areas[18].

Patients who live in deprived areas may be more challenging for healthcare professionals as they often have more psychosocial and behavioural difficulties that impact on their health and care management[3, 19, 20]. General practice consultations in deprived areas have been characterised by higher patient demand, greater psychological and physical morbidity, chronic health problems, and less patient enablement[21]. *[Patient enablement is defined as the extent to which a patient is capable of understanding and coping with his or her health issues[22]].*

In addition, self-reported GP stress levels have been found to be significantly higher during clinical encounters with patients from more deprived areas compared to patients from more affluent areas[19]. GPs prefer to work and live in areas with many amenities, a pleasant environment, and low deprivation levels[2]. Doctors who do work in deprived areas are more likely to stay there for a shorter time compared to colleagues working with middle-class populations[23].

This evidence suggests the competencies required of health practitioners working in deprived areas may be extremely demanding and they need more support to work there.

1.2.3 General Practitioner shortages

In the UK, many GPs are approaching retirement age as figures in 2012 showed 22% of GPs in England were aged 55 or over compared to 17% in 2000[24]. The ratio of male to female GPs also raises concerns in terms of reducing the average number of working

hours per GP[1]. In 2011, 46% of GPs were female[24], and women are more likely than men to take career breaks and to seek part-time employment[1, 25].

The number of female GPs is projected to increase[24]. Since 2001, the number of females joining the GP workforce (mean increase 5.2%) has disproportionately outnumbered male entrants (mean increase 0.1%)[24]. In addition, medical students considering general practice as a career are more likely to be female than male[26].

Amongst medical students, research has consistently indicated low intent to pursue GP careers[26-28]. Yet, more concerning (than the low intention for general practice compared to other medical careers), is that far fewer students than are actually required to fill the GP training posts wish to do so[26, 28]. Moreover, many medical students are provided with insufficient primary care career advice during their studies and are left with limited understanding of the roles available[29]. Deprived urban areas also appear to have more difficulties in recruiting and retaining doctors at postgraduate trainee levels compared to other areas[30].

Collectively, the implication of these observations about the current and potential workforce (i.e. medical student career intentions) indicates an even greater shortage of GPs in the future[8, 28, 31].

1.2.4 Healthcare policy related to deprived areas

The World Health Organisation (WHO), the governing body for healthcare throughout the world, has the vision of high-quality health services providing equitable healthcare for every individual[32]. In the UK, the reality of healthcare provision is that it is disproportionate, as more financial support is given to acute, hospital-based care than to the majority of patients who are treated in primary care[1]. In common with many other countries, populations are not provided with health service provision where and when they need it most. This is known as the Inverse Care Law where *"the availability of good medical care tends to vary inversely with the need of the population served."*[33, 34]

An implication of GP shortages, and stretched primary care services, is that ultimately greater patient demand may be applied to hospital settings[31]. Health improvements in the quality of primary care have been associated with reductions in the cost of secondary care[35]. For example, in the management of strokes it has been estimated that £22.15 million can be saved in annual hospital costs by quality improvements in primary care[36].

The entire healthcare system may work more efficiently for the whole population if improvements are made to primary care[35]. High-quality primary care has also been associated with improved health outcomes in deprived areas[37]. However, the difficulties associated with an undersupply of primary healthcare professionals and the Inverse Care Law[33] are determined by multifaceted social determinants involving economic, political, historical, and institutional factors.

Different types of policy have been suggested to achieve equity in GP numbers including: regulation of entry (i.e. restricting over-entry into areas designated as over-doctored); targeted initiatives aimed at shortage areas (i.e. through providing extra payments), and general supply increases across all areas[2].

Since 1970, general practices in deprived areas have received increased funding per patient compared to practices in less deprived areas. However, debate remains as to whether the NHS should allocate funding to tackle health inequalities or ensure equitable access to healthcare[38]. Targets to reduce health inequalities have focused attention on certain communities to positive effect (e.g. the elderly) but may have led to a disproportionate focus at the expense of other groups (e.g. minority groups)[38].

Financial incentives provided to GPs and students who train in under-served areas have been encouraging in rectifying workforce shortages[39]. However, such schemes have major limitations as they are expensive, are reliant on long-term commitment from funders, and assuming a causal link is too complex[39].

Other policy considerations in primary care have attempted to reduce healthcare inequity in under-served areas by involving other (non-GP) primary care providers, to undertake responsibilities usually required of GPs. In 2006, the introduction of the Alternative Provider Medical Services contract allowed primary care trusts to contract a range of providers to procure specific primary care services in under-served areas. This policy was later expanded to allow primary care trusts to tender for new healthcare centres which offered services to registered and unregistered patients on a quick appointment or walk-in basis[40].

Since then, *The Health and Social Care Act 2012*[41] introduced many changes to the NHS which placed greater emphasis on the roles of GPs in commissioning health services. The re-structuring of the NHS acknowledged that too much care occurs in acute settings and more care should be provided in community settings.

A recent mandate from the Department of Health (DH) set out standards by which the organisation overseeing healthcare education in England, Health Education England (HEE) will be judged[15]. HEE aims to ensure that the workforce has the right skills, behaviours and training and is available in the right numbers, to support the delivery of excellent healthcare. HEE has identified that the pressure on the GP workforce is excessive and the existing GP workforce has insufficient capacity to meet current and expected patient needs[1]. One of the main aims of HEE is for 50% of graduating medical students to become GPs[15]; progress on this objective was originally due by 2015 and then later changed to 2016.

This highlights how high a priority the issue is for the government, and how urgent the need is for change. The intent of medical students to pursue GP careers is clearly lower than these requirements[1, 42]. Over the last 20 years only 20-30% of graduates indicated general practice as their first choice[42]. Moreover, in 2012, there was also variation amongst medical schools in the number of doctors who went on to GP training; Keele University had the highest

with approximately 39% compared to Newcastle University with 24% and Cambridge University with 11%[43].

HEE has recognised the importance of medical school as a pivotal time for students' career choices, as students often make their decisions during their early training years[44]. Hence early strategies, including greater medical school exposure to primary care, should be implemented.

The General Medical Council (GMC), the governing body for the regulation of undergraduate and postgraduate medical education in England, provides guidance to medical schools and policy standards for educating future doctors[45, 46]. The GMC are trying to broaden the focus of the curriculum to include more community settings[46] and to provide competence training in contexts more relevant to those in which students will eventually work[31]. Medical schools continue to educate students in ways that are congruent with specialist training, when most students will later become generalists[47].

Moreover, the recent Greenaway *Shape of Training Review* highlighted the changing demographics in the UK including the ageing population, higher number of co-morbidities, and their critical implications for how doctors should be trained[7]. Two recommendations particularly relevant to this research project are that there should be more community focused training and longer placements.

1.2.5 Tackling doctor shortages in deprived areas: medical education

In response to GP shortages, the consistent low intent amongst medical students to pursue GP careers, and the changing healthcare needs of the population, medical schools have an urgent need to take action to address these issues. The numbers and kinds of doctors being produced are largely determined by the education programmes that train, motivate, and supply future doctors[48, 49].

Over the past 100 years, medical education has been underpinned by many principles and recommendations following the seminal work by Abraham Flexner[50-53]. When Flexner's report was written there were large numbers of doctors being produced with varying levels of expertise by unregulated medical schools. His review of medical schools in America and Canada led to many changes standardising the education of students.

Flexner homogenised medical degrees, by separating pre-clinical and clinical education, an approach which is present in many medical schools today. Resources were re-allocated to high-quality teaching establishments and technologically advanced departments, increasing the standard of scientific knowledge among medical students.

However, a number of smaller rural medical schools were closed as a result. There was a stronger emphasis on large universities, training hospitals and urban centres. An unfortunate consequence was that five of the seven medical schools predominantly educating African American students were required to close, with negative implications for under-served communities[50, 54]. Similarly, the report had negative implications for the number of women and working-class medical students[55].

The history of medical education in many countries has similarities. Flexner had influence outside the USA, including in the UK and other Commonwealth countries[56]. In Australia, medical schools were accredited by the GMC until 1985. The curriculum in Australia therefore resembled the British one, with schools and colleges based in large University settings with hospital-based curricula involving short-term rotations[56]. As we see later, measures have since been taken in Australia to address this imbalance[57].

In the UK today, the majority of clinical education predominantly occurs in large teaching hospitals[58]. The specialisation of health services and increasing workload pressures have reduced the time available for education in hospitals, and due to increases in medical

school intakes, there are frequent reports of overcrowding in hospital teaching environments[56, 57].

At the postgraduate level, GP training currently occurs more often in affluent areas than in deprived areas[59]. Data from Scottish GP practices demonstrated that non-training practices had a significantly higher mean deprivation score than training practices[60]. The lengthening of postgraduate GP training from three to five years has been proposed by the Royal College of General Practitioners (RCGP) Scotland to reduce the difficulties of recruiting appropriately skilled GPs in deprived and rural areas[61]. It is envisaged that extending and enriching GP training will allow trainees to gain experience working in deprived environments, making it an appealing career option[61].

Over 90% of NHS patient contact occurs in primary care settings[14], therefore students are often left to apply principles learned in hospitals to other contexts[62, 63]. In hospitals, patients have often been clerked before a student sees them thereby limiting the possibility of encountering differential diagnoses and opportunities for hands-on learning experiences[64-66].

For these reasons, some regard the current medical school curriculum as out-dated in preparedness for practice[53, 57, 62, 63, 66, 67]. Furthermore, the lack of undergraduate exposure to primary care settings may exacerbate insufficient intent among students to pursue employment in primary care[35, 68]. There are suggestions for more learning opportunities, with more hands-on exposure, such as those available in community settings over longer time periods[62, 66, 67].

1.2.6 Background summary

In summary, there are UK GP shortages, particularly in deprived areas, and an insufficient number of medical students intend to become GPs[1]. Often, populations that are under-served by GPs suffer a double detriment: poorer health and poorer access to health services. This has been identified in multiple localities across the

world despite the vision that every individual should have timely access to healthcare[32].

Medical school placements are mainly provided in large teaching hospitals, therefore students have limited exposure to community settings. These community settings are pivotal for treating deprived and ageing populations who have increased levels of co-morbidities and more need. Arguably, many medical schools using current teaching models are exacerbating the situation as not enough GPs are being produced, and those who are, are not working where they are most needed: in under-served, deprived UK areas[31, 53]. Government policy is aiming for 50% of graduating medical students to become GPs to meet UK population needs[15]. However, given the current trajectory, it is quite unclear how a change will be achieved to create more GPs. This thesis sets out to further explore the issues and a possible solution.

1.3 The Difficult and Deprived Areas Programme (DDAP)

In an attempt to address the aforementioned issues within the North East of England, an initiative to increase undergraduate exposure to general practice and community settings in difficult and deprived areas was developed by Durham University. However, before expanding on this, it is necessary to describe the local context of the DDAP.

1.3.1 Community settings

The geographical area of Teesside in the North East of England was considered as ‘difficult and deprived’ because the deprivation indicator is significantly worse than the England average (according to the Index of Multiple Deprivation) and healthcare outcomes are poor, replicated over many years[69]. For example, Stockton-on-Tees has rates of smoking related deaths significantly worse than the England average[69].

Stockton and Hartlepool had 58.9 and 63.0 GPs per 100,000 population in 2012 respectively, compared to a national average of 66.9[70]. Further, Middlesbrough had a GP vacancy rate of 10.4% in 2010 compared to a national average of 2.1%[71]. The UK had 2.8 doctors per 1,000 population in 2011, compared to 3.3 in Australia, 3.8 in Germany, and 2.5 in the USA[72].

Although in national comparisons Teesside is often regarded as significantly deprived, it should be noted that there is also '*pocket deprivation'*, a term used when a minority of patients in a practice list live in areas of severe socio-economic deprivation[21]. Teesside has a range of deprived and affluent populations within very close proximity. For example, within Stockton-on-Tees, life expectancy is 16.0 years lower for men and 11.4 years lower for women, when comparing the most and least deprived areas[69]. Furthermore, in 2014, the average value of a house in an area called Wynyard was around £445,000 compared to the average just eight miles away in Port Clarence, which was around £25,000[73].

1.3.2 Medical school

The School of Medicine, Pharmacy and Health at Durham University in the North East of England opened in 2002 with 70 Phase 1 Medicine students, and in the 2014/15 academic year there were approximately 100 student places per year. The programme is based at Queen's Campus, 23 miles south east of Durham in Stockton-on-Tees. The campus was opened in 1992 with the intention of supporting the region's post-industrial economic development and encouraging the local population to aspire to a University education.

Phase 1 Medicine at Durham University teaches the first two years of a medical degree parallel to the one taught at Newcastle University. The programme is undergraduate-entry, and mature students are accepted. Teaching is supported by University staff, NHS staff, and community partners.

The Phase 1 curriculum primarily covers biomedical knowledge in preparation for clinical placements. A particular strength of Phase 1 Medicine at Durham is the involvement of students within the local community. Students have extensive community-based components, with the opportunity to undertake a family project and learn about the psychosocial factors that are critical in understanding a patient's health. This focus on the community, coupled with the local community needs, suggests that Queen's Campus is uniquely suited to address the problems in Teesside.

Following completion of Phase 1 Medicine at Durham University, students then join Newcastle University for Phase 2 Medicine (Years 3, 4 and 5). Phase 2 Medicine includes mandatory and optional clinical placements in a variety of topic areas. Students are assigned to one of four base units across the North East region where they undertake their placements.

Currently, in third year, all students undertake one afternoon per week in general practice, with most of their other clinical placements in hospital settings. The third year general practice placement often involves small group tutorial learning about particular clinical cases, facilitated by a GP supervisor. In fourth year, the students choose three Student Selected Components (SSCs), each normally lasts six weeks, and then one elective, which normally lasts eight weeks, in a range of clinical and non-clinical areas. In fifth year, all students have a mandatory three week general practice placement.

1.3.3 DDAP programme structure

Funding was secured from the North East Strategic Health Authority in 2010, alongside permission from the Newcastle University and Durham University Joint Board of Management committee, to develop and pilot the DDAP (see Table 1 for aims and learning outcomes of the DDAP). The DDAP is generalist in nature and based in primary care and community settings, allowing students to learn about the psychosocial determinants of health and pursue

community interests whilst gaining an excellent clinical grounding. The DDAP occurs during the fourth year, consisting of the third SSC and the elective combined, a total of 14 weeks. Initially funding was secured for five students per cohort, over three consecutive cohorts. The enhanced community focus of the DDAP is congruent with the GMC guidance[46] and public health policy such as *Better Health, Fairer Health*[74], where equity in healthcare is strived for by the NHS.

The DDAP is partly modelled on successful community initiatives implemented in vast rural and remote areas (e.g. in Australia, Canada, and the USA). These placements are reviewed later in chapter 2 and the concepts in chapter 3. In brief, the initiatives are *'longitudinal'* and are underpinned by principles including *'continuity'* and *'immersion'*. *'Longitudinal'* denotes a placement of 13 weeks or longer, *'continuity'* refers to repeated, on-going contact with a healthcare team, and *'immersion'* involves a deep exclusive engagement experience in a setting[75].

The DDAP curriculum covers a wide range of issues relevant to deprived areas such as health-seeking behaviour, benefits systems, NHS structures, and the psychosocial determinants of health. During the first and second cohort, the students spent two days per week in general practice, two days in a community organisation setting, half a day in a university setting, and half a day self-directed learning. In the first cohort, the students were placed with one general practice and one community organisation (for 14 weeks) whereas in the second cohort they were placed with one general practice and two community organisations (7 weeks each). This change was in response to student feedback from the first cohort as they suggested it would be more valuable to experience different types of community organisations.

A steering group for the programme was set up and meets on a quarterly basis. This group consists of funders, academics, GPs, administrators, and researchers. The group discusses all issues relating to the DDAP such as timetables, general practice

involvement, assessments, negotiation of difficulties encountered and future directions.

Table 1 DDAP aims and learning outcomes

Primary aim

- To encourage medical students to work in deprived areas in the future.

Secondary aims

- To increase student awareness of psychosocial determinants of health and health-seeking behaviours in deprived areas.
- To enhance student motivation, confidence and competence in caring for patients residing in deprived areas.
- To enrich the student experience as active members of the team and provide continuity of care in the community.
- To enable students to understand the interface between primary and secondary care.

Student learning outcomes

- Demonstrate an understanding of the current discourse surrounding health inequalities.
- Identify the links between deprivation and health.
- Describe reasons for specific problems associated with deprived areas.
- To explain how extraneous factors can impact on health outcomes and how to provide effective interventions.
- To demonstrate an understanding of the wider issues relating to health needs in deprived areas and how this may impact on other areas of life.
- Recognise potential barriers to accessing health care in deprived areas and ways in which to address them.
- Describe reasons for the differences in perspective between primary and secondary care and how this may affect health care in deprived areas.
- Identify services and networks within and outside the health service that support people in deprived areas.

1.3.4 Student participation

To enrol on the DDAP, students were asked to voluntarily reply to an invitation sent to all Durham University and Newcastle University medical students (approximately 400 students per academic year). This was normally sent out in their second year via teaching sessions and / or email. For the first and second cohort of students, the minimum number of students applied, so no selection processes were enforced. If applicants had exceeded the number of places available, interviews would have taken place. The criteria for selection would have been for those who had a keen interest in becoming a GP in the local area. The selected students took their third year of medicine in close proximity to Durham University Medical School to allow for attending teaching sessions (often once per term). These sessions were frequently taken by guest speakers on different topics including a GP experience of working in deprived environments, recruitment issues, and mental health awareness.

1.3.5 General practice and community organisation placements

All general practice and community placement providers were required to induct, support and mentor students, and ensure they had useful roles. This often involved observation, shadowing, and hands-on learning experiences under appropriate supervision. All potential placement organisations were selected by the steering group because of their overall relevance to the DDAP aims, although the unique student experience varied depending on the specific nature of the organisation. General practices were remunerated for their involvement. The funding was believed to be in line with existing reimbursement given to undergraduate training practices.

It was anticipated there might have been difficulty in recruiting the types of general practices that were of the greatest relevance to the project, since by definition they are likely to be the ones with the least experience in delivering teaching and resources to accommodate students. Both types of general practices, those with and without teaching experience, were invited for the first cohort and second

cohort. Following an invitation to all general practices in the area, the steering group was overwhelmed by the high level of interest in the DDAP. The steering group decided to prioritise those practices with undergraduate teaching experience.

The general practices will not be named in this thesis in order to protect anonymity, therefore the general information will be provided. Nine general practices were involved over the first two cohorts. The Public Health Observatories supply information about primary care indicators for general practices, allowing a consistent approach to comparing and benchmarking across England. Overall, the information showed that the practices involved experienced higher levels of deprivation compared to the England average. For example, one general practice was shown as being in the fourth most deprived decile in England (1 being most deprived, 10 being least deprived).

The community placement organisations provide a range of services for the local community. Often these organisations have an aim to help disadvantaged communities and to help people who are suffering under difficult circumstances such as drug and alcohol abuse, homelessness, sex workers, minority groups. The experiences of the students involved specific activities related to the organisation, for example a student placed with an asylum seekers' organisation would be involved with case management of individuals dealing with benefits, health and housing. The students stated preferences for particular community areas they would like to experience (see Figure 1).

Arts	Domestic Violence
Employment	HIV/AIDS
Men's Groups	Social Care
Carers	Drugs & Addiction
Food Bank	Homelessness & Housing
Mental Health	Sport & Exercise
Children	Education & Literacy
LGBT & Sexual Health	Hospices/Palliative Care
Prisoners & their Families	Women's Groups
Disability	Elderly
Health Promotion/Public Health	Learning Disabilities
Refugees & Asylum Seekers	Young People

Figure 1 Community placement organisation areas

1.4 This research project

This thesis investigates an innovative programme and addresses broad pragmatic and theoretical issues. The transferability of successful principles from rural initiatives (including immersion and continuity), pragmatic viability, and theoretical implications of placements in post-industrial, under-served deprived areas are explored. The topic has thus far received little attention in undergraduate medical education research, especially in the UK.

A fundamental principle of the DDAP is educating medical students in important healthcare settings that are often neglected within the traditional curriculum. Approximately 13% of clinical placements in UK medical schools are in general practice[76]. Across the UK, 4392 general practice undergraduate training practices have been identified, which were widely distributed with a median distance of 28km between the medical school and the practice[77]. The under-utilisation of placements in post-industrial, deprived areas may be because of the healthcare systems involved, as the specialisation of health services may contribute to the lack of exposure. Many students are educated in ways that are not congruent with how they may eventually work. The requirements of doctor training necessitate

a change from what it is favouring now, i.e. working in hospital specialties, to what society needs it to address, i.e. working in deprived, under-served community areas.

Throughout this thesis, the term ‘non-traditional placement’ will be used to generically describe similar placements but specific labels (i.e. rural, remote, and urban) will be used where necessary. The workforce shortage issue is of importance to primary care planners but the understanding of deprived areas as feasible learning environments is also imperative for educationalists and students.

The learning experienced during a longitudinal placement in an under-served UK area will be explored as well as the variation in experiences of alternative placements. In a comparison between four week and five month placements, Worley and Kitto[78] identified a ‘turning point’ that occurs as a student becomes familiar with the GP practice and their role, therefore requiring less hands-on time with supervisors. This thesis may add to the scant body of knowledge about possible explanations for this occurrence and when it occurs. Although there is a general consensus about placement length of ‘the longer the better’, not just in terms of student development but for relationships between student, supervisors and patients[79]; the associations between length of time and positive student experience are unknown. In addition, the dynamics between students, supervisors and patients may offer insights into how a learning experience may develop the student professional identity and knowledge of the doctor role[80].

1.5 Overall research aims

The overall research aims were:

- To explore the viability of the DDAP as a medical student learning environment.
- To inform a critical understanding of the educational value of longitudinal community placements.

These were underpinned by three specific aims:

- To explore the learning experiences of the DDAP students over time.
- To understand GP supervisor and patient views of student learning during the DDAP.
- To analyse DDAP student learning experiences compared with experiences of alternative clinical placements.

1.6 Thesis structure

This thesis draws together findings from different phases of research, allowing fieldwork to be located in an international context and the interpretation of data within a conceptual framework. At the start of each chapter either an outline or abstract is presented.

- *Chapter 2* is a systematic literature review of clinical placements in under-served areas

- *Chapter 3* is an overview of conceptual approaches to community-based medical education

- *Chapter 4* covers the logistical and ethical considerations of the methods and analysis

- *Chapter 5* presents findings from interviews with DDAP students before the programme

- Chapter *6* describes DDAP student experiences, mid-way and at the end of the programme

- *Chapter 7* presents interview findings from the DDAP, GP supervisors

- *Chapter 8* describes the patient experience of the DDAP

- *Chapter 9* is a comparison study with DDAP peers who took alternative Student Selected Components and Electives

- *Chapter 10* is a comparison study with students taking an established rural programme

- Chapter 11 is a synthesis of the DDAP student learning in relation to: changes over time (before, midway and end), the NHS stakeholders (GP supervisors and patients), and comparisons with two other medical student clinical placements (peer and rural).

- *Chapter 12* is a discussion of the overall research, challenges faced, implications for research and practice, and suggestions for further research.

1.7 Chapter summary

This chapter has introduced the thesis and provided a rationale for the research. There are shortages of GPs particularly in deprived areas. Medical students have limited exposure to such settings during their education. The geographical context and credibility of Durham University was an apt setting for the DDAP. The next section will review the existing evidence for student learning during community placements in under-served areas.

2 Chapter 2 A systematic literature review of undergraduate clinical placements in under-served areas

2.1 Abstract

Context: The delivery of undergraduate clinical education in under-served areas is increasing in various contexts across the world in response to local workforce needs. A collective understanding of the impact of these placements is lacking. Previous reviews often take a positivist approach by looking only at outcome measures. This review addresses the question: What are the strengths and weaknesses for medical students and supervisors of community placements in under-served areas?

Methods: A systematic literature review was carried out by database searching, citation searching, pearl growing, reference list checking, and use of own literature. The databases included MEDLINE, EMBASE, PsycINFO, Web of Science, and ERIC. Search terms used were combinations and variations of four key concepts exploring GP primary care, medical students, placements, and location characteristics. The papers were analysed using a textual narrative synthesis.

Findings: The initial search identified 4923 results. After removal of duplicates and screening of titles and abstracts, 185 met the inclusion criteria. These full articles were obtained and were assessed for their relevance to the research question; fifty-four were then included in the final review. Four main categories were identified: student performance, student perceptions, career pathways, and supervisor experiences.

Conclusions: This review reflects the emergent qualitative data, as well as quantitative data used to assess initiatives. Under-served area placements have produced many beneficial implications for students, supervisors, and the community. There is a growing amount of evidence regarding rural, under-served areas but little in relation to inner-city, deprived areas, and none in the UK.

2.2 Introduction

Although the current model of undergraduate placements is predominantly hospital-based[29], students are increasingly placed in community environments where populations are under-served[81-83]. The primary driver for this change is seen as a workforce planning issue with concerns raised about insufficient future GP numbers[8]. However, a collective understanding of the impact of these initiatives is lacking.

The operational principle under investigation is clinical education in an area that does not usually provide such experience to medical students. Articles frequently refer to the area using transferable terms such as 'non-traditional'[84-86] or 'displaced training environments'[83]. The terms 'under-served' and 'rural' are often used interchangeably yet depending on the local context they may be distinct.

The prominent issues: lack of student interest, lack of student exposure, and difficulty in access to healthcare, persist for areas including rural and urban, and with higher levels of socio-economic deprivation. Within this review the term 'non-traditional' will generically label initiatives but specific terms will be used where appropriate.

Community placements aim to give students enhanced exposure to the local patient demographic hence they are often generalist in nature, in primary care settings over long periods. They often occur in the curriculum when students have choice over what subjects to study. The terms 'primary care' and 'generalism' relate to the content of the placements. A primary care clinician is defined as someone *"who provides integrated, accessible healthcare services and is accountable for tackling a large majority of personal healthcare needs, and practising in the context of family and community"*[87]. The term 'generalism' is used in regard to dealing with undifferentiated illness and the widest range of patients and conditions[88]. An increasingly common undergraduate community approach is to teach several core disciplines (e.g. internal medicine, neurology, obstetrics and gynaecology, paediatrics, surgery, radiology, and psychiatry) in

parallel rather than block rotations; patients are seen over multiple clinical encounters enabling concurrent learning, known as a 'longitudinal integrated clerkship' (LIC)[89].

A small number of reviews have investigated components of clinical placements in under-served areas[49, 90-94].

Ranmuthugala *et al.*[93] reviewed the impact of rural placements in GP practice. Whilst universities with preferential admission of students intending to be rural GPs are successful in this respect, the benefits of placements are inconclusive. The influence of particular aspects of rural training programmes (in terms of nature, timing, frequency, and duration) on impact and uptake of rural practice is unknown. Studies fail to distinguish length of exposure and level of entry to medical schools.

Rabinowitz *et al*.[49] investigated American initiatives to address the undersupply of doctors in rural areas. Eight medical schools demonstrated a positive impact in training students to become future rural physicians.

Barrett *et al.*[90] reviewed research from North America and Canada into the impact of rural placements on medical students between 1966 and 2009. The most common outcome considered was career choice (51% of 72 studies). Of these, most reported an association between experiencing rural training and choosing a primary care career. Practice location was the second most common outcome; 31% of studies reported experiences in a rural setting predicted future employment. Grades were reported in 24% of studies, and most demonstrated equivalency between students with rural experiences and those without. The article suggests that the most effective methods of rural training, optimum rotation length, and timing of the experience should be explored further.

A recent valuable review of LIC outcomes suggested they are an effective pedagogical alternative to traditional block rotations,

however there was little consideration of learning in different contexts and placement length[94].

Existing reviews have found positive outcomes which support the replication of the initiatives, but the explanations are mainly at a surface level and tend to favour quantified outcomes. This review builds on the previous literature[49, 90-94], informing educationalists, policy makers, and those who are seeking to implement a similar initiative in a local context. The study looks wider than previous reviews as global papers are considered and it reflects both quantitative and qualitative approaches in order to report why as well as what.

2.2.1 Research aims

- To systematically identify all informative, published evidence concerning undergraduate community placements in under-served areas
- To identify the strengths and weaknesses for medical students and supervisors of community placements in under-served areas

2.3 Method

The efficacy of under-served area placements was systematically explored using various search techniques[95] (see Table 2).

Table 2 Search techniques

Technique	Description
Database searching	Searching electronic databases with search terms. See Appendix A for search example
Reference list checking	Check references of included papers for additional papers
Citation searching	Check if selected papers have been cited by more recent papers

Pearl (article) growing	Use key paper index terms to identify additional papers
Use of own sources	Literature already known by the research team

The databases searched included: MEDLINE, EMBASE, PsycINFO, Web of Science, and ERIC. Search terms used were combinations and variations of four key concepts exploring: GP primary care, medical students, placements, and location characteristics (see Table 3).

Table 3 Search terms broken down by concept

Concept	Terms
General practice, primary care	GP OR “General Practice” OR “General Practitioner” OR “Primary care practitioner” OR “Primary care” or "Primary healthcare" OR “Family Medicine”
Medical students	“Medical students” OR undergraduate OR student* OR “medical training” OR “Medical education” OR curriculum OR trainee OR Medic
Placements	Placement* OR program* OR “longitudinal clerkship” OR attachment* OR internship OR “extended placement*”
Location characteristics	Under-served OR deprived OR difficult OR rural OR remote OR inner-city OR urban OR indigenous OR poor OR underprivileged OR destitute OR community OR isolated

* explode category terms

The following limits were applied to the search-

Not: Nursing OR Dentistry OR Pharmacy

Date range: 1991 to 2011

Language: English

2.3.1 Inclusion and exclusion criteria

Informative empirical studies providing conceptual and contextual knowledge about exposure to under-served areas were sought (see Figure 2). If initiatives were general community placements they were excluded as it was unknown if there was a GP shortage or if there were difficult conditions that related to students training in such environments. Studies reporting medical programmes that had an extensive under-served area focused curriculum were only included if they described the placement in sufficient detail to allow analysis. No outcome variables were predefined as this was exploratory rather than hypothesis-led research.

Figure 2 Inclusion and exclusion criteria

INCLUSION criteria for papers:

- Primary healthcare / generalism context AND
- Undergraduate medical education AND
- Exposure to under-served areas (including but not limited to rural, remote, isolated, urban, deprived, inner-city) AND
- English language AND
- Academic publications AND

Is the study about either:

- Experiences of students OR
- Experiences of GP supervisors / preceptors

EXCLUSION criteria:

- Not medical students
- Pre-clinical experiences (i.e. first two years of medical degree)
- Postgraduate exposure
- Commentaries, discussions, editorial comments
- Exposure to specialties
- Initiatives that aim to increase workers in under-served areas primarily through financial means

2.3.2 Data extraction and analysis

After reading key articles (prior to conducting the review) it was acknowledged that the literature was based on quantitative and qualitative data, therefore a textual narrative synthesis[96] was deemed appropriate to appraise intervention efficacy. This approach allows an encompassing appreciation of studies whilst describing gaps in the literature[97]. Analysis consisted of three stages: papers grouped into categories, study commentaries produced, followed by a sub-group synthesis.

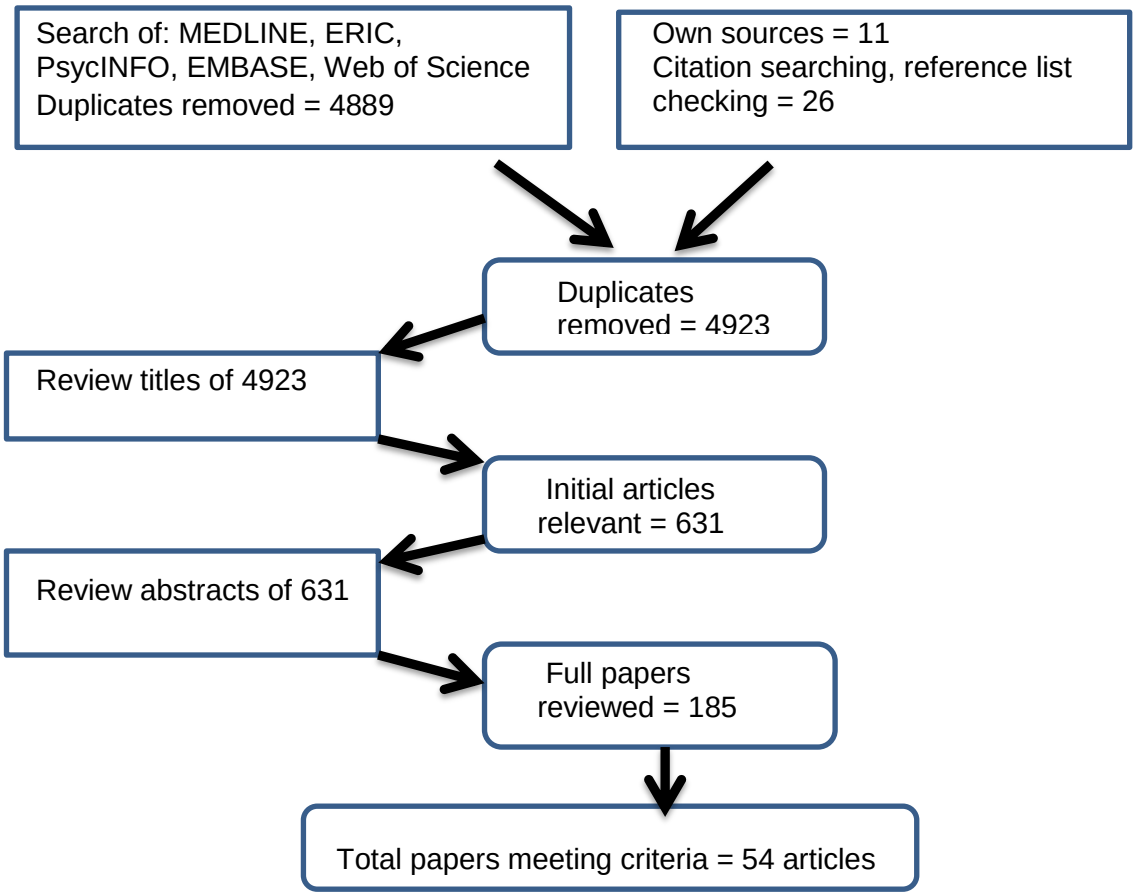
A template was devised to extract relevant data to the research question. This included: year and country, university, geographical area, length of exposure, method, and main findings. Data were

entered into a Word document and Excel spreadsheet for ease of handling and analysis.

2.4 Findings

The initial search yielded 4923 results (see Figure 3). All search results were entered into Endnote. After removal of duplicates and screening of titles and abstracts, 4738 did not meet the inclusion criteria. The remaining 185 articles were obtained in full and were assessed for their relevance to the research question. Of these, 131 were excluded for reasons such as: postgraduate (residency) exposure, broadly focused workforce initiatives, and commentaries. Fifty-four articles were included in the final review.

Figure 3 Number of results



2.4.1 Study characteristics

The characteristics of the articles were categorised; when available, data about the placement were collected. The majority of the studies reported data from Australia (n= 26) and the USA (n=15). Other countries included Canada (n=7), UK (n=4), New Zealand (n=1), South Africa (n=1), and Japan (n=1). *[Please note, one study reported data from two countries].* The majority of the studies had been published after 2000 (n=51), 25 of which were published during or after 2008.

There were single (n=24) and multiple cohort studies (n=26). Most of the papers reported data from one institution (n=49), with just five collecting data from two or more institutions. There were 31 papers reporting quantitative data, 10 papers reporting qualitative data and 13 reporting both. The majority of the studies reported data from placements in rural and remote areas (n= 47). Eight studies included a sample from urban initiatives.

The reported length of exposure varied from two weeks to 104 weeks. There were 18 papers that reported data from placements less than seven months long, ten of these were ≤ six weeks and one was two weeks long. Twenty-nine studies reported data from placements that were seven months or longer in duration.

From the data that could be extracted, 24 had voluntary placements and three had mandatory placements. The clinical experiences were commonly reported from the penultimate year of the medical degree (n=28). Of the identifiable graduate entry schemes, exposure was provided in Year 3 in 14 studies, and both Years 3 and 4 in two. Of the identifiable undergraduate schemes, one placement was in Year 4 and two were in Year 5. The studies were primarily evaluations of programmes.

2.4.2 Summary of study characteristics

The articles found were primarily published from Australian and USA institutions documenting the impact of initiatives in rural areas. The placements lasted between two weeks and 24 months, with the most common reporting exposure lasting 9-12 months. The papers were often based on evaluations of the programmes. Few experimentally robust designs have been employed, with data from one institution being the most commonly described.

2.4.3 Themes

Four main themes were identified: student performance, career pathways, student perceptions, and supervisor experiences. Some papers related to multiple themes. For each theme, a sample of study commentaries (including first author, length of placement, location, and country) is presented followed by a sub-group theme synthesis.

2.4.4 Student performance: Study commentaries

Zink (2010)[86]:

9 months, rural, USA

This paper investigated equivalency between traditional metro-based placements within close proximity to the academic health center and non-traditional rural placements. There was no significant difference between traditional and non-traditional students on the National Board of Medical Examiners (NBME) paediatric exam. There were no significant differences between the two cohorts for the NBME exam for surgery or the clinical knowledge and clinical skills exams. There were no significant differences between the two cohorts for post-elective Objective Structured Clinical Examinations (OSCEs) scores. However, there was a significant difference between the two cohorts for the NBME OB-GYN shelf. Traditional students scored higher (median=72, range 50-98) than the non-traditional students (median=71, range 51-89). The study adds to the literature as it is

one of the largest data sets to show equivalency between rurally longitudinally trained medical students and traditionally trained students.

Power (2006)[98]:

9 months, rural, USA

The performances of non-traditional students and traditional students were compared on a primary care OSCE. The purpose of the study was to compare assessment of training in a structured placement based in urban and suburban areas with a more loosely organised rural placement. The findings provide evidence that rurally trained students at this institution performed at least as well as their peers on OSCE stations testing performance in common primary care scenarios. The wider implications of this study are that medical students may receive high-quality training in rural areas.

Zink (2010)[99]:

9 months, rural, USA

This study took a qualitative approach to explore student performance on OSCEs, comparing rural students with traditional students. The high and low performers on four OSCE scenarios were observed independently by three researchers on videotapes. Both high and low scoring rural students demonstrated more consistent use of rapport building skills. Rural students demonstrated better mastery of rapport building and content knowledge and had a more effective routine in their patient encounters, which was not evident in the traditional students' encounters. Rural students appeared to have an effective pattern in their patient interactions and were more rehearsed at explaining preventive care recommendations. However, traditional students displayed a more complete mastery of the adolescent interview and followed a mnemonic.

Lacy (2007)[100]:

8 weeks, rural & urban, USA

This study investigated whether medical students' end of placement exam scores varied by the location of the placement, in regard to how rural the placement was. The findings indicated that students who took their placement in rural locations performed as well as the students in urban placements. The study was conducted at one medical school which has a focus on rural rotations, demonstrated by 80% of the students going on rural placements. The students were assessed by only one exam which was subject to variances by the order of rotations.

Waters (2006)[101]:

Full academic year, rural & urban, Australia

The examination scores of third year students who spent their penultimate year in either rural or urban settings were investigated. The authors looked at three cohorts. For the first cohort, there were no statistically significant differences. For the second cohort, there was a higher score for rural students in the end of year clinical skills exam (65.7% versus 62.3%). For the third cohort, the rural students scored higher in the mental health rotation (79.3% versus 76.2%) and lower in the medicine rotation (65.5% versus 68.6%). The authors concluded that academic performance among students who studied in rural and urban settings was comparable.

Bianchi (2008)[83]:

5-14 weeks, urban, Canada

The authors compared the academic performance of students who went to distributed rural learning sites and those who went to traditional sites. The first cohort of non-traditional students commenced in 2006 with 34 students. Placements were between 5-14 weeks, and nine students completed two non-traditional rotations for a maximum of 14 weeks. There were no significant differences between the two groups before the intervention (pre-placement and

placement evaluations, progress tests, or an inaugural OSCE). There was a significant difference between non-traditional students and traditional students for post-placement OSCE. Non-traditional students scored significantly higher (mean = 7.30) than traditional students (mean = 7.02).

Wilson (2008)[102]:

1 year, rural, Scotland

This study was an evaluation of an innovative fourth year remote and rural placement conducted at the University of Aberdeen. Fourteen students took part in the placement. Assessment data were consistent with their third year performance on all assessments and no significant differences were found. No academic disadvantage was suffered from taking part on the course and interest in rural practice was maintained.

Worley (1999)[103]:

Full academic year, rural, Australia

This study compared academic grades of students who took a rural placement and those who did not. The eight rural placement students were matched (for academic performance) with eight control group students from the tertiary hospital. The rural placement students performed better than their tertiary hospital controls in four of the five OSCEs. When clinical ward performance was added to the OSCE marks, the rural students had higher end of term scores in each of the five disciplines (O&G, paediatrics, internal medicine, surgery, and psychiatry). The rural placement students' academic performance improved in comparison with that of their tertiary hospital peers and in comparison to their own results in previous years.

Worley (2004)[104]:

Full academic year, rural, Australia

This was one of the first studies to investigate exam performance of undergraduate students in community settings. The rural students in their third year (graduate entry course) were compared to students receiving tertiary teaching in hospitals. There were 371 participants in total, 40 from the rural community programme, 68 from Darwin, and 263 studying in Adelaide. Rural students (mean = 69.3) and Darwin students (mean = 68.2) scored significantly higher than Adelaide students (mean = 65.2) in Year 3. Rural students had a significantly improved score in Year 3 over the Adelaide group (adjusted mean difference = 3.08). The fact that all the students had been admitted to study Medicine at Flinders was seen as an indication that they had all shown sufficient national admission test performance, performance in undergraduate degree, and performance at a standardized interview.

Smucny (2005)[105]:

36 weeks, rural, USA

The performance of the students was compared between rural and traditional placements on USMLE Step 2 scores. Data were available for 1,627 students who graduated between 1993 and 2003. The rural students (n=123) had higher adjusted mean step 2 scores than traditional students (212.3 versus 199.1). The authors suggest that the results may have been influenced by selection bias, as students apply and can be rejected if they are in poor academic standing although this has rarely happened.

Young (2008)[85]:

32 weeks, rural, Australia

Rural placement students were compared with matched, urban hospital placement students for examination performance. The students were matched for age range, gender, and background. The students from both groups filled in a rural rotation survey and a core

clinical competency survey. The rural placement group improved their class ranking compared with the matched urban counterparts.

2.4.5 Student performance: Subgroup synthesis

The most objective way to demonstrate performance of students taking placements in non-traditional areas is from educational outcomes. Objective Structured Clinical Examinations (OSCE) are one of the most widely recognised examination tools in medical student assessment[106] and were the most commonly reported exams[83, 86, 98, 99, 103, 104]. Other measures reported were National Board of Medical Examiners subject examinations (NBME)[84, 86] and United States Medical Licensing Examinations (USMLE).[84, 105] The common finding across assessment types was that students' scores did not significantly differ by taking a non-traditional under-served area placement (see Table 4).[84, 98, 100-102, 107] The studies were mainly conducted in the USA and Australia in relation to rural areas.[84-86, 100, 107] Cohorts have been large (n>200) and over numerous years (5 years).[86, 104]

Table 4 Studies that have assessed the performance of students taking placements in non-traditional areas compared to students in traditional areas.

Exam	Outcome	Source (Author/year)
OSCE	Non-traditional higher	Bianchi *et al.* (2008)[83] Power *et al.* (2006)[98] Worley *et al.* (2000)[81]
	Equivalent	Power *et al.* (2006)[98] Zink *et al.* (2010a)[86] Bianchi *et al.* (2008)[83]
	Non-traditional lower	Power *et al.* (2006)[98]
NBME	Non-traditional higher	None found
	Equivalent	Zink *et al.* (2010a)[86] Schauer & Schieve (2006)[84] Lacy *et al.* (2007)[100]
	Non-traditional lower	Zink *et al.* (2010a)[86]
USMLE	Non-traditional higher	Smucny et al. (2006)[105]
	Equivalent	Schauer & Schieve (2006)[84]
	Non-traditional lower	None found
End of year exams	Non-traditional higher	Worley et al. (2004)[104] Waters *et al.* (2006)[101] Schauer & Schieve (2006)[84]
	Equivalent	Margolis *et al.* (2005)[107] Lacy *et al.* (2007)[100] Waters *et al.* (2006)[101] Bianchi *et al.* (2008)[83] Zink *et al.* (2010a)[86]
	Non-traditional lower	None found

There has been some pattern of increased clinical proficiency scores among non-traditional placement students[83-85, 101, 105]. Non-traditional students demonstrated better mastery of rapport building, greater knowledge, and had an effective patient encounter routine unlike traditional students[99].

Conversely, non-traditional students' book knowledge was significantly worse than that of the traditional students in two studies[86, 98]. This may be in relation to improved clinical scores as the students spent more time dealing with clinical issues and less time on self-directed learning[99].

Students who took their rural rotation during the second semester scored higher than those who took it in the first semester[100]; and those who took exams during the first three months of the year had lower scores[86]. Timing of the placement has been found to have an impact on grade scores although research is severely lacking in this area.

2.4.6 Career pathways: Study commentaries

Eley (2009)[108]:

1-2 years, rural, Australia

This study was conducted by the University of Queensland Rural Clinical School (UQRCS) to investigate graduates of either a one-year and / or two-year rural placement. There was a significant difference between rural background and non-rural background for the UQRCS altering desire to pursue a medical career in a rural or remote location. Students from a rural background (mean = 4.19) were more encouraged by the UQRCS than non-rural background students (mean = 3.59). Interestingly, there was a significant difference between length of time at the UQRCS and feeling more encouraged to pursue a medical career in a rural and remote location. Students who spent two years at UQRCS (mean = 4.07) felt more encouraged than students just spending either their third year (mean = 3.52) or fourth year (mean = 3.71) at UQRCS.

Critchley (2007)[109]:

4 weeks, rural, Australia

Student views were analysed after a mandatory four-week placement in a rural area. Of 393 students who took the course, 93% responded to the survey. The rural exposure consisted of students attending a short-term community placement, an indigenous placement, and a small rural community placement. This study found that 13% had always considered rural practice, with another 38% saying they would practise rurally for a short time or consider it in the future. The views of students were not collected prior to the placement so it is unclear whether a change has really occurred.

Stagg (2009)[110]:

Full academic year, rural, Australia

This study collected data from graduates of the Parallel Rural Community Curriculum (PRCC). A retrospective survey was sent to

all contactable graduates with between one and nine years post-graduation experience. The study looked at the factors that influenced career choices of the PRCC graduates. Usable responses were received from 46 graduates (53% response rate). Key influencing factors on graduates choosing a rural career pathway were having a spouse/partner with a rural background, clinical teachers and mentors, the extended rural-based undergraduate learning experience, and a specialty preference for general practice.

Williamson (2003)[111]:

7 weeks, rural, New Zealand

A questionnaire was given to all students immediately before and after taking a rural placement during 2000 and 2001. There was a significant difference between respondents having ‘considered rural general practice’ pre and post placement. There was a significant increase in the likelihood of entering rural general practice after the rural attachment. Students from a rural background reported a significantly greater likelihood of entering rural general practice than urban respondents. The results suggest that both student origin and undergraduate experience have positive effects on the likelihood of entering rural general practice. Unlike other studies, the students described their background (i.e. rural, remote) instead of indicating it on a classification rating system.

Woloschuk (2002)[112]:

4 weeks, rural, Canada

The aim of the study was to determine whether exposure to a rural educational experience changes students' likelihood of becoming a rural locum or taking up rural practice and whether student background and gender are related to these practice plans. As a result of the rural educational experience, all students were more likely to take up a rural locum post. Compared to their urban-raised peers, students from rural backgrounds reported a significantly

greater likelihood of being a rural locum and practising in a rural community, irrespective of gender or participating in a rural educational experience. There was no relationship between background and career choice. A rural educational experience at the undergraduate level increased the stated likelihood of students participating in rural locum posts and helped to solidify existing rural affiliations. All students were encouraged by the placement, whether they had a rural background or not.

Halaas (2008)[113]:

9 months, rural, USA

This study was conducted on a nine-month longitudinal experience in a rural community. The study looked at the recruitment and retention of graduates from the Programme since 1971 and found that of 901 students currently practising, around half (n = 448, 49.7%) were in rural settings. Of these 901, the majority were in primary care specialties (n = 707, 78.6%). Among primary care graduates, significantly more of those in family medicine currently practised in rural areas than those in other primary care specialties (61.0% vs. 26.5%). The data suggests that a nine-month longitudinal experience in a rural community increases the number of students choosing primary care practice, especially family medicine, in a rural setting.

Lynch (2001)[114]:

5 weeks, rural, USA

Two medical schools that implemented a rural placement were investigated by comparing those who participated in rural placements and those who did not. Of 52 students who were now in residency training, 77% were in primary care and 50% were in family medicine residency programs. In contrast, 49% of the students in the comparison groups were in primary care and 21% were in family medicine residency programs. Medical students who participated in rural placements were more likely to choose family medicine and

other primary care specialties and to match into residency programs in community hospitals than students who participated in traditional placements.

Smucny (2005)[105]:

36 weeks, rural, USA

Rural placement graduates from rural home towns were significantly more likely to be practising in rural communities than were graduates from non-rural hometowns. Of 708 graduates who were now residents, rural placement graduates were significantly more likely to have a rural address than were traditional graduates (17% vs. 6%). Specialty choice was not significantly associated with practice locations of rural placement graduates; 16 (28%) rural placement graduates were family physicians in rural practice compared with six (21%) rural placement graduates who were in other specialties.

Worley (2008)[115]:

Full academic year, rural, Australia

The career paths of graduates from three discrete placements were compared: rural, remote, and urban. A retrospective postal survey was sent to all 150 graduates who took Year 3 between 1998 and 2000. There were 74 (49% response rate) replies with usable data. There were significant associations between practice location and age at admission, medical education program location, and rural background. Of 19 graduates from a rural background, 15 (79%) reported a rural career path, compared with 10 (30%) of the other 33 graduates. There was no difference in the specialty choices of graduates of the three programs. This study provides evidence that clinical programmes designed to increase the rural and remote medical workforce do fulfil this objective.

2.4.7 Career pathways: Subgroup synthesis

Educating students who will eventually return to the area is imperative. Students experiencing undergraduate exposure and having a rural background themselves reported a significantly greater likelihood of entering rural general practice[105, 108, 110, 111, 113]. This was found at various stages including career intent, both pre and post placement, and employment as a qualified doctor. Pre and post research designs found a positive shift in preference for considering rural general practice[111, 116]. All students (regardless of background) were encouraged towards rural practice[112], and this was observed similarly elsewhere[108, 110, 111, 117].

The lasting effect of exposure is under-researched. Between 1971 and 2007, following a nine month rural placement, 82% of graduates chose primary care careers and, of those in practice, 44% had been employed in rural settings all of the time[113]. Lynch *et al.* found that 77% of students went on to work in primary care and 42% in community hospitals (after a community experience) compared to 49% and 25% respectively of those who had not undertaken community experience[114].

One of the few studies that collected data on a mandatory placement reported that around 40% of students would practise rurally for a short time or consider it in the future; so even those who did not volunteer to be involved were still positively influenced[109]. Length of exposure may be a factor influencing career choice[118]. A longer rural clinical experience (two years vs. one year) was found to be more effective in eventual choice of workplace location[108].

2.4.8 Student perceptions: Study commentaries

Wilson (2008)[102]:

1 year, rural, Scotland

This study used a mixed methods approach including questionnaire, focus group, and assessment data. Focus group data revealed four main themes regarding why students chose to take the placement, including: teaching reputation, to experience remote and rural medicine, a change from the city, and lifestyle factors.

Worley (2004)[119]:

Full academic year, rural, Australia

Twenty-nine students including six from rural primary care, eight from the remote secondary hospital, and 15 from the urban tertiary teaching hospital, completed a retrospective survey of their learning experiences and perceived competence to manage 78 common procedural skills and 62 common conditions. Students in rural primary care reported a pattern of increased clinical exposure to common clinical conditions and procedures in comparison with their hospital-based peers. The students in the remote secondary care hospital reported increased exposure to common conditions and no significant difference in the opportunity to undertake common procedures.

Lacy (2005)[120]:

8 weeks, rural & urban, USA

The objective of the study was to determine whether students' learning experiences, measured by improvement in perceived competence, according to how rural a placement was. Rural placements from 1990 to 2003 were assessed using before and after placement questionnaires. Mean perceived competency improved for all items. Students in rural locations had no statistically significant differences from students in urban locations in perceptions of their clinical skill or comfort with basic diagnoses. There were no

differences in medical students' perceived competence based on the rurality of their placement.

Nyangairi (2010)[82]:

6 weeks, rural, South Africa

The aim of the study was to explore the experiences of final year medical students exposed to primary healthcare settings in rural and under-served areas. Student log books were assessed for common themes. The themes that emerged were improvement in consultation and other skills, application of knowledge, increased capability to deal with undifferentiated patients, increased confidence and self-esteem, an eye to see inefficiencies in the health system, an appreciation of primary healthcare and other disciplines, exposure to community health problems, and being able to be innovative. The students developed a holistic approach to primary care.

Okayama (2011)[121]:

2 weeks, rural, Japan

This study looked at a rural placement and students' attitudes toward community health care. A survey was given to 693 students, with responses from 645 (93.1%). The main finding was that student attitudes for feeling 'worthwhile' and 'confidence' increased after the placement. These are important attitudes in relation to behavioural change. The placement was associated with a positive change for both attitudes of 'worthwhile' and *'confidence'* and motivated students to practise community health care.

Couper (2011)[89]:

Full academic year, rural, Australia & Canada

This comparative study, consisting of interviews with students and staff from two different programmes in Australia and Canada, highlighted the importance of continuity and the value of extended

placements. Students developed more responsibility for patient care over time which helped them to form well-rounded clinical competence for common health problems and practical procedural skills and also a broad set of skills related to team work, psychosocial understanding, awareness of context and community, problem-solving, and professional development. In addition to continuity of care, students saw and learned about the whole life cycle of health and disease. This was the first study to simultaneously evaluate a rural longitudinal placement on two different continents.

Zink (2008)[122]:

36 weeks, rural, USA

Students in their third year wrote essays relating to hands-on learning experiences which were then analysed thematically. Where possible, the frequencies of patient encounters and procedures experienced by rural placement students were compared with those experienced by metropolitan placement students. Data were collected for three cohorts of students (n = 95). The students described the placement benefits in terms of continuity experiences, one-to-one supervision, long-term relationships, and strong relationships with the working team. The students felt they developed at a comfortable yet challenging pace and their responsibility grew over time. The rural placement students reported more hands-on experience, more confidence, and more autonomy than metropolitan placement students. The authors conclude that the rural experience provides a nurturing, longitudinal, immersion experience.

Deaville (2011)[123]:

6 weeks, rural, Wales

Students reported that the placements enabled a positive learning experience because of the one-to-one teaching experience. The relationships with GP supervisors were closer than those they had previously experienced. The analysis also found that rural placement

students had heightened anxiety. The distance from friends and family, isolation, and travel were challenges for the students. The cost and time implications of going on rural placements were seen to be potentially detrimental to learning opportunities.

Baker (2003)[124]:

6 weeks, rural & urban, Australia

Sixty-four final year undergraduate medical students completed a questionnaire to evaluate the educational value and quality of GP supervisor teaching during a three week rural and three week urban general practice placement. Sixty-four rural and 76 urban GP supervisors were assessed. The median score for each section was high (high being good), ranging between 9 and 10 (10 point scale). For teaching quality, 38% of students rated a perfect score of 10; however, 17% of students rated between 1 and 7. Approximately 15-25% of students perceived various aspects of their placement to be mediocre or poor.

Worley (2000)[81]:

Full academic year, rural, Australia

In this study, students' learning experience was perceived to transform from being in a competitively-based peer environment to a collaborative supportive peer environment. There was prior concern about the teaching capability of GP supervisors but actually the students found that GPs were excellent facilitators of learning. In the first semester, students were very anxious as they perceived that they were missing out on content compared to peers taking the traditional placement. However, in the second semester, the students from the traditional placement were anxious as they perceived the rural placement students to have an unfair clinical preparation advantage going into the end of year exams.

McNiff (2009)[125]:

6 weeks, rural, Scotland

This was a qualitative study in which eight students were interviewed. Students spent half of their placement time in a local hospital and also in general practice so that they could experience the complete range of remote and rural practice. Overall, the students had a mixed response. The positives identified about rural healthcare placements were the close relationship that GPs had with patients and the benefits this had for patients. The students felt they had integrated well into the placement and were not competing for learning experiences with peers. A negative implication was the possibility of 'bumping into' the patients in the community. The main issues faced during the placement were transport, computer access, availability of textbooks and travel allowances.

Shannon (2005)[116]:

12 weeks, rural, USA

Confidence ratings positively correlated with ratings for the overall quality of the placement and with plans to practise in a smaller town. A social responsibility outcome, the perceived importance of meeting the unique needs of the poor, was significantly changed for the group of 279 medical students. After the placement this indicator increased. The increased interest in providing healthcare service to the indigent population between the baseline and post placement may indicate that rural experiences can have an impact on students' understanding of the importance of helping this disadvantaged community. This study is one of the few that uses before and after intervention data.

Denz-Penhey (2005)[126]:

3-6 weeks, rural, Australia

Three different types of placements were contrasted to see the values of each. The students enjoyed the excellence of teaching and

learning opportunities in their rural sites. The student cohort had actively participated in a wide range of community activities outside their role as medical students. The students did not want their learning interrupted by what they perceived as unnecessary change as it can take some months before rapport is established and the students' knowledge is known to GPs. Some students reported that it took more than four months to become sufficiently acculturated to the particular community before they perceived themselves to be useful in the medical setting.

Critchley (2007)[109]:

4 weeks, rural, Australia

Seventy-five per cent of students rated their rural community placement 'good' to 'excellent' and 59% rated their indigenous placements similarly. Only 35% of students agreed that their learning objectives were met 'well' or 'very well'. Only 12% said that the experience did not increase their interest in rural practice 'at all'. The course was expensive and logistically difficult to implement. Fifteen themes were identified about the positives of the placement. The most common themes were to experience community integration, rural practice, indigenous placements, and rural life, and understanding rural health.

2.4.9 Student perceptions: Subgroup synthesis

Students' valuing of placements in under-served areas may underpin objective outcomes such as performance and career pathway. These findings are mainly from qualitative interview studies which provide detailed insight[81, 89, 102, 123, 125, 127]. Pre-placement reasons for students embarking on placements included: teaching reputation, to experience remote and rural medicine, lifestyle factors, and breadth of opportunity for educational development[102, 128]. Negative issues mentioned pre-placement were the nature of rural consultations not

providing appropriate material, financial support, and social dislocation[128, 129].

Many positive experiences were described by students. They felt integrated within the community, developed a psychosocial understanding, increased social responsibility, gained awareness of context and community, developed teamwork skills, and improved problem-solving[89, 109, 116, 126]. By increasing responsibility for patient care over a period of time, continuity of the placement allows a student to learn about the whole life cycle of health and develop well-rounded clinical competence and practical skills[82, 89, 122]. The immersion experience facilitates closer relationships with colleagues[122]. In South Africa students developed a holistic approach to primary care, could see inefficiencies in the health system, and increased their capability to deal with undifferentiated patients[82]. Students perceived improvements to their confidence and self-esteem[82, 89, 116, 120, 121] and expressed satisfaction with rural exposure[109, 112]. Confidence, enjoyment, and self-belief are important factors in behavioural change and motivation[121].

Students have also had negative experiences of placements. Around 15-25% of students perceived various aspects of their placement to be mediocre or poor[124]. Students reported disliking the possibility of ‘bumping into’ patients in the community, lack of placement structure, learning objectives not being met, limited opportunity to consult with patients alone, logistical accommodation issues, and anxiety arising from social isolation[109, 123, 125]. Initially students were concerned about teaching quality, but by the second cohort students found GPs to be excellent teachers[81].

2.4.10 Supervisor experiences: Study commentaries

Walters (2011)[130]:

Full academic year, rural, Australia

Supervisors were interviewed about their involvement with a year-long rural placement. Themes relating to the doctor-student relationship were central to GP supervisors' experiences. The experience with the students adds value to the role of the supervisor which will be more important than any material remuneration given to GPs who are involved with teaching medical students.

Hudson (2011)[131]:

12 months, regional or rural, Australia

GPs were interviewed about reasons why they wanted to engage in the longitudinal community-based placement. The interviews were conducted prior to the first cohort starting their placement. Twenty-eight interviews with GPs from 26 practices (response rate 76%) were conducted. Thirteen categories were identified and were clustered into three themes: engaging in and contributing to learning, refining practice and ensuring generation of new members, and engaging in joint enterprise with the educational institution. The longitudinal clerkship model was thought to give students a chance to see the whole population versus a very small number of very sick patients and give them a view of the health system. Barriers discussed were about feeling responsible for the 'whole curriculum' and being able to cover everything. The authors conclude GPs were committed to refining practice and ensuring generation of new members in their profession. They were motivated to engage in novel regional and rural longitudinal clinical placements as they perceived that they offer students an authentic learning experience and are a potential strategy to help address workforce shortages.

Smucny (2004)[105]:

36 weeks, rural, USA

The study explored the views of staff from the host community settings where students were based. They reported that placements had the benefits of recruiting new doctors, retention of existing staff, leading to better care from doctors, benefits to medical staff, benefits to nursing staff, good public relations, and stimulus to improve the library. The staff acknowledged that some might suffer financially because of time they spent with students. One reported losing money at first, then breaking even, and then eventually gaining. The staff thought that rural placements had benefitted students through more comprehensive training, greater involvement in patient care, learning that healthcare in rural areas is as good as it is urban areas, and learning about administrative issues of running a small hospital.

Baker (2003)[124]:

6 weeks, rural & urban, Australia

A survey was sent to 60 rural GP supervisors. Despite the lack of formal preparation to teach medical students, the majority indicated they felt confident and understood what students needed to learn. However, many did not know how their teaching fitted into the overall curriculum. Supervisors believed that their role as a clinical teacher had not been clearly defined by the programme director and also that undergraduate students had little understanding of what they needed to learn during their placements. Seven themes emerged from the free text responses: curriculum content, increased formal academic support, collaborative communication, increased rural health focus, formal feedback, minimum standards, and staff development.

Walters (2009)[132]:

Full academic year, rural, Australia

This study focused on GPs' use of clinical time when engaged with supervising students. In total, 523 consultations involving 17 GPs

and nine students were videotaped over a 12 month period. The consultations were: alone with no students present (n = 257), parallel consultations where the doctor alone saw a patient during a teaching session while a student saw a patient in a separate room (n = 133), and supervising consultations where a student saw the patient prior to the doctor joining the consultation (n = 133). GPs spent more time when they were consulting alone on activities including examining patients, patient management, clerical and other activities. GPs spent more time when supervising students on teaching students and history taking. Parallel consultations were similar to lone consultations apart from more time for introduction activities and less time on clerical and other activities. The study shows that the entire consultation takes no longer when a student is being taught, and the organising of clinical activities in order to meet the needs of both patient and student is likely to require different processing skills to solo consulting.

Walters (2008)[133]:

Full academic year, rural, Australia

The amount of time that GPs spent supervising students when consulting patients was investigated to see if consultants spend longer in consultations when a student is involved. A total of 523 consultations involving 17 GPs and nine students were videotaped over a 12 month period. When taking confounding variables into account, there was no significant difference between mean regular consultation time and mean supervising consultation time or mean parallel consultation time. The estimated marginal mean times for regular consultations were 13 minutes, 27 seconds; supervising consultations 12 minutes, 48 seconds; and parallel consultations 12 minutes, 24 seconds. Teaching consultations were significantly shorter when GPs had more years of recent supervisor experience. The study showed that consultation time did not increase when a rural GP was supervising a student using the parallel consulting model. The study has a small sample size. This is one of the first

studies to use an objective measure of impact of supervision on consultation times.

Worley (2001)[78]:

Full academic year, rural, Australia

This was a study about the hypothetical financial impact of student placements on rural general practices. Students and GPs used a log book during the five and eight month points in their academic year. The log books showed that mean length of time spent by the GP per consultation decreased from 14.4 minutes to 9.5 minutes when a student was present. There were no statistically significant differences between the two reporting periods. A hypothetical model is proposed that acknowledges that student learning may hinder consultation time due to the student need to become familiar with the practice and for the practitioner to be satisfied the student has the required skills. Between four weeks and five months the student ceases to be a financial burden as consultation times will shorten; this is referred to as the turning point. The study suggests that extended placements should be at least five to six months long.

2.4.11 Supervisor experiences: Subgroup synthesis

Research has investigated supervisors' experiences of undergraduate teaching. To understand this perspective may facilitate future GP roles as they are crucial in medical education.

GPs were motivated to become involved by the prospect of giving students the opportunity to experience remote and rural medicine[125]. Supervisors have intrinsic motivation (enjoyment, developing professional skills) and they, like students, were satisfied with their involvement.[131] Quantitative and qualitative research found continuing medical education[134], positive impact for learning[123], and refining practice[131] were benefits supervisors experienced. A tangible benefit, receiving a personal digital assistant computer, was well received[135].

A negative perception cited by supervisors was being uncertain about how their teaching fitted into the overall curriculum.[81, 124] Supervisors believed their role was not clearly defined and students had little understanding of what they needed to learn. This may not be through inefficient GP teaching skills but through a lack of curriculum development, and objectives not matching placement content.

There is an indication that students can have a negative impact on GP income[105, 131, 134] yet the extent is unknown. This is particularly important where healthcare is not subsidised. Supervisors believe it takes time before a student becomes a benefit to a practice rather than a burden[126]. Using an objective measure (time), one study showed supervisors effectively distribute time allocated to consultation tasks differently when supervising students[132]. In another study, mean length of time spent by GP per consultation decreased from 14.4 minutes to 9.5 minutes when a student was present[78].

2.5 Discussion

2.5.1 Summary of findings

The review found undergraduate exposure to under-served areas has multiple beneficial implications for stakeholders. Studies were frequently from countries with large rural areas, namely the USA, Australia, and Canada, and driven by a need to address shortages of rural doctors. Subsequently the majority of the findings have come from rural areas, with little data from other under-served areas.

A consistent finding was that students' exam scores did not significantly differ by taking a non-traditional under-served area placement[100-102, 107]. There was a tentative pattern of higher grades among non-traditional placement students in areas such as clinical proficiency and rapport with patients[83, 84, 101, 105], however this was not substantiated by all studies[86, 98].

The studies found that all students (regardless of background) were more likely to undertake a rural post after a community placement[108, 110-112, 117]. Student experiences included a deeper understanding of primary care, breadth of opportunity, developing responsibility over time, and integrating with the community[82, 89, 122]. Students were concerned about consultations not providing appropriate material, learning objectives not being met, and logistical issues[109, 123, 125].

Supervisor experiences included giving something back to medical education, professional development, and refining practice[125, 131, 134]. Supervisors were sometimes unclear how their teaching fitted the curriculum, felt they had nebulous roles, and felt unprepared[81, 124], highlighting the need for faculty development.

2.5.2 Findings in context

Collectively the research supports longer-term placements to help students integrate, embed, and develop emotional attachment to community life[126]. However, both students and supervisors raised concerns about meeting curriculum requirements[81, 124]. Existing

learning objectives may not readily adapt to non-traditional placements hence provoking this concern. Performance equivalency is a pragmatic objective although it may detract focus from the holistic development of the student professional identity[122].

The expansion of programmes in countries including Australia, New Zealand, the USA, and Canada demonstrates the sustainability of running under-served curricula, supporting replication to other contexts. Although most studies report data from one institution, collectively this review provides an evidence base. If initiatives are implemented and evaluated concurrently at multiple institutions this may substantiate findings. Similarities between programmes in different continents (North America and Australia) have been observed conjointly[89] so the initiatives may translate to different contexts.

The UK has less of a rural workforce issue but there are doctor shortages in areas of deprivation[17] often found in inner-cities and areas that have endured post-industrial collapse[16]. Hays'[16] review of medical education in Europe suggested that the application of Australian rural initiatives may be feasible but issues of transferability are largely untested. Under-served area placements may provide students with a holistic appreciation of medicine, however it has been suggested that medical school experience has discouraged interest in practising in inner-cities[136]. The success of initiatives is demonstrated mainly in rural areas[84, 107, 116, 127] while the application to contrasting contexts with nonetheless similar issues has not been widely acted upon.

Research finding educational equivalency of non-traditional placement students demonstrates a major strength; however, caution should be taken about learning in different contexts. Equivalency studies are often analysed using Analyses of Variance (ANOVAs), with a non-significant finding indicating two groups are not significantly different. This does not imply they are the same[137] yet

comparability of placements has often been concluded following a non-significant finding[83, 101].

Some studies indicate higher exam scores for students taking non-traditional placements[83, 101, 104], but this has not been consistently replicated as most demonstrate equivalency. Within studies that found higher scores, the placement characteristics differ. In contrast, placements that concluded performance equivalency also differ. Comparative qualitative research could conceptualise programmes where students do better rather than equivalently to understand why this may be the case.

Research indicates that students do return to work in the area[110, 113, 114] but longer-term data are required. The benefits of undergraduate programmes may be lost if postgraduate training provides insufficient exposure to under-served areas[138]. Positive changes in career trajectory towards under-served areas do appear to happen but whether this would occur without exposure is unclear. A placement enables students to achieve personal goals and enhance self-efficacy beliefs towards the complex demands of rural practice according to socio-cognitive career theory[139].

2.5.3 Limitations of studies

Many studies suffer from similar methodological and contextual constraints. The placements were often voluntary and pilots, therefore samples were small, from one cohort, and were not randomized. Randomly assigning students to groups would counteract self-selection bias but it is ethically and morally challenging to make interventions mandatory purely for sampling robustness. A recurring limitation was collecting data from one medical school only[83, 84100, 140]. The innovation may have been implemented differently from one school to the next, affecting the student experience.

The literature is lacking placement characteristic detail as contextual factors are sometimes described in brevity or omitted. Contextual information regarding prevalent health outcomes, deprivation indices, and population doctor ratios would be valuable for comparisons. Inaccuracies may occur if comparing placements of supposed similar length or locality when in reality they are not similar. Factors such as admittance (mandatory or voluntary; graduate or non-graduate) may be fundamental to outcomes. Most studies reported graduate-entry degrees which may have been a confounding variable. Many studies did not stringently assess or match students prior to the placement. Students may have predisposed attributes that provoke appeal to under-served area placements; while student background and career intent are well-established[49], there has been little investigation into personality profiles (e.g. altruism, dealing with uncertainty).

2.5.4 Limitations of the review

A possible weakness was the search strategy having a very large number of results. A review[141] with similar search terms initially yielded nearly 7000 citations. The use of educational search terms is liable to identify a high number of results given the vast education literature. The balance between sensitivity and specificity is a complex challenge with no perfect outcome. As the technical development and accessibility of electronic databases expands, the relevant literature simultaneously unveils, which makes comprehensive reviews increasingly demanding. There were also difficulties in separating details about placements from the studies, for example distilling exposure information from medical schools with multiple components (admissions, modules).

2.5.5 Conclusion

This review builds on the literature, taking a collective approach to under-served, community area placements incorporating objective and subjective data, with a view to extending knowledge beyond rural

areas. The placements identified benefits for students developing their clinical knowledge, confidence and interpersonal skills, and increasing the likelihood of them returning to work in the area. To provide a holistic appreciation of medicine and develop professional capabilities are principles that may benefit all medical students, regardless of their future roles. There is a growing amount of evidence regarding rural, under-served areas but there is little in relation to inner-city, deprived areas, and none in the UK.

3 Chapter 3 Conceptual framework

3.1 Chapter outline

This chapter reviews conceptual approaches associated with medical student learning during longitudinal community placements. The chapter starts with an appreciation of the different ways in which a research project can be approached. Three different paradigms of positivism, post-positivism, and anti-positivism are then described. The discussion then moves on to consider learning theories including behaviourism, social learning theory, cognitive constructivism and social constructivism. The chapter ends with a description of my chosen research approach, utilising the Experience Based Learning model.

3.1.1 Research aims

- To analyse conceptual approaches associated with medical student learning during community placements
- To define the conceptual approach of my research

3.2 Epistemology: Where to start?

When I started this research project, the DDAP was still being developed but some components, over which I had no control, were established. The background information is provided in chapter 1 but to summarise:

- The DDAP was an innovative, exploratory pilot programme placing medical students in under-served, deprived UK areas for 14 weeks
- The DDAP had to provide fourth year students with a placement experience aligned with existing SSC and elective requirements
- Participation was initially limited for financial reasons to five students per cohort, over three years

As part of any research project it is imperative to consider how ‘information’ is regarded through the consideration and realisation of the researcher’s assumptions. These assumptions relate to how knowledge is viewed, how the researcher sees themselves in relation to this knowledge, and the techniques used to discover knowledge. This process has been defined as the ‘research orientation’ as it shapes how a project is approached, which is fundamental to what new knowledge is established[142]. The research orientation process is not necessarily designed to articulate that one approach is better than another but to make explicit the underlying assumptions from which research findings emerge.

Paradigms are defined as belief systems or world views which guide a research project, with ontological, epistemological, and methodological assumptions used to capture, conceptualise, and construct new knowledge[143-145].

Ontology is a theory of being and is concerned with the nature of existence and structure of reality[146]. Ontological assumptions are associated with the phenomena being investigated and whether the construction of reality is regarded as more objective or more subjective in nature[147, 148].

Epistemology is a theory of knowledge and focuses on the relationship between the researcher and what is to be known[147, 148]. Epistemologies include several fundamentally different ways of how to comprehend human behaviour and experience[148].

Methodology refers to the nature of the approach to research[146]. Methodologies therefore inform the methods to collect data and the intentions regarding how and what data is to be collected[143].

Sometimes, within the same paradigm, quantitative and qualitative research approaches may be followed[146]. In general terms, quantitative research involves numerical data and the use of statistical methods to identify differences between conditions

whereas qualitative research involves textual data and the exploration of meaning.

The complex and sometimes subtle differences between paradigms imply multiple approaches regarding how to collect and treat information. Divergent approaches, described below, may address what is unknown in different ways to generate knowledge. Information generated from a single paradigmatic approach should be used cautiously, in context, and may be complementary to disparate approaches[147].

The conceptual approaches which are described in the remainder of this chapter contain different ontological, epistemological, and methodological assumptions and should be compared tentatively, if at all, as there are many overlapping concepts and ideas with no overall encompassing taxonomy[146]. Consequently, there are a plurality of ways that medical education research can address any given phenomenon[67].

3.2.1 Positivist paradigms

Positivism is the view that there is a natural scientific world, with the assumption that there is an objective ontology which can be studied. Hence positivist paradigms believe that when conditions are manipulated they can result in outcomes which can be measured. Positivism is an historical approach from the natural sciences. When positivist paradigms are applied to the social world, experimental testing and hypothesizing are how laws, or new knowledge, are ascertained[149]. They seek to find the truth of a particular situation, what works and can explain the world.

Within positivism an effort is made to limit the impact of the researcher on the data collected, as integrity is obtained from the tools by which data is collected. Quantitative approaches often contain indices that can examine the reliability and accuracy of a small sample to consider the larger scale implications of findings.

Positivist approaches aim to reduce the variance of estimates of treatment-effects, as changes may occur naturally over time. The use of hypothesis formulations can help to refine testing of new knowledge. Within medical education research many projects are based on positivism[147].

