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A study of a population served by a health centre to determine the incidence and prevalence of psychiatric, subnormal and social disorders

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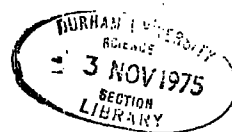
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A Study of a population served by a health centre
to determine the incidence and prevalence of
psychiatric, subnormal and social disorders.



DEREK MOWBRAY
1975

The research and investigations carried out
in this thesis were conducted only by myself;
they have not been presented in any other
thesis.

Derek Mowbray 28th June
Derek Mowbray 1975.

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Derek Mowbray.

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A STUDY OF A POPULATION SERVED BY A HEALTH CENTRE TO DETERMINE THE
INCIDENCE AND PREVALENCE OF PSYCHIATRIC, SUBNORMAL AND SOCIAL DISORDERS.

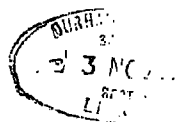
The National Health Service underwent a management reorganisation on April 1st 1974. With this reorganisation has come the increased focus on the way co-ordination, planning and control can take place at the operational level of the service.

Concentrating on the planning aspect of managing health services, there has been a history of data collection concerning the mortality and morbidity of populations. This data has formed the basis of information from which NHS plans have emerged. It is argued, however, that this information is not in the appropriate form for planning health services at operational level.

A description of current information systems is made together with an assessment as to their value in the planning process of the NHS. A more detailed discussion follows on methods adopted in highlighting prevalence and incidence rates for certain illnesses within the general population, as it is these which indicate more closely the needs of people in respect of the services they expect to receive from the NHS.

A review of the literature concerned with prevalence and incidence rates for psychiatric illness follows. From this review it can be seen that there have been a variety of methods adopted in obtaining prevalence rates.

A description of a prevalence study, using the General Health Questionnaire, is made, indicating the reasons for failing to conduct the study, which have implications for planning.



(ii)

Finally, a description and analysis of the incidence of psychiatric illness in a defined population is made, with comparisons being made between the prevalence studies previously quoted and national morbidity figures.

INTRODUCTION

The reorganisation of the National Health Service which took effect on the 1st April 1974 brought with it a fundamental change in the way health services in Britain were managed. The alternative perspectives have been described by Knox, Morris and Holland (1) - "The first view is that both medical and non-medical administrators in the health services work mainly on the basis of central divisions. They are essentially interpreters of policy, accountants and personnel managers.... The second view is that the work of administrators is based upon a continuing examination of needs through the conduct of analytical studies and planned investigations". The reorganised health service has been facilitated by the use of a management framework which attempts, as far as any framework is capable, of combining these two perspectives in a way which shows management discretion to be located closer to the operational activity of the health service than at any time before. Thus, the emphasis in the current NHS is, theoretically at least, upon the continuing examination of requirements for health services at the operational level.

The management framework which provides the guidelines for achieving continuing examination is founded within the "classical" management model. Briefly, this model emerges from the acceptance that purposive organisations receive and utilize information in such a way as to allow organisations to adapt themselves to the prevailing internal and external constraints which affect them.

The "classical" framework upon which the current NHS can be analysed can be appropriately described by referring to the synthesis of concepts promulgated by Tannenbaum (2). He writes that there are three basic elements in the management process - the co-ordination of all aspects of an organisation in pursuit of a goal; the direction or planning of the

organisation and its constituent parts and the control or monitoring of the organisation in the pursuit of the goal or goals.

In applying this basis framework to the current structure of the NHS it is necessary first to analyse the various levels of decision within the organisation which shows the management process to occur. Chamberlain(3) identifies three levels of decision. The first is the level of policy decision upon which the whole organisation may function. The second is the administrative level which examines the policy for the organisation and identifies ways in which policy might be implemented. The third level is concerned with execution or implementation of policy in the practical situation.

The final aspect of this organisational analysis is the identification of the people who carry out the manager process at all the levels of decision. In the National Health Service there is little distinction made between the managers in the reorganised service, as the organisation itself relies heavily upon the interaction of all the disciplines making up the service. Thus the main disciplines of Doctor, Nurse and Administrator, are mentioned here to represent the main divisions of disciplines rather than to describe in detail the disciplines grouped under these headings.

From this it is possible to construct a three dimensional matrix upon which an organisational analysis of the NHS can be based (Table 1).

The National Health Service can therefore be described in terms of the matrix. In outline structure the service (in England) is organised hierarchical, the sequence being:-

The Department of Health and Social Security (DHSS)

The Regional Health Authority (RHA)

The Area Health Authority (AHA)

The District Management Team (DMT)

Relating this sequence to levels of policy, administrative and executive, the DHSS and RHA can be seen to relate to the policy level; the AHA to the administrative level, and the DMT to the executive level. In actual practice there are elements of each function within each level principally because the policy formation may originate at the operational (DMT) level with consequent ramifications on the other levels of decision. This will be explored further in the analysis of the Planning Process. The problem, however, is alluded to in the statement earlier of Knox, Morris and Howard. Briefly, the DMT in the reorganised health service has the functions of managing and co-ordinating most of the operational services of the NHS (4). Thus the DMT has the responsibility of co-ordinating, planning and control of services at operational level.

It is the planning aspect of the functions of the DMT which allows policy at the operational level to emerge, and which itself will influence the other decision making levels. This, therefore, creates confusion in attempting to identify precisely the decision making levels of the NHS.

It is not the function of this thesis to examine the processes of planning or management in any great depth, but to examine ways in which planning at the operational level of the service may be facilitated. In order to do this, however, it has been necessary to describe the theoretical base upon which the service is currently founded, and to highlight the complexity of the structure by referring to the potentially confusing elements in the decision making levels. This thesis will go on to argue the fact that information for planning is a vital aspect of the management process, and that current information is not of the appropriate form to help in this process. The thesis will illustrate developments which are attempting to improve the information available, and which, in themselves, attempt to influence the planning and the policies of the NHS. The need for such improvement is summarised by Robert Maxwell (5) -

"Today... there is a new challenge; how to use wisely the armoury of treatment skills available. Thanks to advances in knowledge and techniques, the skills at our disposal are greater than ever before. To use them indiscriminately is, however, to use them irresponsibly".

In a health service with limited resources and potentially unlimited demand the planning of services requires a fundamental examination of needs at the operational level. Such an examination necessitates the improvement in information services and a reflection of that improvement on the plans which influence the policy of the service.

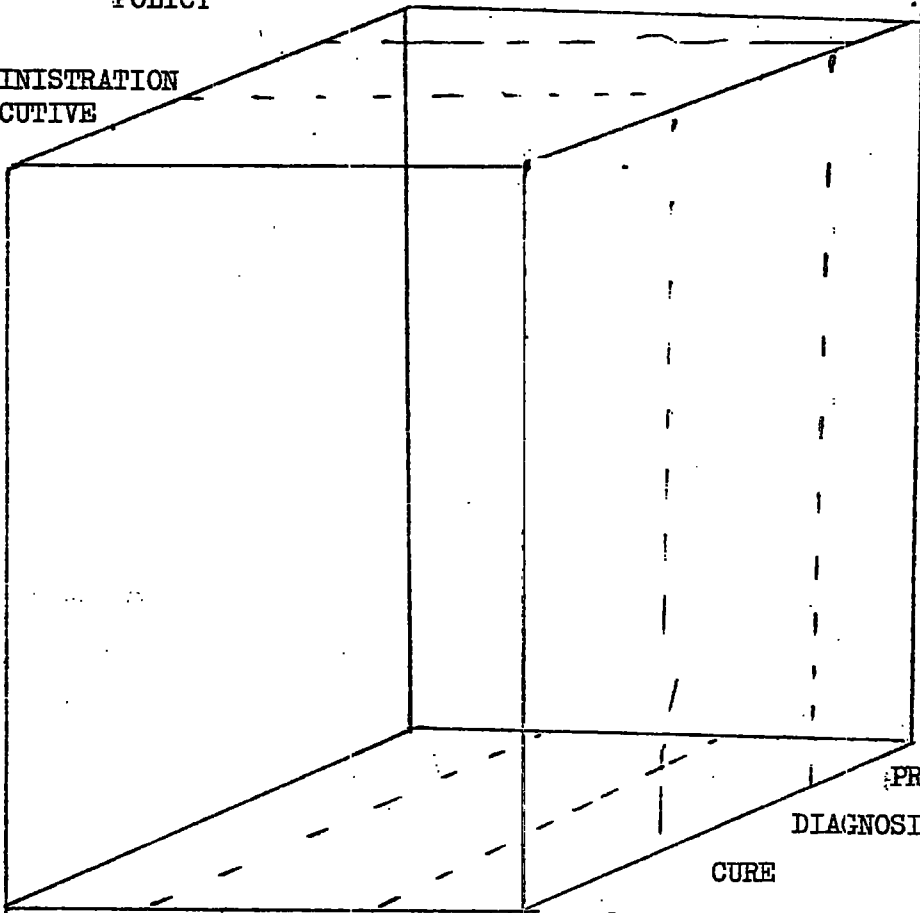
This thesis will, therefore, go on to examine the problem of planning services for an imprecisely defined illness yet a great resource user and will demonstrate the inadequacy of information reflecting this illness. The paper will also describe an attempt at a practical application of an information tool in a general practice setting, and will discuss the reasons for its failure, and the implications.

Table 1

LEVEL OF DECISION MAKING

POLICY

ADMINISTRATION
EXECUTIVE



PREVENTION

DIAGNOSIS

CURE

ORGANISATIONAL
ARRANGEMENTS

DIRECTION

CONTROL

NATURE OF EXECUTIVE ACTION

UNIVERSAL FUNCTIONS

CHAPTER 1

With the reorganisation of the National Health Service has come the culmination of fragmented thought on the way health services in Great Britain should be managed. To take planning as an illustration of the fragmented thought, the concepts of planning have undergone radical change within the last twenty-five years. This change has been essentially combined with a much slower, but nevertheless complete reappraisal of the approach to health care. The 15th century saw the emergence of the Medical Officer of Health. This emergence followed centuries of concern over the epidemic diseases such as plague, typhus and leprosy, all of which were aggravated by the Industrial Revolution. Thus the nation became acutely aware of the necessity for people to be inter-dependent. Reform of the sanitary conditions began to take place in the early 19th century, and the first Medical Officer of Health was appointed in Liverpool in 1847 following a private act - The Liverpool Sanitary Act of 1846. This Medical Officer of Health was followed in 1848 by the appointment of Dr. John Simon as the Medical Officer of Health for London. This appointment followed the passing of the City Servers Act of 1848.

From these beginnings emerged a movement to establish Medical Officers of Health throughout Britain and to bring to every district someone with specialist knowledge who could contribute to the reduction of epidemic disease. By 1870 the first diploma in Public Health had been offered by Dublin University, and in 1888 The Local Government Act stated that Medical Officers of Health in a district of 50,000 or more inhabitants must possess the Diploma in Public Health.

Thus the Medical Officer of Health became a key figure in the planning of services for the community. He developed in power and prestige and reached a height under the National Health Service Act of 1946. Prior

to this Act Medical Officers of Health were responsible, through the merging of the Poor Law and Local Authority services in 1929, for administering Poor Law hospital facilities. Under the National Health Service Act 1946 they lost this responsibility but they became the Chief Officers of Local Health Authorities, and were therefore responsible for the definition of objectives evaluating services and establishing priorities for the Local Health Authority. These services affected most people living within an Authority and included domiciliary midwifery, health visiting and home nursing, vaccination and immunisation, ambulance services and the planning of health centres.

Under reorganisation the role of the Medical Officer of Health has disappeared. In his place has emerged the Area Medical Officer supported by District Community Physicians. The basic principle that there should be a suitably qualified practitioner concerned with community health is followed under the new management structure. A difference, however, is that the community services are no longer the sole concern of the medical officer; they are now the concern of a team of managers including an administrator, a nurse, a treasurer, and a hospital doctor, as well as the Community Physician. This team is known as the District Management Team.

General Medical Practitioners emerged together with hospital doctors in the 16th century. At this time there were three distinct types of doctor: the Physicians, the Surgeons and the Apothecaries. In the 18th century the Apothecaries, who had hitherto been involved in the selling of drugs across the counter, began to make home visits with the intention of prescribing drugs to clients. Both in London and the Provinces at this time, the Apothecary was the day to day practitioner concentrating on home medicine. In 1832 the British Medical Association was established. At that time the BMA drew much of its

membership from the Apothecaries, a situation which is echoed today with much of the membership of the BMA being General Medical Practitioners. The BMA has adopted an important role in the planning of services in recent years, and it can be no coincidence that the bulk of their planning advice and proposals concern the community.

Hospital doctors began to develop characteristics of their own as early as the 16th century. In 1518 the Physicians, who were generally gentlemen educated in the classics who ministered to the upper classes, formed their own College, with the intention of developing the expertise of their profession by the examination of candidates for entry to the College.

The Surgeons, separating themselves from the barber surgeons in the latter part of the 18th century, ultimately established their own College in 1800. At about this time a relationship developed between the Physicians, Surgeons and Apothecaries. In London, the Physician was the specialist and the Surgeon or the Apothecary was the day to day practitioner. In the Provinces, the situation was a little different. There, both the Physicians and Surgeons were appointed as honoraries to the voluntary hospitals, which were developing at the time.

Thus hospital doctors emerged. By the nature of things, hospital doctors practiced in hospital for no fees in order to develop their private practice through reputation. This desire for reputation continues today in that, apart from Lawyers, only Fellows of the Royal College of Physicians cannot sue for fees, thus safeguarding reputations.

The hospitals in which doctors worked have had an interesting development. Historically the earliest hospitals appear to have been parts of

monasteries and similar establishments set aside to help the poor and wayfarer. However, following the establishment in 1716 of the "Charitable Society for the Relieving of the Sick Poor and Needy" voluntary hospitals were built from money donated by local populations. It is not surprising, therefore, that the first voluntary hospitals were built in fashionable areas - London, Bristol and Shrewsbury, to name a few.

