THE CARE OF SCHIZOPHRENIA IN GENERAL PRACTICE

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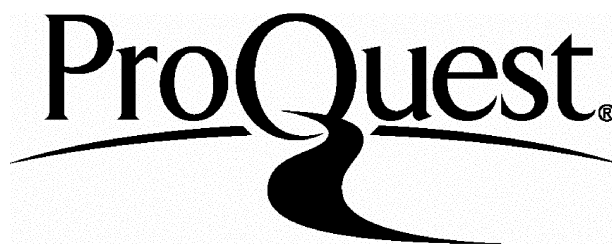ProQuest Number: 10055434

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ABSTRACT

Schizophrenia, the most common form of psychosis, is a chronic disorder that usually develops in early adulthood and often leads to life long disability. Over the last decade, the transfer of patients with chronic schizophrenia from long stay hospitals to the community has had an impact on the extent of involvement of the general practitioners in the care of patients with schizophrenia. Little, however, is known about the role of the general practitioner in the management of patients with schizophrenia.

The study described in this thesis tests the hypothesis that the diagnosis of psychosis recorded on a general practice computer system is accurate and that patients with schizophrenia present a high workload in general practice. The study also determines the views of patients and general practitioners about the services currently offered in a group of London general practices.

Sixteen general practices in London consisting of 28 general practitioners and 72,000 registered patients were recruited to the study. After validation of the diagnoses of psychoses as entered on the general practice computers, a sample of patients and all the general practitioners involved in their care were interviewed to assess their views on the service provided. Lastly, a comparative assessment was made of the care offered to all patients with schizophrenia and age and sex matched controls.

The diagnoses of schizophrenia and other related psychosis as entered on the practice computers was accurate. The overall prevalence of schizophrenia in these practice was 3.0 per 1000, with a higher prevalence in the inner city practices (3.75 per 1000) compared to suburban practices (2 per 1000). The patients' views on the services offered to them were not always in accordance with those of the general practitioners. Patients with schizophrenia, attended the surgery as frequently as other patients with chronic physical diseases but significantly more often than patients randomly selected from the general practice age sex register. The care

offered to patients with schizophrenia, was less structured than that provided to other patients with chronic physical diseases.

General practitioners are increasingly involved in the care of patients with schizophrenia. There is a need, however, to consider a more structured approach to their management. General practice computers can be effectively used to identify patients. Before developing a practice based care plan, it is essential to identify the need of the patients and the professionals involved in their care. This study provides a detailed account of the management currently offered in general practice and will assist general practitioners and mental health professionals in developing a more structured approach to the care of patients with schizophrenia in general practice.

ACKNOWLEDGEMENTS

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CHAPTER ONE

INTRODUCTION AND LITERATURE REVIEW

The first part of this chapter describes the range of mental health problems in patients consulting general practitioners. This is followed by a historical account of the factors leading to the transfer of the long term mentally ill to the community. The rest of this chapter will provide an account of other aspects of schizophrenia relevant to the study such as the classification, epidemiology, prognosis and principles of management. The aetiology of schizophrenia will not be discussed in this thesis as it is beyond the scope of this study.

1.1 Mental health problems in primary care - pathways to care

The "gate keeper" system of primary care in the UK has resulted in the general practitioner being the first professional contact for most patients early in the process of any illness.

Sixty to 70% of people consult their general practitioner in any one year and about 90% consult their doctor in 2-5 years (Fry et al, 1984). Each person on a GP's list consults on average 2-4 times a year. Each consultation takes on average 5-10 minutes on average and is rarely longer than 20 minutes (Fry et al, 1984). A substantial proportion of all general practice consultations are believed to have a psychiatric component.

There are several stages from the development of a mental

health problem to establishing contact with professional services (Goldberg & Huxley, 1992). This is summarised in table 1. Level 1 represents the total psychiatric morbidity in the community, determined by population screening questionnaires. At any time, 6-19% of British men and 7-33% of British women are likely to be suffering from a psychiatric illness (Goldberg & Huxley, 1992). The decision to see a doctor depends on a wide range of factors such as their own concept and/or their family's concept of what constitutes illness, their beliefs about why one may consult a doctor, what they expect of their doctor, accessibility of the doctor and availability of other sources of help. The decision to consult is the first filter on the pathway to psychiatric care. Having passed through the first filter the person becomes a patient at level 2, which represents the total morbidity in primary care. The reported prevalence of mental health problems in general practices varies from 3.7-65% (Shepherd & Clare, 1981) suggesting differences in the general practitioner's ability to recognise psychiatric illness. The second filter is hence, the ability of the doctor to detect a psychiatric problem. Previous work in Greater Manchester suggested that general practitioners identified about 54% of the mental health disorders among their patients (Goldberg, 1980). General practitioners with a higher detection rate were found to use an interview technique which was particularly sensitive to the detection of the patients' psychological and social problems (Goldberg & Huxley, 1992).