3.2.2 Post-positivist paradigms

Post-positivism assumes that objective knowledge of the world is not fully accessible and seeks to establish a most likely truth[147]. There is an acceptance that there may be more than one true experience of reality, which will be dependent on an individual's position. Critical theory and constructivism are examples of post-positivist paradigms.

In contrast to positivism, the researcher's position and interpretation can be valuable to the investigation, as meaning is constructed by the researcher-participant interaction[145]. Post-positivist paradigms are often more appropriate than positivist paradigms to develop an early understanding of a topic as the understanding may be at an exploratory level. The findings may also be useful to understand the circumstances for which the findings will and will not be relevant. Conclusions from post-positivist approaches should be made tentatively if attempts are made to consider the implications on a larger scale and/or in settings other than the one(s) from which the data originated.

3.2.3 Anti-positivist paradigms

Anti-positivism fully rejects positivism principles and therefore assumes that ontology and epistemology are subjective and changing[147]. There are many truths and multiple ways of experiencing the same situation as there is no one 'truth'. Interpretivism is an example of an anti-positivist paradigm.

Within anti-positivist paradigms, qualitative methodologies seek to explain a situation by developing an idiographic understanding of

what something means, being in a particular situation, within a social reality[148]. Qualitative research helps to investigate human behaviour and the variations of complex behaviour in context. Anti-positivist methodologies include grounded theory and ethnography. Anti-positivist approaches may be criticised because they are based on subjective assumptions therefore they cannot make reliable inferences to other contexts because of their originating nature.

These examples of how paradigms conceptualise the world can be applied to specific bodies of knowledge, and will now be explored in the domain of learning.

3.3 Introduction to learning theories

Learning involves a collation of an individual's cognitive, emotional, environmental influences and experiences, when developing knowledge, skills, and values. Learning theories are frameworks that describe how information is absorbed, processed, and retained during learning[67].

Different levels of theory have been conceptualised, known as grand theory, middle range theory, and low range theory[67]. The level is derived according to how a theory is formed (e.g. empirically, anecdotally), its purpose, and its applicability to other contexts. Grand theories are those which will be meaningful to understanding a range of topics but are not directly empirically testable, whereas middle range theories are grounded in empirical data. Finally, low range theories are personal theories that are not transferable.

I have identified at least four broad learning theories particularly relevant to medical student learning in community settings: behaviourism, social learning theory, cognitive constructivism, and social constructivism. Behaviourism focuses on objective observable aspects demonstrating learning; social learning theory involves learning through individual interpretations of social context

behaviours; cognitive theory investigates the construction of internal thought processes to explain learning; and finally social constructivism views learning as a process in which the learner actively constructs and engages in building new concepts during social interactions[150].

These theories and their core ideas will now be briefly discussed and critiqued with applied examples to demonstrate their relevance. Literature about student learning in under-served areas is identified using various definitions including community-based medical education, community-based education, longitudinal integrated clerkships, displaced training environments, and non-traditional settings, amongst others. Non-traditional or displaced training environments often include community settings that are, by definition, areas outside of the main teaching institutions in which students are not commonly educated.

3.3.1 Behaviourism

Behavourism is primarily concerned with cause and effect to explain how individuals function in any given situation[151] and has commonalities with positivism. There is an assumption that behaviour is governed by natural laws that can be meaningfully studied and identified[151]. Behaviourists seek scientific explanations that predict the occurrence of behaviour as it relates to environmental events; this is known as operant conditioning. When a class of environmental events is shown experimentally to have a predictable effect on behaviour, this is called a functional relationship[152]. This can apply to learning when signified by a behaviour change. A learner will observe a behaviour and this will either be positively or negatively reinforced, affecting the likelihood of it being replicated (or not) in a future similar situation.

Placements in under-served areas have produced many beneficial outcomes for students as they have performed equivalently and occasionally better than their peers[81, 104]. Behaviourism principles

may suggest that observing such success may attract more students to learn in such settings given the demonstrable effects. Students may come to the environment purely to achieve this outcome of improved exam performance. Learning may be driven by the vicarious experience of others.

Behaviourism theories may help to understand what motivates GPs to be involved with community placements. For example, the occurrence of students returning to work in the area may be a key line of inquiry that will motivate GPs to be involved. If, over numerous cohorts, GPs observe a positive effect they may repeat their involvement. Behaviours may also be reinforced in work based environments as students will observe many health service provision roles which may enhance interdisciplinary learning. Behaviourism may be especially relevant to understanding interactions with patients in deprived areas as the population may require specific communication skills in a highly sensitised and specialised manner. These required skills may be appropriately learned through direct involvement and observing others.

3.3.2 Social learning theory

Social learning theory focuses on learning that occurs within a social context as it considers how people learn from one another, encompassing observational learning, imitation, and modelling[153]. Social learning theory and social cognitive theory have core ideas about: self-efficacy (beliefs about abilities), outcome expectations (beliefs about consequences), and goals (beliefs about achievements)[153]. These are affected by contextual supports and barriers which are perceived factors that affect the ability to pursue and achieve goals.

Many theories applied to work-based learning are rooted in social learning theory. Social learning theory takes social interaction into account but considers learning primarily from an individual psychological perspective, therefore is more aligned to post-

positivism and anti-positivism paradigms than behaviourism. Any learning is assumed to put great emphasis on interpersonal relations involving imitation and modelling, therefore focusing on the study of cognitive processes by which observation can become a source of learning[153]. Social learning theory is different to behaviourism as it involves cognitive processing through reification of outcomes. It is useful for understanding detailed information processing mechanisms by which social interactions affect behaviour.

Social learning theories focus on the acquisition of membership by newcomers within a functionalist framework, where acquiring membership is defined as internalising the norms of a social group[154]. There is a difference between imitation and the construction of identity which facilitates learning. For example, role modelling in the workplace occurs as learners work very closely with individuals, in particular their supervisors. Role models will facilitate learner learning through their actions. Likewise, vicarious experience and reinforcement of interactions will be important to decide whether an action is enforced (and repeated) or not. During placements learners will have longer to build such relationships with other individuals. The application of social learning theory to understanding learning may extend to patients as well. A difficult patient seen multiple times may become accustomed to the student and become more open to interaction over time.

3.3.3 Cognitive constructivism

Constructivism relates to how people interpret what they see around them, and how they view the world from their own individual standing point. Everyone constructs their own realities based on perceptions of what exists in life around them. Processes within these constructions give learners meaning to what they are doing and what they learn. Constructivism has two distinct domains, that of the individual and social.

Individual, cognitive constructivists believe that knowledge is always constructed by the exploration and development of individual meaningful accounts of phenomena[155]. Cognitivists such as Piaget see knowledge as actively constructed by learners in response to interactions with environmental stimuli. Cognitive learning theories are concerned with the process of relating new information to previously learned facts. The learning process may be unique to those who are actively involved in the learning. Like behaviourism, reinforcement may be a concept in cognitive learning theory but does not occur through physical (behavioural) acts. Instead, decisions are reinforced within an individual, influencing the chances of replication or the adjusting of cognitions to ultimately achieve success. Knowledge is acquired by reinforcing learning through reflection on existing knowledge. Examples of cognitive learning theory include adult learning principles (developed by Knowles) and transformative learning (developed by Mezirow)[156]; these are described below.

3.3.3.1 Adult learning principles

Adult learning theory describes how people learn and how they learn to learn[156]. Adult life is an accumulation of a unique set of experiences and contexts. An adult learning model is known as andragogy; the six principles of andragogy are[157]:

1) Adult learners are internally motivated and self-directed.
2) Adult learners bring previous life experiences and knowledge to learning experiences.
3) Adult learners are goal oriented and learning must help reach their goal.
4) Adult learners are relevancy oriented so there must be a reason to learn.
5) Adult learners are practical.
6) Adult learners like to be respected and treated equally.

Adult learning ideas are underpinned by humanistic psychology[156]. Autonomous and self-directed adults need to be free to direct

themselves[150]. Teachers must actively involve learners in the learning process rather than teaching didactically.

When a student goes on a placement they are aiming to learn material by being based in a working environment. It may be reasoned that for the learners to feel they are progressing they may need to have these principles satisfied in the learning environment, therefore supervisors may need to facilitate the learner in each of these objectives. The learner may not integrate with the placement if they are not supported in their learning.

The adult learning principles omit ideas of retention and, importantly for the current topic, there is little indication about external motivators and transfer of learning to practice[150]. The use of 'adult' principles for 'students' is questionable in terms of the operational definition of who or what defines an adult. Often medical students are young adults hence they are unlikely to have vast life experience from which to draw, as their learning is more likely to be from academic classroom environments. Furthermore, reflection is not comprehensively covered by andragogy; a learner may have the motivation to learn but how does the information change perception?

3.3.3.2 Transformative learning theory

Transformative learning goes beyond the individual and involves the environment, as learners play a key role in development[156]. The learner will have what they know and believe confronted and challenged, therefore learning through a process of reflection. The individual learner again is at the core, which influences what is seen and how a learner relates to it. It is unclear whether transformative learning relates to the relationships that learners have with others or is purely about the learning cycle in the mind of the learner.

The Parallel Rural Community Curriculum has been described as being based on transformative learning principles as it provides learners with a changeable experience that can reflect and adapt to their current stage[158]. Learning is not a discrete event as it is heavily

dependent on the individual and their approach to how they interpret, assimilate, deal with, and hypothesize the information with which they have been faced. This again is an important distinction from more traditional methods of teaching as it acknowledges the complexity of knowledge comprehension, learning 'to be' rather than learning 'to do'. This notion has important implications for designing learning environments in many ways. The professional identify of the individual will change as the responsibility they have within a healthcare team will grow over time to reflect the emerging role.

3.3.3.3 Social identity theory

Social identity theory depicts that individuals exist in a social world, where they have to construct their identities in relation to the environment. A learner may be strengthened and enriched by the environment, which may play a part in their development[151]. Learning is seen as structuralist, which means that mental structures are applied to new content[151]. Research by Worley[127] described how learners taking the Parallel Rural Community Curriculum described their experience as going to *"work"* opposed to a *"placement"* and called patients, *"my patient".* This perhaps suggests the students feel their identity during the placement to be more like a doctor than a student. The student role in these placements is as a team member, as they are involved in patient care and feel responsible for their patient, rather than as an observer.

3.3.3.4 Experiential learning

Experiential learning, developed by the Kolb model, acknowledges the role of a learner, learning through doing, and reflecting on the learning process[159]. By getting practical hands-on experience of an activity, a learner can incorporate conscious and unconscious learning mechanisms that will adjust their behaviour in similar situations in the future. Experiential learning asserts that learning can be done individually but is required to occur in a practical

environment. Many facets of experiential learning are described in socio-cultural theories which are explained below.

3.3.4 Social constructivism

Social constructivism proposes that the social group interactions, as well as the individual, help in the development of learning[151]. This means that any knowledge constructed socially is inter-subjective among the collaborators, and that meaning is based in a specific social context. For example, chairs are cultural artefacts, developed over generations, and can be manipulated in new ways for someone's own needs. Similarly, ways of thinking and language are also cultural tools that can be adapted for an idiosyncratic purpose in a new moment of time.

Many social theories build on ideas of Vygotsky, which critically view the environment as the agent that contributes to learning[151]. Socio-cultural theories draw on many different principles within the social environment, hence there is disagreement about what really causes learning[159]. Critical examples in the workplace include tacit knowledge and tacit learning (what we implicitly know and learn) which lead to reflection and adjustment[159]. Learning is not seen as the acquisition of knowledge by individuals but as a process of social participation, referred to as the acquisition and participation metaphors[160].

3.3.4.1 Situated learning

Situated learning describes how context and activity are fundamental to what is learned[161]. Knowledge is constructed by individuals in a process of adjustment to the context. For example, a past experience is shaped by present experience as learning does not lock in time and experiences meet in new moments of negotiation. Learning and understanding are therefore as they are experienced in the present through interactions with what has occurred in the past. Situated learning originates from ideas in socio-cultural theory, social

cognitive theory, work-based learning, experiential learning and reflection[159]. Hence, situated learning is based heavily in constructivism principles, and views learning as a process of active participation in problem solving. Learning is always situated in both a particular context which occurs in a location, and within a set of social relations in which knowledge is present[159].

3.3.4.1.1 Community of Practice

The concept of legitimate peripheral participation states that access to a community of practice, its resources and activities provides a means for newcomers to learn through observation and gradually deepen their relationship to the community of practice[161, 162]. Communities of practice are frameworks, or social relations, that enable learning in social environments[163]. Learners are active participants in the practices of social communities and construct identities in relation to a learning trajectory[162].

To be a true community of practice three factors must be present: the domain (shared meaning), the community (relationships), and the practice (practitioners)[163]. The community is learning collectively through groups. In some groups individuals are core while in others they are at the outskirts (peripheral), evolving in their role as they learn over time. Relationships build social capital and variations of social engagement provide the proper context for learning to take place. This way of understanding learning is more than simply 'learning by doing' or experiential learning as it is learning to talk, not learning from talk[150].

There are several principles behind learners' development as they become full participants in a community of practice[163]. The learner must perform a task, as learning is achieved through experience. Known meaning is then created by more and more involvement. To have or recognise a community of practice is critical, as learning is achieved from being part of a community of practice. Without a community an individual may not be able to learn. Another key

construct is identity because learning is seen as ‘becoming’, which is achieved through knowledge translation and utilisation. According to community of practice theory, learning does not belong to individual persons as it belongs to various conversations of which they are a part. Learning occurs in the relationships between people rather than inside the individual learners’ cognitions.

The issue of power can affect a community of practice, as outside institutions such as universities and hospitals can play a huge role in the learning environment. Community of practice theory may undervalue more formal structures and institutions for learning as learners may need to be at a certain level before they enter the community to participate. Learners must have a valid place (legitimate role) or else they will not be able to participate fully over time. This can lead to behavioural change, which is change that results in greater knowledge sharing and in turn positively influences performance[163].

The ideas of legitimate peripheral participation raise interesting issues in educational contexts about how learners can transform effectively from peripheral to maximising participation[150]. In the design of an under-served area placement this theoretical understanding can be applied in how the curriculum is devised. A learning curriculum consists of situated opportunities for development as the community becomes the learning resource[150].

Establishing that learners have a legitimate role in a community, and that their learning and participation contribute to the community, will help educators and learners to direct activity away from just observing. Three facets of increasing the social dimensions of learning have been identified: approaches to maximise participation, approaches to maximise learning from others, and approaches to build on natural community processes.

3.4 Career theories

So far the application of theory to community-based medical education has focused on the learning domain. As placements in under-served areas were often started because of workforce shortages there has been research to look at career trajectories, associated with placement experiences, to inform a deeper understanding of career pathways. Career theories are heavily based on personality factors that influence long-term decisions. These are seen as traits so are likely to persist. On the other hand, learning theories are written more from a state orientated view, having different needs in different situations. There is a discrepancy in the amount of weight that is given to personality factors in learning theories compared to career theories.

Social Cognitive Career Theory lies within social learning theory and social cognitive theory, incorporating behavioural, cognitivist and humanistic perspectives[164, 165]. Reflective learning, self-regulation, and experiential learning are addressed in each of cognitive, humanist, and social learning orientations. Social Cognitive Career Theory has value in furthering understanding of why learners ultimately choose careers the way they do[139]. The theory may help to inform educators to interact with learners in particular ways that may increase the desire to pursue employment in rural areas. This theoretical approach again involves social activity in learning as it incorporates the influences of the social environment on how the learner forms decisions.

3.5 Underpinning principles of longitudinal community placements in under-served areas

As mentioned in chapter 1, medical school curricula have been under heavy scrutiny for not being up to date with society's requirements and modern learning theory. Therefore, other ways of providing education may be necessary for education that is better aligned to modern society's healthcare needs. A longitudinal integrated clerkship is one suggestion, as it connects principles of the learning

sciences to educational redesign[158, 166-168]. A recent case study reviewed the principles from three distinct longitudinal integrated clerkships located in rural, urban, and tertiary care environments in Australia, America, and Canada[158]. Five key principles were identified:

- Educational continuity
- Relationship-based education
- Authentic roles in care
- Upholding meaningful connections to medicine ideals (such as advocacy and patient centeredness)
- Duty and commitment as drivers of learning

Although these principles have been cited as underpinning longitudinal integrated clerkships specifically, they have relevance to the application of other immersive, longitudinal community placements. In fact, many of these concepts feature heavily, often implicitly, in the placements described in chapter 2.

Scholars have recently begun to consider the underlying theoretical principles of longitudinal community placements; however, this is very much at an exploratory stage[75, 130, 168, 169]. The literature has highlighted the significance of learners engaging in social participation which helps to drive learning[167]. The key terms of continuity, immersion, symbiosis, and social accountability are described below and are discussed throughout the later data chapters.

3.5.1 Continuity

To support the current needs of the healthcare system it is suggested that continuity can help education to become patient-centred and leaner-centred through the increased involvement of patients[170]. Continuity refers to *"repeated, ongoing contact with a healthcare team"*[75]. The educational value of continuity has been demonstrated during community placements[158, 171-173]. Continuity is believed to help students understand patients' needs and teach learners in a rational

manner rather than the disjointed block rotation learning that has been heavily utilised throughout medical education[171]. Continuity helps learners learn in a less diffused manner by understanding the complex challenges of healthcare as they unravel during a patient's illness journey[173].

The literature suggests the need to embed the principle within care, pedagogy, and supervision; indeed, all aspects of undergraduate teaching[170, 172, 174]. Continuity in clinical education can pertain to a host of pragmatic longitudinal experiences: following patients through the healthcare process, a curriculum that gradually increases in difficulty and interdisciplinary nature, and building on-going relationships with supervisors[170].

3.5.2 Immersion

Immersion is another concept that has been pinpointed for the success of community placements and involves *"a deep exclusive engagement experience in a setting"*[75]. Medical students are encouraged to be immersed in the settings in which they are placed, which may involve living and integrating with the population. This may also link to continuity as the amount of immersion possible may be linked to the extended length of time the students have in the setting. Continuity and immersion are recognised as key mechanisms in the logistical application of longitudinal placements; however, further theoretical insight has also been identified about the holistic underpinnings of community placements.

3.5.3 Symbiosis

Based on empirical data from the Parallel Rural Community Curriculum at Flinders University, Paul Worley and colleagues articulated the term 'symbiosis' in medical education, which is defined as *"a mutually beneficial partnership between persons, organisations or concepts of different kinds."*[79, 127]

Symbiosis is attributed to account for the positive benefits of community-based medical education through the power of *relationships* between stakeholders. This is based on values that can be evoked through the engagement of learners in an otherwise service-driven environment. The student's presence can be beneficial to doctors, the wider healthcare team, and the patients. It is not a burden on resources and given the right conditions the student can add value to the healthcare team. This is important when time is critical to the success of the healthcare system as there are many constraints on resources to be able to serve the needs of patients.

These relationships can also encourage symbiosis as the benefits are not just for the university and the learner but can be on-going for the doctors and patients involved[127]. The concept of symbiosis may help to encourage GPs in areas that are not normally involved with medical education, as it demonstrates how the initiative can work for them and not just be about university strategic priorities[127]. In theory, this should help recruit further practices to be involved and to develop partnerships in collaboration with local stakeholders.

3.5.4 Social accountability

Social accountability extends the ideas of symbiotic relationships as it refers to directing education, research, and service activities to addressing the priority health concerns of the community[175]. A distinction has been articulated between socially responsible, socially responsive, and socially accountable medical school programmes (see Table 5[175]). Medical schools are at various levels amongst these indicators.

Table 5 Social accountability indicators

Term	Description
Socially responsible	Community orientated, intending to produce good practitioners, based on implicit identification of healthcare needs.
Socially responsive	Community-based, responds to healthcare needs by directing education, research, and service activities towards explicitly identified health priorities in society.
Socially accountable	Contextualised community engaged, goes beyond directing education, research, and service and works collaboratively with governments, health service organisations, and the public to positively impact on health and be able to demonstrate these relationships.

Social accountability appears to be a modern discourse to conceptualise medical school aims and curricula[168]. Awareness of social accountability can also be developed by students so that they have a greater understanding of the healthcare needs of the local population. The role of medical schools has evolved over time periods which has implications for research about aspects of constituents parts of medical education including aspects of learning, selection, and professionalism[50].

3.6 Conceptual approach of my research

Research investigating non-traditional placements in under-served areas has predominantly focused on demonstrating examination equivalency with traditional placements, as discussed in chapter 2. For example, repeated measures can monitor changes across the same measures, comparing pre- and post-placement data[104]. However, when I considered outcome measures for the DDAP there were no direct before and after existing curriculum comparators that

could be analysed. There are assessments during the SSCs and electives but these are mainly set against personalised learning outcomes and are not comparable amongst peers. The use of repeated measures may also have been tenuous as the structure of the DDAP could have changed slightly between years, with implications for generalisability. The sample within the PhD timeframe (limited to 10, and 15 for the length of the pilot) meant the size would have been too weak to draw meaningful conclusions.

The DDAP curriculum aims (in chapter 1) did not orientate towards quantified measures i.e. better examination performances or increasing application numbers for GP training posts. Although these may be welcome outcomes, the objective measurement of such indicators was not a prerequisite to why the DDAP was established and was not possible due to time, funding, and sample size constraints. In addition, the application of positivist principles to the social world is a contentious issue as consideration of context, ambiguity, and personal experiences is often omitted within such an approach. Moreover, if there is no universal 'truth' of a particular situation then congruence is what will be achieved[147].

Conceptual approaches are often postulated to dispose of contrasting viewpoints in the fight for the 'true' understanding of the truth, however individual and social (socio-cultural) theories should be seen as complementary rather than competing. Learning is both a social and an individual process. The DDAP aims were broad and exploratory in nature, therefore more aligned to qualitative research questions using post-positivist paradigms. A primary aim of the research was to understand the DDAP student learning experience, which can be achieved by qualitative research to gather deep insight about experiences. Particular focus was on the collection of data and contextual information to understand the operational nature of the placements investigated.

After reviewing theoretical approaches of medical student learning during community placements and consideration of how to interpret

information during this research study, I decided to use a social constructivist approach. This approach assumes that knowledge is co-constructed through interactions and the existence within a physical/social environment. There is no one universal 'true' understanding that can explain a situation across time but the co-constructed interpretation of individuals can divulge deep reasons for what occurs and why. Understanding and interpretation are seen as emerging within environments, which highlights the pivotal role many elements within this setting can have on what is discovered. The methodology therefore was conducted according to this approach to understand what and how students learned during the DDAP.

When assessing research quality, critiques may be posed which inherently reflect the assumptions on which the questions are based. For example, if based on an objective ontology perspective, critiques may orientate around the representativeness and generalisability of the sample, researcher bias, and hypothesis testing[147]. However, given that a more subjective ontology has been assumed in my research, appropriate understandings of the nature of experience should be critiqued. Questions more suitable are: what is the description by the participant and how has it come to be understood in this way? How has the researcher's own experience influenced the research and interpretation? And what new understanding is generated? The next chapter and remainder of the thesis consider such questions.

In this chapter I have reviewed a range of learning theories from more cognitive-based models to more social-cultural models where the activities and interactions are key to what is learned. The social models tend to have more resonance and value for explanatory studies that seek to evoke a range of factors that influence the development of learners during their experiences[150].

During my data analysis, a middle range theory, Experience Based Learning (ExBL)[176], was identified from the literature as being particularly relevant to understanding the data. The ExBL model was identified to support data analysis because it provided a critical approach to help understand and analyse the influence of organisations, workplace characteristics, and relationships on student learning. ExBL was chosen over other theoretical approaches because of its applied nature to understanding data, socio-cultural orientation (situated learning) and its development originating from understanding student learning during clinical placements[177].

ExBL provides an understanding of how a medical student placement can be optimised for learning[178] and has been empirically developed from research studies[176-178]. ExBL acknowledges the importance of learners constructing their learning through the experience of workplace settings[176, 177]. Supported participation within these settings helps the learner to develop their professional identity[178]. ExBL encapsulates many of the discussed elements of socio-cultural theories of learning as it links core constructs to aspects of medical student learning.

Core constructs relevant to ExBL are communities of practice and situated learning[176]. To succinctly summarise, situated learning is where learning is contextualised within an environment and is crucial to understanding why and how learning occurs. Learners have (active/passive) roles within the environment which will drive their learning. At the core of learning is the sense of identity of the student. In community of practice theory, learning environments comprise novices and experts who have a shared purpose towards a common goal. A novice learns through legitimate peripheral participation as they become core to the purpose of the community of practice through a learning trajectory of negotiation, meaning clarification (reification), and crossing contextual boundaries.

In practical terms, learning is in itself seen as the formation of identity which is developed through interactions within the intervention of a placement. The context of the placement provides facilitators and barriers to the development of the identity. Situated learning provides a concept which can guide educators in the understanding of placements and help them to create optimal conditions for learning.

According to ExBL, learning is seen as a change in the identity of the learner, which is understood by investigating outcomes, processes, and conditions[176, 178].

Outcomes uncover what the learner gets out of the experience. This may be in terms of real-patient learning (e.g. understanding an illness in context of a patient), affective learning (moods, feelings), or practical learning (knowledge, attitudes, and skills).

Processes for learning are understood as the activities and level of participation which enable a student to learn. Learning is achieved through participation in practice as the time spent in a physical space can provide appropriate opportunities. Learning is seen as socially constructed meaning making which is inclusive of how a learner interacts within a physical environment.

Finally, conditions relate to features that enable learning to occur. These features can be at the institutional level down to pedagogic approaches. The programme design can affect the conditions for learning, whereas the pedagogic approach in the workplace usually consists of relationships between students, supervisors, and patients.

Given that ExBL is a middle range theory it has more applicability to facilitate understanding empirical data than more abstract orientated theories. For example, Communities of Practice theory could have been used as the conceptual orientation but it has been represented in many different ways when used in conjunction with data[179, 180]. The definition of what constitutes a ‘community’ conjures up different meanings within the literature; hence there is ambiguity in the interpretation and understanding of data when considering such an

approach[179]. I believed the ExBL model overcame these issues as the focus of the analysis could be more pragmatic and could critique important components that influence student learning during workplace experiences through inventorying and identifying links between conditions, processes, and outcomes.

3.7 Chapter summary

This section has reviewed conceptual approaches that may be used to explain learning during under-served area placements. Much of the medical education research literature tends to favour holistic, social approaches that embroil the community in the activity of learning. The individual exists within the community which facilitates their learning. This research uses a constructivist approach to understand medical student learning. The conceptual approach of the Experience Based Learning model was adapted for data analysis.

4 Chapter 4 Methodology and analytical approach

4.1 Chapter outline

The previous chapters have provided a rationale and context for the research, and then analysed conceptual frameworks to provide a basis for the pragmatic research approach. In this chapter the research approach, data sources, ethical procedures, and analytical approach are presented. The techniques and considerations will be described, including justification to explain why they were chosen.

4.2 Research rigour

To establish qualitative research as credible, the judgement is often derived from how trustworthy and transparent the research is. Lincoln and Guba[181] have developed four criteria to demonstrate effective qualitative research (see Table 6):

Table 6 Criteria for qualitative research

Term	Considerations
Credibility	How truthful are the findings?
Transferability	How applicable are the findings to other settings?
Dependability	Are the findings consistent and reliable?
Confirmability	Are the findings made in light of possible biases?

Thus, by detailing what, when, and how data is treated, qualitative research is more likely to be acceptable by academic standards. Within this research in accordance with assessing quality in qualitative research[143, 181, 182], I have incorporated data triangulation, reflexivity, deviant experiences to the main DDAP sample (e.g. comparison groups), described the data collection and analytical processes, and investigated a worthwhile area of knowledge. Details about these considerations are below.

4.3 Triangulation

Triangulation is a method used to check and establish how trustworthy research is by analysing a research question from multiple perspectives[183]. 'Data triangulation' is a method that can explore an issue with multiple approaches[184], for example by different sources, methods, or analyses[183]. The value of triangulation is that it allows a deeper understanding of a topic. This is not necessarily for consistency across different perspectives but to explore an issue from different perspectives. However, it can be a time intensive process in accessing and arranging the collection of data from all of the relevant stakeholders.

Time triangulation was another concept utilised in my research as it enabled shifts in perception to be explored over the duration of the DDAP. As the journey unrolled, the experiences of those involved developed, which again helped to understand experiences at a deeper level rather than a 'snapshot' understanding.

4.4 Design

When designing the research approach, the limited sample size was a critical consideration. A rolling cohort study approach with two discrete comparison groups was devised (Figure 4). A systematic literature review helped to inform the primary data collection. Use of source triangulation allowed an in-depth understanding of the DDAP from multiple perspectives: the DDAP students, NHS stakeholders, and comparisons to alternative placement experiences. Collectively, the research design aimed to facilitate a deep understanding of student learning during clinical placements.

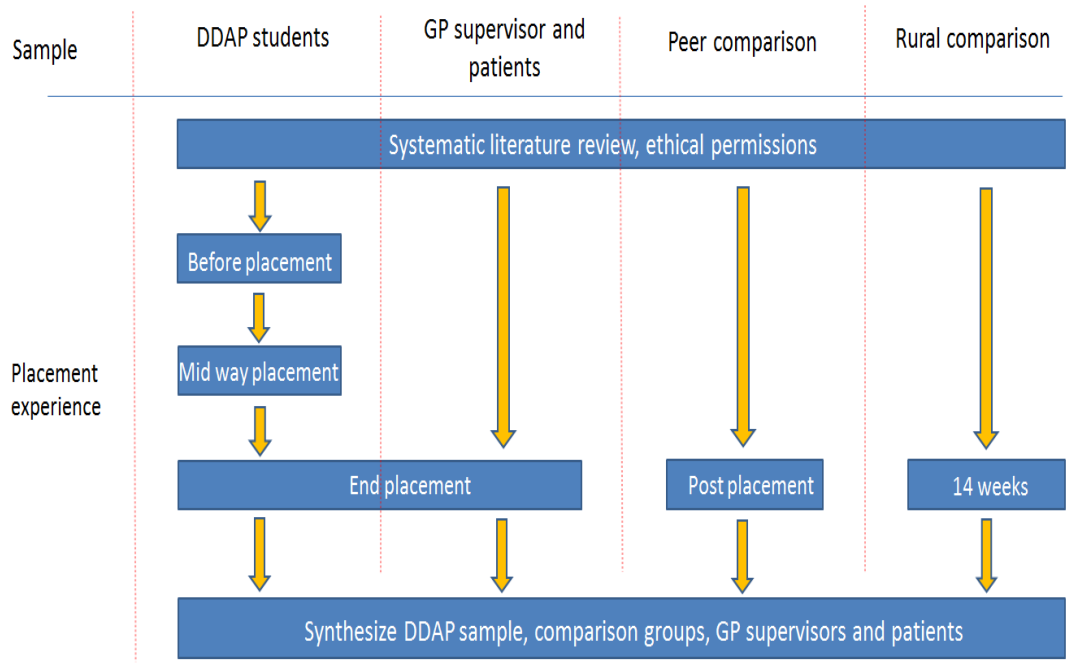


Figure 4 Visual representation of research overview

4.4.1 DDAP data (chapters 5, 6, 7, and 8)

The DDAP students were interviewed before, during, and at the end of the DDAP. NHS stakeholders (GP supervisors and GP patients) were interviewed post placement to explore their DDAP experiences.

4.4.2 Comparison data (chapters 9 and 10)

The term comparison group is used rather than control group as these samples were selected for the purpose of not experiencing the DDAP rather than controlled conditions. The comparison experiences provided insight on a broad scale into undergraduate clinical placements.

Firstly, a comparison sample of peers from the same degree programme but not taking the DDAP was interviewed. These interviews explored the reasons for pursuing alternative placements to the DDAP and the value of these experiences (SSCs and electives), which could then be compared to the DDAP experiences.

Secondly, a comparison was undertaken with students taking an established rural community programme, after 14 weeks into the one year programme. This data was collected from students at Flinders University taking the Parallel Rural Community Curriculum (PRCC) in South Australia.

4.4.3 Data synthesis (chapter 11)

As well as establishing credibility for each data source, triangulation allowed a synthesis to emerge which encompassed multiple perspectives, incorporating transparency of data collection and analysis over multiple time points. However, it is important that findings remain in context of their originating source so that they can be meaningfully synthesised[97, 185]. Details for each strand of the research design including data collection procedure, timings, etc. are contained within each respective data chapter.

4.4.4 Timeline

Two consecutive cohorts experiencing the DDAP in the academic years 2012/13 and 2013/14 were investigated (approximately Apr-July / August). My PhD commenced in October 2011 with the first DDAP cohort starting their placement in April 2013, I therefore used this time to conduct the systematic literature review, gain ethical permissions, conduct the pre-DDAP interviews, and collect data from the comparison samples at Flinders University and Newcastle University.

The peer comparison interviews occurred during the academic years 2012/13 and 2013/14, between November and March. The peer comparison interviews were done at this time to collect data from students at the same university who took alternative placements to the DDAP.

The rural comparison participants were interviewed in April 2012. This component was undertaken prior to collecting DDAP data so

that I could understand what could be achieved after this length of placement. Logistical restrictions meant that I could not collect data from a second cohort for this group.

4.5 Settings

The DDAP involved students going into general practice, a community placement, and attending teaching sessions in a University setting. Interviews were conducted at Durham University Queen's Campus or via telephone. The Parallel Rural Community Curriculum students had experiences in community hospitals, general practices, the community, and classroom environments in South Australia. The Newcastle University peer comparison students had experiences in a wide range of settings including hospitals and general practice (described in chapter 9). The respective Universities were the common setting for interviewing participants about their experiences but telephone interviews were also utilised due to resource limitations.

4.5.1 Access to research sites

Negotiating access and securing permission to conduct the research was a time-consuming process, yet it helped to improve the quality of the research. Timely access to the sites from which the participants were recruited was negotiated with the general practices and NHS Research and Development committees. Each participating general practice was visited to discuss the proposed research activity. During the meeting the GPs and practice managers were provided with information sheets about the study. The general practices involved volunteered to be part of the DDAP and were aware that research would be undertaken. A letter was sent to all general practices in the region which contained information about the programme and the research. Thankfully, the GPs and students were enthusiastic and assisted the research process. The success of data collection hinged on the high level of cooperation with others.

4.5.2 Sampling strategy

The focus of the research was on the generation of rich, 'thick' descriptions of the phenomena. In qualitative research, the criterion of a required number of participants is a contentious issue that seems to confuse the epistemology of an approach. The criteria and justification are more suited to the nature of the participants, i.e. whether they were representative (or not) of the population.

There are various types of research sampling strategies, these come under two broad categories which are probability sampling (random, chance) and non-probability sampling[148]. Probability samples are representative of a population whereas non-probability samples are not truly representative, which affects generalisability. In qualitative research, a sample is mainly selected using a non-probability strategy because the approach focuses on identifying social constructs, and understanding themes that emerge from the data. Two non-probability approaches used in this the research include purposive sampling and convenience sampling.

'Purposive sampling' is where a small number of people are specifically selected because they have experience of what is being investigated. A sample is sought that has the ability to provide data to confirm, challenge, or expand the understanding relevant to the research question[161, 186]. An advantage of purposive sampling is that the group selected can provide in-depth insights about a particular situation. A disadvantage is that the sample may omit participants who do not fit the criteria but may have relevant insights.

Purposive sampling was used to recruit the DDAP students, GP supervisors, and rural comparison students. The sampling strategy was purposive as I only selected people who fit the criteria of having direct experience of the DDAP or the Parallel Rural Community Curriculum at Flinders. However, for the DDAP, the sample was restricted to the number of spaces that were available on the Programme.

Another approach used in this research was ‘convenience sampling’. This is using a sample that is accessible and has no restrictions on who can participate in the research[148]. The strategy assembles an available sample that can provide relevant insight into a research question. A weakness of this approach is that participants are self-selected and may have particular issues that they want to discuss.

Convenience sampling was used for the peer comparison group and patient interviews. For example, only patients who visited the general practices and who were self-selected (as they chose to be in a certain situation at a specific time) were interviewed. Similarly, the strategy for the peer comparison group constituted a convenience sample as participants volunteered to an open invitation to discuss their placement experiences.

Both comparison samples were stratified with the DDAP sample in mind, hence they were of a similar size and with similar characteristics (e.g. student year, age, gender). The comparison samples could also be called ‘deviant samples’[187] as the groups were selected for the purpose of not experiencing the DDAP. The deviant samples were identified to gather insights about alternative placement experiences to the DDAP.

4.6 Research methods

A range of research methods were used during the research. Interviews are an appropriate data collection technique when there are a limited number of potential participants available. The intention of data collection was for depth of understanding. Information sheets were handed out to participants prior to carrying out interviews; while being an ethical requirement this may also have allowed participants time to reflect on their experiences and perhaps give more thoughtful answers.

4.6.1 Interviews

Interviews permit participants to respond to questions, whilst allowing them the freedom to discuss issues pertinent to the topic. Interviews can be done one-to-one, in group situations (focus groups), and may be conducted through different modalities (i.e. face to face, telephone).

3.7.1.1 One-to-one interviews

The intention of a '*semi-structured*' interview is to allow the participant to drive the direction of the interview depending on their individual experiences, and to avoid rigidity. The style of interviewing therefore was conversational and interactive, requiring the use of broad open-ended questions in a relaxed environment. For example, *"Please can you tell me about your experience of the placement?"* was a common opening question. This would then be followed up by more specific questions about various aspects of the experiences.

The disadvantages of one-to-one interviews are that setting up, transcribing, and analysing data are all hugely time-consuming processes. The value of interview data may also be questioned for not being an accurate record of the social world, as it is subject to influences such as researcher interpretation and the capability of the participant. This was important to consider during the analysis so that the data were not quantified by frequency. Responses may be biased because the participant wants to help the researcher (*demand characteristics*), misunderstood the question, or to cover up their true beliefs. Additionally, the responses given may have been transient relating to how a participant felt at that time. Converting thoughts into words is a complex process, but the interview transcript is an accurate record of what was said and is a legitimate tool for the analytical process. However, cues such as body language, unintended meanings, tones, sarcasm, and pauses from the participant play an important part in the interpretation of data.

3.7.1.2 Focus groups

A focus group allows multiple people to share and discuss their views on a topic at one time. Focus groups have similar advantages to interviews as they can be in depth about a specific topic. They may evoke conformity from group responses but the discussion between participants may enable them to explore concepts differently and to balance views. Unlike one-to-one interviews, focus groups can be used to collect data from multiple participants in a short time frame, and consequently the process of transcribing, analysing, and interpreting data can be undertaken more quickly.

A disadvantage of focus groups is that they can be controlled by more vocal members, leading to inhibited responses from quieter members of the group. There may be reluctance among participants to disclose information in a public setting compared to a one-to-one interview. They can also be more difficult to set up as they require the availability of people at the same place and time. Focus groups may be used more effectively as a confirmatory rather than exploratory approach, as depth of understanding may be difficult to ascertain in a group setting.

3.7.1.3 Interview modality

3.7.1.3.1 Face-to-face interviews

The modality for conducting interviews also required consideration. Face-to-face interviews are assumed to be the ‘gold standard’ for collecting qualitative data[188]. Face-to-face interviews optimally take place in a relaxed setting and many cues in addition to language, including shifts in body language, facial expressions, subtle voice changes, and intonations can play a part in the messages being conveyed from participants to researchers. A disadvantage of face-to-face interviews is that they can be very difficult to organise. This includes finding a convenient location and time for the participant and the researcher.

3.7.1.3.2 Telephone interviews

When participants are located across large geographical areas it may be more appropriate to consider the use of telephone interviews. This reduces the time and cost of travelling to and conducting interviews[189, 190]. Despite the assumption of 'gold standard' face-to-face interviews, there is very little evidence that the quality of data is compromised when data is collected by telephone[191]. Loss of nonverbal data (body language), contextual data (appearance, setting), and verbal data (use of telephone) may not undermine the quality of findings as participants can feel relaxed without interviewer presence, able to disclose sensitive information and able to focus more on the conversation[191].

4.6.2 Free response surveys

Another technique considered for use in this research was open-ended survey questions. This technique allows data to be collected quickly and does not impose on the participant's time in the same manner as interviews and focus groups. However, the disadvantage is that the data is not as rich, as it will be surface level responses that may not require deep thought. This makes theoretical interpretation of data extremely challenging. Written statements may be ambiguous and the space that is available may not give the participant enough room to explain their answers.

4.6.3 Topic guides

All of the topic guides for the research were derived by integrating understandings from the literature, researcher expertise, and stakeholder input (e.g. GPs, steering group). The systematic literature review was completed at the beginning of the project and informed the interview guide for all phases of the research. For example the literature highlighted the positive nature of community integration and the holistic value of community placements for students which lead to questions of this nature being included. For

instance, please tell me about your experiences with members of the healthcare team? The interview questions were then drawn up and refined by discussions with my supervisors, and members of the Centre for Medical Education Research, Durham University. When the interviews were conducted, there was further refinement between one sample and the next (i.e. from rural comparison sample to the DDAP sample). Due to timetabling restrictions of data having to be collected at certain times (e.g. midway and end of DDAP) this meant that interviews within samples could not be analysed in depth between the participants. This limited the option of iterative data analysis. However, as I conducted all of the interviews this allowed me to listen and consider each interviewees response, which allowed me to have a deeper understanding of the issues and may have impacted on the approach to questions in the next interview.

4.6.4 Secondary research, reviewing published literature

The first stage of the research was to conduct a systematic literature review (Figure 4). Reviewing the literature is an established secondary research method that often proves a sound foundation on which to build a research project[192]. Literature reviews can produce an overview of how a topic has been constructed within the academic field, postulations on what is of importance to the current body of knowledge, and highlight any gaps in knowledge. A literature review is useful as a stand-alone project but also informs primary research in devising drafts of interview questions and the interpretation of research findings in the context of previous literature.

Literature reviews are not without limitations. Surveys of the literature can be undertaken using divergent analytic approaches and are susceptible to a selective interpretation of the literature[97, 185]. The value of systematic literature reviews is that they are a more transparent and replicable approach than narrative reviews[192] as they often seek to quantify findings and generalise findings[97]. Traditional systematic reviews may be criticised as they seek to understand

what has been done before, rather than to explore in-depth causes for outcomes[96]. On the other hand, the approach can be extremely helpful to bring together and review an emerging topic if there is a limited existing knowledge base.

4.6.5 Personal reflection & networking experiences

I became an indirect data source via the expertise I acquired from my role as a researcher; my role on the DDAP steering committee; observing weekly teaching sessions, and informal conversations with teaching staff, administrators, and students regarding the programme. This will all have influenced my knowledge and interpretation. Throughout the research I wrote down notes of my thoughts, challenges, and experiences. Although this was not a direct data source or analysed in the formal sense, my experience will have undoubtedly contributed to the information that is presented in this thesis.

4.7 Reflexivity

"A researcher's background and position will affect what they choose to investigate, the angle of investigation, the methods judged most adequate, the findings considered most appropriate, and the framing and communication of conclusions." [Malterud, 2001 pg. 483-484][193]

In accordance with constructivism, qualitative research is heavily based on interpretation and meaning, so the position of the researcher should be described to allow the reader to appreciate and question the approach taken, from a fully informed perspective. A researcher will undoubtedly have an impact on the interpretation of data collected, as idiosyncratic views and experiences of their life world, including historical and social mechanisms, will shape their understandings.

I have an occupational psychology background, with a keen interest in individual differences, cognitions and behaviour, which has

involved learning about theoretical components that influence the way individuals behave in workplace settings. I have also been involved in various medical education research projects, using mainly qualitative and some quantitative methods. Much of this work has been focused on evoking data that considers individuals' personal experiences of different phenomena. My background in research methods was helpful to navigate through the challenges of conducting independent research.

I do not have a medical background nor any prior involvement in medical degree teaching. Before starting this project I had not undertaken prior research with undergraduate medical students, and had no pre-conceived ideas or experiences about effective pedagogy for community-based medical education. I could also approach the perceptions of the stakeholders with a fresh perspective as I was not concerned with the medical knowledge which the students were acquiring throughout the programme.

I viewed my involvement with the DDAP as twofold. I had to assess the DDAP, providing recommendations locally for stakeholders, and I had to contextualise my research- within the wider academic community. The value of my role was not purely to evaluate, as the understanding was a deeper conceptual discourse that would be of relevance to a wider audience. Although there are pragmatic implications of the research, the wider contribution to issues of continuity, location, and placement content were also pertinent.

My position may be an advantage over other research which investigates the efficacy of similar programmes as I was not bound by the success of the DDAP to my PhD role fulfilment. The research was not confined to predetermined hypothesis testing which may have hampered the analytical process. This allowed me to be independent when conducting the research and in providing recommendations. Often research articles in this field are authored by programme directors, clinicians, or educators who may have a

conflict of interest as their role continuation depends on the success of the programme, potentially affecting their interpretation of data.

Being a non-medical researcher was challenging, as the medical terminology (procedures, specialties, illnesses) was often new to me and the research area and literature were initially unfamiliar. My relationship to the participants varied from multiple meetings (DDAP students) to one-off encounters (Australian participants). My role, as a researcher, admittedly was not entirely as an 'outsider', as I sat in on DDAP teaching sessions and became 'part of the furniture' for the students throughout the programme. I was able to attend sessions and hear their experiences on a regular basis. I could then follow this up during the interviews with the students. I stressed to the DDAP students that I was not involved with the teaching aspect and they were free to disclose information about the programme that would not reflect on their academic ratings. I think it was advantageous to my role that I was also a researcher/student rather than teaching staff. I also think this position was facilitated by my age and other demographics being similar to most of the participants. This may have helped to build a rapport with the participants in data collection stages. If students had associated me with an authoritative position (e.g. lecturer) this may have hindered how open they were.

4.8 Ethics & research governance

Ethics committees serve the purpose of protecting the rights of the participants, minimising potential harms and ensuring the integrity of research. Key concepts carefully considered by an ethics committee are possible risks (harms), confidentiality, anonymity, and data security.

The ethical stance of a research project should be considered a continuous process and not a stand-alone event, i.e. just to receive a favourable opinion from an ethics committee. Conducting research is a process of renegotiating barriers and overcoming obstacles to meet the original purpose of undertaking the research. As research

evolves so too should ethical considerations, to protect those who participate.

In total, the research has been reviewed on five occasions because of the different institutions that have been accessed to recruit participants (see Table 7). All of the research has firstly been reviewed by the Durham University, School of Medicine, Pharmacy and Health Ethics Sub-Committee and then by a second committee as required.

The dates of the progress were as follows:

Table 7 Ethical approval information

Approx. Date	Ethics committee	Sample(s) considered
February, 2012	Durham University, School of Medicine, Pharmacy and Health Ethics Sub-Committee	DDAP students, peer comparison & rural comparison
March, 2012	Flinders University, School of Medicine, Research and Evaluation Group	Rural comparison
November, 2012	Newcastle University, Faculty of Medical Sciences Ethics Committee	Peer comparison
January, 2013	Durham University, School of Medicine, Pharmacy and Health Ethics Sub-Committee	GP supervisors and patients
February, 2013	NRES Committee, West Midlands, Black Country proportionate review committee, Project: 13/WM/0106.	GP supervisors and patients

4.8.1 Ethical considerations

The main ethical considerations arising from this research were related to the small sample sizes. This required careful planning to protect participant confidentiality and anonymity, which led to several changes in the information sheets and data reporting. Principally this was to make participants fully aware of the risks and be warned that, despite best efforts to remove all information from transcripts that could be linked to individuals, they may still be identified. Following a recommendation from the Durham University ethics committee,

quotes from participants may have been modified slightly to reduce idiosyncratic terminology used by participants in the transcripts.

The DDAP students may have been concerned about anonymity when giving critical feedback because of the small sample. If they were unhappy with something they had said after the interview they had the opportunity to withdraw any statements if they believed their anonymity could not be protected. I had to ensure anonymity was protected as much as possible by grouping together demographic information. In some circumstances a description of what was said may be used by the researcher rather than directly quoting the participant, again to protect anonymity.

The number of general practices involved with the research matched the number of students enrolled on the DDAP, so again I had to try and minimise any inferences about identity that could be drawn from data reported.

For the NHS patient ethical protection, it was clearly stated in the information sheet that patients would not be asked any personal questions about why they were seeing their doctor. Although I was asking patients to reflect on the positive and negative aspects of the programme, they were reassured that whatever they said would not reflect on them or their healthcare in any way. Patients may have found discussions about their experience uncomfortable if they had negative experiences, therefore the interview could be stopped at any time if the participant did not wish to continue.

Ethical permission was not required for the systematic literature review as it was based on secondary data.

4.9 Analytical approach

In this section the justification, assumptions and principles behind the techniques to analyse the data are discussed. This section describes how data were analysed, and the analytical process to ensure rigour.

All of the interviews were audio-taped and then transcribed. Notes were also taken during the interviews. A selection of the transcripts were then read independently and discussed in supervision meetings. This allowed emerging ideas and themes to be considered and debated. I then applied this understanding to the analysis and coding of data, as is described below and within each respective data chapter. The coding frameworks were developed and refined during data analysis and following discussions with supervisors.

The initial findings were discussed with the DDAP steering group and relevant stakeholders (e.g. GPs, NHS employees, researchers, teaching staff). In addition, I sent an early draft of chapter 6 to a theoretical expert to comment and provide feedback on the application of the Experience Based Learning model. This feedback allowed further refinement of the analytical ideas and complex consideration of which quotes should be ascribed or challenged different areas within the theory. The initial findings were presented and discussed at national and international conferences which allowed further critical reflection on the data and enlightenment from international experts. Respondent validation was not used as a strategy to ensure rigour. It has been criticised for limiting analytical research as there is a discrepancy between a researcher providing an overall summary and a respondent with individual concerns[182]. Furthermore, as I collected data over two cohorts (DDAP students and peer comparison) this allowed the interviews to explore similarities and differences between the cohorts.

I will briefly discuss three possible analytical options and then present reasons for pursuing a framework analysis approach.

4.9.1 Grounded Theory

A grounded theory is directly developed from the investigation of a phenomenon and sometimes later verified[194]. Often, but not always,

an attempt is made to omit previous thinking on a given topic so that a new interpretation can be derived from the data itself. This may be appropriate when there is very little or no research on a topic, limiting the comparison of a study to previous studies. A grounded theory approach makes use of techniques such as constant comparison (continually referring between analysis and data collection) and data saturation (pursuing a topic until no new themes emerge)[186, 195]. Constant comparison involves searching for negative or disconfirming cases to challenge the grounded theory. Data analysis is often undertaken concurrently with data collection. The use of grounded theory can explain a situation in a very deep manner that can then be applied to a host of different situations. The data collection stages involve very broad open-ended structures allowing participants to discuss any pertinent issues about a topic. The ultimate aim is to present a theoretical understanding of a specific phenomenon, based on empirical data, which can then explain other situations.

4.9.2 Phenomenology

Phenomenology is rooted in philosophical foundations, and has later been developed by psychologists for the application of research[196]. Although there are many adaptations of a phenomenological research approach, three principles common to many of these are: phenomenological reduction, description, and a search for essences[197]. The variations of phenomenology often differ in the amount of description and interpretation applied by the researcher during data collection and the analysis process. Phenomenology tries to uncover an individual's understanding of the 'lived world' and therefore it may have been particularly appropriate to my research because of the limited sample size. Phenomenological research looks deeply at language and the meaning of data. However, it may not necessarily produce an understanding relevant to other situations. Considerable weight in the interpretation of meaning is

given to non-paralinguistic cues such as body language and emphasis, more so than in other qualitative approaches.

4.9.3 Framework Analysis

Framework analysis is an approach which looks at data using induction and deduction to produce a meaningful interpretation relevant to applied needs[198]. Induction refers to generating understanding based on empirical observation in the process of developing theory; in contrast deduction is where theories are used to explain the phenomena investigated[199].

Framework analysis is appropriate when there are specific questions that need answering, limited resources are available, and there is limited existing knowledge in the field that may be explored within the research[200]. The analysis of data can occur after all data has been collected or can be done throughout the data collection process to look at specific issues. The endpoint of framework analysis is often to provide recommendations for future practice, therefore it is an increasingly popular method in policy and curriculum research.

Existing knowledge is incorporated into the planning, data collection and analysis stages of the research. Inductive analysis uncovers emergent themes whereas deductive techniques look for previously conceived (a-priori) issues, which will need to be explicitly addressed.

4.10 Step-by-step process of framework analysis

Before justifying why framework analysis was carried out during this research project, a description of the analytical process is provided. The data in the remainder of the thesis has been analysed using this approach. Qualitative data from interviews were tape recorded with consent and then transcribed verbatim. Transcriptions were imported into NVivo 9 and analysed by coding data. The stages of the analysis

involved[198, 200]: 1) Familiarisation 2) Identifying a framework 3) Indexing 4) Charting and finally 5) Mapping and interpretation.

4.10.1 Familiarisation

Familiarisation involved immersing myself in the data to gain a thorough feel for the dialogue. This was done by reading the transcript data and noting the range, depth and diversity in the data collected. I achieved this by transcribing some of the recordings myself, which although a time-consuming process, helped to engrain the interviews into my thoughts assisting the analytic process. I knew when particular topics of discussions occurred across the interviews so could quickly retrieve and recollect relevant sections. Also by transcribing and listening to the interviews again I could pay more attention to analysing the content rather than being involved with the interview process. When conducting the research, the many distractions of undertaking data collection may limit the understanding of what the participant is saying at that time, due to asking optimal questions to extract information relevant to the research aims.

It is encouraged in the familiarisation stage to re-read the transcripts many times so that subtleties and assumptions were noticed. For instance, if looking for certain content within a text it may become readily identifiable within a researcher's assumption. However, if researchers are closed in their perceptions, they may not interpret what the participant is saying accurately. The interpretation may therefore be flawed, as the researcher may just become familiar with the content they thought they would discover.

4.10.2 Identifying a framework

This process discovered the key issues, concepts or themes to which much of the data related. To devise the framework it was important to focus on:

- A-priori issues: issues that relate to the study aims and the literature in the interview schedule
- Emergent issues: issues that are raised by the participants
- Analytic issues: themes consistently raised by participants

The analytic process was developed through conversations with others who did not collect the data. For example, the interviews were discussed anonymously with my supervisors, research peers, teaching fellows, GPs, at steering group meetings, and at conferences. This allowed ideas to emerge through conversations so that I could then go back to the data and see if any ideas were worth pursuing. The conversations were with individuals who had varying levels of knowledge of the topic and therefore were open to a range of direct and vicarious experiences of student placements. This stage of discussion is a development in the researcher's understanding of the data collected that is often omitted in the descriptions of data analysis. However, it perhaps gives further meanings to the data and helps it move beyond the descriptive level.

4.10.3 Indexing

This involved applying the framework to the data by re-reading the transcripts and marking sections of text which related to themes or sub-themes in the thematic framework. This was done using the computer software package, NVivo 9. Using this software is more efficient than printing out the transcripts as it can be used to store the data and multiple codes can also be attributed to blocks of text. Indexing was done to see if the data fitted with the coding framework identified. Any relevant sections that were not coded were then described using a new code.

4.10.4 Charting

The NVivo software enabled data to be coded and stored in separate sections that were used for the charting stage of analysis. The

charting stage involved the collection of all the selected sections under a particular theme and viewing the data as a whole for each theme. The analysis then involved reading the quotes, looking for similarities and differences.

4.10.5 Mapping and interpretation

This stage involved integrating the key themes identified from the data and the analysis to address the aims and objectives of the research. Each respective part of data collection was analysed separately (DDAP students, GP supervisors and patients, peer and rural comparators) and synthesised together towards the latter stages of analysis taking into account differences over time. Again this stage was accelerated by conversations with others which helped with the interpretation of the research findings.

4.11 Justification for using framework analysis

When deciding which analytical approach to use, I had to carefully consider the strengths and weaknesses of different approaches combined with the purpose of the research. Analytical qualitative approaches can be divided into three broad categories which focus on: the use of language, description and interpretation of experiences, and developing theory about experiences[201].

The link between developing theory and the analytical approach may be intrinsic in some research but I did not set out with a certain understanding within which to guide my findings. Given the large amount of literature written on workplace learning theory, a true interpretation free of relevant material was not rational. For research to build on existing conceptualisations may be more valuable than to start with yet another new interpretation. While the application of a longitudinal general practice and community placement in UK deprived areas is novel, the application of learning theory to the workplace setting is not. As similar initiatives, particularly in Australia,

have been studied, it would be very naive to dismiss these ideas and start from a grounded approach.

When using a grounded theory approach, the data collection and analysis phases are not kept distinct and analysis is conducted iteratively moving from data collection to analysis and back again which enables themes to be explored and developed. An iterative process allows the research to build on the ideas from the analysis and identify disconfirming or negative cases to challenge the emerging theory.

A limitation of grounded theory is the requirement of time and space during data collection to facilitate analysis; this prohibits time constraints which may force the researcher to collect data on a set date. For example, interviews with the rural comparison students were conducted over a period of two days which was feasible during my short visit to Australia. Also the DDAP student, supervisor, and patient data were collected concurrently due to the timing of the placement. Furthermore, grounded theory assumes a large enough sample can be obtained to seek data saturation and inform a model. Due to the DDAP sample size in this study (e.g. nine students) grounded theory was not feasible. The aim of developing theory using continuous sampling and theoretical saturation was not feasible with a limited sample.

This study involved framework analysis approach, I was able to incorporate literature understandings into the initial question guide and analyse all the data once the interviews were complete. The rural comparison data were collected early on in the study and will have impacted on the subsequent data collected throughout the study (e.g. highlighting the positive impact of student-supervisor relationships), although this data was not analysed in-depth until the latter stages of the study.

4.11.1 Inductive-deductive approach

The analytical approach chosen mirrored the programme aims, as it was exploratory in nature, investigating the experiences of students during the DDAP. Unlike many grounded theory approaches, framework analysis allows the inclusion of pre-existing theoretical interpretations into the data analysis. Raw data was explored inductively and deductively, to understand idiosyncratic placement experiences whilst investigating specific issues highlighted by stakeholders (e.g. career trajectories) and the literature (e.g. continuity of learning, pedagogic relationships). The coding frameworks therefore were informed by the literature review, previous knowledge, experience, and particular research questions. The approach can utilise existing knowledge and allow new themes to emerge.

As the approach allowed a-priori themes to be included in the analysis, this helped to answer specific questions that were of interest to policy and curriculum makers. The existent knowledge of previous conceptualisations helped to guide the research. By considering information that has been published, my research can build on what is known. To start from a blind perspective may not inform educators, and there would be a likelihood of repeating circles of theoretical propositions. Knowledge does not exist in isolation and I think the developments already made in understanding a topic should be included.

4.11.2 Pragmatic value

Framework analysis may be considered by some qualitative researchers to have low value in analysing data because it is a relatively new approach (developed in the last 30 years) and therefore has not been heavily critiqued. It is based on pragmatic application rather than theoretical orientation. The approach can be especially useful for policy-led medical education research or to answer a specific research question, unlike other qualitative

approaches. The end product of Framework analysis is often recommendations for practice, which is apt for the applied nature of medical education research. The process of producing recommendations should be transparent from the research.

Theoretical models may be an integral part of Framework analysis and the end product of producing recommendations should not be viewed as a short cut to understanding data. This may not be epistemologically different to approaches that produce a model. The usability of recommendations can be understood by non-academics and translated into practice unlike the production of a model which is often embroiled in theoretical terminology, perhaps making it inaccessible to practitioners.

Framework analysis will not only be used for analysing individual studies within this thesis but also for the overall synthesis. It is effective in synthesising data and may be extremely valuable for re-analysing data sets and the integration of qualitative data to provide meaningful recommendations for practice[97, 202].

4.11.3 Limitations

Framework analysis has been criticised for being a reductionist technique to analyse data. The approach may feel limiting to people if viewed as a step-by-step guide. It has pre-defined variables that will impose particular findings, i.e. if one is looking for a particular finding one will find it. This is true of some research which seeks to prove a particular point or theory by picking up on related evidence, known as biased assimilation[203]. The development of theoretical models helps to provide a context for the themes that can be defended when questioned. The basis for these themes and models is underpinned by the questions asked, and the intentions of the research. It is a matter of how broad or narrow the findings are, which does not make them reductionist. Theoretical understandings can look for interconnecting ideas across experiences rather than depth. They are described as looking more deeply at the data but this

is not always what is being achieved. Some theories may then explain a lot of events at once rather than a specific event in time.

Qualitative research involves collecting a huge amount of data and summarising this into overarching concepts. Framework analysis may reduce data down to its smallest parts, paying less attention to context. The findings eventually reported are so far from the reality of what was intended by the participant, as the time point has passed. The researcher records the interview, interprets and then analyses it to come up with a summary- a summary which may be so convoluted from the time of the interview. Any technique which summarises huge texts into a few concentrated themes may be considered reductionist.

4.11.4 Summary of justification for using framework analysis

Qualitative approaches are valued for being broad and open but this may not be meaningful if there is no focus. Consideration of the application of research to medical education is imperative. The emphasis of researcher interpretation during qualitative research is an area of ambiguity and open to criticism by others. Framework analysis does not limit interpretation, but does try to make it a transparent process. In essence, it provides the workings out of how a finding or conclusion has come about. Researchers may not fully understand an individual's cognition in their interpretation of a situation but can make explicit the steps that were taken to get to the final interpretation.

Transparency should be apparent so that each element can be scrutinised by scholars. I believe the inclusion of reflexivity should be incorporated into all qualitative research as the individual researchers can never truly 'bracket out' their pre-conceptions. While this exercise is often associated with phenomenology, undertaking this activity will strengthen the defence of research rigour.

The key to the most suitable research approach is in the research questions asked. Research questions will drive the methodology in the most powerful way. Framework analysis is a modern approach to answer questions relevant to today's needs. Grounded theory is perhaps dated (i.e. idealistic) and based on classic theoretical development, and therefore will view Framework analysis as naïve and reductionist. It may view framework analysis as not appreciating data as a complex, multifaceted story of phenomena, but rather seeking to reduce it to as small a component as possible which may be out of context. However, by doing this it can answer a specific question, instead of being nebulous in scope and giving a broad response.

Framework analysis reflects my epistemological position in the way data in the world is viewed and how it comes to have meaning. All medical education research has the prerequisite of furthering knowledge. Data was collected without incorporating conceptual approaches to allow the data to capture unique experiences about the learning environments. This was viewed as an appropriate technique that would simultaneously elicit participants' experiences and not limit the findings in a reductionist way. A framework approach also allows constructs to evolve from the data collection and these can be analysed in a manner to give later meaningful interpretations.

4.12 Chapter summary

This chapter has described and provided a rationale for the choices of research methods used. Qualitative research has a strong emphasis on transparency, hence it is crucial to uncover what decisions were made and why. The ethical considerations were outlined, with protection of the anonymity and confidentiality of the small samples being of utmost importance. The ethics application had to reflect this, and some details which may ordinarily be openly reported by research publications had to be justifiable for inclusion with the best interests of the participants in mind. Framework

analysis was selected for multiple reasons; it is a transparent, iterative process that is increasingly being used in health-related research. Inductive and deductive theoretical techniques can be introduced in a process that is relevant and can be used to analyse large quantities of data in a short space of time.

5 Chapter 5 Reasons for volunteering for the DDAP

5.1 Abstract

Introduction: DDAP participation was voluntary therefore there was a need to analyse the reasons why students chose it. In the literature, very little research has investigated the reasons why medical students volunteer for under-served area placements.
Method: Semi-structured interviews with all students (n=12) were carried out before starting the DDAP. Most of the interviews were conducted face-to-face (n=8) with the remaining conducted via telephone (n=4). The interviews lasted between 15 and 29 minutes.
Findings: The reasons for volunteering for the DDAP were underpinned by the three final themes: baseline status, becoming a doctor, and DDAP expectations. The baseline status often included a primary care / GP career intent, limited experience of deprived settings and a reluctance to travel internationally. Students hoped to develop their doctor identity by providing healthcare for patients in deprived areas, becoming a ‘better’ doctor and informing their career decisions. The DDAP content expectations were mainly around general practice experiences and patient contact. The extended placement length evoked positivity and apprehension.
Conclusions: Continuity in learning over time was a key construct which explained many of the reasons for volunteering for the DDAP. Future programmes which are implemented, similar to the DDAP, may consider the types of characteristics students possess to inform the design of recruitment strategies.

5.2 Introduction

DDAP participation was voluntary, therefore there was a need to analyse the reasons why students chose it. Limited previous research has investigated the reasons why students have volunteered for under-served area, community placements. From the papers that were identified, there were papers from countries including the UK, Australia, and the USA, using both quantitative and qualitative approaches.

A qualitative paper, using focus groups, found that student reasons for choosing a rural placement included: experiencing rural life, personal development, increasing life experience, and the better learning opportunities[204]. The rural location was a very strong driver in student decisions[204]. The above reasons were similar to the findings of a paper studying reasons for choosing a rural placement in Scotland, which reported themes related to: teaching reputation, experiencing remote and rural medicine, a change from Aberdeen, and lifestyle factors[102].

Other research carried out in the UK identified negative factors associated with choosing rural placements[128]. Rural practices were thought to provide a narrow range of patient contact and learning opportunities, and rural life was thought to be unattractive, especially out of formal placement hours. The distances from friends and social outlets were also seen as negative.

Quantitative research which has investigated student reasons found that the primary factor was patient access, with 97% (n=119) of students considering this to be important, and 84% (n=81) of students stating that this was a positive factor in their decision-making[205]. Patient access refers to the ability to interact with the local patient population in a more direct manner than is possible for the urban student[205]. Major factors were, friends and academic reputation, but these can have a positive or negative impact on a student's decision about going on the placement[205].

Although there is limited research which looking at reasons why students volunteer specifically for undergraduate placements, there is a greater body of knowledge regarding factors which influence student intentions to pursue rural, GP careers. It is well established that the background of a student plays an important role in career decisions[49]. Students who are from rural backgrounds are more likely to go into rural practice[49]. Family and lifestyle factors are also important characteristics in career decisions.

The literature has therefore identified diverse reasons why students may or may not choose a placement. These reasons appear to mainly orientate around the appeal of the location. Rural placements are seen as offering a range of benefits including more patient engagement (better learning opportunities) and a new lifestyle experience, which may promote personal development. Factors which are important in volunteering often include family and friends, academic reputation, and background of the student.

5.2.1 Research aims

- To analyse why students volunteered for the DDAP
- To consider the expectations of the DDAP

5.3 Method

Semi-structured interviews with all students (n=12) were carried out before starting the DDAP. Most of the interviews were conducted face-to-face (n=8) with the remaining conducted via telephone (n=4). The students were geographically dispersed during Phase 2 Medicine, therefore face-to-face interviews were not always possible. The interviews lasted between 15 and 29 minutes.

5.4 Analysis

The data were analysed using framework analysis, as described in chapter 4. During analysis, the initial findings were presented at national and international conferences to inform critical reflection.

Despite the sample size, data saturation occurred after the first cohort of DDAP students as the second cohort mainly provided confirmatory data.

5.4.1 Conceptual framework

The Experience Based Learning model[176], described in chapter 3, was adapted to understand the data. The learning model is derived from situated learning which emphasises learning as interlinked with identity. The identity of the students who applied was therefore crucial to understand.

5.5 Findings

Three final themes were identified which underpinned choosing the DDAP (see Table 8):

- **Baseline status:** GP / Primary care career intent, limited experiences of providing healthcare in deprived areas, DDAP preparedness, reluctance to travel internationally
- **Becoming a doctor:** To provide healthcare in deprived areas, to maintain clinical skills, to become a 'better' doctor, to inform career decisions
- **DDAP expectations:** patient contact in deprived areas, positivity about longitudinal placement, apprehension about longitudinal placement, perceived differences to alternative experiences

Table 8 Framework analysis development

A-priori themes (interview guide)	**Emergent themes** (descriptive coding framework)	**Core themes** (overarching themes)	**Final analytic themes** (conceptual lens applied to data)
➢ Reasons for volunteering ➢ Motivations ➢ Why volunteered ➢ Looking forward to ➢ Not looking forward to ➢ Peer views ➢ Family views ➢ Preparedness ➢ What will it be like ➢ Do you feel prepared ➢ Previous experiences ➢ What will be challenging ➢ Potential Outcomes ➢ Impact ➢ Medical training ➢ Personal ➢ Career intent	➢ GP, primary care career intent ➢ Previous experiences ➢ Preparedness ➢ Reluctance to travel	Existing experience and career intent	Baseline status
	➢ To provide healthcare in deprived areas ➢ To maintain and develop clinical skills ➢ To become a 'better' doctor ➢ To inform career decision	Developing competencies	Becoming a doctor
	➢ Patient contact in deprived areas ➢ Longitudinal placement – positivity ➢ Longitudinal placement – apprehension ➢ Social perceptions	DDAP expectations	Value of continuity

5.5.1 Sample characteristics

To protect anonymity, and because of the small sample size, an overall sample summary will be presented. The majority of the students were female, aged 21-30, and White British. This is consistent with the high proportion of female medical students across England[28]. The students came from a mixture of rural, urban, suburban, and inner-city background areas but interestingly none described their upbringing as originating from a deprived area. For most students, medicine was their first degree but some had also previously completed degrees elsewhere. There was a mixture of students who took Phase 1 medicine at either Durham University or Newcastle University. During Phase 2 (including the DDAP cohort) all students were at Newcastle University. Over the two cohorts, three of the interviewed students ultimately did not participate in the DDAP. The reasons given for declining participation included issues such as: wanting to take placements internationally elsewhere, future career considerations, and lifestyle / family commitments.

5.5.2 Baseline status - existing experience and intent

Participating in the DDAP is voluntary, therefore it is important to consider the baseline status of students so that any after-placement conclusions are not over-stated. The relevant previous experience a student has may inform how they approach the DDAP, what their expectations are, and what they hope to get out of it. Although the sample was small, many commonalities were identified throughout this theme.

5.5.2.1 GP, primary care career intent

The students had open views towards their future medical careers but most of them were interested in the prospect of a career in general practice and/or in primary care. The students were still making up their minds about future careers and would see how their experiences developed their interest. Some of the students were more firmly set on being GPs in the future.

Sort of open to change but if I had to pick today GP is what I'd go and do. [D2]

The main reason for volunteering was because I'm quite interested in becoming a GP in the future and I wanted more experience with that. [D11]

5.5.2.2 Limited experiences of providing healthcare in deprived areas

All of the students had experience of general practice settings (at least half a day per week) in third year. However, they had quite limited experience of providing healthcare in deprived areas. Their current level of understanding of such settings was therefore often quite low and this was often a reason for their involvement, i.e. to gain more experience of this setting.

I was a carer last year and that got me interested in health care inequalities and also working on a council estate in [place] has got me really interested in the differences and the difficulties of working in that sort of area. [D2]

There have been a few patients who had overdoses and you're kind of on suicide watch and that's quite difficult. But not much experience. [D11]

Some of the students had experience in deprived areas but often these experiences were in roles not providing healthcare. To have this relevant experience shows a high level of engagement with the topic as the students were willing to experience the setting without necessarily getting a ‘clinical’ experience. Moreover, students who did have more relevant clinical experiences were often motivated by their experiences.

Some of the voluntary work I do I love, it's really, really good and the paid work I've enjoyed but it was really hard work…A lot of the issues faced by carers are also issues relevant to doctors. [D2]

I spent time in a school which is in quite a difficult area in [place] and that really motivated me to work with that kind of person….we've not really had much exposure to difficult patients. We always get given the easy patients with just straightforward things going on and no social issues. [D7]

5.5.2.3 DDAP preparedness

The students felt reasonably prepared before starting the DDAP. This was partly due to their previous general practice placement which had given them experience of seeing patients and carrying out the activities of a GP. The fast-paced, short-term placement nature of the curriculum also meant that students were used to starting placements with little preparation.

I don't really know what to prepare myself for but yeah we've had a lot of practice both in a GP setting and secondary care with patients so I don't feel scared of patients. [D1]

You spend a lot of time in your third year doing clinical skills and stuff so yeah I'm reasonably prepared, shouldn't be too much of a shock, plus you're coming into having done two clinical SSCs before that so should be well prepared. [D4]

The third year DDAP sessions informed expectations of what the experience would really be like rather than an aspirational idea. However, there was still uncertainty about what preparedness was required.

I've got a more realistic view of what to expect now that we've had all these sessions in third year, I think it's made me kind

> *of more nervous about it but also more excited about it because I've got more of an idea about what I'm going into… obviously there's an element of unknown about the GPs and we don't know what the practices are like and we don't know what the areas are like*. [D2]

> *I know I'm going to learn a lot and I know I don't have those skills. I know I'm not great with those difficult situations. Possibly a bit more good on the sexual health side, but everything else I know I'm not terribly good at which is why I chose it. Because I know I want to improve. I don't really feel prepared but I'm just open to learn it all.* [D11]

The students discussed previous components of the curriculum and how prepared this had made them feel. The first two pre-clinical years were acknowledged as positive as they were taught about the challenges encountered in deprived settings. However (perhaps as would be expected), the application of this knowledge to the real world was lacking. The DDAP was perceived by students as being able to provide this opportunity, to help embed book knowledge and see if it is appropriate to real life settings. In preparation for the DDAP, Phase 1Medicine at Durham University was perceived as being particularly positive for learning about the social side of medicine.

> *The first two years here (Durham) are quite good because orientated a bit more toward the social side of the medicine. From our point of view we've had the community placement and all this kind of social type stuff has influenced the curriculum so I think from that point of view I'm quite clued up… kind of ready for it.* [D4]

> *We just had two visits to a GP practice in the whole year* [second year]. *So like a morning session and that was it. The rest was all just lecture based….I think it's important to get you*

out and getting experience of what the job's going to entail instead of just being in a classroom teaching all the time. [D5]

Apparently here in Durham, one day a week they went and did something, like they spent time in a smoking cessation clinic or drugs clinic or something. We never did anything like that. I think we're at a disadvantage there. [D7]

5.5.2.4 Reluctance to travel internationally

All of the students mentioned that they were reluctant to travel internationally for their elective period. This reluctance was often for personal, financial, or family reasons.

I've never really wanted to go abroad for my elective, I understand the point it makes you appreciate the NHS here but yeah I never really had an overwhelming urge to go abroad. [D1]

I've always thought it's a weird idea to go abroad for some time and work in a different country when there's so many things in this country that are different to what we've done before. I feel like it's just turned into a gap year and it needs to be something that's going to help with my career. [D7]

The financial cost was a common reason for not wanting to go abroad. Some of the students were mature students so had a desire to limit costs.

I want to stay in the UK for my elective, so it all just sort of fitted into what I wanted to do. I thought it would be good for applications as well….and also financial reasons, I mean it's very expensive to organise electives now. [D5]

> *This is so different, which is good. The elective I only see as being like this is easy. I wasn't going to be going abroad anyway because I've got a little child.* [D10]

5.5.3 Summary of baseline status

The students' career intentions were slightly skewed towards favouring GP primary care careers but they were very much open to experiences at this early stage. The existing experiences of deprived settings were fairly limited but there was some acknowledgement of the difficulties patients in such settings suffer. The understanding of deprived areas was mainly a theoretical 'textbook' understanding rather than actual experience of the challenging conditions. The existing curriculum appears to positively prepare the students for starting the DDAP. The students had little experience of combining the two areas, GP primary care and deprived settings. The DDAP was seen as an opportunity to combine these two. Most, if not all of the students had a reluctance to travel for their elective which therefore may have increased the desire to volunteer for the DDAP. This reluctance was underpinned by a variety of reasons including financial, family, and personal.