In 1867 Poor Law Infirmaries were established. These infirmaries were run by Boards of Guardians initially, but were transferred in 1929 to local authorities and became known as Municipal Hospitals.

Thus hospitals emerged from two contrasting points - the hospitals established through donations, and the hospitals provided through local rates. The contrast in services provided in these hospitals can be imagined, and in fact indicate the contrast between the large endowment funds of some current teaching hospitals and the dearth of extra finance for the majority of other hospitals.

The distribution of these hospitals was heavily influenced by the populations supporting them. Thus it was possible to find two major hospitals located close to each other - one developed as a voluntary hospital, the other as a municipal hospital. An illustration is the short distance of one mile between Cardiff Royal Infirmary (voluntary hospital, later a teaching hospital) and St. David's Hospital (municipal hospital).

In 1897 the King Edward VII's Hospital Fund was established. This Fund was instrumental in promoting the concept of "groups" of hospitals serving particular sections of populations. This concept gained official

acceptance with the National Health Service Act of 1946 which established Hospital Management Committees responsible for administering groups of hospitals. With this development, together with planning powers given to Area Health Authorities under reorganisation, some hospitals have closed or undergone a "change of use" to provide a more even distribution of facilities for given populations.

It can be seen, therefore, that despite the efforts of such organisations as the King's Fund, the general state of planning within the National Health Service has been fragmented. Even the Act of 1946 perpetuated this fragmentation.

The National Health Service Act 1946 established three distinct administrative branches of the service. These were the hospital and specialist services, the local health authority and the executive council. The hospital and specialist services were organised through Regional Hospital Boards, who controlled hospitals within regions throughout England, Wales and Scotland. As agents of Regional Hospital Boards, Hospital Management Committees were established to administer hospital services within defined limitations. Other specialty services, such as Mass Radiography and Blood Transfusion, were administered regionally by the Regional Hospital Board. There were fourteen Regional Hospital Boards in England and one for Wales. There were five in Scotland.

Quite separate from these were local health authorities which were part of local government organisations. These administered community services such as Immunisation and Vaccination, district nursing service, midwifery service, health visitors. Such services include School Health.

Again, quite separate from either of these two services already mentioned,

was the Executive Council. These Councils were responsible for administering the General Medical, Dental, Pharmaceutical and Ophthalmic services.

It is clear now, and was becoming clearer throughout the first twenty-five years of the National Health Service, that planning of health services was inhibited by the administrative arrangements. Planning was fragmented, when conducted. It was never really the function of any one of the individual administrative bodies to plan total health services for particular client groups. The only level of co-ordination under the old structure was the Ministry of Health, later Department of Health and Social Security.

An illustration of this is that in the late 1950's and 1960's work was begun on the replacing of outdated hospital buildings, 50% of which date from the last century and 75% before the First World War. In 1962 a hospital plan was produced and, by establishing certain ratios of beds per thousand population, drew up a detailed list of development required until 1975. Little acknowledgement was made of the fact that hospital provision is totally bound up with the services provided to the patient in the community. There was a further complication in that the Hospital Plan was concerned with capital expenditure. The policy of the Treasury was that Capital and Revenue expenditure could not be mixed. Thus financial provision of manpower was totally separated from that for buildings. It is hardly surprising, therefore, that a common belief is that the Health Service is a service of buildings rather than a service of manpower. It goes without saying that care is provided by individuals and not buildings.

The Development of Planning Systems

On a more general level, the last hundred years has seen the involvement of government in the regulation of economic as well as judicial and international affairs. As a result, governments have become responsible for allocating a larger proportion of national resources. Until the 1950's the study of public expenditure was concerned with the raising of revenue and the effect that this and subsequent government expenditure had on the economy as a whole. What money was spent on was either seen to be a "good thing" or it could be justified in a strictly economic sense.

The development of analyses of public expenditure first took place in the United States as a result of a desire by public administrators for knowledge about the relationship between various alternatives of achieving social objectives. Greater involvement also meant a larger number of social objectives to be catered for, and so some idea of each objective's priority is necessary if such decisions are not taken by default. Priority becomes particularly important in times of financial stringency where an extra allocation of resources cannot be made within an expanding budget. Priorities have to be catered for by a positive reallocation of resources which, unless priorities are static, involve the reduced provision of more services.

The first development of analysis as an aid to decision making took place in the United States by Secretary McNamara in order to supply him with performance and cost information from which a choice among alternatives could be made. As a result of the obvious success of this undertaking, it was felt important to extend the principles to other areas of public expenditure. In 1965 President Johnson established a comprehensive planning programme and budgeting system (PPB) throughout

the Federal Government. He said that this would enable administrators to:

- (a) Identify our national goals with precision and on a continuing basis.
- (b) Choose among these goals the ones that are most urgent.
- (c) Search for alternative means of reaching those goals most effectively at the least cost.
- (d) Inform ourselves not merely of next year's costs, but on the second, and third, and subsequent costs of our programme.
- (e) Measure the performance of our progress to ensure a dollar's worth of service for a dollar spent.

In Britain, systems on the American model were introduced into public service towards the end of the 1960's and are now in use in a number of local authorities and government departments.

The planning systems which have now been developed rely on a particular model of the way decisions are made. Stewart discusses PPB and associated systems as being practical modifications on a pure-rationality model. According to this model a decision maker has to establish a complete set of operational objectives, an inventory of the resources required, a complete set of alternative policies, predictions as to the expected costs and benefits of each alternative, a calculation of the expectations of each benefit, and the identification of the alternatives with the lightest net expectation.

The practical modifications include provision for monitoring the effects of programmes and using this information to review and, if necessary, to modify the policies. It is also possible to consider complete sets of alternative policies, and rather than finding the optimal alternative, the policy maker points out directions which can be explored without specifying how far it is possible to go.

The Planning Process in the Reorganised NHS

The reorganisation of the health service emerged as an evolution towards the improvement of health service management. Planning is a major component of the management process and the systems for planning have, themselves, evolved, though they appear to be behind the more general evolution.

The Hospital Plan 1962 (1) has already been mentioned as a document describing strategic planning for hospitals within the NHS. A centrally produced document, it could be criticised for failing to incorporate the opinions and experience of those working at the operational level of the service. This criticism can be extrapolated into an overall criticism of the way the NHS was being managed at that time and which prompted such comments as those found in "The Shape of Hospital Management in 1980?" produced by the King's Fund in 1967 (2). This report considered alternative ways of improving the management of hospitals, and was produced at a time when official consideration was being given to the question of management. In 1968 a "Green Paper" entitled The National Health Service - The Administrative Structure of the Medical and Related services in England and Wales (3), was circulated throughout the NHS for comment. This consultative document puts forward early official ideas for the improvement in the management of services. Paragraph 15 proposes the way planning should develop: - "It would seem right that those making plans for the future and those managing the present arrangements should be more closely linked." The document then goes on to outline the major decision-making levels which the (then) government proposed. It proposes Area Authorities, a role of which would be "for planning efficient use of complementary resources". (para. 21). Planning is also seen as one of five major functions of staff at Area Board Headquarters (para. 63).

In May 1971 a White Paper (4) or consultative document was again distributed within the NHS making new proposals for the revised management structure of the NHS. This document also places emphasis on planning (para.7), and proposes Regional and Area Authorities with responsibilities for this function.

In the document Management Arrangements for the Reorganised National Health Service (5) the planning "cycle" is first mentioned. This cycle is basically a logical system for relating national policy to feasible plans developed at the operational level of the service.

The cycle is an annual cycle involving the establishment of national policy, the identification of needs within Districts, consultation on plans with local interests, and the submission of District plans through Area Health Authorities to be considered by Regional Health Authorities and the Department of Health and Social Security.

Since the production of this document trials of the planning cycle have taken place. The East Dorset Trial Report (6) concluded that the information noted on the (proposed) form is inadequate for most planning purposes (page 6). The information deficiencies are expanded in the main content of the report.

The trial in South Glamorgan was considered unsuccessful from the point of view of the planners because information was lacking in a form which would give an indication of the needs of the population being served (7). In neither of these trials could it be claimed that plans were related to finance or potential available resources. Thus, the presentation of alternatives within a financially constraining situation was, and is, not possible. The problem of information deficiency is recognised by the DHSS. Draft Circular on the "Development

of Health Service Information and Information Services" (8) refers to the need to develop "improved basic information systems throughout the NHS".

The purpose of the Planning cycle which is to be formally introduced in April 1976 is to help District Management Teams to formulate policies and plans for services within each District.

To fulfil this objective, each Health District will establish Health Care Planning Teams - one team for each of the major health services under review. In St. Thomas' Health District in London there will be ten Health Care Planning Teams, one for each of the following services:

Primary Care	The Elderly
Maternity	The Chronic Sick
Mental Health	Specialist Services: Medicine
Child Health	Surgery
Management	Support Services

These teams will review health services in the District and will present plans proposing changes to the District Management Team.

The District Management Team will collate all plans and present them to the Area Health Authority, which will allocate resources to implement those plans which are accepted. This process takes a year, and each planning team has a responsibility for reviewing plans for services as an on-going commitment.

Health Care Planning Teams are made up of members working at the operational level of the service. A Draft Circular on Health Care

Planning Teams (9) proposes that the main members will be:

The District Community Physician

A Consultant

A General Practitioner

Two Nurses

A Social Worker

An Administrator

Thus the planning system of the NHS has evolved to incorporate those persons working at the operational level of the service. The planning system has also evolved to become a system which plans for services to groups of people, rather than being a system which plans only for hospitals or only for the community services.

The planning system will be seen to be successful if health service developments actually respond to the needs of the populations being served. Although the development of the District Community Physician with his knowledge of local population is a step in the direction of reflecting needs, objective information about needs is scarce. Such information requires development and collation, but the task involved is extremely complex.

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CHAPTER 2.

Information in Planning

Planning is a process of decision making concerning the future. An element of the decision making process is concerned with objective evidence. In order to allow for the maximum knowledge in establishing objective evidence, information, in the appropriate form, need to be fed into the decision making process.

Information can be described as the transmission of knowledge from a source to a recipient. This knowledge can take the form of statistics. Statistics can be defined as the numerical description of social, economic and bibliographical phenomena. They come in a variety of forms. Vital statistics are, conventionally, numerical records of marriage, births, sickness and deaths by which the health and growth of a community may be studied. "Just as the biological study of a single man would be the record of a series of episodes of birth, infancy, adolescence, maturity, reproduction and ultimate decay, of illness, accidents, anxieties, triumphs in one human life, so the biological study of groups of human beings involves the statistical summary, the numerical aggregation of a large number of episodes arising continuously in a large number of lives".

Demography is concerned with the growth, development and movement of human populations in groups. It forms the basis for all economic planning in so far as it relates to the growth of manpower, and its distribution. (1)

History

It was Plague which gave the impetus to vital statistics. In 1538 the first Bills of Mortality were compiled and these became a continuous weekly series in 1603. The first cholera epidemic hastened the national

registration of deaths which commenced in 1831.

The first recorded attempt at estimating the population of Great Britain was made by Gregory King (1648 - 1712) who worked from tax returns of houses.

In 1951 the first International Statistical Congress was suggested. It met in 1853 and in 1872 a Permanent Commission of the International Statistical Congress was established. In 1885 the International Statistics Institute was formed.

In 1907 the Office International d'Hygiene Publique was set up in Paris as the first permanent international health organisation though primarily concerned with quarantine. In 1923 the League of Nations established a Health Organisation consisting of a Health Committee, an Advisory Council appointed by the Office International d'Hygiene Publique, and the Health Section. An Epidemiological Intelligence Service had been organised in 1927 and this produced periodical reports of infectious diseases in European countries. The first Monthly Epidemiological Report of the Health Section appeared in 1923. To promote the standardisation of statistical methods, the Health Committee convened in 1923, 1924 and 1925 meetings of the directors of demographic services in the principal European countries. At the 1925 meeting they agreed to draw up common rules relating to the registration of the causes of death.

The World Health Organisation was set up as a result of an International Health Conference at New York in 1946, to which 61 governments sent representatives.

The work of the Organisation is carried out by three organisations:- The World Health Assembly, The Executive Board and the Secretariat under the

Director General. The World Health Organisation is a specialised agency of the United Nations and represents the culmination of efforts to establish a single inter-governmental body concerned with health. As such it inherits the functions of antecedent organisations such as the Office International d'Hygiene Publique, the Health Organisation of the League of Nations and the Health Division of UNRRA (the wartime relief organisation of the United Nations).

Among the important technical publications of WHO there is the monthly Epidemiological and Vital Statistics Report containing statistics on infectious diseases and birth and death rates, and articles on epidemiological and demographic studies.

The Statistical Office of the United Nations collects statistics from all over the world and publishes annually a Demographic Year Book. This volume provides detailed statistics of population, births and deaths with careful notes of conditions affecting validity or comparability. From time to time the statistical office publishes manuals setting out the basic principles of census taking and vital statistics systems.

Recognition of the international character of problems arising from population pressure in less developed countries where available resources in their current economic state are too meagre to match the existing population, led the United Nations to establish a Population Commission in 1946 to advise on these problems and other population matters including methodology of measurement.

More Detailed Perspective

Statistical measurement of the health of the community is not only concerned with the number of persons in the community but involves consideration of heterogeneity and it is necessary to classify the population with respect to certain characteristics - e.g. age, sex,

marital status, birthplace, occupation and housing conditions. This allows for deeper understanding when comparisons are made between populations.

The actual population is known only by census enumerations, although estimates are also made.