TABLE 1:THE PATHWAYS TO PSYCHIATRIC CARE: 5 LEVELS AND 4 FILTERS

(reproduced from Goldberg & Huxley 1992)

	The community	Primary Medical Care		Special psychiatric services	
	Level 1	Level 2	Level 3	Level 4	Level 5
One year period prevalence, median estimate	250 ——	230 ——	140 ——	17 ——	6 (per 100/yr)

		First filter	Second Filter	Third filter	Fourth filter
Characteristics of four filters		Illness behaviour	Detection of disorder	Referral to Psychiatrist	Admission to psychiatric beds
Key Individual		the patient	Primary care physician	Primary care Physician	Psychiatrists
Factors operating on key individuals		Severity and type of symptoms Psycho-social stress Learned patterns of illness behaviour	Interview technique Personality factors Training and attitudes	Confidence in own ability to manage Availability and quality of psych services Attitudes towards psychiatrists	Availability of beds Availability of adequate community psychiatric services
Other factors		Attitudes of relatives Availability of medical services Ability to pay for treatment	Presenting symptom pattern Socio-demographic characteristics of patient	Symptoms patterns of patient Attitudes of patient and family	Symptom patterns of patient Risk to self or others Attitudes of patient and family Delay in other professional help

Patients identified as having a mental health problem enter level 3, which constitutes the conspicuous or overt psychiatric morbidity in primary care. The most recent estimate of morbidity in primary care comes from the third national study (McCormick et al, 1995), which gives an annual period prevalence of 109.1/1000 for episodes of mental disorder diagnosable by ICD 9 (table 2). This figure is strikingly similar to Shepherd's earlier estimate of 102/1000 in 1966. Similar studies in Holland (Wilmink, 1989) and Italy (Tansella & Williams, 1989), however, have produced annual prevalence rates of 94/1000 and 34/1000 respectively, in general practice populations.

The process from here involves further filters; referral to psychiatric services to enter level 4 (ie all hospital psychiatric patients) and in- patient admissions or level 5. Not all patients go through all the filters described above and quite often a person may go directly from level 1 to level 4 without any contact with primary care. This is true of patients with severe psychiatric illnesses such as schizophrenia or related non affective psychosis, especially in an acute crisis.

It is now firmly established that up to 20-30% of patients attending their general practitioner (Goldberg & Williams, 1988) do so for largely psychological reasons but the majority of these disorders are non-psychotic in nature. Until recently, most psychiatric research in general practice has concentrated on "minor psychiatric morbidity" and very little attention has been given to psychoses. This study will

TABLE 2 EPISODES OF MENTAL DISEASES USING ROYAL COLLEGE OF GENERAL PRACTITIONER CODES PER 1000 PATIENTS (McCormick, 1995)

DISEASE	PATIENTS CONSULTING	
	per 1000	% of total
Anxiety	29.6	27.1
Depression	28.0	25.7
Hypochondriasis neurasthenias & physiological disorders due to mental factors	9.1	8.3
Psychoses	5.1	4.7
Phobic, obsessional hysterical disorders	3.0	2.7
Alcoholism, drug dependency	5.4	5.0
Sexual disorder	1.4	1.3
Insomnia	9.2	8.4
Transient situational disturbance, acute stress reaction, adjustment reaction	10.2	9.4
Others	8.1	7.4
Total	109.1	100%

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address this gap in primary care research. This study is timely especially in light of the current shift in emphasis to community care of patients with schizophrenia and other psychosis. This would have a great impact on the level of involvement of the GP in the care of the longterm mentally ill.

In the next section an account of the events leading to the changes from hospital in-patient to community care will be discussed.

1.2 The move to the community

Community care of the long term mentally ill arose out of the change in views of how people with mental health disorders should be treated and by whom. Such views were influenced by the development of antipsychotic drug therapy together with increasing concern about the relationship between an individual with a psychiatric illness and his/her own society. In the early 19th century the ideas of developing secure asylums seemed reasonable, in that these institutions offered protection to those who could not be cured. By the turn of the century, however, discontent with asylum care resulted in tentative efforts towards after-care and the beginning of out-patient treatment. At about this time, Henry Maudsley, a successful psychiatrist, offered £30,000 to build a mental hospital which influenced a change in the Mental Treatment Act of 1930. These changes included recommendations concerning voluntary treatment, a closer link between psychiatry and medicine and an emphasis on the

continuing care of discharged patients in the community.
Following the end of the World War II several mental hospitals
adopted a policy of patients being admitted and discharged
relatively quickly. The concept of "comprehensive care" (ie.
the discharge of hospital patients to the community with
supervised drug therapy, which occurred between 1948-1952),
was another important development. In 1961 a further
breakthrough occurred following the use of the first out
patient nursing service, which was the precursor to the
community psychiatric nursing service (Moore, 1961). These
successive changes resulted in a steady reduction in mental
hospital populations over the 1970s and an increase in the
network of services such as the day hospitals and day centres
together with the development of housing in the community for
those who were mentally disabled (Bennett, 1978).