5.5.4 Becoming a doctor - developing competencies

The reasons for volunteering orientated around becoming a doctor. The students wanted to develop their professional identity i.e. clinical skills, being more confident in their own ability and able to deal with a wide range of patients. Across the sample, there was narrow variation in the reasons why they volunteered for the DDAP.

5.5.4.1 To provide healthcare in deprived areas

The setting of the placement was seen as a motivating factor, i.e. in the community and deprived areas. Students were particularly aware of how the patients in such areas may differ from patients in other settings.

> *It's going to be dealing with difficult patients and the different illnesses …which is mainly why I wanted to do this programme to get experience of it early on and then be more confident once you're qualified.* [D5]

> *I think it probably will open my eyes to a lot of what people live with. I know I come from what you would probably call quite a sheltered life compared to a lot of people who live in difficult situations. I'll probably have my eyes opened a bit to what people deal with on a day-to-day basis.* [D12]

The students were motivated by the opportunity to consider a range of patient issues such as communication, intelligence, psychosocial factors, and determinants of health, which will have a combined impact on how a patient comes to terms with whatever illness they face. The students thought they could learn how to deal with diverse populations as this will require specific communication skills. This communication learning may be in addition to what is normally experienced during a standard general practice placement.

> *I want to work in a GP practice where it's not just easy cases of people without anything going on. I want to get out and work with people that have difficult things happening.* [D7]

> *I obviously was attracted to the whole difficult and deprived area part of it because I think a lot of doctors and medical students aren't very skilled in those sorts of areas. I want to have those skills. I want more exposure to all the problems and the links between the health and deprivation…what I can do to help and provide the right education and guide patients in the right direction.* [D11]

The students valued the opportunity to strengthen their communication skills with people from deprived areas. They were aware that the patient groups may be more challenging but consequently the placement may be better for learning. The DDAP may help students to recognise whether they have the capability to work with disadvantaged populations in the future.

> *I think it's about developing techniques as to how to engage with people…you use a different set of communication skills to talk to those people that are not as well off, not as well educated.* [D4]

> *It's getting some more insight into, but also trying to do it with people that are hardest to work with, than your everyday groups. What skills sets I've got…what areas am I good at working in and what areas am I not.* [D10]

> *I think doing this placement is going to prepare me more for dealing with difficult situations in the future than the whole med school will.* [D11]

5.5.4.2 To maintain and develop clinical skills

The students saw the DDAP as an opportunity to keep their clinical skills up to date. The students were happy to stay in the UK and thought the DDAP experience may be more rewarding for their learning than an international elective.

> *People will go off on their elective and maybe do two weeks of medicine and do eight weeks of holidaying and travelling. I'm going to just be doing medicine straight through, so in theory when I get back, I'll still have that high level of skill and knowledge, be more successful in year 5…a lot of people don't progress, they go off and do a lot of things they're interested in, but they're not really relevant to their career. They're not gaining skills per se.* [D4]

> *I think most people see the electives as an excuse to go on holiday and try to do as much travelling as they can, rather than focusing on the medical side of it. I think they would rather travel but then they realise that I'm probably going to gain a lot more from my placement than they will. I think they're quite jealous in that sense!* [D11]

An interesting aspect mentioned was the 'conscious' decision to learn rather than missing out on the elective.

> *I think they* [peers] *think we're a bit stupid because we're missing out on a holiday, and missing out on a chance to travel, which is true, and a shame, but I think they do respect we're doing something conscious and it's like a decision to try and learn rather than just going on a standard elective.* [D1]

> *I thought it was a better decision for my career and what I wanted to do in the future rather than just go on an elective which would end up, more than likely being like a holiday.* [D12]

The preparation for fifth year was a reason commonly discussed by the participants. They saw the DDAP as a good opportunity to enhance their skills in preparation.

> *I think it'll put me at an advantage going into fifth year because I will have been in this country working in the NHS and keeping my skills up to date.* [D7]

> *Hopefully the skills that I learn at the GP practice will help me for my finals.* [D10]

5.5.4.3 To become a 'better' doctor

The students often mentioned that they wanted to become 'better' doctors. Obviously they are all medical students aiming to become qualified doctors, but the distinction of a 'better' doctor was articulated. This was particularly related to clinical skills, the ability to provide care for patients, and confidence in their own capability.

> *Hopefully I can be a better doctor, just better all round, more experienced, more comfortable.* [D1]

> *It should help us become better doctors because of it, because you will have just had more time to practise it and because you will have seen a wider variety of patients in GP than others.* [D2]

> *To have a better understanding of people from a deprived area, to develop the skills, particularly communication skills to deal with people from deprived areas, to try and get an appreciation as to where they're coming from and what the rational of them seeking healthcare is. Hopefully that will make me a better doctor and that's the whole point of this, essentially to make me a better doctor.* [D4]

The preparation for future roles in medicine and improving their overall abilities was a motivating reason for volunteering.

> *I think the skills you will take away and use in any way you feel free. I'm sure it will make me a better doctor overall, and yes they will contribute to my career path and give me a better appreciation as to where people are coming from.* [D4]

> *The main thing that I want to improve is communication skills. I think it's going to affect the way I am as a doctor in the future if I have all these new skills… you're going to be exposed to quite a lot of different medical problems. It kind of keeps your clinical knowledge up to date. Get lots of clinical experience in taking histories and examinations. I think that experience in long placement will help me in the future.* [D11]

5.5.4.4 To inform career decision

The students volunteered for the programme to help them make informed decisions about their future careers. As discussed earlier, not all the students wanted to become GPs but many were inclined towards this area. They saw the DDAP as being a good opportunity to decide whether or not it was the career for them.

> *I hope to gain a better insight into that kind of work, working in that sort of area, and working in a GP practice…I really like general practice and I'll probably end up working in the community… If I love it [GP] then I will stick with it and probably I can't imagine changing my mind after that and if I hate it then I'll have to re-think things.* [D2]

> *This project gives me an opportunity to spend some time and just to see is this something I'd want to do long term… It's better to get a gauge of something that you'll enjoy and whether you can do something during medicine, rather than waiting until you start specialty training.* [D10]

The students said they believed it is better to get an understanding now rather than finding out later on in their career that they do not want to pursue a certain job. The limited opportunities within the Medical Programme to understand what primary care careers are available were also mentioned.

> *Fourth year most of the SSC placements are secondary care. But I think there isn't a lot of primary care ... We don't know about it. In med school I don't think it's very good in teaching us about what is available.* [D11]

5.5.5 Summary of becoming a doctor

The students volunteered for the programme for many similar reasons. These primarily revolved around the requirements of the undergraduate curriculum and the drive to become ‘better’ doctors. They saw the potential in the DDAP to help them develop the clinical skills and give them an opportunity to practise these. Students also joined the programme to give them more experience of dealing with populations from deprived areas. They had a desire to understand at a deeper level the challenges this provides and the extra skills it may require. This may also help with less tangible skills such as improved confidence in their own abilities and with talking to patients.

5.5.6 DDAP expectations - value of continuity

Given the pilot nature of the programme, I was interested to understand what the students thought the actual programme may be like. The structure of the DDAP was more nebulous for the first cohort.

5.5.6.1 Expected content: Patient contact in deprived areas

The students talked predominantly about the general practice placement when mentioning their expectations. They envisaged lots of patient contact, opportunities to practise their clinical skills, and learning with the help of supervisors. Similarly, this was a motivator for the second cohort.

> *I would like to think we are going to see patients every day and be involved in practices and get to practise lots of clinical skills. What I don't want is me turning up and sitting there in a GP surgery all day next to a GP who's doing all the consultations and not actually getting any real world practical clinical experience.* [D4]

> *I think sometimes you might go and spend time with other people in the team in the GP's surgery, such as the nurses and community staff.* [D5]

> *I'm just hoping to get a bit more practice and improve my clinical skills a bit because in our previous GP experience a lot of it has been just observing.* [D12]

The distribution of patients may also be different during the DDAP to what students experienced in the past. During the DDAP the patients may have undifferentiated symptoms of illness rather than the student knowing beforehand what is wrong with the patient. The students thought there would be opportunities for patient contact with a particular focus on patients from deprived areas. However, there

was very little discussion of the community placement aspect. By the second cohort there was a much better appreciation of the content and structure of the DDAP.

> *It's probably going to be more geared towards those who are deprived rather than the whole population… see the things that are slightly hidden where you don't often realise go on.* [D1]

> *When we're in the GP surgery we'd normally see patients that the GP has brought in with a specific problem to show us. When we're in the hospital we go and see patients that have a specific history and that are easy to take history from.* [D7]

> *I think that's what's brilliant about - because there is structure to it. I like variety, I like structure, and I like knowing where I'm going to be. It's very organised, so that's really good for me.* [D10]

5.5.6.2 Longitudinal placement - Positivity

The DDAP evoked positive responses about the extended placement. The length of time was seen as being able to provide insights into various aspects of the GP role and community healthcare. The following quote articulates the aims of the DDAP from the student perspective and how it is intended to help them develop their understanding of difficult and deprived areas.

> *Being placed in one place for a long time is really good because at the minute we do two days on a ward and then you move on and go somewhere else. So it will be getting to be part of a team... and it being real working life rather than being a student where you just get in everyone's way. That really appeals to me. And also be able to find out if I have a realistic view of what that sort of work involves. I've probably got quite an idealistic view of oh this is what being a GP in an*

> *inner city area would be like, just to explore that more, I'm excited about that chance.* [D2]

> *At the moment it just feels like you get comfortable and then you move onto the next thing because it's such a short rotation. Whereas this will give us more time to settle in.* [D7]

There was an acknowledgement of their current level of understanding of patients in such areas, which they admit may not reflect the true likeness of the situation, but they hope they will be able to gather a *"realistic"* take rather than an *"idealistic".* This may be the case for many students who have not experienced the challenges of providing healthcare in such environments. The continuity in the length of the placement may also help to establish the relationships, foster active learning environments and allow students to see patients on multiple occasions.

> *The more experience you get with every day with patients, is obviously a good thing. Mostly medicine is experience so the more skills you developed and the more diverse group of people you see then that should make you a better doctor, which is one of the foundations for participating in the programme, I want to be a better doctor. Part of developing those skills I see is just a beneficial thing to do.* [D4]

> *The fact that it was a long placement. I like the idea of continuity, possibly seeing the same patients over and over again. Getting to know them properly.* [D11]

The long length of time was thought to help the students gain more responsibility and be 'hands-on'. The students referred to 'time' as a positive dimension that would be beneficial for many reasons. Time would allow development for becoming a better doctor, developing communication skills, and understanding the GP role.

> *I think you'll be able to get your foot in the door more and take on more responsibility and feel like you are involved.* [D7]

> *I'm looking forward to, kind of like I said, the continuity. The long, long placement. I like that you can really just get your teeth into it and get the most out of it if it's a long placement… it's just nice to stay in one place for a bit and learn as much as you can.* [D11]

The strength of the length of placement was perceived to allow the students to see people multiple times, which will facilitate relationships. The students will be able to become part of the healthcare team. They thought they may become more integral to a GP practice as they have longer to build relationships and become part of a team.

> *See a GP again and again and again and see if they're always consistent with patients and see how they manage to be consistent in that part of communication which you don't see on the placements at the moment because you just pop in for half a day and then leave, and they might put on smiles and act their best for that day but actually seeing how people manage to work and still maintain a good level of a care every day.* [D1]

> *I want that extended period in a GP surgery to settle in and get established in there….I think it's good that it's fourteen weeks because you're in one GP surgery and you're with one person… I think we might get to the point where we're part of the team.* [D7]

5.5.6.3 Longitudinal placement - apprehension

In contrast to the positivity, the length of time was construed to be negative if the relationships do not support learning and/or the DDAP feels like a waste of time to the student. Students were concerned

about not enjoying the experience and then being ‘stuck’ there for the remaining length of time. There was concern about not getting on with the people at the GP practice.

> *I guess if I hate it, it’s 14 weeks in one place which isn’t going to be fun. I’m conscious if it’s not great then it’s a long time to be in one place.* [D2]

> *I guess because we're spending so long in one GP surgery, just worried that I’ll like it and get along with the GP and things like that.* [D7]

> *Going to GP every day for 14 weeks… I might not enjoy it; I guess is a worry… I don't know because I've never done a long placement like that before.* [D11]

Also there was potential concern about the length of placement if it is not structured (or too structured) and students are not involved with patient care.

> *I guess it might get repetitive or we might end up just kind of being shift aside and not seeing very much.* [D2]

> *Something that you find enjoyable over the short term, you might not over a longer period of time…the novel might become tedious.* [D10]

5.5.6.4 Social perceptions of DDAP participation – electives as holidays

The perceptions of others were interesting to explore as it gave a social appreciation of reasons why the DDAP would be chosen and the implications of doing so. There was some talk of ‘giving up’ an elective but the financial implication of saving money by not going abroad was favoured. The elective was often talked about in negative terms in respect of learning and seen more as a *“holiday”.*

> *Most people are going abroad so they think it's a bit strange that I'm staying. They think it's quite a long time because it's SSC and elective combined. It's quite a big commitment… A lot of people want to go to Brazil this time because it's the World Cup!* [D7]

> *People don't really see the elective as a career move.* [D11]

The following quotes illustrate many of the themes discussed, including the comparison to alternative experiences, the length of time of the placement, and the personal development to help become a *"better doctor".* The use of the term *"sacrificing"* highlights that the student may feel as if they are giving up something to do the DDAP.

> *You could get someone who goes all the way through fourth year without having any patient contact at all if you pick certain SSCs.* [D2]

> *I'm sacrificing my elective and SSC to do this… I have a greater appreciation of what will make me a better doctor.* [D4]

> *I think it's going to prepare me for what I want to do as my lifelong career and make me more confident once I'm qualified because I've had time doing like intense medical training for 14 weeks compared to if I'd gone on an elective…I think people use it as more of a holiday and then get a shock when they come into final year…they've been out of medicine for a while.* [D5]

5.5.7 Summary of DDAP expectations

As the DDAP was a pilot programme, the student expectations of the DDAP provided further insight into the reasons for volunteering. The content and expectations were mainly discussed in terms of the general practice placement, potential enhanced patient contact, and

the longitudinal length of the placement. Positive expectations were identified about the possibility of forming stronger professional relationships and having more time to practise skills. In contrast, there was apprehension about the length of placement, particularly if the students did not feel welcomed into the setting or did not have enough responsibility for patient care. The longitudinal placement was therefore critical to the expected value of the programme. The comparison to alternative experiences also provided further reasons for participation. Students perceived more structured learning environments and the opportunity to have more responsibility. The comparisons were often made in relation to the elective, as the students perceived the DDAP to be a more valuable learning experience. The students described the electives as being a time for a student to travel and pursue interest outside of medicine whereas the DDAP may be more beneficial to develop their clinical skills and inform their future career.

5.6 Discussion

5.6.1 Summary interpretation of findings

The first and second cohorts of the DDAP had a limited understanding of what the pilot programme would actually entail. Overall, three final themes related to choosing the DDAP were identified: baseline status, becoming a doctor, and the expectations of the DDAP.

5.6.1.1 Baseline status

Most of the students had some limited experience of providing healthcare in deprived areas but this was rarely in a clinical capacity. The DDAP provided an opportunity to overcome this gap in the experiences. The students spoke about the opportunities to provide healthcare in deprived areas and to try to get a better understanding of what this setting entailed. While all the students had an interest in primary care, they were mainly undecided on what their future roles would be. All of the students were reluctant to travel for their elective so this was indirectly a reason why many students picked the DDAP. They had little desire to travel, for financial reasons, or had previously travelled so did not want to.

5.6.1.2 Becoming a doctor

The students hoped to develop their confidence in dealing with patients and felt that knowledge of the deprived settings would help to contextualise their understanding. To develop communication skills with perhaps more challenging patients than previous experiences was a motivating factor for volunteering. They understood the need to tailor their approach depending on the patient, although this was an area in which they felt they were lacking experience. They welcomed the exposure to general practice settings and clinical experience. They wanted to see a diverse range of patients in order to develop their personal and professional attributes.

5.6.1.3 DDAP expectations

The students mainly spoke about the desire to have general practice placement experiences and made very few comments about the community placement aspect. This was because they knew very little about the community placement at this stage. The longitudinal nature of the placement was thought to help to provide a more realistic understanding of the day-to-day GP role. Students wanted to develop clinical skills and to experience this type of population for an extended period. It was not necessarily that they had not experienced the population before, but the DDAP was offering a longer experience in a clinical role.

The views of others were important to consider as it helped to understand underlying reasons for DDAP participation. The term ‘sacrifice’ was used, which suggested the students perceived giving up the elective rather than gaining a new opportunity. The students wanted to gain more general practice experience as they acknowledged having limited general practice opportunities.

5.6.2 Findings in context

5.6.2.1 Conceptual framework

According to the Experience Based Learning model, the identity formation of students provides insights into what developments are made during learning. When students started the DDAP, there was a need to understand their reasons for volunteering, what they expected the DDAP to be like, and what they hoped to get out of the experience. The baseline status may impact on the learning possible throughout the DDAP. Students placed themselves voluntarily in a situation which is critical to what development is possible throughout the DDAP. Learning in this sense is through their identity, as it transforms through active participation. At this time i.e. before participation, the areas in which the students wanted to develop provided a good understanding about how this might occur.

There was particular focus on the clinical skills and professional competencies of the students. They were keen to become ‘better’ doctors. The students identified that if they are not given the responsibility this may be detrimental to their development. They may in essence remain at their baseline status, as identified in this study, and may not be satisfied with their DDAP experiences. This is a possibility if the DDAP does not fulfil the students’ expectations.

To identify constructs of the student identity helped to establish at what point the student currently sees themself, and what they need to develop. The pre-existing identity and experiences of students are important considerations for communities of practice theory as the student may not feel like legitimate participators. Their sense of identity and knowledge of the communities of practice they are entering may guide them in what they experience of the setting. The DDAP may help them to reflect on their learning and shift their book knowledge to experiences in deprived settings.

5.6.2.2 Continuity of learning

This research identified that the longitudinal nature of the programme was a strong motivator for volunteering. The analytical theme of continuity was critical for underpinning many of the reasons for volunteering. Continuity is a key part of the success of longitudinal community placements[75]. Continuity was underpinning how many of the developments identified in the ‘becoming a doctor’ theme could be achieved. The value of continuity can be positive for many different reasons including setting, supervision, peers, and patients[170].

However, the construct of continuity was not purely a positive factor. The negative repercussion of the longitudinal placement may also have a downside of negative supervisory relationships, not being given the envisaged opportunities for greater patient contact, lack of responsibility, and limited participation. The presence of continuity (or

not) therefore could be a hinge for the success or failure of the programme.

5.6.2.3 The appeal of placement setting

The findings from the literature[128, 204] about reasons why students volunteer are somewhat similar to the issues found in this research. In particular, the learning opportunities afforded by the location were identified by students; this was identified in this research under the sub-theme of learning about providing healthcare for patients in deprived settings. The opportunity for practising clinical skills and understanding deprived area patients was a key motivational driver.

In contrast to the appeal of rural areas, there was little mention by DDAP students about the appeal of experiencing the lifestyle of the location. However, the DDAP students did not discuss anxiety about the prospect of being based in deprived settings either. This was identified by Deaville[123], who found that it was the distance from the University setting (learning opportunities and isolation) which created anxiety rather than the rural setting per se. As the community DDAP settings are not located geographically far from Queen's Campus the students had this support close by.

None of the students said they were from 'deprived' backgrounds. Unlike 'rural' background being a positive influence on future career[49] there is little known about other deprived backgrounds. In the literature there is a clear indication that medical students come from the upper two domestic groupings. This may signify an even greater difficulty with future GP recruitment to under-served areas. Often those with supportive families will pursue opportunities that are not in line with the traditional curriculum[205].

5.6.3 Strengths

This chapter has analysed why students volunteered for the DDAP. The interviews were carried out by one researcher who was not involved with the administration, teaching, or assessment of the

DDAP. The research identified a baseline status before starting the placement.

5.6.4 Limitations

The small number of participants does not give quantification about what is the most common reason for volunteering, but does provide an explanation about why the students volunteered. The sample may have provoked homogenous responses as the group were voluntarily self-selected. The generalisability of the findings should also be made cautiously. The pre-existing experiences of the students may shape their DDAP experiences and the impact the programme has on them. This is why the research was conducted to clearly establish what types of students would volunteer for such a programme. This study also improves the credibility of the overall thesis as there is a critical awareness of reasons for student participation.

5.7 Conclusions

The reasons for volunteering for the DDAP were underpinned by the students' baseline status, becoming a doctor and their expectations.

The baseline status included a primary care / GP career intent, limited experience of deprived settings, preparedness and a reluctance to travel. Students hoped to develop their doctor identity by providing healthcare for patients in deprived areas, becoming a *"better"* doctor and informing their career decisions. The content expectations were mainly around GP experiences and patient contact, while the proposed longitudinal placement length evoked positivity and apprehension. Continuity in learning was a key construct which explained many of the reasons for DDAP participation.

Future programmes which are implemented, similar to the DDAP, may understand what types of characteristics students may possess to inform the design of recruitment strategies.

6 Chapter 6 Midway and end of DDAP student experiences

6.1 Abstract

Introduction: Research was undertaken to understand the viability of the DDAP as a learning environment for medical students. The research aimed to analyse how the DDAP facilitated student learning.

Method: Nine students undertook the DDAP, four in the first cohort and five in the second cohort. One-to-one semi-structured interviews were carried out with all the students before, during and at the end of the placement. This chapter reports on the findings from the midway (6-7 weeks) and end of placement interviews (14 weeks). The interviews lasted between 24 and 35 minutes. Due to limited resources some of the midway interviews were carried out by telephone. All the end of DDAP interviews were face-to-face. The data were initially analysed using framework analysis.

Findings: According to the Experience Based Learning model, learning is seen as a change in the identity of the student, which is understood by investigating outcomes, processes, and conditions. The DDAP supported real patient learning, affective learning, and practical learning outcomes. The placements were positively received by the students especially when they were given independent time with patients. The student-supervisor pedagogic relationships facilitated learning. The supervisors talked through patient cases with the students, testing their knowledge and giving feedback.

Conclusion: The DDAP was a positive learning experience for the medical students which helped them to learn about the psychosocial determinants of health, while practising and reinforcing their clinical skills and medical knowledge. The students' learning was facilitated through independent clinical time with patients, which promoted deeper learning about the role of the doctor. The integrated

programme structure gave the students a well-rounded understanding of the complex issues related to providing healthcare in deprived areas. The longitudinal nature of the DDAP was useful as it allowed an immersive experience in deprived areas.

6.2 Research questions

This chapter addresses the following research questions:

- What are the strengths and limitations for medical students of a longitudinal general practice and community placement in deprived areas?
- What is the educational value of the DDAP?
- How do students learn during the DDAP?

6.3 Method

In total, nine students undertook the DDAP, four in the first cohort and five in the second cohort. One-to-one semi-structured interviews were carried out with all the students before, during and at the end of the programme. The students were interviewed at the midway point during the placement, approximately after six weeks (i.e. after the Student Selected Component) and at the end of the programme, after 14 weeks (i.e. end of the Elective). This design enabled an in-depth understanding at two time points. The interviews lasted between 24 and 35 minutes. Due to resource limitations, some of the midway interviews were carried out by telephone. All the end of placement interviews were face-to-face. The interviews tended to revolve around the general practice placement, community placement, teaching sessions and programme characteristics.

6.4 Data analysis

I initially discussed the data during research meetings with my supervision team. The data were also discussed during on-going conversations with local GPs throughout the data analysis. The analysis of data using framework analysis (see chapter 4) identified inductive and deductive themes. At this point a middle range theory, the Experience Based Learning model[176, 177], was identified as being pertinent to understanding the data, as the theory appeared to explain many components. Two core domains of Experience Based Learning were identified in the data: situated learning and

participation. It was evident that learning was a social activity which was inherent to the workplace setting.

The Experience Based Learning model assumes that medical student learning can be greatly understood by identifying the formation of, and changes to, the identity of the student during an experience[177, 178]. Identity is how one feels about oneself within a setting, whereas a role is what one's position is within a setting. Identity, according to Experience Based Learning, is formed through supported participation promoted by the conditions of support available, although there are many feedback loops so supported participation also promotes the conditions[176]. Identifying outcomes demonstrates learning progression made during an experience, in this case during the DDAP. According to the Experience Based Learning model these outcomes are thought to be related to the processes and conditions of learning, in particular the patient/service user interactions and supported participation. The DDAP was a complex intervention to cross different identity formation boundaries and the learning activities therefore were critical to identify what opportunities enabled the students to develop.

A secondary analysis according to the Experience Based Learning model was undertaken (see Table 9). Prof Tim Dornan provided expert theoretical feedback on an early draft of the chapter with particular attention to the Experience Based Learning model.

6.5 Findings

Quotes from the midway interviews are denoted as [DM] and quotes from the end of placement interviews as [DE].

Table 9 Summary of theme development

A-priori codes (interview guide)	**Emergent codes** (initial descriptive coding framework)	**Core themes** (Descriptive themes)	**Final themes** (conceptual lens applied to data)	**Analytical themes**
Overall experiences Learning domains Supervisor support GP placement Facilitating learning Impact Outcomes Community placement Medical training Comparison to alternative experiences Teaching sessions Personal characteristics Career intentions Reflections Length of time evaluation Volunteer again Changes	Observing, Home visits, Parallel consulting, Shortage of time based at GP, Patient contact, Understanding GP role, Informing career decision, Deficient exposure to deprived, Patient responsiveness, Supervision, GP practice staff, Deprived patients, Sense of Identity	GP placement: Learning activities, educational value, social relationships	Outcomes	Role in setting
	Drop-in sessions, Administration, Exposure to patients in deprived settings, Understanding the role of community providers	Community placement: Learning activities, educational value, social relationships		Learning through talking
	Material covered, Bridging learning between the GP placement and community placement, Structure of sessions, Lack of clinical and deprivation content	Teaching sessions: Educational value	Processes	Subject matter experts
	Overall perceptions, Actual experiences aligned to expectations, Programme structure, Length of placement, Recommendations for change	DDAP characteristics	Conditions	Continuity

6.6 Outcomes

The different ways in which the DDAP had an impact on the students were analysed (see Table 10). According to the Experience Based Learning model, identifying outcomes helps to understand the identity of the student which is constantly transforming and developing within the student during learning.

Table 10 Overview of DDAP student outcomes

Practical learning (PL)	Real patient learning (RPL)	Affective learning (AL)
Clinical skills, management plans and medical knowledge	Understanding health-seeking behaviours	Compassion and frustration in caring for patients from deprived areas
Dealing with the unknown	Unsettling emotions	Satisfaction
Career pathways		
Psychosocial determinants of health		

6.6.1 Practical learning (PL)

Proficiencies are criteria that relate to areas such as applied knowledge, attitudes, skills, and an enhanced ability to learn in practice settings[178]. Practical learning (PL) refers to the development in areas of knowledge and attitudes. Proficiencies are perhaps the more tangible areas of the curriculum that students may recognise as being pertinent to their sense of identity of becoming a qualified doctor, a community of practice of which students are striving to become legitimate members throughout medical school.

6.6.1.1 Practical Learning: Clinical skills, management plans and medical knowledge

The general practice placement helped students to improve their medical knowledge and become more comfortable in dealing with patients. Involvement with general practice consultations helped the

students to apply knowledge to workplace patient experiences, which in turn further developed clinical skills. This development was particularly evident at the end of the programme. The DDAP experience was positively regarded as it prepared students for their final year. Students received complex and contextualised learning. In particular, they learnt about management plans which are a key part of a Foundation doctor role.

> *You learn about different conditions, normally conditions that you wouldn't see in a hospital… You learn more communication skills, practise them more, get better at examining, just become generally more comfortable and confident… It's always challenging to stretch your knowledge of things that you didn't know about before.* [DE1]

> *It's helping hone my clinical skills greatly. I'm seeing a lot of patients every day and the variety of pathology. It's just fine tuning the skills all the time.* [DM4]

6.6.1.2 Practical Learning: Dealing with unknown diagnoses

The varied nature of patient presentations in general practice helped the students to learn, as they required different knowledge to deal with each respective case. The unknown nature of general practice consultations in advance helped students to think through a diagnostic case rather than being previously informed, as is more commonplace in hospital settings. The following excerpts suggest a definition of competence which is importantly different to being able to demonstrate the ability to do clearly defined tasks in test situations.

> *In other experiences, they've told you what you can go and see, for example they've put you on a day where you've looked at cardio patients, they've put you on a day where you've looked at respiratory patients, whereas this you just take each patient as it comes, you don't know what you're going to get.* [DM5]

> *Depending on the GP will say 'Well what do you think's going on? Give me a differential as to what might be wrong with the patient' and then they'll ask you investigate as to how you go about finding what is wrong with the patient and manage it and treat it and what you know about the conditions.* [DE4]

The unknown nature of patient presentations also helped students to highlight areas of strengths and weaknesses in their own knowledge and skills. This is an important stage in learning, to be able to recognise one's own incompetence in performing a task[159]. It is an example of a virtuous circle within Experience Based Learning, as it demonstrates the trajectory of how being constantly challenged reinforces the existing and identifies the need for the new.

> *Doing solo surgeries; obviously you don't know what's going to come through the door and some of it is fine and like pretty straight-forward and some of it, I just end up feeling a little bit out of my depth with… really challenging and tiring at first but it has become a lot easier, which is good.* [DM2]

> *It helped illustrate some areas where I need to do some more work; areas of weakness I should say….learning points about what I need to improve my skills on and what areas of knowledge are lacking and what I need to kind of go away and read about.* [DM4]

6.6.1.3 Practical Learning: Career pathways

The experiences helped the students to understand the true role of a GP. Often previous student experiences of general practice were from a 'snapshot', half a day a week. However, the DDAP exposure to general practice over a longer period allowed students to get a more realistic understanding of the role.

> *It's given me a much better understanding of what it is to be a GP and what that involves, which is useful, just talking to the staff as well, you kind of hear what the GPs say about*

> *their job, like a lot of them love it but yeah there's good things and bad things about it aren't there and just being able to kind of talk to people more about what they particularly, what aspects of their job they particularly enjoy.* [DE2]

> *I've got a normal real life experience of GP, so when* [the GP] *having good days, when* [the GP] *having bad days. All the paperwork* [the GP] *got to do. Like I see that when I leave at four o'clock,* [the GP] *not leaving till like seven, eight o'clock… I felt like I hadn't had like a proper placement or enough exposure to say that I knew enough about it, like the working life. Obviously, we have our GP placements, but to actually do it as a job is quite different.* [DE12]

The DDAP informed career decisions. The opportunities available within medicine are wide ranging and the students acknowledged a broadening understanding of the many careers available.

> *It's also made me aware of different jobs that are available within medicine, so for example going and working in prisons, I wasn't aware of that. And the importance of working in a team.* [DE5]

> *It's given me the opportunity to work with offenders so that might be something that I want to do.* [DE10]

For some, the experience helped to strengthen the decision to pursue a career in general practice, and work in a deprived area.

> *The GP, I wish that would carry on and on and on, I wish that I could get a place there. I really like it (laughter) I'd really like to be employed by them…. They're really great!* [DM10]

> *It's inspired me to definitely work in a deprived area and it's given me lots of kind of ideas for the future… what I'd do and how to improve access to healthcare.* [DE11]

> *I've learnt that I do want to be a GP and that was sort of one of the main things I wanted to get in this project. Could I work*

> *in GP day to day? It's definitely confirmed that for me. ..People always say in the GP, 'We haven't put you off?'; 'No!' we've had some hard days but no. So yeah, even with the hard days I still want to do it!* [DE12]

In contrast, the experience left some students feeling they did not want to pursue a GP career. Importantly, through the DDAP experience the students developed reasons for deciding this, particularly based on the acceptability of repeated patient contact.

> *I don't want to be a general practitioner, that's for sure! It's not the job for me…It's too mundane. It's an alright job but I'm not big on long term patient contact. For me, seeing people week in and week out with the same problem, back pain, coming back and back and back it's just not, I'd lose patience with them. Not literally lose patients, but I'd lose my patience!* [DE4]

> *I don't think GPs enjoy doing general practice anymore 'cos there's not enough time; patients don't enjoy going to the general practice 'cos it takes them six weeks to get an appointment and then they've only got ten minutes to get their point across and I just don't want to work in that kind of environment.* [DE7]

On the whole, the DDAP experience was followed by an ambiguous attitude towards a future career in general practice. The longitudinal, repeated nature of patient contact may be favoured by those who want to pursue a GP career.

> *I didn't hate GP but I'm not gagging to do it either.* [DE1]

> *I'm still on the fence, but when it does come to making a decision I think that I've got more understanding to make the right decision compared to at the start of the programme.* [DE8]

> *There are some patients that I wanted to know what happened and I think that's a good thing and that made me think I do want to be a GP. Because I'll be thinking 'Oh what happens then?' but if you're their GP then you'll find out… you can look after people for a long period of time rather than at a hospital where you might just see somebody once then that's it.* [DE10]

6.6.1.4 Practical Learning: Psychosocial determinants of health

The DDAP covered informative topics that had not been covered in the previous medical school curriculum. Some of the particularly useful topics covered in the teaching sessions were about the structures of healthcare funding in relation to deprived areas. This finding is an example of how complex, contextualised knowledge is typical of applied (workplace) learning.

> *Lots of different sides to medicine, so like prison medicine, and organisations that work specifically with people we maybe miss like the domestic abuse charity, so it's really useful. I've learnt a lot about social issues, things about housing and benefits and how those things all relate into health, particularly mental health.* [DE2]

> *Working with the homeless outreach teams was a real eye opener because I've never done anything like that before… we got in the car until two a.m. and just drove round, going to places where you'd usually avoid like parks at midnight and things like that and trying to find people. And we actually did find someone who hadn't been known to the charity and got to go to the assessment centre.* [DE11]

The quote above was about a two-day organised visit which gave students exposure to a homeless charity organisation. In general, the community placements were extremely valuable in facilitating learning about the psychosocial determinants of health and considering a 'whole person' approach to medicine.

> *Most of the people who use that [community] service, I guess they're using that service because of some aspect of deprivation, yeah whether like financial or social or whatever… Gaining more of a kind of holistic understanding of the things that make people behave the way they do in terms of lifestyle choices that contribute to their health.* [DM2]

> *It's good to learn about finance, I think that's a big part of people's health behaviour. Especially in deprived areas, how the benefits work and what struggles people might have with those… it's like a whole person approach, getting the person the right benefits, getting them into health care, like liaising with social services.* [DM7]

The students learned about the role community organisations have in addressing healthcare. People who access community services are often those in deprived areas. Community organisations are sometimes not particularly well connected to general practice and other healthcare settings. This knowledge about the role of community organisations was identified as being especially important for GPs who work in deprived areas, so that they can signpost patients to appropriate organisations and be more comfortable in dealing with complex issues.

> *I've learned a lot about the role of community agencies in society which I didn't know very much about before and that's been really useful to understand more about that and more about how they help people.* [DM11]

> *I was sat in a meeting with probation and the [organisation A] were there, but also [organisation B] and they were like asking probation if [organisation B] have partners that have got children so they can identify them so they can do some work… as a GP, you've got to know about different services available 'cos someone might come in and you might be able to signpost them… rather than thinking 'What are we going to*

> *do with this person?' it's important that we become aware of what services there are.* [DM10]

> *I've seen patients who present in the community. Often they don't want to go and seek healthcare professionals and so they're seeking advice from community members because they trust them. And then these community members are having to say, 'Go to the doctor' and that makes patients more likely to do so…I've realised this link between community care and primary care. They work together to improve access to healthcare for patients living in deprived areas. I didn't realise to what extent that happened. I was quite surprised and impressed.* [DM11]

Specific, practical learning about health issues related to Lesbian, Gay, Bisexual and Transgender (LGBT) communities helped one student to have an affective outcome: confidence in dealing with difficulties related to LGBT communities. The Experience Based Learning model acknowledges that developing knowledge and confidence may lead to increased participation in learning when faced with similar issues in the future.

> *I think LGBT is something we don't get teaching on and something that I did not know much about. Like anything, if you don't know much about something it's quite awkward when you approach it because you're not familiar with it. So, I feel more confident now if I were to see a patient who happened to be LGBT. I'd be a lot more comfortable in a [GP] consultation.* [DM11]

> *I feel like I've got a bit more knowledge of what people are actually going through and the true extent of what people are doing. I think I've got more confidence in dealing with people's problems and helping them.* [DE7]

In Teesside, not every location, nor every patient, is *"deprived"*, therefore the placements helped the students to appreciate the contrast between different settings.

> *The community placement has been useful in that I've seen a lot of the varying levels of demand and wealth and depravity across the wider community of Teesside. Having been to really, really posh people accessing healthcare down to really, really poor people accessing healthcare. So the diversity has been quite wide.* [DM4]

> *I've never had experience on the [community placement] before and that gave you a comparison between deprived and not deprived areas so that was quite good.* [DE5]

6.6.2 Real patient learning (RPL)

Real patient learning (RPL) is where students have their own specific experiences of learning related to people, rather than broad learning outcomes[178].

6.6.2.1 Real Patient Learning: Understanding health-seeking behaviours

In addition to the higher prevalence, and diversity, of illnesses encountered in general practice consultations amongst patients in deprived areas (which helped to develop clinical skills), the added value of seeing potentially more challenging patients facilitated further learning opportunities. The DDAP helped the students gain an understanding of wider issues related to health, beyond a medical model of symptom, diagnosis and cure.

> *You learn a lot about people's lives and what they're dealing with when you understand where they're from, rather than just being in hospital.* [DE1]

> *A lot of experiences talking to people at the food banks. It's taught me a lot more about how the benefit system works and how that's currently working and how that's changing and the practical impact of stuff like the bedroom tax on people…it's really useful just to have spent a lot of time kind of immersed in looking at other factors that contribute to health and like actually meeting people and learning about their situation and learning about the choices they make.* [DM2]

> *I've got a better understanding of how, like a person's home and finance and social situation can affect their health and mostly their health seeking behaviour; how likely they are to go to the GP, and listen to what the GP says, and how they go about seeking healthcare.* [DM7]

From real patient experiences, the students learned about the reasons why patients from deprived areas accessed healthcare and when this access occurred (e.g. often late presentations).

> *In deprived areas the patients tend not to come to the [general] practice unless they really need to, and they're the people who really need the treatment, who are not getting it.* [DM5]

> *A lady came with symptoms that had been going on for a very long time, that would be very worrying to anyone else, and she'd chosen not to come in and she chose not to attend the referral… it's really hard to understand, but when you go back and reflect on it, you can see that she has a very difficult home life, there's a lot going on, she's got drug and alcohol problems and all that might take a precedent over her health. So it's understanding how people's lives might reflect on their opinion on their health and how important it is.* [DM7]

> *A lot of the problems that they come in with aren't like physical problems often it's like social or psychological and their living arrangements has an impact on their physical health.* [DM10]

The students had powerful patient experiences which vibrantly demonstrated the negative effect deprivation can have on health. Patient illnesses may be exacerbated by not being able to afford preventative medication.

> *So for example, like having no transport; financial, not being able to afford a taxi and not really realising what services are out there, like walk-in centres that would deal with their medical problems.* [DE5]

> *You'll have a patient come in and they'll be given like two drugs, so they'll be given an anti-inflammatory and then they need to have like a stomach protection as well, so that's two prescriptions that they have to go and get. And they'll be like "Oh that's going to cost me a fortune!"…. I spoke to the pharmacist and she says that they have patients come in and say "Which of these lists is most important? Which one of these drugs is most important cos I can only afford one?"* [DE7]

> *There was one person with diabetes and living on the streets had really messed up the diabetes and stuff and drinking as well had like messed it up and it was just seeing how those interplayed so it was a lot more acute… their illness had been definitely impacted by poverty.* [DE10]

The students participated in GP home visits. These were felt to be especially relevant to the DDAP intended curriculum as they allowed the student to further learn about factors that impact on a patient's health. The interprofessional nature of real patient learning was also identified through the acknowledgment of learning with health visitors.

> *The home visits are good. They're sometimes a bit cramped. Not always the nicest homes but it's good 'cos it gives me experience of deprived areas. I go with the, oh what was it*

> *called, health visitor and I went in some quite horrible homes, that was quite eye opening.* [DM1]

> *Home visits have been a really good part of it, 'cos they're looking more I guess at social stuff and deprivation and seeing people in their home context.* [DM2]

6.6.2.2 Real Patient Learning: Unsettling emotions

The ability of the DDAP fostering real patient learning was discovered. The DDAP was the first time most students had experienced deprived community settings and provided care for patients in these areas. The experience evoked uncomfortable, 'challenging' emotions within the students as they were exposed to real people.

> *I found it challenging speaking to people of different cultures, different backgrounds…It's something that you probably won't have done before in an area of society that you probably haven't had much experience of.* [DE1]

> *I remember one boy, who's only nine years old and he was obese and was 110 kgs which was just shocking. I just found that whole situation really difficult because I just had to keep reminding myself 'He's only nine! He's only nine'. When you were trying to talk to him about like the consequences of being obese, which is an adult problem really and I'm just thinking 'A nine year old shouldn't have to think about diabetes or his heart or things like that'. That was really difficult and he was getting really upset as well.* [DE12]

The challenge in providing healthcare, or even just talking to patients from deprived areas was evident. The students often found it hard to comprehend the patients' complex attitudes to their lifestyle and healthcare, and to relate to their diverse backgrounds.

> *I think because it's working with girls who are my age or younger and who have really different backgrounds, I just felt*

a bit like 'Oh I don't really know how to relate to these people'. [DM2]

Seeing patients not do what they're told by the doctor. People would stay at home longer than they should have and they should have just [sought] healthcare sooner. [DE5]

A lady had a breast lump and she'd had horrid symptoms for nine months and not come and then she was sent for a two week rule so like querying cancer and she didn't attend it and I think it was like disbelief and sad that she'd not, she'd made the effort to come to the GP and have it examined but she'd not gone any further with it. And it is a frustrating because, not on her, like her behaviour wasn't frustrating, it was that no one was trying to make the extra effort to go and see why. I think on the GP's side of it, it was frustrating. [DM7]

6.6.3 Affective learning (AL)

Affective learning (AL) outcomes refer to areas such as confidence, motivation, and sense of belonging[178]. Affective learning domains are perhaps the areas of the undergraduate curriculum that are not so easy to explain, measure, and develop.

6.6.3.1 Affective Learning: Compassion & frustration in caring for patients from deprived settings

Once the students developed an understanding of health-seeking behaviours, this was often followed by an affective learning outcome, as the increased awareness led to compassion for deprived populations. Students observed that often patients in deprived areas waited until the last moment to get treatment instead of preventative care. The community placement was particularly helpful to allow students to gain experience of deprived settings and the population who live in them.

> *Making me more aware of how much need there is, how real people's struggles are and how widespread they are and how much more there is to that than the kind of snapshot glimpse we get of that when people come into hospital, come into the GP's surgery. It's encouraged me to have a lot more compassion or to try and think in a more kind of empathic, compassionate way.* [DE2]

The longitudinal placement gave students a 'deeper', more realistic understanding of deprived areas.

> *Learnt a lot more about how people who are deprived are actually living because although I thought I knew stuff about it but I've seen it a lot more deeply and the length and breadth of what people are deprived, it's quite horrible.* [DM1]

> *I found working with the recovery service quite difficult because the clients, I just couldn't get my head around their lifestyle at all. That was quite difficult at first but obviously spending a bit more time with them and the teaching sessions opened my mind a bit and just get to know them. I can have a more meaningful consultation now. At first I would just go back and be like 'How is it possible; Why do they choose to do this; and why has she done that instead of doing this?'.* [DE12]

As the students learned more about the deprived populations, they gained an appreciation of the complexity in providing healthcare for these populations. The experience created a new sense of meaning and often resulted in the students feeling *"frustrated"* by the situation.

> *I guess that's the frustrating part of it, you know what they need to do but they just can't do it for whatever reason. So for example, stop smoking, they know it's bad but they can't do it. What can you do?! They need to lose weight, they won't. What can you do?!* [DE5]

> *I came on to it* [DDAP] *thinking 'Oh these are people that really need some help and it would be really nice to help*

> *people that really need it and feel like you're giving something back' but coming up against resistance and having people that they don't want any help and you're just inconveniencing them and there's no way to help them. I guess that's been difficult coming to terms with the fact that you can't. You're not going to make a difference to some people.* [DM7]

The analysis identified individual differences, as this frustration led to a range of feelings, including negative feelings of helplessness, and more positive feelings of motivation to learn more and challenge the situation.

Helplessness:

> *I learnt a lot more about what deprivation is and how it affects you and how many people are deprived and how it's just so difficult to change it and so inbuilt into society, it's really difficult to help those people because they're very difficult to reach…I guess it's a bit frustrating that you can't do everything and you can't change things as much as you want to and things won't get better easily or ever, so … bit depressing.* [DE1]

> *In reality there's not a lot I can do personally about it other than to be more aware of it in future practise and try and encourage patients to come when they've got problems.* [DM5]

Motivation:

> *I've got an overall better understanding and an overall kind of excitement to go and learn more about deprivation and to use what we've learnt on the programme more in the future as well. Kind of build on that, feels like a starting place rather than a kind of ending point.* [DE2]

> *It's really opened my eyes to the things that people are dealing with and how prevalent things are and how the current system just really isn't scratching the surface. Things like paying for prescriptions, like it's £8.05 for a prescription and that's crazy and people can't afford it and we're not doing anything about it. I think it's just given me more of an awareness of what is going wrong and made me think that in the future I want to keep that awareness and try and do something in my community that's going to help that.* [DE7]

This experience of developing compassion may lead the students to become better doctors in the future. Based on their experiences with patients from deprived areas, they may tailor their approach to consider the whole person rather than just a medical condition.

> *I've got more empathy with people and what they're going through but I think it's also made me step back a bit and think that you can't fix everything for someone and that's not your job. You have to be in your professional role and do what you can for that person in your role.* [DE7]

> *I understand a bit more about why they don't seek healthcare 'cos often you know they don't exactly get great responses from health care and get judged a lot often because the GP just doesn't understand or you, so it's not that they're being outright mean or rude, just maybe a misunderstanding so I think it's really good if you are more aware of like minorities. It will help you as a future doctor to communicate well.* [DM11]

> *I think you try to be open minded and you intend to be but unless you've been challenged I guess in a way that we have now, then it's difficult to put into practice. I think I will be more open minded now and try and see sort of where they're coming from and look at all aspects of their life rather than just their medical condition or why they've come today.* [DE12]

6.6.3.2 Affective Learning: Satisfaction

During both the midway and the end of placement interviews, the students were generally positive about their DDAP learning experiences. The quotes show that satisfaction is linked with various components including evidence of important real patient learning and influencing career choice, which are not trivial outcomes.

> *I'm really glad I did it. It's just worked out really well, it's been an aspect that I've been really interested in, it's fed into what I'm going to do next year, fed into future choices.* [DE2]

> *All my other SSCs were awful and like I had a great GP placement in third year but this [DDAP] was so much better. Like this is the best, like medical, clinical, social experience of the whole four years for me!... I think you don't find that many things that really inspire you. So, when something does it's just a great feeling and you feel like you know where you're going, you know you're doing the right thing. I hadn't really felt like that before on the course.* [DE11]

A potential weakness in Experience Based Learning was identified through negative instances of satisfaction affect. The Experience Based Learning model does not consider individual differences between learners. There is an assumption in the model that all learners learn the same way whereas the data highlighted that there were differences between students relating to the satisfaction affect side of learning.

> *Looking back on it, it's not completely positive which it could have been so I'm not sad I did it but I have been frustrated by quite a few things along the way... But, it's been valuable in a lot of things so I'm not upset.* [DE1]

> *It's [DDAP] really useful for the overall medical degree and getting ready for fifth year but it's just not what I expected to be doing on this placement. It's not got the focus that I thought it would have.* [DM7]

The students were satisfied with the teaching session topics covered and with the speakers.

> *From the teaching sessions' point of view, they've been quite interesting, we've seen a lot of very different people come in and talk about very different things and they've all been quite interesting.* [DM4]

> *I think it's great, the facilitators are so passionate about the talk that they're giving and they're such experts in their field and I think they're really great in motivating you because of their passion so that's been amazing to see… you can tell that they want to do this and they want to get across the messages and so yeah, it's been, small group has really worked well with that because it just facilitates better kind of discussions.* [DM11]

The students were very satisfied with the general practice placements. This was mainly down to patient contact (participation) and having real patient learning experiences of the wide variety of illnesses presented in general practice.

> *I've been really happy with the exposure that I've had…the fact that you've got patient contact… and that you're seeing a wide range of medical conditions. You never know what you're going to see each day.* [DM5]

> *My GP placement's been the best I think. That's what I've enjoyed the most.* [The GP] *seems to really understand what we're doing with the project so is keen to like look for opportunities related to the project and* [the GP] *really enthusiastic about it. I think that's helped a lot; that it hasn't just been a GP placement.* [The GP] *helped me like relate it to what we're doing in class as well.* [DE12]

6.6.4 Summary of outcomes

The DDAP provided opportunities for real patient learning, affective learning, and practical learning. Real patient learning helped to give students more practice of their clinical skills in dealing with whatever comes through the door. The students began to tackle the difficulties of consulting and found it challenging at first.

Affective learning related to compassion for patients in deprived settings and having a much better appreciation of the difficulties they face with their healthcare. The community placement provided an opportunity to experience the ‘deprived’ setting through an immersive experience. The community placement gave students enhanced exposure to populations who live in such settings and the issues they faced. Often the students saw a diverse group of people with a range of illness concerns.

There were many practical learning outcomes from the DDAP. The students understood much more about the role of community providers in society and how they help deprived communities. The teaching sessions allowed students to learn about issues that are normally not covered by the undergraduate curriculum, including topics such as benefits systems, NHS structures, and prison medicine. These are pertinent to understanding how healthcare is provided in deprived settings. Often the sessions were taken by guest lecturers so they had expert knowledge on the topic. The DDAP also helped students to understand the role of a GP and to inform their career decisions, albeit sometimes negatively towards GP careers.

6.7 Processes

The prominent learning opportunities encountered during the DDAP were identified; this helped to establish what the students experienced and how the DDAP facilitated learning. The DDAP processes of learning involved observations, rehearsing and performing, and supported participation in authentic practice (see Table 11). The term 'authentic' practice relates to student experiences in 'real life' contexts and genuine workplace activities involving health and social care[161].

Table 11 Overview of learning processes

Instructional design	Participation	Support
Observing	Rehearsing and performing	Supported participation in authentic practice

6.7.1 Observing

A particularly valuable observation experience in the general practice and community placements was going on home visits. The visits allowed the student to see the patient in their home (natural) environment compared to in a general practice or hospital setting. Seeing patients in their own homes was often seen as a *"privilege".* Healthcare was on the patients' 'ground' rather than the formal setting.

> *I've had the privilege of seeing patients in their own home and in the GP setting, comparing and contrasting different consultation skills that you would use for that… Because you're seeing the patient in their home setting and when you've got ten minutes in the GP setting, it's difficult to cover all their social aspects.* [DM5]

> *I've enjoyed doing the community placements and getting out and actually meeting people outside of the GP surgery… 'cos people behave differently when they're in the GP surgery to how they are when they're in their own home.* [DE7]

The patients may be more relaxed when healthcare is provided in their home rather than when they visit the general practice. Seeing patients in their home setting helped students to consider everyday lifestyle factors that contribute to how likely a patient is to manage a condition. Through authentic experience of observing and experiencing the settings in which patients live, there was sometimes no need for certain questions because the visible surroundings provided the answer.

> *I do like going into people's homes because you see what they're really like in their own environment, they're a lot more relaxed I think. 'Cos a lady we saw yesterday was falling asleep whilst we were talking to her and I don't think she'd do that if she came to the GP's surgery.* [DM1]

> *When you're in their own home, you can see them visually, you don't need to ask. It's a fair question of the GP to ask you 'Have you got a toilet downstairs or upstairs?' if they're immobile. But when you're in the home, you can see what the setting is, and I think that's really important when you're considering management plans for patients…For example, if you're going to put them on water tablets it's going to make them go to the toilet quite a lot.* [DM5]

> *People are more open and the fact that you're going into their house and seeing how they live, you get a different idea of the problems that they're facing and they let their guards down a bit more. They know that you've not got a time limit so you can actually get some idea of them as a whole person, which is really helpful.* [DE7]

In the opening two to three weeks, the students appreciated observing other healthcare professionals including GPs, nurses and allied health professionals during this initial familiarisation. This enabled vicarious learning to see how different healthcare

professionals varied in their approach with patients and how patients responded differently to different professionals. This may be particularly relevant to deprived areas as there is a higher prevalence of specific illnesses (e.g. smoking related, drug abuse, depression) and certain doctors may be chosen by patients to treat particular illnesses.

> *I think I had two weeks at the start where we just sat in with other people… I sit in with like other health care professionals, like midwives and stuff and obviously that's more just observing.* [DM2]

> *I always liked to sit in with a GP because you see how they manage their consultations and how they either recognise or like brush aside patients' concerns and the issues that they're really bringing… you recognise things that you want to do and things that you don't want to do from other doctors.* [DE7]

> *It's really interesting to see how different GPs attracted different patients like; one of them would get more psychiatric patients with like anxiety and depression. And it's like interesting to see how someone's personality draws different types of patients.* [DE10]

The GP played a role of a gatekeeper in supporting students to have independent experience. Sometimes, patients were not suitable for student involvement so the GPs decided to let the students observe.

> *Because quite a lot of the cases are complex, it's not always possible to see patients on my own…The GP would look through their lists and see which patients were suitable for me to see.* [DM5]

> *I just watch basically, yeah with the other GPs. So it's not as fun…I think the other GPs obviously don't have as good an idea of me, of whether they feel like, 'cos it's only just a one off sort of thing. I don't know if they would want me to be on my own with their patients.* [DM11]

The limiting function of observing was acknowledged and how 'tedious' it may become if the placement continued like this. The students reported that they often wanted to participate more actively. However, it may be more appropriate for some students to continue to observe, in order to develop confidence until they feel ready to participate.

> *Sitting in and observing, it was useful for a week to get a refresh, I think if it had been any longer than a week or two observing it probably would have got a bit tedious.* [DM4]

> *Cos I'm sat there and they've got like ten minutes or something and I don't, sometimes I just want to sit quietly 'cos I know that they've got a lot to get through and stuff. So it's just, but at the right times we talk and discuss.* [DM10]

> *I kind of hoped that I'd be able to see patients on my own and that happened quite quickly 'cos I think sitting and watching is quite boring and I'd rather just try out things.* [DM11]

The observation role was sometimes detrimental to students' sense of belonging within the workplace environment, in terms of the productive role they could take on. The community placements enabled students to be involved with drop-in style sessions, which often involved observing and/or rehearsing. There were, however, missed opportunities for supported participation, in both the general practice placement and the community placement. Some student learning experience perhaps needed to be more contributory.

> *On the Friday it's like a drop-in, so it's, you see about five or six clients but I don't talk to them, I just sit there whilst the other person talks to them.* [DM1]

> *Sometimes in the general practice, the types of patients that they had were not appropriate for medical students so all you could do would be to observe; not like the kind that you can go in and take a history from and examine and get the practice in…not allowed to do anything…I guess probably that's how it*

> *should be 'cos I'm only there to observe so they [patients] don't need to have that much involvement with me, do they?* [DE5]

> *At my community placements, still felt like a medical student 'cos you don't, you're just, most of it is just kind of observing and chatting.* [DE11]

In some instances, there was frustration, as students were only allowed to observe rather than being active, even though they had the capability to perform the required tasks. This frustration was often regarding limited participation in 'clinical' learning opportunities in the community placements. The quotes below highlight elements of missed opportunities for supported participation.

> *You can only observe and you're not allowed to do anything so it would have been more beneficial if you could practise clinical skills and things ready for next year. Rules and regulations they're not allowed to…That's all I do, observe, I'm not allowed to do anything else.* [DM5]

> *My community placement had to have Thursday and Friday, and Friday's non clinical so it's just like a nothing day and they're just kind of like a business where you do businessy sort of things, it's probably not really relevant to me.* [DM11]

This ambiguity in the sense of belonging and a lack of a clear role fostered an affective outcome of 'frustration', signifying a negative association of the observation process. This frustration was associated with some students questioning the purpose of the community placement. One student saw it as a question of whether the placement was for the benefit of the students or the community organisations. There was a trade-off between the educational benefits and the negative affect of being seen as an extra pair of hands. This highlights a negative instance of organisation support at the condition level.

> *I know the charities wanted us to be there for longer so that they could get more out of it but I don't really think it's about that, I think it's about us getting stuff out of it. I know it's a two way thing in a way, but really, we're at university to try and learn things… we're not just there to be useful to others, we're there to try and learn as much as possible…I do sometimes wonder how much it's related to deprivation because obviously the clients are deprived but a lot of the time is spent writing letters for them, it's not to do with their deprivation. So I'm not quite sure how suited it is to the project.* [DM1]

> *I think the [community placement] had the potential to be better, like more interesting and more relevant but because of the nature of what it is, I didn't have much opportunity to see women in the community or have much input on how, on what the women were doing in the refuge.* [DE7]

> *The [community] placement I just felt like I was, like working in a charity, which I was basically so it was just getting to understand the charity and the way they worked.* [DE10]

6.7.2 Rehearsing and performing

The students were involved with rehearsing and performing in the workplace. They relayed information which they had gathered from the patient, to the GP. This demonstrates student activity in authentic experiences, as the information was new to the GP. Students were consciously aware of how rehearsing and participating aided their learning and transformed negative emotion affects (e.g. *"I was crap"*) into more positive outcomes (e.g. *"getting better"*).

> *I'm mostly taking a history and if I feel confident I'm examining them on my own and then reporting it back to the GP and they finish it off and prescribe anything that needs prescribing.* [DM1]

> *It's been quite good getting back into it [patient contact]. When I first started off I was crap basically, but slowly, it's just been getting back into it... First week was just getting used to everything again and just getting used to taking histories and just remembering all the different skill styles and then after that it's just slowly getting better, slowly getting more involved as well.* [DM8]

The students developed skills through hands-on practical experiences such as performing injections, which led to positive affects. The students played an important supportive role between the GP and the patient. However, there were very limited descriptions of practising clinical skills other than history taking, examination and management plans.

> *The lady that I've seen with the tiredness because they're querying a learning disability with her and because I'd seen her a few times, in the third consultation she felt comfortable enough to tell me that she wasn't understanding what the GP was saying and asking for it to be explained in another way which I think, if she didn't know us, she wouldn't have been comfortable to do that.* [DM7]

> *Quite hands on so she let me, like take blood and do the urine analysis and blood pressure and all those little checks which obviously I'm quite confident to do so she let me do it.* [DM8]

The informal support for learning, provided during the DDAP, enabled students to learn about healthcare management at a deeper level, and build on pre-existing knowledge that had been covered in the early stages of the degree. The general practice consultations and home visits helped the students to appreciate factors which are important in healthcare management, as they learned from informally talking to patients.

> *You learn from the person as a whole and you learn their story and you learn why they're consulting... you know and chat to*

> *them far more informally than you would in a doctor's surgery* [DE2]

> *I kind of took notice of where they [patients] all came from and we talked about how kind of, what areas were deprived and how this affects the way they present. And affects almost kind of their health behaviour so that was interesting just to get a little bit of an insight into why kind of they were the way they were and it kind of helped me as well when I was talking to the patients, to get a better understanding of them.* [DM11]

The enhanced understanding and time to talk to patients (during the community placement) was acknowledged as not being possible during a general practice consultation. Student involvement in the community placements was often in a 'volunteer' role.

> *It just feels more like a volunteer with that charity …it just changes the kind of focus of learning to be more, less on medicine and more on kind of social things and deprivation…I've been involved with people in a way that's kind of a bit more in-depth than you'd ever get in GP, like the same girls come back to the drop-in every Tuesday evening, you get to know a lot more about their lives and kind of issues that they're facing than I would do if it was just one consultation.* [DM2]

> *I do see people with medical needs and have medical conditions, most of them like mental health and drug and alcohol but that's not why I'm there seeing them, I'm there to see them like with finance and housing and social issues and stuff like that but it has been frustrating when I've tried to write a case report and I don't know as much as I'd know if I'd done a medical interview with them.* [DM7]

> *The people that I see on my community placement are probably people who don't want to go to the GP and don't want to access healthcare. When they find out I'm a student*

> *doctor I think it's a great opportunity for them to kind of give me advice and let me know why they don't kind of like going to GPs...I feel like my role has been just as a learning student for the future and I think they really appreciate that.* [DM11]

There were positive and negative outcomes from participation during the community placement. One student was dissatisfied with the nature of the 'volunteer' community activities. However, crucially, the informal learning process helped students to understand why patients from deprived areas struggle to access healthcare. Continuity was identified to help bridge the gap between the students and the potentially challenging people they came into contact with, people who may not have been open to communication at first.

> *Expecting me to be on the phone and to not have any other work to be doing but just answer the phone and answer the door. Just being expected to make leaflets and posters for their fundraising.* [DE1]

> *With the community placement I didn't feel like a doctor at all, but that was lovely, it was really nice not to feel medical and there were things that, like it was useful to have medical expertise about, so like when we saw people who had mental health things, it was useful to have a bit of a medical basis, it was nice to be able to bring that to the charity. But yeah it didn't feel like I was a doctor, like I think people probably forgot that which was nice.* [DE2]

> *At first I think they didn't kind of like me being there but 'cos again, I was there for so long, especially with the groups, I went to a lot of group meetings and I think after a few of the meetings they started to kind of like accept that I was there.* [DE11]

6.7.3 Supported participation in authentic practice

The power of others, namely GP supervisors, helped to determine

the students' sense of belonging within the community of practice through the support they provided. This was mainly in terms of the responsibility the students were given and their level of involvement with patient care. There were examples of supported participation in authentic practice and this process resulted in real patient learning.

> *For the first couple of weeks I sat in on consultations and now see patients independently, take their history, do the examination, fill in the notes on the computer; we then go through to the GP and I present the patient back to the GP and the GP chips in or adds anything that they want to do and then prescribes for them. Or they discuss with me what the investigational approach would be, what the management plan would be and then the GP acts on whether they agree or not, basically.* [DM4]

> *At the start of the programme I was a bit rusty to put it lightly and when I had my surgeries I would take a history and then go back to the GP and ask like 'What should I do next?' And then they would suggest something to do and then go back and like back and forth and I was spending quite a lot of time doing that. But towards the end I was just a bit more independent and I was just getting through everything and then I'd go and see the GP and I was spending more time with the patient rather than with the GP.* [DE8]

> *It kind of felt like I was a real GP because I had the ten minute slot to figure out why they were here, and get their history. Go back to the GP and present the case and then we both went back together, so each patient we went through their background and why we think they may be presenting and then it was a really great experience to kind of act like a GP.* [DM11]

There were many examples of contribution leading to positive identity emotions. When students were allowed to contribute to patient care, they felt like a doctor, hence, the process of transformation in identity

was captured by the data. The students learned how to deal with patients by utilising and developing their communication skills. The words highlighted in the quotes below poignantly demonstrate the value of how participation in patient care enabled students to transform their sense of identity. Supported participation provided opportunities to learn by being challenged to think independently (e.g. formulating management plans and diagnostics), which is a core condition of Experience Based Learning.

> *Having more time with patients and seeing patients I do think I'm getting a little bit more to grips with what patients come in with, which is good. I think* ***seeing patients on your own is the thing that makes you feel like a doctor*** *because when you've got a doctor in the same room, you still feel like a student and the patient still talks to the doctor even though the know they're supposed to talk to you so really it doesn't help very much. I think one on one time with patients without a doctor in the room is probably the best way to feel more like a doctor and you get more out of it.* [DM1]

> *Seeing patients independently and formulating management plans and diagnostics, that's a key area that's quite difficult to develop as a medical student before you become a foundation doctor at the end of year five because you're being taught constantly stuff, but you never get the opportunity to* ***actually play the role of the doctor*** *so from that point of view it's been very good for that… Yeah I pretty much do that every day.* [DM4]

When students had independent time with patients they began to feel like a doctor.

> *I've kind of felt more like the registrar, more like an F2 GP placement with having my own clinic.* [DM7]

> *When I was like in my own room with the patients then I was starting to feel that I'm just preparing to be a doctor.* [DE10]

The following quotes were fantastic examples of progression in identity emotion through supported participation, demonstrated by the fading of support and an increasing part in contributing to patient welfare. Aside from the fading of support, the GP supervisors also tailored the level of supported participation by adapting the amount of activity to maximise student learning. This included enhanced GP supervisor support, i.e. low student participation in patient care, and less hands-on support, i.e. high student participation in patient care.

> *So towards the end of GP, yeah I did feel like there were some consultations that I was basically doing myself, I sort of felt like 'Oh yeah, like I'm almost like a doctor now. You know I just need the doctor to sign something' whereas at the start it felt like 'I don't know what I'm doing, I've just taken a history and that's it'* [DE2]

> *They're [GP supervisors] taking time, taking time out to talk to me, giving me opportunities to like spend time* [with] *patients when I'm there but like letting me do examinations and stuff and just like really taking the time, just really welcoming, I've really, really enjoyed that experience.* [DM10]

> *I haven't been watched whilst I've been with the patients, I've literally just been on my own. But I think kind* [the GP] *gains an impression with the way they* [patients] *are with me afterwards… I feel confident that the GP has the confidence in me to be on my own and so early on as well, I think that gave me more confidence.* [DM11]

An Experience Based Learning feedback loop was identified. Resulting from the high level of patient interaction (participation) facilitating clinical learning (practical outcome), the students reported feeling more confident in their own ability and knowledge (affective outcome) leading to further increased participation. The poignant conversations with patients and GPs helped the students to realise their, often increased, level of competence.

> *Definitely it feels like stuff is starting to come together and patients will ask stuff and I'll be able to say with a lot more confidence than I would have done in the past 'Oh no (like) I don't think you need to worry about this disease, or this medication has this side effect' and all that kind of thing and that's been really lovely to be able to do that and feel like 'This is ok', like you know I'm competent enough to be able to say this now as a fourth year.* [DM2]

> *You become a lot more confident that you are doing the right things and you know, the process of seeing patients, taking histories, you know and then realising you ARE asking all the right questions, you're doing all the right things and then when you discuss it with the doctors and when you're giving the answers they want to hear, you kind of realise 'I do actually know quite a bit about what I'm doing here and I would be reasonably ok I think in the real world, doing it'.* [DM4]

> *You get used to the staff and the staff get used to what you can do and what you want to do. You feel like you're more of a colleague rather than just a student that's bothering them a bit, and you, like I've seen patients like five or six times over the period which is really good 'cos you feel like they have more confidence in you because they're going to see you again and they come back and they'll tell you how they're doing after they saw you last time and stuff. So you get that continuity.* [DE7]

In the community placement, there were also examples of supported participation from attending drop-in sessions and learning about preventative care.

> *It's been great as well, really, really useful and we're kind of splitting time between the women's work, so helping out with the women's drop-in on Tuesday nights and then running a life skills class for some of the girls on a Friday and then just sort of setting up food bank type things where they kind of get*

people to just come along and have a cup of tea and a chat and then if they need a food parcel, they'll give them one. [DM2]

The drop-in has been really great to see…just to kind of look at how we can do preventative stuff and start really early on and try and kind of tackle problems before they even start rather than just trying to fix them. [DE2]

I was with [community placement] so they're like floating support workers for young people that help them with housing and stuff. It was young people that haven't had the best start and they haven't really learnt the life skills to live on their own so it was kind of supporting everything that they have to do in their house. So you see a lot of things you wouldn't see as a GP. [DE7]

6.7.4 Summary of processes

The learning opportunities provided by the DDAP gave students opportunities to participate in the care of patients. The amount of participation that students had within the placements varied. When students were contributing to patient care their sense of belonging greatly increased and they felt like a doctor. Communicating with patients in deprived areas was a valuable experience.

The general practice placement was positively received by the students, especially when they were given independent consultation time with patients. Parallel consulting helped to facilitate their learning and make them feel like a doctor. Often the students spent the initial two weeks observing and settling into the practice. Home visits were a very positive learning aspect, as students could see a patient in a natural setting, and see factors that impact on their healthcare rather than having to ask questions. Students spoke energetically about the opportunity to see a patient in a more natural environment. This allowed the DDAP aims to be realised and give

students a deep appreciation of the psychosocial factors that impact on people's health and care management.

However, if the students were undertaking tasks that did not feel 'clinically relevant' then the students' learning suffered. They often felt frustrated with the lack of clinical opportunities within the placement as they were observing. In addition, such community environments may not be used to having students present and so the role was more of a volunteer than a medical student. However, the community placement provided insights which they could not gain unless they were immersed in the environment.

6.8 Conditions

The conditions of support that the DDAP provided for student learning were analysed in the data (see Table 12). The general practices and community organisations were not provided with any specific guidance from the DDAP steering group about how to engage students.

Table 12 DDAP conditions of support for learning

Planning experience at curriculum level	Delivering experience at curriculum level	Formally supporting individualised learning	Informally supporting individualised learning
Placement length	Complexity of the workplace as a learning environment	Teaching sessions	Welcoming the students
Sequencing student experience between general practice, community placement, and teaching sessions	Workplace learning opportunities	GP supervisors	Meeting people in different settings
Shortage of time allotted to general practice	Actual experiences aligned to expectations	Interprofessional learning	

6.8.1 Planning at curriculum level

It is important to consider how a learning experience has been planned at the curriculum level by organisers because of the potential impact on intended and unintended learning outcomes. The conditions of support include elements that are predetermined for the students ahead of them starting their placements, such as placement length and programme structure.

6.8.1.1 Placement length

The expectations of the extended placement length at the beginning

were influential in shaping how the student approached the placement. In terms of satisfaction, the students acknowledged a time lag in starting to feel *"settled"* within the placements. Often, this took two to three weeks before they started learning through more authentic involvement. This time lag also applied to realising what the DDAP was really about.

> *I think the time span of it obviously makes a difference… 14 weeks felt massive when we started it but actually, I think it just changes the way you think about the project and the way you think about the kind of urgency with which you have to do things…I think it's taken a while to kind of settle into actually getting a focus on deprivation and all the stuff that the programme is actually about.* [DM2]

> *I've kind of settled in to it as if it's a job. I don't want to finish it 'cos I feel like I've settled into the role and like I'm actually quite good at doing what I'm doing at the moment. So I think it's been a good length… it's been good to be there longer than we'd normally be somewhere.* [DE7]

The longitudinal programme was regarded as a positive way to overcome many of the difficulties mentioned previously in the analysis, as it allowed more time to settle, build relationships with others, and to practise clinical skills. This highlights the value of continuity of learning in one setting. The students continued learning at a more advanced (involved) level instead of having to move location and start the settling in process again. The extra time also allowed students the time to rectify areas of weaknesses.

> *I'm trying to force myself to do more in the next few weeks because I've been a little bit timid but it's good that the project's long which means that I've got time to build that confidence up over the project.* [DM1]

> *I think it's nice to be finished in that six weeks, knowing that like there's a lot more to come of it and relationships that have been built up can be built on further… So I think it's been really nice to have a longer amount of time in which to do things.* [DM2]

The value of the longitudinal programme enabled students to get to know the healthcare team properly, feel part of the team, and feel like they had an *"actual job".* This suggests that students felt they were becoming, or indeed were, legitimate participators.

> *It's good the length, 'cos you can have a long time to be able to see things and you're not moving around, you're in the same area, you're not having to get used to things again – so how people work and things, the environment, and I think that's important for learning.* [DM5]

> *I think probably the biggest thing is having a long time to spend with the same people, so I felt that both in the GP Practice and the community placement. I really got to know a team properly and got to work with them and got to know individuals and that's a really different experience to most of the ones we have in medical school. So that was lovely and probably the closest to having an actual job that we've ever come, as well, just because, yeah it's so much easier when you know what you're doing. That was probably my favourite thing about it.* [DE2]

> *Cos you're with the team so long, it feels like you're part of a team and like you know what time you're going to work, how long you're going to be there, what you're going to be doing. And it feels like you've got an actual role whereas a lot of the time as a student you're just kind of bouncing around trying to find someone that will put up with you for ten minutes to get some learning outcomes so it's been good, it's been like quite secure.* [DE7]

Continuity of patient care was also a positive experience facilitated by the longitudinal programme (condition for learning). This condition exposed students to, and reinforced the challenging nature of, providing healthcare for terminally ill patients.

> *I really enjoyed the length of time because of the continuity and like experiencing getting to know patients and I'd never really had that before.* [DE11]

> *I've seen a patient on the sort of palliative care pathway and she unfortunately passed away. Obviously it was expected but that was quite difficult because I actually got to know her over about two months so that was difficult but it's also been really good 'cos that's what you will do in GP. You don't just see someone like the day before they die; you've developed a relationship with them.* [DE12]

6.8.1.2 Sequencing student experience between general practice, community placement and teaching sessions

The teaching sessions helped to combine learning from the different components of the programme. Instead of doing a solid block of placement 'A', there was time to think and relate it to other aspects that may not have been initially associated with the topic, allowing deeper learning. The students also discussed and shared their experiences with peers. There was evidence of how the conditions created both formal and informal supports for participation. The integration and way that time was split between the different settings, including the teaching sessions in the middle of the week, helped to *"tie"* the experiences together.

> *I think it's good because you do your two days at one place and then you have a break on a Wednesday to try and consolidate things and then Thursday and Friday you're doing your next bit so I quite like it.* [DM5]

> *They are topics that you don't really come across in teaching at med school, so that's again why it's so great. And it's so relevant to what we do in the community and what we're doing in the GP that it all just ties it up together. So it's great!* [DM11]

> *Having the teaching sessions has been really good. That's helped keep us focused on our placements. I think it would have been quite easy to just go out to the community placement or the GP placement, it could easily have just become another clinical attachment. So having the teaching sessions every week and coming together and sharing our ideas every week has sort of helped us focus.* [DE12]

The structure of the programme, and different experiences in the different placements, highlighted how planning at the curriculum level (condition), helped to drive understanding of deprived areas and complex health choices. Wider knowledge and understanding of patients evolved in different settings, i.e. the general practice consultation rooms, home visits, community placement organisations' premises, and other community settings. The experience of a home visit changed how one student approached patients when back in the general practice consultations.

> *I think a lot of the girls, I think if they came into a GP's surgery it would be really easy to be like 'Why are you drinking so much?' you know, 'Why are you taking drugs and stuff and harming yourself in this way?' and actually there's so much behind like those choices that they make that it's been really good to consider that kind of more in-depth by meeting individuals rather than just thinking about it in theory.* [DM2]

> *When you're in the home setting you can see what the social problems are much more easily than in a conversation in the surgery. But 'cos you're seeing them in their home, I would be more inclined to try and incorporate them into consultation skills now, in the GP setting; because I know how important they are…Health promotion, it sounds daft but some of them*

> *aren't aware of the services that are available… For example smoking cessation, some of them are struggling at home with young children when really there's help out there to help them through difficult times. They're just NOT aware of it.* [DM5]

The structure of the DDAP (planning experience at curriculum level) was well received by students as it helped them to consolidate learning and motivated them.