The first census in England, Wales and Scotland was in 1801 and was repeated at 10 year intervals. Due to the Second World War there was a gap between 1931 and 1951. The kind of information gathered has differed with each census. In 1801 the census counted the number of males and females of each house and family and the number of persons engaged in agriculture, trade, manufacture or handicraft and other occupations not specially classified in 1821 the information was first sought as to ages. Before the 1841 census the civil registration of births, deaths and marriages had been instituted in England and Wales and the newly appointed local registrars replaced the parish overseers as the officers responsible for conducting the census. In Scotland civil registration was not established until 1855 and thus the census of 1841 was entrusted to the official schoolmaster or other fit person. Information of the 1851 census included that of occupation, birthplace, relationship, marital condition, education and the number of persons deaf and dumb or blind.

In the census report of 1881 the age and sex distribution of each urban and rural Sanitary Authority as constituted that year was given for the first time.

The information of the 1891 census included the number of rooms and their occupants in all tenements with less than five rooms, and the important distinction between employers, employees and those working on their own account.

In 1911 a number of important changes were made. The difficulty of defining "house" was avoided by the enumeration for each urban and rural district of the number of various classes of buildings used as dwelling - ordinary dwelling houses, blocks of flats and the separate flats or dwelling, composing them, shops, institutions etc., with the corresponding populations.

The most important development was a detailed enquiry into fertility. The following questions were asked in respect of every married woman:-

1. Duration of marriage in completed years.
2. The number of children born alive to the present marriage who:
 - a) were still alive at the census
 - b) had died before the census.

The Census Act 1920 gave power to hold periodical enumerations at intervals of not less than 5 years and covered not only the 1921 census but future censuses. The Act states that the questions to be asked at any census are to be prescribed by Order in Council, but must fall within the following general scope:-

- a) Name, sex, age
- b) Occupation, profession, trade or employment
- c) Nationality, birthplace, race, language
- d) Place of abode, character of dwelling
- e) Conditions as to marriage, relation to head of family, issue born in marriage.
- f) Any other matters with respect to which it is desirable to obtain statistical information with a view to ascertaining the social and civil condition of the population.

The 1931 Census omitted any enquiry into education, workplace and either dependency or fertility, and was thus simpler than in 1921.

As part of the General security measures during the war of 1939-1945 every

civilian person in Great Britain on September 29th 1939 had to be recorded on a National Register. The head of each household was required to complete a schedule similar to that of a normal census, showing the name, age, sex, date of birth, marital condition, occupation and national service commitment of every member of the household. In 1944 the National Register Volume was published showing the civilian population of each area, in sex and age groups; no information was given as to occupation.

The 1951 Census asked certain special questions such as those concerning fertility, education and household arrangements. The 1961 Census added three important questions to the normal range. These were:-

- i) Tenure of dwelling
- ii) Change of usual address in the previous year
- iii) Scientific and technological qualifications.

The census held in 1966 was entirely on a 10% household sample basis and included new questions on the ownership and garaging of motor cars, means of travel to work, and employment supplementary to main occupation.

Registration

Registration of baptisms, marriages and deaths in England and Wales dates back to 1536 in the reign of Henry VIII when the clergy in every parish were required to keep a weekly record of these events. The Births and Deaths Registration Act, 1836, established the General Register Office and provided for the registration of births and deaths, though no penalty was imposed in the event of refusal to register. A penalty was applied by the Births and Deaths Registration Act 1874 and registration became progressively more complete. Registration has been consolidated by the Births and Deaths Registration Act 1953, the Marriage Act 1949, and the

Registration Service Act 1953.

In England, apart from registration, it is required by the Public Health Act 1936 that the person in attendance on a birth, and the parent if residing at the place of birth, shall notify the Local Health Authority within 36 hours in order that Health Visitors may make early visits for welfare purposes. The details furnished on birth notification include name, address, date and place of birth, live or stillborn, and birth weight.

Like births, registration of deaths dates from the Act of 1836.

Every medical practitioner attending the deceased in his last illness is required to furnish a certificate stating the cause of death to the best of his knowledge and belief and to deliver it to the Registrar. The Registrar cannot give a certificate authorising the disposal of the body until this has been done and he is satisfied that if the case is one which should be reported to the Coroner, the Coroner has completed his investigations.

The information required by regulation under the Births and Deaths Registration Act 1953 to be registered for death is as follows:-

- i) Date and place of death
- ii) Name, Surname
- iii) Sex
- iv) Age
- v) Occupation
- vi) Cause of death
- vii) Signature, description and residence of informant.

Additional particulars recorded at death registration under the Population (Statistics) Act 1960 are:-

- i) Whether the deceased was single, married, widowed or divorced.
- ii) The age of the surviving spouse, if any, of the deceased.

Marriages

In England the information recorded at civil marriages, or by the person solemnizing a religious marriage and transmitted to the Registrar, comprises:-

- i) Date of marriage
- ii) Names and Surnames
- iii) Ages
- iv) Marital conditions
- v) Occupations
- vi) Residences at time of marriage
- vii) Fathers' names and surnames
- viii) Occupations of fathers, together with precise place of marriage and form of ceremony.

From all these forms of information the Registrar General's Office issues to Area Health Authorities vital statistics for each calendar year for individual districts which include estimates of population, numbers of births by sex and legitimacy, numbers of deaths by sex, numbers of deaths of children under one year by age and legitimacy, and a summary of the principal rates in England and Wales as a whole.

There is, also, the Registrar General's Weekly Return which includes a record of the number of births, deaths, infant deaths and deaths from some of the principal epidemic diseases registered in the preceding week in England and Wales, Greater London and the Counties, a serial record of these figures and of notifications of certain infectious diseases for the current and preceding weeks with culminative totals up to date and

corresponding figures for recent years for (a) England and Wales.

(b) Greater London; a record of deaths by age and from the principal causes in Greater London; a record of the numbers of cases of infectious disease notified in each local government area; a record of the numbers of new claims to sickness benefit made under the National Insurance Act in the current week and three preceeding weeks together with weekly averages for earlier periods; values of air temperature, rainfall and sunshine in certain large towns and meteorological observations taken at Kent Observatory, Richmond, supplied by the Meteorological Office.

The Registrar General's Quarterly Return contains a serial record of the principal quarterly and annual figures of births, stillbirths, marriages, deaths, infant deaths, deaths under four weeks and peri-natal deaths, and rates. Figures are given for England, Wales and for standard and Hospital Regions, records of the number of births and deaths in certain cities abroad and infant mortality by quarters over the last few years in several countries other than England and Wales, compiled from special returns sent by them; a table showing the numbers of deaths from the principal causes, distinguishing sex, registered in England and Wales in each of the last nine available is generally that preceeding the one to which the return relates; an analysis of migration statistics, a table showing the number of insured persons absent from work owing to certified sickness or industrial injury on specific days in three consecutive months in England and Wales and in Standard Regions, values of air temperature, rainfall and sunshine in districts of England and Wales in each month of the calendar quarter, supplied by the Meteorological Office.

There is also the Registrar General's Statistical Review (Annual) which contains detailed vital statistics compiled in the processes described above.

There are publications on special studies. So far topics have included

cancer registration, morbidity measurement, hospital in-patient records, general practitioner statistics and internal and external migration.

Health Services Statistics

It was soon after the establishment of the National Health Service on the appointed day in 1948 that the first data collection system was introduced. The data were collected for two reasons: to determine the facilities used by the N.H.S. and to determine the use made of these facilities by patients. The system is known as the Annual Hospital Return (SH3).

The SH3 is an annual return made to the Department of Health and Social Security for the Welsh Office showing the number of staffed beds, the average number of beds in use, their daily occupancy, and the number of patients who have been treated in them.

An annual return has been found to be of little value to the management of health services at the operational level. To combat this, in Wales, a return known as the QSI is made to the Welsh Office on a quarterly basis providing the same information as the SH3 but for each quarter of the year.

The Hospital In-patient Enquiry (HIPE) provides detailed information with respect to patients. The age and sex, details of operation and diagnosis, is obtained through this enquiry. This system was introduced in 1949 and was initially conducted on a small number of hospitals. Since 1952 with the gradual expansion of the Enquiry to include all non-psychiatric hospitals, data has only been collected on a sample of 10% of all in-patients.

To provide a rapid feed back of information about patients Hospital Activity Analysis was introduced in 1959. "The main purpose is to provide for doctors and administrators both at hospital level and in the Boards an

Information System in which details relating to individual patients are brought together for analysis. These include clinical data relating to diagnosis and operations, and patient characteristics such as sex, marital status and area of residence, as well as administrative information about admission, length of stay and discharge. As far as records are concerned this need not involve doctors in anything more than the supervision of the entry of clinical information in the summary sheet!

These data collection systems represent a small number of such systems now operative in the health service. They cover all parts of the service.

Data are currently collected on the allocation of beds, and their use, the accommodation of chronically sick and disabled persons, Family Planning Services, mental handicap facilities, the numbers and location of psychiatric patients, the number of patients attending outpatient clinics by the type of clinic, the number of cervical cytology tests and their outcome, the workload in such departments as Pathology and Radiology, the number of meals provided for patients under discrete categories, a breakdown of chiropody services, the numbers and type of doctors, nurses, administrators and ancillary staff. Of those data collection systems relating to General Medical, Dental, Pharmaceutical and Ophthalmic practitioners, information can be derived indicating the personal details of Family Doctors, details concerning their remuneration, particulars about dental treatment.

Local Authority Social Service Departments have their own data collection systems which have associations with health services. For example the Handicapped Persons' Register, the Blind or Partially Sighted Persons Register the Chronically Sick and Disabled Persons Register, the number of Elderly persons in homes, the number of Mentally Ill and Handicapped in homes, the number of mothers and babies and so on.

This list has, of necessity, been short and thus incomplete. All the information relates to activity within the health or social services. Very little actually relates to the detailed description of the needs of the general population. Therefore, on one hand health service planners have available vital statistics, and on the other information concerning the activity of health services. In the middle, where there should be information relating to the general population to the health service, there is a short fall of information.

Psychiatric Case Registers

The objectives of establishing Psychiatric Case Registers are numerous (2) (Stats. Rept.No.8). Among them are:-

- i) To create a system of linked, cumulative and longitudinal records to enable analyses of manifestations of morbidity in individuals and in groups of people over time.
- ii) To provide a means of monitoring trends over long periods.
- iii) To establish a flexible sampling frame
- iv) To generate a common data base for ad hoc studies.

The Camberwell Register, established in 1964, has objectives which include the ability to draw objective samples for detailed studies of specific topics. Statistical studies are also undertaken of all specialist mental health care provided for the Camberwell population, and changes in the services are monitored. (3)

The Oxford Psychiatric Register has as a special interest a systematic study of personal and financial associations between Psychiatric and Physical disorder. In addition there would be the opportunity to carry out operational and planning studies of the Psychiatric Services (if required). (2)

A major purpose of the Salford Register is to provide a local information service.

The Southampton Psychiatric Register is seen as a tool for evaluation.

Three broad areas of evaluation are envisaged:-

- i) To monitor the efficiency of the new organisation of services in meeting the mental health needs of the city,
- ii) to find out whether the new service is better or worse than than the old one in providing care and treatment for patients,
- iii) to observe what effect the introduction of the new Psychiatric Service has on the staff, and standard of care given in the service. (2)

The Cardiff Psychiatric Register has the aims of providing information about groups and types of patients which will assist in managing the service and planning of future developments and of providing information about individual patients which can be used to supplement information in case-notes, provide record linkage between hospitals and to allow for the setting up of continuous care registers. The main aspect of the Register is that it includes the assessment of patients' needs in terms of physical care required, types of supervision required, levels of handicap etc. This approach is intended to give a more realistic base on which to control current services and to plan future ones. It will also provide an appropriate data base upon which evaluation studies of particular services can take place. (4)

Epidemiological Studies

All these data collection systems and registers lead on to the studies of the distribution and determinants of disease in human populations - epidemiology. The purposes for which epidemiological investigations are carried out may be considered under five headings, although a single investigation may serve more than one objective:-

1. The provision of data necessary for planning and evaluating health care.
2. The identification of determinants of disease so as to enable prevention.
3. The evaluation of methods used to control disease.
4. The observation of the natural history of disease.
5. The classification of disease.

The pressing need to create health services which are appropriate to the people they serve has been formally recognised in the emergence of Community Medicine as a new branch of medical practice. In the same way as a sick person required diagnosis, treatment and a continued observation, so a community required recognition of its health problems, the operation of appropriate preventive or curative health services, and continued surveillance to ensure that these services are effective.

The main purpose of epidemiological studies of disease causation is to identify determinants whose manipulation could lead to the prevention of disease, rather than determinants such as genetic constitution, which although of great interest, cannot be manipulated at the present time.

The purpose of evaluating disease control is to ensure that any introduction of controlling mechanisms is effective. There is a further factor. As well as demonstrating effectiveness, it is necessary to measure the cost of its large scale application in terms of trained personnel, time required, money needed for basic materials and transport, and other factors. The value of one method in relation to others is assessed by relating the cost of its application to its effectiveness.

Knowledge of disease natural history is essential since without it a doctor cannot make a prognosis of the likely outcome of a patient's illness. This prognosis is the basis for rational decisions about therapy.

The epidemiological characteristics of a disease are an integral part of its basic description, by means of which it is identified. When one considers the many undiagnosed tropical disorders vaguely attributed to viruses, or the difficulty in classifying tropical skin diseases, there seems little doubt that study of epidemiological characteristics of patients with apparently similar clinical presentations will lead to the recognition of many new tropical disease entities.

The intention in carrying out an epidemiological investigation of a disease may be either to describe its pattern of occurrence in a population or to analyse the influences which determine that one person is affected while another is not.

Descriptive studies are carried out in order to determine the frequency of disease, the kind of people suffering from it, and where and when it occurs. Information about patients is analysed to show the distribution of attributes or variables such as their sex and age and the time and place where they developed the disease.

Such descriptive studies can be conducted by analysing the incidence rates. These are defined as the frequency of occurrence of some event related to a disease per unit of population during a specific period of time.