The development of community care, however, has resulted
in new problems. There is anxiety about the burdens of
community care on families (Scottish Schizophrenia Research
Group, 1987). Alarming statements have been made about the
numbers of mentally ill among homeless people (Chant, 1986).
Claims that prisons have replaced the asylum for many
chronically disturbed patients, however, have been challenged
(Bowden, 1990; Fowles, 1990). It was therefore recognised
that a need for planning of individual settlement, special
provisions for the care of chronic patients who require some
form of clinical care, monitoring of medication and self-care
and a 24 hour crisis service was required. This resulted in
the government developing a report on community care in 1985

(House of Commons Social Service Committee, 1985) examining services both in Britain and elsewhere. The report recommended that no person should be discharged from hospital without a co-ordinated and individual care plan. The Griffiths report (Griffiths, 1988) published at about this time, recommended that local authorities should be responsible for the delivery of packages of care to individuals and must act as designers, organisers and purchasers of services in the community. After much deliberation, April 1993 was set as the starting date for implementation of Sir Roy Griffith's recommendations. It was stressed, however, that while local authorities would become responsible for packages of care to the mentally handicapped, the elderly and the physically handicapped, the health service would continue to have responsibility to a greater extent for community care of those individuals disabled by psychiatric illness (Department of Health & Department of Social Security, 1989). The most recent 1990 NHS Community Care Act, developed from these recommendations has been in force since the 1st April 1993 (Secretaries of State for Health & Social Security, Wales and Scotland, 1989).

As a results of these changes, it was expected that general practitioners would get more involved in the care of the severely mentally ill (Kendell, 1989). A recent survey of general practitioners in Gwent, however, suggested that most of them were overwhelmed by the changes in the last three years, such as the new contract and fundholding, so that the concept of the community care act seemed remote and rather

theoretical (Robinson, 1993). Further evidence suggests that general practitioners are poorly prepared for the implementation of the reforms (Deeprose, 1993). If effective delivery of community services to the long term mentally ill are to be considered, it is essential to examine the involvement of the general practitioner. The chief aim of my study is hence to assess the role of the general practitioner in the management of schizophrenia.

The next section will discuss the definition and diagnosis of schizophrenia and associated psychoses followed by a brief review of the epidemiology of schizophrenia and the course and outcome of the disease.

1.3 Definition and diagnosis of schizophrenia

The psychoses are major psychiatric illnesses characterised by severe symptoms, such as a marked depression of mood and/or delusions or hallucinations, usually accompanied by a lack of insight. They can be divided into the organic and non organic or functional types (table 3). Although, most diagnostic schedules go to lengths to differentiate between these two categories, in practice the differences are less clear cut.

The classification of psychosis according to the International Classification of Diseases, ninth edition (WHO, 1978) has been outlined in Table 3. Organic psychoses include those resulting from senile or presenile dementia, intoxication with alcohol and certain drugs (notably amphetamines and LSD) and other cerebral or intracranial

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TABLE 3 ICD 9 Classification of Psychosis

PSYCHOSIS	
ORGANIC PSYCHOSIS(290-294)	NON-ORGANIC PSYCHOSIS (FUNCTIONAL PSYCHOSIS) 295-298
1) Senile and presenile Dementia (290) 2) Alcoholic psychosis (291) 3) Psychosis associated with intracranial infections (292) 4) Psychosis associated with other cerebral conditions (293) 5) Psychosis with other physical conditions(294)	1) **Non-Affective psychosis** (295, 297, 298) Schizophrenia (295) Paranoid States (297) Other Non-Organic Psychosis (298) 2) **Affective Psychosis** (296)

pathology. Functional psychosis, can be affective or non affective in type. The affective types are severe disorders of mood (ie both depression and anxiety or elation and excitement) which are usually recurrent and are accompanied by one or more of the following: delusions, perplexity, disturbed attitude to self and perceptual and behavioural disorders.

The main syndromes of non affective psychoses are schizophrenia, paranoid states and other non organic psychoses The guide to the Classification of Mental disorders according to the ninth revision of the International Classification of Diseases states that " Schizophrenia is a group of psychoses with a fundamental disturbance of personality, a characteristic distortion of thinking, often a sense of being controlled by alien forces, delusions which may be bizarre, disturbed perception, abnormal affect out of keeping with the real situation and autism. The disturbance of personality involves its most basic functions which gives the person his feeling of individuality, uniqueness and self direction. The most intimate thoughts and acts are felt to be known and shared by others and explanatory delusions may develop, to the effect that natural and supernatural forces are felt to influence the person's thoughts and actions in a way that are often bizarre. One may often see themselves as the pivot of all that happens. Hallucinations, especially of hearing, are common and may comment on the patient and address him or her directly. Perception is frequently disturbed in other ways; there may be perplexity, irrelevant features may become all important and accompanied by passivity feelings which may make

the patient believe that everyday objects and situations possess a special, usually sinister meaning intended for them. In characteristic schizophrenic disturbance of thinking, peripheral and minor features of a total concept, which are inhibited in normal mental activity, are brought to the forefront and utilized in the place of the elements relevant and appropriate to the situation. Thus thinking becomes vague, elliptical and obscure and its expression in speech almost incomprehensible. Breaks and interpolations in the flow of consecutive thought are frequent and the patient may be convinced that his thoughts are being withdrawn by some outside agency. Mood may be shallow, capricious or incongruous. Ambivalence and disturbance of volition may appear as inertia, negativitism or stupor. Catatonia may be present" (WHO, 1978).