> *I think the way the programme's set out is really good to have two days and then a quieter day in the middle 'cos I think there's quite a lot of learning that happens kind of just through reflection and what's been happening 'cos like days, actual days at placement are really busy and I think it's nice to have a day in the middle to kind of think about what's happened rather than just kind of processing it and leaving it to one side. I think that's been like useful to have and a good way to kind of, a good way to learn.* [DM2]

> *You wouldn't find it as exciting going back in because it would be the same thing every day. Whereas you get a change, you think 'Oh I'm back to that, that's nice'. So it kept it fresh.* [DE5]

6.8.1.3 Shortage of allotted time to general practice

One of the main areas of weakness of the DDAP was the shortage of time spent in the general practice. Students felt two days was not enough for the nature of the programme, as it did not allow sufficient time to build up relationships and see enough patients. The free time available during the general practice placement was also felt to be too long if there were no opportunities to go on home visits on those days.

> *Only got two days in GP which I don't really think is enough because it had really been advertised as a primary care kind of GP placement and if you add it up we'll actually be spending 28 days in GP which, if you did an SSC in GP you'd*

do more than that. So really it's not very much experience. [DM1]

I think it is difficult to see enough patients and to develop enough of a relationship with just two days a week. The amount of days you do in general practice is part of this programme which is an extended programme, is actually less than you'd do in an SSC if you did five days a week in an SSC for six weeks you get more days than you get in general practice across the whole thing. [DE4]

6.8.2 Delivering experience at placement level

The conditions of support also refer to how the experience is delivered at the placement level. Although an experience can be planned, it is the actualisation of learning during a placement that may truly reflect the student experience.

6.8.2.1 Complexity of the workplace as a learning environment

The complexity of the workplace as a learning environment was vividly evoked by the data across the community placements, general practice placement and teaching sessions. This complexity was often underpinned by the relevance of the work / learning environments and their alignment to the DDAP aims (or vice versa).

There was negativity about the opportunities to experience providing healthcare for deprived populations during the general practice placement; the challenge being that deprived patients will probably not access the general practice in the first place. As identified in the outcomes section (see 6.6.2.1), often patients only came to the practice if they really needed healthcare. The students felt, in relation to the nature of the intended DDAP aims, there would have been more emphasis on learning about deprivation and health.

I think because of the very specific nature of like the project, the [GP] *surgery is not really in a deprived area at all and*

> *obviously like it covers all of* [Town]*, which encompasses areas like that but in terms of having a really gritty experience and stuff, like a massive experience of stuff, it hasn't kind of fully met those outcomes.* [DM2]

> *I kind of expected it to be a GP surgery that was being more proactive in how they were dealing with deprivation. It's just the same as all the GPs I've been in before…I've not really been in a less deprived GP… wherever you are there's going to be more affluent people and more deprived people. So I guess there isn't a GP anywhere where everyone's deprived.* [DM7]

> *The GP practice had some deprived but quite a lot of them were just your average like upper working class or middle class or something so there wasn't a great deal of deprivation there really.* [DE10]

The community placements were with many different types of organisations, therefore the nature of their work was specific to their particular organisational purpose. This meant that service user demand and the requirements of the organisation were fundamental to the activities in which students were involved in. Some days were more useful for learning than others.

> *I was in placements that never normally have medical students so the first one they just took me out with them and I was just like one of the team and stuff. And then in the* [community placement], *they didn't quite know what to do with me, because I wasn't a social work student, which they normally have, so they couldn't really take me along to the Outreach visits without first asking the women if that was ok…. So I think they didn't really know what to do with me.* [DE7]

> *I've been doing social work and at first it was a bit sort of hit and miss 'cos I was going out with social workers in this one office and I found there was a lot of waiting around 'cos they*

> *go out on visiting and they come back and they write up their visits and do the paperwork, which obviously I can't be involved in. So I felt like I was waiting for visits to happen all the time.* [DE12]

The varying nature of the day-to-day activities of the community placement, subsequently, had an impact on the role the student could undertake during the placement. This was a negative instance of organisation support having an adverse effect on learning, thus illustrating how relatively small things can have a huge effect.

> *Not always sure what my role is and that's been a bit of a problem and a little bit disorganised with no one, not telling me when the staff are on holiday and things like that. But that's just more practical things 'cos often they haven't thought about it until I arrive and then they're like 'Oh, we'll have to give* [the student] *something to do'.* [DM1]

> *I think, at* [community placement] *I think people, a lot of the time there's just so many volunteers that work for them that I'm just effectively another volunteer which is great and fine... I'm really thankful there hasn't been a kind of like 'Oh so this is [name] and* [the student] *a medical student and* [the student] *doing … that would just feel really kind of, I don't know, condescending.* [DM2]

> *The only problem with it has been lack of organisation around the community placement, so with [organisation], so I'm kind of having to organise things because sometimes I've just been sat in the office with nothing to do and that's not so good!* [DM10]

6.8.2.2 Workplace learning opportunities

The students were involved with a wide range of workplace activities, which were used by the organisations as learning opportunities. Students were involved in parallel consulting, home visits, drop-in

sessions, and administration type experiences. In the community placements, the administration experiences included typing, photocopying, and answering telephone calls. Organisational support for learning can direct a workplace towards being a favourable learning environment but other forces may operate (e.g. service demand) and have an adverse effect.

> *I'm doing a lot of typing and photocopying and writing letters for clients and things like that so it's a bit more…I've been asked to look through cases and find where the judge has made a mistake, which I'm really not capable of.* [DM1]

> *At the day centre, I was sort of as a volunteer so getting more involved but I was just shadowing the social worker so things like meetings about safeguarding issues or meetings about housing. The meetings where they decide who's going to pay for the residential care and things like that. All things I'd never seen before.* [DE12]

The students discussed a stage of learning in the general practice where they were actively involved in the patient's care, the activity of parallel consulting. In principle, this often followed a model of a student seeing a patient independently and then presenting the case to the GP. The first stage of involvement was history taking, followed by examining, and finally consideration of management plans. Although the students had experienced doing general practice consultations in the past, they had limited experiences of consulting patients independently and over a full surgery, typically they saw five to six patients.

> *It's been really nice to be able to start doing like surgery on my own with the GP support obviously, next door. Which has been like challenging because I've never really done that, I've never really done that for a prolonged period before. Maybe seen a few patients individually but definitely not done a surgery, so it has been challenging but good.* [DM2]

> *Because in GP in third year you were always part, you were always in a group of two or three whereas now you're on your own. You're on your own in terms of you see patients on your own. I've been able to see patients on my own whereas before it's generally been with another medical student or another two. Sometimes you didn't always get to do much.* [DM5]

> *In third year we didn't really get a lot of time to see patients on our own, there was a lot of didactic learning and it wasn't as useful as it has been in year four.* [DM4]

There was a link between organisational support at the placement level leading to a positive identity emotion.

> *The first few weeks I was mostly in, more and more I was on my own so that makes you more, feel like a doctor**…** being part of team and acting as a professional probably makes me more professional, more mature.* [DE1]

6.8.2.3 Actual experiences aligned to expectations

The students reflected back on what they thought the DDAP would be like and how it actually was. The students thought the DDAP would consist of more time in general practice settings. These data highlight a gap between intended outcomes and actual experiences. The conditions of the programme have not led to the outcomes anticipated at the outset. Students also thought there would be more focus on deprivation within the general practice placement.

> *I guess the main focus at the beginning was 'We'll put you in a general practice, that is very inner-city', like heavier focus on the general practice side of it. Rather than just two days a week in GP it sounded like there was going to be more of it, but it was going to be more focused in an area of deprivation rather than kind of being 'Here's your area of deprivation Thursdays and Fridays and here's your GP practice on Monday and Tuesday.* [DE2]

> *I expected to see essentially three and a half months of general practice and that's not really what actually happened in the end. 'Cos community placement came in and first it was going to be a day, and then it went to two days and then we had a Wednesday off and it was just like, you know 'Well really the general practice content here is really quite small'. So it was badged as essentially a primary care rotation.* [DE4]

> *When we were at the GP in third year, they'd bring in patients that were to do with what we were doing so we'd have a different case each week and they'd bring in a patient that was an interesting case to do with that. I thought I'd be doing that, like getting patients in that had a story relevant to what we were doing.* [DM7]

6.8.3 Formally supporting individualised learning

There are components of the curriculum that are formally set up to assist with student learning. This may include timetabled sessions, networking opportunities, and other formalised methods of learning.

6.8.3.1 Teaching sessions

Often the teaching sessions were taken by guest speakers, who were passionate subject experts, but were not all qualified teachers. There was perceived to be a lack of 'clinical and deprivation' orientation during the teaching sessions.

> *Some of the teachers weren't very good at engaging us straight away so that then when they asked us a question an hour later, it wasn't very easy to join in.* [DE1]

> *The weakness is it's [teaching sessions] not always clinically relevant. As clinical students going into final year you're almost qualified doctors, it's useful to have, everything to have a reasonable clinical spin on it because that's what's actually valuable to you at this point in time and I felt that sometimes*

> *some of the sessions weren't particularly useful in that respect.* [DE4]

> *Getting people in from outside, like specialise in what they're talking about is a really good thing 'cos I like hearing it from the horse's mouth so to speak.* [DE10]

The level of student engagement in the teaching sessions was important for learning as the small, interactive group facilitated learning.

> *It can be really interactive, the sessions and the people that come in like totally knowledgeable on what they're talking about obviously because that's their area and it's like really good that we've got people of that calibre coming in to talk to us and like it really adds and contributes to our learning.* [DM10]

> *I like that in the small groups they can be quite interactive and quite informal, which I think encouraged everyone to speak up and get involved.* [DE12]

6.8.3.2 GP supervisors

The GP supervisors were highly regarded by the students, and the pedagogic relationships often consisted of actively discussing patient cases. There were good one-to-one teaching opportunities available within the placement, demonstrating how a condition (favourable doctor-to-student ratio) facilitated learning. The GP supervisors encouraged the students to get the most out of the placement.

> *The GP expected more from me so that was quite good in terms of pushing you to do more work and get up to speed with final year.* [DE5]

> *She [supervisor] gave me like the right amount of independence in my, when I was given surgeries to run. She let me do everything needed but at the same time, she just*

> *provided a safety net. So if I missed something she would deal with it before the patient leaves.* [DE8]

> *We have a really great system now, me and my GP and I think we understand what I want as well, 'cos you know he's kind of supervising me whereas I think the other GPs obviously don't have as good an idea of me.* [DM11]

The GPs helped the students to learn through testing their knowledge and encouraging them to develop management plans. The students were not just observing or just parallel consulting, but also reflecting on the experience with the GP to learn about the situation. Student reflection about experiences with different healthcare professionals was encouraged during GP supervisor tutorial sessions.

> *When I take a history and do an exam I have to relay back to them [GP supervisor], so they ask questions and get you to think about what could be going on and then the next one you just find yourself getting better, patient by patient.* [DM8]

> *I have a tutorial once a week with like Dr [name] who's the lead and we kind of just discuss what I've learnt that week. I think we're going to have a bit more formal teaching in that session so I guess that's the space to discuss what I learnt with the physio, what I learnt with the midwife.* [DM2]

There were variations in how the GP supervisors actively engaged students in patient consultations; however, not all GPs supported students. The following quotes are examples of conditions of support which allowed, or failed to allow, students to ascend to higher levels of participation. Similarly, in terms of learning about deprivation, some GPs provided support that allowed students to gain more from the experience.

> *My supervisor, I was with him one session a week and he asked me questions, either when the patient was there or just after they'd left. He was keen for me to have a lot of time with*

the patients on my own and he would spend quite a lot of time explaining stuff after the patient had gone compared to other doctors. [DE1]

Some GPs, yes, they actually let you see patients, talk to patients, do a history, do an examination, listen to your diagnoses and discuss management and you actually feel like you're doing the job and you're actually kind of end game. Some of the GPs have not been like that and it's been a bit kind of sitting in a corner watching more than doing and that's just no use to anybody, that's just, that is, being a medical student really and that's not the experience you really want when you come into your final year. [DE4]

There's one GP that's really good and he'll discuss what factors to do with deprivation might be influencing that consultation and then like what areas might be difficult but I think the others, it's just a matter of feeding the patient back and getting the patient on their way. [DM7]

6.8.3.3 Interprofessional learning

The students discussed formal support, from interprofessional teams, at the general practice and community placements. The DDAP provided conditions of support which allowed students to be involved with a range of multidisciplinary roles in the general practice. The experience allowed students to see how a patient's healthcare was treated differently by different healthcare professionals.

I was with nurses quite a few times and I was also with the phlebotomist at one point and that was really useful; got to see a lot more different things, I was taught to give injections, I was able to practise taking blood and just saw some different things that you don't see with the GP. [DE1]

> *I've been in the palliative care meeting and there's been a talk by a barrister on the mental capacity app which was really useful.* [DM10]

> *In the first week I was at the front with the receptionist, just to get an idea of how the whole system service kind of works. So I've kind of been, and I've been upstairs as well with the secretaries so kind of been all over the GP which is great. Yeah, because I'm there for such a long time I might as well get to know everyone and that was right from the beginning.* [DM11]

The students talked about interacting with nurses in different settings, other than a hospital, and how that made a difference to their attitude towards nurses. The informal interactions may alter how the students view nurses in the future, impacting on the interprofessional relationships within the working environment. This, again, supports a notion of competence beyond book knowledge.

> *Nurses tend to be a bit more aloof in hospitals but in GP practices they're a bit more friendly.* [DE1]

> *Learning to build relationships in different teams really quickly, kind of environment to be in and they're very different and there are a lot of people in both so there's a big team at the GP… learning how to quickly build relationships within those teams to be able to work effectively has been a really useful learning point.* [DM2]

6.8.4 Informally supporting individualised learning

Learning experiences occurred in many different types of activities within the placements. The value of informal activities (e.g. coffee breaks, meet and greet) supporting learning was also identified.

6.8.4.1 Welcoming the students

The initial settling stage into the DDAP placements involved affective support from GP supervisors (e.g. welcoming, hosting dinners) and meeting and finding out who people were. This 'friendly' informal support was also evident in the community placement. When the students learned about their position and role requirements, this helped to overcome anxiety, and helped the student feel like they had a legitimate role in the placements. Sometimes, this was made easier by staff initiating introductions, but on other occasions the students had to show initiative and introduce themselves. The complexity of the working environment (service, time, constraints) limited the capacity of how able the student felt, to become a legitimate member.

> *I think it just took a while for both the staff and me to figure out what my role was and what I was supposed to be doing. I think we're still figuring that out a bit, but yeah it's got better.* [DM1]

> *Everyone was really helpful and friendly and because they're used to having students… they made a point of taking me round all the different practices and introducing me to the, and then letting me go to lunch time learning meetings so again you'd met up with everyone there, so they knew who you were when you were going to sit in with them which is good. Instead of just turning up and saying who you are.* [DM5]

The informal discussions with GPs were beneficial for the socialisation of the student to learn about the role of a GP, deprivation, and tying together different aspects of the programme. Informal interactions provided opportunities for the GPs to discuss other aspects of the role of a doctor, away from the clinical requirements.

> *Often after a patient's left, they'll talk to me about the condition around the drugs or examining… And if there's a break between patients they'll just talk to me generally about their*

job. [DM1]

It's really interesting to speak to a GP that has an interest in this kind of thing, has been a GP for a long time, in the system that we currently have… I guess I have quite naïve views on it, and think 'Oh it would be lovely to go and meet these people half way and do clinics here and here and do all this stuff'. But he has been through healthcare and knows why that isn't happening. [DM7]

6.8.4.2 Meeting people in different settings

The mixture of the settings (e.g. general practice, home visits, drop-in sessions, University) provided learning through informal interactions with a diverse group of people (staff and patients). The relevance of the different placements was aligned, and the students benefited from this integration.

I think it's really experiential learning as well, like obviously backed up with a little bit of theory and teaching, but like you kind of can't avoid learning just because it's like a new situation and quite a challenging situation….You meet lots of different people who will have very different stories and meeting a lot of different staff who all have very different experience as well and I think a lot of it, a lot of learning just comes from conversations with them really. [DM2]

Really enjoying it, especially because it's been split between general practice and on the [community] service a lot, it's a good mix and you've seen a wide range of things so conditions is good for next year, preparation for next year. [DM5]

The pedagogic conditions of the relationships between students and patients were strong as patients were perceived by students as being *"satisfied"* by having students involved in their healthcare. The reasons for this satisfaction were mainly related to the extra time that

students had available to spend with the patients. This allowed the student to build a relationship of trust with the patient.

> *Most were very pleasant and some enjoyed me being there because it gave them more time to talk.* [DE1]

> *I don't think they particularly cared because it's a teaching practice and they have people in all the time, from year one up to GP registrars. There were only two occasions in the three and a half months when somebody didn't want me in the room and that was because it was an intimate examination.* [DE4]

> *They [patients] didn't seem to make a distinction between you being a student and then the doctor being a doctor.* [DE7]

The students felt some discomfort with their involvement with patients. Some patients were examined by the student and the doctor, and were hesitant towards the student. The feelings of student discomfort may form part of the learning process as they were pushed out of their comfort zone and more into participation, the role of a doctor.

> *Just 'cos you have to examine the patient and then the doctor has to, it's often like, you don't want to have to make them get undressed twice and you don't want to examine a child twice because it makes them cry and all that kind of thing so I think I need to get a bit more confident with just doing it anyway.* [DM1]

> *I think a lot of people are always a bit hesitant especially now because I'm doing a surgery on my own and quite a lot of them come in expecting me to be sat there with the GP. I think overall there's a reasonably positive response so that by the end of a consultation people realise what's happening and then they'll be like 'Oh yeah, that's fine', quite enjoy talking to a student. So that's been a positive experience.* [DM2]

The negativity towards student involvement with patients may have been if the patients had limited time available and saw the student as slowing down the process of visiting the general practice. This perhaps highlights more development is required to maximise the condition of support for learning.

> *I think most of them were quite positive apart from the few who were in a rush and had somewhere else to go… patients were just like 'Oh, why is there a medical student here? This is just slowing me down' but sometimes you felt it was nice for them to feel like it was nice to have a bit longer to talk, so yeah that was lovely.* [DE2]

6.8.5 Summary of conditions

The pedagogic conditions provided by the DDAP were mainly discussed within the general practice setting. The students were positive about their GP supervisors, the opportunities for one-to-one learning tutorials and feedback in between patients to reflect on learning. The students discussed clinical learning with other healthcare professionals. According to the students, the patients were generally supportive of the student presence, although there were initially some confidence issues within the students themselves.

In terms of the organisational support and programme design, there were key elements that could facilitate or inhibit the learning process. The nature of a community organisation meant that the day-to-day activities were service dependent, therefore planning and organising for student learning was challenging. In essence, whatever service the community organisation provided affected the learning experience provided.

As there were difficulties in providing students with engaging learning activities in the community placements, this meant the students had to use their initiative to actively seek out learning opportunities. The students were influential in determining the type of experience they

had. The community placement perhaps needed to be more prepared for the student to facilitate more learning opportunities.

Some of the weaknesses discovered about the general practice placement included the structure of the DDAP, giving insufficient time at the general practice, and the lack of focus on ‘deprived’ patients. There was a slight weakness regarding the links between the ‘clinical and deprivation’ topics and how these two areas could be better encapsulated within the teaching sessions.

The integrated nature of the DDAP was favourable as it motivated students instead of being a monotonous, solid block of a particular placement. The students were accustomed to short block rotations so their appetite for changing environments was heightened. However, the students perceived there were not enough days at the general practice to meet the objectives of the programme.

The students were satisfied with the programme length. The 14-week programme helped to overcome the shortage of days in general practice. In addition, the longitudinal programme had benefits including more time to establish team working relationships, and allowing the students to improve on clinical areas of weakness. As the students were aware of the longitudinal placement, it facilitated a different mind-set at the beginning of the placement. This in turn affected how the student approached learning opportunities within the placement. i.e. becoming part of the healthcare team.

6.9 Findings summary

The DDAP interviews focused around the three different components: the general practice placement, community placement, and the teaching sessions. For clarity, the experience and educational value will be summarised for each component.

6.9.1 General practice placements

The general practice placements were very favourably received in terms of the learning opportunities they provided. For the first two to three weeks, the students were observing the GPs and other healthcare professionals. The GPs often then got the students involved with consulting independently and presenting the patient back to them. The GPs varied in their supervisory style and how much they involved the student. This variation included factors such as room availability, complex patients, and the competence of the student. Although the latter was not discussed, it is an inevitable judgement that a GP must make in terms of patient safety.

When the students were more actively involved with the patients' care, this was due to having independent consulting experiences and discussing cases with the GP. The skills developed included history taking, examining, and performing tests (e.g. blood tests). Seeing patients on their own was a powerful way to drive students' learning. The students had to think independently but had the comfort of knowing the GP would check their practice. The students were therefore nurtured by supervisors in a safe environment for both students and patients.

The patients involved with the students were not always screened by GPs, but were normally restricted to those who the GP thought were not going to be too challenging (i.e. drug users). The knowledge and skills required for history taking were not new for students. However, doing a full surgery and maintaining performance over time was a new experience. The students perceived themselves becoming more confident and being able to deal with patients.

The DDAP helped students to feel like doctors by their actively seeing patients without the doctor's presence, which gave them a sense of responsibility. The students reported feeling prepared for fifth year because they had gained experience of developing management plans. Often, the students were also challenged further, as the patients were in deprived areas.

A particularly favourable aspect of the DDAP was the home visits. This allowed students to see patients in their own setting, which was considered to be more natural. The conditions in which the patient lived gave insights that cannot be achieved in a general practice consultation room. Following home visits, and the community placements experiences, the students alluded to being more conscious of deprivation during general practice consultations.

Although the DDAP experience did not increase the intent to pursue a GP career for all of the students, it helped them to understand the working role of a GP in a deprived area. The students recognised that deprived populations, those who need healthcare most, often did not present in general practice; therefore, they had limited experiences of these patients and felt frustrated by this.

6.9.2 Community placements

Student satisfaction regarding the community placements was mixed. The placements provided valuable exposure to deprived communities, and specific issues that people had to deal with, yet sometimes the experience was unrelated to health in a direct sense (i.e. bedroom tax, benefits, food allowance). Ultimately, these issues may be linked to healthcare if they persist, as health difficulties may arise as a consequence of poverty and lifestyle choices. Some students saw the value of this immersive community experience, while others considered it to be irrelevant, and too distant from developing clinical skills, and preparing to be a doctor.

The community placements gave students a much better understanding of deprived areas. Students became acutely aware of the unmet need of deprived patients. They saw the patients who probably should be attending general practice consultations. This understanding of health seeking behaviour helped students to understand how complex providing healthcare for deprived communities actually is.

The community placement organisations often had varying levels of service demand on a day-to-day basis, so as an educational environment the relevance was sometimes questioned. The organisations were more accustomed to having volunteers rather than placement students. The student role, therefore, was often not as a medical student to gain clinical skills, but as a medical student to gain an understanding of deprived communities. Ahead of starting the community placement, the role of the students perhaps needed to be more clearly defined. The community learning experiences were largely dependent on how forthcoming the students were in their approach, as they had to use their initiative to seek out learning opportunities.

The students were very positive about meeting a diverse range of people. The placements were often in areas of society of which the students had little experience. The community placements fostered more affective learning outcomes than practical learning outcomes. Although they were not directly quantifiable in a clinical skills sense, the development of the student was more around issues such as professionalism, compassion, integrity, and communication. These areas are arguably just as important as developing clinical skills.

6.9.3 Teaching sessions

The teaching sessions were also favourably received by the medical students. The content covered addressed issues that were relevant to deprived, community settings. They learned about topics which are sometimes not covered in depth in the undergraduate curriculum.

Often the sessions were taken by guest speakers who had extensive knowledge of the topics and were passionate speakers. The teaching sessions often helped to ‘tie’ together the different components of the DDAP. They also provided informal opportunities for the students to discuss their experiences and meet up on a regular basis. This was thought to strengthen the learning within each respective placement. Without the teaching sessions the DDAP learning may be stifled as the students may not have had the background knowledge or theory from which to build.

6.10 Discussion

Overall

The findings from the end of placement interviews were consistent with the midway interviews. The students were generally satisfied with their experiences and the learning opportunities provided. The structure of the DDAP was a strength of the curriculum design at the placement level. The integration between the three interrelated components helped students to get a deeper understanding of deprived, community areas.

The analysis indicated the students were fairly satisfied with the length of the placement. The time was perceived to be long early on, but after seeing how it progressed there were no lasting concerns. There were strong views around the intended overall aim of the DDAP and what it was trying to achieve. Many of the issues were perhaps due to the ‘pilot’ nature of the programme. The DDAP was initially considered by students to be an extended general practice placement but in reality the amount of general practice contact time was similar to, or even less than, a normal Student Selected Component or an Elective in general practice. The shortage of days in general practice was frustrating for most of the students.

The primary aim of the DDAP may be seen as developing clinical skills in general practice. The DDAP also provided learning about understanding patients who live in deprived areas. The learning benefits for students included developing communication skills and becoming more confident in dealing with deprived populations, to contextualise knowledge.

The correct medical advice for a healthcare professional to promote healthy behaviours amongst patients in deprived settings is complex. The DDAP helped students to understand patients' living conditions and the difficulties they have, which helped the students to develop compassion. The students understood more about a whole person approach to medicine, and not just regarding patients as illnesses requiring diagnosis and treatment. These outcomes were particularly driven by the community placements. When students went on home visits they saw patients in more natural settings and understood patients within their social context. The patients may be more relaxed in this setting, which may have implications for how open they are with the student.

The DDAP provided an experience in understanding healthcare for patients in deprived areas. The challenges and frustrations in providing this population with appropriate healthcare were understood by the students. The students felt somewhat helpless regarding the situation and their role, understanding the difficulties and the limited impact general practice has in helping deprived communities. Although general practice is an interface with patients in deprived settings, it is by no means the only mechanism by which all healthcare will be provided. The community access to other services helped students to learn about other issues (e.g. addiction and support services) that do not always require a doctor's involvement. The students were exposed in the community placement to these issues but perhaps not in a role (e.g. volunteer) which was useful to them at this time (i.e. fourth year of medical school). Although the community placement helped students to

understand the population, mainly through discussion with service users, it did not enhance their clinical skills.

6.10.1 Findings in context

This discussion will focus on identity formation, which is integral to learning according to Experience Based Learning[176]. During the DDAP, the students developed towards a community of practice identified as ‘becoming a doctor’. A conscious choice has been made to omit the notion of ‘professional’ when discussing identity formation due to the nebulous and misunderstood use of the term within the literature.

6.10.1.1 Outcomes

The DDAP provided conditions for students to develop their identity particularly in relation to affects and proficiencies.

A proficiency developed during the DDAP related predominantly to clinical skills. The independent time with patients and the longitudinal programme facilitated student learning. The general practice learning activities also provided a sense of competence so that the students were aware of areas of knowledge gaps. The students perceived that the DDAP effectively prepared them for final year.

Another proficiency developed was the understanding, and skills needed, to deal with patients in deprived areas. The exposure to patients provided a basis for students to learn about complex issues. This was sometimes challenging for the students as it pushed them out of their comfort zone. Students had to contemplate challenging healthcare issues, including the difficulties people experienced and the impact they had on their healthcare.

Another proficiency developed was the understanding of the GP role. This area of knowledge again was developed in various ways, including the interactions of students with GPs. These interactions helped the students to learn about the role, not only in the clinical

sense but about the less patient engaged side, the administrative duties. The continuity of supervision helped to establish these relationships, and subsequently the understanding of the GP role. When comparing the DDAP to previous general practice experiences, the DDAP allowed students time to understand the GP role at a deeper level versus a previous snapshot understanding.

During the DDAP, the main area of affective learning was related to confidence. This was the confidence in dealing with patients, clinical skills, and the students' own ability. The students increased their confidence in dealing with deprived patients. Again, this was particularly developed through the community placement. The students realised how comfortable or uncomfortable they were in dealing with these groups. In tandem, with developing proficiencies, as the students learned more, their affective qualities pertaining to their identity developed. These two developments (practical learning and affective learning) created a new understanding for future learning, as they had moved from being a novice towards being an expert.

The DDAP did not seem to have an overtly positive influence on the students' motivation to pursue a GP career. The experience did motivate students to explore other careers and areas available within medicine.

6.10.1.2 How did the DDAP learning conditions and processes foster outcomes?

The DDAP provided conditions and processes which allowed students to learn about a patient as a whole person, rather than as a symptom-illness case. Students were immersed in settings where there was a range of deprivation and diversity among patients. This immersion led to enhanced knowledge of factors that impact on a person and ultimately impact on their healthcare. While the students were previously aware of the theory and knowledge behind patient difficulties, the opportunity to experience and understand the issues

with real patients may make them more prepared to be a doctor. The shift in meaning, by learning about what a patient from a deprived area struggled with, transformed the students' understanding. In the 'before DDAP' interviews, the students had more 'ideological' views from textbooks. The DDAP participation allowed a more 'realistic' insight into deprived patients through real patient learning. This experience was gained by being in a community environment, interacting with it and responding to it.

The sense of belonging and legitimacy of feeling like a doctor were analysed in the data. The development was often driven by others, in allowing students responsibility and by seeing patients independently. Identity formation was developed within interactions in a social context. Students perceived that the patients were satisfied with their involvement, so the students' sense of belonging helped to facilitate the development of the confidence affect. Learning required the cooperation of the patients otherwise students may not have experienced this transformation. In essence, the stakeholders were all gatekeepers in the fragile process of student development. Feeling like a doctor was a social construct that was initiated following a process of activities which resulted in a new identity. The variation of different patient cases allowed the students to develop and negotiate the difficulties of clinical learning.

The mechanisms of learning that were identified across the dataset included the role in setting, learning through talking, subject matter experts, and continuity. Each of these was interrelated to the core construct of 'participation'.

6.10.1.3 Student roles in the settings

Roles are a social construct and are not to be confused with identities. Identity is how one feels about oneself within a setting, whereas a role is what one's position is within a setting. As the role changes so too does the identity. The students were situated in challenging environments, where the setting and the 'active role' of

being in the setting facilitated learning. The students created their own learning experience.

The role in the setting was seen as a socially constructed process that was largely directed by the novice-expert relationships. The students started off as observers, and then the GPs slowly integrated them into the community of practice. Under appropriate supervision the students learned through an apprentice model and were often empowered by their supervisors to take on more activity. By having more activity in authentic practice, the students began to feel like a doctor as they took on new roles and developed their identity. Participation created a change in their self-identity as they often felt more like a doctor.

The role of students in the community placement was somewhat less clear than in the general practice placement. In this setting, there was not a formal novice-expert relationship therefore development was not a tacit progression towards an explicit objective. There were instances identified within the data where opportunities for supported participation were missed. Students were, in effect, volunteers rather than trainee doctors. This led students to question the relevance of the placement and its worth, as they were given tasks that they perceived did not develop their identity as a doctor. It was down to the student to transfer learning from the community placement to the relevance they required for being a medical doctor. This process perhaps needs a guided transition so they are not left to apply principles at their own accord. The more ‘active’ students actively pursued learning opportunities. If the students were not volunteers for the DDAP this could be a key area of learning development that may be omitted.

6.10.1.4 Learning through participation

Learning was often achieved through talking with others. Although talking was often not in a clinical sense, it had relevance to their development as a doctor, as a better understanding of a person may

be beneficial to all students. The students had an extended general practice experience and were often more involved than they had been in the past. The DDAP was also often the first time they had done extended surgeries.

Within the general practice placement, the students' learning was driven through talking to others within the environment. This process helped to develop their sense of identity in various ways. They became aware of their own progress through talking to patients, with a sense of realisation about development in their competence. The students developed their clinical skills and confidence in their own abilities, which subsequently was perceived to impact on the way they talked to patients and supervisors.

The DDAP provided a background social context for the community of practice and identity development. Pedagogic relationships were instrumental in shaping how learning was interpreted and constructed. Learning was perceived to occur through the actual process of independently examining patients and talking to patients, as well as the discussions with subject matter experts, reflecting on the knowledge.

6.10.1.5 Relationships with supervisors

The student identity formation was developed through interactions and conversations held with others. The key personnel were the GPs, as they played a pivotal role in student development. The timing of the DDAP within the undergraduate curriculum allowed students to be actively engaged with patients (subject to the appropriate supervision of the GP). The teaching sessions were often taken by subject matter experts (e.g. child protection personnel, commissioners, lecturers, researchers) who imparted their relevant knowledge on a topic. Workplace supervisors had a pivotal role in facilitating the legitimacy of students. The experts (e.g. GP supervisor, community stakeholders) in effect acted as gatekeepers

who mediated the student involvement in patient care, and subsequently the student professional identity development.

When the students talked through their week's activities with the GP supervisor, this informed the identification of tailored learning requirements. The experiences with different healthcare professionals were reflected on during tutorial sessions with the GP supervisor. This was a powerful technique that helped students to reflect on their learning. The supervisors helped the students to learn about clinical skills which gave them confidence in their own abilities. If such tutorial, supervisory discussions were omitted from the placement there is likelihood this may be detrimental to the development of the identity formation. It was through the interaction that there was development rather than through individual cognitive reflection on the situation. This finding highlights the importance of considering learning as a process rather than as a discrete outcome.

However, if the gatekeeper was ineffectual, learning may be limited. The vicarious observation role of the student was a benefit when going on home visits. This was particularly helpful for learning about deprived areas. The students saw the patients in their own home. This helped students to understand patient cases in more depth than might normally be required in a general practice.

6.10.1.6 Continuity of learning

Continuity was a core element which played a key role underpinning the identity formation of the students. Continuity was identified in terms of forming stronger relationships with others (e.g. supervisors, peers), allowing more time to feel comfortable within the general practice, and more time to practise clinical skills. Often, the analysis identified benefits because of *"more time"* to experience X and Y or *"more time"* to develop Z over the placement. X and Y often related to instructional designs such as parallel consultations or home visits, whereas Z was often related to affective learning outcomes such as confidence with patients.

The DDAP took place over an extended time period and had a variety of different outcomes. A benefit of the extended placement was that there were more opportunities for relationships to develop, compared to shorter placements. Situated learning was evident as students interacted within the placement and conditional factors such as how prepared the setting was for the student, the quality of supervision, the programme structure and student activity, and the relevance of the programme to future medical training.

Continuity of the integrated nature of different placements within the deprived setting motivated students, or in Experience Based Learning terms, fostered affective outcomes related to satisfaction and motivation. Furthermore, the mix between the three placements (general practice, community, teaching sessions) helped to compose an overall experience which was regarded as unique to the medical curriculum. In isolation, the placement experiences may have been covered in the existing curriculum, but perhaps the value was due to their being interrelated. Students saw how different healthcare services interacted. Students were given an insight into deprived areas that even the GPs and community organisation staff perhaps do not have.

6.10.2 Strengths and limitations of the study

Within the literature the understanding of under-served area placements is beginning to be understood within theoretical constructs for rural areas[139, 169]; however, this understanding has not been developed in other under-served area placements[206]. This research provides a deep understanding of the student learning experience during a longitudinal placement in general practice and community settings in under-served, deprived areas. The learning experience provided by the DDAP was discovered using the Experience Based Learning model by investigating the outcomes, processes, and conditions[176].

The interviews midway through the DDAP provided rich data in terms of the learning activities provided with the placements. This research approach was unique and has not been reported within the literature. Often interviews are conducted retrospectively and just once. As many of the established (rural) programmes are based on the 'extended' nature of placements, this research also considers student experiences at six weeks and 14 weeks into a placement.

The self-selected students may bias the findings, as they were a motivated group of students who volunteered to participate in the DDAP. Furthermore, the understandings generated in relation to identity formation may be restricted only to similar students who volunteer for the programme and are similar to the student baseline status identified in the before DDAP interviews.

6.10.3 Conclusions

The DDAP was a positive learning experience for the medical students which helped them to learn about the psychosocial determinants of health, while practising and reinforcing their clinical skills and medical knowledge. The students' learning was facilitated through independent time with patients, which helped them feel like a doctor. The integrated programme structure gave the students a well-rounded understanding of the complex issues of providing healthcare in deprived areas. The longitudinal DDAP allowed an immersive, participatory student experience in deprived areas.

7 Chapter 7 General practitioner supervisor experiences of the DDAP

7.1 Abstract

Background: GP supervisors play a key part in the success of running community placements. In addition to student perceptions of the DDAP, the views of GP supervisors were required to triangulate learning experiences and to inform a broader understanding of the DDAP. The aim of the research was to explore GP supervisor experiences.

Method: Telephone interviews were conducted with fourteen GP supervisors from nine different general practices. Interviews lasted between 14 and 38 minutes and were transcribed verbatim. The data were analysed using Experience Based Learning theory to identify conditions, processes and outcomes related to student learning.

Findings: The GPs were intellectually stimulated as the DDAP often fitted with a teaching ethos in their general practice. The processes of learning which were identified, emphasised the importance of patient contact driving the students' learning. The GPs pushed and challenged students to further their knowledge and skills. Analysing the conditions of support for learning, identified that each general practice had a lead GP who was responsible for registering the practice interest in the DDAP and coordinating student activities. Compared to third and fifth year general practice placements, the extended placement length allowed students to develop a greater understanding of working in general practice, and build professional relationships. The GPs were concerned they did not expose students to the most deprived patients, as often these patients do not present symptoms to general practice.

Conclusions: The GP supervisors were satisfied with their involvement with the DDAP. The DDAP allowed students a longer period of time to integrate with the general practice and have hands on clinical learning experiences. The GPs experienced benefits including intellectual stimulation and keeping their knowledge up to date.

7.2 Introduction

Research which has considered GP supervisor experiences during community placements was analysed in chapter 2 but in the context of the current chapter, a brief summary will be presented. Research has found that GP supervisors experienced benefits including satisfaction in continuing medical education[134], which has a positive impact on learning[123] and refining practice[131]. Supervisors have intrinsic motivation including enjoyment and developing professional skills[131].

A negative experience cited by supervisors was being uncertain about how their teaching fitted into the overall curriculum[81, 124], as supervisors believed their role was not clearly defined. This may be the result of lack of curriculum development and objectives not matching placement content rather than lack of teaching competence. Supervisors believe it takes time before a student becomes a benefit to a practice rather than a burden[126]. In the past, they have effectively distributed time allocated to consultation tasks differently, when supervising students[132].

The views of the DDAP GP supervisors were required to inform a broader understanding of the DDAP learning experiences, in addition to the students' perceptions.

7.2.1 Research aims

- To explore GP supervisor experiences of the DDAP
- To consider student learning experiences from the GP supervisor perspective

7.3 Method

All of the general practices involved with the DDAP had volunteered to participate in the initiative and were aware that research was being conducted about the programme. Prior to data collection, I accompanied the DDAP teaching fellow and visited the appropriate

people at the general practices (e.g. GPs, practice managers), to distribute information about the programme and the research. Consent forms were signed by all participants and then an interview was arranged (often via email).

Telephone interviews were conducted with fourteen GP supervisors from nine different general practices (one general practice per student). Interviews lasted between 14 and 38 minutes and were transcribed verbatim. These were carried out for both cohorts of students i.e. interviewing GP supervisors in summer 2013 (June-Oct) and summer 2014 (June-Sep). The GP supervisors were asked about their reasons for being involved with the programme, challenges and strengths of supervising a student, and reflections on how the student fitted in with the practice.

The research protocol was originally considered by the Durham University School of Medicine, Pharmacy and Health Ethics Sub-Committee and later by the NRES Committee, West Midlands, Black Country proportionate review committee (project: 13/WM/0106). Favourable ethical opinion was received from both ethical committees.

The Experience Based Learning model was used as a theoretical framework to guide the data analysis. This helped to identify the conditions, processes and outcomes related to medical student learning.

7.4 Findings

Firstly, the sample characteristics will be presented, followed by the reasons why the GP supervisors and their respective general practices participated in the DDAP. The analysis then focuses on exploring the placement experiences.

7.4.1.1 Sample characteristics

Over two cohorts, ten female and four male GP supervisors were interviewed. The age range was from 32 to 52, with a mean of 40. The GPs all worked in general practices in the North East of England. Often the GPs were heavily involved with undergraduate teaching throughout different stages of the curriculum. The GPs had a mean of nine years undergraduate teaching experience (range 4 to 19), and a mean of nine years working at their current general practice (range 2 to 23).

7.4.1.2 Reason for involvement: Teaching practice ethos

It was important to understand why the GPs became involved with the DDAP because it was a pilot programme. The main reason was because the general practices were already heavily involved with the undergraduate programme and had a teaching 'ethos'. The GPs enjoyed teaching students and were keen to pursue any further opportunities. They saw the DDAP as an opportunity to become involved in the fourth year Student Selected Components and the Electives.

> *I approached the practice about it and as they usually do, the practice said 'Yeah, if you fancy doing it, go for it'. Which is kind of our general policy about most things. If it's not going to cause too much problem and financially is viable, then we tend to go ahead.* [GP3]

It promotes learning amongst clinical staff in terms of preparing for teaching and addressing the educational needs of the students. [GP7]

Having the opportunity for something like this and someone for a long period of time was met very positively by the partners because a lot of them want to be involved in teaching. Having someone for 14 weeks really gave you an opportunity for everyone to get their turn and get involved…we've got a real ethos of getting involved in education. [GP8]

7.4.1.3 Reason for involvement: Interest in extended placement & deprivation topic

Another reason, for involvement, was an interest in what the project was trying to achieve. The focus on deprivation and the longitudinal placement length were of great interest. The hope for improving recruitment to the area was also important.

I was very interested in it because of my interest in primary care education for undergrads. I guess for me what was particularly interesting was the longitudinal aspect. [GP3]

Anything that encourages people to look at general practice as a career that potentially increases the chance of them taking that up I think is what's needed at the moment with our recruitment difficulties. [GP13]

7.4.1.4 Summary of reasons for involvement with the DDAP

The general practices involved with the DDAP, were often, already, heavily involved with undergraduate teaching. Therefore, the DDAP was an extension of this involvement. There was also interest in the DDAP specifically in what it was trying to achieve. The GPs welcomed the opportunity to supervise a student over an extended

period of time, focus on the local patient demographic, and further consider how deprivation affects healthcare.

7.5 Outcomes

Outcomes were identified for the GP supervisors and the wider general practices, the DDAP students, and the patients.

7.5.1 GP supervisor & general practice outcomes

7.5.1.1 Intellectual stimulation

There were many benefits of participation in the DDAP for the GP supervisors. The GPs learned from teaching the students, as it kept them *"on their toes"*, and up-to-date with clinical knowledge. The GPs learned by having to explain something and through realising gaps in their own knowledge. The involvement with the DDAP encouraged the GPs to think more about the patient groups and issues they face. The GPs perceived receiving a boost in their enthusiasm and intellectual motivation to work.

> *It makes you more aware of your patient groups and I think that you learn things from the students, for example [student] went to the food bank so she fed that back and we learnt something as a practice, from that. You learn things about the patient specifically if she goes and takes a history from them and has a bit more time, then sometimes you get more of an understanding yourself of their social circumstances and the difficulties that they may face.* [GP5]

> *It pushed me towards doing some reading on health inequalities because it's a big issue in our own practice.* [GP7]

> *Teaching uses a different bit of my brain. I think it keeps me fresh. It keeps me on the ball as a GP, 'cos you're constantly being challenged and questioning yourself and thinking about what you do.* [GP8]

The wider, general practice gained from the student presence as it also helped to keep the practice up to date. The DDAP involvement

allowed the general practice staff to understand the requirements of the fourth year medical curriculum, including the third Student Selected Component and the Elective. Often the practices were involved with other components of the undergraduate curriculum therefore the DDAP supported a more informed understanding of the curriculum.

> *I have more of an understanding of what the fourth years do in their SSCs and the outcomes that they're meant to achieve at the end of their elective period so that was kind of useful with a view to having fifth years.* [GP5]

> *As a practice we have other doctors do our training as well so it keeps us all motivated, it keeps our guidelines and protocols up to date.* [GP6]

7.5.1.2 Satisfaction

Many of the GPs found DDAP participation enjoyable, rewarding and motivating. In addition, it supported their own staff appraisals. According to the GPs, other practice staff enjoyed the students' presence. The GPs acknowledged that the benefits were often for teaching medical students in general rather than the DDAP per se. The GP supervisors wanted to participate again in the future.

> *It's a break from the monotony of seeing patients and it is always good to pass on your knowledge, it makes the day much more interesting… From the point of view of appraisals it always looks good to be keeping up to date by doing other things and students are a brilliant way of doing that.* [GP4]

> *It was a very stimulating and an interesting project…I would certainly be delighted to be involved again in the future.* [GP7]

I get a buzz out of teaching anyway. I do absolutely loads of it so I got as much of a buzz out of it as I do any teaching. [GP8]

7.5.1.3 Remuneration

Another benefit identified from participating in the DDAP was the remuneration. Although this may not have been the first priority, it was critical for involvement.

There's a financial incentive, there's always that! Unfortunately general practice is quite money based as is everything in the NHS these days so that was certainly something we got from it. [GP4]

At the end of the day, it is costly to have a student. It's costly in time and you do have to make sacrifices in order to mentor them and supervise them properly, not that it's all about money, it is a big factor and especially for some practices, deciding whether to get involved, it has to be properly funded. [GP9]

7.5.2 Student outcomes

7.5.2.1 Clinical skills & confidence in ability

The GPs often noticed a change in the student's ability and confidence over the placement. By the end of the placement, the GPs thought the students had improved their communication skills, management plans, medicine knowledge base, and understanding of patients from deprived areas. The DDAP experience was thought to be beneficial for students in the future.

She has more of an understanding of people's social circumstances and how that impacts on their health seeking behaviours and how we try and help them… the range of patients that you can get in one general practice and how you might have to accommodate your approach. [GP5]

> *Her medical knowledge increased considerably because obviously she saw an awful lot of patients…I think she became much more confident…In terms of clinical skills and also in terms of becoming more forthcoming during teaching sessions...I think it took her a little while to get used to us here.* [GP7]

> *One of the things you have to learn to do as a doctor is present a patient and there's a real art to that and he got much, much better and he was really very slick in his presentations, which I think will stand him in very good stead when he goes into final year and beyond.* [GP8]

7.5.2.2 Understanding the role of a GP

During the placement, the students gained a better understanding of the GP role. The students appreciated the complex communication channels between primary care and secondary care.

> *It gave her a good understanding of the complexity of primary care… more of an idea about the roles of a GP beyond the purely clinical role in terms of running a practice and organising health care for a practice population.* [GP7]

> *It certainly gave him a real idea of what it's like to be a GP… we are in quite a deprived area and so he will have got a good grasp of what that means for the GP and what we have to face here.* [GP9]

7.5.2.3 Influencing career pathways

The DDAP experience may influence students' future career intent. The increased understanding of the GP role was thought to have an impact on the increased likelihood of the student choosing general practice in the future.

> *Her likelihood of doing primary care was high at the end of the attachment. So that's always positive for us.* [GP3]

> *I'd like to think she'd consider a career in general practice… I mean I know general practice probably isn't at the top of their list of career things but I'd like to think that she'd certainly got a good insight into what it was like to be a GP.* [GP4]

Even if the students do not choose general practice careers, the experience will still have provided them with a much better understanding of what a GP role entails.

> *He would hopefully have a long term awareness of the role of a GP in general and an appreciation of the pressures that there are in general practice that he could go on to use and remember. I think that awareness of the different sort of demographics that you can have will stay with him.* [GP9]

> *If he ends up being a hospital consultant, in a way, that's a bigger success for us because he's actually got a really good understanding of general practice, he spent four months in GP, he'd have a much better understanding than your average consultant of how we work and what we're capable of and what our limitations are.* [GP12]

> *If it shows somebody that they're really not cut out for it…that's certainly not a wasted experience.* [GP13]

7.5.3 Patient outcomes

7.5.3.1 Longer consultations with a healthcare provider

The GPs thought that patients benefited from the student involvement because the students had more time to spend with them. The students perhaps went into more depth and gave more of a considered understanding to their health issues than a GP had time

for. As long as the GPs had the final say on management plans, the GPs believed the patients were happy to be involved as they understood the educational value. There was little involvement from the patients in terms of teaching the students, apart from being a 'case' from which the students could learn.

> *Our patients tend to be quite thankful and quite humble and really embrace having students; they're more than happy to see students. They really appreciate somebody else being interested and they do enjoy it when there's somebody who's got time to talk to them – which the students tend to have a lot more than we do!* [GP4]

> *They're absolutely fine with the students sitting it and many of them have no worries about having a student talk to them first as long as they get to see a GP afterwards. They're very supportive actually.* [GP5]

> *Patients are very receptive to having a student and seem to understand that education is a function of the health service and are quite happy to see students in the practice*. [GP7]

7.6 Summary of outcomes

The DDAP outcomes identified, related to the GP supervisors and wider general practice, the students, and the patients. For the GPs, the benefits were that they kept their skills up to date and learnt new material. The GPs also believed that the wider general practices benefitted from the DDAP, by keeping up to date with the latest developments, as teaching is beneficial for everyone. The involvement allowed everyone at the general practices to have a better understanding of the undergraduate curriculum. The GPs received a sense of enjoyment and motivation through teaching the students. The general practices also received financial payment in compensation for supervising the students.

The GPs learned through teaching the student. The DDAP facilitated the GP supervisors learning as they had to approach their role differently and explicitly state the reasons for making certain decisions. By allowing the students to be actively involved in patients' healthcare, it helped the GPs to think differently about what they were doing.

The GPs identified two main benefits for students. The first was developing confidence in ability as the students developed their communication skills and management plans. Secondly, students gained a better understanding of the GP role. The GPs hoped this understanding would have a positive impact on their career trajectories.

The final set of DDAP outcomes, identified from analysing the GP supervisor data, was related to the patients. The patients were satisfied with their involvement because they experienced a longer consultation with a healthcare professional. This longer consultation provided students with the opportunity to identify important factors that influenced healthcare management.

7.7 Processes

7.7.1 Observing

The students initially spent two-to-three weeks observing other GPs. The students also observed other members of the healthcare team. The observations helped the students to have indirect contact with patients.

> *Going out with a health visitor she found interesting because child protection issues and things are something that perhaps students don't see a great deal of or aren't involved with….She accompanied us on home visits, with a range of us so with either myself or an F2 or other GPs and registrars, depending on what was happening.* [GP5]

> *We discussed the scenarios and the cases but there was no like one to one interaction for her or where I let her examine my patients on her own, it was more sitting and observing my surgery.* [GP6]

The GPs facilitated student learning by having discussions after each patient. The GPs were aware that if the students were not involved during consultations, it was detrimental to their learning and motivation.

> *I think there's a limit to the benefit of watching people, you learn much more when you do it yourself so I think she did a bit of that to start off with and then we threw her in…The worst thing for students is not to have anything to do and to be felt that you're just a pain. Space was made for her, our slots were blocked out in order to teach her and I think it went well.* [GP1]

> *The student has to be kind of involved within the consultation or else there's a danger they'll drift off to sleep really… I*

encourage the students to jump in and ask any questions. It brings the student in to the consultation to ask them what else they might want to ask, or you ask them if they want to examine. [GP11]

7.7.2 Hot seating

The GPs discussed a technique called 'hot seating' where the students and the GPs, switched roles (seats) between consultations, to allow the students to observe and practise with supervisor presence. Hot seating allowed the GPs to observe the competence of the student and identify their strengths and weaknesses. The GPs were also able to identify the competence of the student from the information they presented back to them. The GPs often stayed in the background during the consultations to enable greater student participation.

A patient comes in and the student will see them so you can actually directly observe what they say and what their consultation skills are like and then you swap over. So the next patient, the trainer will see the patient and they just basically take a back seat. It means that you each learn from each other's consultation skills; you get direct observation of them…It [hot seating] is a good way of assessing where they're up to so that you know that they're competent enough to go out and do their own parallel surgeries. [GP4]

I very much try and stay in the background at the beginning of the consultation just to observe the student consulting. But then kind of chip in when there were particular questions that I wanted to ask that hadn't been asked at that point. [GP13]

7.7.3 Parallel consulting

One of the most significant student learning activities was parallel consulting. The GPs tried to get the students actively involved with

patient care so that they could learn from the situation. When appropriate, they encouraged the students to independently take histories then present back to them. During parallel consulting, the students inevitably saw a reduced number of patients compared to a normal surgery. There was variation in the number of patients per surgery seen by students across different general practices (e.g. between four or five to seven or eight).

> *She'd see about four or five patients per surgery and then she would call me after each one, while the patient was still with her, tell me the history and examination findings and then we would reach a management plan and then sort the patient out together. Then have a little bit of debrief after each patient if that was necessary and then debrief for the whole lot at the end when she'd written them all up to make sure her notes were full and complete.* [GP1]

7.7.4 Ad-hoc patient case teaching

Often the patient consultations raised particular topics that the GP supervisors and students then discussed. The lead GPs often had weekly or fortnightly tutorials with the students. Again, this allowed discussions of patient cases, and reflections on what the students were seeing within the practice on a weekly basis. These techniques helped to improve student knowledge.

> *We had teaching sessions on individual cases that she'd seen, for example we saw somebody with COPD so we might touch on that at the time, but then at the end of the surgery have a little session on the latest guidelines to COPD and what she already knew…I think as she went on, I made her work a little bit harder about how she arrived at differential diagnoses and what she might do if she was a GP.* [GP1]

> *We'd use the consultation as a teaching opportunity so if someone came with a knee pain, we would examine the knee and use that to teach [student], remind her, how to examine a knee. If they came with diabetes, it would then lead to discussion on diabetes management. So it was very clinically based.* [GP3]

7.7.5 Home visits

Another learning opportunity for students was during the home visits. This helped the students to see the deprived areas surrounding the practice.

> *She accompanied us on home visits, with a range of us depending on what was happening… I think she got a lot of experience of interesting reflections from home visits, because it's perhaps not something they've done a great deal of in their third year placements at general practice.* [GP5]

> *I suspect [student name] seen a lot more patients on home visits which does give you a different sort of side to general practice as well as seeing them in surgery.* [GP10]

The home visits enabled the students to actually see the deprived areas and health management issues related to deprivation. Home visits also enabled the following up of patients.

> *She'll have got deprivation exposure from home visits because the people we visit tend to be the people who don't come into surgery… She saw a patient who's terminal and followed her through her 14-week block.* [GP2]

> *She went on visits to more deprived areas, a couple of patients I encouraged her to follow up were, I wouldn't say this is typical but your stereotypical smoking and drinking,*

unemployed type patient from a deprived area. [GP3]

7.7.6 Developmental participation activities

The GPs tailored the students learning experiences and helped them to fulfil their learning objectives, by mediating their participation and responsibility for patients.

> *Having a chat with them initially to work out what areas they need to work on and the weaknesses they have and then try and tailor your teaching and consultation around their needs… Giving them feedback in a helpful way and encouraging them to look into areas that they could work on and improve.* [GP9]

> *When I first suggested she go off and see a patient on her own she was quite hesitant. In fact, in the first few weeks she declined and the next time I just said 'Right, this one's yours, go and see her'. She was nervous but as the time went on she got much more confident.* [GP10]

The stages of student participation, and the designs used to allow students to participate, are presented in the quotes below. After three to six weeks in the placement, independent time with patients often occurred.

> *From the first week she was sat in watching us. And then from probably the second week, possibly the third week, she would have her own surgery. She would have patients booked in to see her every 30 minutes and then she would see them first, then she would call in one of us to present the patient to us.* [GP3]

> *She'll have three phases as it were. First phase of observation and sitting and watching doctors work or clinicians work; second phase of actually being observed doing some, taking clinical histories and examining patients and then a third*

> *phase assessing a patient and then presenting a case and then discussing the case with the supervising clinician…The first phase probably two weeks, the second phase, probably four weeks and then the rest of the attachment would have been along the lines of seeing patients, assessing them and then presenting the case.* [GP7]

> *We'd really get [student] to get involved as much as she could. If it was something she'd never heard of, she would watch; if it was something she'd dealt with before we'd get her to do the explanation or the patient information aspect.* [GP3]

Students participated by diagnosing patients and suggesting management plans. At the end of the consultations, the GPs always had the final say on management plans.

> *He was seeing a fair number of people on his own. I mean he would always come back, present the patient to the doctor, and discuss management so the patient was always seen by him and by the doctor. He never dealt solely with a patient.* [GP8]

7.7.7 Patient contact driving the learning

The GPs allowed students to see patients on their own and develop their clinical reasoning skills. By seeing patients on their own, the students had to take on a new participatory role which was helpful for learning.

> *Doing their own surgeries; they're thinking on their feet, trying to devise management plans and then checking them with us and formulating them with help from us; I think they find invaluable.* [GP2]

> *The opportunity to see people on his own and formulate his*

> *own differential diagnosis and management plans was very positive and I think that will certainly help him in his final year.* [GP8]

> *I think seeing patients for themselves, being exposed, being almost sort of thrown in at the deep end where they've got to take the history and come up with a diagnosis and a plan and I think that's what helps them learn.* [GP9]

The students were sometimes nervous at first, but over time they grew in confidence and became more comfortable in talking to patients. The supervisors supported participation through a gradient of responsibility, which largely depended on what the student had done previously. The students were encouraged to take on the role of the doctor by being asked to think through a diagnosis. This involved clinical reasoning skills through the active involvement in patient care.

> *You've got to be put in the position of taking charge of the patient for you to then feel that you're involved and they're memorable and what you learn from, from that patient and from that patient's experience is more memorable and it's much more relevant to you.* [GP4]

> *I would often be asking him what the differential diagnosis was; what his management plan would be, before I gave him the answer. You're encouraging him to behave more as a doctor. It's often the difference between students and doctors, certainly it's the final year, you want people to be thinking independently.* [GP8]

The GPs used a variety of techniques to help the students learn and reflect on the patient cases including quizzing, open questions, and directing readings. There was also opportunity for students to rehearse communication skills. Highlighted in bold in the next quote,

the GP demonstrates the process by which they facilitated learning. The GPs helped the students to become aware and realise the decisions they were making. Based on seeing patients, the students asked questions to the GP and vice versa; therefore, the patients were driving learning.

> *I did sort of **stretch her towards*** [emphasis added] *the end to be thinking what would she do if she was me seeing a patient? I would, towards the end, stop her, through her history taking and clarify things with patients or say 'Well what were you thinking there? What else might you have asked here' and patients were very gracious and allowed us to do that.* [GP1]

> *Very much encouraging the student to go away and look things up themselves. So if we see someone with a particular problem, he's maybe not familiar, actually suggest he goes away and read it but the next time I see him, actually check that he has and sort of quiz him on it.* [GP8]

> *We did some rehearsing as to how you might say this, how you might say that. Tried to give constructive feedback on any history presentations he did and again actually rehearsed 'Ok, if you're presenting this patient again, can you think of different ways you'd want to put this across to make it sound more slick and putting things in the right order'; so partly by example but partly by practising wording, phrasing etc.* [GP8]

7.8 Summary of processes

The main instructional design used for student learning was parallel consulting, this is where the students saw a patient independently, and then presented the case back to the GP. The students varied in their levels of participation in patient care. Students' participation often started with observation of the GP. The GP then discussed patient cases during the consultations to facilitate student learning.

When appropriate, the GPs allowed students to consult independently, and be more actively involved with patient care. The GPs recognised, and facilitated, patient contact driving the student's learning. A student's lack of knowledge, about a patient's illness, was identified as a valuable learning opportunity. The GPs challenged the students and directed them to learn about any gaps in their knowledge. Some of the GPs took a proactive role, and used the patient cases to focus on aspects of deprivation. However, this was opportunistic and was not a standard component of the DDAP learning experience.

7.9 Conditions

7.9.1 Programme design & structure

7.9.1.1 Meeting curriculum requirements

Many conditions of support for learning were identified when analysing how the learning experiences met the curriculum requirements. At the beginning of the placement, the GPs often had discussions with students to consider their learning objectives. The GPs were often involved with other stages of the curriculum therefore were familiar with the requirements of general practice placements.

The GPs acknowledged that in real situations i.e. a normal day-to-day general practice consultation which involves the examination of a patient (under time pressures), do not require a fully comprehensive approach, compared to what will be required by students for their exams. This example highlighted how the definition of competence is complex, which relates to a similar finding about competence in the DDAP student data.

> *As a GP your examinations are very focused and tailored to the setting of general practice and the lack of time that we have, whereas for a student, in their exams, they need to do a much more extensive examination. So I tailor things slightly that way but I always say to the students that what they see me do in an examination isn't going to be as comprehensive as they are expected to do in their exam.* [GP9]

> *The third years have got a very prescriptive programme depending on what they're doing in the hospitals. The fifth years, it's three weeks and you need to be able to get them to do this by the end… I guess 'cos there wasn't any kind of assessment at the end it just felt a bit, not woolly, just that we weren't 100% sure that we were doing the right thing?* [GP10]

The GPs were unsure what knowledge and skill content was covered

by other GPs supervisors, this was perhaps due to the intermittent student contact.

> *The supervision? It was fine. I wasn't quite sure what she had already covered with the other GPs and I guess if she was consistently with one, that might be better…I wasn't really all that sure sometimes whether what I was blathering on about was what she'd already been taught by other people.* [GP1]

> *I probably don't know enough about the actual structure of it [the DDAP]. I was literally just supervising him on a clinical level, in surgery and with patients rather than exactly what he was doing with his time the rest of the time or any sort of bookwork he was doing.* [GP9]

The GPs espoused views that the DDAP experience they provided was the same as with any other medical student placement. This was in terms of the supervision and the focus of the placement. Many of the GPs did not experience any difference from supervising other student placements, so for them, it was a normal supervision relationship.

> *It's the same sort of way that we teach which is exposure to patients, what comes through the door... I guess knowing that she'd come with a deprived project, how was this different from other students we've had and from our point of view, it wasn't a great deal different. You know? If I'm honest!* [GP1]

> *We treated her like any other student. I'm not sure the fact that she was doing a difficult and deprived area placement made a great deal of difference, from the practice point of view.* [GP11]

The quotes below highlight how the GPs were sometimes unaware of the subtleties of learning or saw it purely as activity.

> *I let her basically ask questions as we go along after the patient leaves the room and we discuss them.* [GP6]

> *Most of the teaching in the practice is clinically based on consulting with patients.* [GP7]

There was some uncertainty about the DDAP curriculum and how the DDAP had intended to give students exposure to the most deprived patients.

> *This being a new project, I think both the students and ourselves were slightly unsure about what we were supposed to be doing. Whether we were supposed to be perhaps targeting more deprived patients or what really?* [GP1]

> *Our teaching aspect really did focus on clinical general practice rather than necessarily on anything linked to deprivation.* [GP3]

Some of the GPs were able to put a contextual spin on things so that the students were taught about how deprivation influenced healthcare management.

> *I did have a patient from a deprived background who ate all the wrong things, smoked, did all the wrong things and we used that as a case to then discuss the socio-economic aspects.* [GP3]

> *Thinking 'Well how does that fit in with the remit we've been given about difficult and deprived'. That was probably the only thing I was really consciously, trying to do differently from the fifth years and the third years.* [GP12]

7.9.1.2 Shortage of student immersion in 'deprived healthcare'

The participating general practices were chosen because they were identified by the steering group as being able to fulfil the requirements of the DDAP. However, the GP supervisors questioned the actual experience that they provided in relation to allowing students to see the 'deprived' aspects of the healthcare communities. The GPs acknowledged that not all of the patients were from deprived areas therefore it was difficult to highlight deprivation issues for all patients. Instead, there was a range in the types of patients that the students saw.

> *With the slant supposed to be on deprived areas, I guess, we do live in a deprived area but not all our patients are deprived so of course she saw a balance of what came in through the door.* [GP1]

> *We're a huge practice and we have a lot of patients from deprived areas and a lot of patients from non-deprived areas… the ideal was for the students to be attached to a practice in a deprived area where all the patients were from a deprived background. Now, that might happen in the east end of London, but it doesn't happen anywhere in the north…There are no practices that only deal with very deprived areas, every practice covers the whole area so that will include deprived areas and less deprived areas.* [GP3]

As there was a full range of patients attending, it meant the GPs could not limit the students to just consulting deprived patients. The nature of providing 'artificial' patient contact was discussed, which has implications for the authentic experience the student can have.

> *You can't really target who's going to come in through the door first but she certainly saw with me some quite difficult patients.* [GP1]

> *You're meeting patients who are from deprived bits and from the nice bits and with the inverse care law, the really deprived ones don't see medical services…Did it meet the difficult and deprived aims? He certainly had some exposure to that; as much as we could give him without being artificial.* [GP8]

The GPs acknowledged that the patients who visit the practice and patients who they visit during home visits are sometimes not the most challenging 'deprived' patients.

> *We are relatively deprived but we tend to see the more affluent people because they're the ones who bother to make the appointments and actually attend.* [GP2]

> *He's not been fully immersed… I don't think any of us are fully immersed, even people who work in that area. You know I work in a deprived area; I don't live in a deprived area. I come home to somewhere nice and leafy. [GP8]*

There was acknowledgement of the different types of illnesses that the students could see amongst patients from deprived areas. In response to many of the issues highlighted in this theme, the DDAP could help the students to focus on the deprived aspects of the location.

> *It would have been nice for her to have had a more geographical tour of our patch. And pointed things out to her, how people live and where they live...I think there's nothing like seeing places and people and perhaps going into the pound shops in our poorest areas and see what life's like for people. That's more of an eye opener than seeing some of the health problems that people present in our nice, clean, clinical surgery.* [GP1]

We have a lot of smokers and patients with alcohol problems and poor diets and obesity and lots of patients who are unemployed and lots of patients who work with quite manual jobs so we see lots of musculoskeletal problems and COPD. [GP4]

She saw her share of alcoholics and drug addicts and personality disorders and things so hopefully she would have got a flavour of what it's like. [GP11]

7.9.1.3 Patient allocation

The nature of how patients were allocated to students was discussed. Sometimes students saw any patients that came to the general practice that day; the curriculum was *"what comes through the door".*

She didn't have a surgery organised for herself seeing patients but they were picked off the list…so I guess not in advance but on the day, say if it was this afternoon I would look at the list and think 'Oh they would be suitable, they would be suitable' and we'd just consent the patient at the time for that. [GP5]

In general 'it's what comes through the door', they're not specifically selected. [GP7]

When he was on emergency surgery that's patients who've just rung up on the day saying 'I need to be seen today'. What you ended up doing was just sending him off to see the next patient…that was clearly just a random allocation of what arrived in the door. It was bit of mix and match on allocating the patients. [GP8]

On the whole, the GPs considered who the student saw, so that they

felt the student was capable of dealing with the situation. This meant in effect the GP was the gatekeeper. This control condition was to keep a safe limit rather than to inhibit the learning process. It was necessary for the protection of the student, and the patient, that this process was followed.

> *You would actually look and say 'Well, ok perhaps Mr Bloggs or Mrs Jones is a good one for you to go and see' either because you felt they had particular deprivation problems or because they were perhaps more straightforward. We obviously have some sort of challenging people who are perhaps more difficult for students to deal with and perhaps with them, we would see them together.* [GP8]

> *You're not going to pick your scuzzy, absolutely drug addict who might kick off in the middle. You know that's going to be unfair on* [student]. [GP12]

7.9.1.4 Time pressures & insufficient room space

The main challenge of being involved with the DDAP was the time pressure from teaching. The GPs had less time to provide a service to patients as they had to teach the student. There was also a tension alluded to between the teaching GP supervisors and other GPs in the practice.

> *The main challenge is time because protected time needs to be fitted into clinical sessions to allow teaching to take place which therefore reduces the number of appointments that can be offered in those sessions.* [GP7]

> *I think the challenges of trying to ensure a good enough experience and good enough teaching, balancing that with clinical work load and perhaps the challenge that other partners don't necessarily understand.* [GP13]

The GPs were sometimes side-tracked by teaching, so they found that their own surgery was running late. They had to teach students on top of their 'day' job. However, this was not seen as a major problem.

> *Sometimes things take a little bit longer 'cos you're making sure that the student understands what's going on and they may have their own questions to ask the patient if they think of anything.* [GP5]

> *When you've got students sitting in I find it very difficult to write up clinical notes as I go along so you always end up finding yourself having to do a bit of catching up at the end of the day or at the end of surgery but that's ok…I've still got the rest of the week to work at normal speed, so no major challenges really.* [GP8]

One way to deal with this issue, was allocating the students to different GPs, so that each GP was able to work at *"normal"* speed the rest of the week. The two day DDAP structure facilitated this process. Parallel consulting required students to see patients in a separate room. The general practices therefore were required to have enough space to accommodate this. This sometimes created difficulties, depending on the size of the practice and appropriate timetabling. Again, this was not a major issue, as the practice could work around the difficulties.

> *There is a bit of juggling of rooms but we can cope.* [GP2]

> *There's the time issue which is why we share out between four or five of us….it would end up being half a day one session a week with me and then the other three sessions in general practice with the other GPs or sitting with primary health care team members.* [GP3]

7.9.1.5 Placement length

The GPs discussed their perceptions of the placement length. The length allowed continuity of care, following up patients after initial consultations, which enabled students to see how a diagnosis and treatment changed over time. The extended placement length also allowed the students to integrate within the general practice.

> *It was longer, which was great 'cos it just meant that we had longer to get to know the student; the student had longer to get involved in the practice and the main thing I loved was the fact that the student could follow up patients… [student] could actually see, the tablets that she'd suggested for the blood pressure – did that actually help? Did the advice on someone's diabetes help and actually see that in the long term.* [GP3]

> *The biggest thing was the length of the placement and therefore the continuity and the ability to find out what happens to that patient and see the outcome of investigations and referral and see people on more than one occasion…. I think that's probably unique in all of their undergraduate teaching.* [GP13]

The GPs compared the length of placement with the existing three week general practice placement in fifth year. The DDAP allowed more opportunities for continuity with patients.

> *It gave her a good understanding of the complexity of primary care… It allowed her to see patients, the same patients, to follow patients because she was here for a long time whereas with shorter attachments like the final year attachment, 'cos they're only here for three weeks, they really can't follow anybody up over a prolonged period of time.* [GP7]

> *I liked having a long period of time 'cos also during that you have the ability to see people more than once. Whereas in a short, three week attachment it's actually quite difficult to see people more than once in that time period.* [GP8]

> *The fifth year placements, like three weeks which are ridiculously short. It was like he was part of the team really and seemed to settle in.* [GP9]

The extended length of placement provided opportunity for continuity of supervision. The length of the placement enabled patient directed learning to occur, and increased the range of patients that could be seen over a longer period of time.

> *Having someone for a long period of time, I think was fabulous…. you could continually build on where you were.* [GP8]

> *It was nice to have a student who you got to know over the 14 weeks and therefore were able to sort of pick up learning points and carry things through with some continuity.* [GP5]

Many GPs thought that the existing length of the placement was satisfactory, and it should remain this way. However, many thought that an even longer placement would be even more beneficial.

> *I think it [the length] was about right, I think it allowed us to develop the confidence in where she was going and what she was managing. And it certainly gave her plenty of experience.* [GP13]

> *The longer it is, the more the students are likely to gain from it and most students, at the end of their placements will say "it's not long enough." If you just go on that, then you can make a*

point that if it was longer, that they would get more benefit. [GP9]

7.9.1.6 Lack of weekly immersion in general practice

Although the placement was longer than normal, the weekly shortage of days the students had at the general practice had negative implications for student learning experiences. The GPs thought that the part time, stop-start nature of the placement negatively affected the continuity of learning and continuity of supervision. If anything, the GPs thought that the student experience in general practice was less immersive compared to a normal placement.

Normally the student would spend half their time developing an audit, whereas here she spent half the time doing her community placement. So she had less time in the practice maybe than our SSC students normally do, but she was here for longer… I would tend to only see her once a week and so if we missed that for whatever reason, that would be fortnightly. [GP3]

When you're only seeing a student a couple of days a week you don't really have time to establish what their learning needs and abilities are… it was a bit difficult initially in terms of teaching them the computer the first week but then by the second week they might have forgotten. So it's just little things like that. Which sound insignificant but it takes a few weeks to settle in and get the habit. [GP5]

However, this shortage of days had benefits for the GPs, as they had less to timetable for the students. There was also a perceived benefit for the students, as the structure may help them to stay motivated.

It was a good balance 'cos it gave her the variety in terms of going and doing something else during the week and then I

> *think five days would probably have been a bit too much really; at this stage of her career.* [GP7]

> *I suppose we had him for 28 days if you look at it that way, I think that's a very reasonable amount of time… I found two days a week pretty good and it gives you a chance to catch up a little bit at other times of the week.* [GP8]

Alternatively, having more days at the general practice may have been beneficial. If it was to be extended, the learning outcomes may have to be refined to ensure it remains a beneficial learning experience.

> *I would love to see six months part time, in primary care, linked in more with other things whether it be secondary care or other places the patients go. So they see the student on the Monday morning, we refer them to whoever, it could be something deprivation related, it could be Citizens' Advice Bureau or it could be the hospital…then a month later, the patient tells the student when it will be and the student joins the patient and goes to Citizens' Advice with them, or goes to the Gastroscopy service with them.* [GP3]

> *I only saw her once a week and then sometimes she wasn't even in with me, so I didn't see very much of her so perhaps longer in general practice might be better.* [GP11]

7.9.2 Pedagogical Relationships (PR):

7.9.2.1 PR: Lead GP

There was always a lead (champion) GP at each practice who registered the practice interest in the DDAP, got other GPs involved in the project, helped to schedule the student's timetable, and was often most heavily involved with supervising the student. The lead GPs were instrumental in facilitating a successful DDAP experience.

> *I was the lead contact GP at [name] surgery so I did the introduction with [student] while [he/she] was at the surgery here. Every week I had an hour with her where we just reviewed where we were up to each week and then did the end of attachment review.* [GP3]

> *My role really was to oversee the student's timetable really and make sure he saw a bit of everything and accommodate things that he wanted to see which changed on the way. And, you know just make sure he's had a good time and we completed everything really.* [GP12]

The students had supervision sessions with the lead GPs on a weekly and sometimes fortnightly basis.

> *Predominantly planning a timetable for the student and then supervising clinical sessions for the student as we went through and discussing cases as they came up and kind of trying to link the cases that we saw to the learning objectives of the projects; that would be the main sort of thing really supervising clinical sessions with the student and then obviously I was there when she did her case presentation at the end.* [GP7]

> *I take a lead on all the undergraduate teaching that we do. I was the supervisor for [student name] and oversaw [his/her] time with us. I put together all [his/her] timetabling and each week… [his/her] probably had at least one or two sessions with me and then one or two sessions with other partners. I was overseeing, supervising, trying to give [his/her] constructive feedback on the experience and trying to help [his/her] meet the outcomes.* [GP8]

7.9.2.2 PR: GP Supervisors

Some GPs were primarily involved with the DDAP as student supervisors. The lead GP arranged sessions with many GPs to give the students a range of experiences with different GP styles. The GPs varied in the number of sessions they had with the student. Sometimes they had infrequent sessions with the students (around once a week). This limited the learning progression available with a supervisor and sometimes led to the students doing observations, even late into the placement. Although the GPs may not have been heavily involved with supervision sessions, there was also informal communication during breaks.

> *She felt like she'd been with a few of us, was quite beneficial for her because she saw different styles and different approaches… We just covered one surgery a week so that was fine... I mean [name] sort of sorts it all out and we just do what we're told really (laughter).* [GP1]

> *I am obviously one of the GP partners at the surgery so I work three days a week and I didn't have much to do with [student] other than we did a few surgeries together so, and I saw her kind of obviously at coffee times and things so … I thought we probably did about four or five parallel surgeries together in her time.* [GP4]

> *I think that the students learn different things from different doctors who have slightly different approaches and ways.* [GP9]

7.9.2.3 PR: Multidisciplinary learning

The students had experiences with a range of healthcare professionals who worked at the general practice including: nurses, midwives, health visitors, phlebotomists and physiotherapists. Often the inter-professional learning involved observations and teaching from different discipline experts.