Descriptive studies can also be conducted by examining prevalence rates. These rates define the proportion of the population which it is expected to be affected by a disease at one particular time.

Analytical studies are carried out to test hypotheses about the influences which determine that one person is affected by a disease while another is not. They are designed to show whether a particular event or attribute acts as a "cause" whose "effect" is the resulting disease.

There are two basic kinds of observations made in population studies

which suggest that a particular event or attribute is a determinant of a particular disorder:

1. The comparison of people with the disorder and normal people, showing that the determinant occurs more frequently among those with the disorder than those without it.
2. The comparison of people exposed to the determinant and those not exposed showing that a greater proportion of people develop the disease among the exposed population than among the non-exposed.

This thesis is concerned with the first form of observation. Before moving on to the descriptive study of the incidence of non-psychotic mental illness in a defined population, a brief discussion will follow of the methods which have been developed to quantify, by questionnaire, non-psychotic mental illness. Following this brief discussion, a description of the prevalence-study, together with its implications will be made.

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CHAPTER 3 (1)

The methods of identifying need within the general population have been largely based on establishing the activity within populations. In order to assess need some objective criteria must be established against which needs can be determined. To say someone is ill or is suffering from a particular disorder does not indicate on its own that the needs of the individual have been identified. Previous experience may suggest certain courses of action with regard to identified disorders but these courses of action can only be established once the specific needs of the patient have been clarified.

There is an extensive literature on the methods of identifying persons suffering from certain psychiatric disorders. Whether these methods extend to a clear identification of need will be discussed later.

Many surveys of psychiatric disorders have relied on the examination of hospital clinical records. However as Felix and Bowers (2) point out this process means that the researchers have no control over the "case-finding process, over the record keeping, or even the diagnosis." The method depends on the amount of demand made for hospital services, the clinical policy of the hospital under study, the method of recording clinical details, and "the hospital staff's varied training and skill in classifying disorders".

In the general population identification of psychiatric disorder has normally resulted from the interaction of the patient or client with the Psychiatrist. Thus a standard assessment, using this approach, is difficult, as it is based on the psychiatrist's judgement at the time of consultation. Recognising this has precipitated a number of studies comparing one Psychiatrist's consistency of assessment with another. In his review of the field Foulds (3) writes - "The earlier and more

pessimistic studies of the reliability of psychiatric diagnosis appear to have been superseded by better designed studies which suggest that inter-psychotic, neurotic and intra-psychotic reliabilities are satisfactorily high, whereas intra-neurotic reliabilities are low". Goldberg (4) suggests that reliability of psychiatric assessments between psychiatrists can be increased still further if standardized psychiatric interviews and rating scales are used.

A study which illustrates the method using psychiatrists as the sole case identifier is that started by Essen-Möller (5) and carried on by Hagnell (6). Two adjoining parishes with a total of 2500 inhabitants in a rural area in the south of Sweden were intensively studied by Essen-Möller and three colleagues in 1947. The interview used was relatively unstructured, but since the interviewer aimed to collect information in a number of specified areas at the same point in the course of the interview it would count as a "guided-interview". Essen-Möller arranged individuals in a continuum ranging from definite mental illness through abnormalities of personality to complete normality. He found a lifetime prevalence of 1.7% for psychosis, 5.17% for neurosis. A large proportion of the population were thought to be personality variants, and only 39.6% of men and 32.8% of women were thought to be normal. Hagnell revisited these patients. His approach produced a higher figure for neurosis although the figure for psychosis remained the same. Few investigators have used a procedure whereby screening instruments and questionnaires and key informants suggest potential cases. Lin (7) used this technique in a prevalence study of a mental illness in Formosa, but although his figures for psychosis were comparable to those of other investigators his figure of 1.2% of population for neurotic illness suggests that his informants did not report many potential cases.

Eaton and Weil's (8) study of mental disorder amongst Hutterites involved a total of 2000 interviews. Of these the psychiatrist interviewed nearly 300 patients but the majority of those classed as mentally disturbed were interviewed not by him but by a team of six research assistants acting on information by key informants. This study suggested a prevalence of only 16.7 per 1000.

In Cole, Branch and Shaw's (9) Survey of Salt Lake City, the interviews were carried out by a third-year psychiatric resident and a PS.N. - both supervised by a psychiatrist. The interviews used were unstructured and psychiatric questions were asked towards the end. Twenty-five families were interviewed in each of eight separate city blocks. The authors accepted information about absent family members from their informant in each family, and arrived at a prevalence rate of 333 per 1000 for all mental disorders in people over the age of 16.

In most community surveys of mental illness the psychiatrist has evaluated the notes of an interview carried out by another person rather than interviewed the patient himself. Some have interviewed non-psychiatrically trained medical colleagues; others have trained research assistants to administer a standardized interview.

The survey carried out by Pasamanick, Roberts, Lemkan and Krueger (10) is an example of the first method. The patients were seen by physicians at John-Hopkins Hospital for a first medical assessment, and notes were examined by a psychiatrist. The result of the survey was that in the non-institutionalised population the rate of "obvious mental illness" was 93.4 per 1000.

In the William County Survey Roth and Luton (11) attempted to estimate the number of people who should be under psychiatric care at any

particular point in time in Tennessee. They used two social workers and a psychiatric nurse as their interviewers, and used persons referred by their key informants. They arrived at a figure of 46.7 per 1000 for all disorders active on the census day. Two large surveys of mental illness have used highly structured interviews administered by research assistants and have produced prevalence rates for mental illness much higher than previously reported. The Midtown Manhattan Survey (12) used trained interviewers to administer a very long, highly structured interview that took from two to four hours to complete. This survey found that 234 per 1000 were impaired. This figure was supported by the Stirling County Survey by Leighton, Harding, Macklin, Macmillan and Leighton (13). Trained research assistants administered a very long structured interview. The completed schedule was assessed by a series of psychiatrists who also saw impressions from two other physicians, and at least one other community source, and any relevant hospital or institutional record. From this, two sub-studies arose known as the Family Life Survey and the Bristol Health Survey.

The Family Life Survey consisted of 1000 interviews of heads of household or their wives taken from the whole of Stirling County. This gave a prevalence rate of 577 per 1000 of the population who were "genuine psychiatric cases". The Bristol Health Survey consisted of only 140 interviews with a representative sample of all persons over the age of 18 in the town of Bristol. It produced the figure of 690 per 1000 of the population who were "genuine Psychiatric cases".

A further method of interview is to design the interview in such a way that the person administering it can compute a score which indicates whether the respondent is likely to be a psychiatric case. In order to

do this the structured interview would need to be subjected to at least a validity study, where the scores generated by the structured interview is compared with the results of a blind, clinical assessment.

Comparatively few structured interviews can be administered by a non-psychiatrist and used as a method of case identification. Macmillan's (14) Health Opinion Survey consists of 75 "health orientated" queries. A complex scoring process used weighted scores for each item derived from a discriminant functional analysis. The calibration study used as "normals" those respondents who came from farms that had been designed "good farms" by the County Agricultural Agent, while the "cases" were inmates at local mental hospitals. The content of the items have a heavy somatic bias, and the method of identifying normals seems open to questions.

Langner's (15) test is administered as a structured interview, and consists of 22 items drawn from the entire pool of psychiatric items used in the Midtown Manhattan Survey that discriminated between two interior groups of respondents. These were 72 "known well" respondents chosen on the basis of a half-hour interview with a psychiatrist from a "larger group" and 139 "known ill" respondents who were currently receiving psychiatric treatment. Each item was shown to correlate well with the rating psychiatrists' overall judgement of mental health over the 1660 interviews that are the basis of the Midtown Survey itself.

A rather different approach is represented by the Beck Depression Inventory, a short standardized series of questions aimed at detecting depression and administered by a skilled worker. Schwab, Bialon, Clemmons, Martin and Holzer (16) carried out a validation study of the Beck Depression Inventory on 153 medical in-patients by correlating their scores with the results of a standardized psychiatric interview using

the Hamilton Scale. They found that 14% of their patients were misclassified by the Inventory. Fould's (17) Symptom-Signa Inventory (S.S.I.) consists of 80 questions which are administered by an interviewer and scored "yes" or "no". The S.S.I. was designed not as a case identification in epidemiology but as a diagnostic instrument. It can, however, be used as a method of case identification and when tested on 263 psychiatrically ill, and 73 apparently well, subjects achieved a fairly good discrimination. Using a threshold score of four or more to indicate illness, and three or less to indicate health, 89% of the apparently normal group were correctly placed.

Foulds and Hope (18) have identified 20 items in the S.S.I. which they refer to as a "personal disturbance scale", since it has been shown to discriminate between a group of 69 "normal women" and their calibration groups of psychiatric patients. Although the authors envisage that the scale might be used as a screening device in epidemiological and social surveys, they properly emphasized that their standardization data were obtained when the 20 items of the "personal disturbance scale" were given as part of the full-length S.S.I., as an interview administered by a clinical psychologist. The S.S.I. would appear to be an instrument of acceptable validity and is indeed in many ways comparable to the General Health Questionnaire.

Case identification by General Practitioners

The earliest psychiatric survey by a General Practitioner was by John Bremner (19) who reported on an isolated community of 1000 persons in northern Norway, throughout the last war. Bremner estimated that no fewer than 25% of the population were "psychic exceptionals" - an opinion that he expressed only after he had carried out what was in effect a psychiatric interview in order to establish the subject as a case.

Shepherd and his associates (20) survey of psychiatric morbidity in 46 London general practices found that individual doctors varied in their estimates of psychiatric morbidity from as few as 37.8 to as many as 323 per 1000 patients at risk.

It is clear that although general practice is a rich potential source of information about neurotic illness in the community, there is a pressing need for a research instrument to assess psychiatric morbidity irrespective of the differing standards of observers.

The wide differences in prevalence rates reported in the various community surveys are due in large part to differences in the method used for case identification. The ultimate method of case identification must remain interview by an experienced psychiatrist, and the introduction of various rating and scoring procedures can greatly increase the reliability of this procedure. Since it is usually impracticable for a psychiatrist to interview each member of a population, a standardized screening instrument of known reliability and validity is clearly desirable.

The advantages of using self-administered questionnaires to identify cases are fairly self-evident. Large numbers of subjects can be approached, the method is relatively cheap and is not as time-consuming as most interview methods. There are no problems of varying standards between different interviewers, and most of the questionnaires are objective in that the person scoring them does not have to make subjective judgements.

The Cornell Medical Inventory was originally designed to screen recruits in the Second World War and was intended to save doctor's time and to increase the accuracy of clinical diagnosis. It is easy to administer, and unskilled interpreters may make psychiatric assessments on the basis

of the C.M.I. scores, which are as good as those of skilled interpreters. The C.M.I. has been used as a method of psychiatric case identification in many situations and countries. Rawnsley (21) used his own modification of the C.M.I. to compare the assessments made by the C.M.I. with his own independent assessment of 76 members of a random sample of a rural population in the Vale of Glamorgan. His modification consisted of using only 100 of the original items, and having each question typed out on a separate card. The patient then had to sort out the cards into two piles - "yes" and "no". This test was administered by research workers and at psychiatric assessment a few days later, the patient was classified as healthy, physically ill, or as a psychiatric case on the basis of an unstructured interview.

Saslow's (22) New Psychiatric Screening Test deals with possible symptoms formation when two emotions - anger and anxiety - are suppressed by the respondent. The test is in two almost identical sections. It is interesting that a test that does not ask the patient at all about his present symptoms should be so good at detecting disturbances in the current mental state. As the test is worded, a given patient should have the same score irrespective of whether he completes it during the period of sickness or health.

The scale compiled by Zung (23) consists of 20 self-descriptive statements to which the respondent is expected to respond on a four point frequency scale. The items were derived from a consideration of three factor analyses of complaints made by depressed patients. When the items are examined it can be seen that the scale is likely to detect other psychiatric illness beside depression.

The Personal Distress Scale (3) is derived from the items of the Symptom - Sign Inventory (S.S.I.) that were found useful in discrimination between

healthy respondents and normal people.

A 48 item self-rating score has been devised by Crown and Crisp (24) for diagnostic, therapeutic, prognostic and research purposes. This scale, known as the Middlesex Hospital Questionnaire, was not designed as a method of case identification, and it seems unlikely that it would be ideal for this purpose. Traits are not distinguished from symptoms, and there is little attempt to measure the severity of the present disturbance. If it is to be used for case identification in a community setting it would need to undergo reliability and validity studies, and these have not so far been reported.

Lanyon's (25) Psychological Screening Inventory consists of 130 statements concerned with personality. The test is intended as a brief screening device for use in mental health settings. The test does not measure current mental state but seems rather to be a short, multiphase personality inventory. The nearest that the test comes to screening as opposed to personality diagnosis is with the psychotism scale, where it is said that a high score indicates that the respondent's problems "warrant formal psychological or psychiatric" examination.

It has been shown that no scale at present is really satisfactory for the purposes of case identification, and that most of them do not distinguish between personality traits and symptoms.

The General Health Questionnaire (4) attempts to overcome the problems of other self-administered scales. The test items stress the "here and now" situation, and pay no attention to how the individual has felt or behaved in the past. The Questionnaire aims to provide normative data about the symptoms and signs that define non-psychotic psychiatric illness in an English population. The G.H.Q., which was to be used for the second part

of this study, is the 60 item version devised by Goldberg (4) which has undergone extensive validation studies in this country and U.S.A. The outcome of these studies suggest that respondents with high scores indicate that there is a high probability that there is something wrong with the patient, but it does not tell the physician the diagnosis. As Goldberg states, "It could assist general practitioners and physicians in the identification of patients with minor psychiatric illness, and for epidemiologists and social psychiatrists it could have applications in research". He goes on to suggest that the Questionnaire can be used to test the changes in psychiatric disturbance with time, and to assess the point prevalence of minor psychiatric illness.