Most of the symptoms described above are characteristic of the acute syndrome and are referred to as positive symptoms. The chronic syndrome, however, is marked by apathy; lack of energy, drive and motivation; underactivity; slowness of thought and movement; poverty of speech and social withdrawal. These symptoms are regarded as negative symptoms.

Paranoid states are those syndromes in which delusional beliefs, often persecutory in character, dominate the clinical picture. There is considerable uncertainty about the diagnosis of this condition which is difficult to distinguish from schizophrenia or an affective or organic psychosis. Paranoid states are often diagnosed when a more exact classification is not possible and this implies that with

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observation over time, the diagnosis may be revised to another category. Long term follow up of patients where a definite diagnosis of a paranoid state has been made, indicates a more favourable outcome than for patients with schizophrenia (Retertsol, 1970).

Finally, the category of "other non organic psychoses" is restricted to a small group of psychotic conditions that are largely or entirely attributable to a recent life experience. These psychoses can be of a depressive, excitative, paranoid or confusional type. Included under this heading are the unspecified psychosis, a term used as a last resort when a patient cannot be allocated to any other category.

1.4 Classification used in psychiatry

There are several systems of classification of psychiatric disorders. Diagnoses can be syndromal or multiaxial. A multiaxial diagnostic system takes into account several factors such as physical, psychological, social and personality attributes in developing a diagnosis. In general practice the use of a multiaxial system of classification is preferred for psychiatric disorders (Sharp & King, 1989).

At the time of the study described by me in this thesis, the principal systems used for classification of psychiatric disorders were the International Classification of Disease (ICD) (World Health Organization, 1978) and the Diagnostic and Statistical Manual of Mental Disorders (American Psychiatric Association, 1987). The DSMIIIR uses a five axes diagnostic

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approach which includes psychological, physical and personality assessments together with psychosocial stressors and an evaluation of previous functioning. The ICD 9 on the other hand restricts itself to one axis. Jenkins and colleagues (1988) have shown that although the ICD 9 could not be applied consistently by general practitioners rating videotaped consultations, there was good agreement on individual general practitioners' observations of patients' psychological, physical, personality and social features.

1.4.1 The development of ideas of schizophrenia

The term schizophrenia was initially used by Bleuler (1911) and was derived from the Greek roots *schiz-* to split and *phren-* the mind. Over the last century the condition has been variously defined in different countries. Until recently, the American diagnostic criteria for schizophrenia were broader than the British criteria. In the last 20 years, however, attempts have been made to achieve international uniformity in definition and diagnosis. The Schneider's first rank symptoms (Schneider, 1959) listed below (table 4), have formed the basis for a consensus diagnosis.

The exploration of these symptoms forms the core of the standardised psychiatric interview, the Present State Examination (PSE) (Wing at al, 1974). This interview has been successfully used in World Health Organisation studies and other psychiatric research to determine the prevalence of schizophrenia internationally (WHO, 1973). A detailed account of this interview will be provided in the methods section.

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TABLE 4   SCHNEIDER'S FIRST RANK SYMPTOMS

Hearing thoughts spoken aloud

"Third person" hallucinations

Auditory Hallucinations in the form of a commentary

Thought withdrawal or insertion

Thought broadcasting

Delusional perception

Feelings or actions described as being made or influenced by external agents

Somatic hallucinations

The first rank criteria define a core group of patients in whom the onset of the illness is often abrupt, the course benign, and the family history weighted towards affective illness rather than schizophrenia (Kendell et al, 1979). In an attempt to remedy this tendency, the DSMIIIR and to some extent, the ICD9 criteria developed more selective and longitudinal definitions.

1.4.2 Classification of psychosis for clinical and research purposes

Most psychiatrists now agree that a clear operational definition of schizophrenia is important for research purposes. There is, however, little consensus on how such a definition should be arrived at. Some concepts of schizophrenia are based solely on symptoms, such as Schneider's first rank symptoms. This is sometimes called a

cross-sectional approach. Other concepts are based both on symptoms and the course of the disorder; for example progression to a state of chronic disorder. This is a longitudinal diagnosis.

1.4.2a Cross sectional criteria

Schneider first rank symptoms were until recently, the usual basis of diagnosis in the UK. They lead to high reliability of diagnosis but not to effective prediction of outcome (Kendell et al, 1979). Moreover, first rank symptoms are not completely specific to schizophrenia, since they are occasionally found in mania and depressive disorder. "Third person" hallucinatory voices have been found to be the least discriminating of these symptoms (Mellor 1982). Other cross sectional definitions of schizophrenia are found in the International Classification of Diseases. According to ICD9 criteria, a diagnosis of schizophrenia is only made if there is evidence of:

1) disturbances in at least two of the following: thought, perception, mood, conduct or personality and

2) the condition runs a protracted, deteriorating or chronic course.

Nevertheless, no specific time limit for duration of symptoms is suggested.