She sat in both with doctors and also with all the different members of the primary health care team from the phlebotomist who take the blood through the practice nurses, the nurse practitioner, the health visitor, so she got a very good grounding in the work that everybody does in primary care. [GP7]

He also sat in with the practice nurses with chronic disease management so he got a bit of diabetes clinic and asthma clinic and COPD clinic. [GP8]

7.9.2.4 PR: Student motivation

The students were frequently referred to by the GPs as being highly motivated, interested in the topics, and engaging with the opportunities. The students were, in effect, a condition of support for learning. The high level of student motivation and engagement made the role of GP supervision a more enriching and enjoyable experience. The voluntary nature of the DDAP was recognised as being influential in the types of students who participated. If the DDAP was not voluntary the students participating may lack this motivation.

I mean [name] was a very pleasant student to have with us, very keen and you know enthusiastic to learn as much she could. So she made it easy for us…she was a very sort of engaging student…she was quite mature and sort of slotted into the team quite well. [GP1]

You've really got to just throw yourself in, see your own patients otherwise you just won't remember if you don't have an interest. [GP4]

> *He was a good student and very capable and conscientious so that always helps. I think with other students that aren't like that it can be a bit more challenging and a bit more difficult.* [GP9]

7.10 Summary of conditions

There was always a lead GP at each practice, who took a more active role in coordinating the student placement and registered the practice interest in the DDAP. They arranged timetabling and often saw the student the most during their placement. Other GP involvement varied, from one-off supervisory sessions, to three or four supervisory sessions. The non-lead GP supervisors supervised the students like they would any other general practice placement.

The DDAP students were identified as being highly motivated and willing to use their initiative to pursue any learning opportunities. The GPs acknowledged that supervising a motivated student made the DDAP more successful.

In terms of curriculum planning, for the conditions of learning, there was concern about the lack of deprivation focus. The general practices see a range of affluent and deprived patients; therefore, it was difficult to provide students with a fully 'deprived' patient experience. Moreover, the GPs were unsure about what they were meant to be teaching the students i.e. whether and how to focus on deprivation.

7.11 Discussion

7.11.1 Summary interpretation

The analysis identified DDAP outcomes for the GP supervisors, the general practice, the students and the patients. The GPs received intellectual stimulation as they enjoyed teaching. The DDAP fitted with the general practice teaching ethos. The GPs felt that they kept their knowledge and skills up to date. Financial compensation was also received for being involved with the DDAP. The identified student outcomes included improving confidence in their ability and understanding of the GP role. The patients were perceived to be satisfied by having a longer consultation with a healthcare professional.

Collectively, these outcomes demonstrate that the DDAP was beneficial for the GP supervisors, as well as the participating students. In general, a strong motivation and enjoyment in teaching is important for the continuation of GP supervisor involvement in undergraduate teaching but the underlying financial remuneration is critical[207].

The analysis of student learning processes identified the importance of patient contact driving student learning. The GPs pushed students to stretch their knowledge and tried to provide the students with plenty of hands on clinical experiences. The GPs tried to enable students to become decision-makers, particularly in relation to management plans. Some GPs saw the student less frequently therefore had less experience of the student learning process. A benefit to the students; however, was that they saw a range of different GP styles.

Each general practice had a lead GP who was responsible for registering the practice interest and getting others involved with the project. They often spent the most time with the student and organised the student timetable. The GP supervisor experiences were often no different to supervising other medical student

placements. Similar to previous research, the GPs were sometimes unsure how their teaching fitted into the overall curriculum[81, 124]. The characteristics of the students played an important role in learning as the they influenced their learning experience through motivation (or lack of).

Based on this data, the advantages of the DDAP cannot be robustly distinguished from other general practice placements. This does not weaken the findings but gives a rounder understanding of how the DDAP fits into the overall curriculum.

7.12 Conclusions

This research investigated the GP supervisor experiences of the DDAP. The DDAP allowed students a longer period of time to integrate with the general practice and gain hands on clinical experience. The GPs allowed students to be involved with patient care under appropriate supervision. The GPs enabled patient contact to drive the students learning. The GPs experienced benefits including intellectual stimulation and keeping knowledge up to date.

8 Chapter 8 General Practice patient experiences of the DDAP

8.1 Abstract

Background: There is limited knowledge about opportunistic patient experiences of medical student learning encounters. This is particularly the case in under-served areas such as inner-city, post-industrial and deprived areas. The aim of the research was to investigate the experiences of patients during an extended undergraduate general practice placement within the context of an innovative programme providing medical students with greater exposure to deprived communities.

Method: Twelve telephone interviews were conducted lasting between 8 and 24 minutes. The sample consisted of seven females and five males, with an age range of between 20 and 75. Framework analysis was used to analyse the data, with later analysis positioned by the Experience Based Learning model.

Results: The patients were satisfied, and often felt reassured and at ease after interacting with the student. Patients often saw their role as an *"object"* but were happy to provide experience for students, as it enabled them to develop and practise their skills. A key condition of support for learning, that the patients recognised, was the importance of the GP supervisors overseeing the learning process.

Conclusions: This research investigated the views of patients during the DDAP. The patients were satisfied with their involvement. Pedagogically, patient roles during undergraduate medical education have traditionally been passive. Whether patients should be encouraged and supported to be more active requires further consideration.

8.2 Introduction

Patient interaction is a core component of the undergraduate medical curriculum. Despite the 'desired' paramount role of patients, there is limited research about patient perceptions of their involvement with students. The GMC, in their policy guidance document *Tomorrow's Doctors*, and others, highlight the need to involve patients more actively in medical education, beyond traditional passive roles[46, 208-210]. *'Patient centeredness'* and patients as *'partners in education'* are increasingly popular terms in medical education. These terms draw particular attention to patients facilitating student learning, and empower patients[46].

Patient involvement may occur at different points within the undergraduate curriculum, for example in the selection of medical students, teaching, assessment and feedback, curriculum development, and governance. These instances tend to involve patients selected for a particular reason, i.e. providing an appropriate example of a specific medical condition. However, pedagogy which involves patients during real-life, service-driven, workplace-based encounters, may consist of patient roles and experiences vastly different to those involved in more structured curriculum components.

This chapter focuses on opportunistic general practice patient involvement between patients and students, where patients primarily visit the general practice for a healthcare service; essentially forming a curriculum that 'walks through the door'.

In the literature, a survey was carried out with 495 patients who were involved with medical students prior to being seen by a GP[211]. The survey explored the role of patients during general practice consultations, and identified themes including patients as: facilitators of the development of students' professional skills and attitude; experts in their condition, exemplars of their condition, and as part of a real context. The authors identified that there is a lack of qualitative research, which is needed to understand patient views.

However, there is some qualitative research which has investigated the role of patients at a deeper level. Interviews were conducted with patients who were involved with students during a Longitudinal Integrated Clerkship (LIC), which gave students extended clinical exposure to the community[80]. The importance of understanding student identity in learning was identified, as students' sense of belonging and identity related to patient involvement. A recent paper focused on the role of patients and drew comparisons between active and passive student-patient interactions[212]. The authors suggested that more research is needed to understand how supervisors can encourage students to create mutual relationships with patients. Mutual relationships are where the patients benefit from the experiences, not just the student.

There is limited knowledge about student learning processes that occur in encounters between students and patients in clinical settings[212]. The role of patients in general practice settings has not been fully explored, as the educational meaning of the interactions has predominantly focused on student perceptions and experiences.

This chapter focuses on medical student learning during general practice placements, from the patient perspective. In 2013 and 2014, a programme to give medical students extended exposure to difficult and deprived areas was piloted. This was initiated in response to GP shortages, particularly in deprived areas, and the low intent among students to become GPs.

8.2.1 Research aims

- To analyse patient experiences of the DDAP
- To explore the student learning from the patient perspective

8.3 Method

The data collection took place for two cohorts (academic year 2012 / 2013 and 2013 / 2014), between April and August. Nine general practices were involved in total. Each practice had one student.

Following lengthy discussions with the DDAP steering group, the supervision team, and local GPs, a decision was made for the students to assist in recruiting the patients for the research. It was believed to be unfeasible and logistically challenging for the (non-medical) researcher to encroach on patients during their visits to the general practice. It was also unfeasible for the GPs to recruit patients, as the students were supervised by many different GPs over the placement length. For the first cohort, a two-page, written survey (mainly open-ended questions), was given to patients by the students to fill in and provide feedback about their experience. However, this yielded poor quality data so was removed for the second cohort.

Patients who met the students during their general practice placements were invited to participate in a telephone interview. Following consultations, students handed out information sheets to patients and obtained written consent. To avoid a selection bias, students were asked to hand out participation packs to all patients (who were adjudged to able to participate coherently in a telephone interview) during designated weeks (around 6-7 weeks and 11-12 weeks into the placement).

In accordance with NHS ethical guidance, patients had to be 18 and over, and able to participate coherently in a telephone interview (as judged by the student / GP). Telephone interviews were conducted to reduce the burden on patients, and to allow interviews to be held in a more relaxed environment. Logistical and access difficulties were also minimised using this approach.

The students passed the completed patient consent forms and contact details on to me, and I then contacted patients (at least 72 hours later) to see if they would like to participate in a telephone interview, at a convenient time. In total, twelve interviews were conducted, lasting between 8 and 24 minutes.

The data were analysed using framework analysis. The Experience Based Learning model was used as a theoretical framework to guide the data analysis (see chapter 3). This helped to identify the conditions, processes and outcomes related to medical student learning and the patients' DDAP experiences.

8.4 Findings

In accordance with the Experience Based Learning model[176], the data were analysed by identifying conditions (e.g. how patient involvement was initiated), processes (e.g. student participation in patient care), and outcomes (e.g. patient satisfaction), related to medical student learning and the patients' DDAP experiences.

8.4.1 Sample characteristics

Overall, twelve interviews were conducted, the sample consisted of seven females and five males, with an age range between 18 and 80 (most commonly between age bands of 30-60. The majority of the participants were White British and did not consider themselves to have a disability (according to the Disability Discrimination Act 1995). During the time of the DDAP, the sample had all visited the general practices in the North East of England. The overall demographics of patients registered at the general practices' involved with the DDAP typically had a higher deprivation score, higher income deprivation affecting older people, higher unemployment rate, and more disability allowance claimants, than the England general practice average. In consultation with the Durham ethical committee in order to protect patient confidentiality this information was not collected for the sample. The patients had a range of experiences with the students including having their history taken, diagnoses, and examinations.

8.4.2 Conditions

8.4.2.1 Patient consent

All of the patients were asked if they had consented to a student being present. The patients were asked by receptionists, GPs, or medical students, or a combination of these.

> *I think [student] introduced herself and said what she was going to do and that she would discuss it with the GP and was*

that alright? And we got that at the counter as well, at reception. [P1]

When I phoned up she said 'Do you mind if you come in and go and see a medical student?' so I said 'No, not a problem'. [P7]

8.4.2.2 Patient reasons for involvement

The patients had altruistic reasons for participating. They saw their involvement as low risk (if the student was appropriately supervised), were happy to provide students with experience, and saw no reason not to give consent. Also, through their own work life experiences they were aware of the difficulty in gaining hands-on experience.

I've been in a similar situation as a [occupation], myself, and if everybody says 'No', then nobody's going to learn…It's part of the process isn't it? You've got to give in order to receive? …everybody has to learn, they all have to have the experience. [P2]

It was helping somebody isn't it? You know in their quest to become a doctor, it's helping her with other people, with seeing to proper patients rather than just being in a university… hands-on experience rather than just book learning. [P8]

The patients thought their involvement would help the students develop. Interestingly, there was a distinction made between a *"proper"* doctor and a *"good"* doctor. A *"good"* doctor perhaps demonstrates more compassion and is more able to talk to patients than a *"proper"* doctor. The patients were aware of the importance of students being able to practise with people rather than reading textbooks.

If everybody says no, they're not going to learn how to be, not a proper doctor but a good doctor. I'm saying it's not just the knowledge that makes a good doctor, it's the right bedside manner, it's them being able to talk to the patients. Sometimes with a doctor, it's not a case of going in and writing prescriptions, sometimes it's giving you peace of mind, putting you at ease. You can't learn that bit from a book… I'm very much one for you need experience to learn, medical text books will give you an awful lot of information but patient interaction, it's going to make a better doctor. [P3]

They have to start off somewhere, I mean it's one thing to just learn something, you need to learn more from hands-on and you know you're not always confident when you start out but you get confident as you go along and get more experienced obviously the more you do. [P4]

It's alright having a plastic body with all the body parts on it but there's nothing like getting your hands on a bit of flesh. [P6]

8.4.2.3 Longer consultations & shorter appointment waiting times

The involvement of students in patient consultations meant that the patients spent longer at the general practices. However, the patients also had longer appointments, which they were satisfied with. The students sometimes provided a more caring and compassionate approach to the patient because of the longer appointment time. The students had more time available than the GPs.

It's certainly longer than I have been with my previous GP. [P2]

I think sometimes the doctors want you out the surgery because they're busy, busy, busy whereas I think [student name] had a little bit more time…. she was quite chatty, she

> *was asking me all sorts about what I did, and I think she was going a bit more in depth than the doctor might have done.* [P6]

Through organising patient engagement with students, the receptionists facilitated a condition of support for learning. Some patients had a short appointment waiting time by seeing the student. Patients thought the students would get quicker after more practice.

> *I think over time she will naturally take less time which, I mean that's part of the thing, the time that she took was very involved and she will take less time as time goes by. Learns the short cuts and things.* [P2]

> *She [receptionist] said 'Do you want to go through the medical student?' because I couldn't get an appointment to see a doctor for as long I needed you know 'cos they were very busy…She said… it's a lot more easier when you go and see the student first and then I got to see the doctor quicker so, otherwise I wouldn't have got in for another week!* [P7]

8.4.2.4 The role of the patient during the consultation

The patients mainly regarded their role as a pedagogical 'object' during the consultation, using terms such as *"guinea pig"* and *"teaching tool".* However, these terms were not used with negative connotations, as the patients were trying to emphasise how they were *"real people"*, providing students with real life learning experiences.

> *I'm the guinea pig that the doctor says 'Well if you prod here, and you prod there, that will show you this and that will show you that'. I'm the teaching tool, the doctor is the teacher….everybody has to have the time to do things, so I'm normally fairly happy to say, I'm here, if you need to prod and*

> *poke, there you go…they do need to be able to practise on real people.* [P3]

> *I think guinea pig's a bad way of putting it but they've got to like learn the trade on somebody. I've got no problem with that at all.* [P6]

The students had to interact with patients; the patient's role therefore was implicitly referred to as 'active' because of these student-patient interactions. Again, the patients acknowledged the importance of students being able to practise with real people.

> *It's getting in and doing the job that you find out how the computer system works, how the GP's prescribing works blah, blah. I think it's the same with doctors, they've got to know how to interact with a patient and they're not going to learn how to interact with a patient by reading a book. So I'm very much, you know if I can help, be any sort of help that way, I'm quite happy to play guinea pig as it were.* [P3]

> *It is a good way of introducing them to people, patients as people and Dr [name] had a different relationship with each of his patients… We used to have a bit of a laugh and I think it helped them to relax and look at patients as human beings rather than as something that would appear on the page of a textbook and gave us a bit of humanity.* [P5]

The patients discussed why they thought they were involved with the students, and what they thought they brought to the situation. The range of healthcare provided by a general practice meant that the students were challenged with many different illnesses. The patients tried to be open and honest to support medical student learning.

> *What I hope is that by being as open as I was, that [student] was able to absorb what was happening. You know, how it*

affected the relationship… From my own experience as a [occupation], I know that I did learn a lot from the people that I was observing. [P2]

I think you tell your GP an awful lot more than you'd tell a hospital doctor. I think with the medical students being in with the GP, they get to see more; I mean hospitals, everything's in a department. So it's surgical, it's medical, it's gynaecological, it's geriatrics, it's paediatrics whereas GP, they do everything. They are a jack of all trades. With a medical student, they can go in on a morning and it's a baby with a runny nose. Before lunch they can see a cancer patient, after lunch COPD, it's an awful lot you'll see in one day in, especially our surgery! [P3]

She sees all different types of ailments and so forth and I suppose I might have been different from somebody else so she would get that experience. [P8]

8.4.2.5 Student-supervisor relationship

The patients were aware that the GPs used their consultations as teaching experiences. The GPs facilitated students' learning by showing them clinical examples, and then asking questions. The GPs initially guided the students through diagnostics and management plans. The GPs directed learning around symptoms and illnesses, depending on the patients who visited the practice. Sometimes, the patients were unsure how they were supposed to participate in the consultations.

He [GP] did try to teach her but he didn't sort of talk over her, undermine anything that she said or anything. Sometimes when he asked the questions, she didn't really know what it was or she wasn't really sure what she'd give as a diagnosis…. He did give her a chance but then he took it a step further and said what he thought it was… I do have a heart murmur so he [GP] did find that quite interesting

> *because he got [student name] to come and listen to my heart murmur.* [P4]

> *I have a thing in the back of my ankle, it's a tendon and it swells every now and then and he said 'Can you tell me why so 'n so?', and that was addressed to the student and he was probing to see what they knew of it, of this particular aspect but I didn't know what he was after so, the instinct was to jump in and tell them and that was the last thing I should have done (laughter) so I wasn't a great deal of help!* [P5]

The dynamics between the student-patient-doctor did not appear to be a three-way mutual conversation. Mainly, there were two-way conversations between: students and patients, students and GPs, and patients and GPs.

> *I had a little bit of input. I didn't feel like sort of left out or anything… they're the experts, leave them to it.* [P6]

> *The young one asked me questions and I answered them and then my doctor spoke to the young one and they sort of conferred.* [P8]

8.4.2.6 Student ability

The patients recognised the ability of the student as an important factor in the amount of participation the student had with them. The students were ready to participate in authentic learning experiences. The students may have been discouraged from a GP career if they had negative experiences.

> *If they went in it too early, too early in their education, they could be out of their depth but I don't think she was.* [P1]

Obviously they [students] don't have the range of experience that a qualified doctor has, but at the same time they do have the new techniques that may be relevant. [P2]

With their lack of experience, if they didn't think about something that was relevant. It's 'cos the more experienced doctor, he might think of different things than what she would have done because he might have came across it more often in his working life than she will have done just being a newly qualified doctor or a student. [P4]

8.4.2.7 Overall GP responsibility

The patients continually reiterated the importance of supported participation. The GPs had to oversee management plans and conclude the patient's visit to the general practice. This was an important requirement for patient involvement with students. In addition, the patients were happier for students to be involved if they were visiting the general practice for less serious illnesses.

It's reassuring that there's a GP there who came in and whizzed through everything and did a double check…I was aware that if there was anything that she'd missed, the GP would be there as well. So there was a failsafe. [P1]

I don't mind as long as someone more experienced that they can fall back on or go to and say, 'This is what the patient came in with, this is what I think, what do you think?' I think that's obviously needed in case anything is missed. [P4]

It all went through the doctor so it's not as if she's telling me something that she could possibly get wrong… If I walked in and she thought 'Jesus Christ, this guy's on his last legs'; you know she's not qualified as yet to say to me 'I think you're dying'; it's putting her in quite a bad position. You've got to

> *learn somewhere but that's the doctor's job to advise somebody of that and then she could be there.* [P6]

The patients recognised that the GPs had demonstrated trust in the student to participate in their healthcare, therefore they subsequently trusted the student. Sometimes, the GPs just had to confirm what the student identified. However, the patients noticed a difference between the students and the GPs, as the GPs had more confidence than the students. The patients believed experience is influential in developing confidence.

> *Basically the doctor just came along and verified it. Yeah, yeah that's fine and that was it. But [student] did the hard work of the exam and the diagnostics and suggested the end result, which the doctor agreed with.* [P2]

> *If they trust that student to be involved in my care then I trust them 'cos I know that that my GPs wouldn't entrust my care with someone that they didn't trust. Plus the fact, the GP's there, it's not like you're only seeing a medical student.* [P3]

> *They [GPs] really come across really the more air of confidence and air of authority and things, they just sort of make you feel a bit more comfortable that you're getting like looked at a bit better I guess.* [P4]

8.4.3 Summary of conditions

The patients had various reasons for allowing the students to be involved in their healthcare. The patients often recognised the importance of students gaining hands-on experiences, and thought they had nothing to risk by consenting to be involved. The patients often had longer consultations with students, so they could discuss their case with a healthcare practitioner for longer. Also, the patients sometimes received a quicker appointment (shorter waiting time), as

the students often provided consultations that were not booked weeks in advance.

The patients discussed the pedagogical relationships between themselves, the students and the GPs. The GPs asked questions and showed clinical examples to the students. There was little evidence of a three-way conversation. The patients often saw their role as an object, and referred to themselves as *"guinea pigs"* or *"teaching tools".* The patients recognised the importance of the GPs having overall responsibility and the final say in their management plans. They were happy for students to be involved but wanted the responsibility for any decisions to be the GPs.

8.4.4 Processes

8.4.4.1 Patient experiences of students observing consultations

The patients described their experiences of students observing their consultation. The students were not directly involved during observations, but gained an understanding of how the GPs interacted with the patients.

> *They just smiled when they were expected to and sat and listened. I don't think she asked questions. She certainly didn't interrupt; you know to ask the doctor what he meant. She just sat there really.* [P5]

> *She's still young, she's learning, so listen to the doctor and see how he does it and see how the patient reacts. And if he gets it wrong then it's a mental note for her not to do that next time.* [P6]

Sometimes, there were minimal interactions between the patients and the students, as the nature of the consultations did not allow for examinations. During observations, the students took notes and sometimes asked questions about the illnesses to the GPs and / or the patients. One patient vividly described the student role as *"blotting paper"* during their experience.

> *They were there listening to what was going on but I didn't get any care from them. They didn't seem to take part in treatment or care or anything, certainly not in my case…They sat there like pieces of blotting paper, soaking up everything they could.* [P5]

> *To be honest I think she was more just taking the notes. We were having discussions about 'Does your chest hurt? Does this hurt?' and she was writing it all down. I don't think she actually told me what she thought it was*. [P6]

8.4.4.2 Patient experiences of student participation in their care

The patients often saw the students first, and were then presented by the students to the GPs. The students individually talked to the patients about their symptoms for around 10-15 minutes. The students asked questions and recorded relevant information to then present to the GP. The students often picked up on the relevant information through the initial consultation. Sometimes, not all of a medical history was on a computer, so the discussions helped to elicit more about the patient's illness.

> *She was very comprehensive in all the questioning; she covered everything and passed us on to the doctor afterwards while I was there.* [P2]

> *I went in and I spoke to her first and she asked me some questions about symptoms and then she had a think about them and then she relayed them to the other GP and he discussed it with me as well.* [P4]

> *I just didn't mind sitting and being there talking, you know. She obviously, she can't ask loads and loads of questions but what she did ask was interesting and just to find out the, like my medical history is all on the, some of it's on the computer but not all of it, so.* [P7]

As well as history taking, the students also did practical examinations. One patient was aware of the high level of student competence, as the student provided a similar examination to that of the GP. Once the student had informed the GP about a patient's case, the GP then became more active in patient care. The student's role changed from actively gathering and considering information, to passing this information on and observing the GPs.

> *She took a history from me and my daughter and she examined her… The GP came in, she went through the history*

> *in front of us and he did a pretty similar examination so you know, the physical examination that she gave was adequate because it's not too dissimilar to the one the GP gave.* [P1]

> *I think she waited until the doctor came in, then expressed her sort of findings to him and then they had a discussion about it with me in the room and then he had a listen to me chest and he concurred with what she thought.* [P6]

The patients perceived that participation with real people drove student learning, as the students gained valuable experience and developed their clinical knowledge. Communication skills were also perceived to be developed through patient contact. Weaknesses in student knowledge were also identified by patients.

The second quote below perhaps indicates a high level of the professionalism of the student (rather than an assumed gap in knowledge), as the student may not have been comfortable (or required) to communicate the diagnosis to the patient.

> *It was good practice of physical examination and history taking... it's a real situation with real people… it's real life isn't it, rather than textbooks? So yeah, it just, it makes them think about real life situations and ours wasn't too challenging but I'm sure some situations would be more challenging.* [P1]

> *I think she pretty much did everything that she could have done or was supposed to do 'cos she did examine me, she did ask me like the relevant questions and everything; she didn't seem to know an awful lot of what it meant after that. She wasn't really sure what should be done about it, or what the symptoms might mean.* [P4]

8.4.5 Summary of processes

The patients had experiences of students observing their

consultations. In these experiences the patients had minimal interactions with the students. However, the patients thought the students learned from their case. In other instances, students were more actively participating in the care of the patients. The patients initially talked to the students individually, often for 10 to 15 minutes. They talked to the students primarily about their symptoms and illnesses, but also had more time to talk in depth about their medical history. The students then presented the cases to the GPs and they went through management plans together. At times, the GPs just had to confirm what the students had covered, whereas at other times, for more testing cases, the GPs had to use their advanced knowledge and expertise.

8.4.6 Outcomes

8.4.6.1 Patient satisfaction

The patients were generally very satisfied with the student involvement. The students had varying levels of involvement with the patients. Sometimes, the patients were mainly observed by the students, yet at other times the students were more actively engaged. The satisfaction appeared to remain across different levels of student participation. The patients thought the students were professional, and regarded the students as a doctor. All of the patients were willing for medical students to be involved in their healthcare in the future.

> *She made me feel at ease … It's not as if I walked in there and she was a complete bumbling wreck and didn't have a clue what she was doing. She came over very professional*. [P6]

> *She's more like a doctor than some of them I've been to actually, 'cos she was asking if I was alright, the medical treatment and that…She was very nice, very interested and she seemed to want to learn...I really enjoyed it actually…she seemed to want to get to know the patient, and then obviously the medical history. She was more, I don't know whether you'd say compassionate or what but she was good.* [P7]

However, some patients were aware of the inexperience of the students. There was a difference in style between the students and the GPs. As mentioned earlier, the GPs were perceived as having more confidence than the students. One of the patients was a little dissatisfied with their experience and felt it was intrusive. The teaching encounter / healthcare service boundary may have been overstepped in the consultation, perhaps to the detriment of patient care, as there were issues left unsaid.

Experienced doctors have got that air about themselves where they're that little bit more confident in what to say and everything. Whereas obviously she's a student, to me she didn't seem that confident to the level of like an experienced doctor. She tried her best and she knew how to ask the questions that she felt were relevant but it's obviously not quite the same as someone more experienced. [P4]

When I had specific things I wanted to talk to Dr [name] about, in particular about things affecting me. I didn't get round to mentioning them because he was telling them things, pointing things out to them… I used to come out feeling as if there were things that had been left unsaid that I wanted to get out and say and I wasn't given the opportunity. [P5]

8.4.6.2 Patients reassured by students

A thought-provoking finding was that the patients were provided with reassurance from the students. The patients perceived that the students were very professional in their approach and helped to calm them. The analysis suggests this was achieved by supporting the students (authentic participation), and having longer to spend in a consultation than a GP usually does (condition at placement level). The students often applied what they had previously been taught to real situations. This may have resulted in a more thorough consultation approach than a routine GP consultation with a known patient.

I can't think of the right word for it but it seemed more involved than I've been used to with GPs in the past. I think because she was trying to cover every eventuality, there was more questioning than I'm used to which is fine, that's not a problem. [P2]

I was actually rather nervous about seeing the GP over what I was there for and she did actually help calm me down. More

> *than I expected her to actually. And then like I say, she, she did come up with a few things that I didn't know, I'm actually a [occupation] so on certain things I'm actually, I'm normally fairly more clued up than Joe Public. You know she told me a few things that I didn't know, which helped calm me down.* [P3]

> *It makes you feel more confident. You see when I go to a doctors, I'm a bit shimmy shammy, I don't like to say what's wrong and what isn't wrong and there's a lot of them just 'tut' you away but I could have talked to her. I could have gone to her with other things that I have wrong.* [P10]

The patients believed that the students were sometimes more caring in their approach than GPs. They thought this may have been because of the considered and compassionate approach of the student.

> *I think the fact that she was very open and she's got a nice manner, you know just in that, in that respect, she was open and I didn't feel at all threatened or intimidated by her or her manner. I wish that a lot more doctors were like her!* [P2]

> *Some doctors they're very knowledgeable I'll give them their due but put a patient in front of them and they forget they're human beings, they treat the condition rather than the patient. Whereas I think with medical students now it is better that they're getting more experience of the patient at the early stages.* [P3]

> *The GP's a bit more curt when they talk; she [student] smiled and you know, like she cared… There's some doctors that when you, when you ring up and make an appointment you think 'Oh God, I don't want to see that doctor'; but she was nice.* [P10]

The students may have more up-to-date knowledge, and so this may benefit the patients. Also, by patients having more people involved in their healthcare, the healthcare team may be more likely to pick up on things that might be missed.

> *The students might be more aware of recent updates and you know, and techniques… It depends entirely on the competence of the medical students. Obviously they don't have the range of experience that the doctor has, you know, a qualified doctor has, but at the same time they do have the new techniques that may be relevant.* [P2]

> *Sometimes they [students] see things that doctors don't… they'll pick up on things that doctors miss…one doctor says 'Oh you've got tonsillitis'; you go and see another doctor 'Oh you've got a sore throat'. Different people pick up on different things and I think the more people you have involved in your care, the better.* [P3]

> *They might have some more up-to-date knowledge of new things coming in rather than someone with more practice who doesn't maybe have top-up training as often.* [P4]

8.4.6.3 Student outcomes

The patients recognised the benefits for the students of having hands-on experiences. The experiences also helped the students to be involved with different types of patients within the general practice. There was also a mutual implication; patients received a healthcare service and students gained experience.

> *They were able to practise but at the same time we were able to get a service.* [P1]

> *It depends on the type of patient care. I would imagine that getting brought in as a medical student on a terminally ill*

patient who's in a great deal of pain, I think, without a lot of experience, that can be extremely frightening and extremely worrying. [P3]

I think one of the big things is meeting different people because I'm sure there are quite a lot of people that are quite pleasant when you go in to see the doctor; or the majority are but I can imagine there are some older people that can get quite aggressive and not so happy to deal with. And when you're a doctor you've got to deal with them day in and day out so I'm sure she saw some patients during her time there that weren't too pleasant. But that's just life and that's, like again, learning. [P6]

8.4.7 Summary of outcomes

The patients were satisfied with their DDAP involvement. They were pleased they could assist student learning, and found the students to be professional. The patients felt reassured by the students on occasions. The students sometimes acted as a source of support for the patients during their general practice visit. The patients felt the students were more on their side and it made the consultation less intimidating. Some patients thought that students may have had more up-to-date knowledge, which was potentially a benefit for their healthcare. The patients also identified DDAP benefits for the students, they saw a range of patients and had real patient learning experiences.

8.5 Discussion

8.5.1 Summary

This chapter explored the DDAP from the patient perspective. The patients were satisfied with their involvement. They were happy to be involved with students as they provided real life learning experiences for students rather than textbook learning. They thought the DDAP allowed the students to practise their clinical skills.

The patients considered their role as *"objects"* or *"teaching tools"* but were altruistic, and saw the educational value of this role. The patients were involved in observations, history taking and examination procedures with students. The patients received benefits of comfort and reassurance from the students. They had longer to spend with students because of the extended consultation length which perhaps enabled a more in-depth caring approach.

The overall pattern of communication typically progressed along the following trajectory: 1) student-patient 2) student-doctor 3) doctor-patient 4) doctor-student. The student gathered information from the patient and then relayed it to the GP. The GP then discussed the case, and the management plan, with the patient and student respectively. There was little reference to three-way conversations. Generally, the patients seemed to be happy with their involvement and raised few objections. The crucial condition for student learning was mediated by the GPs. The GPs had to be accountable for the overall responsibility for any actions that were taken resulting from the consultation.

8.5.2 Related literature & implications

Favourable patient satisfaction is critical for the continuous engagement of patients within medical education, and it has been consistently found in the literature[210, 213-215]. This study further asserts that patients from GP practices in post-industrial, deprived UK areas are also satisfied. This satisfaction was underpinned by a variety of themes identified, particularly in terms of the role of the patient.

The patients recognised the educational value of students having hands-on learning experiences. A distinction between a 'good' and 'proper' doctor was evoked in the data with regard to how a student needs experience to learn how to become a 'good' doctor who has the *"right bedside manner".* This emphasises that when learning to become a doctor, medical students cannot learn everything from a book. This perhaps refers to the *hidden curriculum* as the roots of medical training are the process of moral enculturation and transferring rules regarding behaviour to students rather than the technical information required and the teaching of technical skills[216]. Similarly to other research, patients have perceived helping medical students with their learning[208, 217]. Stacy and Spencer[208] found that patients believe they provide useful exemplars of their condition and gain satisfaction through helping. Satisfaction of patients from helping students learn has also been found in deprived areas[214].

One study found that patient benefits included, a longer consultation time and altruism[218]. Another study identified that involvement with students positively affected patient wellbeing as they felt supported, comforted, and reassured through their involvement[173]. Patient-focused students were found to be more engaging than other members of the healthcare team, and were described as being more humanistic in their approach, as they focused on the whole patient rather than on symptoms[173].

Similarly to this research, other studies have found that patients see their role as an 'object' or 'guinea pig'[209, 213]. Using Goffman's Dramaturgy theory, which describes how individuals present and portray themselves to others Monrouxe *et al.* identified that patients may take on many different roles during teaching encounters including actor, director, audience, nonperson and prop[219]. It is often the case that these terms are not used negatively, as the role of patients is facilitating student learning. A condition of support that mediated learning was the role of the GP supervisors. When

supervisors involved both the patients and the students during consultations, the GPs facilitated student learning, which in turn affected the usefulness the patient perceived in their role. Patient involvement in general practice, medical education settings, provides a partnership in supporting student learning, rather than direct teaching[214].

To facilitate student learning, the significance of the gatekeeper, i.e. the GP supervisor, in terms of having the final say in the management plans was critical. The patients were happy with student interaction, from minimal (e.g. observation) to full (e.g. history taking and examination), providing the GP had overall responsibility. This is in accordance with supported participation in the Experience Based Learning model as students must be adequately supported by the conditions of support, in order to participate in workplace learning activities. The responsibility of the GP is an optimal condition that needs to be in place to support learning. The patients recognised the ability (or lack of) of the students, yet they trusted the students because the GPs had already trusted the students to participate in their healthcare. These conditions of support for learning helped to create learning processes which allowed more responsibility in accordance with the student ability.

The patients' perception of their role was understated, as they were more 'active' in supporting students' learning than they realised. This supports the dramaturgy theory[219], as individuals are not always aware of their roles within the context of an environment which has predetermined elements. Patients were often engaged in prolonged conversations with students and provided practice with real people, which helped to develop students' clinical and communication skills. Subsequently, patients received important benefits from their involvement with medical students, such as comfort and reassurance.

Collectively, the existing literature[209, 210, 212] suggests the patient

should move from being a ‘guinea pig’ (passive) to becoming ‘teacher’ or full participant (active). Consequently, a key question arises, should educators be concerned that patients see their roles as ‘guinea pigs’? This study suggests that ultimately the condition that mediates the patient perception is the approach of the GP supervisor. How the student-patient-doctor relationship is conjointly mediated, interacts with the roles that are perceived during the learning encounter.

Active patient involvement is being encouraged across the medical curriculum[46] but the application to all undergraduate learning contexts is contentious. There is a need to understand settings in which patients should be more active and others where they may be more passive.

Based on this research, I question whether patients need to be more active during opportunistic patient encounters in general practice settings, as patients are already active. While it can be beneficial to increase interaction between the student and patient, the patient is aware of their role and is satisfied. If patients become full participants in the communities of practice, the service provision (care) may not be fully achieved and patients may feel dissatisfied with their visit to the practice, as was identified in this study. Moreover, the patients may not feel prepared, or want, to provide more than the role of a ‘teaching tool’. A balance between service and workplace learning must be respected as learning is complex in workplace situations. In contrast to this insight, Monrouxe *et al.*[219] suggested that when patients are placed in the role of a nonperson during teaching encounters it may foster a sense of identity loss, low self-esteem, and anonymity. Further research is required to clarify if patients are positive about having such passive roles and if the demographics of the sample may influence this finding (e.g. deprived and affluent population areas).

8.5.3 Strengths

The understanding of patient views within medical education research is limited, especially in comparison to the wealth of data from student, supervisor and student-supervisor perspectives. This study provides insights into what actually happens during medical student and patient encounters in general practice settings. In particular, the amount of patient and student participation was analysed.

8.5.4 Limitations

The patients who participated in this research may have had a positive bias through being deliberately selected. This is a frequent obstacle when conducting medical education research with patients[220]. There are many ways to recruit patients and gather feedback in healthcare settings, including gatekeeper distribution, follow-up distribution, doctor/student distribution, and distribution at discharge; each its own strengths and weaknesses[220]. Following extensive discussions with stakeholders about the most rigorous and feasible sampling approach, this study adopted doctor/student distribution.

The sample who participated in the research all visited the general practices in deprived community areas in the North East of England. However, those who took part may not have been from the lower socio-economic groupings. Restrictions set down by the ethics committee did not allow the collection of data that would indicate socio-economic status. Nonetheless, often the most deprived patients do not seek timely healthcare in general practice as was acknowledged by the GP supervisors in the previous chapter; therefore, representation from this group remains a great challenge for research studies.

8.5.5 Conclusions

This research investigated the views of patients during an undergraduate extended general practice placement, as part of an

innovative programme providing medical students with greater exposure to under-served, deprived, communities. The patients were satisfied with their involvement and often felt reassured and at ease after interacting with the students. They often saw their role as an ‘object’ but were happy to provide experience for students, which enabled them to develop and practise their skills. A key condition of support for learning, that the patients recognised, was the importance of the GP supervisors overseeing the learning process. Pedagogically, patient roles during undergraduate medical education have been passive. Whether patients should be encouraged and supported to be more active requires further consideration.

9 Chapter 9 Peer comparison- educational value of the Student Selected Components and electives

9.1 Abstract

Introduction: This study was a sub-component of the thesis and considered student learning experiences of alternative placements to the DDAP, which were taken by peers from the same medical programme. In fourth year, all students undertake three Student Selected Components and one elective. This study, acting as a comparator, enabled a more informed understanding of the DDAP in relation to the existing medical curriculum.

Method: Sixteen students from the Newcastle University Medical Programme were interviewed by telephone following completion of fourth year. The interviews lasted between 21 and 44 minutes. All interviews were transcribed. The Experience Based Learning model was used to interpret the data.

Findings: The students had experienced a wide range of specialties and many different healthcare settings, in many countries. The interviews demonstrated a variation in favourable and unfavourable learning experiences across the Student Selected Components and electives. Many students developed clinical skills and medical knowledge, influenced career decisions, and developed their confidence to perform their future Foundation Doctor role. The importance of supported participation and having a role within the healthcare team was continually identified during the analysis.

Conclusions: The Student Selected Components and electives were a valuable but variable student learning experience. The experiences often increased student confidence, helped students consider future careers, and improved clinical knowledge. However, there were also negative experiences, as some students perceived a lack of belonging and were unsupported. The role of the students in the workplace environment, level of participation, and effective supervision, were often linked to positive or negative learning experiences.

9.2 Introduction

To reiterate, the DDAP occurred during the third (out of three) Student Selected Component (SSC) and the elective time period combined, i.e. the end of fourth year. Clinical placements are often short-term rotations (four to six weeks) whereas the DDAP permits a longer period of time (14 weeks). At Newcastle University (during the time of data collection), each SSC (six weeks) and elective (eight weeks) allowed students to choose learning topics related to medicine that they would like to experience, potentially in any suitable location. Often the electives are located internationally, whereas the SSCs tend to be in close proximity to Newcastle upon Tyne.

The SSCs are learning experiences which are guided by broad personal and professional development outcomes and allow greater exploration of core curriculum topics, exploration of non-core subjects, research, and self-directed learning opportunities[221]. As the SSCs and elective subjects are chosen by students, and learning outcomes are largely student set, the role of the students in creating their own learning experience is critical.

The educational value of the electives has been identified as enhancing: student clinical knowledge and skills, global perspectives, personal and professional development, institutional benefits, and ethical considerations[222, 223]. Attitudinal shifts to help students understand medicine in a wider sense have often been reported[222, 223]. However, there is often scepticism about the impact of electives on healthcare service provision and the benefits to the host institution of supervising a student[222]. Overseas electives provide valuable opportunities for UK medical students to experience healthcare settings other than the National Health Service (NHS), but are sometimes referred to as ‘medical tourism’[223]. There has been less empirical research on electives compared to the rest of the medical undergraduate curriculum[224], and there is a perceived need to further understand their educational value[223].

To inform a broader understanding of the DDAP, a peer comparison sample was required, consisting of students from the same medical programme who experienced a wide range of SSCs and electives. The collection and analysis of this data in itself also provided interesting findings, as the educational value of the SSCs and electives was mainly considered independently of the DDAP in this chapter.

9.2.1 Research aim

- To analyse how student peers of those taking the DDAP perceive their fourth year SSCs and elective learning experiences

9.3 Method

A DDAP peer comparison group of students who had alternative clinical placements was identified using a deviant case, convenience sample. This is where a sample is substantially different from the dominant pattern, i.e. the sample was sought for peer experiences different to the DDAP.

The students were contacted, in the first instance, by the academic unit coordinator and informed of the opportunity to participate in the study. An email was sent out with an information sheet and consent form. Sixteen telephone interviews with fifth year students were completed. Telephone interviews were conducted because of the geographical variability of placements and timetabling pressure on students at the time of data collection. Participants received a small value book voucher for participating.

Interviews were recorded and transcribed. After anonymisation, transcriptions were imported into NVivo 9 and analysed by coding data. Experience Based Learning theory directed the data analysis by identifying conditions, processes and outcomes related to medical student learning.

9.4 Findings

All of the students took three Student Selected Components and one elective in their fourth year. This meant that the students had experienced a range of placements, and many had both favourable and unfavourable learning experiences over the year. The quotes are denoted with SSC and / or elective.

9.4.1 Sample characteristics

All of the participants were in their fifth year at Newcastle University, studying Medicine, and had recently completed their Student Selected Components and electives. The majority of the participants were female, aged 21-30, and White British. From self-description, they came from a mixture of rural, urban, suburban and affluent backgrounds.

The students interviewed had undertaken placements studying many different topics and in many different places (see Table 13). The electives were mostly located internationally, including in many third world countries.

The reasons for choosing the Student Selected Components and electives typically included: limited experience of a topic, wanting to gain further experience or pursue a specialty as a career, for travel reasons, or to enhance their curriculum vitae (CV) (see Figure 5).

Table 13 Student Selected Components and elective characteristics

Student Selected Component topic examples	Elective topic examples	Elective Place examples SSC place examples
Academic psychiatry Accident and Emergency Acute medicine Acute paediatrics Ambulance service Anaesthetics Breast cancer (oncology) Breast cancer clinic Cardiology Clinical neurology Complementary and alternative medicine Elderly care Emergency medicine Forensic pathology General medicine and clinical pharmacology General practice Geriatrics Head and neck reconstruction Infectious diseases Medical education (general practice) Medical oncology Neonatal intensive care unit Neurological intensive care Neurosurgery Obstetrics and gynaecology Paediatric surgery Palliative care Paediatric neurology (neuroscience) Pharmacology Psychiatry Public health Renal and transplantation Research Respiratory medicine Sexual health (genito-urinary medicine) Substance misuse	Accident and emergency General medicine General practice General surgery Genetics Infectious diseases Internal medicine Mission hospital Other Paediatrics Psychiatry Radiology Surgery Trauma	Aberdeen, Scotland Arusha, Tanzania Carlisle Durham Germany Hong Kong India Jerusalem, Israel London Malawi Manchester Middlesbrough Newcastle North Tyneside Orkney, Scotland South Pacific Sri Lanka, Nepal St Vincent, Grenadines Sunderland Sydney, Australia Thailand Tobago, Caribbean Vancouver, Canada Zambia

Figure 5 Summary of reasons for choosing Student Selected Components and electives

Limited prior experience

For me it was a case of testing the waters and there was a few things that I quite liked but hadn't got a lot of experience in so it was just a chance for me to get a better grasp on what a job in those areas would involve and whether I'd really like them or not. [NF4]

I felt it was just an area I didn't know a lot about that we didn't get that much teaching on before. [NF10]

Wanted to pursue as career

I think geriatrics and paediatrics are probably the two specialties that I'd most consider moving into so I just wanted to get more experience in them. [NF2]

I'm probably going to end up as a GP and you don't get much time, like proper block of time doing GP, I didn't really find having just a morning a week very useful 'cos you don't really get a proper idea of what general practice is all about. [NF5]

Good supervisor / positive role model

I'd done a week with this particular consultant and he was like the best doctor, best teacher I'd ever seen so I was just like, 'amazing' you'll be a really good teacher. [NF5]

I did cardiology because I liked the consultant quite a lot who was supervising it, so, yeah I kind of chose to do it with her. [NF7]

Travel

For my elective, I'd wanted to go to Jerusalem since I was a kid so I thought I'd best do it on my elective where I could stay there for an extended period of time. [NF1]

I wanted to go to a third world place and I'd never been to Africa before. So Zambia was an English speaking country and it was relatively stable. [NF5]

I very much wanted to go somewhere that was completely different from the NHS. That was my main prerogative and I was quite enthusiastic for that to be somewhere in a developing country environment. [NF14]

Other reasons (including cost, free time, enhance CV)

My third one was complementary and alternative medicine and that was one of my top choices 'cos basically you were in for two days a week and it sounded like fun 'cos you got massages and things like that and I wanted something chilled for my last one! [NF3]

My elective was mainly because I didn't have enough money and was poor planning but I ended up staying in the UK. [NF4]

The second SSC, so the research one, was mainly because it was neuro related and to try and get involved in research and name on a paper to support applications. [NF9]

9.5 Conditions

The conditions of support for learning were identified across the Student Selected Components and the elective experiences.

9.5.1 Placement length

In terms of learning, the students were generally satisfied with the length of the six-week Student Selected Components. They said that any shorter would not have given them enough time in the setting.

> *The SSCs are a good length. I think anything shorter you really don't get a feel for how daily life works in the ward. I would even want them to be kind of slightly longer.* [SSC, NF1]

> *It took me several weeks to get my head around, so I think six weeks is a great length for an SSC. I think to have them much shorter just means that you spend most of your time trying to find your feet and then it's finished. I wouldn't want them any shorter than six weeks.* [SSC, NF14]

The students were also satisfied with the length of the electives. If anything, they thought it could be shorter, primarily because of the financial burden and travel away from home.

> *We were away for about three months in total and I was ready to come home when we'd finished. It was nice that it's eight weeks and then you get about two and a half weeks holiday at the end of it.* [Elective, NF5]

> *As far as the elective goes personally I think it's too long. I don't think we learnt anything in eight weeks that we couldn't have learnt in six. From a financial point of view, a lot of people find eight weeks is just too long to spend usually somewhere quite expensive.* [Elective, NF7]

The challenges of short-term rotations were acknowledged as students had to learn how systems work and meet new people every

time they started a new placement. An implication of a longer placement was that it allowed more time for student-supervisor relationships to develop. The supervisors and staff were also able to establish the competency level of the student.

> *Because you were there for a longer time, I think it gave you a better indication of what it can actually be like to work within that team rather than being a medical student and going and seeing some cool cases for the day. It gave you a better feeling of actually what it would be like to do a job there.* [Elective, NF2]

> *For the first two weeks they're still figuring out who you are, what your role is, what you're here to do.* [Elective, NF4]

> *When you go from place to place, you have to start all over again, learn how, where everything is, who everyone is and how the system works there. It was difficult. More time would be nice.* [SSC, NF12]

9.5.2 Language barrier

Many of the students experienced language difficulties as they often had electives in countries where English was not the first language, or if it was, it was incomprehensible to them. This provided a barrier to learning as it limited participation in workplace activities and made students feel unwelcome. To overcome this obstacle, the students often had to find translators such as nurses or other medical trainees to help them interact with patients. Alternatively, they tried to learn the local language.

> *We didn't actually do that much hands-on stuff in the elective… More like following a ward round or teaching and stuff rather than seeing patients, 'cos of the language barrier mainly.* [Elective, NF2]

> *I needed the local medics to translate for me, so we would almost do the consultation together a lot of the time. Or I'd do it and they'd translate and then chip in and stuff… I tried really hard to learn [language] because it helped me get along with them and then they'd involve me more.* [Elective, NF11]

> *They only spoke [language] and I spoke a little bit of [language]. Obviously I had to up my game quite a lot but that was very valuable in terms of feeling what it's like to be an outsider in a place where everyone knows each other and everyone knows the language and it's quite a small town and I was an outsider there.* [Elective, NF13]

9.5.3 Student-doctor ratio

An important condition of support for learning, which facilitated enhanced opportunities for authentic participation in patient care, was a one-to-one student-doctor ratio. This meant that there were fewer learners to compete for learning opportunities.

> *Being the only student and having to be more confident in approaching people and not just being able to huddle as a group of medical students. Being expected to go and see people. That's been a big driver…I loved being in [place], felt very much part of it and quite welcomed and I think you get a bit more involved and more part of the team, more than just 'oh one of the many students'.* [Elective, NF15]

As there were few doctors in the healthcare team, this also acted as a driver for student learning. Students had to take responsibility for patient care. The lack of doctors meant that students got more experience relevant to the future Foundation doctor role. In Experience Based Learning terms, it is an example of fading support leading to greater participation.

> *There were not a lot of people there for you to be able to check everything all the time and just doing more things and it was just a really daunting prospect to be in a completely different country with hardly any actual medical tools. Everything was stripped right back and you had to improvise a lot of the time.* [Elective, NF5]

> *I got to have a bit of a practice of that F1 role because there wasn't any F1s…. It was a good opportunity to do things you don't learn at medical school about being a junior doctor… occasionally got sent to assess patients first before the doctor did so had that sort of experience that you don't get so much.* [Elective, NF15]

However, there were also experiences of there being too many learners in the healthcare team. This condition therefore acted as a barrier to learning.

> *SSCs, you were definitely a medical student!…you felt kind of competing against other medical students to be able to get in to watch the things that you want to watch or do the things that you want to do.* [SSC, NF5]

> *You weren't really sure what you were meant to be doing and you had to avoid the third year students being there and the three other SSC students because obviously you can't have half a dozen students on labour ward together… you really had to work round other people.* [SSC, NF15]

9.5.4 Pedagogical relationships (PR)

9.5.4.1 Supportive pedagogical relationships

There were instances where the students were supported by supervisors, which enhanced their learning experiences. The

students felt appropriately supervised and they were able to develop their competence.

> *On my elective there was a French doctor working on the adults and patients ward and I spent a lot of time going round with her and discussing x-rays you could use or listening to the chest and you felt like you were working as a team and that was quite a good learning experience.* [Elective, NF11]

> *Everybody's been very aware that I've been a student and not really asked to do anything I wasn't comfortable with… In respiratory we did lots of sitting in clinics and chatting after each patient, asking questions and answering questions and there were some seminars which I went to so that was organised formal teaching.* [SSC, NF15]

The students also felt supported by the other healthcare professionals in the team. Students were encouraged by others during placements, which gave them a role and increased the activities they provided.

> *Some of the SSCs I really felt part of the team and I think that's so important as a medical student because that is how you learn. That's how you learn the ins and outs of whatever, wherever you're working.* [SSC, NF1]

> *I really enjoyed it because you got more integrated and everyone got used to you being there and you could see how everything was working and it meant that you didn't feel out of place… it means that you're more willing to learn and you learn more and you get more stuck in and that's the best way to learn.* [SSC, NF3]

9.5.4.2 Unsupportive pedagogical relationships

In contrast, there were negative experiences of the supervision and learning environments. It was not that the supervision was bad per se, but more that the supervision was missing. The supervisors sometimes welcomed students into the department but then left the students to pursue their own learning opportunities.

> *I think it is a case of how enthusiastic the department was in teaching and if the registrar or the consultant weren't particularly happy to have us around or just saw us as obstructions rather than an opportunity to teach then it was all the more difficult to motivate yourself to learn because you just felt like you weren't needed and you weren't part of the team.* [SSC, NF1]

> *My supervisor was like 'off you go and sort yourself out'… I think I saw him two or three times in the six weeks… he said 'You don't want to follow me round all the time' and I'm thinking 'Well, you're getting paid to do this and you've done absolutely nothing to help'. Might as well have been in the department and not had anybody named as my supervisor.* [SSC, NF15]

Often, the supervisors and / or other healthcare staff had too high a workload, which was detrimental to student learning. The students were aware of the differences between effective and ineffective supervision and the implications for learning.

> *I learn so much more from talking it through and them asking me questions or quizzing me on things than just going home and reading about it.* [SSC, NF5]

> *If you have a poor relationship with a supervisor or you don't see them very much, then you're probably going to be less inclined to do much work. If you don't come in, no one really notices to be honest. But if you're actually enjoying it because*

> *the supervisor's taking an interest in you and you're having a professional relationship, that's quite an inspiring thing and that makes you come in more and you get to learn more with that exposure.* [SSC, NF7]

9.6 Summary of conditions

Analysing the conditions of support for learning helped to identify factors that facilitated and inhibited learning. The lengths of the Student Selected Components and electives were favourably received by the students, as they allowed students to integrate with the healthcare teams during the placements. Anything shorter than six weeks was perceived to provide insufficient time in the settings. The challenges of short placements were outlined as students have to settle into a new system and know how the processes work in each department. The electives were described as being a long time away from their homes. Some students experienced language difficulties, which acted as a barrier to participation in learning activities. Consequently, translators had to be sought or else the students were primarily observing in the workplace.

There were experiences of positive and negative student-doctor ratios. Often, the international electives had fewer learners while the Student Selected Components had more learners than supervisors. Both supportive and unsupportive pedagogic, supervisory experiences were identified. Some supervisors had frequent contact with students and made an effort to induct them into the healthcare teams. On the other hand, some students experienced poor supervisory relationships, as the supervisors had too high a workload. The students were introduced to the departments but were not given any further support.

9.7 Processes

9.7.1 Authentic participation

There were instances of participation where students were competent to undertake activities and able to develop their ability. Students often mentioned how the team environment supported participation, as they did practical procedures and consulted patients before they were seen by doctors.

> *You've got a lot of opportunities to actually be hands on rather than being taught as a group… the doctors would be like 'Oh do you want to take the blood pressure?' or 'Do you want to do this history?' I got a lot more chance to practise my skills.* [SSC, NF2]

> *Most of what I did during the elective, I took bloods and put in cannulas, things like that, so the practical side of things. I got to talk to the patients, which again was great.* [Elective, NF13]

> *Going to see patients first and picking up the person who was third or fourth, waiting, so by the time I'd seen them they were at the top of the queue and could be seen by the doctor and I was presenting cases.* [SSC, NF15]

The students played an important role in patient care as they presented their interpretation of the next actions required. The delegation of jobs, and some responsibility, greatly added to students feeling part of the team, as they were actively involved in authentic activities.

> *You were involved as part of a team. You saw patients when they first came into hospital. You got to do practical procedures like suturing and stapling and all that. All that was really good…. For general surgery, I assisted in the theatre every morning and I was part of the rounds. Got to do some on-calls as well.* [SSC, NF12]

> *I think when you're part of the team and when you get delegated smaller jobs to do, you feel like you* ***really are*** [emphasis added] *part of the team and you are being useful rather than obstructive and feeling like you're in the way, which I suspect most medical students feel like. It's better for your self-esteem and it's better for your development.* [SSC, NF1]

When the students felt part of the team, they often had higher levels of participation in patient care, and perceived themselves to have a valued role. The one-to-one student-doctor ratio (condition of support for learning) facilitated students having responsibility, which helped them to feel part of the team. The following quotes are examples of how authentic participation, and supported participation, led to increased confidence and performing the role of the doctor. The participation again led to more confidence in preparedness for their future role as a doctor.

> *After the first few days of getting to know it I was integral to the running of the whole team unlike the first SSC. I was seeing the same people every single day so I could be part of it so thoroughly enjoyed that and that was really good. I felt like I learned a lot from that clinic.* [SSC, NF14]

> *They told us 'Can you do these cannulations? Can you write these discharge summaries?' and that sort of stuff, I think it was having the jobs given to us, I think for me, especially was very important because in terms of feeling part of the team and learning the ropes. Because that's what you would be doing as an F1 and that's what you need to kind of get to grips with*. [SSC, NF1]

> *I had quite a lot of responsibility. I had my roles and I was part of the team, so I got to contribute…the fact that there were jobs that I have to do for myself rather than just spectating was what I really enjoyed about it.* [Elective, NF16]

9.7.2 Lack of participation in workplace activities

Conversely, there were many instances of inadequate participation as students felt frustrated. The competence of the students was beyond the level of participation available in the workplace. The analysis found many instances of negative references to observation roles.

> *I was realising that at this level I'm not practising the things that I'm supposed to be doing as a doctor, I'm not [doing] those things day in day out. I know that I will have to, but at the moment I'm not.* [SSC, NF1]

> *In terms of actually getting hands-on with some stuff it was a lot more observing than would have been in the UK.* [Elective, NF13]

> *I was observing quite a lot of the time which is quite dull when you get to fourth year and you're still stuck observing and not really doing very much…I didn't feel like I was really pushed or able to sort of develop that much.* [SSC, NF4]

In other instances, a lack of supported participation was identified. The students were active but were not supervised effectively. The condition of the language barrier also contributed to students being passive learners and experiencing a lack of participation.

> *I thought in the less developed countries they let you do a lot more as a medical student but in that hospital they don't actually let you do anything. You just shadow the doctors and you don't get to even take bloods or do anything like that and it was quite hard to learn anything really there because of the communication problems.* [Elective, NF8]

> *Mostly went round on the ward round and tried to pick up what was going on, speaking very fast in [language]. That was*

difficult, and then I watched a lot of endoscopes and colonoscopies and so again that was very passive. [Elective, NF13]

9.8 Summary of Processes

The students were heavily involved in authentic patient care experiences as they performed examinations, carried out procedures, and took histories. They presented diagnostic information to their supervisors and sometimes suggested management plans. The team environment was critical as the students were given tasks that made them feel part of the team and had a worthwhile role. Students were especially positive when they had experiences of the role of the doctor. In contrast, there were experiences where students were not supported and had low levels of participation in patient care. The wards were too busy so there was little time for others to provide learning experiences. Students were observing a lot of the time which often felt below their level of competence.

9.9 Outcomes

9.9.1 Real patient learning (RPL)

9.9.1.1 RPL: Patient experiences driving learning

The students discussed vibrant experiences with patients, which helped them to learn. The following examples demonstrate how real patient learning led to clinical skill development and increased confidence. The importance of confidence impacting on the level of participation in learning was pivotal. Confidence and clinical skills were further developed by participating with appropriate support.

> *Being able to deal with quite acutely ill patients and seeing people with legs that had been in car accidents and stuff like that and you'd not really had that experience before my elective.* [Elective, NF9]

> *One of the BEST learning experiences I had was when the doctor was called to go and review a patient, the senior clinician said 'Right, you go first and tell us what you think' and so the nurses were presenting what had happened, and what her obs were and they did an ABC approach and then didn't check her blood glucose and I just thought 'This is a really stupid thing to have done' and made us think 'Yeah this is what I'm going to have to do in a year's time – go and review people myself' so being put slightly out of your comfort zone but knowing she was coming down the corridor in ten minutes as a backup was quite a good way of learning, being put on the spot.* [SSC, NF15]

When students had these types of experiences with patients they were more inclined to pursue self-directed learning opportunities, such as further reading about clinical cases to develop their knowledge.

> *Being put in the role of a junior doctor. Like you see something, you go home, you read about it and then it sticks in a bit better…having that case to be able to pin your*

> *knowledge onto just makes it so much easier to remember.* [Elective, NF5]

> *Having a job to do and having things to do. Actually seeing someone in front of you with malaria…It made me realise how fascinating and how stimulating it is…I was more inclined, when I'd seen a particular condition, to go home and read about it, rather than just having an exam looming over me, and thinking, 'I probably should learn about malaria for this exam.'* [Elective, NF16]

9.9.1.2 RPL: Different healthcare systems

Real patient learning was powerful in helping students to identify differences between different healthcare systems and different healthcare specialties. The analysis discovered a distinction in the definition of competence, between *"lecture"* based learning and *"ward"* based learning. *"Ward"* based learning is *"messier"* as it involves learning with real patients.

In addition, the following quotes highlight how medical student learning consists of affective components (e.g. *"frightening"*), the challenges of learning through different approaches (e.g. acquisition and participation metaphors[160]), and complex contextualised workplace learning (e.g. dealing with uncertainty). All of these types of experiences are of significant relevance to the working role of a doctor.

> *I found it difficult to watch people with massive bedsores and with no legs because of diabetes and things like that. In England they're things that can be controlled so easily but in places like that there's no way to help people, so that was quite hard to watch knowing if those people were born in a different country they would still have their legs and they wouldn't have bedsores all over their back.* [Elective, NF3]

> *As medical students we tend to like being given information wholesale when we're sat down and someone gives you a lecture because you know that everyone's learning the same thing and you know that things aren't going to be missed out, it's going to be fairly clean. Actually a lot of stuff that you learn is a bit messier, it's on the ward in a clinic and you learn what something feels like, what something looks like and stuff that you don't get in a lecture…It's a bit more frightening because it's not so formally packaged and delivered but it's a good thing to be able to learn from and do.* [SSC, NF13]

The elective experiences were in diverse healthcare settings, very different to the NHS system in the UK. Some of the learning experiences related to patient pathways and how healthcare systems work. The students saw how patients were treated and the multidisciplinary healthcare approach.

> *In [place] we were at two different hospitals, one was a district hospital, state funded hospital and one was a private one. And the private hospital was like an NHS hospital but hardly any beds were taken and the state run hospital was just crowded and people would wait for hours and hours just to see the doctor for a few minutes.* [Elective, NF2]

> *I learnt a lot about the dynamics of multi-disciplinary teams…like A&E, the nurses pretty much always knew the diagnosis before the doctors had even seen them. I learnt a lot about care pathways and referrals.* [SSC, NF4]

> *There were just mattresses on the floor, and there were beds crammed together with barely any space between beds… The patient's relatives would have to bring bedding with them to keep the patients warm…It wasn't particularly clean. There was nothing that resembled nursing as you know it in the UK. It was very basic… it's a stark contrast.* [Elective, NF16]

9.9.2 Practical learning (PL)

9.9.2.1 PL: Variable clinical skill improvement

The majority of students perceived that they were improving their medical knowledge and clinical skills. These developments often resulted from many of the conditions and processes identified earlier in the chapter.

> *My clinical skills in paediatrics improved a lot because I got used to handling babies, just because you do it so often.* [SSC, NF2]

> *I felt I had good variety and all being practical, clinical things which I'm pleased I did because I feel like more prepared for final year…Increased practical skills with doing bloods and cannulas because that was a big like sticking point and I was still rubbish at that in January when I was doing respiratory so that was good. And then doing other practical things for the first time like blood gasses, getting scrubbed in for surgery.* [SSC, NF15]

The students understood more about their level of competence. They improved competence in some areas, and realised weaknesses in others. This enabled students to have new 'meaning making' experiences in their identity formation process.

> *I found out what I didn't know… there's so much I don't know, I think that was the biggest learning point for me… I need to really learn more about all these things before I can say that I can safely practise…it was hard to be wrong sometimes because it felt like 'Oh because I'm wrong, maybe this is not the specialty for me.' But you had to overcome that feeling and you had to keep liking the specialty even though sometimes you're wrong.* [SSC & Elective, NF1]

> *It's quite a steep learning curve to sort of figure out what level you should be at when you first get there!* [SSC, NF4]

> *I guess more how to problem solve, how to figure things out for yourself and learn how to ask for help when you realise you do need it.* [SSC & Elective, NF12]

Some students perceived very little or even no improvement to their knowledge, and perceived a lack of preparedness for practice in the future. This suggests that there were missed learning opportunities during the placements.

> *The SSCs I didn't really learn anything profound…I didn't really learn anything about what I want to do for my career or anything like that.* [SSC, NF3]

> *I had just done all these not-that clinical SSCs... so at the end I don't think I learned that much… I don't think it has prepared [me] that well for the fifth year. I feel the jump, suddenly, all the tutors and doctors expect a lot more from us as fifth years…in a way it didn't help learning because I just avoided the things I don't like. (laughs) So I still need to learn all that stuff.* [SSC, NF11]

9.9.2.2 PL: Influence on future careers

The placement experiences gave students a better understanding of potential careers, but they were mainly undecided. Experiencing a particular career role was a valuable learning opportunity which informed the career decision process. The nature of authentic learning was analysed; students found it more motivating to learn because of a genuine interest rather than for an exam.

> *I hadn't really considered palliative care before fourth year and now I'm considering it a lot more. It's made me realise that I do prefer a primary care setting...I think it's really hard to know what you do want to do until you're actually working.* [SSC, NF10]

> *It's been absolutely fantastic, exposure to alternative career pathways…what you like and what you dislike, and that being a guiding and motivating factor, rather than trying to be motivated to do work and to read because you've got exams coming up.* [SSC & Elective, NF16]

Some students saw the placements as an opportunity to experience their near future role as a Foundation Year 1 doctor. They experienced the role and what some of the requirements were. The experience of certain specialities helped some to decide whether it, or was not, the career for them. Having a positive experience helped some students to pursue a certain career.

> *Paediatric surgery, while it was really interesting, it made me realise that I definitely don't want to do surgery because I don't like the working relationships and competitiveness of it.* [SSC, NF2]

> *Gave you a better understanding of what to expect on the job when you are actually a doctor, what to expect on the wards and the responsibilities you'll have and the type of roles you'll be taking on. I've got quite a well-rounded picture of the doctor's lifestyle and their job roles.* [SSC & Elective, NF4]

> *It was my first real experience with what it might be like to be an F1 and onwards… in medical school you learned about medicine and the pathology behind diseases that you need to know and what medications you should give. When you're doctor, there's a big emphasis on practical things like how to handover a patient.* [SSC, NF14]

9.9.3 Affective learning (AL)

9.9.3.1 AL: increased confidence

The students felt more confident in their ability. There was increased confidence to work as a doctor in the future. They went through a

process of feeling uncertain at the beginning, towards having more confidence at the end of the placements.

> *At the start your decision making, you've really got a lot of self-doubt about 'Ooh is this right, is this right?' and by the end you're able to trust your own judgement a bit better.* [Elective, NF5]

> *I'm a lot less nervous about starting work because before you're really exposed to that kind of environment; all you've got is a false expectation about what junior doctors actually do. When you're actually doing it, you realise straight away that there's a huge amount of support out there so you're really not as on your own as you thought you might have been.* [SSC, NF7]

> *It's taught me to be more independent, and assertive. It was a lot of self-learning at times, and you get put on the spot a lot. It's all character building.* [SSC & Elective, NF12]

9.9.3.2 AL: satisfaction

Some students were satisfied with their placements. However, the high satisfaction was mainly regarding the international locations visited and independent travel experience rather than clinical learning.

> *It was incredible. Once in a life time opportunity! I'm glad I went to where I went as well. It was just the right amount of time, right people, right place.* [Elective, NF5]

> *Elective's more exciting because it was in like a different country… Just like a lot of fun… a lot of travelling, seeing everything and eating the food in [place].* [Elective, NF8]

9.9.3.3 AL: Lack of belonging

As previously mentioned, not all experiences were favourable for student learning, therefore students sometimes felt *"lost"* and *"undervalued".* One student said they felt *"resented"* for being there, which must have negatively impacted their learning experiences.

> *On my elective I didn't really feel part of the team because I, well I wasn't doing much... although we were in a team of students, I didn't feel part of the kind of clinical team… you didn't have to go in for all of them, in fact you could really just not turn up and no one would notice. So, I think it was a challenge for me to motivate myself to go in, I mean I did go in every day, sometimes it felt like 'Why am I kind of doing this?'* [Elective, NF1]

> *They were so busy that they didn't really care about students and there were so many of us anyway, I think they kind of resented us being there because we kind of got in the way, so it made me not want to be there and not want to do things, so I didn't really learn.* [SSC, NF3]

> *On my elective I felt a completely spare part, I felt completely undervalued and no one really noticed whether I was there or not to be honest. So we hardly went in because, if you were there you just kind of stood at the back being ignored by everyone and if you weren't there no-one noticed. So probably it made more sense for us not to go in... I think our presence was completely superfluous to their requirements really.* [Elective, NF7]

Sometimes, the students clearly did not feel like legitimate members of the communities of practice. As previously identified in the chapter, some of the conditions that contributed to this were unsupportive pedagogical relationships, language barriers, and a lack of role in the team.

> *Not everyone was happy to have me around, especially because of the language barrier and they had to translate sometimes. They weren't too happy about that because they had to give up extra time for me. I think those days they weren't like a particularly good learning experience.* [Elective, NF1]

> *In the first one I felt a bit lost, so that was difficult because everyone was very busy.* [SSC, NF14]

9.10 Summary of outcomes

The outcomes identified were practical learning, real patient learning, and affective learning. In terms of practical learning, the students developed their clinical skills and medical knowledge. Working on clinical wards gave them experience in the working role of a doctor, beyond what is taught in the curriculum (e.g. handovers). The students in turn gained confidence form this participation. The students acquired knowledge about the diversity of potential careers available and experienced specialties to which they had limited exposure. These experiences gave them a better opportunity to see what the actual role of the doctor consisted of. Real patient learning experiences were particularly valuable to demonstrate differences between healthcare systems and specialities. There were vibrant experiences of differences in healthcare abroad. One affective outcome identified related to a lack of belonging in the healthcare team. As a result of the conditions and processes described earlier, the students were dissatisfied with some of their experiences.

9.11 Discussion

The Student Selected Components (SSCs) and electives often developed students' clinical skills, confidence in their ability, and understanding of potential career pathways, and gave them real patient learning experiences. In the literature, electives have been found to be beneficial learning experiences for the personal and professional development of medical students, including informing their career decisions[222, 225]. However, the current research also found negative experiences of the Student Selected Components and electives, as some students felt isolated, unsupported, and did not perceive themselves to be furthering their clinical skills. Similarly, electives have been criticised for being unstructured and unfulfilling potential educational opportunities[223]. Ultimately, the students' experiences varied; however, I have uncovered an understanding of why, as this research helps to pick out the conditions which mediated processes and the outcomes associated with the placements. There were many workplace placement complexities but if certain conditions were recognised it was more likely that more participatory or exclusionary experiences would also be identified.

In logistical terms the Student Selected Components and electives have notable differences as the Student Selected Components are shorter, are mainly based in the UK, and have more specific assessments (e.g. presentations, audits, portfolio's) and learning outcomes. However, within the data presented there were many commonalities in the learning experiences of students across the Student Selected Components and electives, particularly surrounding what opportunities there were in the workplace environments and the impact of these. The Student Selected Components often had more instances where the students perceived developing their clinical skills specific to the specialty they experienced. Yet the electives tended to be overseas and had more examples where students felt unsupported, had a lack of belonging, and struggled to further their learning.

The peer comparison interviews highlighted the importance of effective supervision in the enablement of a student to become a legitimate part of the healthcare team. Adequate supervision is a vital component of the elective experience[223]. There were positive experiences, where students were participating and felt they provided a valuable role as they undertook minor procedures and were in the role of the doctor. This often occurred when the students felt welcomed and were given structured supervision. The data suggests the students themselves had a pivotal role in pursuing learning opportunities, and making the most of the placement.

In contrast, there were conditions and processes that inhibited learning. The students often did not feel part of the team as they felt *"like a spare part"* and *"undervalued".* Students often feel excluded if they do not participate in communities of practice and perceive a lack of legitimacy in the functioning of workplaces[161]. The supervisor or clinical team were often too busy or understaffed so did not provide the teaching or experience needed. Another element was that there was sometimes a poor student-doctor ratio, as the learners had to compete for learning opportunities. During electives, language difficulties were another barrier to learning, as translators were sometimes needed. The students were sometimes limited to observing.

There was perhaps a self-fulfilling prophecy regarding the students who did or did not have a productive role in the environment. Many students saw the Student Selected Components and electives as an opportunity to gain experience of the role of F1 doctors. As long as they developed skills and confidence in performing this future role then the experience was beneficial.

Moreover, some students used the placements to understand potential careers, practise clinical skills, and learn about a specific topic. Others, however, took *"easier"* options, with less clinical skill demand and more time off, and selected placements based mainly on geographical location. This was particularly the case for electives

which were often taken abroad. There may have been little motivation to learn and therefore any minor barrier to learning may have been given too much prominence.

It may be impossible to distinguish the interaction between learning experiences and outcomes, as not even the students will know what facilitated or inhibited learning. However, it was up to the students to be self-directed and motivated to learn hence they are pivotal in what is experienced.

Throughout the data presented in this chapter and in the thesis, many of the students have acknowledged that the electives are an opportunity to travel internationally and have an extended *"holiday".* Learning (particularly relevant to medicine) is not always the main driver for choosing a particular placement. However, there are considerable risk factors associated with the electives, which were highlighted by the tragic loss of two Newcastle University medical students during their elective in Malaysia, August 2014[226].

The issues identified in this chapter perhaps lead the curriculum to move to more structured learning experiences. Cherniak, Drain and Brewer recently identified 22 objectives, concerning pre, during, and post electives, to ensure medical students have a more meaningful experience[227]. Adherence to the objectives may enable many of the difficulties encountered by students to be overcome as there will be better preparation by the student and the host institution.

This research builds on the limited knowledge about the educational value of Student Selected Components and electives. Student learning is a complex social experience in action, and understanding the variables in social interactions can help to inform educators to develop learning environments[161]. This research is based on a sample of volunteers from the fifth year of the Newcastle University Medical Programme therefore there may be a self-selection bias as only those with poignant experiences may have volunteered to take part in the study. The wide ranging topics and locations of the

Student Selected Components and electives demonstrate a diversity of experiences.

9.12 Conclusions

The Student Selected Components and elective experiences often increased student confidence, helped students consider future careers, and improved clinical knowledge. There were also negative experiences as students commented on unsupported learning environments. There were key conditions and processes of learning that were often linked to these positive or negative learning experiences including the role the students in the environment, level of participation, and effective supervision.

10 Chapter 10 Rural comparison- educational value of an established rural, community programme

10.1 Abstract

Introduction: The Flinders University School of Medicine piloted the Parallel Rural Community Curriculum (PRCC) in 1997 to allow medical students to undertake a full academic year based in rural and remote areas. It has since grown to become one of the most renowned examples of a longitudinal rural community placement in the world. The PRCC was selected as a suitable comparator for the DDAP because of its excellent reputation, community orientation, longitudinal placement, and aim to facilitate GP workforce recruitment to the local area. The aim of the study was to explore student learning experiences of an established rural community placement after 14 weeks in placement.

Method: Semi-structured, one-to-one interviews and focus groups were conducted. Interviews occurred after 14 weeks to enable comparison with the DDAP. In total, six PRCC students were interviewed, and the interviews lasted between 20 and 75 minutes. The Experience Based Learning model was used to interpret the data.

Findings: The PRCC was a very positive learning experience as the students reported greater confidence and improved clinical skills after just 14 weeks. They perceived that the placement length enabled supervisors to appreciate their capabilities and support participation to further develop their confidence. In comparison to the traditional hospital placement at the Flinders Medical Centre (FMC) in Adelaide, students reported having fewer peers on placement which increased patient contact, enhanced supervision, reinforced learning, and led to better preparation for the end of year exams.