The General Health Questionnaire was to have been used to establish the prevalence of non-psychotic psychiatrically ill persons residing on Llanedeyrn Estate in Cardiff. The prevalence study was conceived as a basis from which services for this category of patients could be developed. In addition, the study would have the objectives of:

- (a) evaluating the General Health Questionnaire in a general practice population study;
- (b) determining the prevalence of emotional disturbance in a sample of the adult population registered with Llanedeyrn Health Centre;
- (c) exploring the use made by patients of the available services in the community;
- (d) establishing the therapeutic objectives of these services as they relate to individual patients;
- (e) assessing the outcome of the intervention of these services on each patient by the re-administration of the General Health Questionnaire.

It was intended that a postal circulation of the General Health Questionnaire to a 1 in 7 randomly chosen sample would take place. The sample would be derived from the adult population (ages 16-65) who were registered with the Llanedeyrn Health Centre. The fact that each member of the sample would be registered would mean that additional information such as age, sex, address and socio-economic groupings could be obtained from the sample. The prevalence rate would be compared with the incidence rate, and a measure of shortfall would be highlighted. This measure of shortfall would form a basis for developing appropriate services. The evaluation of the services themselves is not under discussion here, although this would form part of the study as described earlier. The evaluation would arise from the comparison of two groups of patients with high scores on the General Health Questionnaire and two groups of patients with low scores. One group of each of the high and low scores would be traced in order to ascertain the amount and level of the intervention of support services. After a fixed time of six months, each group would be tested with the G.H.Q. to determine differences. Any differences would then be analysed.

The failure of this part of the study raises certain implications for planning.

The failure to proceed with this part of the study was mainly due to organisational aspects. The sample was easily obtained by taking every seventh person registered, and recording all the relevant facts about that person. The problems began with the belief, on the part of the General Practitioners, that the General Health Questionnaire is not sensitive enough to highlight those persons who needed to be highlighted. Furthermore the issuing of a questionnaire was deemed to be an invasion of privacy, which could cause a raise in expectation on the part of the patients. A further point of objection was that identification of need

would help create a demand for services which could not be satisfied. In the context of decision making about the future, these points seem fundamental to the whole approach of planning services.

The implications of the failure are these:

- (a) information showing the level of shortfall in the provision of services is unobtainable without a special study;
- (b) to mount a special study general practitioners must be closely involved, and their complete commitment assured;
- (c) general practitioners are rarely involved in planning and their suspicion of the planning process, in this study, was clear, despite close collaboration over a period of more than two years.

Although it is true that any results of this particular part of the study could not be easily applied to other populations, the study was an attempt at identifying the problems of obtaining information in a general practice setting. Llanedeyrn Health Centre, with its form of registration, appeared to provide an ideal situation in which to study these problems. In the event the problems were more organisational than research problems, and, as such, were a greater disappointment.

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CHAPTER 4

Emotional Disturbance and the Use of the Available Services in the Community.

In the last chapter we have seen that a few studies have been conducted to determine the prevalence of emotional disorder in the general population. They have produced estimates which vary with the populations studied and the method used to identify cases. Hare and Shaw(1) found, for example, that 20% of all adults on a new housing estate showed some degree of "Nervous disorder".

There are various agencies available in the community which offer help to people who are troubled by emotional problems, and a working party in

Cardiff (2 and 3) found that these could be grouped into four main categories:-

- 1) the medical services,
- 2) the social service departments,
- 3) the voluntary organisations,
- 4) the law enforcement agencies.

The number of disturbed individuals who seek help from these sources is not known, although it is believed that only approximately 20% seek medical advice. There is also little information concerning the efficiency of the help provided to individuals who do make contact with the caring professions.

It was proposed to identify a group of individuals with evidence of emotional disturbance among the adults registered with the General Practice Unit, and to follow their patterns of contact with the available agencies, their management and eventual outcome. It is planned to select these patients by using the General Health Questionnaire (GHQ) which was devised by Goldberg (4) as a screening instrument for the detection of emotional disturbance. It has been tested with inpatient, outpatient and general practice populations, and found to be of good reliability and validity when compared with a full specialist psychiatric assessment. The GHQ has not previously been used in a general population study.

The first part of the study was concerned with the identification of the incidence of emotional disturbance in the population served by Llanedeyrn Health Centre. It will be seen from the following description of this study that no diagnostic instrument has been used, and that consequently the reliability of diagnosis between clinicians cannot be guaranteed. However, the normal measure of morbidity within populations is obtained through General Practitioner diagnosis, and the first part of this study depends exclusively on G.P. diagnosis.

Llanedeyrn Health Centre was chosen as the base from which the study could be undertaken because of the following factors:-

- (a) The Health Centre serves a defined population.
- (b) The Health Centre and constituent practices developed simultaneously with the development of Llanedeyrn Estate.
- (c) The Health Centre is a Department within the Welsh National School of Medicine, and therefore has research and teaching functions in addition to service functions.
- (d) The Social Services Department has defined the Llanedeyrn Estate as coterminous with the Social Services Area.
- (e) There is a mixture of age, sex and socio-economic groupings within the population which would make the survey results of particular interest.

Defined Population

Table 2 indicates the location and Table 3 is a map of Llanedeyrn Estate. The estate is located on the northern outskirts of Cardiff, approximately half a mile from the University of Wales and four miles from the City Centre. The population of the estate in 1972 was approximately 12,000 persons of whom approximately 55% live in 2,000 local authority housing, the rest (1,500) being privately owned.

The estate is clearly defined. It was designed with the intention of reducing the circulation of cars, and the intention of increasing freedom of pedestrian movement. Thus the estate is linked by footpaths to all parts. It is divided into four principal zones for shopping, with one major central shopping complex, within which is located the Health Centre. Further sub-divisions of the estate are denoted by address units, which themselves facilitate the registration of patients at the Health Centre. The addresses are:

Chapel Wood
Pennsylvania
Wellwood
Coed - y - Gores
Spring Wood
Round Wood
Llanedeyrn Road
Wern Goch
Glan - y - Nant
Bryn - y - Nant
Bryn Fedw
Ael - y - Bryn
Coed Edeyrn
Wellwood 2

The number of housing units built by the local authority is described in Table 4, together with a description of the reasons for selecting tenants adopted by the local authority but revised to exclude the financial limitations in March 1972.

The Health Centre developed as the Estate developed

From the earliest building of Llanedeyrn Estate, there was a General Practitioner providing medical care. The Surgery for the Practitioner originated in one of the earliest houses on the estate. In early 1970 the Health Centre was completed and the two "founder" General Practitioners moved into these new premises. Tables 5 and 6 shows the development of Services from 1968 until August 1972. Table 6 shows the way the distribution of patients to General Practitioner has fluctuated when a new Practitioner joins the Centre.

By August, 1972, there were six practitioners working from the Health Centre, three were full time, and three part time. The part time practitioners shared their time with other practices outside Llanedeyryn Estate.

The Health Centre does not constitute the only source of care for the population. This is clearly demonstrated by the fact that on 1st August, 1972, there were 5,639 persons registered with the Health Centre, and on that date, there were approximately 12,000 people living on the estate.

In 1972, there was one other single-handed General Practice, which has since closed. It can only be assumed therefore that 50% of the population of Llanedeyrn Estate are either registered with the one remaining General Practitioner (now no longer practising) or are not registered at all with practitioners within the estate. Table 7 indicates the rate at which the practice has grown. All figures, except where indicated, have been checked against residence thereby omitting those who have died or moved from the estate. There are no figures available indicating the general growth of the population of the estate.

The Centre is a Department of the Welsh National School of Medicine

The Health Centre is also part of the Department of Social and Occupational Medicine in the Welsh National School of Medicine, with the practitioners being salaried employees of the University. Because of this, the development of the computer based general practice records has taken place.

The background to this project focused attention on the National Health Insurance System which commenced in 1912. Since that time, medical record cards have existed almost unchanged. Whilst this may be convenient for a single-handed general practitioner, the development of Health Centres meant

the greater chance of a patient being seen by a doctor which was not "his own". Equally, the introduction of para-medical supporting staff, such as Social Workers and Health Visitors, means that information about patients should be more comprehensive than was possible with the National Health Insurance System.

With attached local authority staff to the Health Centre, the work of the Centre becomes increasingly more concerned with prevention. Thus the medical record would need to include information concerning immunization, ante-natal examinations, child development, results of screening tests.

An ideal records system for an integrated community health service would -

- (a) provide all the information, from whatever source, which might be valuable in caring for the patient,
- (b) maintain the confidentiality of information given by the patient to the individual members of the team,
- (c) operate as a source of morbidity and other data on the population served by the practice and, in this, be compatible with data from other sources in the area,
- (d) be so designed that it is possible to link the community record of a patient with medical records from other sources, such as hospitals, vital registrations, etc,
- (e) serve as a source for studies of the operation of the service, demands made on it, how these are met and the variations in time and place,
- (f) enable assessment to be made of the effectiveness of the medical service,
- (g) be so designed as to encourage the majority of doctors and other staff to maintain it in a proper manner.

To help achieve the ideal, the computer based system at Llanedeyrn has the objectives:-

- (a) to combine in a single record the data collected by the doctor the health visitor and the district nurse, in such a manner as to be available to each when they are seeing a patient,
- (b) to experiment with the use of the type of folder recommended by the Tunbridge Committee in 1965 together with standard size stationery and forms,
- (c) to design a format that would provide a continuing medical record of an individual which would be of use for research,
- (d) to experiment with methods of data collection and recording so that selected information may be stored in a computer file for subsequent analysis and retrieval.

From this description of the Medical Record System at Llanedeyrn, it can be concluded that a major interest of the staff at the Centre was to experiment in the use of information for the purpose of improving care to patients.

The Social Services Department has defined Llanedeyrn Estate as part of Area covered by an Area Team.

The service provided by Glamorgan Social Services Department to Llanedeyrn Estate has been hampered by the lack of staff. With the reorganisation of the Social Services in 1972, the division of Glamorgan into areas for Social Service purposes has created problems of its own. However, despite this, it has been possible to obtain figures relating to Social Service provision which will be referred to later.

There is a mix of age, sex and socio-economic groupings within the population
Table 8 shows the structure of the population in the Estate which has actually been seen by a doctor in the practice from the day the practice started until

June 1972, corrected for mobility and death. In practice, most patients had been seen in 1972, although it should be remembered that a proportion will have been seen only once, and this could have been when the practice opened. This number would be very small, and would not materially affect the overall structure of the practice population.

Table 8 shows the high proportion of children (up to age 15) which form the practice population, with a higher proportion of male compared to female children. The general population of Cardiff has 23.98%. In both the Llanedeyrn and Cardiff population there is a higher proportion of male over female children. This proportion between sexes is reversed for the adult population of between ages 15 and 69. Llanedeyrn has 24.40% males compared to 30.41% females, whereas the Cardiff population has 32.97% males and 34.66% females. The Cardiff adult population forms 67.63% of the total, whereas Llanedeyrn forms only 54.81% of the total practice population.

The elderly population (age 70+ years) of Llanedeyrn favours the females with 0.76% being male and 1.13% being female. A similar pattern emerges in the Cardiff population with 2.90% being male and 5.47% being female.

The male : female relationship between Llanedeyrn and Cardiff is similar, but Llanedeyrn is heavily biased towards children (43.28% of the practice population compared with 23.98% of the Cardiff population).

It can be concluded, therefore, that the structure of the practice population is biased towards children, and would thus not form a representative population for Cardiff Borough.

Table 10 illustrates the Socio-economic distribution of the Llanedeyrn practice population. This is compared in Table 11 with the distribution

for South East Wales. The main differences occur in groups 2,6,7, 11 and 17. Group 17 results are probably due to the various ways of recording the indefinite category. The mix of the practice population appears to be generally representative of the South East Wales population and therefore the results of the Survey, in terms of socio-economic grouping, could be generalised to a greater population over the age of 15 years.

Recording Incidence of Non-Psychotic Mental Illness

Since the medical record used and developed within the Llanedeyrn Health Centre has a computer base, it has been possible to record the incidence of non-psychotic mental illness and to give some idea of the time after registration when the first episode of the illness occurred. The purpose of this within the present framework is to attempt a comparison between known incidence per thousand of the population with a point prevalence rate to be determined through application of the General Health Questionnaire. The difference, if any, would have implications regarding planning of services.

As a first stage, Table 12 shows the number of persons registered with the Health Centre who were receiving care from the local authority social services department on 6th December, 1972, broken down by sex and location. Because of the unspecific manner in which the Social Services Department maintains its records, it is not known how many of these persons are in contact for statutory reasons or for social support of the nature precipitated by non-psychotic mental illness. More recent contact with South Glamorgan Social Services Department showed that only one person was in contact for social reasons about whom the Health Centre knew nothing (5.2.74). Thus it would be fair to conclude that the Health Centre is likely to care for most, if not all, persons registered with them who suffer from some form of non-psychotic mental illness, even though the illness may

be predominantly socially based.

The incidence rate for the practice population is determined by the first episode of a patient making contact with the centre which was recorded and coded according to the Royal College of General Practitioners Classification of Morbidity based on the International Classification of Diseases (8th revision).

The accuracy of diagnosis and recording has been discussed elsewhere. At Llanedeyrn it is widely acknowledged that accuracy in diagnosis and recording is not assumed, due to the fact that neurosis may be presented as some physical illness such as headache. Consequently headache is more likely to be recorded.

Despite this, resources are invoked in the diagnosis, and the prescription of an aspirin for the headache might be the only resource invoked for someone who may be clearly neurotic for social or environmental reasons.

Table 13 illustrates the total number of persons registered with the Centre who have been diagnosed under separate catalogues by age and by the length of time between registering with the Centre and the first episode. It was not possible to establish the incidence rate in any one year due to programming of the computer, which would only produce episodes for each year without indicating when the first episode took place.