1.4.2 (b) Longitudinal criteria

1.4.2 (b)i The Feighner Diagnostic Criteria

This classification developed at Washington University,

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St Louis, includes both longitudinal and cross sectional criteria and is designed to identify patients with a poor prognosis. The definition requires the exclusion of significant affective symptoms, drug abuse or alcoholism; and requires six months continuous illness. These criteria are reliable but restrictive leaving a high proportion of cases without a certain diagnosis. Patients with poor prognosis are identified reasonably well but this could be on account of the criteria of six months of continuous illness which is necessary before a diagnosis can be made. Feighner's criteria have been widely used in research (Feighner et al, 1972).

1.4.2 (b)ii   The Research Diagnostic Criteria (RDC)

This schedule was developed from Feighner criteria by Spitzer et al (1978). The two systems differ mainly in emphasis on course of illness; whereas Feighner requires six months continuous illness, RDC requires only a two week history. A structured interview, the Schedule of Affective Disorder and Schizophrenia (SADS), has been developed for use with Research Diagnostic Criteria.

1.4.2 (b)iii DSMIIIR Diagnostic Criteria

This commonly used diagnostic schedule, was developed from both the Feighner Diagnostic Criteria and Research Diagnostic Systems. The DSMIIIR (table 5), has to some extent overcome the difficulty of cross sectional diagnostic schedules, by offering a more operationalised approach. All short lived episodes (<6 months) of continuous disturbance and those with

TABLE 5: DSM IIIR CRITERIA FOR DIAGNOSIS OF SCHIZOPHRENIA

A. At least one of the following during a phase of the illness

(i) Bizarre delusions (content is patently absurd and has no possible basis in fact) such as delusion of being controlled, thought broadcasting, thought insertion and thought withdrawal.
   (ii) Somatic, grandiose, religious, nihilistic or other delusions without persecutory or jealous content.
   (iii) Delusions of persecutory or jealous content if accompanied by hallucinations of any type.
   (iv) Auditory hallucinations in which either a voice keeps up a running commentary on the individual's behaviour and thought, or two or more voices converse with each other.
   (v) Auditory hallucinations on several occasions with content of more than one or two words having no relation to depression or elation.
   (vi) Incoherence, marked loosening of association, marked illogical thinking, or marked poverty of speech if associated with at least one of the following:
        a. blunted, flat or inappropriate affect
        b. delusions and hallucinations
        c. catatonic or other grossly disorganised behaviour

B. Deterioration from a previous level of functioning in such areas as work, social relations and self care.

C. Duration: continuous signs of illness for at least six months at some time during the person's life, with some signs of illness at present. The six month period must include an active phase during which there were symptoms from A, with or without prodromal or residual phase, as defined below.

D. Onset of prodromal or active phase of the illness before age 45.

E. Not due to any Organic Mental Disorder or Mental Retardation.

coincidental affective symptoms are excluded. The focus on Schneiderian symptoms is broadened to encompass all hallucinations and bizarre delusions, provided they last for at least a week.

In the tenth revision of the International Classification of Diseases (World Health Organization, 1992) schizophrenia and other mental illness are re-defined along the lines of the DSMIIIR, so that the two major systems are now in close agreement. Although both these systems have stood the tests of field trials of reliability there still exists no adequate measure of validity. The standardised diagnoses are developed by experts in the field and there are no objective physical or biological criteria against which the syndromal criteria can be assessed.

In the study described in this thesis, I used both the ICD 9 and DSM IIIR criteria retrospectively in order to obtain a diagnosis for each of the subjects recruited to the study. This was done in order to cover a range of presentations. The ICD 9 criteria are less restrictive than those of the DSMIIIR and hence include a larger number of subjects under the categories of non affective psychosis. It was not possible to use the most recent tenth revision of the ICD schedule or the fourth edition of DSM in my study as it was conducted before the publication of both these schedules.

1.4.3 c Recent editions of diagnostic schedules

Since the publication of the study described in this thesis there have newer versions of both the ICD and the DSM

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released. This section will provide a brief account of each of these schedules.

1.4.3 c (i) International classification of Diseases - tenth edition

The most recent tenth version of the International Classification of Disease (ICD 10) is larger than the ICD 9 (World Health Organisation, 1992). Numeric codes (001-999) used in ICD 9 have been replaced by an alphanumeric coding system, based on codes with a single letter followed by two numbers (eg A00 - Z99). This has allowed a significant increase in the number of categories available for classification. Further categorisation is also possible by decimal numeric subdivisions. The chapter that dealt with mental disorders in the ICD 9 had been expanded so as to provide adequate room for future changes of the classification system without having to redesign the entire system. The use of a multiaxial classification system of ICD 10 as compared to the ICD 9 has resulted in close agreement of the two major mental health diagnostic classification, the ICD and the DSM.

1.4.3 c (ii) The fourth version of the Diagnostic and Statistical Manual

This was published in 1994. The development of the DSM-IV has benefited from the vast amount of research on psychiatric diagnosis that was generated from the DSM III and the DSM IIIR. The task force and on the DSM-IV conducted a three stage empirical process that included a comprehensive literature review of the published literature using DSM III

and DSM IIIR, reanalysis of previous datasets and extensive field trials. The groups involved in preparing both the ICD 10 and the DSM IV have worked closely to co-ordinate their efforts so that the codes and terms provided in the DSM-IV are now fully compatible with the ICD 10.