Conclusions: The PRCC drove student learning with an abundance of authentic patient contact and nurturing supervision. The hands-on experiences facilitated learning in preparation for end of year exams.

After 14 weeks many of the benefits identified after one year were already present, but there were gaps in confidence, clinical skills, and continuity within the placement. The remaining placement time may help to reinforce learning as the students felt they were just beginning to reap educational benefits.

10.2 Introduction

Flinders University and the Riverland Division of General Practice piloted the Parallel Rural Community Curriculum (PRCC) in 1997 to allow medical students to undertake a full academic year based in rural areas[81]. One of the main reasons for initiating the PRCC was the issue of GP workforce shortages in rural areas, as well as the difficulty of providing teaching in traditional hospital settings due to the increasing number of medical students[57, 81, 228]. The aim was to increase the number of students working in rural general practice in the future. To pilot the initiative, funding was secured from the Commonwealth Department of Health and Aged Care[81].

At the time of data collection in academic year 2012/13, the PRCC took place in Year 3 of a four-year, graduate-entry medical programme. However, when it was first implemented it occurred during Year 5 of a six-year programme. Currently, Year 3 is the principal clinical year and culminates with exams to assess learning across a range of core discipline areas. During the PRCC, students learn by having an active role in the longitudinal care of patients who walk through the door in general practice[228]. If patients are referred to inpatient hospital or specialist care, the students may follow the patients up, to enable them to see the patient journey through the healthcare system, including the return to the community[228]. The PRCC timetable structure has typically included the following activities shown in Figure 6[228]:

- Continuous ad-hoc teaching based in general practice
- Two sessions per week parallel consulting with GP supervisor
- Daily exposure to hospital inpatients
- Minimum of two days per week on call
- Minimum of one in three weekends on call
- Weekly GP tutorial (1-2 hours)
- One day small group study (practice-based learning cases, specialists tutorials, video conference tutorials)
- Fortnightly specialist consulting sessions
- Weekly operating theatres sessions

- Monthly clinical attachments with allied health professionals

Figure 6 Parallel Rural Community Curriculum activity examples

Flinders University is based in Adelaide, South Australia, where there are very few universities in a vast geographical region. The medical school covers the north-south corridor of Australia. The students who voluntarily take the PRCC live and study in rural communities and often require re-location away from the city of Adelaide. For example, one rural host community is approximately 150 miles from Adelaide. The PRCC originally started in these types of areas, with eight students in four communities, and has grown ever since to include different regions[228] (e.g. Mount Gambier, Darwin) and variations of the curriculum (e.g. The Onkapringa Clinical Education Programme, OCEP[229]). The OCEP is an exemplary hybrid model of the PRCC which occurs in outer urban areas with high socioeconomic deprivation[229].

The PRCC has been examined extensively by research investigating student outcomes[104], supervisor outcomes[230], and future career pathways[110], amongst other research. The PRCC was selected as a suitable comparator for the DDAP because of the similarities in aims: to provide a community-focused, longitudinal placement, and to facilitate workforce recruitment to the local area. Much of the research published about the PRCC students has been based on data collected at the end of the programme[104] and post participation[110]. As the DDAP is a 14-week programme, I was interested to explore how students experienced the PRCC up to this unique point in time, and enable a comparable time in placement.

10.2.1 Research aim

- To explore student learning experiences of an established rural community placement after 14 weeks in placement

10.3 Method

A qualitative approach was carried out involving semi-structured, one-to-one interviews and focus groups. In total, six PRCC students were interviewed either through one-to-one interviews (n=1) or focus groups (n=5). All interviews were face-to-face on Flinders University training premises. The interviews lasted between 20 and 75 minutes.

Broad open questions were used at the beginning of all interviews to allow participants to reflect unrestrictedly on their experiences, i.e. please can you describe your experience of the PRCC so far? Follow-up questions included questions on the educational and social strengths and weaknesses of the PRCC, and reflections on the length and locality of the placement. The question guide was derived from and informed by the literature review in chapter 2. Subsequent revisions were made to the question guide by the researcher and with input from colleagues at the Centre for Medical Education Research, Durham University.

Purposive sampling was used to explore the experiences of students involved with the PRCC. The students were identified with the assistance of Flinders University staff members. Students were approached in teaching sessions and volunteered to take part. An interview time was then arranged. The participants had time to read the information sheets and ask any questions.

10.3.1 Data analysis

The mixture of individual and group interviews allowed idiosyncratic in-depth accounts as well as social group interactions which evoked thoughtful responses, reflections, and discussion amongst peers. All interviews were audio-recorded and then transcribed. I collected the data as part of a study trip to South Australia in April 2012 therefore I was an external researcher with no prior or on-going involvement with the operational running of the PRCC. The data were analysed using framework analysis using NVivo 9 software. The Experience Based Learning model was used to interpret the data.

10.3.2 Ethics and consent

The research protocol was first reviewed and approved by the Durham University School of Medicine, Pharmacy and Health Ethics Committee, Sub Committee. Permission was also given by the Dean of Medicine and the School of Medicine, Research and Evaluation Group at Flinders University. Participation was voluntary and all participants signed a consent form after receiving verbal and written information about the study.

10.4 Findings

Firstly, the reasons for volunteering for the PRCC will be discussed, followed by analysis of the PRCC experiences. The PRCC students can choose various locations for their placements, and the students interviewed were all participating in the same region.

10.5 Baseline status

The baseline status of students was important to understand as it enabled consideration of the types of students that volunteered for the programme, and identified context for interpreting outcomes of programme participation.

10.5.1 Excellent reputation

The students were aware of the positive reputation of the programme in terms of academic performance (see chapter 2). The exam preparation was welcomed as there were summative end of year assessments including Objective Structured Clinical Examinations. The knowledge of this positive reputation was often gained from peers.

> *It has a good reputation for students doing well so academically that sounds good… when you hear things like the students do well it certainly reinforces the decision that going there is gonna be a good learning experience.* [F1]

> *I'd heard from other people you get a lot of clinical help; you get to do a lot of clinical things up here. I've been told as well you tend to do better in the clinical exams up here. I think they're quite proud of and I thought as it's our clinical year I wanted to focus on the best stuff.* [F6]

However, the students were aware that the reputation itself depends largely on the attitude of the students to make it a success.

It seems to be marketed, you're gonna do well, but I think it comes down to the individual a lot of the time so I don't really buy into that a lot. [F5]

It could help a good student to become a great student, it could move you up a few degrees, as opposed to whereas this person was gunna be terrible but now they're awesome. [F6]

10.5.2 Desire to experience the rural lifestyle

The setting of the rural area was attractive to the students as they often wanted to escape the city. They wanted to experience the country lifestyle and provide healthcare in a rural community.

I picked the Riverland because of the distance from Adelaide, it's far enough away that you'll get some interesting things here, they won't always get shipped out to Adelaide straight away, it's close enough that you can still go back for a weekend if you wanted. [F5]

Some people on my course, they're graduate entry and they've never lived out of home and they've always lived in Adelaide… the idea of moving out of home is a big deal for them… and to 'the country' for some people it's this ridiculously terrifying thing. [F1]

The support of family and / or a lifestyle which was congruent with the rural placement was especially important.

They [parents] think it's great, back in the country, they can come down here for holidays. Mum's really like, "be a rural doctor", come back to home. So I think she dreams this is a step on the path of me returning back to home. [F1]

My partner, even though he's three hours away in Adelaide he's pretty understanding of the requirements and that we might only see each other once every 2 or 3 weekends because of on call roster… it does take its toll. [F3]

10.5.3 Providing healthcare in rural, community areas

In preparation for the PRCC, the students had short visits to become familiar with the rural community settings in Years 1 and 2. Flinders University have set up a medical school admissions initiative referred to as the *"sub quota"* which aims to recruit members of the local population to become doctors in the area. The orientation of students from this initiative gave students a head start, as they could quickly find their way through the different systems which enabled a convenient process for their placement experience. For most students, this was their first clinical year, so they had very limited or even no clinical experiences in rural communities.

> *Part of PRCC sub quota, every semester for the last two years we have come down here for a week, and stayed at the caravan park on Flinders dollar and then come into the practices and sat in with the GP, so I'd actually gone to most of the practices and met a lot of the doctors and having had that two years of knowing I was coming here.* [F1]

> *Academically I couldn't say I was prepared we came up here with no obstetrics backgrounds so you may walk into antenatal session in the first week and what they want you to do? I've no idea, unless you've got a background in that or you're presented with a kid and they're not just small adults they've got a whole different approach and systems and that's not really seen or taught in the first two years so you're suddenly left to develop an approach where you don't know where to start from.* [F4]

The students were aware of the need for doctors in rural communities, this acted as a motivator to return to practise in the area. The quotes below mention how one student had always wanted to be a rural GP and how the PRCC may be useful for helping to secure a future job. The impact of the PRCC on future careers was also discussed by another participant who considered role modelling

as a factor in career planning. This may be particularly relevant for females in rural areas who may have a shortage of role models.

> *GP's what I've always wanted to do… I think going from a small town, the most educated woman was the doctor… she was just a role model for me, as somebody in the community who was educated and had a good job*. [F1]

> *I'm trying to set a pathway for the potential future saying ok this is probably a practice I'd like to come back to and perhaps putting a foot in the door….I guess growing up, living in the country for a large part of your life, your heart's guna be back maybe not to the same community but somewhere other because you know the need and know the respect and feel that you could actually make a difference to that community.* [F2]

10.6 Summary of baseline status

The reasons for volunteering for the PRCC included the favourable learning opportunities, the reputation of the programme and the appeal of living in rural areas including work life balance, independence, and being away from the city. The positive reputation of the PRCC in helping students prepare for the end of year exams was a strong motivator. The learning opportunities possible from the PRCC, such as one-to-one teaching and clinical contact, were also positive affiliations of the programme. Enrolling on the PRCC was a substantial commitment that involved moving away from Adelaide (for many of the students) for the third year of study.

10.7 Parallel Rural Community Curriculum learning experiences

After 14 weeks the PRCC was viewed as a very positive learning experience. The students often discussed differences between their placement experience and an alternative option, the traditional year spent at the Flinders Medical Centre in Adelaide, a large University teaching hospital. In particular, this comparison revolved around the smaller number of peers, which had perceived potential benefits including abundant patient contact, enhanced supervision, reinforcement of learning, and better preparation for the end of year exams.

10.8 Conditions

The conditions of support for learning throughout the placement were analysed. The main conditions of support were at the curriculum design level and the strong pedagogical relationships between students and supervisors.

10.8.1 Curriculum design

10.8.1.1 Continuity of structure, settings, and patients

The PRCC design was deeply rooted in principles of continuity. The rural healthcare setting provided appropriate clinical content while the community integration and participatory incentives facilitated the student learning experience. The difference between the PRCC and the traditional hospital experience was frequently discussed in terms of the structure of the placement. The PRCC is based in the same departments across the year, i.e. a longitudinal integrated clerkship, whereas the traditional curriculum is a block rotation, hospital experience in different departments (specialties). The PRCC structure allowed for continuity in student learning, in particular for relationships with supervisors and patients respectively. The students saw patients several times, allowing them to really know a patient and be involved in their healthcare.

> *I like the continuity, I like the fact that we're in the same place for the entire year, at Flinders they rotate wards every 4 weeks, so every 4 weeks they have to get to know their new supervisor and new team, I like here that I get to know the nurses and they're the same for the whole year.* [F1]

> *There's a lot more continuity with patients, I have patients that I will be following through for the whole year, which if you're doing 4 week blocks in a hospital you don't get to see that. So that's good because you get to really know the patient, you get really involved in the management of their diseases and especially where we are, there's a lot of older people so it's interesting, there's different diseases that you have to tie together and you can't just focus on the one problem they have. All of them inter-relating.* [F6]

The learning trajectory of the PRCC is different to the traditional hospital experience because clinical knowledge is covered across the year rather than through rotational block learning. A rural student perceived their learning process to be more like *"scrambling across the year".* The students were aware of the different ways medicine and illnesses can be tackled as there is not always one correct approach.

> *We have a checklist that is given to us about things we should experience during the year. We're seeing most of the things in general practice whereas students back at Flinders medical centre are seeing block rotations of six week paediatrics, six weeks of surgery. They can tick off all those little boxes in one, and we are sort of scrambling across the year…By the end we get to the same point but it's just a little bit more jumbled in the middle…Seeing life as it happens. Put the jigsaw together at the end.* [F3]

> *They [Flinders staff] said to us at the start, 'don't compare yourself with people in the city because it's a different way of learning.' They're doing all little short blocks of knowledge so by mid-year they will be like "we know heaps", whereas we are like "we still know nothing"… it will be like unconsciously incompetent and then consciously incompetent, and then unconsciously competent and then consciously competent. I'm in the consciously incompetent, I know that I don't know stuff!* [F6]

The PRCC students were not able to see as much acute medicine as those at the Flinders Medical Centre. This was because of the capacity of healthcare provision in rural areas rather than what the programme designers were allowing students to experience. However, the placement provided students with sufficient exposure for their end of year exam requirements, as they saw a variety of ailments. This issue is obviously a regular concern for the PRCC students, as modifications are made in fourth year to ensure sufficient exposure to acute illnesses is achieved.

> *Sometimes you feel you haven't seen enough of the rare stuff. Like our emergency stuff it's keep them alive, and then get them out. We had a lady we got to see her in the acute stages but then that was all in the chopper.* [F1]

> *I haven't seen enough acute things. I get nervous compared to Adelaide that we won't understand the full acute care situation. We understand more the diagnostic management.* [F3]

> *We've covered more than what I anticipated, with specialists in surgery. I think there will be some aspects with the hospital system that we won't be as well versed in, when we go back, but we cover that in fourth year, it's not a big problem. We should be pretty good at following things from a GP setting to a hospital and communication.* [F5]

As identified earlier, the PRCC has a positive reputation. This reputation acted as reassurance for the students as they could relate to the success of other students in previous years. This highlights a unique instance of how curriculum development broadens learning experiences.

> *There seems to be a trustworthiness about the programme. So if you think am I not guna make it, are we getting enough of everything? I just think, well there's been a group of nine for the last 13 years, they must have done something right!* [F2]

> *When you are comparing what people have done, you might have done something which is really exciting which is cool but then they know all the stuff about, they've just finished a rotation on whatever, they're speaking a different language.* [F5]

10.8.1.2 Educational value after 14 weeks

A fascinating insight into the PRCC was gathered by analysing how a formal condition of support from the University impacted on learning, i.e. the length of the placement. The students discussed the relationships they had made, and the trust developed from the relationships over time, as well as the increased confidence to become more involved in patient care. The students experienced abundant patient contact after 14 weeks. The following examples show how the placement length fostered outcomes. For example, an affective outcome, of students growing in confidence over the year, perhaps resulted from the curriculum design condition of the continuity and extended length of placement.

> *Three months would still be alright, I think you would have learnt a lot, it would certainly still have value.* [F1]

> *I think that's [14 weeks] a good amount of time to get into the swing of things, as opposed to a shorter placement, where you just get comfortable somewhere and it's like aww I've*

> *finished… I've learnt a lot and had the chance to do a lot of clinical stuff, like I'm happy it's still going, we have been here for 14 weeks now, we've done heaps.* [F6]

The students were just starting to feel settled and felt the next few months would involve even more learning. The 14-week placement length successfully supported participation but the students acknowledged and anticipated there were still many more opportunities for further participation, including community integration and further time to consolidate learning.

> *You're just starting to get your feet and find your own and people trust you. You're building confidence, they're building confidence in you and really letting you develop. I've only probably felt that I've got my foot in, got accepted and really started to tackle some boundaries in the last month.* [F3]

> *Gives you a time to get settled, to develop relationships with your main educators, gives you more exposure to those specialists who come out because you are one on one with the specialist…. It just gives you more time to consolidate your learning.* [F4]

> *It takes you a little while to see how everything works, what you're meant to be doing. I felt comfortable after about a month or two…I reckon by the end of the year we will be pretty integrated in the community, but in 14 weeks I don't think you will get the same, we've just started to get past the glares when we walk into the supermarket like you don't belong here.* [F5]

10.8.1.3 Beneficial student-doctor ratio

The students mainly discussed positive elements of being in the rural community, as they were afforded better learning opportunities during the experience. A key condition for learning identified was the smaller number of learners in the setting, therefore there were fewer

people to compete for opportunities to practise skills. It was clear from the experiences that there was a great depth of involvement and many opportunities to have authentic care experience as clinical skills and routine procedures were practised. The high level of participation and greater opportunities for learning (process), were perhaps a result of having fewer peers in the learning environment (condition) leading to increased confidence in ability (outcome).

In experiences prior to the PRCC, there was frustration with other students being in the learning environment, acting as a block to learning opportunities. This strengthened the enjoyment of the PRCC as the opportunity to be more involved with clinical work was much more forthcoming.

> *The other day I got to assist the surgeon on a mid-line incision, appendectomy, they sliced this guy open, and I got to scrub him and assist. Then in the practice, stuff like pap smears, breast exams, digital rectal exams, hands-on stuff. Not having to compete with other people… in Adelaide I'd be lucky to be in the room. I couldn't even get near the curtain… That gave me the s**t so much… I'll not learn anything from that.* [F1]

> *At the teaching hospitals you can get lost in the crowd… I knew this would be more confronting, there would be no hiding.* [F3]

> *At the hospital you've got your registrars, your HMOs, your interns, your fourth years, and then the third years. Whereas as here, it's pretty much like the consultant and then you, or in delivery, the doctor, the midwife, then you, so you get to participate much more than you might otherwise.* [F6]

The students recognised that having fewer peer learners led to them feeling more accountable and responsible. The PRCC may be particularly helpful to students who are hesitant to participate, as the experience drives them to higher levels of participation. There was

more responsibility given to them to participate in the clinical workplace.

There was an acknowledgement that the staff and students would have noticed if they did not attend sessions, which enhanced their sense of belonging to their community of practice. The PRCC did not just support students to observe practice, as the students believed the Flinders Medical Centre allowed, although obviously they had not experienced the alternative placement.

> *You're a lot more accountable, because there's only nine of us. All our teaching sessions are compulsory and like they might say oh it's not compulsory but if somebody doesn't turn up it's like more than a tenth of the students gone so your attitude is different, you're like I've got to go, being there, and here people notice. Like last week we had a couple of teaching days down at Renmark and today everyone has been like 'where have you been?'* [F1]

> *I know personally if I'd been at Flinders I'd just stand back and hide and stuff, I'd be okay that's fine, but here it pushes you to do it... they know you and you're more accountable…It's been good to be more independent.* [F5]

10.8.1.4 Immersion in community settings

The setting was often discussed by participants, as it was fundamental to many of the reasons for pursuing the rural placement. The University facilitated student immersion in community settings by requiring the completion of a portfolio of their experiences. The portfolio facilitated immersion in community settings outside of medicine and included education, sporting, and community settings. In Experience Based Learning terms, this is an example of formal support from the University supporting individualised learning. The students were encouraged to identify their own personal ways to become immersed in rural community settings.

> *On the first day we had this session, where we had the tourist guide saying welcome to the Riverland, these are things you can do, and the person from the theatre, these are the shows you can see…I'm a keen [sport] player and they've got an astro turf here, so I sussed that out and called them to see if I could play…I didn't want to be sat at home by myself every night, cos I live alone as well.* [F1]

> *We went to the kindergarten, did a talk showing them the instruments we use…we have like four different areas that we have to do, we have a talk at a lions club, a public health one and a vocation one… I don't mind that we have to do the community things. I was probably guna do that anyway but for other people it might be frustrating to get ordered.* [F6]

> *We're guna play [sport] so I think that will probably help. We've met a few people at [sport] trials.* [F5]

Integration within the local community in various ways was identified during the analysis. The students tried to participate in sports and be involved with local activities. Again, the length of placement was a critical factor in relation to how this integration occurred. The blurring of boundaries between formal and informal support for individualised learning was identified; initially, encouraging participation may be formal, but as time went on the support became more informal. This integration helped the students to feel welcomed and attached to the community. However, the compulsory requirement by the University for students to integrate with the community was not always warmly received by students.

> *I didn't want to be one of those people that live here but leave every Friday at 5 o'clock and get back on Monday at 8am from Adelaide. I wanted to meet people, get to know the community and actually live here…Makes the year better, makes life more fun… Because I'm here for a year I've been playing sport and*

meeting people and doing that sort of stuff... I like being settled here for the year. [F1]

I was very lucky in the community, the [community] club, they take in the student, not as an extra set of hands but for me to experience it, which is great. [F2]

I have been a bit annoyed with the instances of community involvement making it a compulsory thing, I think it's a wonderful thing to encourage the people to do, especially if in previous years they're young single people coming up here they should be encouraged. But if you've already got families, we're just plain not interested in joining the sporting community or going to the [community] club. [F3]

10.8.1.5 Incentives provided to participate in the PRCC

Planning at the curriculum level was demonstrated by the incentives the University provided for PRCC participation. Decisions were made at a senior level, which was thought to increase and facilitate student participation. The University provided students with accommodation in the rural areas, with which they were satisfied.

We're so well looked after, the Uni has houses in each of the towns, and they just allocate... So I've got just round the corner this two bedroom unit, with a study… the rent is paid by Flinders, we don't have to pay a bond, have to pay electricity and water, gas if I had some. [F1]

I've been very lucky I've got a house that's actually located in the grounds of the hospital. The only downside is that it doesn't have a street entrance so the paper round can't find it! We had to set up a post office box so that all the mail didn't go round the hospital. It's brilliantly really, it's a nice place, we're happy. [F4]

Other benefits the students could access during the PRCC included petrol, laptops and mobile phones. Perhaps as a result of the incentives, the students were more relaxed when undertaking the placements as they did not have to worry about certain constraints.

> *We get laptops for the year, which is perhaps is a bit of a remnant from the days when people did not have laptops, we have the option of getting a mobile phone on a loan. We also get a relocation allowance so that was 250 dollars for the whole year… I feel well looked after.* [F1]

> *All your essentials, all your furniture, all your electronics, so you don't have to worry about the major items and you know re stocking of kitchen and all these little peripheral issues, and you do find over time there's little things that you want of your own or you want to add but it's one less stress and also not having to pay rent because for me it would have been a very un-viable option if I had to move up here to pay rent…certainly means life is easier and there's one less thing to worry about.* [F2]

10.8.2 Pedagogical relationships

10.8.2.1 Nurturing supervisory relationships

Strong pedagogical relationships between the students, peers and supervisors were especially apparent during the interviews. The supervisors had nurturing relationships with the students as they steadily supported and reassured the students, helping them to develop their learning and expertise.

> *I find the GPs are incredibly supportive, they've seen all the students coming through having no knowledge… with the experienced GPs, they know how to feed it to you, they know how to encourage without making you feel like you're stupid.. They teach through each step, get you there in the end.* [F2]

> *It's good cos the staff all know you… I think because they know you there's a bit more trust so they let you do a lot more than they do back at Flinders.* [F5]

The supervisors demonstrated trust in the students by involving them in patient care, which in turn helped students to feel more confident in their approach.

> *Some days I probably exceed the expectations. When you are handed the scalpel and the GP say here you can remove this one and stitch this one up. There's the trust not only of the supervisor but of the patient and they're very willing because you've got to learn somewhere.* [F2]

> *If you see the same people, over and over for like the 12 months, I guess in the city you would have a broader range of people to learn from, but we still get a lot up here from specialists… instead you get people who really know you and go oh yea she's really confident, she can go and do this, or she's done that a lot, or you haven't done this before so go and try it.* [F6]

As alluded to in the last quote, this nurturing relationship developed over the longer period of time. There was also increased supervision time available due to there being fewer peers.

> *Like [name] and I have our supervisor, [name], and he looks after us with academic things, and we get tutorials with him just the two of us and that's a very good student to teacher ratio and same in the hospital when you're sitting in with specialists it's a really good ratio so I thought that would be beneficial and yeah even student patient ratio.* [F1]

> *The ability to have a steady influence of the educators that you're with and be able to draw those years of experience out of them, and learn one on one, like a master and apprentice type situation.* [F2]

> *Everyone here [PRCC] is really friendly and nurturing in a way, if you stuff it up it doesn't matter, whereas back in the city there isn't that time to spend with people, so it's all a bit more rushed, and they're like why haven't you done that. Get the drip in, but here it's like good.* [F5]

There were opportunities for different supervisors to have input into learning which allowed students to see different working styles. The high quality relationships were also apparent with one-off visits from the specialists. The value of the PRCC in facilitating strong learning relationships between the supervisors and students was demonstrated by the students discussing returning to the main teaching hospital the following year. When the students return to the large, city hospital context, the *"scary consultants"* may seem more *"human"* and the relationships may be strengthened.

> *We've known them [specialists] in different circumstances up here, knowing that they're actually pretty human.* [F4]

> *We've had even better than some people back in the city because you get one on one time with specialists that come out here which is good…It's good at [place] clinic, because we get to work with a lot of different doctors who have different styles of working…They [specialists] get to know you a bit more so when you go back to the city it's like do I recognise you…at least you can do a gentle yeah I'm from the Riverland.* [F5]

> *They do tutorials for us which is just a small group so they ask you lots of questions and that's how you learn.* [F6]

Through instilling student confidence during pedagogic relationships with supervisors, which were made possible by certain conditions for learning, the students were then given further opportunities to learn. Increased confidence was not only a perceived affective student outcome, but supervisors also had time to develop confidence in the

responsibilities they gave to the students, thus making confidence a process function to facilitate learning. A feedback loop then occurred, as the supervisors helped to further develop students' confidence by allowing them to recognise that they had a legitimate role in the workplace. The students realised they had knowledge which was of value in the healthcare setting.

> *They're [supervisors] good at teasing out knowledge, they will ask you a whole series of questions to get you to the answer, and they will be like "see you did know that", and you're like "oh yeah" (laughs).* [F5]

> *They're really good at telling you what areas to work on.. Like the GP said to me "your knowledge is really good, you just need to be more confident with what you're saying"… I've learnt don't hold back answers because yes sometimes I can be wrong, but more often than not you will be right, and feel like really good because you feel like you're getting on. I was told to improve my confidence and I think I'm starting to get there.* [F6]

10.8.2.2 Positive learning relationships with PRCC peers

The students discussed the strength of having a small group of peers, which facilitated learning opportunities. During the PRCC, there were weekly case-based learning sessions often led by specialists. The small group allowed students to support each other.

> *As a group it's important to have good relationships with the other students that are here, we're very supportive of each other and learning experiences, if we weren't and got competitive it would be hard.* [F1]

> *You do have to learn how to deal with conflict and stuff, it's a very small group of nine people, you're all trying to learn the same things, you might have one patient that's got one thing and it's the only time of year you're going to see it so all nine*

> *of you are being involved, but you have to learn when to step back and kind of play your role in the team, contribute without over-powering everyone.* [F6]

There was also *"healthy"* competition within the PRCC peer group. The competition was for 'active participation' in patient care and showed how the students were trying to compare their own involvement to achieve this target.

> *Competitiveness within our group, like healthy competitiveness, we're talking to each other going what have you learnt, what have you done this week? And you're like s**t they've done 10 papsmears, I've only done one. So there's that level where you're trying to keep up with your peers.* [F1]

> *I think that's probably something I would struggle with in the city, if I had another student that was like no, I'm going to do it. I would be like okay, whereas here I think because it's a bit smaller and more relaxed. When you're in your clinic, I think there's only the two of us, so we're pretty good at saying no I did it last time.* [F6]

10.9 Summary of conditions

The strength of the relationships between the students and supervisors was fascinating as it allowed the students to develop over time. The supervisors demonstrated trust in the students and were very supportive. The students discussed the value of continuity particularly for enhancing relationships with supervisors and with patients. The implications of these relationships were that they improved the learning afforded by the placement.

After 14 weeks, the students appeared settled and were starting to feel comfortable in the clinical settings. They had gained a lot from the experiences by this point, but believed the rest of the time would reinforce what had been covered and further improve their clinical

skills. The positive relationships within the student peer group were also mentioned. The students supported each other but also had healthy competitiveness, where they compared what learning opportunities they had acquired. This sense of belonging to a group was thought to help them develop.

The incentives provided by the University for participating in the PRCC included accommodation rent, petrol allowances, laptops and mobile phones. These incentives helped to make the transition to rural life an easier process and reduced the stress of moving to a different location. The University sought to integrate students within the community so that it became part of their lifestyle experience. The impact of the community integration was generally positively received, but was influenced by individual circumstances, especially if they had families.

10.10 Processes

The way students learned throughout the placement was analysed.

10.10.1 Active participation in authentic patient care

The students had many opportunities for being actively involved in patient care, which greatly facilitated their learning. The students demonstrated extreme positivity and enthusiasm about the learning experiences they had encountered during the PRCC. Many of the conditions highlighted in this chapter allowed the students to be in a position where they maximised their learning in the environment. For example, through developing the trust of the supervisor a student then became involved in patient care. The supervisors supported participation in learning through authentic patient care experiences which received extremely positive reactions from the students.

> *I had a lady come in who said I want a pap smear done, so I was like alright, are you happy for me to do it, and she was and that's really awesome!* [F1]

> *The anaesthetist hands you the tube and says "here you can intubate this one if you like", you go "YEEAAHHH okay!"* [F4]

The following quotes identify patient contact driving the learning and students being able to practise skills rather than reading about them. Learning through active participation is common in these quotes.

> *I could read a textbook for hours and hours and I'll never retain the same as the person sitting in front of me seeing the condition, working through it and everything I've done with them I don't forget. So really that relating person to condition and then I can put the whole spectrum together and that sticks for me.* [F2]

> *You get a lot more of that here because you get access to patients…. you are getting that one on one unique exposure.* [F3]

> *I can't learn a format if I have to learn 10 steps, I can't remember those 10 steps they'll come out in a very jumbled order but if I practise history taking and learn those 10 steps it's a meaningful experience or practise those 10 steps examining someone I can get a format in my brain and learn it. The lived experience for me is a lot more meaningful.* [F4]

The condition of having more time available to participate was also captured in relation to having time to make mistakes and learning from these in a supportive way. There was acknowledgement that this level of participation was not usually possible in main teaching hospital experience. The PRCC students developed clinical reasoning skills and management plans perhaps more than was possible in the hospital setting. Actively going through the clinical reasoning process may help the student learn more rather than being given the answers. The high level of increased participation in patient care facilitated this learning process.

> *They're [non-PRCC peers] often jealous of some of the hand on experience that I'm getting and a lot of them go "I wish I'd done that!"…we're probably getting a lot more experience on seeing a patient front up and working through the problem, this is a patient with this, they presented x,y,z and now go back and do your own history and find out more about them so they've already got the answers where we have to work through it so it's really developing your clinical reasoning skills along the way.* [F2]

> *At first we are just observing and now we're sitting in and they're actually getting us to help with the decisions, I feel like by the end of the year we'll be almost doing those on our own.* [F6]

The students had to actively identify the diagnoses. The learning material available in primary care was also cited as being more relevant than the specialised hospital medicine, to help pass their medical programme.

> *The GP part is really good erm I enjoy getting to consult with the patients and figure out their problems and to be hands, one on one and hands-on with them…In Adelaide, with there being more students and stuff it's a lot more competitive for things like that, and something like a pap smear is a basic skill you need to graduate to do, so I think you get more primary care medicine, which I feel is what I need to be competent at, not the rare stuff that they see at Flinders .* [F1]

10.10.2 Confidence rollercoaster facilitating learning

The students discussed a confidence journey during the placement. This confidence process was associated with participation. As participation increased, so did confidence, which impacted on learning. The students were made aware that previous student cohorts had experienced the same transition, and had successfully come through the process.

During the PRCC, the students increased awareness of their level of competence, helping them to become better doctors. This understanding was underpinned by the realisation of sometimes feeling peripheral and having a lack of authority in providing healthcare. The data highlights how being legitimate in a community of practice is a complex position. Students quickly swayed between different states depending on context and available support. The PRCC pushed the students to learn outside their comfort zone but this was regarded as being positive for learning.

> *It is a confidence shattering time, you don't have a degree of knowledge, and a degree of authority to speak from and it's de-stabilising emotionally.* [F3]

> *This year I think will either make or break me. I will either get with the programme, and really start to develop the confidence by the end of the year or I'll just be repeating third year.* [F4]

> *I think I have learned that it's okay not to know everything yet, and that's okay to say "I'm not sure", I will go and read up on that, to put forward an answer but not feel bad when you are wrong, so and as long as you put some logical reasoning behind it, because I'm not very good at being wrong and stuff (laughs) so.* [F6]

The students likened the time at the beginning of the PRCC to a 'honeymoon' phase.

> *I think that to me the honeymoon period is just coming to an end and that the real guts work is now starting.* [F2]

> *My experience has been very nerve wracking, I would have been stressed out in Adelaide so maybe it's just me but I've been very stressed with the whole thing. Definitely not a very happy honeymoon.* [F4]

The students could see the process of the PRCC having a positive impact over the longer term but they felt they were still developing and were in a transitional stage. This may be a factor of being only 14 weeks into the programme and relatively early on in the overall third year. Alternatively, it may be about the challenge of being more hands-on, having more responsibility, and having a legitimate role in the team. This demonstrates the value of the PRCC being a longer placement than just the 14 weeks.

> *I can see how it has the potential to develop my confidence but don't think I'm quite there yet but probably you know if you spoke to doctors in the clinic and they compared me now with when I started a few months ago then they would see some change that way just a bit more confident in doing things… I feel very much like just starting to get a bit more comfortable.* [F4]

Individual patient cases evoked ambivalent feeling at times but this ultimately helped the students as they considered the issues from different perspectives. They were aware of their incompetence.

> *The student role is very dis-empowering, and the doctor role is more empowering than the nurse role, so I get certain complexities depending on the situation. Therefore, I can oscillate during the day between, whether I'm competent, semi competent or incompetent and that's in half an hour.* [F2]

> *I oscillate when I see patient cases, I go I think I'm hitting a stumbling point, pick up the phone, next door can you come in because I don't know. So one patient goes really well, how you might treat it, how you might investigate it, the next one I've got no idea.* [F3]

10.11 Summary of processes

The PRCC enabled high levels of participation in patient care. The students were involved with practical procedures and hands-on activities that might not have been possible back at the Flinders Medical Centre. This participation was in a trusting environment, which was largely created by the strong student-supervisor relationships. The supervisors demonstrated trust by allowing the students to be actively involved. The students became more confident during the placement and felt that they actively contributed to the setting. This learning environment of the nurturing relationships with supervisors contributed to the students feeling more confident in their own abilities, which then led to further involvement in patient care.

A 'confidence rollercoaster' was identified, which students endured as they became active participants. The students acknowledged the transitional nature and the tensions of this difficult stage. This transition included moving from being observers to participants, and

actively engaging in the management of patients. However, a longer placement may develop confidence and skills further. The students were becoming more confident and were able to get more involved after 14 weeks. The expectation was that this would develop more over the next few months

10.12 Outcomes

The research investigated the impact the placement had on the students.

10.12.1 Real patient learning: Clinical skill development

There were many opportunities to practise clinical skills with patients throughout the placement.

> *I won't be struggling to remember how to do basic skills like taking blood, that's something we do quite a lot here, that my friends in Adelaide do very little of, they're impressed, they were telling me how stoked they were to have done two, and I was like I've done like thirty or forty, it's something we need to know by intern year so it's not like imminent that we have to know but yeah confidence and aptitude.* [F1]

> *Practical skills like, things like taking blood, giving injections, like I don't know how many hundred flu vaccines I've done.* [F5]

> *At least 300 (laughs).* [F6]

This was crucial for the students because of the end of year exams. The students felt confident going into the exams because of the large number of patient learning opportunities. Active participation in real patient care helped to drive students' learning and encouraged them to read up on material with which they were unfamiliar. This process of seeing a patient and then reflecting on what is known (or not) facilitated further learning.

> *I reckon at the end of the year we're guna rock out at the OSCEs because every patient that comes in here is like an OSCE, I feel and I think that's the way I try and treat it, if this was an OSCE what would I be doing…Every time you see a patient, like this lady today had shingles and I was trying to figure out the dermatomes, like the distribution, what nerve group was infected, so every time you see a patient and you*

realise you don't know enough, that's motivating, so you're like I need to go look that up. [F1]

10.12.2 Affective learning: Confidence in ability

The students perceived having much more confidence in their own ability, particularly in dealing with patients. This will have positive implications for clinical learning and will most likely result in further confidence development within the student. The student's role was accepted and developed over a longer period as the supervisors had confidence in the student to undertake more responsibilities. This may be key to learning and enhance the students' competence, and confidence in themselves developing their identity as a doctor.

It's increased my confidence immensely, communicating with patients, if I'm talking to patient I am actually helping them. My exam that I'm doing isn't just practice, I'm guna present that to the doctor and based on that, the doctor is guna say what we're guna do. So confidence talking to patients, confidence talking to colleagues, nurses, receptionists, specialists. [F1]

My confidence and dealing with patients has improved, my confidence in talking with a specialist and being able to present what I think is wrong and being able to work through it, whereas I would have been sitting in the corner, trembling four or five months ago if I was asked to do that. [F2]

These quotes also display what role the students perceived they were playing in the patients' healthcare. Confidence was borne out of experience with a patient, an authentic experience which they feel is making a difference to a patient.

Descriptions of being terrified, scared and vulnerable were commonplace amongst the analysis of improved confidence. This may reflect concerns about being 'thrown in at the deep end', risks of training, and the affective support that is required for participation.

The quotes below demonstrate that sometimes the learners found participatory workplace learning experiences challenging.

> *From somebody who's like scared of nurses, scared of patients, who's shy about getting stuff done, to somebody who I really feel next year I will be confident about myself and my abilities and what I've been trained to do, I won't be struggling to remember how to do basic skills like taking blood.* [F1]

> *I think the relationships have taken quite a long time to establish to a point where you feel like you can trust someone with your vulnerability.* [F3]

> *I thought it would be good one on one. That's exactly what it's like. Sometimes it's terrifying!* [F4]

Throughout this analysis, there have been many examples of very high satisfaction with the placement for a variety of reasons previously mentioned, i.e. patient contact, supervisors, length of placement.

> *Experiences so far. Oh I love it! … I'm really enjoying being here and the programme requires doctors who are willing to teach their students and are happy to have the students here, like our doctors are, they're very caring.* [F1]

> *I enjoy just the clinical all the different experiences because you're not doing one block, you're doing different stuff every day and you're in a theatre and you get to assist… I've really enjoyed the country; I've never lived outside the city before.* [F5]

10.12.3 Practical learning: Career pathways

For many students, understanding of the GP role improved during the PRCC, such that they could make an informed career decision.

> *Originally I was like I don't think I could live in the County but now after I've been here for a couple of months I really like it, so yeah it's on my list of things, but who knows, wait and see…I just rule things out that I really don't like. I don't think I could do psychiatry or surgery. I hope to get something where I have a bit of a life outside of medicine.* [F5]

> *It's good to see what the rural GP does, some of the different things compared to a GP in the city. There's just a bit more scope out here for doing things like anaesthetics, or doing obstetrics, or a bit of surgery, on top of having patients that in the city might just be managed by specialists. But out here, they might see the specialist once every three months; the GP has to take on more responsibility. We are seeing exactly what the rural GP does, and it does make everything more exciting if that's the path you want to choose.* [F6]

Most of the students were unsure of their favoured career at this early stage in their medical training. Some were more positive than others; however none of the students seemed to be 'put off' by the experience. The rural community and rural upbringing of the student appeared to have a positive influence on pursuing a rural GP career.

> *I went into med school taking every year as it comes. I've not had a fixed idea in terms of where I want to be in specialty when I finish. Guess I've always had ideas and spent a lot of time ruling out things I didn't want to do.* [F2]

> *Still early days I think, certainly the country has some appeal I'm not sure about GP land but I'm not sure what specialty either, I haven't found my interest yet, but would hope it involves a lifestyle that enables me not to be in a big city.* [F4]

10.13 Summary of outcomes

One of the strongest outcomes identified was related to increased student confidence. This was mainly in a clinical sense, which involved better skills in diagnosis, management, and undertaking minor procedures. Confidence also related to talking to patients and conveying information to clinical supervisors. Student contact with patients helped to reinforce learning and support more effective communication. The students also developed their clinical skills. These were encouraging outcomes, as the students felt optimistic about their end of year exams. Many students had positive inclinations about rural GP positions in the future but were not fully committed to any career at this stage. The placement allowed students to understand the role of the GP and therefore make a more informed career decision. The PRCC also helped students understand the challenges of the role and the connections to other specialties. Overall, there was a high level of satisfaction with the PRCC.

10.14 Discussion

10.14.1 The educational value of the Parallel Rural Community Curriculum

Students' confidence in their own ability is a key facet of competence and motivation for learning as it is likely to support students in challenging circumstances and help them overcome obstacles. As identified in social learning theory in chapter 3, learning can be conditioned by the relationships between what is to be known and how close one feels to achieving this goal (self-efficacy). The participants discussed developing confidence in two ways, sometimes simultaneously. Firstly, there was the confidence they had in themselves about their clinical skills. This was especially important in preparation for their end of year exams. Secondly, there was the confidence the students had in communicating with patients and putting the clinical skills into practice.

The role of supervisors in student learning was highlighted (supporting participation), as the students needed recognition of their clinical skills (feeling legitimate) which then affected student confidence in future situations (participation). The link between feeling legitimate (confidence) and participation was an important transitional process undertaken by the students during this challenging year. The students may perceive being isolated in their learning because of their current competence and the competence required for their end of year examinations. In addition, their assessed competence may be somewhat different to competence needed in the clinical workplace.

The influence of placements on career pathways is an area of key importance given the potential links to future careers. Although students were generally encouraged towards general practice, many were uncertain of their long-term career ambitions. The uncertainty may reflect how early the students were in their training. The beneficial impact of the PRCC on careers may only be realised by students later on in their training, once they have experienced other aspects of medicine and have more of a comparator.

10.14.2 Conditions and processes leading to outcomes

The students gained many clinical skills from hands-on experiences of different specialties. The students were in a transition process between how much they already knew and what they still needed to know. The students were pushed hard by the scheduling of work. The abundant patient contact is a key driver of the PRCC as it provides students with independent clinical experience under appropriate supported participation. At the beginning, students reported feeling unconfident and uncertain about their abilities. This was often the first time they had experienced authentic participation learning processes in a rural community. Some of the students were quite experienced and could draw on a wide range of previous experience. They came from established senior positions and were not always newcomers to work. This background may have helped them to integrate with the different communities of practice.

The small size of the peer group and excellent opportunities for supervision were also favourable learning conditions of support. Students experienced continuity of peers, supervisors, and patients. This led to working relationships in which they shared experiences and learned from each other's experiences. There was less competition and more sharing of learning experiences, creating another learning community.

The rural location was a substantial part of the appeal and the enjoyment of the PRCC experience. The students discussed integration within the community and time allocated to different activities within the community, which was facilitated by the programme coordinators. This helped students to integrate into the community, particularly those who might struggle to adjust to rural life. The students did not mention feeling isolated living in rural areas; therefore this suggests Flinders University were supporting students appropriately in their placement. The rural lifestyle and community immersion were a huge part of the placement experience. The community integration highlighted the nature of the PRCC as a

holistic experience for an individual to learn about community aspects as well as the clinical knowledge, an imperative for the end of year exams.

10.14.3 Findings in context

The PRCC was identified as a comparator for the DDAP because of the published literature about the programme[81, 110, 115, 132, 133]. Many of these publications mainly relate to outcomes[104, 115], particularly examination performance[103, 104, 231]. The current study explored how the students learned during the rural placement and, using the Experience Learning model[176], identified conditions, processes, and outcomes of the PRCC.

The confidence of the students was associated with a high level of participation, underpinned by the nurturing supervisory relationships and relationships amongst the peer group. A lack of peers in a clinical setting has also been shown elsewhere to increase opportunities for participation[161].

An observational comparison study between longitudinal integrated clerkship student activity and traditional block rotation student activity found that students who took longitudinal integrated clerkships had more involvement in direct patient care activities and had patient contact on multiple occasions towards the end of their placements[172]. The longitudinal integrated clerkships provided students with independent time with patients to examine them under appropriate clinical supervision. The continuity of supervisors and settings over a long period of time enables this process to occur in a developmental approach compared to traditional block rotation placements[172].

In terms of placement length, Worley and Kitto[78] identified a turning point around 16 weeks when the supervisors believed the students began to become positive for the practice. The initial process of a student ‘settling in’ to the placement was thought to take one to two months[78].

This study identified that after 14 weeks students perceived a confidence rollercoaster, where they were moving between conflicting positive and negative emotions in their learning journey. Students were being challenged and taken out of their comfort zone but this was extremely helpful for their learning. This resonates with the concept of cognitive dissonance where cognitions which are inconsistent result in an uncomfortable state[232].

This dissonance state may also reveal that the students were moving between different stages of the conscious-competence model[233]. The model involves unconscious incompetence (unaware of skill required), conscious incompetence (aware of skill but recognises need to develop), conscious competence (acquired skill but needs to improve), and unconscious competence (achieved mastery can perform without thought). The rural students perceived that they were learning many clinical skills and were beginning to be heavily involved in patient care. One student suggested they were in the consciously incompetent stage. This suggests that while 14 weeks was clearly beneficial, there is still room for plenty of development over the remaining placement length to move towards unconscious competence. Within the data, the students anticipated that the remainder of the placement would enable them to practise and reinforce their clinical skills and confidence.

Community integration has been previously identified as a key part of the rural placement experience[127]. Programmes similar to the PRCC are not only beneficial for the students but also for the host community[127, 133, 228]. The integration of students into the rural communities, facilitated by incentives, helped students to adjust to the surroundings and learn during the placement. Research has demonstrated that students are not a drain on resources and can be part of a solution to GP workforce shortages[78, 115, 133]. Student presence in rural healthcare settings can be beneficial for

stakeholders involved with the programme[127, 130], as students have provided a valued role.

Research by Stagg[110] showed positive student inclinations to pursue rural GP careers following the PRCC. The students from the current study were largely non-committal at this time point but had gained an in-depth understanding of the rural GP role. The remaining medical degree programme may further develop this interest in relation to other clinical placements.

10.14.4 Strengths

This is the first known qualitative study about the PRCC after 14 weeks. Often data is collected at the end of the PRCC (a full academic year) but this research offers insight into the progress of students after 14 weeks. Relatively few articles about longitudinal community placements have used a conceptual orientation, therefore using the Experience Based Learning model was a novel approach to explore student learning in the rural setting. As an external researcher I had a perspective that was not predisposed by any prior involvement with the PRCC.

10.14.5 Limitations

The sample size was small (n=6) and the findings cannot claim generalisability beyond the study conditions, yet the mixture of interviews and focus groups allowed in-depth discussions. The actual experiences of the Flinders Medical Centre students are not explored in this study, but empirical research supports that traditional block rotation learning has less supervision time, patient contact and continuity than longitudinal integrated clerkship models[171].

10.15 Conclusion

The established rural community programme was enjoyed by students as it advanced their learning through abundant patient

contact and excellent supervision. The hands-on experiences were critical for learning in preparation for the end of year exams. After 14 weeks, many of the benefits identified after one year are present, but there are gaps in confidence and clinical skills, and continuity within the placement is not fully established. A longer placement may help to reinforce learning as the students felt they were just beginning to reap the educational benefits.

11 Chapter 11 Overall data synthesis

11.1 Chapter outline

This chapter provides an overall synthesis of the data and focuses on understanding learning experiences of the DDAP students in relation to: changes over time (*before*, *midway,* and *end*) and NHS stakeholders (*GP supervisors and patients*) and in comparison with two different types of clinical placements (*peer comparison* and *rural comparison*).

11.2 Introduction

The majority of research about longitudinal community placements has predominantly focused on demonstrating that non-traditional placements do not result in significantly different examination performance to traditional placements[206, 234]. However, the placements provide opportunities to improve many areas of students' development, as well as their clinical skills[235]. There is currently a limited understanding of these other benefits (e.g. developing compassion, patient-centeredness). Moreover, the emphasis on exam achievement was initially appropriate, but given the quantity of evidence now available to support these placements, it is important to understand why longitudinal placements are so effective[94].

In this thesis, the model of Experience Based Learning[176, 177] provided a conceptual framework for the data analysis and interpretation. The Experience Based Learning model allowed the research to demonstrate the educational value of the placements and begin to unpick how student learning was achieved. Learning was seen as socially constructed and through 'meaning making' in the workplace settings. Identifying conditions for learning helped to understand what the students experienced and how they constructed their learning environments. The workplace environment provided a basis for what a student learned. Students were able to understand

and learn from the shape of the conditions and process. The supportive and unsupportive elements for learning were elicited through this conceptual orientation across the data.

11.3 Research aims

The aims of the synthesis were:

1) To explore the learning experiences of the DDAP students over time
2) To explore GP supervisor and patient views of student learning during the DDAP
3) To analyse DDAP student learning experiences compared with experiences of alternative clinical placements

11.4 Analysis

This synthesis focuses on addressing the research aims across the different sources. For each programme, the original analysis identified: outcomes (e.g. influence on careers, clinical skills), processes (e.g. active participation, observation, role in the team), and conditions (e.g. curriculum design, placement length). To conduct this synthesis, the final themes from each data source were compiled. The similarities and differences across the themes were then extrapolated to create a new understanding. Quotes and summary tables (using data initially presented in the earlier chapters) are integrated below with analysis after the tables.

11.5 **Research aim 1:** To explore the learning experiences of the DDAP students over time

The first triangulation involved the analysis of DDAP student learning experiences over time. This included data from chapters 5 and 6, which explored: the reasons for volunteering for the DDAP, the midway experiences, and the end of DDAP experiences (see Table 14).

In the quotes presented in Table 14, green = before DDAP, black = midway and blue = end of DDAP.

Table 14 Synthesis of before, midway, and end of DDAP interviews

Developing clinical skills

- *I'm just hoping to get a bit more practice and improve my clinical skills a bit because in our previous GP experience a lot of it has been just observing.* [Before, D12]
- *Seeing patients independently and formulating management plans and diagnostics, that's a key area that's quite difficult to develop as a medical student before you become a foundation doctor at the end of year five because you're being taught constantly stuff, but you never get the opportunity to actually play the role of the doctor so from that point of view it's been very good for that… Yeah I pretty much do that every day.* [Midway, DM4]
- *You learn about different conditions, normally conditions that you wouldn't see in a hospital… You learn more communication skills, practise them more, get better at examining, just become generally more comfortable and confident.* [End, DE1]

Providing healthcare in deprived areas

- *I obviously was attracted to the whole difficult and deprived area part of it because I think a lot of doctors and medical students aren't very skilled in those sorts of areas. I want to have those skills. I want more exposure to all the problems and the links between the health and deprivation.* [Before, D11]
- *Learnt a lot more about how people who are deprived are actually living because although I thought I knew stuff about it I've seen it a lot more deeply and the length and breadth of what people are deprived, it's quite horrible.* [Midway, DM 1]
- *I came on to it* [DDAP] *thinking 'Oh these are people that really need some help and it would be really nice to help people that really need it and feel like you're giving something back' but coming up against resistance and having people that they don't want any help and you're just inconveniencing them and*

there's no way to help them. I guess that's been difficult coming to terms with the fact that you can't. You're not going to make a difference to some people. [Midway, DM7]

- *Making me more aware of how much need there is, how real people's struggles are and how widespread they are and how much more there is to that than the kind of snapshot glimpse we get of that when people come into hospital, come into the GP's surgery.* [End, DE2]
- *Working with the homeless outreach teams was a real eye opener because I've never done anything like that before.* [End, DE11]

Becoming a 'better' doctor

- *It should help us become better doctors because of it, because you will have just had more time to practice it and because you will have seen a wider variety of patients in GP than others.* [Before, D2]
- *Gaining more of a kind of holistic understanding of the things that make people behave the way they do in terms of life style choices that contribute to their health.* [Midway, DM2]
- *You learn a lot about people's lives and what they're dealing with when you understand where they're from, rather than just being in hospital.* [End, DE1]
- *I think you try to be open minded and you intend to be but unless you've been challenged in a way that we have now, then it's difficult to put into practise. I think I will be more open minded now and try and see sort of where they're coming from and look at all aspects of their life rather than just their medical condition or why they've come today.* [End, DE12]

Influencing careers

- *Sort of open to change but if I had to pick today GP is what I'd go and do.* [Before, D2]
- *It's given me a much better understanding of what it is to be a GP and what that involves.* [End, DE2]
- *It's inspired me to definitely work in a deprived area and it's given me lots of kind of ideas for the future… what I'd do and how to improve access to healthcare.* [End, DE11]
- *I don't want to be a general practitioner, that's for sure! It's not the job for me…It's too mundane. It's an alright job but I'm not big on long term patient contact.* [End, DE4]

Educational value of the longitudinal placement

- *I think you'll be able to get your foot in the door more and take on more responsibility and feel like you are involved.* [Before, D7]
- *I guess it might get repetitive or we might end up just kind of being shift aside*

and not seeing very much. [Before, D2]

- *Cos you're with the team so long, it feels like you're part of a team and like you know what time you're going to work, how long you're going to be there, what you're going to be doing. And it feels like you've got an actual role whereas a lot of the time as a student you're just kind of bouncing around trying to find someone that will put up with you for ten minutes to get some learning outcomes. [End, DE7]*
- *I really enjoyed the length of time because of the continuity and like experiencing getting to know patients and I'd never really had that before. [End, DE11]*

Prior to the programme, the students saw the DDAP as an opportunity to develop their clinical skills in preparation for fifth year. Subsequently, there were experiences that confirmed this, as the students gained practical experience and developed their clinical knowledge and skills. They valued the opportunity provided by the DDAP to *"play the role of the doctor".*

The students also had many experiences of providing healthcare for patients in deprived areas as they saw *"how real people's struggles are".* Before the DDAP, they acknowledged this was an area of knowledge they had hoped to develop, which again they achieved. For example, this was demonstrated by one student (see table above, D11-DE11). However, this understanding and experience was challenging for the students as they realised just how complex the issues of deprivation and health really are.

A similar development the students wanted to achieve prior to participation was to become a 'better' doctor. The students fulfilled this by gaining a more holistic understanding of factors that affect people's health, health-seeking behaviour and healthcare management. The students appreciated the community immersion of the DDAP and understanding where people come from rather than *"just being in hospital".*

The influence of the DDAP on students' career decisions was evident. The *before* DDAP interviews identified that many of the students were initially interested in a general practice and / or a

primary care career. The longitudinal placement gave all students a much more informed understanding of the role of a GP in a deprived setting (e.g. participant D2-DE2). Subsequently, there were mixed responses to this deeper understanding. Some students were encouraged to pursue a GP career, some were not, while others were still ambivalent at such an early stage in their training. An individual's favourable or unfavourable response to the prospect of having repeated patient contact (as a qualified doctor) was important in influencing the decision.

An educational value of the longitudinal placement, perceived by students, was developing strong working relationships with other members of the healthcare team. Students reported *"feeling part of a team"* and having *"an actual role"* in the team, compared to other medical student placement experiences, where they had to search for belonging and ask for learning opportunities. During the DDAP, the students perceived themselves having a valued role in the healthcare team and experienced continuity with patients.

11.6 **Research aim 2:** To explore General Practitioner supervisor and patient views of student learning during the DDAP

A second form of triangulation involved the comparison of the DDAP student learning experiences with stakeholder interpretations of the DDAP (see Table 15). The general practice consultation process with student involvement was analysed from the DDAP student, GP supervisor, and patient perspective. These data were firstly presented in chapters 6, 7 and 8.

Blue = student, dark red = GP supervisor and orange = patient.

Table 15 Synthesis of the DDAP student, GP supervisor, and patient data

Satisfaction

- *This is the best, like medical, clinical, social experience of the whole four years for me!* [Student, DE11]
- *She made me feel at ease … It's not as if I walked in there and she was a complete, bumbling wreck and didn't have a clue what she was doing. She came over very professional*. [Patient, 6]
- *It was a very stimulating and an interesting project…I would certainly be delighted to be involved again in the future.* [GP supervisor 7]

Influencing careers

- *I've got a normal real life experience of GP, so when she's having good days, when she's having bad days. All the paperwork she's got to do. Like I see that when I leave at four o'clock, she's not leaving till like seven, eight o'clock… I felt like I hadn't had like a proper placement or enough exposure to say that I knew enough about it, like the working life.* [Student, DE12]
- *If he ends up being a hospital consultant, in a way, that's a bigger success for us because he's actually got a really good understanding of general practice, he spent four months in GP, he'd have a much better understanding than your average consultant of how we work and what we're capable of and what our limitations are.* [GP supervisor, 12]

Developing clinical skills

- *Her medical knowledge increased considerably because obviously she saw an awful lot of patients…I think she became much more confident…In terms of clinical skills.* [GP supervisor, 7]
- *She took a history from me and my daughter and she examined her… The*

GP came in, she went through the history in front of us and he did a pretty similar examination so you know, the physical examination that she gave was adequate because it's not too dissimilar to the one the GP gave. [Patient, 1]

Developing compassion

- *It's really opened my eyes to the things that people are dealing with and how prevalent things are and how the current system just really isn't scratching the surface. I think it's just given me more of an awareness of what is going wrong and made me think that in the future I want to keep that awareness and try and do something in my community that's going to help.* [Student, DE7]
- *I think sometimes the doctors want you out the surgery because they're busy, busy, busy whereas I think [student name] had a little bit more time…. she was quite chatty, she was asking me all sorts about what I did, and I think she was going a bit more in depth than the doctor might have done.* [Patient, 6]

Patient contact driving student learning

- *I've been really happy with the exposure that I've had…the fact that you've got patient contact… and that you're seeing a wide range of medical conditions. You never know what you're going to see each day.* [Student, DM5]
- *You've got to be put in the position of taking charge of the patient for you to then feel that you're involved and they're memorable and what you learn from, from that patient and from that patient's experience is more memorable and it's much more relevant to you.* [GP supervisor, 4]
- *I think seeing patients for themselves, being exposed, being almost sort of thrown in at the deep end where they've got to take the history and come up with a diagnosis and a plan and I think that's what helps them learn. [GP supervisor, 9]*
- *It was good practice of physical examination and history taking... it's a real situation with real people… it's real life isn't it, rather than textbooks.* [Patient, 1]

GP supervisor and student pedagogical relationships

- *She [supervisor] gave me like the right amount of independence in my, when I was given surgeries to run. She let me do everything needed but at the same time, she just provided a safety net. So if I missed something she would deal with it before the patient leaves.* [Student, DE8]
- *We'd use the consultation as a teaching opportunity so if someone came*

with a knee pain, we would examine the knee and use that to teach [student], remind her, how to examine a knee. If they came with diabetes, it would then lead to discussion on diabetes management. So it was very clinically based. [GP supervisor, 3]

Value of the longitudinal placement

Part of the team, continuity with supervisors

- *Probably the biggest thing is having a long time to spend with the same people, so I felt that both in the GP Practice and the community placement. I really got to know a team properly and got to work with them and got to know individuals. That's a really different experience to most of the ones we have in medical school. That was lovely and probably the closest to having an actual job that we've ever come.* [Student, DE 2]
- *It was nice to have a student who you got to know over the 14 weeks and therefore were able to pick up learning points and carry things through with some continuity.* [GP supervisor, 5]

Following illness journey, continuity with patients

- *I've seen a patient on the palliative care pathway and she unfortunately passed away. Obviously it was expected but that was quite difficult because I actually got to know her over about two months but it's also been really good 'cos that's what you will do in GP. You don't just see someone like the day before they die; you've developed a relationship with them.* [Student, DE12]
- *The biggest thing was the length of the placement and therefore the continuity and the ability to find out what happens to that patient and see the outcome of investigations and referral and see people on more than one occasion…. I think that's probably unique in all of their undergraduate teaching.* [GP supervisor, 13]
- *I would imagine that getting brought in as a medical student on a terminally ill patient who's in a great deal of pain, I think, without a lot of experience that can be extremely frightening and extremely worrying.* [Patient, 3]

In addition to the student satisfaction, the GP supervisors and patients were also satisfied with their participation in the DDAP. The patients were satisfied with their involvement regardless of whether this was involvement in history taking or for more hands-on clinical examinations. The patients thought the students were professional and friendly, and reassured them when needed. In terms of influencing careers, again the experience provided students with an

informed understanding of the GP role and would help students in whatever medical career they pursue.

Similarly to the students, the GP supervisors acknowledged improvements in the students' clinical skills and medical knowledge. One patient also recognised the high level of the competence of a student, as they observed how the GP consultation was very similar to the student consultation.

The theme of students developing compassion was identified as an important outcome from the DDAP. The real patient experiences helped students to understand the limitations of the current healthcare system in providing care for deprived communities. The patients also emphasised that during general practice consultations, the students were patient focused.

The students were given many opportunities to practise with real patients and independently provide an initial consultation as the patients drove student learning. GPs and patients were aware of the educational value for students of having authentic patient care experience as opposed to textbook learning. The high level of motivation amongst the DDAP students driving their learning was noted by the GPs. When combining this understanding with the interviews before DDAP, it is clear the students were highly motivated to take part.

The students often had strong relationships with the lead GP supervisor at each practice. The GPs recognised the importance of students having patient contact; they would often use the clinical cases as teaching material. However, the students saw other GP supervisors at their general practice infrequently so lacked a positive relationship.

Extending the *before-during-end* DDAP triangulation, the GP supervisors also valued the longitudinal placement, primarily due to

being able to develop a professional educational relationship with the students. GP supervisors were able to continually build and strengthen student learning over the programme. Both the students and GPs acknowledged how unique this continuity of supervision was, during the entire medical undergraduate curriculum. However, some participants perceived that continuity was slightly lost due to the limited number of days at the general practice. A powerful learning example, a longitudinal experience with a terminally ill patient, demonstrated how continuity with patients was achieved during the DDAP.

11.7 **Research aim 3:** To analyse DDAP student learning experiences compared with experiences of alternative clinical placements

A third form of triangulation involved the comparison of DDAP student learning experiences with alternative placements, including the data presented in chapters 5, 6, 9 and 10. There were many themes which identified conditions and processes that facilitated or limited student learning (see Table 16). The colour coding scheme below is in relation to student learning and is for illustrative purposes only, i.e. not quantifiable: green = favourable, orange = mixture of favourable and unfavourable, red = unfavourable.

Table 16 Themes across DDAP, peer comparison, and rural comparison data

Placement characteristics	**Outcomes** *Practical Learning:* PL *Real Patient Learning:* RPL *Affective Learning:* AL	**Processes**	**Conditions**
Difficult and Deprived Areas Programme (DDAP): 14 weeks. Voluntary, in 4th year of a 5 year, undergraduate-entry, medical programme. General practice, community organisations, teaching institution. Post-industrial, under-served, deprived areas. North East England.	➢ PL: Clinical skills, management plans and medical knowledge, dealing with unknown diagnoses, career pathways, psychosocial determinants of health ➢ RPL: Understanding health seeking behaviour, unsettling emotions ➢ AL: Providing care in deprived areas; compassion and	➢ Observing ➢ Rehearsing and performing ➢ Supported participation in authentic practice	➢ Placement length ➢ Sequencing of student experiences ➢ Shortage of allotted time in general practice ➢ Complexity of workplace as a learning environment ➢ Workplace learning opportunities ➢ Actual experiences aligned to expectations ➢ Teaching sessions ➢ GP supervisors ➢ Interprofessional learning

	frustration, satisfaction		➢ Welcoming the students ➢ Meeting people in different settings
Peer comparison- Student Selected Components and Electives: SSC- 6 weeks, electives- 8 weeks. Optional, in 4th year of a 5 year, undergraduate-entry, medical programme. Many different healthcare settings (incl. hospital, general practice). UK and Internationally.	➢ RPL: patient experiences driving learning ➢ RPL: Different healthcare systems ➢ PL: Variable clinical skill improvement, career pathways ➢ AL: Increased confidence, satisfaction, lack of belonging	➢ Authentic participation ➢ Lack of participation in workplace activities	➢ Placement length ➢ Language barrier ➢ Student-doctor ratio ➢ Supportive pedagogical relationships ➢ Unsupportive pedagogical relationships
Rural comparison- Parallel Rural Community Curriculum (PRCC): Full academic year (approx. 40 weeks). Voluntary, in 3rd year of a 4 year, graduate-entry, medical programme. General practice, teaching institution, community hospital settings. Rural, community areas. South Australia.	➢ RPL: clinical skill development ➢ PL: career pathways ➢ AL: confidence in ability	➢ Active participation in authentic patient care ➢ Confidence rollercoaster	➢ Curriculum design: Continuity of structure, settings, and patients ➢ Beneficial student-doctor ratio ➢ Immersion in community settings ➢ Incentives ➢ Nurturing supervisory relationships ➢ Positive learning relationships with PRCC peers

This triangulation identified that all of the programmes had practical learning, real patient learning, and affective learning outcomes.

Similarly, all the programmes fostered authentic student participation in patient care, developed clinical skills and confidence, and influenced career decisions. However, there were variations in the quality and quantity of authentic participation, how legitimate the students' participation was in the communities of practice, and how well participation was supported. Overall, these findings demonstrate how the Experience Based Learning model can highlight the positive and negative impacts on student learning, which has previously been identified[178].

The DDAP had examples of both supportive and unsupportive learning experiences (green, orange and red themes), but tended to have more favourable instances of authentic participation, as the students felt their participation was legitimate, i.e. they had a role in the team. The established rural comparison data definitely had the most supportive examples of immersive participatory experiences (most green themes). Conversely, the peer comparison sample often did not feel they had a legitimate role, had both supportive and unsupportive experiences (most red themes), and sometimes lacked the quantity and quality of experiences provided by community placements.

There were complex issues at play in understanding why there were favourable and unfavourable learning experiences. The conditions provided at the curriculum design level offered many useful insights. One key condition for learning was the length of placement and contact with the supervisor, influencing the pedagogical relationship. Trust was steadily developed in the student-supervisor relationship over time. The data particularly demonstrated the value of having an effective, nurturing, supervisor relationship. This enabled supported participation, facilitating students to undertake the role of a doctor.

In Table 16 many similar themes were identified; however, there were also critical differences across: participation in workplace learning activities, supervisor relationships, the learning environment,

and preparedness for future roles. These differences were explored further (see Table 17):

Blue = DDAP students, gold = rural comparison, purple = peer comparison.

Table 17 Synthesis of DDAP students, peer comparison, and rural comparison data

Contrasting the participation in workplace learning activities

Hands-on learning experiences

- *The anaesthetist hands you the tube and says "here you can intubate this one if you like", you go "YEEAAHHH okay!"* [Rural, F4]
- *The GP part is really good… I enjoy getting to consult with the patients and figure out their problems and to be hands, one on one and hands-on with them.* [Rural, F1]
- *For the first couple of weeks I sat in on consultations and now see patients independently, take their history, do the examination, fill in the notes on the computer; we then go through to the GP and I present the patient back to the GP* [DDAP, DM4]
- *When I was like in my own room with the patients then I was starting to feel that I'm just preparing to be a doctor.* [DDAP, DE10]
- *We didn't actually do that much hands-on stuff in the elective… More like following a ward round or teaching and stuff rather than seeing patients, 'cos of the language barrier mainly.* [Peer, NF2]
- *On my elective I didn't really feel part of the team because I, well I wasn't doing much... although we were in a team of students, I didn't feel part of the kind of clinical team… you didn't have to go in, for all of them in fact you could really just not turn up and no one would notice. So, I think it was a challenge for me to motivate myself to go in, I mean I did go in every day, sometimes it felt like 'Why am I kind of doing this?* [Peer, NF1]

Clinical reasoning skills

- *We're probably getting a lot more experience on seeing a patient front up and working through the problem, this is a patient with this, they presented x,y,z and now go back and do your own history and find out more about them… we have to work through it so it's really developing your clinical reasoning skills along the way.* [Rural, F2]
- *It kind of felt like I was a real GP because I had the ten minute slot to figure out why they were here and get their history.* [DDAP, DM11]
- *I was observing quite a lot of the time which is quite dull when you get to fourth year and you're still stuck observing and not really doing very much…I didn't feel like I was really pushed or able to sort of develop that much.* [Peer,

NF4]

Placements facilitating continuity with patients

- *There's a lot more continuity with patients, I have patients that I will be following through for the whole year…So that's good because you get to really know the patient, you get really involved in the management of their diseases.* [Rural, F6]
- *I've seen patients like five or six times over the period which is really good 'cos you feel like they have more confidence in you because they're going to see you again and they come back and they'll tell you how they're doing after they saw you last time and stuff. So you get that continuity.* [DDAP, DE7]

Contrasting the supervisor relationships

- *It's good cos the staff all know you… I think because they know you there's a bit more trust so they let you do a lot more.* [Rural, F5]
- *Some GPs, yes, they actually let you see patients, talk to patients, do a history, do an examination, listen to you diagnoses and discuss management and you actually feel like you're doing the job and you're actually kind of end game. Some of the GPs have not been like that and it's been a bit kind of sitting in a corner watching more than doing and that's just no use to anybody.* [DDAP, DE4]
- *My supervisor, was like 'off you go and sort yourself out'… I think I saw him two or three times in the six weeks… he said 'You don't want to follow me round all the time' and I'm thinking 'Well, you're getting paid to do this and you've done absolutely nothing to help'. Might as well have been in the department and not had anybody named as my supervisor.* [Peer, NF15]

Contrasting the learning environment (student doctor ratio and peer relationships)

Number of people in the healthcare team

- *Here, it's pretty much like the consultant and then you, or in delivery, the doctor, the midwife, then you, so you get to participate much more.* [Rural, F6]
- *I think one on one time with patients without a doctor in the room is probably the best way to feel more like a doctor and you get more out of it.* [DDAP, DM1]
- *You weren't really sure what you were meant to be doing and you had to avoid the third year students being there and the three other SSC students because obviously you can't have half a dozen students on labour ward together… you really had to work round other people.* [Peer, NF15]

Relationships with peers

- *As a group it's important to have good relationships with the other students that are here, we're very supportive of each other and learning experiences, if we weren't and got competitive it would be hard.* [Rural, F1]
- *I like that in the small groups they can be quite interactive and quite informal, which I think encouraged everyone to speak up and get involved.* [DDAP, DE12]
- *You felt kind of competing against other medical students to be able to get in to watch the things that you want to watch or do the things that you want to do.* [Peer, NF5]

Role in the healthcare team

- *The other day I got to assist the surgeon on a mid-line incision, appendectomy, they sliced this guy open, and I got to scrub him and assist. Then in the practice, stuff like pap smears, breast exams, digital rectal exams, hands-on stuff. Not having to compete with other people.* [Rural, F1]
- *You get used to the staff and the staff get used to what you can do and what you want to do. You feel like you're more of a colleague rather than just a student that's bothering them a bit.* [DDAP, DE7]
- *On my elective I felt a completely spare part, I felt completely undervalued and no one really noticed whether I was there or not to be honest. So we hardly went in because, if you were there you just kind of stood at the back being ignored by everyone and if you weren't there no-one noticed. So probably it made more sense for us not to go in... I think our presence was completely superfluous to their requirements really.* [Peer, NF7]

<u>Contrasting preparedness for future roles</u>

- *I reckon at the end of the year we're guna rock out at the OSCEs because every patient that comes in here is like an OSCE.* [Rural, F1]
- *I thought it was a better decision for my career and what I wanted to do in the future rather than just go on an elective which would end up, more than likely being like a holiday.* [DDAP, D12]
- *In terms of actually getting hands-on with some stuff it was a lot more observing than would have been in the UK.* [Peer, NF13]
- *It's [DDAP] really useful for the overall medical degree and getting ready for fifth year.* [DDAP, DM7]
- *I had just done all these not-that clinical SSC's... so at the end I don't think I learned that much… I don't think it has prepared [me] that well for the fifth year. I feel the jump, suddenly, all the tutors and doctors expect a lot more from us as fifth years…in a way it didn't help learning because I just*

> *avoided the things I don't like. (laughs) So I still need to learn all that stuff.* [Peer, NF11]

The data in Table 17 vividly demonstrate many differences between the three samples. When interpreting these findings, it should be remembered that Table 17 is considering the differences between the programmes, following the identification of similarities in Table 16, i.e. not all placement experiences were favourable or unfavourable for learning.

Many hands-on learning experiences were evident amongst the students taking the rural comparison programme. The rural community-based students were extremely satisfied with what they had achieved, and were enjoying the programme, as they developed their clinical reasoning skills. In contrast, the peer comparison sample often had negative experiences, as they had limited participation in workplace activities, and were observing, despite having the capability to participate more. The DDAP students had many hands-on learning experiences and were put in the position of *"preparing to be a doctor".*

The rural and DDAP students had experiences of continuity with patients, as they saw the same patients many times over the placement duration. This allowed students to get to *"really know the patient"* and be *"involved in the management of their diseases".* There was no evidence of this type of experience from the peer comparison sample.

The quality of supervisory relationships varied across the samples. The rural comparison mainly had nurturing relationships which had developed over time; the students were known to the healthcare team, and felt they could participate more because of these strong, trusting relationships. In contrast, the peer comparison sample sometimes had supervisors who had little time to dedicate to teaching, or worse still, left the student largely without any

supervision. The DDAP sample had a mixture of supportive and unsupportive GP supervisor experiences. Some were extremely engaging and facilitated learning (often the lead DDAP GPs), while others were too busy and could not dedicate the time needed.

The characteristics of the learning environment were another area that varied across the placements. The rural comparison and DDAP students mainly had positive engaging relationships with peers and the healthcare team. Also, there were often very few learners to compete for hands-on learning opportunities, with a favourable student-supervisor ratio of one-to-one. In contrast, the peer comparison students had experiences where there were many other learners in the healthcare team, and therefore found it challenging to have authentic participatory experiences. They were sometimes unsure of their role in the healthcare team, as they felt *"undervalued"* and *"like a spare part"* observing rather than participating.

The preparedness for future roles also highlighted differences, as again, on the whole, the rural programme and DDAP facilitated student development as the students felt confident about their skills. The rural placement students had gained many hands-on clinical experiences and were confident going into their exams and future roles. The DDAP students were aware they had missed out on the travel aspect of the elective, yet they had been immersed in community settings which enabled them to be more prepared for their final year. Some of the peer comparison group reported feeling prepared by their placement experiences (as was identified in Table 16); however, there were also some students who perceived that their clinical skills did not develop, as they were mainly observing.

11.8 Discussion

Medical student learning in the clinical years is a complex process. Therefore, investigating student experiences in different placements has created an understanding of the conditions and positive processes that are conducive to supporting and shaping learning. Workplace learning is subject to many uncontrollable influences that educators struggle to control as well as interpret and conceptualise[62, 161]. This synthesis highlights some of the favourable and unfavourable conditions related to medical student learning.

The Experience Based Learning model was originally developed to understand medical student learning[177] but empirical research has also incorporated patient and supervisor perceptions using this model[209, 236]. During my research, the Experience Based Learning model has enabled a greater understanding of the value of community placements from the perspective of supervisors and patients, to inform findings about student learning. In addition, the theory has informed the experiences of these stakeholders as the benefits of such programmes are not limited to medical students[127].

Although learning was viewed as idiosyncratic through a social constructivist approach during this thesis, there were commonalities in how students, GP supervisors, and patients interpreted their situations, particularly about the conditions of support and processes shaping student learning. For programmes such as the DDAP, it is important that all of those participating are considered. There was a high level of satisfaction amongst students, GP supervisors, and patients. The continuation of programmes similar to the DDAP will be mediated in part by the ongoing cooperation of GP supervisors and patients.