Table 14 shows the relationship between the incidence rate of those persons registered with Llanedeyrn Health Centre and the National rate. In all categories the rate for Llanedeyrn is lower except for frigidity and unspecified neurosis. The rate for mental handicap (mental retardation) is considerably lower than for the general population, perhaps indicating the method of selecting persons applying to reside on the estate. The same can be said for depressed neurosis, and physical disorders of

presumably psychogenic origins.

These differences may be the result of alternative methods of recording and diagnosis, but as both the National and Llanedeyrn figures are based on G.P. diagnosis, these differences reflect the variation which probably occurs throughout general practice.

The average percentage number of patients who present themselves to the practice per annum is 5.02% of the total practice population for these categories of illness. As the categories include psychotic as well as non-psychotic illness, this is lower than many of the studies shown in Chapter 3. Table 14 shows a heavy bias towards non-psychotic illnesses, and they constitute 4.9% of all psychiatric illness presented.

Table 15 indicates the sex of patients diagnosed under the categories described. The higher proportion of women suffering from most categories is consistent with national figures.

Table 16 indicates the age with a higher proportion of illness occurring between ages 20 and 55, which again follows the general pattern of national figures (Table 17).

Table 17 shows the relationship between the incidence and socio-economic groupings. As there is a larger proportion of the middle grouping in the population, it is not surprising that the middle grouping provides a higher ratio of illness. Table 18, however, shows the relationship of the incidence within the Llanedeyrn population within socio-economic groupings. Socio-economic groups 6, 8 and 12 show that a high proportion of the practice population in those groupings suffer from some form of mental illness, whereas the lowest levels are to be found in groups 1, 2, 11 and 13. Group 17, which is the undefined group, has the lowest of all. A high amount of the non-psychotic disorders are found in socio-economic groups 5, 8 and 12. Table 19 gives a breakdown of the Registrar General's

Classification which is applicable here.

General Discussion

The generally low level of psychiatric morbidity (5.02%) is, perhaps reflected in the number of persons making contact with the Social Services Department (69 or 1.42%) - Table 12. This difference does indicate that a higher proportion of persons with psychiatric problems do make contact with the General Practitioner, and that services based on general practice are indicated. This is based on the assumption that Social Services are capable of providing some form of care to the psychiatrically ill.

4.9% of all psychiatric illness presented to the health centre is non-psychotic. A comparison follows between the Llanedeyran incidence result and those prevalence results quoted in Chapter 3.

	PSYCHOSIS		NEUROSIS		PSYCHIATRIC ILLNESS Llanedeyrn including Mental Handicap	
	Llane deyrn		Llane deyrn			
Essen Möller L = 2500	1.7%	0.12%	5.17%	4.9%		
Lin					1.2%	5.02%
Eaton & Weil L = 2000					1.67%	5.02%
Branch & Shaw L = 200					33.3%	5.02%
Pasamanick et al					9.34%	5.02%
Roth and Luton					4.67%	5.02%
Family Life Survey L = 1000					5.77%	5.02%
Bristol Health Survey L = 140					6.9%	5.02%
Bremmer L = 1000					25%	5.02%
Shepherd et al					a) 3.78% b) 32.3%	5.02%

This comparison shows the enormous variation which had been obtained due largely to the alternative methods of identification and lack of standardised diagnosis.

The implications of these studies support the view expressed earlier in this thesis that current forms of information collation are not helpful in the planning of services. Each of these studies can, no doubt, be questioned as to their method, but each has been an attempt at quantifying the same problem. The studies also show that there is not a uniform level of incidence or prevalence, and that each population and community has variable levels of illness. This supports the view that prevalence studies should be conducted for each population having plans developed for it. As described earlier, the feasibility of this happening can be reduced according to the opinion of the general practitioners concerned.

The development of health service plans depends upon the clinical practice being adopted. At Llanedeyrn the large proportion of neurotic illness within the total incidence of psychiatric illness suggests a greater amount of social service involvement. This, quite clearly, depends on whether general practitioners are willing to devote a large amount of their time on this form of illness.



Llanedeyrn Estate

- 50
 - 75
 - 100
 - 125
 - 150
 - 175
 - 200
 - 225
 - 250
 - 275
 - 300
 - 325
 - 350
 - 375
 - 400
 - 425
 - 450
 - 475
 - 500
 - 525
 - 550
 - 575
 - 600
 - 625
 - 650
 - 675
 - 700
 - 725
 - 750
 - 775
 - 800
 - 825
 - 850
 - 875
 - 900
 - 925
 - 950
 - 975
 - 1000
- corner shop
 - filling station
 - bus route & bus stops
 - pedestrian way & underpass
 - woodland
 - playing field
 - primary school
 - secondary school
 - childrens play spaces
 - childrens adventure play space
 - open space

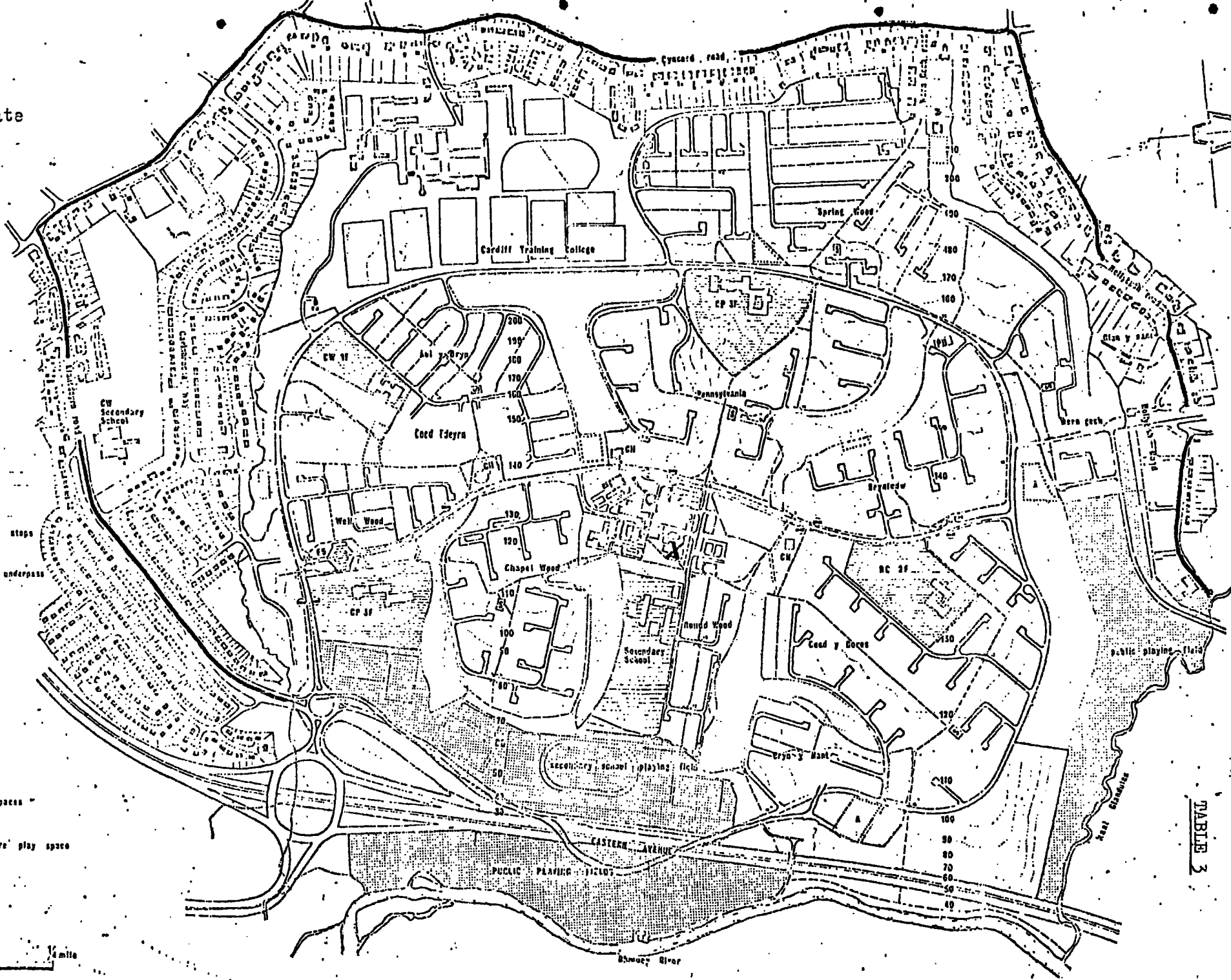


TABLE 3

LLANEDEYRN HEALTH CENTRE

Selection for houses

Selection is based on:-

- a) An annual income of 5 times the net annual rent, i.e. £16 per week.
- b) previous ability to maintain a home at the standards acceptable to the Council.
- c) living within Cardiff City Prior to moving to Llanedeyrn.

Inhibitors to selection:

- a) a continual criminal record
- b) illness, subject to MOH's advice
- c) Rent arrears
- d) Maintaining an untidy home.

Housing

	<u>Shop</u>	<u>1 bedr'm</u>	<u>2 bedr'm</u>	<u>3 bedr'm</u>	<u>4 bedr'm</u>	<u>Total</u>
Chapel Wood	1	48	24	250	36	359
Pennsylvania		119	37	468	57	681
Coed-y-Gores	1	49	98	419	74	641
Round Wood				122	10	132
Wern Gorch	1		45	56	26	128
Shopping Centre		45				
	<u>3</u>	<u>261</u>	<u>204</u>	<u>1315</u>	<u>203</u>	<u>1986</u>

LLANEDYRN HEALTH CENTRENOVEMBER 21ST, 1972PROPORTIONAL PATIENT DISTRIBUTION PER DOCTOR *

	<u>Full time</u>	<u>Part time</u>
1st January, 1970	671	
24th March, 1970	938	
30th June, 1970	1,169	
22nd September, 1970	1,002	501
19th December, 1970	1,364	684
30th January, 1971	1,462	731
27th March, 1971	1,618	809
26th June, 1971	1,842	921
25th September, 1971	1,984	992
18th December, 1971	2,126	1,053
1st January, 1972	2,140	1,070
29th January, 1972 +	1,572	786
25th March, 1972	1,608 **	804 **
1st August, 1972	1,612	806

* These figures exclude the contribution of trainees, who work full time

** These figures have doubtful accuracy

+ Addition of two part time practitioners

MEDICAL STAFFING

	<u>Date of arrival</u>	
Dr. Robert Harvard Davis	1968	Full time
Dr. Erian Wallace	1st March, 1969.	Full time
Dr. D. Millward	1st July, 1970	Part time
Dr. R.H.G. Lloyd	1st February, 1972	Part time
Dr. A.S. Parsons	1st February, 1972	Part time
Dr. N.C.H. Stott	1st October, 1972	Full time

Trainees

	<u>Date of arrival</u>	<u>Date of departure</u>	
Dr. T. Davies	August, 1969	August, 1970	Full time
Dr. Wincoli	February, 1970	February, 1971	Full time
Dr. Elliot	February, 1971	February, 1972	Full time
Dr. Bayson	February, 1972		Full time
Dr. McCarthy	August, 1972		Full time

Part time: Medical staff work one half day each working day, and take their turn for evening and night duty, as well as weekend duty.

21st November, 1972.

LLANDEYRN HEALTH CENTRE.Table 7

1st January 1970	1342
24th March 1970	1876
30th June 1970	2339
22nd September 1970	2505
19th December 1970	3422

30th January 1971	3656
27th March 1971	4045
26th June 1971	4608
25th September 1971	4963
18th December 1971	5315

1st January 1972	5351
25th March 1972	5627*
1st August 1972	5639

* doubtful accuracy

LLANEDOYRN ESTATE

TABLE E

Structure of population seen by a doctor at Llanedoyrn Health Centre June 1972.

AGE		CE	CF	PE	WW	CO	SP	RO	LL	WG	OT	BF	BY	AB	TOTAL
0 - 4	M		87	115	30	199	3	10	5	6	5	100	35	13	608
	F		104	119	19	176	-	10	4	7	4	104	24	11	592
5 - 9	M		100	61	15	67	2	3	6	2	2	33	8	0	307
	F		92	67	10	61	-	2	4	-	3	25	8	0	280
10 - 14	M		51	35	9	36	-	1	2	2	1	16	5	4	168
	F		50	30	10	33	-	-	4	2	1	14	3	6	153
15 - 19	M		34	19	7	13	-	3	2	1	-	10	3	1	93
	F		34	25	3	26	-	2	1	4	1	18	7	2	123
20 - 24	M		32	41	-	74	2	1	-	4	4	44	12	5	219
	F		62	64	4	129	-	7	4	4	7	75	21	7	384
25 - 29	M		60	67	19	88	1	4	7	4	7	40	5	11	313
	F		73	74	26	91	1	3	10	5	5	44	15	16	363
30 - 34	M		31	38	9	43	-	1	5	3	3	17	5	8	163
	F		45	38	13	37	-	-	5	1	2	21	5	8	175
35 - 39	M		38	23	6	28	1	2	1	1	-	12	4	6	122
	F		40	23	5	26	2	2	1	-	2	8	5	5	119
40 - 44	M		29	21	4	19	-	2	1	-	2	9	1	1	89
	F		28	26	5	11	1	3	1	2	1	5	2	2	87
45 - 49	M	2	37	14	3	10	-	-	-	1	-	2	1	-	70
	F	1	38	16	5	14	-	-	-	1	1	6	1	-	83
50 - 54	M		12	15	3	11	1	-	-	-	1	3	-	-	46
	F		9	10	-	10	-	-	1	1	1	4	-	1	37
55 - 59	M		19	5	1	6	-	-	-	-	-	1	1	1	34
	F		13	7	-	6	-	-	-	-	-	2	1	-	29
60 - 64	M		11	4	-	4	-	-	-	-	-	3	2	-	24
	F		9	6	1	8	-	-	-	-	-	3	1	-	28
65 - 69	M		4	4	-	1	-	-	-	-	-	1	-	-	10
	F		10	19	-	10	-	-	-	1	-	6	-	-	46
70 - 74	M		3	5	-	5	-	-	-	-	1	3	-	-	17
	F		7	9	1	8	-	-	-	-	-	8	-	-	33
75 - 79	M		6	3	-	2	-	-	-	-	-	-	-	-	11
	F		6	7	1	4	-	-	-	-	-	1	-	-	19
80 and over	M		3	1	-	2	1	1	-	-	-	1	1	-	9
	F		6	4	-	1	-	-	-	-	1	1	-	-	3
TOTAL	M	2	563	471	106	608	10	28	29	24	26	295	83	58	2303
	F	1	626	544	103	651	4	29	35	28	29	347	93	66	2554
															4857