1.4.3. d Primary care classification systems

1.4.3 d (i)   The International Classification of Primary Care (ICPC)

The international classification of primary care was developed 15 years ago and hence reflects concepts and ideas from the early 1980's (Lambert & Wood 1987). This diagnostic system uses an episode of care" as the unit of assessment. An episode of care is a health problem from its first presentation to a health care provider to the completion of the last encounter for the same health problem (Lambert et al, 1993). Reasons for encounter, early diagnosis and interventions form the core of an episode of care and may consist of one or more encounters. The ICPC diagnostic system hence produces information on the characteristic distribution and content of health problems in primary care but unlike the ICD system might not always provide a diagnostic label.

Recent research with ICPC has led to newer applications and has resulted in the schedule being translated into 19 languages. Over the last 10 years there has been some friction in the relationship between the primary care classification systems and the ICD because of conceptual and taxonomical problems. ICD 10 however, now provides a nomenclature of

diseases recognised by the international community, that does not suffer these problems. This has been done by making provisions for classification of a range of illnesses that might not have a diagnostic label. Current work on the conversion of the ICD 10 using ICPC as the ordering principle can result in the development of a classification system which will allow exchange of patient data with specialists and hospitals (Wood et al, 1992).

It was not possible to use the ICPC system in the study described in this thesis as it was essential to assign a diagnostic label to each of the patients studied.

1.4.3 d (ii) The Diagnostic and Statistical Manual fourth edition for primary care

A primary care version of the DSM, known as the DSM-IV-PC (American Psychiatric Society, 1995) has also been recently published and is derived from the DSM-IV. This system can be readily cross linked to the DSM-IV. This is not possible however, with the system of the International Classification of Primary Care. Plans to develop a cross link between the DSM-IV-PC and the ICPC are in the process of being considered.

1.4.3 Differential diagnosis in clinical practice

Early differentiation between an organic and a functional syndrome is important in clinical practice. Acute and chronic brain syndromes induced by drugs or having other aetiologies may present with first rank symptoms and must be excluded at the outset. A thorough history, mental state examination and

physical examination with particular reference to neurological
abnormalities and a careful search for clouding of
consciousness, memory deficit and other symptoms and signs
(not characteristic of a functional syndrome) are essential in
order to clarify any uncertainty.

Further differentiation between an affective and non
affective psychosis may be difficult and can only be made by
careful attention to the mood of the patient. This may be
possible by close observation over a period of time. Other
disorders often mistaken for schizophrenia are the personality
disorders. This is often the case in younger patients where
insidious changes are observed. Once again, a definitive
diagnosis can be arrived at by careful observation for disease
specific symptoms over a period of time and by obtaining
information from persons close to the patient in order to
assist this process.

1.5 Prevalence and incidence of schizophrenia

To date no population has been shown to be free of
schizophrenia. In an extensive survey conducted in 12
countries, the annual period prevalence (ie the numbers of all
old and new current existing cases over a period of one year)
of schizophrenia was 2-4/1000 of population (Jablensky &
Sartorius, 1975). There is evidence that schizophrenia tends
to occur at comparable incidence rates (ie number of new cases
per 10,000 population at risk per unit time) in populations
that are geographically and culturally wide apart.

1.5.1 Urban and rural differences

Substantial variations in prevalence rates in different parts of the same country are frequently reported. Prevalence rates of schizophrenia reported from urban areas in Europe and the United States have generally been significantly higher than those of rural areas (Freeman, 1994). For example, in the United Kingdom a review of all known schizophrenics from Nithsdale in South West Scotland, a largely rural area, revealed a point prevalence of 1.73 per 1000 for schizophrenia and 2.38 per 1000 for all categories of non affective psychosis (McCreadie, 1990). In contrast, estimates of point prevalence for schizophrenia in North and South Camden, (two adjacent London boroughs) was 4 and 6.4 per 1000 respectively and these figures rose to 5.6 and 9.8 per 1000 for the broader category of non affective psychosis (Campbell et al, 1990). As similar diagnostic criteria were used in both studies, the variation in prevalence rates between Nithsdale and Camden can only be explained by regional differences. High prevalence rates have been described in other urban areas. The prevalence rate in Salford, an urban area in North England was 6.26 cases per 1000 adult population (Bamrah et al, 1991) as defined by the ICD9 and the Syndrome Check List of the PSE.

Similarly, the prevalence of schizophrenia and rates of first admission to hospital in Sweden, were found to be higher in urban than rural areas (Lewis et al, 1992). The incidence of schizophrenia was 1.65 times higher among the study population brought up in cities than subjects who had a rural upbringing (Lewis et al, 1992).

Various explanations for the epidemiological differences in rural and urban setting have been suggested. Factors such as infectious diseases, culture, migration and other social processes may affect geographic differences in rates. The excess of schizophrenia in cities could be explained by - the "social drift" and "breeder" hypothesis. "Social drift" is the migration of those affected by psychiatric morbidity to areas of a particular kind, where social demands on them may be less. This theory would explain the higher prevalence in the South Camden area of London, on account of its inner city location and in particular the presence of three major railway termini, namely Kings Cross, Euston and St Pancras which are linked to most parts of the country. In contrast North Camden is a predominantly residential area with light industry and business and services.