In response to research aims 1 and 2, the triangulation highlighted mainly similarities across the data, whereas the triangulation in response to aim 3 highlighted many similarities and many differences across the data. Across the three distinct programmes (DDAP, peer

comparison, rural comparison) there were differences in the quality and quantity of participation in workplace learning activities, supervisor relationships, the learning environment, and preparedness for future roles. The conditions of medical student learning which were of key importance to the processes and outcomes included: the extended length of the placement, continuity of learning, nurturing supervisory relationships, and active roles in the healthcare team with real patient exposure.

The analysis suggests community placements have benefits beyond developing clinical skills. These include learning more about the psychosocial determinants of health and providing understanding about community services and patients from those communities, which are likely to help students in their future roles - both in general practice and in other settings (e.g. hospitals). These are important experiences that might otherwise be missing from the curricula and should be incorporated in more reflective ways to support development of a more rounded patient-focused doctor.

11.9 Conclusions

The design of the research allowed the DDAP educational value to be synthesised in three distinct ways: 1) Comparison of DDAP student experiences over time, 2) Comparison with stakeholder experiences, and 3) Comparison with alternative placements.

Firstly, the *before--midway--end DDAP* triangulation suggested the students were satisfied with their learning experiences, as the DDAP fulfilled their expectations. The DDAP helped to develop students' clinical skills, gave them experience of providing healthcare in deprived areas, influenced career decisions, and may help them to become better doctors in the future.

Secondly, the *student--GP supervisor--patient* triangulation identified that the stakeholders were satisfied with their DDAP involvement.

The findings from each respective source often overlapped as there were commonalities in the recognition of the educational value of students gaining hands-on, participatory clinical experiences.

Thirdly, the *DDAP student--peer comparison--rural comparison* triangulation provided further insight into the educational value of community placements. The rural comparison had many examples of hands-on learning experiences that were of huge benefit for student learning. The DDAP tended to have mainly favourable learning experiences whereas the peer comparison had both favourable and unfavourable learning experiences.

12 Chapter 12 Discussion

12.1 Chapter outline

This chapter presents a summary of each chapter, a model explaining why longitudinal community placements are effective, and the implications of the study. Recommendations for further research and for practice are then provided, followed by study conclusions.

12.2 Chapter summaries

Chapter 1 provided the context for the origin of the DDAP and highlighted why the programme was developed. There are national GP shortages, particularly in deprived areas, and an insufficient number of medical students intend to become GPs in the future. Medical school placements are mainly in large teaching hospitals, therefore students have limited exposure to community settings which are key settings for providing healthcare for the ageing population with increased levels of co-morbidities. The DDAP structure was 14 weeks duration, consisting of two days per week in general practice, two days in community organisations, a half day teaching session, and half a day self-directed learning.

Chapter 2 was a literature review of clinical placements in under-served, community areas. Although many placements have been initiated across the world there was a lack of understanding about the efficacy of the placements. Four themes were identified, including student perceptions, examination performance, career pathways, and supervisor experiences. Many benefits of the placements have been identified, for students, supervisors, and the wider community. There are many placements in rural and remote areas but there is limited information about placements in other under-served areas such as inner-city, difficult and deprived areas.

Chapter 3 discussed theoretical perspectives on learning during community placements. The literature has tended to focus on holistic learning models which emphasize the role the learner has in the

interpretation and shaping of the environment. The Experience Based Learning model was adapted for the data analysis as the core constructs of participation and communities of practice appeared to reside extremely well with the DDAP student data. The Experience Based Learning model seeks to explain student learning by analysing conditions (e.g. curriculum design), processes (e.g. supervisor relationships), and outcomes (e.g. skill development). Community of practice theory is a prominent theoretical approach, particularly helpful when learning occurs in the workplace and involves social interactions and being an active member of a team. The Experience Based Learning model therefore provided a conceptual orientation for the research.

Chapter 4 identified the methods and practical negotiations undertaken to conduct the research. Reflexivity critically analysed the orientation of the researcher and where the perspectives came from. Five ethical committees have reviewed this research proposal at various points including Durham University, the NHS, Newcastle University and Flinders University. Qualitative research using semi-structured interviews was the preferred approach for data collection as it explores in-depth experiences of phenomena and is suited to small samples.

Chapter 5 investigated student views before the DDAP. The students often had GP / primary care career intentions and a strong desire to learn more about psychosocial determinants of health. They were keen to develop clinical skills and communication skills in helping populations in deprived areas.

Chapter 6 presented data analysis from the midway and end of DDAP interviews. The DDAP outcomes identified were related to practical learning (clinical skills; wider determinants of health), real patient learning (health-seeking behaviours), and affective learning (compassion and satisfaction). When on placements, the students initially observed and later were supported to be more involved in authentic patient care. After about three weeks they were

independently consulting patients and then relaying the information to supervisors in a joint consultation with the patient. There was evidence of positive nurturing formal and informal pedagogic relationships, particularly between students and supervisors but also with other healthcare staff.

Chapter 7 analysed data from the GP supervisor interviews. The DDAP allowed students a longer period of time to integrate with the general practice, gain hands-on clinical experience, and follow patients up. The GPs allowed students to be involved with patient care under appropriate supervision. The GPs experienced benefits including intellectual stimulation and keeping their knowledge up to date.

Chapter 8 presented findings from interviews with patients who were involved with the DDAP. The patients were satisfied with their involvement and often felt reassured and at ease after interacting with the student. Patients regarded their role as passive 'objects' but were satisfied with this as they were aware they provided an opportunity for students to gain experience. A key condition of medical student learning and patient participation was the importance of GP supervisors ultimately having responsibility and the final word on management plans.

Chapter 9 was a peer comparison with students who had taken alternative clinical placements. These experiences were in a wide range of topics in many different locations. There were examples of both positive and negative learning experiences, but key conditions and processes identified were the student-doctor ratio, supervision quality, and team participation, which varied considerably.

Chapter 10 involved research with an established rural community-based programme after 14 weeks in placement (to ensure comparability with the DDAP). The Flinders University Parallel Rural Community Curriculum (PRCC) was identified as a relevant benchmark to compare and help understand what could be achieved in a community placement after 14 weeks. The findings indicated that

students were participating in hands-on learning and had excellent nurturing supervisory relationships.

Chapter 11 was a synthesis of all the data collected. The *before--midway--end DDAP* triangulation suggested the students were satisfied with their learning experiences, as the DDAP fulfilled their expectations. The *student--GP supervisor--patient* triangulation also identified they were all satisfied with their DDAP involvement and benefitted from the experiences. The *DDAP student--peer comparison--rural comparison* triangulation identified there were many similarities and many differences in the quality and quantity of participation in workplace learning activities, supervisor relationships, the learning environment, and preparedness for future roles. The conditions of support for medical student learning which were of key importance included: the extended length of the placement, continuity of learning, nurturing supervisory relationships, and active roles in the healthcare team with real patient exposure.

12.3 Overall research aims revisited

1) To explore the viability of the DDAP as a medical student learning environment

2) To inform a critical understanding of the educational value of longitudinal, community placements

12.4 Why are longitudinal community placements effective?

In order to bring together all of the research in this thesis, I have produced Figure 7 to demonstrate the value of longitudinal community placements and the potential implications of such initiatives. In summary, the figure displays the reasons behind developing the placement initiative (A1-A3), key components of the placement (B1-B3), and the outcomes that the placement facilitated (C1-C3).

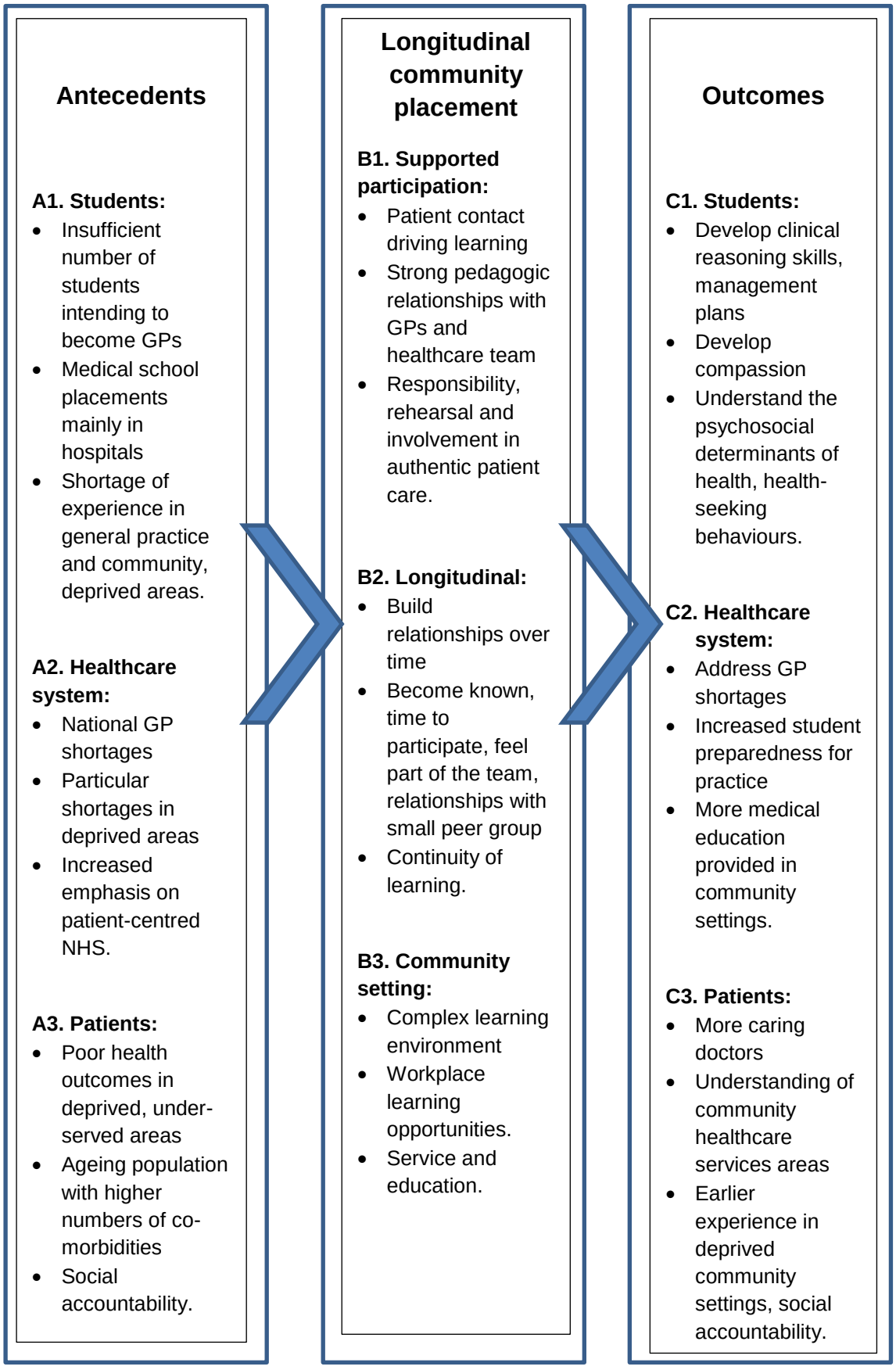


Figure 7 Illustrating the value of longitudinal community placements

12.4.1 Antecedents (A1-A3)

Firstly, Figure 7 shows the reasons for developing a longitudinal community placement. These are split into three components related to medical students, the healthcare system, and patients.

There is currently low intent among medical students to pursue GP careers, which indicates future GP shortages (A1). In addition, the medical school curriculum provides students with more clinical time in hospital settings compared to general practice and community settings.

There are national GP shortages, particularly in deprived areas (A2). Following the Francis Inquiry there is an added emphasis on the urgent need for all NHS healthcare staff to deliver stronger patient-centred care[237].

The socially accountable role of medical schools to address the healthcare needs of the whole population is of critical importance[238](A3). The UK population is ageing, which has implications for healthcare in community settings in regard to tackling higher numbers of co-morbidities. Social accountability refers to directing education, research and service activities to addressing the priority health concerns of the community[175]. Many medical schools (e.g. Flinders University) have a vision to support under-served communities by tackling GP shortages and the low intent among medical students to pursue GP careers[26, 58, 81, 239].

12.4.2 Longitudinal community placement initiative (B1-B3)

Secondly, the DDAP was an intervention which gave students longitudinal exposure to community settings. The theoretical framework of Experience Based Learning[176, 177] has enabled me to understand student learning during longitudinal community placements. I have produced a model to explain what happens when students are afforded more time to become active participants in authentic patient care activities, during longitudinal placements in under-served, rural and deprived areas (see Figure 8).

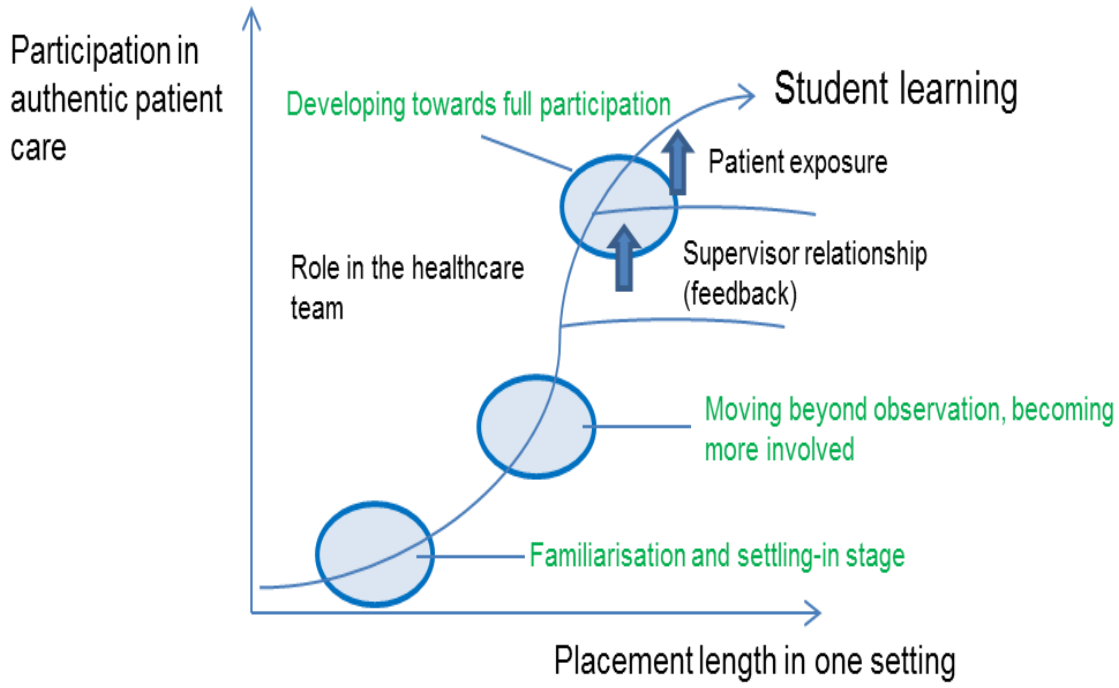


Figure 8 A model which displays the student learning process during longitudinal community placements

The model demonstrates that when medical students are given more time in one setting and increase their participation in authentic patient care they improve their learning and move through different developmental stages. However, the learning progression is not a linear relationship over time.

Initially there is the familiarisation and settling-in stage (lower left of the model), which often occurs during weeks 1-4 during a longitudinal community placement. The students are learning about the workplace environment, meeting others, and finding their role. This is primarily observation. The second stage (centre of the model) involves students becoming more involved in healthcare practice and having more active roles in the healthcare team (around weeks 4-8). The third stage (upper right of the model) is where the students are developing towards full participation, are known to the healthcare team, and have effective relationships with their supervisors (8-10 weeks and onwards). During this phase students learning is facilitated by direct patient contact and feedback on performance by the supervisor. This development cycles in an iterative way on the

basis of the relationship, what has gone on before, and what the learner is capable of achieving next.

During multiple short term clinical placements many medical students may have experiences aligned to the bottom left of the model as they struggle to learn in the workplace environment and are observing but not fully participating. However, to facilitate and progress learning it is necessary for effective supervisory support and high levels of patient exposure to drive learning. This is aligned to the Experience Based Learning model as the core of learning resonates around supported participation in practice[176]. Supervisors can support, challenge and enable students to develop their learning over the longitudinal length of a placement. Furthermore, patient exposure involving active participation in authentic patient care with real patients then drives students to develop further, for example to revisit book learning. Beyond the third stage, a learner may keep developing as they gain more and more experience of becoming a doctor, and continue their professional development throughout their career.

Within the data I have collected there was clear evidence of this variation in medical student learning progression (as was identified in chapter 11). The rural comparison students tended to have experiences that were more likely to be found at the top right hand side of the model. They were actively participating in patient care and were supported by supervisors (and other members of the healthcare team). They were also spending the majority of their time in clinical settings. The DDAP students tended to have experiences in the centre of the model as they were learning but had limited time in general practice (only two days). Whereas the peer comparison had a mixture of experiences, but many were in the bottom left hand side of the model, as they were observing and felt unsupported.

The familiarisation, settling-in and adapting phase during all the placements was relatively short (around three weeks). When the placements were longer, there was more time for the students to participate and become known within the healthcare team (B2),

which enabled them to acknowledge their areas of strength, have more time to work on addressing their learning weaknesses, and benefit from feedback to keep developing.

In the longitudinal community placements (DDAP and rural comparison), the students became more confident over time, as the pedagogic relationships strengthened with their supervisors who observed developments in their abilities, which then facilitated further opportunities for participation (B1). The analysis suggests continuity of practice can bring about an important learning effect. When the students were given more time in a setting (i.e. a longitudinal placement) and were participating in real authentic practice under appropriate supervision (nurturing, supervisor relationships), they moved to become full participants in the healthcare team. The students grew in confidence via feedback from the supervisors, patients, and other members of the healthcare team, which in turn activated more drive to experience authentic patient learning opportunities.

Within the literature there is an emerging understanding about factors that explain how medical students learn during longitudinal community placements but a coherent explanation is lacking. Studies that have explored how medical graduates and student nurses learn have identified similar components to the proposed model; these include student role, responsibility and independence, opportunities to practice different tasks, relations to supervisors, and receiving feedback[65, 180, 240]. On the other hand, factors which obstruct learning include supervision which lacks continuity and a lack of opportunity to practise[240].

Furthermore, Figure 8 has similarities with a conceptual orientation derived to explain nursing student learning called conquering operational space[180]. This involves three phases of learning called: positioning (chaos and insecurity), involving (recognising learning opportunities), and integrating (achieving relevant learning

experiences). Students have an increased sense of engagement in the workplace as their roles develop.

The proposed model also resonates with the ideas of continuity of learning, which is an important concept to achieve situated learning through participation (B2). Continuity is recognised as an underpinning principle for shaping student learning and for the educational success of longitudinal community placements[75, 158, 170, 241]. This thesis also found continuity was a consistent concept which galvanised the learning opportunities available within the placements. Learning was facilitated by establishing strong relationships with supervisors who developed trust in the student over a longer time period. Similarly using workplace affordances theory, Hauer *et al.*[242] found evidence to suggest that relationships with sites, supervisors, and patients afford students more opportunities to take on more advanced roles with their patients. Continuity of supervision helps students to develop by providing them with more time to talk and to receive feedback[174]. The informal discussions between DDAP students and supervisors also helped students to understand the wider role of a GP. These interactive experiences are important to help students navigate their own career trajectories so that they have a rounder appreciation of what a GP role entails[139].

Often in the medical curriculum, students move quickly from one placement to the next, as the placements last between three and six weeks; therefore, students have a limited opportunity for day-to-day hands-on practice, and have a greater focus on specific clinical cases in preparation for exams. Consequently, during shorter placements, students often remain as observers as they do not have time to form nurturing relationships and reach full participation, which limits their development. From the peer comparison data there was clear evidence of this, as often the students had not built up relationships with their supervisors, were mainly observing, and felt undervalued.

The complexity of workplace environments used for learning purposes was highlighted by the data (B3). In terms of student learning environments, community healthcare settings provide many complex functions including a balance of patient service, social care, social accountability, education, and workforce development[127]. These functions will have an impact on the suitability of the workplace in terms of the quality of student learning opportunities available. The community settings often involved patient presentations with undifferentiated symptoms of illness which required students to consider clinical reasoning skills and develop management plans.

12.4.3 Outcomes (C1-C3)

Thirdly, the outcomes and potential benefits of longitudinal community placements are presented. In this thesis, a 14-week placement was analysed as part of a pilot programme (Difficult and Deprived Areas Programme) and compared with an established rural programme (Parallel Rural Community Curriculum) and a peer comparison placement. My research found there were substantial benefits for learning after just 14 weeks in the community placements.

Many of the participatory learning processes were associated with the educational value of the DDAP as the initiative enabled students to develop clinical skills, understand the psychosocial determinants of health, understand health-seeking behaviours, provide healthcare through teamwork in deprived areas, and influence career decisions (C1). During the longitudinal placements, some of the students were aware of their strengths but, critically to progress learning, they also had time to receive feedback and deal with their weaknesses. Within the student placement data this awareness was likened to instances of cognitive dissonance[232] (e.g. confidence rollercoaster) as the students described negative affective components (feeling terrified) but reported these had a positive emphasis as they were developing and felt more motivated to pursue learning opportunities (e.g. read up

on patient cases). There were more instances of these types of examples in the rural comparison and DDAP data than the peer comparison. To assist with student learning, having the time available to recognise, consider and work on areas of weakness is a major strength of longitudinal placements[94].

The DDAP went beyond a shorter placement length, and gave students the opportunity to understand the daily challenges and rewards of being a GP (C2). The settings in which medical students learn are critical in their development as a doctor. Like longitudinal integrated clerkships, the DDAP has enabled students to engage, integrate and participate in several communities of practice over time (e.g. general practice and community organisations)[169]. This supports research which suggested that student learning is a social process underpinned by an interplay between social competence and personal experience[169, 243]. Longitudinal, community placements enable students to have abundant hands-on learning experiences and rehearse the role of the doctor.

The DDAP learning experience was perceived by students and GP supervisors to be a valuable experience omitted from the existing medical curriculum, and one that could lead to more students taking up general practice (C2). In addition, the evidence from rural community placements (identified in my literature review) has demonstrated a positive impact on future career uptake. The benefits of a 14-week placement over six-week (Student Selected Components) and eight-week (elective) placements included increased student participation in authentic patient care and stronger supervisory relationships.

Situated learning was continually recognised as the data emphasised that much of what is learned is specific to the situation in which it is learned[244](C2-3). The fact that most workplace learning for medical students takes place in hospitals[76] raises doubt over the preparation of many medical students for all their future roles, for example understanding GPs and patients from community settings and

deprived areas. Most students will not have had experience of such environments, therefore will lack knowledge and understanding about these patients, and how best to help and relate to them.

The outcomes from the longitudinal community placements relevant to patients were the development of compassion, and understanding the complexity of delivering healthcare in deprived areas and the psychosocial determinants of health (C3). These may not currently be identified by students as core competencies required for becoming a good doctor[245]; however, these qualities may be beneficial for all medical students to become better doctors in future practice[246]. These important developments in students are critical to the NHS, as there is a strong driver to deliver more care and compassion[237].

In the literature, longitudinal placements have demonstrated sustained improvements in students' patient-centeredness where they have become advocates for patients[174, 235]. There are many benefits to be realised from encouraging students to develop a holistic approach to understand patients' healthcare issues (rather than symptom-focus), including a better understanding of the patients' healthcare journey (background and lifestyle), how the whole healthcare system delivers care to patients, and multidisciplinary team working.

The DDAP could be said to be socially accountable as it has responded to patient need by providing students with more exposure to deprived settings in partnership with health service and community organisations (C3). The DDAP also has the potential to enhance student learning and respond to workforce shortages.

12.4.4 Summary of Figure 7 and Figure 8

The Figures have brought together the issues tackled in this thesis, demonstrated how students learn during clinical placements, analysed differences between short-term and longitudinal placements, and identified their impact. The students learned from

supported participation through real patient learning during longitudinal community placement experiences. The experience was challenging yet rewarding for students, and was a unique experience in their undergraduate teaching. There were benefits for the students, the healthcare system and patients. The students developed their clinical skills and compassion, and understood more about the psychosocial determinants of health. The healthcare system took action to address workforce shortages and the unmet need of under-served areas. Patients experienced compassionate care, as students gained a more holistic understanding of their healthcare due to the longitudinal nature of the placement.

12.5 Implications

12.5.1 Implications for policy and practice

This thesis illustrates the potential benefits for the population and medical workforce when longitudinal placements are provided in the community. The findings from this research have the potential to raise the awareness of the shortage of general practice and community undergraduate placements, nationally and more specifically in deprived areas.

Clinical community placements are currently underused and, unless this changes, the shortage of GPs is likely to remain. Health Education England has a mandate to recruit 50% of graduating medical student as future GPs[15]. Hence, initiatives such as the DDAP are urgently needed to allow more students to experience and understand the role of a GP in a deprived community, and consider whether it appeals to them as a future career.

One of the major strengths of the DDAP was that it enabled the students to develop many other qualities required for becoming good doctors. The DDAP students developed compassion, understood more about the psychosocial determinants of health and health-seeking behaviours, and experienced providing healthcare through teamwork in deprived areas. The longitudinal placement enabled

relationships to develop with patients which facilitated a greater understanding of patients' healthcare needs. This suggests the DDAP experience may help to create more compassionate doctors; therefore the experience should be extended to all medical students and not just those who have GP career intentions. It is likely to devalue the programme if it is regarded as just for those intent on a GP career. These are important strategic curriculum considerations that will shape and change the medical student learning environment and the future medical workforce.

Moreover, the aim of a medical school curriculum may influence how a community programme develops, and whether it does contribute to the needs of the local population. A school may work in conjunction with the local community. The Northern Ontario School of Medicine is an excellent example of putting the local community first, as it puts the needs of the community into the clinical years curriculum[247]. To address a chronic shortage of doctors and healthcare providers in Northern Ontario, the Government of Ontario established a new medical school, which enabled the medical school to tackle the complex issues by bringing together community organisations, community groups, two universities, hospitals, healthcare services, doctors, and other healthcare providers[247].

This thesis may provide a useful evidence base for medical schools and educators who are interested in designing and setting up similar longitudinal community medical student placements. The model demonstrates how to establish effective medical student learning environments because of the key importance of student roles, continuity, effective nurturing supervisory relationships and facilitating plenty of authentic patient learning experiences.

12.5.2 Implications for research

This thesis extends the current literature by furthering the understanding of the educational value of longitudinal community placements. My systematic literature review (see chapter 2) brought

together studies about under-served area placements and provoked questions about the aims of the medical curriculum[238]. The review has already been cited by several international journal articles which have collectively suggested that undergraduate clinical learning spaces in community, non-hospital settings greatly influence the development of healthcare practitioners (not just doctors)[234, 248-252]. These learning settings provide context-dependent learning environments that enable students to develop. The professional identity formation of medical students in different settings needs to be further considered as medical education develops[48].

Within the literature there is still a limited understanding about the educational value of specific placement lengths and settings[93, 206]. The value of a longitudinal placement involves a set of different components (e.g. settings, relationships, and outcomes) rather than an overall comparison of length alone. In addition to rural areas, there is a further need to consider placements in deprived, urban, inner-city and post-industrial communities when addressing under-served areas.

The strong educational value of a 14-week placement was evident; however, instances were identified in the data (particularly from the rural comparison sample) where confidence, clinical skills, and supervisory relationships could be developed further. This finding highlights the potential value of longer placements to enhance the continuity of learning. Further rehearsal and practice of clinical skills would be expected to develop more if a placement was longer. Additionally, most of the successful community placements identified in my literature review were from initiatives that were of seven months duration or longer, which would suggest that there are benefits from placements of longer duration.

Some of the issues discussed in this thesis are being confronted by medical education research internationally, predominantly in the USA, Australia and Canada, whereas in the UK progress has been slow. I remain unsure why this is the case but suggest this is due to

curriculum inertia and the difficulty in implementing curriculum changes[47]. This situation exists despite the pioneering integrated hospital and community initiative developed by Nigel Oswald at Cambridge University in England in the 1990s[253, 254], which was cited as influencing the development of the Parallel Rural Community Curriculum[81]. The Cambridge University programme unfortunately did not continue due to funding limitations. This example highlights the high importance of funding, social accountability, and partnerships with the local community. Continued scholarly research to demonstrate the educational value of such innovations is an imperative.

In the UK, there are currently no known undergraduate longitudinal placements in under-served, post-industrial, deprived community areas similar to the DDAP[206]. However, there are extended rural community placements, for example in Keele (North West England) [128, 255], and in Aberdeen and the Highlands (Scotland)[102, 125]. Other medical schools have also started to develop models based on longitudinal integrated clerkships[256].

Recently, urban community placements have been described in Australia[229] and the USA[257]. Like rural placements, urban initiatives can provide an excellent basis to meet the healthcare needs of the local population[257]. Placements in urban areas have enabled students to develop confidence in working with under-served populations and carry out community projects to address social accountability and public health concerns[229, 257].

12.6 Strengths of the study

This prospective qualitative research study followed the DDAP student experiences over time and assimilated data from multiple perspectives, which provided depth to the understanding of how medical students learn during clinical placements. A review of longitudinal community placements found that just three studies have previously collected data pre and post placement[75].

The timing of the interviews allowed the reasons for participation to be explored and helped to contextualise the experiences of the DDAP. The DDAP student data was synthesised in many distinct ways: comparison of experiences over time, comparison with GP supervisor and patient experiences, comparison with peer placement experiences, and comparison with an established rural placement.

It has been acknowledged by others, that there is a scant body of literature in general about medical student learning during longitudinal, community placements[75, 130, 169, 206]. This research has investigated a range of practical, logistical, and theoretical issues for longitudinal community placement developers. In reality, theory, knowledge and practice are not separate but related[67].

The research adds to the limited understanding about the scope of the Experience Based Learning model, as I have applied it to understand student learning during an innovative pilot programme and explored its veracity as an explanatory model. A novel aspect this research addresses within the theory is to further the understanding about individual differences and the consideration of what students bring to a workplace learning experience i.e. a student's characteristics and motivation was seen as a condition for learning. Currently the theory does not comprehensively explain the differences between individual learners. The students influenced their own learning opportunities and similarly the GP supervisors often highlighted that the students were motivated to learn. This area requires further research to understand exactly how individual students can affect what learning opportunities are available in the workplace, in both positive and negative ways. The DDAP has been a suitable medical student placement innovation for which to apply the Experience Based Learning model.

Collectively, this thesis contains a unique dataset, including over 85 interviews with DDAP students over time, GP supervisors, patients, peer comparison students, and rural comparison students, over a period of two and a half years. The DDAP has been investigated

from multiple perspectives and over multiple time points. This thesis has achieved an in-depth analysis of the viability of the DDAP as a medical student learning environment and highlighted many of the strengths of longitudinal community placements, adding another layer to the understanding of why they work.

12.7 Limitations of the study

The study may be criticised for its lack of ability to generalise due to the overall small sample size. The sampling strategy involved both purposive and convenience sampling. These strategies are susceptible to the individuals who makeup of the samples which may influence the findings. For the peer comparison and patient interviews a convenience sample was used as the participants volunteered to take part and were accessible. The patient participants may not have been the most deprived patients as often these patient groups do not visit general practice for timely healthcare[6]. Recruiting and conducting medical education research about patients is a complex but worthwhile exercise as the findings provided valuable insights about patients' active and passive roles during consultations.

Although the peer comparison sample was a convenience sample it provided a good comparison of the range of placements undertaken by the students. In addition, students who volunteered to take part in the study had both positive and / or negative experiences. The students who were interviewed had experienced placements in hospitals, general practices, community settings and other healthcare environments, and in many different locations. There were many overlapping experiences within the sample and in relation to the literature (e.g. feeling unsupported).

The overall sampling strategy and sample size were restricted due to the pilot nature of the DDAP, small number of student places on the programme, curriculum scheduling of placements, and time constraints. Data collection had to occur at specific times (e.g.

Flinders over two days, DDAP midway and end) which limited the sampling strategies, methods and ability to analyse the data iteratively. Had there been no restrictions on when data could be collected this would have allowed time for a more iterative analytical approach, to build and develop concepts. However, the transparent data collection process, analysis, and interpretation, helped to establish the trustworthiness and credibility of the research. As with social constructivist paradigms, the emphasis of the research was on depth of understanding which can then be adapted to inform other settings.

The conceptual orientation of the research (towards the Experience Based Learning model) may have influenced a narrowed theoretical interpretation of the data as it was more descriptive than analytical. However, the theory was incorporated into the data analytical processes i.e. after the data collection. This allowed an in-depth understanding about the many different considerable social environments and influences on student learning (e.g. universities, general practices, relationships, peers, supervisors). The review of conceptual approaches in Chapter 3 highlighted that much of student learning has been understood using socio-cultural theories (e.g. Communities of Practice) therefore the Experience Based Learning model was a practical tool for which to provide an interpretative framework to analyse the complex data.

All those involved with the DDAP may have had a strong inclination for it to be a success and have a positive bias or vice versa as the participants may have been overly critical. The research approach (including reflexivity) helped to overcome these obstacles by using two comparison groups, to create an understanding of alternative experiences, from participants who had no knowledge or expectations of the DDAP. The comparison samples of participants had little interest in whether the DDAP pilot was successful, so they freely discussed their own placement experiences which were then compared. My role as a neutral researcher was not linked to the success or failure of the DDAP.

The students volunteered to take part in the DDAP which may have impacted on their experiences and the data. Awareness of this potential weakness is the reason why the research in chapter 5 was conducted, to establish the characteristics of the students in advance of participation. The baseline status included a primary care / GP career intent, limited experience of deprived settings, and a reluctance to travel. This helped to analyse the interpretation of their experience and consider implications for students who might not volunteer for the programme.

12.8 Personal reflection

My research journey has spanned three continents as I have travelled and discussed the project with scholars in Australia, the Czech Republic, Italy, England, Japan, and the USA. These scholars live and work in hugely varying healthcare systems and contexts, yet the issues encountered are very similar.

When I started this research project, I had little knowledge of undergraduate medical education as my previous projects were involved with postgraduate medical education. I had carried out research with staff in the NHS but not with patients or undergraduate students. One of the main difficulties encountered with data collection was when collecting data from patients. In the first year this included a two-page written feedback sheet that yielded a low response rate and low quality data, therefore this was removed in the second year so that only telephone interviews were conducted. There are relatively few medical education research papers which include qualitative patient data compared to student and supervisor interviews, as focus is on student learning not patients.

Throughout this thesis there is a tension which I have attempted to address between localised applied research and broader theoretical research. ‘Evaluation’ is often considered - a shallow local contextualised activity to assess the impact of an intervention within a given context. In contrast, ‘research’ pursues a more complex

understanding of what works in a specific situation and how transferable this understanding is to external environments and situations. There is often a gap between quality medical education research and the translation into practice due to a lack of clarification studies about why and how something works[50, 258]. The purpose and application of medical education research to practice should be integral to every project[259].

My role as a researcher has allowed me to apply a scholarly understanding to an innovative medical school intervention. Perhaps surprisingly, a question I struggled with in the early stages of the research was: what is the DDAP really about? Was the aim to transplant a rural model into the North East of England and observe the effect, or was it to create a bespoke initiative that fostered the development of competencies required for being a doctor in the local area? In essence, the background of the DDAP was established but the structure of the programme was still developing, as was my research.

This confusion was probably due to the pilot nature of designing a medical education innovation. However, after interviewing the DDAP students, GP supervisors, and patients, it became clear that it was not just my misunderstanding, but that many people shared these views. There is great complexity in using workplaces as learning environments and the alignment of work activities to curriculum aims. This is why my recommendations for the future stress the importance of considering the strategic aims (intended outcomes) of the programme.

Using the Experience Based Learning model to interpret and analyse the data has been a challenging yet rewarding process. There were instances where it was unclear to which specific elements of the theory the quotes belonged, as often there were many overlaps. Hence, within each chapter there are quotes that could equally have been presented in a number of different themes. Also, the application of the theory involving GP supervisor and patient experiences was a

challenge as the theory has mainly been derived from student data[176].

12.9 Recommendations

12.9.1 Recommendations for policy and practice

This thesis has demonstrated the educational value of longitudinal community placements in deprived areas which enabled students to develop clinical skills and compassion, understand the psychosocial determinants of health and complexities of providing healthcare in community areas, and may help them to become better doctors in the future.

Recommendation 1: Medical Schools and the GMC should develop more longitudinal community placements to strengthen the focus of the medical curriculum towards more patient-centred experiences.

The DDAP should be extended in length and more students should be able to have this valuable experience. In addition, longitudinal community placements should strive to become even more patient-centred.

Recommendation 2: To increase the number of students and extend the length of the DDAP.

The DDAP student data and the literature suggest that emergency settings are often how patients from deprived settings are admitted into healthcare systems, as they do not get the preventative care they need in general practice settings[6]. The students could follow patients, for example from Accident and Emergency settings back to the community settings, including general practice and across community services.

Recommendation 3: To enable students to follow patients through the healthcare system during the DDAP.

12.9.2 Recommendations for further research

To enhance the understanding of continuity and length of placement, a research approach could use a continual process of data collection. This may follow learning progression over time, and during real patient learning experiences.

Recommendation 4: To explore student learning over time (e.g. through audio-diaries, log books, written reflective diaries).

Research could explore how the following factors impact on learning: the extended length of the placement, continuity of learning, nurturing supervisory relationships, and active roles in the healthcare team with real patient exposure. For example, a qualitative project contrasting learning during rural and urban placements could be conducted.

Recommendation 5: To further explore the educational value of learning in other deprived settings.

Research should focus on the impact of the DDAP on students who have little or no intention of pursuing general practice careers in the future. This would help to further establish the educational value of the DDAP as a learning environment.

Recommendation 6: To explore the DDAP educational experience of those who have no intention to pursue GP careers

A particularly valuable learning experience during the DDAP was from home visits. Research should be conducted to explore how learning in this setting could be made more optimal for student learning.

Recommendation 7: To explore patient experiences of home visits

12.10 Conclusions

This thesis has explored medical student learning during an innovative pilot programme which provided students with longitudinal exposure to general practice and community settings in post-industrial, deprived areas. The DDAP has been investigated from multiple perspectives and over multiple time points. In addition, medical student learning was explored during alternative clinical placements.

The reasons for volunteering for the DDAP were underpinned by the student baseline status, moving towards becoming a doctor and their expectations. The baseline status included a primary care / GP career intent, limited experience of deprived settings, and a reluctance to travel. Students hoped to gain further experience of general practice, understand healthcare provision for patients in deprived areas, become a 'better' doctor and inform their career decisions. This finding may inform the design of recruitment strategies for future programmes to understand what attracts students to such opportunities.

The DDAP was a positive learning experience for the medical students which helped them to learn about the psychosocial determinants of health while practising and reinforcing their clinical skills and knowledge. The students' learning was facilitated through independent clinical time with patients, which promoted deeper learning about the role of the doctor. The integrated structure of the programme complemented each component to give the students a well-rounded understanding of the complex issues of providing healthcare in deprived areas. The longitudinal nature of the DDAP was useful to allow an immersive experience in challenging settings.

The DDAP allowed students a longer period of time to integrate with the general practice and gain hands-on clinical experience. The GPs allowed students to be involved with patient care under appropriate supervision. The GPs experienced benefits including intellectual

stimulation and keeping knowledge up to date.

The patients were satisfied with their involvement and often felt reassured and at ease after interacting with the student. They saw their role as an ‘object’ but were happy to provide the experience for students to develop and practise their skills. A key condition was that patients recognised the importance of the GP supervisors overseeing the process.

The Student Selected Component and elective experiences often increased student confidence, helped them consider future careers, and improved clinical knowledge. There were also negative experiences when students perceived learning environments to be unsupportive. There were key conditions and processes of learning that were often linked to these positive or negative learning experiences including the role of the students in the environment, level of participation, and effective supervision.

The established rural community programme was enjoyed by students as it pushed them to learn with an abundance of patient contact time and excellent supervision of their learning. The hands-on experiences were critical to learning in preparation for the end of year exams. After 14 weeks, many of the benefits identified after one year were present but there were gaps in confidence and clinical skills, and relationships were still developing. A longer placement may help to reinforce learning as the students perceived they were just beginning to reap the benefits of the placement.

Across the three distinct programmes (DDAP, peer comparison, rural comparison), there were differences in the quality and quantity of participation in workplace learning activities, supervisor relationships, the learning environment, and preparedness for future roles. The synthesis highlighted the importance of the longitudinal placements, continuity of learning, nurturing supervisory relationships, and having

active roles in the healthcare team, all facilitating the learning process.

Overall, this thesis builds on the international longitudinal community placement literature and extends understanding of these placements beyond rural areas. The research explored medical student learning during an innovative placement in under-served, post-industrial, deprived areas. The research provides a basis for scholars to further understand why longitudinal community placements are effective and may help to create better doctors for the future.

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14 Appendices

Appendices include consent forms, ethical approvals, participation information sheets, interview guides, invitation letters, literature review table and search, and literature review publication.

Consent forms

Durham University
School of Medicine, Pharmacy and Health

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CONSENT FORM FOR RESEARCH STUDY

Title of Project: Exploring the impact on medical students of extended exposure to General Practice in inner city, difficult and deprived areas

Name of Researcher: Paul Crampton

	Please INITIAL to confirm
➢ I confirm that I have read and understand the information sheet (03.01.12) for the above study.	
➢ I have had the opportunity to consider the information, ask questions and have had these answered satisfactorily.	
➢ I understand that my participation is voluntary and that I am free to withdraw at any time, without giving any reason.	
➢ I agree to the interview being tape recorded and transcribed and what I say may be used for anonymous quotes in future publications.	
➢ I agree to take part in the above research study.	

Name of Participant	Date	Signature

Name of Researcher	Date	Signature

When complete, 1 copy for participant: 1 copy for researcher kept securely

Durham University
School of Medicine, Pharmacy and Health

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CONSENT FORM FOR STAFF INTERVIEW

Title of Project: Staff and patient views of student placements in deprived areas

Name of Researcher: Paul Crampton

	Please INITIAL to confirm
➢ I confirm that I have read and understand the information sheet (dated 12/09/12) for the above study.	
➢ I have had the opportunity to consider the information, ask questions and have had these answered satisfactorily.	
➢ I understand that my participation is voluntary and that I am free to withdraw at any time, without giving any reason.	
➢ I agree to the interview being tape recorded and transcribed and what I say may be used for anonymous quotes in future publications.	
➢ I agree to take part in the above research study.	

Name of Participant	Date	Signature

When complete, 1 copy for participant; 1 copy for researcher kept securely

Durham University
School of Medicine, Pharmacy and Health

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Contact details for Telephone interview

This information will be destroyed following the interview

I would prefer to be contacted by: ☐ Email
☐ Telephone

Email: _____

Contact telephone: _____

If known, please give details of when would be the most suitable time (day) to contact you / conduct the telephone interview:

_____

_____

_____

Durham University
School of Medicine, Pharmacy and Health

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CONSENT FORM FOR PATIENT INTERVIEW

Title of Project: Staff and patient views of student placements in deprived areas

Please read this sheet carefully and if you agree to take part, please initial and sign. Then fill in the demographic information sheet and return them both to a practice staff member (student). Please keep one copy of the consent form.

Name of Researcher: Paul Crampton

	Please **INITIAL** boxes
➢ I confirm that I have read and understand the information sheet (dated 18/09/12) for the above study	
➢ I agree to be interviewed about my experiences with the medical student. I understand that the interviewer **will NOT ask personal questions about my health** or why I was seeing the doctor / medical student	
➢ I understand that the interview will be recorded and typed out, and that the person doing this knows the importance of confidentiality	
➢ I understand that my participation is voluntary and that I am free to withdraw at any time, without giving any reason	
➢ I understand that quotes from interviews may be used in publications or reports	
➢ I agree to take part in the above research study	

Name:

Signature: Date:

Telephone number for interview: (This will be destroyed following interview)	

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5th YEAR COMPARISON GROUP CONSENT FORM

Title of Project: Exploring the impact on medical students of extended exposure to Community Practice in inner city, difficult and deprived areas

Name of Researcher: Paul Crampton

	Please INITIAL to confirm
➢ I confirm that I have read and understand the information sheet (03.09.12) for the above study.	
➢ I have had the opportunity to consider the information, ask questions and have had these answered satisfactorily.	
➢ I understand that my participation is voluntary and that I am free to withdraw at any time, without giving any reason.	
➢ I agree to the interview being tape recorded and transcribed and what I say may be used for anonymous quotes in future publications.	
➢ I agree to take part in the above research study.	

Name of Participant	Date	Signature

When complete, 1 copy for participant: 1 copy for researcher kept securely

Durham University
School of Medicine and Health

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CONSENT FORM FOR STUDENT INTERVIEW

Title of Project: Exploring the impact on medical students of extended exposure to community practice in rural areas

Name of Researcher: Paul Crampton

	Please INITIAL to confirm
➢ I confirm that I have read and understand the information sheet (dated 05/03/12) for the above study.	
➢ I have had the opportunity to consider the information, ask questions and have had these answered satisfactorily.	
➢ I understand that my participation is voluntary and that I am free to withdraw at any time, without giving any reason.	
➢ I agree to the interview being tape recorded and transcribed and what I say may be used for anonymous quotes in future publications.	
➢ I agree to take part in the above research study.	

Name of Participant	Date	Signature

When complete, 1 copy for participant: 1 copy for researcher kept securely

Ethical approvals

Durham University

Wolfson Research Institute
Improving health and well-being

Rebecca Maier (nee Perrett)
NHS Engagement Manager, Wolfson Research Institute
Chair, School of Medicine and Health Ethics Sub- Committee
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Email: Rebecca.Perrett@durham.ac.uk

Paul Crampton
Medical Education Research Group
School of Medicine and Health
Burdon House
Leazes Lane
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DH1 1TA

27th February 2012

Dear Paul,

Re: Ethics Application ESC2/2012/02
Exploring the impact on medical students of extended exposure to General Practice in inner city, difficult and deprived areas.

Thank you for sending your revisions to the above application to the School of Medicine and Health ethics sub-committee.

I am satisfied that all of the changes requested by the SMH ethics sub-committee at the meeting have been made. I can therefore confirm Durham University ethical approval for you to conduct this project.

The additional elements to your planned research i.e. Interviewing NHS stakeholders (GP practice staff), Interviewing NHS patients and Interviewing students, clinicians, practice staff in Flinders, Australia, have not been included in this application and will require full ethical review by the committee prior to commencing.

Please note that as custodian of the data generated for this study you will be responsible for ensuring it is maintained and destroyed as outlined in this proposal and in keeping with the Data Protection Act.

Please do not hesitate to contact me should you have any questions. Good luck, I hope that the project goes well.

With best wishes

RHMaier

Rebecca Maier

Durham University

Wolfson Research Institute
Improving health and well-being

Rebecca Maier (nee Perrett)
NHS Engagement Manager, Wolfson Research Institute
Chair, School of Medicine and Health Ethics Sub- Committee
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Paul Crampton
Medical Education Research Group
School of Medicine and Health
Burdon House
Leazes Lane
Durham
DH1 1TA

12th March 2012

Dear Paul,

Re: Ethics Application ESC2/2012/02
Exploring the impact on medical students of extended exposure to General Practice in inner city, difficult and deprived areas.

Thank you for sending an amendment to the above project to the School of Medicine and Health ethics sub-committee. This amendment covers the collection of data through focus groups and interviews at Flinders in Australia.

I have reviewed the amendment documentation and I can confirm Durham University ethical approval for you to conduct this project incorporating this amendment.

Please note that as custodian of the data generated for this study you will be responsible for ensuring it is maintained and destroyed as outlined in this proposal and in keeping with the Data Protection Act.

Please do not hesitate to contact me should you have any questions. Good luck, I hope that the project goes well.

With best wishes

RHMaier

Rebecca Maier

Durham University

School of Medicine, Pharmacy and Health

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Rebecca Maier (nee Perrett)
NHS Engagement Manager, Wolfson Research Institute
Chair, School of Medicine, Pharmacy and Health Ethics Sub- Committee

Paul Crampton
PhD Student, Medical Education Research Group
Durham University
Burdon House
Leazes Road
DH1 1TA

14th November 2012

Dear Paul,

Re: Ethics Application ESC2/2012/14
Investigating the dynamics amid students, NHS staff, and patients, during a community placement

Thank you for sending the above application to the School of Medicine, Pharmacy and Health Ethics Sub-Committee and for attending the meeting on 17th October 2012 with Professor Jan Illing.

The committee members found no major issues with your project, but they have asked that the following minor changes are made prior to review and approval by the Chair:

NHS Rec Form

- A18 – Please reword the information to reflect the actual activity of taking written consent rather than just giving out the information sheets.
- A13 & A60 – Please check all the documentation and ensure that the numbers of participants to be recruited is consistent throughout the application. The committee also suggested that the method of patient recruitment being used is reviewed at the end of year one.
- A21– Please ensure the length of time of each interview is consistent across all documentation.
- A21.7, A27.5, A30.1 – The committee felt there was no rationale for gaining written consent from some and not all staff participants and requested that written consent is obtained for all staff participants.
- A29 - The committee felt that it was appropriate to call each participant, to let him or her know if they are to be included in the research or not, as you may be

dealing with the same participants/practice in subsequent years. Please amend as appropriate.

- A31 – Should this be written AND verbal consent will be gained?
- A36 – The committee requested that additional information be added to the information sheets explaining why you are collecting sensitive and personal data, and what it will be used for. The committee suggested thinking carefully about what inferences you can draw from such a small set of data, and thus what should be collected.
- A36 –Please record personal details on a separate sheet to ensure the data can be correctly anonymised at a later date.
- A34–44 – The committee suggested that personal data be destroyed
- earlier than the research data. The committee suggests that the applicant thinks about keeping the research data, which is anonymised, longer than currently stated in the application.
- A50–1 – Please complete the question and include justification for not publicly listing the research.
- A52 – Please include the following the statement before the information about protecting the data. 'There is no intention to use personal data in publishing and disseminating the results of the research.'
- A54-1 – Please provide the committee with information as to what changes have been made to the application as a result of the peer review comments, or provide justification for not making changes.
- A71.2, A72 – Please note that governance approval at additional sites will be required as they become known.

Protocol

- Page 5, Figure 1 – The committee requested consistency throughout the documentation regarding the numbers of participants involved.

Patient Letter and Information Sheet for patients

- The committee requested that the language used in the letter be made simpler for the lay person to understand, and suggested carrying out a 'Flesch-Kincaid' report. In addition, the committee suggest asking someone else not involved with the study (e.g. a member of staff at the GP practice) to read the information and provide feedback on its readability and clarity.
- The committee also request that the information sheet is open in regards to the purpose and intentions of the study, particularly around the use of the term 'deprived area'. The committee felt that potential participants would be aware that they lived in a deprived area and thus that this, or a similar term, should be included in the information.
- Please add the following, or similar, information to the patient information sheet - 'Upon discussion if you feel that the interview brings up matters that I am not able to deal with as a researcher, we would advise you to discuss these with your GP to ensure you get the appropriate support'.
- Please add details of the transcription service to the information sheets, per A38 of the NHS REC form.
- Benefits section should be related to participants' benefits not the Researchers.
- Please include a disadvantages section.
- Details of exactly what information personal will be requested should be added.
- Please include the following statement – 'When these results are published no one will be able to identify you'.

- Please include statements about anonymity and data security.
- Change to journal publications, not submissions.

Information Sheet for Staff

- The committee requested information be added about the reason for collecting ethnicity, and other personal data.
- Please add that this study has been reviewed by X NHS REC too.

Administrative Comments

General

- Documents need to be consistently labelled and to have versions and dates on them.

NHS REC Form

- A5-1 – enter 'not applicable'.
- A15 – Tick 'generic health relevance'.
- A17-1 – Aged over 18 years needs adding.
- A53 – Information needs adding to PIS.
- A64.1 – Sponsor is Clare McGlynn as DhoFR (SS&H) or Russell Hill as Faculty Director (Research Development & Governance).
- A76 – NRES will need copy of DU certificate of insurance.

Patient Information Leaflets

- Label clearly e.g. 'Info Sheet for GP Patients' and 'Info Sheet for GP Staff'.
- Proof read (e.g. 'you can drop without providing an explanation - should be 'drop out')
- Why have you been invited – remove 'selected' from the first sentence.
- What are you being asked to do? - this seems confused and needs to be clearer to differentiate between the survey and the interview.
- After the section on what you are being asked to do – the information on surveys disappears and needs to be added.

Patient Consent Form

- Demographic data should not be stored with the consent form so it should be either detachable or a separate form.

If you have any questions please let me know. Once the changes have been made please return the updated documents to me and I will review and approve them by Chair's action.

With best wishes

Rebecca Maier

Durham University

School of Medicine, Pharmacy and Health

Shaped by the past, creating the future

Rebecca Maier
NHS Engagement Manager, Wolfson Research Institute
Chair, School of Medicine, Pharmacy and Health Ethics Sub- Committee

Paul Crampton
PhD Student, Medical Education Research Group
Durham University
Burdon House
Leazes Road
DH1 1TA

2nd January 2013

Dear Paul,

Re: Ethics Application ESC2/2012/14
Investigating the dynamics amid students, NHS staff, and patients, during a community placement

Thank you for sending your revisions to the above application to the School of Medicine, Pharmacy and Health Ethics Sub-Committee.

I have reviewed the revised documents. I am pleased to confirm Durham University ethical approval for you to conduct this study subject to the following minor amendments which should be made prior to your NHS REC application:

- A27.5) refers to verbal consent only and not written consent. The committee have requested that written consent be obtained for all participants.
- A50-1) you mention no database is known. I would suggest adding that any web-based search for deprived areas projects will bring up the project on your Durham University page, which is publically accessible.
- A52) a statement to say that there is no intention of using personal data in any publication should be added.
- Versions and dates need to be reviewed. All need to contain a full date and a version number, currently there are some documents that have been amended that have not had these details changed.

Please note that as custodian of the data generated for this study you will be responsible for ensuring it is maintained and destroyed as outlined in this proposal and in keeping with the Data Protection Act.

Please do not hesitate to contact me should you have any questions. Good luck, I hope that the study goes well.

With best wishes

Rebecca Maier

15 November 2012

Paul Crampton
Medical Education Research Group
Durham University
Burdon House
Leazes Road
DURHAM
DH1 1TA

Faculty of Medical Sciences

Newcastle University
The Medical School
Framlington Place
Newcastle upon Tyne
NE2 4HH United Kingdom

Professor Michael Whitaker
FIBiol FMed Sci
Dean of Research & Innovation

FACULTY OF MEDICAL SCIENCES: ETHICS COMMITTEE

Dear Paul

Title: Exploring the impact on medical students of extended exposure to General Practice in inner city, difficult and deprived areas
Application No: 00606/2012

On behalf of the Faculty of Medical Sciences Ethics Committee, I am writing to confirm that the ethical aspects of your proposal have been considered and your study has been given ethical approval.

The approval is limited to this project: **00606/2012**. If you wish for a further approval to extend this project, please submit a re-application to the FMS Ethics Committee and this will be considered.

During the course of your research project you may find it necessary to revise your protocol. Substantial changes in methodology, or changes that impact on the interface between the researcher and the participants must be considered by the FMS Ethics Committee, prior to implementation.*

At the close of your research project, please report any adverse events that have occurred and the actions that were taken to the FMS Ethics Committee.*

Best wishes,

Yours sincerely

M. Holbrough

Marjorie Holbrough
On behalf of Faculty Ethics Committee
cc.
Professor Michael Whitaker, Dean of Research & Innovation
Ms Lois Neal, Assistant Registrar (Research Strategy)

*Please refer to the latest guidance available on the internal Newcastle Biomedicine web-site.

tel: +44 (0) 191 222 5264
fax: +44 (0) 191 222 5164

Michael.Whitaker@ncl.ac.uk
www.ncl.ac.uk

The University of Newcastle upon Tyne trading as Newcastle University

THE QUEEN'S ANNIVERSARY PRIZES
FOR HIGHER AND FURTHER EDUCATION
2009

Health Research Authority

National Research Ethics Service

NRES Committee West Midlands - The Black Country
HRA NRES Centre Manchester
3rd Floor, Barlow House
4 Minshull Street
Manchester
M1 3DZ

Telephone: 0161 625 7832
Facsimile: 0161 625 7299

06 March 2013

Mr Paul Crampton
PhD student
Durham University
Burdon House, Medical Education
Leazes Road
Durham
DH1 1TA

Dear Mr Crampton

Study title:	**Investigating the dynamics amongst students, NHS staff, and patients, during a difficult and deprived area placement**
REC reference:	**13/WM/0106**
IRAS project ID:	**115998**

The Proportionate Review Sub-committee of the NRES Committee West Midlands - The Black Country reviewed the above application on 27 February 2013.

We plan to publish your research summary wording for the above study on the NRES website, together with your contact details, unless you expressly withhold permission to do so. Publication will be no earlier than three months from the date of this favourable opinion letter. Should you wish to provide a substitute contact point, require further information, or wish to withhold permission to publish, please contact the Co-ordinator Miss Helen Penistone, nrescommittee.westmidlands-blackcountry@nhs.net.

Ethical opinion

The Committee noted the format of the Participant Information Sheet as this differed from the norm. Usually the questions raised are in the first person and the answers given by the author.

On behalf of the Committee, the sub-committee gave a favourable ethical opinion of the above research on the basis described in the application form, protocol and supporting documentation, subject to the conditions specified below.

Ethical review of research sites

The favourable opinion applies to all NHS sites taking part in the study, subject to management permission being obtained from the NHS/HSC R&D office prior to the start of the study (see “Conditions of the favourable opinion” below).

Conditions of the favourable opinion

The favourable opinion is subject to the following conditions being met prior to the start of the study.

Management permission or approval must be obtained from each host organisation prior to the start of the study at the site concerned.

Management permission ("R&D approval") should be sought from all NHS organisations involved in the study in accordance with NHS research governance arrangements.

Guidance on applying for NHS permission for research is available in the Integrated Research Application System or at http://www.rdforum.nhs.uk.

Where a NHS organisation's role in the study is limited to identifying and referring potential participants to research sites ("participant identification centre"), guidance should be sought from the R&D office on the information it requires to give permission for this activity.

For non-NHS sites, site management permission should be obtained in accordance with the procedures of the relevant host organisation.

Sponsors are not required to notify the Committee of approvals from host organisations.

It is the responsibility of the sponsor to ensure that all the conditions are complied with before the start of the study or its initiation at a particular site (as applicable).

You should notify the REC in writing once all conditions have been met (except for site approvals from host organisations) and provide copies of any revised documentation with updated version numbers. The REC will acknowledge receipt and provide a final list of the approved documentation for the study, which can be made available to host organisations to facilitate their permission for the study. Failure to provide the final versions to the REC may cause delay in obtaining permissions.

Approved documents

The documents reviewed and approved were:

Document	*Version*	*Date*
REC application		21 February 2013
Protocol	2	10 November 2012
Investigator CV: Paul Crampton		01 February 2013
Investigator CV: Professor John McLachlan		
Investigator CV: Janet Christina Illing		
Letter of invitation to participant: Patient	2	12 November 2012
Letter of invitation to participant: Staff	2	11 November 2012
Participant Information Sheet: for GP Patients	2	18 September 2012
Participant Information Sheet: for NHS Staff	2	12 September 2012
Participant Consent Form: for patient interview	2	07 March 2012
Participant Consent Form: for staff interview	2	07 March 2012
Interview Schedules/Topic Guides		

Questionnaire: Patient Survey	1	04 September 2012
Questionnaire: Patient Demographics	2	01 December 2012
Peer Review		02 October 2012
University of Durham ethical approval		02 January 2013
Evidence of insurance or indemnity: University of Durham Professional Indemnity		09 July 2012
Evidence of insurance or indemnity: University of Durham Public and Products Liability		09 July 2012

Membership of the Proportionate Review Sub-Committee

The members of the Sub-Committee who took part in the review are listed on the attached sheet.

Statement of compliance

The Committee is constituted in accordance with the Governance Arrangements for Research Ethics Committees and complies fully with the Standard Operating Procedures for Research Ethics Committees in the UK.

After ethical review

Reporting requirements

The attached document "After ethical review – guidance for researchers" gives detailed guidance on reporting requirements for studies with a favourable opinion, including:

- Notifying substantial amendments
- Adding new sites and investigators
- Notification of serious breaches of the protocol
- Progress and safety reports
- Notifying the end of the study

The NRES website also provides guidance on these topics, which is updated in the light of changes in reporting requirements or procedures.

Feedback

You are invited to give your view of the service that you have received from the National Research Ethics Service and the application procedure. If you wish to make your views known please use the feedback form available on the website.
information is available at National Research Ethics Service website > After Review

13/WM/0106 **Please quote this number on all correspondence**

We are pleased to welcome researchers and R & D staff at our NRES committee members' training days – see details at http://www.hra.nhs.uk/hra-training/

With the Committee's best wishes for the success of this project.

Yours sincerely

On behalf of
Dr Jeff Neilson
Chair

Email: nrescommittee.westmidlands-blackcountry@nhs.net

Enclosures: List of names and professions of members who took part in the review

"After ethical review – guidance for researchers"

Copy to: Mr Russell Hill
Faculty of Social Sciences and Health
Durham University
Arthur Holmes Building
Science Site
South Road
Durham
DH1 3LE

Mr Richard Errington,
NHS County Durham & Darlington
John Snow House
University Science Park
Durham
DH1 3YG

NRES Committee West Midlands - The Black Country

Attendance at PRS Sub-Committee of the REC meeting on 27 February 2013

Committee Members:

Name	*Profession*	*Present*	*Notes*
Dr Jeff Neilson	Consultant Haematologist	Yes	
Mr Nanak Singh Sarhadi	Consultant Plastic Surgeon	Yes	
Reverend Mark Stobert	Hospital Chaplin	Yes	

North of England
Commissioning Support Unit

Main number: 0191 217 2783
Fax: 0191 217 2510

Bevan House
1 Esh Plaza
Sir Bobby Robson Way
Great Park
Newcastle
NE13 9BA

03 May 2013

Mr Paul Crampton
Centre for Medical Education Research
Durham University
Burdon House
Leazes Road
Durham
DH1 1TA

Dear Mr Crampton

Study Title: **Investigating the dynamics amongst students, NHS staff, and patients, during a difficult and deprived area placement**

REC Ref: 13/WM/0106

The information supplied about your role in the above research has been reviewed by the North of England Commissioning Support Unit. We provide research assurance to Primary Care Providers in Northumberland Tyne and Wear and County Durham and Tees Valley.

I can confirm that evidence of checks, as deemed commensurate with your research activity, has been provided and deemed acceptable.

This letter provides assurance that the necessary checks and clearances as required for your research activity in **NHS Durham Dales, Easington & Sedgefield CCG, NHS Hartlepool & Stockton CCG and NHS South Tees CCG** are in place.

This assurance is valid for the duration of the research or until expiry of any Occupational Health or CRB clearance (duration 3 years), whichever is earlier. Evidence of updated clearances should be provided to R&D to ensure your assurance continues.

Should your role in the research change, it may be necessary to review these checks and assurances.

You are required to ensure that all information regarding patients or staff remains secure and *strictly confidential* at all times. You must ensure that you understand and comply with the requirements of the NHS Confidentiality Code of Practice and the Data Protection Act and any local or regulatory requirements whilst on GP Practice premises.

Your substantive employer remains responsible for your conduct during this research project.

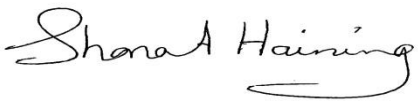
NB: . NECS assurance for the research study must be in place prior to commencement of your role in the above locations.

This letter does not place any obligations on Primary Care Providers to allow you access to staff, patients, information or premises. You must get agreement from each Primary Care Provider confirming their decision to allow access.

If you require advice in relation to the conduct of the research within the above organisations please contact **the NECS R&D Office.**

May I take this opportunity to wish you well in your research role.

Yours sincerely,



Shona A Haining BSc PhD
Senior R&D Manager
North of England Commissioning Support

CC

Catherine Saxton, Durham University, Catherine.saxton@durham.ac.uk

North of England
Commissioning Support Unit

2nd Floor
Riverside House
Goldcrest Way
Newburn Riverside
Newcastle upon Tyne
NE15 8NY

Tel: (0191) 217 2783
E-mail: research@northoftyne.nhs.uk

21 February 2014

Mr Paul Crampton
Centre for Medical Education Research
Durham University
Burdon House
Leazes Road
Durham
DH1 1TA

Dear Mr Crampton

Study Title: **Investigating the dynamics amongst students, NHS staff, and patients, during a difficult and deprived area placement**

REC Ref: **13/WM/0106**

The information supplied about your role in the above research has been reviewed by the North of England Commissioning Support Unit. We provide research assurance to Primary Care Providers in Northumberland Tyne and Wear and County Durham and Tees Valley.

I can confirm that evidence of checks, as deemed commensurate with your research activity, has been provided and deemed acceptable.

This letter provides assurance that the necessary checks and clearances as required for your research activity in **Darlington CCG** *(in addition to* ***NHS Durham Dales, Easington & Sedgefield CCG, NHS Hartlepool & Stockton CCG and NHS South Tees CCG*** *already approved)* are in place.

This assurance is valid for the duration of the research or until expiry of any Occupational Health or CRB clearance (duration 3 years), whichever is earlier. Evidence of updated clearances should be provided to R&D to ensure your assurance continues.

Should your role in the research change, it may be necessary to review these checks and assurances.

You are required to ensure that all information regarding patients or staff remains secure and *strictly confidential* at all times. You must ensure that you

understand and comply with the requirements of the NHS Confidentiality Code of Practice and the Data Protection Act and any local or regulatory requirements whilst on GP Practice premises.

Your substantive employer remains responsible for your conduct during this research project.

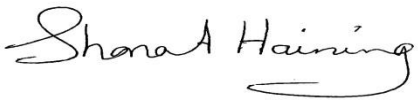
NB: . NECS assurance for the research study must be in place prior to commencement of your role.

This letter does not place any obligations on Primary Care Providers to allow you access to staff, patients, information or premises.

If you require advice in relation to the conduct of the research within the above organisations please contact **the NECS R&D Office.**

May I take this opportunity to wish you well in your research role.

Yours sincerely



Shona A Haining BSc PhD
Senior R&D Manager
North of England Commissioning Support

cc Catherine Saxton, Durham University

Participant Information Sheets

Durham University
School of Medicine and Health

Shaped by the past, creating the future

Exploring the impact on medical students of extended exposure to General Practice in inner city, difficult and deprived areas

Interview Participant Information Sheet

I would like to invite you to take part in a series of interviews as part of my research. Before you decide, I would like you to understand why the research is being done and what it would involve for you. Please read this sheet carefully. If you have any questions, there are contact details at the end of this sheet. Feel free to talk to others about the study if you wish.

What is the purpose of the study?
Durham University is piloting an extended GP placement for medical students in difficult and deprived areas. This is in response to the difficulties experienced in recruiting and retaining GPs in these areas. Medical students are currently predominantly trained in secondary care clinical environments therefore they do not have exposure to this type of medical environment in their training. The research project is looking at the impact on medical students of this extended GP placement in a difficult and deprived area. There is a need to identify the starting point at which students enter the programme to be able to later identify any changes that may occur as a result of programme participation.

Why you have been invited?
All students who are enrolled on the difficult and deprived area programme are being invited to take part in a series of interviews. Subsequent cohorts who take the programme will also be invited.

Do you have to take part?
Participation is entirely voluntary. If you agree to take part now, you can change your mind at any point.

What are you being asked to do?
You are being asked to take part in a series of interviews at Durham University, Queens campus to discuss your current motivations and opinions about General Practice in difficult and deprived areas. You will take part in an interview before (between March-June, 2012), during (April-August, 2013), and after the placement (post August, 2013).

Information such as existing interest in difficult and deprived area General Practice, future career intentions, clinical and community exposure, education background, grades, demographics (age, gender, and ethnicity), approximate current locality (e.g. rural/urban) and characteristics of the area where you grew up (rural/urban) will be requested. Some of this data will be used as a baseline to help track any changes as a result of participating in the DDA programme.

The interviews will be one-on-one with the researcher Paul Crampton and will take 30-60 minutes. Before the first interview starts you will be asked if you are happy for the discussion to be recorded and transcribed, and to sign a consent form agreeing to the recording being made. The recording will be confidentially transcribed, and will be erased after 5 years.

What are the possible disadvantages and risks of taking part?
You will be asked to discuss your thoughts about GP in difficult and deprived areas and your current level of readiness for such an experience. There is a possibility that participation in the research may focus you on the difficulties of the skill set required for GP healthcare in difficult areas, which may lead you to become aware of deficits in your knowledge and expertise. Such reflection is part of the process of being a medical student and should be channelled positively, reflecting on your training. Please speak to the Inner-city Doctor's Teaching Fellow (contact details below) to talk through any concerns; the tutor is there to help and provide support.

You do not have to respond to any questions if you do not want to. If you have any concerns, please consider using any of the contacts named at the end of this information sheet.

What are the possible benefits of taking part?
This is an innovative programme and you are among the first few cohorts to have this educational experience. By gathering the opinions and experiences from yourself and fellow students it will inform a comprehensive evaluation of the programme. The research may then improve the experience for future medical students by understanding the strengths and limitations of the programme.

Will taking part in this study be kept confidential?
I will follow ethical and legal practice. The recording of the interviews will be anonymised during transcription, and the transcript will not include your name. All transcripts will be stored securely on Durham University's secure network, to which only members of the Medical Education Research Group will have access.

As the group is small anonymity may be hard to maintain although this is something I will try to protect. If you are unhappy with something you have said after the interview you can ask for the transcript and have the opportunity to withdraw any statements you wish. Information such as age, ethnicity and quotes from the interviews may be used in reports and papers however demographic data will be reported for the whole group together. All transcripts will be given a unique identifier to which only I will know. Personal data (Age, ethnicity) and consent forms will be stored separately for five years. I will do my utmost to ensure that any critical comments are not attributed to individuals and of course taking part or not will have no impact on your progress and degree studies.

What will happen if you don't want to carry on with the study or are unable to?
After each interview please inform me within 2 weeks if you want to withdraw data. You can drop out of the study at any time and without having to provide an explanation. I would prefer to retain any data already collected but if you decide you have said something you would prefer not to be used as data, I can send you your anonymised transcript for you to remove text you do not wish me to use.

Durham University
School of Medicine and Health

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Who is organising the research and for what reason?
I am carrying out the research as part of my PhD research funded by Durham University. In addition the evaluation will inform the steering group for the programme, will be used for peer reviewed journal submissions, and conference presentations.

Who has reviewed the study?
The research has been reviewed by the Research Ethics Committee of Durham University, School of Medicine and Health.

Further information and contact details
If you have any questions or concerns about any aspect of this study, please contact me and I will try to answer your questions:

Paul Crampton
Email: p.e.s.crampton@durham.ac.uk
School of Medicine and Health, Holliday Building
C106a
Queens Campus
Stockton on Tees
TS17 6BH

If you would like to talk to my supervisors for the research, you may contact these individuals:

Professor John McLachlan
Email: j.c.mclachlan@durham.ac.uk
School of Medicine and Health, Holliday Building
Queen's Campus
Thornaby, Stockton on Tees
TS17 6BH

Professor Jan Illing
Email: j.i.illing@durham.ac.uk
Medical Education Research Group
Burdon house, Leazes lane
Durham
DH1 1TA

If you would like to talk to the support person for the group (Inner-city Doctor's Teaching Fellow) please contact:

Jeanette Hetherington
Email: jeanette.Hetherington@durham.ac.uk
School of Medicine and Health, Holliday Building
C106a
Queens Campus
Stockton on Tees
TS17 6BH

Durham University
School of Medicine and Health

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Information Sheet for NHS staff

Staff and patient views of student placements in deprived areas

I am inviting you to take part in my research which involves a telephone interview. Please read this leaflet carefully to find out more about the research.

What is the purpose of the research?
There are difficulties in recruiting and retaining GPs in the local area so Durham University is trying a new extended GP placement for medical students in these areas. Medical students are mostly clinically educated in hospitals and they have little time in local GP areas. This research will help to evaluate the placement as part of my PhD research, exploring the impact of the placement on students' personal and professional development.

Why you have been invited?
Staff members who have interacted with the student whilst on their placement are being invited to take part in an interview.

What are you being asked to do?
You are being asked to take part in a telephone interview lasting 25-45 minutes. You will be asked about your experience with the student during the placement. The interview will take place at the end of the placement, anticipated to be in August. Information including demographics (age, gender, and ethnicity) and characteristics of the area where you grew up (rural / urban) will be collected. This information is being asked because research has linked individuals' backgrounds with certain areas once they are qualified. The interview will be with the researcher Paul Crampton. Before the interview starts you will be asked if you are happy for the discussion to be recorded and transcribed, and to sign a consent form agreeing to the recording being made. The recording will be will be erased after 10 years.

Do you have to take part?
Participation is entirely voluntary. If you agree to take part now you can change your mind later.

What are the possible risks of taking part?
You do not have to respond to any questions if you do not want to. If you have any concerns, please use the contact details at the end of this sheet.

What are the possible benefits of taking part?
By taking part you have the potential to feel more engaged in undergraduate medicine and are making a contribution that may encourage medical students to train in the area.

Will taking part in this research be kept confidential?
I will follow ethical and legal practice. When the research is reported no one will be able to identify you. The recording of the interviews will be anonymised during transcription and will not include your name. Recordings will be uploaded securely to a transcription service or transcribed internally by Durham University staff. If a transcription service is required a confidentiality agreement will be signed. All transcripts will be stored securely on Durham University's computer network, to which only members of the Centre for Medical Education Research will have access. If you are unhappy with something you have said during the interview you can ask for the transcript to remove any words. Information such as age, ethnicity and quotes from the interviews will be used in reports and papers. All transcripts will be given a unique identifier to which only I will know. The recording will be confidentially transcribed, and will be erased after 10 years. Personal data (Age, ethnicity) and consent forms will be stored separately for three years. I will do my utmost to ensure that any critical comments are not attributed to individuals.

What will happen if you don't want to carry on with the research or are unable to?
After the interview please inform me within 4 weeks if you want to withdraw data. You can drop out from the research without giving a reason. I would prefer to keep any information already collected but if you have said something you prefer I didn't use, I can send you your transcript for you to remove text.

Who is organising the research and for what reason?
I am carrying out the research as part of my PhD, funded by Durham University. The information will also be used by a University steering group, for journal publications, and conference presentations. Please ask if you would like to be given a summary of the research.

Who has reviewed the research?
The research has been reviewed by the Research Ethics Committee of Durham University, School of Medicine, Pharmacy and Health and by the Black Country Research Ethics Proportionate Review Sub-Committee. The research will be registered with your Trust.