2098

2657

- CE - Coed-Ederyn
- CF - Chapel Wood
- PE - Pennsylvania
- WW - Wellwood
- CO - Coed-y-Gores
- SP - Spring Wood
- RO - Round Wood
- LL - Llanedoyrn Road area
- WG - Wern Goch
- OT - Others
- BF - Bryn Fedw
- BY - Bryn-y-Nant
- AB - Ael-y-Bryn

Table 8

92

COMPARISON BETWEEN CARDIFF AND LLANEDEYRN

	AGE	SEX		TOTAL	%
		MALE	FEMALE		
LLANEDEYRN	0-14	1083	1015	2098	43.28
CARDIFF	0-14	33935	33000	66935	23.98
LLANEDEYRN	15-70	1183	1474	2657	54.81
CARDIFF	15-70	92035	96760	188795	67.63
LLANEDEYRN	70+	37	55	92	1.89
CARDIFF	70+	8105	15285	23390	8.37

Census 1971

LLANDEYRN ESTATE

Population seen by a doctor at Llanedeyrn Health Centre June 1972

SOCIO - ECONOMIC GROUPS

AGE		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
15 - 19	M	2	1		3	4		12	5	21	20	1	1					16
	F	2	2		3	2	5	23	6	21	24	6	1				1	27
20 - 24	M	1	4		3	17	8	30	7	44	42	15	4			1	1	42
	F	2	5	1	7	33	13	58	10	101	75	11	6					58
25 - 29	M	5	4	1	6	15	4	40	8	84	62	5	3					56
	F	1	7	1	12	24	7	50	12	99	61	9	4				1	57
30 - 34	M	3	2	1	7	14		30	5	49	22	2	2					16
	F	4	1	1	4	17	2	24	8	44	31		2				1	24
35 - 39	M	2	1		1	11	2	12	12	31	25	2	1				2	15
	F	1	5		3	2	2	24	6	24	19	7	2	1			1	14
40 - 44	M	1	2		3	4		11	6	23	22	1	2	1				9
	F	1	1			5	1	16	7	12	16	2	2		1		1	17
45 - 49	M	6	2		1	2		8	7	12	17	1	1					10
	F	3	2		2	6	1	23	6	10	11	1	1	1			1	11
50 - 54	M	3				6	2	8	4	6	9	2						4
	F	4	2		1	3		8	2	4	6						1	5
55 - 59	M	1	1			3	1	6	3	6	7	1						4
	F	2				3		5	1	1	4	3	1				1	8
60 - 64	M	3				4		3		1	1							12
	F				1	4		5		2	2	2					1	11
65 - 69	M								1	1	1							6
	F					1		4			1						3	36
Over 70	M	2						1										24
	F	1	1					2		4							2	48

Table 10

COMPARISON OF SOCIO-ECONOMIC GROUPINGS

Over Age 15

	SOCIO-ECONOMIC GROUP																
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
LLANEDEYRN																	
MALE	29	18	2	25	81	17	161	75	282	228	32	15	1	-	1	4	214
FEMALE	30	25	3	29	99	31	249	58	320	250	38	19	2	-	-	13	316
TOTAL	59	43	5	53	180	48	410	133	602	478	70	34	3	-	1	17	530
%	2.2	1.6	0.2	2.0	6.8	1.8	15.4	5.0	23.0	18.0	2.6	1.3	0.1	-	0.03	0.6	20.0
SOUTH EAST WALES																	
MALE	18.54	29.41	4.04	17.32	25.84	65.70	3.90	26.89	207.42	131.55	63.48	20.71	3.33	10.63	6.39	3.99	16.16
FEMALE	2.88	8.17	0.15	1.55	29.62	96.62	36.23	1.91	13.67	38.54	23.98	9.23	0.51	1.90	1.10	1.91	5.59
TOTAL	21.42	37.58	4.19	18.87	55.46	162.32	40.13	28.70	220.09	170.09	87.46	29.94	3.84	12.53	7.49	5.90	11.75
%	2.3	4.1	0.5	2.0	6.0	17.5	4.3	3.1	23.7	18.3	9.4	3.2	0.4	1.4	0.8	0.6	1.3

Table 11

SOURCE: SAMPLE CENSUS 1966

Table 12

LLANEDYRN ESTATENUMBER OF PEOPLE IN CONTACT WITH SOCIAL SERVICES DEPARTMENT6th December 1972

ADDRESS	MALE	FEMALE	UNKNOWN	TOTAL
CHAPEL WOOD	3	6	4	13
COED Y GORRES	4	5	7	16
PENSYLVANIA	7	10	3	20
BRYN FEDW	2	5	4	11
WERN GOCH	2	3	1	6
BRYN Y NANT	2	1	-	3
TOTAL	20	30	19	69

LLANEDYRN HEALTH CENTRE

30TH SEPTEMBER, 1972

PATIENTS DIAGNOSED FOR THE FIRST TIME SINCE REGISTRATION

DIAGNOSIS	CODE	0-9 months				10-21 months					22-33 months					34-36 months	
		7-9	4-6	0-3	Total	19-21	16-18	13-15	10-12	Total	31-33	28-30	25-27	22-24	Total	34-36	Total
Anxiety Neurosis	130	38	45	110	193	25	37	42	45	149	10	9	20	21	60	10	10
Depressed Neurosis	134	28	32	71	131	21	27	42	28	118	7	8	9	4	28	6	6
Other special symptoms not elsewhere classified	150	28	29	28	105	12	17	22	19	70	4	5	9	12	30	1	1
Insomnia	146	8	11	22	41	1	7	7	8	23	2	2	2	3	9	-	-
Phobic Neurosis	132	4	6	8	18	1	2	4	1	8	1	-	2	1	4	-	-
Enuresis	148	4	-	7	11	3	-	1	3	7	1	2	3	-	6	3	3
Physical disorders of presumably psychological origin	135	1	2	6	9	3	1	1	-	5	-	-	3	3	6	-	-
Tension headache	147	1	1	4	6	1	1	3	1	6	1	1	1	1	4	2	2
Hysterical Neurosis	131	-	-	4	4	2	-	3	1	6	-	-	1	-	1	-	-
Frigidity	145	2	1	1	4	-	-	-	2	2	-	-	-	-	-	-	-
Other and intensified neurosis	137	-	1	3	4	-	-	3	-	3	1	1	3	1	6	-	-
Personality disorder and sexual deviation	138	-	2	2	4	-	2	1	1	4	-	-	1	1	2	-	-
Affective Psychosis	126	-	1	2	3	-	-	-	-	-	-	-	-	-	-	-	-
Mental Retardation	140	-	-	-	-	-	-	-	1	1	-	-	-	-	-	-	-
Alcoholism and Drug Addiction	139	-	-	1	1	-	-	-	-	-	-	-	-	-	-	-	-
Paranoid States	124	-	-	-	-	-	-	-	1	1	-	-	-	-	-	-	-
Senile Dementia and Pre-senile Dementia	127	-	-	-	-	-	-	1	-	1	-	-	1	-	1	-	-

Table 13

Incidence Rates Determined on Llanedeyrn Practice PopulationCompared with National Study Figures 1970-1971per 1000 (in brackets)All Ages

	<u>Llanedeyrn</u>	<u>% National</u>	<u>Average * (Llanedeyrn)</u>
1. Anxiety Neurosis	82.9	(38.1)	27.6
2. Depressed Neurosis	57.7	(36.2)	19.2
3. Other special symptoms not elsewhere classified.	38.3	(14.1)	12.7
4. Insomnia	16.5	(9.6)	5.5
5. Phobic Neurosis	7.0	(1.5)	0.5
6. Enuresis	5.5	(2.5)	1.8
7. Physical disorders of presumably Psychogenic origins	4.1	(19.7)	1.4
8. Tension Headache	7.8	(4.9)	2.6
9. Hysterical Neurosis	2.4	(1.9)	0.8
10. Frigidity	1.2	(0.3)	0.4
11. Other and unspecified Neurosis	2.6	(0.7)	0.9
12. Personality disorder and sexual deviation	2.0	(1.0)	0.6
13. Affective Psychosis	0.8	(4.6)	0.23
14. Mental Retardation	0.2	(0.4)	0.06
15. Alcoholism and Drug Addiction	0.2	(0.9)	0.06
16. Paranoid States	0.2	(0.5)	0.06
17. Senile Dementia	0.4	(1.0)	0.13

* Average obtained by dividing by 3 = % per annum

30th September, 1972

SEX OF PATIENTS DIAGNOSED FOR THE FIRST TIME SINCE REGISTRATION

TABLE 15

DIAGNOSIS	0-9 months		10-21 months		22-33 months		34-36 months	
	Male	Female	Male	Female	Male	Female	Male	Female
Anxiety Neurosis	56	137	29	120	14	46	4	6
Depressed Neurosis	15	116	13	105	2	26	1	5
Other special symptoms not elsewhere classified	36	49	27	43	7	23	-	1
Insomnia	17	24	16	7	6	3	-	-
Phobic Neurosis	7	11	3	5	1	3	-	-
Enuresis	5	6	3	4	2	4	1	2
Physical disorders of presumably psychogenic origin	3	6	1	4	1	5	-	-
Tension Headache	4	2	1	5	3	1	-	2
Hysterical Neurosis	-	4	-	6	-	1	-	-
Frigidity	-	4	-	2	-	-	-	-
Other and Unspecified Neurosis	1	3	2	1	3	3	-	-
Personality disorder and sexual deviation	3	1	4	-	1	1	-	-
Affective Psychosis	-	3	-	-	-	-	-	-
Mental Retardation	1	-	-	-	-	-	-	-
Alcoholism and Drug Addiction	-	1	-	-	-	-	-	-
Paranoid States	-	-	-	1	-	-	-	-
Senile Dementia and pre-Senile Dementia	-	-	-	1	1	-	-	-

Male Genetic Groups	Mental Retardation:				Alcoholism and Drug Addiction				Paranoid States				Senile Dementia & Pre-senile Dementia			
	0-9ths	10-21ths	22-33ths	34-36ths	0-9ths	10-21ths	22-33ths	34-36ths	0-9ths	10-21ths	22-33ths	34-36ths	0-9ths	10-21ths	22-33ths	34-36ths
1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
7	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-
8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
9	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
10	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
11	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
12	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
13	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
14	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
15	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
16	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
17	-	-	-	-	-	-	-	-	-	1	-	-	-	1	-	-

Relationship between Socio-Economic Grouping and

Incidence Percentages within each Socio-Economic Grouping.

Table 18

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
Anxiety Neurosis	12.2	9.3	-	31.4	26.1	37.5	18.9	29.3	16.9	13.8	11.4	37.5	33.0	-	-	16.6	5.2
Depressed Neurosis	4.0	9.3	-	11.0	10.0	35.4	12.4	25.8	12.2	10.4	8.5	18.7	-	-	-	11.1	2.2
Other Special Symptoms	16.3	16.2	-	-	8.3	2.0	9.2	9.4	6.6	7.9	8.5	21.8	-	-	-	-	2.6
Insomnia	2.0	2.3	-	3.7	1.1	-	4.2	0.8	4.1	2.7	5.7	6.2	-	-	-	5.5	0.7
Phobic Neurosis	-	-	-	1.8	-	-	2.4	-	1.8	1.2	1.4	3.1	-	-	-	-	-
Eneuresis	-	2.3	-	-	1.6	-	1.4	0.8	1.1	1.4	-	3.1	-	-	-	-	0.1
Physical disorders	-	2.3	-	1.8	2.2	-	0.9	0.8	0.6	0.4	1.4	-	-	-	-	-	0.1
Tension Headache	4.1	-	-	-	0.5	2.0	0.2	2.5	0.4	1.0	-	-	-	-	-	-	0.3
Hysterical Neurosis	-	-	-	1.8	0.5	-	0.7	-	0.1	0.6	-	-	-	-	-	5.5	0.1
Frigidity	-	-	-	-	-	-	-	0.8	0.6	0.2	-	-	-	-	-	-	-
Other Neurosis	-	-	-	-	-	-	0.7	-	0.4	1.2	-	-	-	-	-	-	0.1
Personality Disorders	-	-	-	-	-	-	0.2	-	0.6	0.4	1.4	-	-	-	-	-	0.3
Affective Psychosis	-	-	-	-	-	-	0.2	-	-	0.2	2.8	-	-	-	-	-	-
Mental Retardation	-	-	-	-	-	-	-	-	0.1	-	-	-	-	-	-	-	-
Alcoholic	-	-	-	-	-	-	0.2	-	-	-	-	-	-	-	-	-	-
Paranoid States	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.1
Senile Dementia	-	-	-	-	-	-	-	-	0.1	-	-	-	-	-	-	-	0.1
Totals	38.7	41.8	-	51.8	50.0	77.0	52.3	70.6	46.5	41.8	41.4	90.6	33.0	-	-	38.8	12.8

SOCIO-ECONOMIC GROUPING

- 01 Employers and Managers in Central and Local Government, Industry, Commerce etc., large establishments.
- 02 Employers and managers in industry, commerce etc., small establishments
- 03 Professional workers - self employed
- 04 Professional workers - employees
- 05 Intermediate non-manual workers
- 06 Junior non-manual workers
- 07 Personal Service Workers
- 08 Foremen and supervisors - manual
- 09 Skilled manual workers
- 10 Semi-skilled manual workers
- 11 Unskilled manual workers
- 12 Own account workers (other than professional)
- 13 Farmers - employers and managers
- 14 Farmers - own account
- 15 Agricultural Workers
- 16 Members of the armed forces
- 17 Occupation inadequately described.