The " breeder" or social causation hypothesis on the other hand assumes that environmental factors are either causative of schizophrenia or have to be present for a predisposed individual to become ill. For example, it has been suggested that aetiological factors such as neurological damage caused by viral infection (Torrey, 1988) or childhood head trauma (O'Callaghan et al, 1992) are commoner in urban areas. Deprived social conditions (Thornicroft et al, 1991), poor mental health (Blazer et al, 1985) and stressful life events (Brown et al, 1968) associated with the onset of most psychiatric conditions including schizophrenia, are also more common in cities.

The evidence suggests that there is no clear lead in any

one direction (Freeman, 1994). Hence, the epidemiological differences between urban and rural locations are best explained by combining elements of the two social processes of "breeding" and "drifting" (Dauncey et al, 1993).

Since this study was conducted in London, we would expect to identify a substantial number of patients with schizophrenia. Although it was not possible to assess variations in the prevalence rates between urban and rural practices, an attempt was made to examine the differences in disease prevalence between inner city and suburban practices.

1.6 Natural history of schizophrenia - course and outcome

Schizophrenia is a chronic disease which usually develops in early adulthood and is associated with a complete recovery in only a small proportion of cases. The first few years after the onset of the disorder are characterised by a considerable variability in clinical morbidity (Strauss & Carpenter, 1977). After five years, however, major fluctuations in severity of the illness are less likely to occur. A review of 36 follow up studies by Shepherd et al (1989) over the following time periods, 1900-1929, 1930-1949 and 1950 -1980, revealed a considerable reduction in the five year death rate of persons diagnosed as suffering from schizophrenia from the 1930s (table 6). This was more pronounced from the 1940s and was probably associated with the introduction of antibiotics and reduction of infectious diseases. Since the 1940s, an annual death rate of 1% has been noted, with no change in this figure to date.

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TABLE 6: COMPARISONS BETWEEN THE CLINICAL AND SOCIAL OUTCOME OF SCHIZOPHRENIA DURING THREE PERIODS BETWEEN 1900 AND 1980 (Shepherd et al, 1989)				
	Clinical Outcome		Social Outcome	
	Recovered (%)	Deteriorated (%)	Dead (%)	Satisfactory (%)
1900-29 All studies (1st adm)	15 (0)	62 (59)	14	50 (?)*
1930-49 All studies (1st adm)	19 (17)	49 (52)	5	41 (37)
1950-80 (overall)	29	33	5	60
developed countries All studies (1st adm)	20 (26)	33 (30)	-	57 (63)
developing countries All studies (1st adm)	43 (43)	33 (35)	-	68 (66)

These figures are derived from the monograph by Shepherd et al (1989) in their review of 36 studies conducted between 1900-1980. The percentage figures listed in this table are calculated separately for those studies that include only 1st episodes and for studies conducted in high and low income countries.

* Data on social outcome not provided by these studies

From the 1950s there has been a substantial improvement in the recovery rate of schizophrenia, with a proportional reduction in those following a deteriorating course. This trend, however, is limited to studies conducted in low income countries where reported recovery rates of schizophrenia are double that of high income countries (Shepherd, 1989). One third of patients in both the high and low income countries, however, exhibited a deteriorating course with similar social outcomes.

Furthermore, the review described by Shepherd et al (1989) suggested that three of the four studies of low income countries involved only first episode cases and the remaining study excluded chronic cases. By contrast, only four of the 11 studies in high income countries were limited to the first episode cases and the remainder included chronic cases, thus accounting for some of the discrepancy in recovery rates. However, when the recovery rate for first admission alone in these studies is calculated, the recovery rate for high income countries rises from 20 to 26% which is still considerably lower than the recovery rates for the low income countries (table 6). These findings are in keeping with those described in the WHO (Sartorius et al, 1986) two year follow up study of patients conducted in high and low income countries, after their first admission. In this study a significantly higher proportion (56%) of patients in low income countries exhibited mild patterns of course of illness compared with the patients in high income countries (39%). Moreover, in the high income countries, a higher percentage (40%) exhibited a severe

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pattern of illness after two years as compared with the cases in low income countries (24%).

A selective review of North American outcome studies of schizophrenia within the past 25 years suggests that the illness is a chronic disorder whose outcome on average is worse than that of other major mental illnesses. It is associated with an increase risk for suicide, physical illness and mortality. In these studies, the schizophrenic process was not found to be relentlessly progressive but was found to plateau after 5-10 years of manifest illness. Overall, the outcome was heterogenous, but much of the variance was linked to sample characteristics such as psychopathology (broad versus narrow diagnostic criteria, subtypes and co-morbidity), dimensions of chronicity (length of manifest illness, treatment resistance, age of onset and institutionalization) and other predictor variables, namely gender, marital status, socioeconomic status, physical setting and premorbid health. None of these studies demonstrated any effect of treatment on the natural history of the disease (McGlashan, 1988).