Further information and contact details
If you have any questions please contact:

Paul Crampton
Email: p.e.s.crampton@durham.ac.uk
School of Medicine, Pharmacy and Health, Holliday Building
C106a
Queens Campus
Stockton on Tees
TS17 6BH

Durham University
School of Medicine and Health

Shaped by the past, creating the future

To ask my supervisors about the research, please contact:

Professor John McLachlan
Email: j.c.mclachlan@durham.ac.uk
School of Medicine, Pharmacy and Health,
Holliday Building
Queen's Campus
Thornaby, Stockton on Tees
TS17 6BH

Professor Jan Illing
Email: j.c.illing@durham.ac.uk
Centre for Medical Education Research
Burdon house, Leazes Road
Durham
DH1 1TA

Durham University
School of Medicine, Pharmacy and Health

Shaped by the past, creating the future

Information Sheet for GP patients

Staff and patient views of student placements in deprived areas

The research involves a short survey and/or telephone interview. Please read this leaflet carefully to find out more about the research.

What is the purpose of the research?
There are difficulties in hiring and keeping GPs in the local area. Medical students are mostly educated in hospitals and have limited time in local GP practices. Durham University is testing a new extended GP placement for medical students in difficult and deprived areas across County Durham and Tees Valley. This research will help to evaluate the usefulness of the placement and will inform my PhD studies.

Why you have been invited?
Patients who have met the student are being invited to take part.

What are you being asked to do?
If you agree you can take part in a telephone interview lasting 20-40 minutes and / or fill in a short survey (10 minutes) about your experiences with the student. The interview and survey will ask you about your experiences with the student over the time of their placement. I will NOT ask you about personal reasons about why you were seeing the doctor / medical student. The interview will be at a time that is convenient to you. Information about demographics (age, gender, and ethnicity) will be collected. This is so a range of participants will be interviewed. The interview will be with the researcher Paul Crampton. Unfortunately I may not be able to interview everyone who volunteers. If appropriate, I will contact you to inform you that participation is no longer required.

Do you have to take part?
No, it is up to you. If you agree to take part now you can change your mind later. Before the interview starts you will be asked to consent to participate and give permission for the interview to be voice-recorded and typed up.

What are the possible benefits of taking part?
By taking part you have the potential to have a voice in the usefulness or otherwise of agreeing to be seen with a student present. Also you may feel more engaged in the education of medical doctors.

What are the possible risks of taking part?

You do not have to respond to any questions if you do not want to. You may find discussions about your experience uncomfortable. The interview can be stopped at any time if you do not wish to continue. I will ask you to reflect on positive and negative aspects of your experiences; whatever you say will not affect your healthcare in any way. If you feel that the interview brings up matters that I am not able to deal with as a researcher, I would advise you to discuss these with your GP to ensure you get the appropriate support. If you have any concerns about the research please use the contact details at the end of this sheet.

Will taking part be kept confidential?

I will follow ethical and legal practice. When the research is reported no one will be able to identify you. The recording of the interviews will be anonymised during transcription and will not include your name. Recordings will be uploaded securely to a transcription service or transcribed internally by Durham University staff. If a transcription service is used a confidentiality agreement will be signed. All transcripts will be stored securely on Durham University's computer network, to which only members of the Centre for Medical Education Research will have access. If you are unhappy with something you have said during the interview you can ask for the transcript to remove any words. Information including age, ethnicity and quotes from the interviews will be used in reports and papers. All transcripts will be given a unique identifier to which only I will know. The recording will be confidentially transcribed, and will be erased after 10 years. Personal data (Age, ethnicity) and consent forms will be stored separately for three years.

What will happen if you don't want to carry on with the research or are unable to?

After participating please tell me within 4 weeks if you want to remove data. You can drop out from the research without giving a reason. I would prefer to keep any information already collected but if you have said something you prefer I didn't use, I can send you your transcript for you to remove parts.

Who is organising the research and for what reason?

I am carrying out the research as part of my PhD, funded by Durham University. The information will also be used: by a University steering group, for journal publications, and conference presentations. Please ask if you would like to be given a summary of the research.

Who has approved the research?

The research has been reviewed by the Research Ethics Committee of Durham University, School of Medicine, Pharmacy and Health and by the Black Country Research Ethics Proportionate Review Sub-Committee. The research will be registered with the Trust employing your doctor. This means the Trust is happy for the research to be conducted.

Further information

If you have any questions please contact:

Paul Crampton
Email: p.e.s.crampton@durham.ac.uk
Centre for Medical Education Research
Burdon house, Leazes Road
Durham
DH1 1TA

To ask my supervisors about the research, please contact:

Professor John McLachlan
Email: j.c.mclachlan@durham.ac.uk
School of Medicine and Health, Holliday Building
Queen's Campus
Thornaby, Stockton on Tees
TS17 6BH

Professor Jan Illing
Email: j.c.illing@durham.ac.uk
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Burdon house, Leazes Road
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DH1 1TA

Durham University
School of Medicine and Health

Shaped by the past, creating the future

Exploring the impact on medical students of extended exposure to Community Practice in inner city, difficult and deprived areas

Participant Information Sheet for stage 5 students

I would like to invite you to take part in an interview as part of my research. Before you decide, I would like you to understand why the research is being done and what it would involve for you.

Please read this sheet carefully. If you have any questions, there are contact details at the end of this sheet. Feel free to talk to others about the study if you wish.

What is the purpose of the study?
Durham University is piloting an extended GP placement for medical students in difficult and deprived areas. This is in response to the difficulties experienced in recruiting and retaining GPs in these areas. Medical students are currently predominantly trained in secondary care clinical environments therefore they do not have exposure to this type of medical environment in their training. The research project is looking at the impact on medical students of this extended GP placement in a difficult and deprived area. There is a need to compare the perceptions and experiences of students not on the placement with students on the placement to be able to identify any changes that occur.

Why you have been invited?
Selected 5th year students who are not enrolled on the difficult and deprived area programme are being invited to take part in an interview.

Do you have to take part?
Participation is entirely voluntary. If you agree to take part now, you can change your mind at any point.

What are you being asked to do?
You are being asked to take part in a telephone interview to discuss your 4th year clinical experiences and your opinions about General Practice in difficult and deprived areas.

Information such as existing interest in difficult and deprived area General Practice, future career intentions, clinical and community exposure, education background, grades, demographics (age, gender, and ethnicity), approximate current locality (e.g. rural/urban) and characteristics of the area where you grew up (rural/urban) will be requested. Some of this data will provide a baseline to help track any changes that may occur over time regardless of the DDA programme.

The interviews will be with the researcher Paul Crampton and will take approximately 20-45 minutes. Before the interview starts you will be asked if you are happy for the discussion to be recorded and transcribed, and to sign a consent form agreeing to the recording being made. The recording will be confidentially transcribed, and will be erased after 5 years.

What are the possible disadvantages and risks of taking part?
There is a possibility that participation in the research may focus you on the difficulties of the skill set required for GP healthcare in difficult areas, which may lead you to become aware of deficits in your knowledge and expertise. Such reflection is part of the process of being a medical student and should be channelled positively, reflecting on your training. Please speak to the DDA tutor (details below) to talk through any concerns; the tutor is there to help and provide support.

You do not have to respond to any questions if you do not want to. If you have any concerns, please consider using the contacts named at the end of this information sheet.

What are the possible benefits of taking part?
This is an innovative programme for the University. By gathering the opinions and experiences from yourself and fellow students it will inform a comprehensive evaluation of the programme. The research may then improve the experience for future medical students by understanding the strengths and limitations of the programme.

Will taking part in this study be kept confidential?
Yes. I will follow ethical and legal practice. The recording of the interviews will be anonymised during transcription, and the transcript will not include your name. All transcripts will be stored securely on Durham University's secure network, to which only members of the Medical Education Research Centre will have access.

Information from the interviews in the form of anonymous quotes will be used in my PhD and any papers. Any personal data such as age group, gender and ethnicity will be reported by group to increase anonymity. All transcripts will be given a unique identifier to which only I will know. Personal data and consent forms will be stored separately for five years. I will do my utmost to ensure that any critical comments are not attributed to individuals and of course taking part or not has nothing to do with your progress and degree studies.

What will happen if you don't want to carry on with the study or are unable to?

After the interview please inform me within 2 weeks if you want to withdraw data. You can drop out of the study at any time and without having to provide an explanation. I would prefer to retain any data already collected but if you decide you have said something you would prefer not to be used as data I can send you your anonymised transcript for you to remove text you do not wish me to use.

Who is organising the research and for what reason?
I am carrying out the research as part of my PhD research funded by Durham University. In addition the evaluation will inform the steering group for the programme, be used for peer reviewed journal submissions and conference presentations.

Who has reviewed the study?
The research has been reviewed by the Research Ethics Committee of Durham University, School of Medicine, Pharmacy and Health.

Further information and contact details
If you have any questions or concerns about any aspect of this study, please contact me:

Paul Crampton
Email: p.e.s.crampton@durham.ac.uk
School of Medicine, Pharmacy and Health,
Holliday Building
C106a
Queens Campus
Stockton on Tees
TS17 6BH

If you would like to talk to my supervisors for the research, you may contact these individuals:

Professor John McLachlan
Email: j.c.mclachlan@durham.ac.uk
School of Medicine, Pharmacy and Health,
Holliday Building
Queen's Campus
Thornaby, Stockton on Tees
TS17 6BH

Professor Jan Illing
Email: j.i.illing@durham.ac.uk
Medical Education Research Group
Burdon house
Leazes lane
Durham
DH1 1TA

If you would like to talk support person for the group (Inner-city Doctor's Teaching Fellow) please contact:

Jeanette Hetherington
Email: jeanette.Hetherington@durham.ac.uk
School of Medicine and Health, Holliday Building
C106a
Queens Campus
Stockton on Tees
TS17 6BH

Durham University
School of Medicine and Health

Shaped by the past, creating the future

Exploring the impact on medical students of extended exposure to Community Practice in rural areas

Interview Participant Information Sheet

I would like to invite you to take part in an interview as part of my research. Before you decide, I would like you to understand why the research is being done and what it would involve for you. Please read this sheet carefully. If you have any questions, there are contact details at the end of this sheet. Feel free to talk to others about the study if you wish.

What is the purpose of the study?
Durham University, in the UK is piloting an extended GP placement for medical students in difficult and deprived areas. This is in response to the difficulties experienced in recruiting and retaining GPs in these areas. Medical students are currently predominantly trained in secondary care clinical environments therefore they do not have exposure to this type of medical environment in their training. To add to the understanding of the Durham pilot, this study is being carried out to compare the process with the rural Parallel Rural Community Curriculum (PRCC) at Flinders University, Australia. This will help identify any changes that may occur as a result of programme participation and limitations of the Durham pilot.

Why you have been invited?
Selected students who are enrolled on the PRCC at Flinders University are being invited to take part in an interview.

Do you have to take part?
Participation is entirely voluntary. If you agree to take part now, you can change your mind at any point.

What are you being asked to do?
You are being asked to take part in an interview. This will be carried out on Flinders University premises to discuss your current motivations and opinions about General Practice in rural areas and the PRCC. You will take part in the interview in April.

Information such as existing interest in rural and remote General Practice, future career intentions, clinical and community exposure, education background, grades, demographics (age, gender, and ethnicity), approximate current locality (e.g. rural/urban) and characteristics of the area where you grew up (rural/urban) will be requested in writing. Some of this data will be used as to compare information with the students from Durham DDA students to see if there any differences.

The interviews will be one-on-one with the researcher Paul Crampton and will take 30-60 minutes. Before the interview starts you will be asked if you are happy for the discussion to be recorded and transcribed, and to sign a consent form agreeing to the recording being made. The recording will be confidentially transcribed, and will be erased after 5 years.

What are the possible disadvantages and risks of taking part?
You will be asked to discuss your thoughts about GP in rural and remote areas and your current level of experience. There is a possibility that participation in the research may focus you on the difficulties of the skill set required for GP healthcare in difficult areas, which may lead you to become aware of deficits in your knowledge and expertise. Such reflection is part of the process of being a medical student and should be channelled positively, reflecting on your training. Please speak to the PRCC lecturer (contact details below) to talk through any concerns; the tutor is there to help and provide support.

You do not have to respond to any questions if you do not want to. If you have any concerns, please consider using any of the contacts named at the end of this information sheet.

What are the possible benefits of taking part?
Like the PRCC the Durham DDA is an innovative programme. By gathering the opinions and experiences from yourself and fellow students it will inform a comprehensive evaluation of the DDA programme. The research may then improve the experience for future Durham medical students by understanding the strengths and limitations of the programme. The information may also be of use to Flinders University staff who design the curriculum which may be beneficial to future Flinders medical students.

Will taking part in this study be kept confidential?
I will follow ethical and legal practice. The recording of the interviews will be anonymised during transcription, and the transcript will not include your name. All transcripts will be stored securely on Durham University's secure network, to which only members of the Medical Education Research Group will have access.

As the group is small anonymity may be hard to maintain although this is something I will try to protect. If you are unhappy with something you have said after the interview you can ask for the transcript and have the opportunity to withdraw any statements you wish. Information such as age, ethnicity and quotes from the interviews may be used in reports and papers however demographic data will be reported for the whole group together. All transcripts will be given a unique identifier to which only I will know. Personal data (Age, ethnicity) and consent forms will be stored separately for five years. I will do my utmost to ensure that any critical comments are not attributed to individuals and of course taking part or not will have no impact on your progress and degree studies.

What will happen if you don't want to carry on with the study or are unable to?
After the interview please inform me within 4 weeks if you want to withdraw data. You can drop without having to provide an explanation. I would prefer to retain any data already collected but if you decide you have said something you would prefer not to be used as data, I can send you your anonymised transcript for you to remove text you do not wish me to use.

Who is organising the research and for what reason?
I am carrying out the research as part of my PhD research funded by Durham University. In addition the evaluation will inform the steering group for the programme, will be used for peer reviewed journal submissions, and conference presentations.

Who has reviewed the study?
The research has been reviewed by the Research Ethics Committee of Durham University, School of Medicine and Health.

Further information and contact details
If you have any questions or concerns about any aspect of this study, please contact me and I will try to answer your questions:

Paul Crampton
Email: p.e.s.crampton@durham.ac.uk
School of Medicine and Health, Holliday Building
C106a
Queens Campus
Thornaby, Stockton on Tees, UK
TS17 6BH

If you would like to talk to my supervisors for the research, you may contact these individuals:

Professor John McLachlan
Email: j.c.mclachlan@durham.ac.uk
School of Medicine and Health,
Holliday Building
Queen's Campus
Thornaby, Stockton on Tees, UK
TS17 6BH

Professor Jan Illing
Email: j.i.illing@durham.ac.uk
Medical Education Research Group
Burdon house, Leazes lane
Durham, UK
DH1 1TA

If you would like to talk to the support person for the group (lecturer) please contact:

Pamela Stagg
Lecturer, Rural Medical Education
Flinders Rural Clinical School
Box 855
Renmark
South Australia 5341
+61 8 8586 1027

Interview guides

Interview guide

DDAP students before-placement

Baseline data. This data will be used as a baseline to help track any changes as a result of participating in the DDA programme.

About you

- demographics (age, gender, and ethnicity)
- Characteristics of the area where you grew up (rural/urban/difficult and deprived areas)
- education background
- What led you to want to study medicine?
- grades
- approximate current locality (e.g. rural/urban)

Questions

Motivations

What attracted you to this opportunity?

What are your motivations for volunteering for the DDA programme?

How do you feel about participating in this initiative?

What are you most looking forward to? Why?

What are you least looking forward to? Why?

What do you think fellow students (not doing the placement) think about you doing the placement?

What do your friends and family think?

Preparedness

Can you describe to me what you think the placement will be like?

Where has this perception come from? What have you heard about this opportunity?

What are you expectations for the content of the placement?

Do you feel prepared for the placement?

How have your first 2 years of this degree prepared you? Please describe any aspects that you think are relevant to doing the DDA programme

Do you have any experience of difficult and deprived area healthcare? Was this direct health care? Voluntary work? Paid?

What do you think will be most challenging? Why?

How do you feel about doing a 14 week placement, do? Do you think it will be long enough, too long?

How do you think the placement will be different to other rotations taken during Year 4?

Potential outcomes

What impact do you think the programme will have on you, do you hope to gain anything from volunteering for the programme? On your career preference?

How do you think the programme will impact on your medical training?

How do you think the programme will impact on your personal characteristics (confidence, communication skills, assertiveness, etc)?

What are your future career intentions (career plan)? After graduation? 10 years on?

Difficult & Deprived Area Programme (DDAP)
Midway interview guide

Give brief introduction to participant –
The interview will last around half an hour. Firstly, I will ask you about your DDAP experiences, then your SSCs, and finally a comparison between the two.

Confirm permission for recording interview

Consent already granted from first interview

1. DDAP experiences

How have you found the DDAP so far?

How is the GP placement going?
What have you been doing? How involved have you been?
Any strengths? Weaknesses?

How is the community placement going?
Any strengths? Weaknesses?

How have the teaching sessions been?
Any strengths? Weaknesses?

Have you enjoyed the placement? Why?

What have you found challenging about the placement? Why?

Have your expectations been met so far?

What have you learned from your experiences? Prompts: consulting skills, communication, knowledge, clinical leadership, prescribing, managing time, emergency care

What aspects of the experiences have had the greatest impact on your learning? Prompts: patient consultations, responsibility, experiential, reading time, working relationships

Have members of the healthcare team helped your learning? Prompts: within your team, hospital, practice, supervisors

What do you think about taking the placement in a deprived area? What do you think the patients think about you being there?

2. Student Selected Component (SSC) experiences

Please can you tell me about what you did for your SSCs?

What influenced your thoughts for your selection of these?

Were your expectations for the SSCs met?

What have you learned from your SSC experiences? Prompts: consulting skills, communication, knowledge, clinical leadership, prescribing, managing time, emergency care
What aspects of the experiences have had the greatest impact on your learning? Prompts: patient consultations, responsibility, experiential, reading time, working relationships

Have members of the healthcare team helped your learning? Prompts: within your team, hospital, practice, supervisors

Which SSC did you get the most out of and why?

3. Comparisons

Have you noticed any differences between the DDAP and your previous clinical experiences?

Is the DDAP different to your 3rd year GP placement or other GP placements? How?

How do you think the placement compares to other options you could have taken for your SSCs and elective?

During the experiences have you felt more like a doctor or medical student? How did the experiences influence this?

What are your main drivers for learning? E.g. exams, responsibility?

Length of time of placements

How would you evaluate the length of the SSCs? Did the time allow for: continuity of care, longitudinal exposure, development of relationships, mentoring, team work, participatory learning

If the DDAP placement were to finish now, what would you think?

How long would you like the DDAP to be ideally?

Are you looking forward to the rest of the placement? Why / why not?

Final thoughts

Are there any comments you would like to add about your experiences?

Thank you for participating

Difficult & Deprived Areas Project (DDAP)

STUDENT Post-DDAP interview guide

- Ask if participant has any questions about the research (or information sheet)
- Give brief introduction to participant: This interview is about your reflections of DDAP experiences, what you feel you have gained from it, and any changes you might suggest. The interview will last around half an hour.
- Consent already granted from first interview.
- Confirm permission for recording interview.

1. DDAP experiences

Please tell me about your overall experience of the DDAP?

Prompts: Have you enjoyed the DDAP? Why?
What have you found challenging about the DDAP? Why?

If not discussed:- How was the GP placement?
What were the strengths? What were the weaknesses?

How was the community provider placement?
What were the strengths? What were the weaknesses?

How were the teaching sessions?
What were the strengths? What were the weaknesses?

During the experience did you feel more like a doctor or medical student? How did the experience influence this?

2. Learning process

What are the main things you have learned from your experiences?

What aspects of the experience have had the greatest impact on your learning?

How did your GP supervisors help you learn?

Have other members of the healthcare team helped you learn?

Prompts: within your team, practice, nurses, midwives, peers

3. Outcomes

What impact do you think the DDAP has had on you?

Prompt: Have you gained anything from volunteering for the DDAP?

How do you think the experience has affected your personal characteristics?

Has the DDAP informed your career intentions in any way?

Do you think the DDAP will impact on the rest of your medical training? In what way?

4. Length of time & location

How would you evaluate the length of time at the:

GP practice? Community provider? Teaching sessions?

How would you evaluate the length of the DDAP overall?

Ideally, how long would you like the DDAP to be?

Prompt: Do you think it is long enough? Why, why not?

How did you find learning in community settings in deprived areas?

Prompts: Was it different to other settings you have experienced?

What do you think the patients thought about you being there?

5. Comparison to alternative experiences

Which SSC or elective did you get the most out of and why?

Have you noticed any differences between the DDAP and previous clinical experiences?

How do you think the DDAP compares to other options you could have taken for your SSCs and elective?

6. Reflections

In hindsight, how do you feel about volunteering for the DDAP?

Was the DDAP what you expected?

Prompts: Were your expectations met?

What was different and the same as your expectations?

What changes to the DDAP would you suggest?

Would you volunteer again? Why / why not?

7. Final thoughts

Are there any comments you would like to add about the DDAP?

Are there any comments you would like to make about the interview or the interview process?

Thank you for participating

Difficult & Deprived Areas Project (DDAP)

STAFF interview guide

- Ask if participant has any questions about the research (or information sheet)
- Give brief introduction to participant: This interview is to explore your experience of the DDAP, its value, and any changes you might suggest.
- The interview will last around half an hour
- Clarify consent has been taken
- Ask for permission to record interview.

1) DDAP involvement

Please can you describe your role during the placement (DDAP)?

Why did you agree to get involved with the DDAP?

2) Supervising students (if relevant)

How has your experience (of supervision) been?

Have you enjoyed being involved? Why?

Have you found anything challenging?

How prepared did you feel for your role (as a DDAP supervisor)? Why?

3) Student teaching

What methods did you use to enable the student to learn?

How did you allocate patients to the student? What activities did the student undertake?

Did you change your consultation approach with the student present? How?

Were patients directly involved with teaching the student? How? E.g. offering feedback?

Have other members of the healthcare team helped the student learn?

Prompts: GPs, nurses, midwives, peers

4) Student learning process

What parts of the GP placement do you think help the student learn the most?

Have you seen any developments in the student over the placement? If yes, what were they?

Prompts: personal characteristics (confidence, communication skills, assertiveness), clinical learning

Do you think the placement has affected the students' understanding and knowledge of:

(1) Difficult and deprived community settings? How?

(2) Patients in DDA? How?

What impact, if any, do you think the placement may have on the student long term?

Prompts: on medical training, career directions, confidence, clinical skills

If applicable, have you seen any differences between the DDAP student and other students who have had clinical placements at the practice?

5) Length of time

How would you evaluate the length of time of the placement?

Prompts: Do you think it is long enough? Why, why not? Does it allow…continuity of care, longitudinal exposure, development of relationships, mentoring, team work, participatory learning

Would you make any changes to the length of the placement?

Prompt: Do you think the student has enough time based at the practice?

6) Reflections

Have you personally gained anything by being involved the DDAP?

Are there any challenges for you by being involved with the DDAP?

Has the GP practice gained anything from being involved?

Are there any challenges for the GP practice by being involved?

Do you think the DDAP makes a difference to the community?

Would you make any suggestions to improve the DDAP?

Is there anything you would like to add about your experience of the DDAP?

Finally, before we finish can I collect some demographic information about you:-

Age band:
Ethnicity:
Background upbringing (i.e. rural, urban):
Years of teaching experience (if relevant): in the practice:

Thank you for your time

Difficult & Deprived Areas Project (DDAP)

PATIENT interview guide

- Ask if participant has any questions about the research & information sheet
- Give brief introduction to participant: This interview is to explore your experiences with the medical student and what you think of patient involvement in helping students learn. The interview **will NOT** ask you questions about your health or why you were seeing the doctor.
- The interview will last around half an hour.
- Confirm the name of the student. *If applicable,* the questions will build on responses given in the survey to look in-depth at experiences.
- Clarify consent has been taken
- Ask for permission to record interview.

1) Your experiences of the placement

What involvement did the medical student have in your healthcare?

Prompts: Watching only (observing), talking (history taking), check-up (physical exam)

Please could you tell me about your experience(s) with the medical student?

If you saw the medical student more than once, did you see any developments in the student? If yes, what were they?

In what way did you think of the student, as a doctor or as a student? Why?

Were there any differences between the way your GP spoke to you and the way the student spoke to you?

During your experiences did you think you had a role in educating the student? In what way?

Prompt: Were you involved with directly teaching the student (after the consultation)?

In what way do you think your role helps the student learn?

Prompt: Did you consider yourself a teacher?

2) Personal benefits and limitations

Were you asked if it was ok to be seen by a medical student?

Why did you agree?

Are there any advantages for you of medical students being involved in your healthcare?

Are there any disadvantages for you of medical students being involved in your healthcare?

3) Benefits and limitations for students

Are there any advantages for medical students of being involved in your healthcare?

Are there any disadvantages for medical students of being involved in your healthcare?

If you could change anything about how the student was involved in your healthcare, what would you suggest?

Would you be willing to have students involved in your healthcare in the future? Why / why not?

Do you think there are benefits of medical students having placements in the local areas for extended periods?

Do you think there are weaknesses of medical students of having placements in local areas for extended periods?

Is there anything you would like to add about your experiences?

Thank you for your time

Patient Survey

Staff and patient views of student placements in deprived areas

1) On how many occasions was the medical student involved in your healthcare? (Please circle)

1 **2** **3** **4+**

2) What involvement did the student have in your healthcare? (Please circle **ALL** that apply)

Watching (observing) **Talking (history taking)** **Check-up (physical exam)**

3) Were you asked (informed) whether it was ok for a student to be involved in your healthcare?

Yes **No** **Unsure**

4) Please tell me why you agreed to a medical student being involved in your

5) If you saw the medical student more than once, what developments did you see in the student?

6) What, if any, are the advantages FOR PATIENTS of medical students being involved in your healthcare?

7) What, if any, are the disadvantages FOR PATIENTS of medical students being involved in your healthcare?

8) What, if any, do you see as the advantages FOR MEDICAL STUDENTS of being involved in your healthcare?

9) What, if any, are the disadvantages FOR MEDICAL STUDENTS of being involved in your healthcare?

10) Would you be willing to have medical students involved in your healthcare in the future? (Please circle)

Yes **No** **Unsure**

b) Please say why you have given that answer?

Thank you for your time. If you have any questions please use the contact details on the information sheet.

Patient demographics

This information will be used so that participants with various backgrounds can be included in the research

Please circle one

Are you..?

Male Female

Under 20 20-29 30-39 40-49 50-59 60-69 70-79 80 or over

Do you class yourself as?

White	Mixed	Asian	Black
British	White & Black African	Indian	Caribbean
Irish	White & Black Caribbean	Pakistani	African
Any other white background: ……	White & Asian	Bangladeshi	Any other black background: ……
	Any other mixed background: ……	Chinese	
		Any other Asian background:..……	

Any other ethnic background:…….

Do you consider yourself to have a disability? Yes No Do not wish to disclose

(Under the Disability Discrimination Act 1995, a disability is defined as a "physical or mental impairment which has a substantial and a long term effect on a person's ability to carry out normal day to day activities")

On how many occasions was the medical student involved in your healthcare?

1 2 3 4+

Thank you

Stage 5 DDAP comparison group

Interview guide

- Ask if participant has any questions about the research (or information sheet)
- Give brief introduction to participant: This interview is about your reflections of SSC and elective experiences. The interview will last around twenty minutes.
- Confirm prior email consent.
- Confirm permission for recording interview.

What you did (Brief opening questions)

Please can you tell me about what you did for your SSCs and elective?
What type of settings were they in?

What influenced your thoughts for your selection?

Which SSC or elective did you get the most out of and why?

Have you enjoyed the experiences? Why?

What have you found challenging about the experiences?

During the experience did you feel more like a doctor or medical student?
How did the experience influence this?

Learning

What are the main things you feel you have you learned from the experiences?

What aspects have had the greatest impact on your learning?

How did your supervisors help you learn?

Have other members of the healthcare team helped you learn?
Prompts: within your team, practice, nurses, midwives, peers

Were you learning in different settings to what you have previously experienced?

How did the placement mainly increase your understanding of medicine?
Prompts: Experience, reading, reflection

Outcomes

What impact do you think the 4th year has had on you?

How do you think the experience has affected your personal characteristics?

Do you think the year will impact on the rest of your medical training? In what way?

Has your 4th year experiences influenced your career intentions in any way? How?

Length of time & location

How would you evaluate the length of the SSCs and elective?

Ideally, how long would you like the SSCs and electives to be?
Prompt: Do you think they are long enough? Why, why not?

Reflections

In hindsight, how do you feel about the options you chose?
Were your expectations met?

How do you think your elective and SSC compares to other options you could have taken?

What changes to the 4th year would you suggest?

Final thoughts

Are there any comments you would like to add?

Thank you for participating

Flinders Interview guide

About you

- demographics (age, gender, and ethnicity)
- Characteristics of the area where you grew up (rural/urban/difficult and deprived areas)
- education background
- What motivated you to study medicine?
- grades
- approximate current locality (e.g. rural/urban)

Questions

Experiences

What is your experience of the PRCC (Parallel Rural Community Curriculum)?

How do you feel about participating in the programme?

Have you enjoyed the role? What have you enjoyed the most? Why?

What have you found most challenging? Why?

Preparedness

Did you feel prepared for the placement?

What were your expectations for the content of the placement?

How did your first 3 years of the degree prepare you?

Did you have any experience of rural and remote area healthcare? Was this direct health care? Voluntary work? Paid?

Motivations

What were your motivations for volunteering for the PRCC?

What do you think fellow students (not doing the placement) think about you doing the placement?

What do your friends and family think?

How do you think the placement will compare to other rotations you could have taken?

Length of time

How do you feel about doing a placement lasting 1 year?

If the placement were to finish now (after 14 weeks) do you think it would be long enough? Why, why not?

Outcomes

What impact do you think the placement has had on you, have you gained anything from volunteering for the programme?

How do you think the placement will impact on your medical training?

How do you think the placement will impact on your personal characteristics (confidence, communication skills, assertiveness, etc)?

What are your future career intentions (career plan)? After graduation? 10 years on?

What have you learned from the placement?

e.g. consulting skills, communication, knowledge, clinical leadership, prescribing, managing time, emergency care

What are the drivers for learning? E.g. being responsible?

Participation Invitation Letters

Durham University
School of Medicine and Health

Shaped by the past, creating the future

April 2012

Dear Student

Invitation to take part in an interview

This letter is to invite you to take part in a research project looking at the impact of an extended GP placement in difficult and deprived areas. Durham University students are taking a pilot difficult and deprived area placement however there is a need to compare them with perceptions and experiences of students on the Flinders University placement to be able to identify any changes that occur.

Selected third year medical students are being invited to take part to form this comparison group. An information sheet (dated 05.03.12) about the project is attached.

Flinders University has a developed rural community curriculum whereas Durham University is piloting an extended GP placement for medical students in difficult and deprived areas. The research will be carried out by myself (Paul Crampton), as part of my PhD research.

There is no obligation to take part, but your contribution may help us understand the impact of the placement and identify adjustments needed to the benefit of future students.

If you decide to take part, you will participate in a focus group at a time and place that is convenient for you. The focus group will involve answering some questions about your perceptions and experiences of your studies.

Please confirm whether you would like to participate by replying to: p.e.s.crampton@durham.ac.uk or pamela.stagg@flinders.edu.au

Yours sincerely

Paul Crampton

PhD student

Durham University
School of Medicine and Health

Shaped by the past, creating the future

June 2013

Dear Staff member

Invitation to take part in a telephone interview

This letter invites you to take part in a research project evaluating medical student extended GP placements. Durham University is piloting the project in difficult and deprived areas across County Durham and Tees Valley. The research will be carried out by myself (Paul Crampton), as part of my PhD research. An information sheet (12.09.12) about the project is attached.

There is no obligation to take part, but you have the potential to feel more engaged in undergraduate medicine and are make a contribution to an initiative that may encourage medical students to train in the area.

If you decide to take part, you will participate in a telephone interview. The interview will involve answering questions about your experiences with the student.

Please confirm whether you would like to participate by filling in the consent form and handing it back to the practice manager or researcher. Alternatively email: p.e.s.crampton@durham.ac.uk

Yours sincerely,

P. Crampton

Paul Crampton
PhD Student & Research Associate

Centre for Medical Education Research
Website: https://www.dur.ac.uk/school.health/cmer/

Durham University
Burdon House
Leazes Road
Durham
DH1 1TA
Durham line: 0191 334 8201
Stockton line: 0191 334 0833

Durham University
School of Medicine and Health

Shaped by the past, creating the future

June 2013

Dear Patient

Invitation to take part in a short SURVEY and research telephone INTERVIEW

This letter invites you to take part in a research project evaluating medical student extended GP placements. Durham University is piloting the project in difficult and deprived areas across County Durham and Tees Valley. The focus of the research is on the medical student and **will NOT ask you questions about your health**. The research will be carried out by myself (Paul Crampton) as part of my PhD research. An information sheet (dated 18/09/12) about the project is attached.

There is no requirement to take part, but you have the potential to have a voice in the usefulness of agreeing to be seen with a student present and may feel more engaged in the education of medical doctors.

If you decide to take part, you will participate by filling in a short survey and/or a telephone interview about your experiences with the student. The telephone interview will be at a time that is convenient for you.

Please confirm whether you would like to participate by filling in the consent form, patient demographics and survey, and then hand these back together to a practice staff member (student). Alternatively email: p.e.s.crampton@durham.ac.uk

Yours sincerely,

P. Crampton

Paul Crampton
PhD Student & Research Associate

Centre for Medical Education Research
Website: https://www.dur.ac.uk/school.health/cmer/
Durham University
Burdon House
Leazes Road
Durham
DH1 1TA

Literature review identified papers

Literature review identified papers

Reference	Country of study	Area	Type of data	Length of placement	Year of placement	no. of institutions	no. of cohorts	Relevant themes
Baker PG, Dalton L, Walker J. Rural general practitioner preceptors - how can effective undergraduate teaching be supported or improved? *Rural Remote Health* 2003;**3** (1):107.	Australia	rural/ urban	mixed	six weeks	six	1	1	supervisors/ student
Barritt A, Silagy C, Worley P, Watts R, Marley J, Gill D. Attitudes of rural general practitioners towards undergraduate medical student attachments. *Aust Fam Physician* 1997;**26** (Suppl 2):S87-90.	Australia	rural	quant	unknown	unknown	1	1	supervisors
Bianchi F, Stobbe K, Eva K. Comparing academic performance of medical students in distributed learning sites: The McMaster experience. *Med Teach* 2008;**30** 67-71.	Canada	urban	quant	between 5-14 weeks	unknown	1	1	performance
Couper I, Worley P, Strasser R. Rural longitudinal integrated clerkships: lessons from two programs on different continents. *Rural Remote Health* 2011;**11** 1665.	Australia/ Canada	rural	qual	full academic year	three	multiple	1	students
Critchley J, DeWitt DE, Khan MA, Liaw S. A required rural health module increases students' interest in rural health careers. *Rural Remote Health* 2007;**7** 688.	Australia	rural	mixed	four weeks	unknown	1	multiple	students/ careers
Deaville JA, Wynn-Jones J, Hays RB, Coventry PJ, McKinley RK, Randall-Smith J. Perceptions of UK medical students on rural clinical placements. *Rural Remote Health* 2009;**9** 1165.	UK	rural	qual	up to 15 weeks	unknown	1	1	students
Deaville J, Grant A. Overcoming the pull factor of convenient urban living - Perceptions of rural general practice. *Med Teach* 2011;**33** (4):e211-	UK	rural/ urban	qual	six weeks	five	1	1	students/ supervisors

e217.								
Denz-Penhey H, Shannon S, Murdoch CJ, Newbury JW. Do benefits accrue from longer rotations for students in Rural Clinical Schools? *Rural Remote Health* 2005;**5** 414.	Australia	rural	qual	three-six weeks	unknown	1	1	students/ supervisors
Denz-Penhey H, Murdoch J. Is small beautiful? Student performance and perceptions of their experience at larger and smaller sites in rural and remote longitudinal integrated clerkships in the Rural Clinical School of Western Australia. *Rural Remote Health* 2010;**10** (3):1470.	Australia	rural	mixed	full academic year	five	1	multiple	performance/ students
Easterbrook M, Godwin M, Wilson R, et al. Rural background and clinical rural rotations during medical training: Effect on practice location. *Can Med Assoc J* 1999;**160** (8):1159-1163.	Canada	rural	quant	unknown	unknown	1	multiple	careers
Eley D, Baker P. Does recruitment lead to retention? Rural Clinical School training experiences and subsequent intern choices. *Rural Remote Health* 2006;**6** 511.	Australia	rural	mixed	1-2 years	three and/ or four	1	1	careers
Eley D, Baker P, Chater B. The Rural Clinical School Tracking Project: more IS better--confirming factors that influence early career entry into the rural medical workforce. *Med Teach* 2009;**31** (10):454-459.	Australia	rural	quant	1-2 years	three and/ or four	1	multiple	careers
Florence JA, Goodrow B, Wachs J, Grover S, Olive KE. Rural Health Professions Education at East Tennessee State University: Survey of Graduates from the First Decade of the Community Partnership Program. *J Rural Health* 2007;**23** (1):77-83.	USA	rural	quant	unknown	unknown	1	multiple	students/ careers
Glasser M, Hunsaker M, Sweet K, MacDowell M, Meurer M. A comprehensive medical education program response to rural primary care needs. *Acad Med* 2008;**83** (10):952-961.	USA	rural	quant	full academic year	unknown	1	multiple	performance/ careers

Halaas GW, Zink T, Finstad D, Bolin K, Center B. Recruitment and retention of rural physicians: Outcomes from the rural physician associate program of Minnesota. *J Rural Health* 2008;**24** (4):345-352.	USA	rural	quant	nine months	three	1	1	students/ careers
Hudson JN, Weston KM, Farmer EA. Engaging rural preceptors in new longitudinal community clerkships during workforce shortage: a qualitative study. *BMC Fam Pract* 2011;**12** 103.	Australia	rural	qual	12 months	unknown	1	1	supervisors
Jones GI, DeWitt DE, Elliot SL. Medical students' reported barriers to training at a Rural Clinical School. *Aust J Rural Health* 2005;**13** 271-275.	Australia	rural	mixed	unknown	unknown	1	multiple	students
Lacy NL, Paulman PM, Hartman TL. The effect of preceptorship rurality on students' self-perceived clinical competency. *Fam Med* 2005;**37** (6):404-409.	USA	rural/ urban	quant	eight weeks	unknown	1	multiple	students
Lacy NL, Geske JA, Goodman BJ, Hartman TL, Paulman PM. Preceptorship rurality does not affect medical students' shelf exam scores. *Fam Med* 2007;**39** (2):112-115.	USA	rural/ urban	quant	eight weeks	unknown	multiple	multiple	performance
Lynch DC, Teplin SE, Willis SE, et al. Interim evaluation of the Rural Health Scholars Program. *Teaching Learning Med* 2001;**13** 36-42.	USA	rural	mixed	five weeks	unknown	1	1	students/ careers
Margolis SA, Davies LM, Ypinazar V. Isolated rural general practice as the focus for teaching core clinical rotations to pre-registration medical students. *BMC Med Educ* 2005;**5** 22.	Australia	rural	quant	12 months	three	1	1	performance
McNiff C, Moffat M, Bond C, Lawton K. Developing a new GP placement for medical students: The Shetland experience. *Educ Prim Care* 2009;**20** 184-189.	UK	rural	qual	six weeks	five	1	multiple	students/ supervisors
Moores DG, Woodhead-Lyons SC, Wilson DR. Preparing for rural practice - Enhanced experience for medical students and residents.	Canada	rural	quant	unknown	unknown	1	unknown	careers

Can Fam Physician 1998;**44** 1045-1050.								
Nyangairi B, Couper ID, Sondzaba NO. Exposure to primary healthcare for medical students: Experiences of final-year medical students. *SA Fam Pract* 2010;**52** (5):467-470.	South Africa	rural	qual	six weeks	five	1	multiple	students
Okayama M, Kajii E. Does community-based education increase students' motivation to practice community health care?-a cross sectional study. *BMC Med Educ* 2011;**11** 19.	Japan	rural	quant	two weeks	five	multiple	multiple	students/ careers
Orzanco MG, Lovato C, Bates J, Slade S, Grand'Maison P, Vanasse A. Nature and nurture in the family physician's choice of practice location. *Rural Remote Health* 2011;**11** (3):1849.	Canada	rural/ urban	quant	four weeks	three	1	1	students
Power DV, Harris IB, Swentko W, Halaas GW, Benson BJ. Comparing rural-trained medical students with their peers: Performance in a primary care OSCE. *Teach Learn Med* 2006;**18** (3):196-202.	USA	rural	quant	nine months	four	1	multiple	performance
Schauer RW, Schieve D. Performance of medical students in a nontraditional rural clinical program, 1998-99 through 2003-04. *Acad Med* 2006;**81** (7):603-607.	USA	rural	quant	seven months	three	1	1	performance
Scott I, Wilson C, Gowans M. Are personal digital assistants an acceptable incentive for rural community-based preceptors? *Fam Med* 2005;**37** (10):727-733.	Canada	rural	mixed	one month	unknown	multiple	unknown	supervisors
Shannon CK, Baker H, Jackson J, Roy A, Heady H, Gunel E. Evaluation of a required statewide interdisciplinary rural health education program: Student attitudes, career intents and perceived quality. *Rural Remote Health* 2005;**5** 405.	USA	rural	quant	12 weeks	unknown	1	multiple	students/ careers
Smucny J, Beatty P, Grant W, Dennison T, Wolff LT. An evaluation of the rural medical education program of the state University of New York	USA	rural	quant	36 weeks	three	1	multiple	performance/ careers/ supervisors

upstate Medical University, 1990-2003. *Acad Med* 2005;**80** (8):733-738.								
Stagg P, Greenhill J, Worley PS. A new model to understand the career choice and practice location decisions of medical graduates. *Rural Remote Health* 2009;**9** 1245.	Australia	rural	mixed	full academic year	three	multiple	multiple	careers
Tavernier LA, Connor PD, Gates D, Wan JY. Does exposure to medically underserved areas during training influence eventual choice of practice location? *Med Educ* 2003;**37** 299-304.	USA	rural/ urban	quant	unknown	unknown	1	1	careers
Walters L, Worley P, Prideaux D, Lange K. Do consultations in rural general practice take more time when practitioners are precepting medical students? *Med Educ* 2008;**42** 69-73.	Australia	rural	quant	full academic year	three	1	1	supervisors
Walters L, Prideaux D, Worley P, Greenhill J, Rolfe H. What do general practitioners do differently when consulting with a medical student? *Med Educ* 2009;**43** (3):268-273.	Australia	rural	quant	full academic year	three	1	unknown	supervisors
Walters L, Prideaux D, Worley P, Greenhill J. Demonstrating the value of longitudinal integrated placements to general practice preceptors. *Med Educ* 2011;**45** (5):455-463.	Australia	rural	qual	full academic year	unknown	1	multiple	supervisors
Waters B, Hughes J, Forbes K, Wilkinson D. Comparative academic performance of medical students in rural and urban clinical settings. *Med Educ* 2006;**40** (2):117-120.	Australia	rural/ urban	quant	full academic year	three	1	1	performance
Williamson M, Gormley A, Bills J, Farry P. The new rural health curriculum at Dunedin School of Medicine: How has it influenced the attitudes of medical students to a career in rural general practice? *N Z Med J* 2003;**116** 1179.	New Zealand	rural	quant	seven weeks	five	1	1	students/ careers
Wilson M, Cleland J. Evidence for the acceptability and academic success of an innovative remote and rural extended placement.	UK	rural	mixed	12 months	four	1	multiple	performance/ students

Rural Remote Health 2008;**8** 960.								
Woloschuk W, Tarrant M. Does a rural educational experience influence students' likelihood of rural practice? Impact of student background and gender. *Med Educ* 2002;**36** 241-247.	Canada	rural	quant	four weeks	three	1	1	careers/ students
Worley P, Lines D. Can specialist disciplines be learned by undergraduates in a rural general practice setting? Preliminary results of an Australian pilot study. *Med Teach* 1999;**21** (5):482-484.	Australia	rural	mixed	full academic year	three	1	1	performance
Worley PS, Kitto P. Hypothetical model of the financial impact of student attachments on rural general practices. *Rural Remote Health* 2001;**1** (1):83.	Australia	rural	quant	full academic year	three	1	1	supervisors
Worley P, Prideaux D, Strasser R, Magarey A, March R. Empirical evidence for symbiotic medical education: A comparative analysis of community and tertiary-based programmes. *Med Educ* 2006;**40** 109-116.	Australia	rural	qual	full academic year	three	1	1	students/ careers
Worley P, Strasser R, Prideaux D. Can medical students learn specialist disciplines based in rural practice: lessons from students' self reported experience and competence. *Rural Remote Health* 2004;**4** (4):338.	Australia	rural	quant	full academic year	three	1	1	students/ careers
Worley P, Prideaux D, Strasser R, March R, Worley E. What do medical students actually do on clinical rotations? *Med Teach* 2004a;**26** (7):594-598.	Australia	rural	quant	full academic year	three	1	multiple	students
Worley P, Martin A, Prideaux D, Woodman R, Worley E, Lowe M. Vocational career paths of graduate entry medical students at Flinders University: A comparison of rural, remote and tertiary tracks. *Med J Aust* 2008 177-178.	Australia	rural	quant	full academic year	three	1	multiple	careers

Worley P, Silagy C, Prideaux D, Newble D, Jones A. The Parallel Rural Community Curriculum: an integrated clinical curriculum based in rural general practice. *Med Educ* 2000;**34** (7):558-565.	Australia	rural	mixed	full academic year	three	1	multiple	performance/ students/ supervisors
Worley P, Esterman A, Prideaux D. Cohort study of examination performance of undergraduate medical students learning in community settings. *BMJ* 2004;**328** 207-209.	Australia	rural	quant	full academic year	three	1	multiple	performance
Worley P. Flinders University School of Medicine, Northern Territory, Australia: Achieving Educational Excellence along with a Sustainable Rural Medical Workforce. *Medicc Review* 2008;**10** (4):30-34.	Australia	rural	quant	full academic year	three	1	1	careers
Young L, Rego P, Peterson R. Clinical location and student learning: Outcomes from the LCAP program in Queensland, Australia. *Teaching Learn Med* 2008;**20** (3):261-266.	Australia	rural	mixed	full academic year	three	1	multiple	performance
Zink T, Halaas GW, Finstad D, Brooks KD. The rural physician associate program: The value of immersion learning for third-year medical students. *J Rural Health* 2008;**24** (4):353-359.	USA	rural	mixed	36 weeks	three	1	multiple	students
Zink T, Center B, Finstad D, et al. Efforts to graduate more primary care physicians and physicians who will practice in rural areas: Examining outcomes from the university of Minnesota-Duluth and the rural physician associate program. *Acad Med* 2010;**85** 599-604.	USA	rural	quant	nine months	three	1	multiple	performance
Zink T, Power DV, Finstad D, Brooks KD. Is there equivalency between students in a longitudinal, rural clerkship and a traditional urban-based program? *Fam Med* 2010;**42** (10):702-706.	USA	rural	quant	nine months	three	1	multiple	performance
Zink T, Power DV, Olson K, Harris IB, Brooks KD. Qualitative differences between traditional	USA	rural	qual	nine months	unknown	1	unknown	performance

and rural-longitudinal medical student OSCE performance. *Fam Med* 2010;**42** 707-711.								

Publication

A systematic literature review of undergraduate clinical placements in underserved areas

Paul E S Crampton, John C McLachlan & Jan C Illing

CONTEXT The delivery of undergraduate clinical education in underserved areas is increasing in various contexts across the world in response to local workforce needs. A collective understanding of the impact of these placements is lacking. Previous reviews have often taken a positivist approach by only looking at outcome measures. This review addresses the question: What are the strengths and weaknesses for medical students and supervisors of community placements in underserved areas?

METHODS A systematic literature review was carried out by database searching, citation searching, pearl growing, reference list checking and use of own literature. The databases included MEDLINE, EMBASE, PsycINFO, Web of Science and ERIC. The search terms used were combinations and variations of four key concepts exploring general practitioner (GP) primary care, medical students, placements and location characteristics. The papers were analysed using a textual narrative synthesis.

FINDINGS The initial search identified 4923 results. After the removal of duplicates and the screening of titles and abstracts, 185 met the inclusion criteria. These full articles were obtained and assessed for their relevance to the research question; 54 were then included in the final review. Four main categories were identified: student performance, student perceptions, career pathways and supervisor experiences.

CONCLUSIONS This review reflects the emergent qualitative data as well as the quantitative data used to assess initiatives. Underserved area placements have produced many beneficial implications for students, supervisors and the community. There is a growing amount of evidence regarding rural, underserved areas, but little in relation to inner city, deprived areas, and none in the UK.

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Discuss ideas arising from the article at www.meduedu.com 'discuss'

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INTRODUCTION

Although the current model of undergraduate placements is predominantly hospital based,[1] students are increasingly placed in community environments where populations are underserved.[2–4] The primary driver for this change is seen as a workforce planning issue with concerns raised about insufficient future general practitioner (GP) numbers.[5] However, a collective understanding of the impact of these initiatives is lacking.

The operational principle under investigation is clinical education in an area that does not usually provide such experience to medical students. Articles frequently refer to the area using transferable terms such as 'non-traditional'[6–8] or 'displaced training environments.'[4] The terms 'underserved' and 'rural' are often used interchangeably, yet depending on the local context they may be distinct.

The prominent issues of lack of student interest, lack of student exposure and difficulty in access to health care, persist for areas including rural and urban, and with higher levels of socio-economic deprivation. Within this review the term 'non-traditional' will generically label initiatives, but specific terms will be used where appropriate.

Community placements aim to give students enhanced exposure to the local patient demographic. Hence, they are often generalist in nature in primary care settings over long periods. They often occur in the curriculum when students have choice over what subjects to study. The terms 'primary care' and 'generalism' relate to the content of the placements. A primary care clinician is defined as someone 'who provides integrated, accessible health care services and is accountable for tackling a large majority of personal health care needs, and practising in the context of family and community'.[9] The term 'generalism' is used in regard to dealing with undifferentiated illness and the widest range of patients and conditions.[10] An increasingly common undergraduate community approach is to teach several disciplines in parallel rather than block rotations; patients are seen over multiple clinical encounters enabling concurrent learning, known as a 'longitudinal integrated clerkship' (LIC).[11]

A small number of reviews have investigated components of clinical placements in underserved areas.[12–17]

Ranmuthugala *et al.*[16] reviewed the impact of rural placements in GP practice. Although universities with preferential admission of students intending to be rural GPs are successful in this respect, the benefits of placements are inconclusive. The influence of particular aspects of rural training programmes (in terms of nature, timing, frequency and duration) on the impact and uptake of rural practice is unknown. Studies fail to distinguish the length of exposure and the level of entry to medical schools.

Rabinowitz *et al.*[12] investigated American initiatives to address the undersupply of doctors in rural areas. Eight medical schools demonstrated a positive impact in training students to become future rural doctors.

Barrett *et al.*[13] reviewed research from North America and Canada into the impact of rural placements on medical students between 1966 and 2009. The most common outcome considered was career choice (51% of 72 studies). Of these, most reported an association between experiencing rural training and choosing a primary care career. Practice location was the second most common outcome; 31% of studies reported experiences in a rural setting predicted future employment. Grades were reported in 24% of studies and most demonstrated equivalency between students with rural experiences and those without. The article suggests that the most effective methods of rural training, the optimum rotation length and the timing of the experience should be explored further.

A recent valuable review of LIC outcomes suggested that they are an effective pedagogical alternative to traditional block rotations.[17] However, there was little consideration of learning in different contexts and placement length.

Existing reviews found positive outcomes that support the replication of the initiatives, but the explanations are mainly at a surface level and tend to favour quantified outcomes. This review builds on the previous literature,[12–17] informing educationalists, policy makers and those who are seeking to implement a similar initiative in a local context. The study looks wider than previous reviews, as global papers are considered and it reflects both quantitative and qualitative approaches to report why as well as what.

Research question

What are the strengths and weaknesses for medical students and supervisors of community placements in underserved areas?

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Objective: To systematically identify all informative, published evidence concerning undergraduate community placements in underserved areas.

METHOD

The efficacy of underserved area placements was systematically explored using various search techniques (Table 1).

The databases searched included: MEDLINE, EMBASE, PsycINFO, Web of Science and ERIC. The search terms used were combinations and variations of four key concepts exploring GP primary care, medical students, placements and location characteristics (Table 2).

The following limits were applied to the search:

Not: Nursing OR Dentistry OR Pharmacy
Date range: 1991 to 2011
Language: English

Inclusion and exclusion criteria

Informative empirical studies providing conceptual and contextual knowledge about exposure to underserved areas were sought (Fig. 1). If initiatives were general community placements they were excluded as it was unknown if there was a GP shortage or difficult conditions that related to students training in such environments. Studies reporting medical programmes that had an extensive underserved area-focused curriculum were only included if they described the placement in sufficient detail to allow analysis. No outcome variables were predefined, as this was exploratory rather than hypothesis-led research.

Table 1 Search techniques[18]

Technique	Notes
Database searching	Using search terms in electronic databases (see Appendix S1 for search example)
Reference list checking	Check references of included papers for additional papers
Citation searching	Check if selected papers have been cited by more recent papers
Pearl (article) growing	Use key paper index terms to identify additional papers
Use of own sources	Literature already known by the research team

Data extraction and analysis

After reading key articles (prior to conducting the review) it was acknowledged that the literature was based on quantitative and qualitative data. Therefore, a textual narrative synthesis[19] was deemed appropriate to appraise intervention efficacy. This approach allows an encompassing appreciation of studies while describing gaps in the literature.[20] The analysis consisted of three stages: the papers were grouped into categories, study commentaries were produced, followed by a subgroup synthesis.

A template was devised to extract relevant data to the research question. This included: year and country, university, geographical area, length of exposure, method, main findings. Data were entered into a Word document and Excel spreadsheet for ease of handling and analysis.

FINDINGS

The initial search yielded 4923 results (Fig. 2). All search results were entered into Endnote. After the removal of duplicates and screening titles and abstracts, 4738 did not meet the inclusion criteria.

Table 2 Search terms broken down by concept

Concept	Terms
General practice primary care	GP OR 'general practice' OR 'general practitioner' OR 'primary care practitioner' OR 'primary care' or 'primary health care' OR 'family medicine'
Medical students	'Medical students' OR undergraduate OR student* OR 'medical training' OR 'medical education' OR curriculum OR trainee OR medic
Placements	Placement* OR program* OR 'longitudinal clerkship' OR attachment* OR internship OR 'extended placement*'
Location characteristics	Underserved OR deprived OR difficult OR rural OR remote OR inner city OR urban OR indigenous OR poor OR underprivileged OR destitute OR community OR isolated

*explode category terms.

INCLUSION criteria for papers:

- Primary healthcare / generalism context AND
- Undergraduate medical education AND
- Exposure to under-served areas (including but not limited to rural, remote, isolated, urban, deprived, inner city) AND
- English language AND
- Academic publications AND

Is the study about either:

- Experiences of students OR
- Experiences of GP supervisors / preceptors

EXCLUSION criteria:

- Not medical students
- Pre-clinical experiences (i.e. first two years of medical degree)
- Postgraduate exposure
- Commentaries, discussions, editorial comments
- Exposure to specialties
- Initiatives that aim to increase workers in under-served areas primarily through financial means

Figure 1 Inclusion and exclusion criteria

The remaining 185 articles were obtained in full and were assessed for their relevance to the research question. Of these, 131 were excluded for reasons such as postgraduate (residency) exposure, broadly focused workforce initiatives and commentaries. Fifty-four articles were included in the final review.

Study characteristics

The characteristics of the articles were categorised; when available, data about the placement were collected. The majority of the studies reported data from Australia ($n = 26$) and the USA ($n = 15$). Other countries included Canada ($n = 7$), the UK ($n = 4$), New Zealand ($n = 1$), South Africa ($n = 1$) and Japan ($n = 1$). The majority of the studies had been published after 2000 ($n = 51$), 25 of which were published during or after 2008.

There were single ($n = 24$) and multiple cohort studies ($n = 26$). Most of the papers reported data from one institution ($n = 49$), with just five collecting data from two or more institutions. There were 31 papers reporting quantitative data, 10 papers reporting qualitative data and 13 reporting both. The majority of the studies reported data from placements in rural and remote areas ($n = 47$). Eight studies included a sample from urban initiatives.

The reported length of exposure varied from 2 weeks to 104 weeks. There were 18 papers that reported data from placements <7 months long, ten of these were ≤ 6 weeks and one was 2 weeks long. Twenty-nine studies reported data from placements that were 7 months or longer in duration.

From the data that could be extracted, 24 had voluntary placements and three had mandatory placements. The clinical experiences were commonly reported from the penultimate year of the medical degree ($n = 28$). Of the identifiable graduate entry schemes, exposure was provided in Year 3 in 14 studies and in both Year 3 and Year 4 in two. Of the identifiable undergraduate schemes, one placement was in Year 4 and two were in Year 5. The studies were primarily evaluations of programmes.

THEMES

Four main themes were identified: student performance, career pathways, student perceptions and supervisor experiences. Some papers relate to multiple themes.

Student performance

The most objective way to demonstrate the performance of students taking placements in non-traditional areas is from educational outcomes. Objective structured clinical examinations (OSCE) are one of the most widely recognised examination tools in medical student assessment[21] and were the most commonly reported examinations.[4,8,22–25] Other measures reported were National Board of Medical Examiners (NBME) subject examinations[6,8] and US Medical Licensing Examinations (USMLE).[6,26] The common finding across assessment types was that students' scores did not significantly differ by taking a non-traditional underserved area placement (See Table 3).[6,22,27–30] The studies were mainly conducted in America and Australia in relation to rural areas.[6–8,27,28]

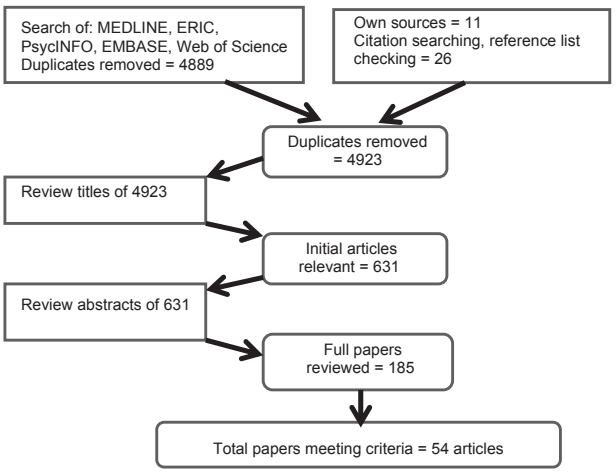

Figure 2 Number of results

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Table 3 Studies that have assessed the performance of students taking placements in non-traditional areas compared with students in traditional areas

Examination	Outcome	Source (Author/year)
Objective structured clinical examinations (OSCE)	Non-traditional higher	Bianchi *et al.* (2008)[4]
		Power *et al.* (2006)[22]
		Worley *et al.* (2000)[2]
	Equivalent	Power *et al.* (2006)[22]
		Zink *et al.* (2010)[8]
		Bianchi *et al.* (2008)[4]
	Non-traditional lower	Power *et al.* (2006)[22]
National Board of Medical Examiners (NBME)	Non-traditional higher	None-found
	Equivalent	Zink *et al.* (2010)[8]
		Schauer & Schieve (2006)[6]
		Lacy *et al.* (2007)[27]
	Non-traditional lower	Zink *et al.* (2010)[8]
US Medical Licensing Examinations (USMLE)	Non-traditional higher	Smucny *et al.* (2006)[26]
	Equivalent	Schauer & Schieve (2006)[6]
	Non-traditional lower	None-found
End of year examinations	Non-traditional higher	Worley *et al.* (2004)[24]
		Waters *et al.* (2006)[30]
		Schauer & Schieve (2006)[6]
	Equivalent	Margolis *et al.* (2005)[28]
		Lacy *et al.* (2007)[27]
		Waters *et al.* (2006)[30]
		Bianchi *et al.* (2008)[4]
		Zink *et al.* (2010)[8]
	Non-traditional lower	None-found

Cohorts have been large ($n > 200$) and over many years (5 years).[8,24]

There has been some pattern of increased clinical proficiency scores among non-traditional placement students.[4,6,7,26,30] Non-traditional students demonstrated better mastery of rapport building, greater knowledge and had an effective patient encounter routine, unlike traditional students.[23]

Conversely, non-traditional students' book knowledge was significantly worse than that of the traditional students in two studies.[8,22] This may be in relation to improved clinical scores as the students spent more time dealing with clinical issues and less time on self-directed learning.[23]

Students who took their rural rotation during the second semester scored higher than those who took it in the first semester[27]; those who took examinations during the first 3 months of the year had lower scores.[8] Timing of the placement has been found to have an impact on grade scores, although research is severely lacking in this area.

Career pathway

Educating students who will eventually return to the area is imperative. Students experiencing undergraduate exposure and having a rural background themselves reported a significantly greater likelihood of entering rural general practice.[26,31–34] This was found at various stages, including career intent, both pre- and post-placement, and employment as a quali-

fied doctor. Pre- and post-research designs found a positive shift in preference for considering rural general practice.[31,35] All students (regardless of background) were encouraged towards rural practice[36]; this was observed similarly elsewhere.[31,32,34,37]

The lasting effect of exposure is under-researched. Between 1971 and 2007, following a 9 month rural placement, 82% of graduates chose primary care careers and of those in practice 44% have been employed in rural settings all of the time.[33] Lynch *et al.*[38] found that 77% of students went on to work in primary care and 42% in community hospitals (after a community experience) compared with 49% and 25%, respectively, of those who had not undertaken community experience.

One of the few studies that collected data on a mandatory placement reported that approximately 40% of students would practice rurally for a short time or consider it in the future; so even those who did not volunteer to be involved were still positively influenced.[39] The length of exposure may be a factor influencing career choice.[40] A longer rural clinical experience (2 years versus 1 year) was found to be more effective in the eventual choice of workplace location.[32]

Student perceptions

Students' valuing of placements in underserved areas may underpin objective outcomes such as performance and career pathway. These findings are mainly from qualitative interview studies, which provide detailed insight.[2,11,29,41–43] Pre-placement reasons for students embarking on placements included: teaching reputation, to experience remote and rural medicine, lifestyle factors and breadth of opportunity for educational development.[29,44] The negative issues mentioned before placement were the nature of rural consultations not providing appropriate material, financial support and social dislocation.[44,45]

Many positive experiences were described by students. They felt integrated with the community, developed a psychosocial understanding, increased social responsibility, gained awareness of context and community, developed teamwork skills and improved problem-solving.[11,35,39,46] By increasing the responsibility for patient care over a period of time, continuity of the placement allows a student to learn about the whole life cycle of health and to develop well-rounded clinical competence and practical skills.[3,11,47] The immersion experience facilitates closer relationships with colleagues.[47] In South Africa, students developed a holistic approach to primary care, could see inefficiencies in the health system and increased capability to deal with undifferentiated patients.[3] Students perceived improvements to their confidence and self-esteem[3,11,35,48,49] and expressed satisfaction with rural exposure.[36,39] Confidence, enjoyment and self-belief are important factors in behavioural change and motivation.[48]

Students have also had negative experiences of placements. Approximately 15–25% of students perceived various aspects of their placement to be mediocre or poor.[50] Students reported disliking the possibility of 'bumping into' patients in the community, the lack of placement structure, learning objectives not being met, the limited opportunity to consult with patients alone, logistical accommodation issues and anxiety arising from social isolation.[39,41,42] Initially students were concerned about teaching quality, but by the second cohort students found GPs to be excellent teachers.[2]

Supervisors' experiences

Research has investigated supervisors' experiences of undergraduate teaching; to understand this perspective may facilitate future GP roles as they are crucial in medical education.

GPs were motivated to become involved by the prospect of giving students the opportunity to experience remote and rural medicine.[41] Supervisors have intrinsic motivation (enjoyment, developing professional skills) and they, like students, were satisfied with their involvement.[51] Quantitative and qualitative research found continuing medical education,[52] a positive impact for learning[42] and refining practice[51] were benefits supervisors experienced. A tangible benefit, receiving a personal digital assistant computer, was well received.[53]

A negative perception cited by supervisors was being uncertain about how their teaching fitted into the overall curriculum.[2,50] Supervisors believed their role was not clearly defined and students had little understanding of what they needed to learn. This may not be through inefficient GP teaching skills, but through a lack of curriculum development and objectives not matching placement content.

There is an indication that students can have a negative impact on GP income,[26,51,52] but the extent is unknown. This is particularly important where health care is not subsidised. Supervisors believe it takes time before a student becomes a benefit to a

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practice rather than a burden.[46] Using an objective measure (time), one study showed that supervisors effectively distribute the time allocated to consultation tasks differently when supervising students.[54] In another study, the mean length of time spent by a GP per consultation decreased from 14.4 to 9.5 minutes when a student was present.[55]

DISCUSSION

Summary of findings

The review found that undergraduate exposure to underserved areas has multiple beneficial implications for stakeholders. Studies were frequently from countries with large rural areas, namely USA, Australia and Canada, and driven by a need to address shortages of rural doctors. Subsequently, the majority of the findings have come from rural areas, with few data from other underserved areas.

A consistent finding was that students' examination scores did not significantly differ by taking a non-traditional underserved area placement.[27–30] There was a tentative pattern of higher grades among non-traditional placement students in areas such as clinical proficiency and rapport with patients.[4,6,26,30] However, this was not substantiated by all studies.[8,22]

The studies found that all students (regardless of background) were more likely to undertake a rural post after a community placement.[31,32,34,36,37] Student experiences included a deeper understanding of primary care, breadth of opportunity, developing responsibility over time and integrating with the community.[3,11,47] Students were concerned about consultations not providing appropriate material, learning objectives not being met and logistical issues.[39,41,42]

Supervisor experiences included giving something back to medical education, professional development and refining practice.[41,51,52] Supervisors were sometimes unclear how their teaching fitted into the curriculum, had nebulous roles and felt unprepared,[2,50] highlighting the need for faculty development.

Findings in context

Collectively, the research supports longer term placements to help students integrate, embed and develop an emotional attachment to community life.[46] However, both students and supervisors raised concerns about meeting curriculum requirements.[2,50] Existing learning objectives may not readily adapt to non-traditional placements, hence provoking this concern. Performance equivalency is a pragmatic objective, although it may detract focus from the holistic development of the student professional identity.[47]

The expansion of programmes in countries including Australia, New Zealand, USA and Canada demonstrates the sustainability of running underserved curricula; supporting replication to other contexts. Although most studies report data from one institution, collectively this review provides an evidence base. If initiatives are implemented and evaluated concurrently at multiple institutions this may substantiate findings. Similarities between programmes in different continents (North America and Australia) have been observed conjointly,[11] so the initiatives may translate to different contexts.

The UK has less of a rural workforce issue, but there are doctor shortages in areas of deprivation,[56] often found in inner cities and areas that have endured post-industrial collapse.[57] Hays'[57] review of medical education in Europe suggested that the application of Australian rural initiatives may be feasible, but issues of transferability are largely untested. Underserved area placements may provide students with a holistic appreciation of medicine, but it has been suggested that medical school experience has discouraged interest to practise in inner cities.[58] The success of initiatives is demonstrated mainly in rural areas,[6,28,35,43] whereas the application to contrasting contexts with nonetheless similar issues has not been widely acted upon.

Research finding educational equivalency of non-traditional placement students demonstrates a major strength. However, caution should be taken about learning in different contexts. Equivalency studies are often analysed using analyses of variance (ANOVAs), with a non-significant finding indicating that two groups are not significantly different. This does not imply they are the same,[59] yet comparability of placements has often been concluded following a non-significant finding.[4,30]

Some studies indicate higher examination scores for students taking non-traditional placements,[4,24,30] but this has not been consistently replicated as most demonstrate equivalency. Within studies that found higher scores, the placement characteristics differ. By contrast, placements that concluded performance equivalency also differ. Comparative qualitative research could conceptualise programmes where students do better rather than equivalently to understand why this may be the case.

Research indicates that students do return to work in the area,[33,34,38] but longer term data are required. The benefits of undergraduate programmes may be lost if postgraduate training provides insufficient exposure to underserved areas.[60] Positive changes in career trajectory towards underserved areas do appear to happen, but whether this would occur without exposure is unclear. A placement enables students to achieve personal goals and enhance self-efficacy beliefs towards the complex demands of rural practice according to socio-cognitive career theory.[61]

Limitations of studies

Many studies suffer from similar methodological and contextual constraints. The placements were often voluntary and pilots. Therefore, samples were small, from one cohort, and were not randomised. Randomly assigning students to groups would counteract self-selection bias, but it is ethically and morally challenging to make interventions mandatory purely for sampling robustness. A recurring limitation was collecting data from one medical school only.[4,6,27,62] The innovation may have been implemented differently from one school to the next, affecting the student experience.

The literature is lacking placement characteristic detail, as contextual factors are sometimes described in brevity or omitted. Contextual information regarding prevalent health outcomes, deprivation indices and population doctor ratios would be valuable for comparisons. Inaccuracies may occur if comparing placements of supposed similar length or locality when in reality they are not. Factors such as admittance (mandatory or voluntary; graduate or non-graduate) may be fundamental to outcomes. Most studies reported graduate-entry degrees, which may have been a confounding variable. Many studies did not stringently assess or match students prior to the placement. Students may have predisposed attributes that provoke appeal to underserved area placements; although the student's background and career intent are well-established,[12] there has been little investigation into personality profiles (e.g. altruism, dealing with uncertainty).

Limitations of the review

A possible weakness was the search strategy having a very large number of results. A review[63] with similar search terms initially yielded nearly 7000 citations. The use of educational search terms will probably identify a high number of results given the vast education literature. The balance between sensitivity and specificity is a complex challenge with no perfect outcome. As the technical development and accessibility of electronic databases expands, the relevant literature simultaneously unveils, which makes comprehensive reviews increasingly demanding. There were also difficulties in separating details about placements from the studies, e.g. distilling exposure information from medical schools with multiple components (admissions, modules).

CONCLUSIONS

This review builds on the literature, taking a collective approach to underserved, community area placements incorporating objective and subjective data, with a view to extending knowledge beyond rural areas.

The placements identified benefits for students developing their clinical knowledge, confidence, interpersonal skills and increasing the likelihood of them returning to work in the area. To provide a holistic appreciation of medicine and to develop professional capabilities are principles that may benefit all medical students, regardless of their future roles.

There is a growing amount of evidence for rural, underserved areas, but there is little in relation to inner city, deprived areas, and none in the UK.

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SUPPORTING INFORMATION

Additional Supporting Information may be found in the online version of this article:

Appendix S1. MEDLINE was searched using the PubMed interface on 10 November 2011 for the period 1991 to 2011.

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Appendix A

MEDLINE was searched using the PubMed interface on 10/11/11 for the period 1991 to 2011

Search Strategy:

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1. Exp Medical education/ (111949)
2. Students, Medical/ (50448)
3. Education, Medical, Undergraduate/ (27987)
4. Student*. Ti, ab (172149)
5. Medical training. Ti, ab (2737)
6. Curriculum. Ti, ab (656968)
7. Trainee(s). Ti, ab (8028)
8. Medic. Ti, ab (2600)
9. 1 OR 2 OR 3 OR 4 OR 5 OR 6 OR 7 OR 8 (1032866)
10. Placement. (69,861)
11. Program/ OR programme/ (276174)
12. Clinical Clerkship/ (3727)
13. Longitudinal. Ti, ab (144147)
14. Integrated. Ti, ab (116293)
15. “Longitudinal clerkships”. (72)
16. “Integrated clerkships”. (10)
17. Attachment/ (77705)
18. (Extended adj4 placement) (1003)
19. 10 or 11 or 12 or 13 or 14 or 15 or 16 or 17 or 18 (688992)
20. Exp medically under-served area/ (7713)
21. Rural. Ti, ab (43068)
22. Residence Characteristics/ (363446)
23. Deprived. Ti, ab (19913)
24. Remote. Ti, ab (37599)
25. (Inner adj3 city). Ti, ab (8140)
26. Indigenous. Ti, ab (16199)
27. Poor. Ti, ab (301427)
28. Underprivileged. Ti, ab (7745)
29. Destitute. Ti, ab (131)
30. Difficult. Ti, ab (219436)
31. Isolated. Ti, ab (675038)
32. 20 OR 21 OR 22 OR 23 OR 24 OR 25 OR 26 OR 27 OR 28 OR 29 OR 30 OR 31 (1699855)
33. General Practice/ (38460)
34. GP. Ti, ab (26553)
35. General Practitioner. Ti, ab (12943)
36. Primary care practitioner. Ti, ab (212)
37. Primary healthcare/ (1631)
38. Exp Rural health services/ (100505)
39. Exp Urban health services/ (116462)
40. Primary care. Ti, ab (67145)

41. “Rural medical practice”. Ti, ab (45)
42. “Inner city health service”. Ti, ab (0)
43. “Inner city medical practice”. Ti, ab (3)
44. Family medicine. Ti, ab (23956)
45. 33 OR 34 OR 35 OR 36 OR 37 OR 38 OR 39 OR 40 OR 41 OR 42 OR 43 OR 44 (387915)
46. Nursing/ (1086263)
47. Dentistry/ (775347)
48. Pharmacy/ (149750)
49. 46 OR 47 OR 48 (2011360)
50. 9 AND 19 AND 32 AND 45 (3294)
51. 50 NOT 49 (2758)
52. LIMIT 51 to yr= “1991 - 2011” AND English (2293)

Medical Education E-Journal Club, Twitter session (10/12/13)

John McLachlan, Jan Illing and I participated in an internet based discussion of my systematic literature review. This was a unique experience to disseminate my research in a novel way. The Editor-in-Chief of Medical Education selected the article and invited us to take part. The article was made available open access by the publisher in preparation for the event. This was the first time any of us had used twitter and experienced this novel approach to discuss research.

The journal 'Medical Education' held its second e-journal club via Twitter on 10 December. The discussion focused on the recent paper by Paul E S Crampton, John C McLachlan, and Jan C Illing, 'A systematic literature review of undergraduate clinical placements in underserved areas'. Participants in the e-journal club included the authors, the e-Editor and e-Council of Medical Education and The Clinical Teacher, and the medical education community.

In anticipation of the Twitter journal club on this article scheduled for 10 December at 1-2PM GMT, the authors of the article provided the following thought-provoking questions to begin the conversation.

Read the post here:
http://www.mededucconversations.com/2013/12/02/medical-education-hosts-2nd-twitter-journal-club/

1. Should ALL medical students be made to have extended placements in under-served, community areas?

2. How much do these initiatives reinforce student decisions to work in such areas (i.e. rural background) and how much do they change people's mind?

3. How applicable are findings from rural areas to other under-served, inner-city, deprived areas?

4. Why do under-served area placements identify benefits for students, supervisors, and the community?

The lively hour-long conversation involved over 140 Tweets. Much of the discussion focused on the benefits and challenges of placing medical students in underserved areas. Participants suggested that these experiences are a necessary part of any medical students training and that all medical students should be placed for a given period of time in an underserved area. Many participants felt that the experience must be structured in some way and involve mentorship to make it more meaningful.

Questions were raised about the differences between international and local experiences and between rural and urban experiences, one of the authors' discussion questions. The participants believed that while all of these are important there was some value to having a local experience in that you might be able to relate it to your own clinical practice in the long-term. In addition, participants discussed the financial restraints with international experiences for both institutions as well as students themselves.

Finally, there was some discussion about the ways in which to assess the effects of these experiences on students and the most important things to assess. This continued to prove to be a difficult question to answer and more discussion about this would be helpful.

For more details of the discussion, please see Storify at https://storify.com/anujavjain/second-medical-education-twitter-journal-club