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CONCLUSIONS

This thesis has been concerned with the use of information in one aspect of the management function of health services planning.

Planning is decision making about the future and relies heavily on the use of information. Any decision, however, includes the feasibility of implementation, and the judgement of those taking the decision.

In the early part of the thesis the planning process was described, and certain key roles of planners were identified. A fairly long history of planning for communities has been discussed, particularly in relation to the development of information reflecting the nature and activity of the population. This information has been principally derived from the census, and a description of the changing questions over time has been made. Other forms of information, particularly relating to epidemiological studies, have been discussed, and the general conclusion has been that information derived from established systems has not been adequate in the planning of services.

Another major difficulty has been in trying to quantify the poorly identified illnesses. Suggestion has been made that psychiatric illness is one which varies according to who makes the diagnosis. Accordingly, it is an illness which is difficult to quantify.

Psychiatric illness is one which is a major resource user, and involves the therapeutic skill of a wide range of disciplines. As such, there is a clear need to quantify the morbidity of psychiatric illness, as it affects a variety of plans within a variety of agencies. One of the problems in the diagnosis of psychiatric illness is that some forms of neurosis can be presented as a physical illness, thus causing general practitioners to record the physical rather than the psychological illness.

In an attempt at quantifying psychiatric illness for a defined population, a study was proposed in which the incidence of the illnesses would be compared with the prevalence. The prevalence would be determined through the administration of the General Health Questionnaire, which is a valid indication of non-psychotic psychiatric illness. The difference between the incidence and prevalence would indicate the potential level of shortfall in the provision of services for this category of patient.

It was further proposed that some form of evaluation of services should take place. This was to have been conducted through the identification of the high and low scores on the General Health Questionnaire, and by dividing the high and low scores into two groups. Each of one of the high and low score groups would be observed, and measures of therapeutic input to these groups would be made. The remaining two groups would act as controls. The general practitioners were to be requested to determine their therapeutic objectives for each patient within the high and low score groups chosen for this aspect of the study. Observations would be made to see whether the therapeutic objectives were being achieved. At the end of six months all the groups would have been tested with the General Health Questionnaire to determine any difference in morbidity.

Unfortunately this aspect of the study could not be proceeded with due to the wishes of the general practitioners concerned. The decision to proceed or not took over a year to be reached, and finally the decision rested with the research committee at Llanedeyrn Health Centre, who felt that the intrusion into people's lives would cause problems for future research.

The implication for planning is that special studies to determine prevalence will be extremely difficult to conduct from a general practice setting. This means that for the difficult to quantify illnesses figures for prevalence will not be readily available and plans will be based on incidence rates.

A measure of incidence has been made on Llanedeyrn Estate using the records of the general practitioners at the Health Centre. Because of the way records are maintained, it has been possible to indicate the age, sex, and socio-economic grouping of those suffering from psychiatric illness.

The first conclusion is that the Llanedeyrn Estate does not relate in structure to Cardiff. There is a heavy bias on the Estate towards children, which is not reflected in the general population. The incidence study excludes children and concentrates on the ages 16-65 years.

The main finding was that just over 5% of those persons registered with the Health Centre have some form of psychiatric illness recorded. This figure is taken from an average of three years, and may, because of this, indicate a lower incidence than might be the case. Most people make contact with the Health Centre within 21 months of registering (342 out of 412 for anxiety neurosis contacted the Health Centre within 21 months - Table 13).

Compared with national morbidity figures, the morbidity on Llanedeyrn Estate is generally lower (Table 14) which may reflect the way people are selected for residence. Of those who do make contact with the Centre, the proportion of women who are diagnosed as psychiatrically disturbed is 2 times that of men over the three year period.

An interesting conclusion from the incidence study is the high number of socio-economic group 12 who suffer from some form of psychiatric illness, the self-employed, and the form of illness is exclusively neurosis of one form or another.

The comparison which was made with prevalence and incidence studies quoted earlier in the thesis indicates the variety of methods and results of quantifying psychiatric illness. The main conclusion which can be drawn from this is that for planning purposes a sensitive and flexible instrument needs to be devised which will yield comparable data from a variety of populations. The General Health Questionnaire may be an appropriate instrument, but the fact that it could not be applied to the Llanedeyrn Estate for organisational reasons, raises the question as to its general application for planning purposes.

APPENDIX

A general conclusion to this thesis is that the recording of the incidence of disease in the general practice context appears not to be suitable for obtaining information upon which plans for health services can be based. Another conclusion has been the questioning of the general application of a screening instrument such as the General Health Questionnaire in a general practice setting. Both of these conclusions arise from the survey conducted at Llanedeyrn Health Centre.

These conclusions, however, have been based on the experience in one general practice setting. The need to continue to attempt to conduct a survey, as suggested in the body of the thesis, is indicated for the following reasons:

- a) that information about the general population can only be realistically obtained through the recording of disease at the general practitioner level;
- b) that through the application of instruments such as the General Health Questionnaire, general practitioner accuracy in recording and defining disease will improve, hopefully to such an extent as to allow incidence rates to be deemed reliable.

The need for information from the general practitioner level is identified in association with the development in the provision of services, particularly when related to the mental health services.

The bulk of information collected about mental illness in the nineteenth century was related to the inmates of asylums for the insane. The development of psychiatry as a specialty coincided with the establishment of asylums catering for the disturbed members of the community. Information about residents in asylums was collected as early as 1838 (Statistics of English Lunatic Asylums - William Farr of the Registrar General's Office).

It soon became apparent that mental illness may have some connection with ecological factors, and some early work by Prichard (1) emphasised the different admission rates from urban and agricultural areas, and Stark (2), in the 1850's, showed that the insane were drawn more often from the lower than from the upper and middle classes.

Most medical workers in the nineteenth century shared contemporary beliefs concerning psychiatric disorder. Chronic disturbance exhibited by the majority of asylum inmates indicated an impassable gulf between normal members of society and the population of asylums. The insane were recognised easily by their curious or alarming behaviour.

Thus it seemed reasonable to assume that the bulk of mental illness was captivated within institutions.

However, a more dynamic approach to mental illness has necessitated a redefinition of the boundaries between mental illness and health. This development is, again, seen in parallel to the development of a more flexible method of admitting people to mental institutions. The Mental Treatment Act of 1930 first made it possible for patients to enter designated mental hospitals voluntarily as inpatients for inpatient treatment. Over the ensuing years, psychiatric outpatient clinics have been set up in an increasing number of general hospitals and more of the mentally ill have been referred for psychiatric assessment and voluntary treatment. With the Mental Health Act of 1959 the rate of change has accelerated still further; for the first time psychiatric patients can be treated informally in any hospital, on legally equivalent terms with all other types of patients.

The general change in attitude to mental illness has precipitated a change in the length of stay in inpatients, and influenced early discharge of sick, but less disturbed patients. It is also envisaged that there will be a vast reduction in the number of beds required for psychiatric patients over the next tens years or so (3). In the absence of any revolutionary advances in medicine this must entail the maintenance in the community of large numbers of mentally disturbed

persons.

It is no longer sufficient to analyse mental hospital statistics, when a mounting case load is being identified and treated in outpatient clinics, day hospitals, general hospital psychiatric wards, and in the community. Nor can attention now be restricted to the certifiable insane, since experience has shown that there is a much larger group of patients with clinically related and not necessarily less severe disorders who do not require compulsory action to ensure treatment, and who may spend long periods of time outside hospital. In consequence the epidemiologist, in studying mental illness, has been forced to extend his observations from institutional populations to include the community at large (4).

Observations on the community at large raise certain major problems. These have been explored by Howard (5). He suggests that the collection of information about the incidence of disease in general practice would appear simply to be a tedious exercise. If, however, diagnostic honesty and statistical analysis are the yardstick of advance in medical knowledge it soon becomes apparent that the variable factors affecting such investigations are considerable, and without detailed analysis of those variables any figures recorded are of partial value.

A survey of sickness (Studies on Medical and Population Subjects No. 12 General Register Office) published in 1958, revealed an attempt to estimate morbidity by means of sample questioning of patients could only show broad outline of serious morbidity on the general population. It had inherent defects:

" 1. It depended on the patient's statement and memory, and these must be erroneous in spite of the elaborate measures taken to minimize this factor, because even a change in the order of question could provide different statistical results.

2. The incidence of minor illness was admittedly fallacious. 'There seems little doubt that the number of minor ailments reported varies

with the intensity of the questioning, and that by spreading the net sufficiently wide most people could be got to confess some minor ailment. It is debateable, however, whether such intensive questioning is bringing us nearer to a true picture of the state of health of the community' ".

General Practitioners attempts to record the incidence of disease, and thus reveal the level of morbidity, presents difficulties. Howard suggests they are due to:

- a) lack of previous experience of the scope involved and the discipline required to record observations;
- b) nomenclature;
- c) personal relations that defy statistical analysis;
- d) lack of time.

Howard investigates these difficulties and raises the problem of multiple diagnosis, which is alluded to in the body of this thesis. This has particular significance in the diagnosis of mental illness, when the patient may present some organic symptom, and be diagnosed as such without the GP investigating further any associated psychological cause. Howard suggests that this is a fundamental difficulty in analysis GP records, in that it is not possible to identify an organic diagnosis which may also be a psychological diagnosis.

The whole issue of the classification of diseases and guidance in the diagnosis of disease is discussed in the Practitioner (1955), where the author finds very little guidance given to GPs in defining disease. Definition appears to be based on custom and tradition. Although matters have improved a little over the years, there is still very little guidance offered to GPs in the diagnosis of disease.

Howard also discusses the problems associated with observer error, and quotes observer error in reading X-ray films as being between 10 and 30 per cent. Cochrane (6) showed that history taking showed that the same kind of discrepancies, and that answers to simple questions were not always reproduceable.

Lees and Cooper (7) reported that in 37 studies the definitions and criteria employed in diagnosis varied widely, as did the reporting of such items as frequency of consultation, the percentage of patient's seen yearly, the ratio of home visits to surgery attendances, and the age and sex pattern of many attenders. They concluded that a great amount of uniformity in the methods of recording and presentation of results so that valid comparisons could be made between the published findings of individual surveys.

Shepherd et al (8) indicates that variation between individual surveys can be distinguished under the following headings:

- 1 Sample procedure
- 2 Diagnostic classification
- 3 Measurement of morbidity
- 4 Recording procedure
- 5 Analysis of data.

If variations occur under all these headings between most of the surveys conducted in general practice then it can be concluded that the value of the surveys is again, partial.

General Practitioners have, in recent years, been attempting to bring a measure of uniformity into certain aspects of recording. Although the difficulties in definition of diagnosis have hardly been tackled, uniformity in record keeping has been promoted through the introduction of the A4 record, and the possible application of computers to record maintenance. The use of computers, with the introduction of standard pro-formas, does not guarantee accurate record keeping.

Hannay (9) reports on samples taken in the first six months of 1972 from computer records in a new health centre, and a total of 1653 names and addresses visited. Almost half of those drawn were not at the address given, and at least 7.5% could not have been effectively registered at the centre. Updating of the computer file did not necessarily increase its accuracy, although this was beginning to improve. The implication of this study of the Llanedeyrn survey is quite clear despite attempts to ensure the accuracy of the Llanedeyrn profile.

These papers have demonstrated the difficulty in relying on incidence rates as a measure of morbidity. There is a clear indication that general practice recording requires some significant improvement, and a concerted effort to overcome some of the fundamental problems described by Howard.

To overcome the difficulty of incidence recording researchers have been concerned with the development of screening instruments which will minimize the number of variables influencing morbidity recording. Goldberg (10) reviewed existing instruments used in screening for mental illness, and concluded that there was no scale really satisfactory for the purposes of case identification. He discusses the shortcoming of questionnaires, indicating that answers to questions depend entirely on the individual respondent. He comments on the problem of bias, scoring and definitions. He consequently developed his own screening instrument, the General Health Questionnaire, which was to be used in the Llanedeyrn survey.

In developing the General Health Questionnaire Goldberg was identifying ways of defining the illnesses which were being studied, and building in the definitions into the questionnaire so that anyone could complete the questionnaire, thus eliminating the factors of bias imposed through the normal interview situation. In the complete survey the questionnaire would be followed by an interview, which would eliminate the bias created by the questionnaire.

The questionnaire was subjected to reliability tests. These are of two kinds. The first is either to construct parallel versions of the same test, or to divide the test items into two closely comparable populations. The second way of testing reliability is to administer the test to the same subjects on more than one occasion.

The questionnaire was also tested for validity. Again, this can be conducted by two methods - content validity and concurrent validity. Content validity refers to the questionnaire that consists of items whose content is relevant to the variable being measured. Concurrent validity refers to the ability of the questionnaire to give scores which are comparable to some external assessment - in the case of the

General Health Questionnaire, judgements about the severity of clinical disturbance made by a psychiatrist at about the same time as the questionnaire was being completed.

It is the need to test screening tools for reliability and validity which indicates the variation between the techniques used for recording prevalence and the techniques used in every day practice for the recording of incidence - the illnesses being, perhaps, more clearly defined for prevalence studies than for day to day recording of incidence. The use of a screening instrument at least indicates a conformity to definitions (determined by the instrument being used) which appears to be extremely difficult to attain in the normal recording of the incidence of disease.

For the purposes of obtaining information from the general population it will continue to be necessary to use such tools as the General Health Questionnaire until such time as general practice recording can be assessed to be as reliable as such instruments.

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