Shepherd et al. (1989) in their five year follow up of a cohort of 121, PSE diagnosed patients with schizophrenia admitted to an Aylesbury county hospital found a striking difference in outcome between male and female schizophrenics on almost every clinical and social dimension. Twice as many women as men experienced a complete remission throughout the five year period, and only half as many deteriorated. The average period of hospital stay for men was three times longer than that for women over the five year follow up period, but

the same proportion of both sexes exhibited a relapsing course. Social functioning was consistently better for women in all areas.

The final section of this chapter will deal with management issues relating to schizophrenia and associated psychoses. This will be followed by a review of the literature outlining the role of the general practitioner in the care of the patients with schizophrenia over the last two to three decades.

1.7 Management of schizophrenia

In this section a summary of the general principles of management of schizophrenia will be discussed. This will be followed by a review of the literature specific to the role of the general practitioner in the management of this disorder. The chief areas of the management of schizophrenia that have been evaluated will be discussed in next section.

1.7.1 Antipsychotic Drug Therapy

Antipsychotic drugs have their greatest effects on positive symptoms of schizophrenia. These are delusions, hallucinations and formal thought disorder (Liddle et al. 1994). Negative symptoms, such as poverty of speech and blunted affect are less responsive to the classical antipsychotic drugs. Side effects include acute dystonia; anticholinergic effects which account for the dry mouth, constipation and blurred vision; and alpha adrenergic blockade which may lead to vasodilation, tachycardia and postural

hypotension. Erectile dysfunction in men and decreased sexual drive in both sexes is due to a combination of raised prolactin, secondary to dopamine blockade, and alpha adrenergic inhibition. The illness itself also has an inhibitory effect on sexual interest. Substantial weight gain occurs in over a third of patients (Silverstone et al, 1988). The most serious, long term, unwanted effect of the antipsychotic drugs is tardive dyskinesia, a syndrome in which choreiform movements are observed, particularly in the head and neck area and almost always involving the tongue. It emerges slowly and shows a positive correlation with the age of the patient and the dose and duration of therapy (Glazer et al, 1993).

Until recently little difference in efficacy between the various antipsychotic drugs could be demonstrated. The differences in side effects often influenced the choice of drug. For example, a markedly sedative drug such as chlorpromazine may be less useful in the retarded patient with many negative symptoms than a more stimulating drug such as flupenthixol. Antipsychotic drugs are now regarded as typical and atypical according to the type of dopamine receptor blockade involved. Atypical antipsychotic drugs have effects on the central nervous system which distinguish them from other antipsychotic drugs (Hirsch & Puri 1993, Kerwin 1993). This development has come about through a greater understanding of dopamine receptors and the advent of newer antipsychotics. Clozapine, a drug whose development was abandoned in the 1970s because of the occasional occurrence of

agranulocytosis, is now used for the treatment of drug resistant schizophrenia. The drug produces almost no extrapyramidmal side-effects and has enhanced efficacy for positive and negative symptoms (Pickar D, 1995). Clozapine is effective in 50 per cent of patients who have not responded to conventional drug treatment and may lead to an improvement of both negative and positive symptoms (Anonymous, 1991a).

It is well established that maintenance on antipsychotic drugs will significantly reduce the relapse rate of schizophrenia (Davis et al. 1980) even if they do not substantially influence the natural life history of the disease (McGlashan, 1988). Most general practitioners on account of their long term contact with patients with schizophrenia, are likely to be involved in the management of their maintenance medication. Long term maintenance with oral antipsychotic drugs is as effective as depot preparations in preventing relapse (Schooler et al, 1980) and thus intramuscular depot medication should only be considered if compliance is poor. Regular injections also provide the opportunity for monitoring of patients, whether this is carried out in hospital, primary care or the community. There is no unequivocal moment at which drug maintenance can be stopped; rather a sensible choice involving patients' views must be made. Unfortunately, relapse may occur even after many years and hence both patients and their carers should be instructed to keep a careful watch for warning signs of the illness.

Good communication between the psychiatrist and general

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practitioner is essential, irrespective of the type of drug used. In one recent study about psychiatric outpatients' consumption of prescribed and non prescribed medication, it was reported that of 58 drug prescriptions 41 were omitted from the records of either psychiatrist or general practitioner (Clarke 1993). Although disagreement largely concerned non psychotropic drugs, important drug interactions might well have been missed. One of the aims of the study described by me in this thesis is to assess the extent of communication between general practitioners and hospital psychiatrists.

1.7.2 Psychological interventions

The observation that relapse may occur even in patients who adhere to drug treatment has led to a resurgence of interest in psychological therapies. A range of psychological techniques have been applied in an attempt to alleviate psychotic symptoms. These include operant methods, distraction and cognitive behavioral interventions. Most have been reported in single case studies or uncontrolled trials (Tarrier, 1992; Bentall et al, 1994; Alford & Corriera, 1994). This is an area of active research and preliminary results suggest that some relief can be achieved from symptoms otherwise refractory to medication (Chadwick & Lowe, 1990,; Kingdon & Turkington, 1991; Nelson et al, 1991; Fowler & Morley, 1989). A comparison of a cognitive behaviour therapy intervention designed specifically for psychotic patients with a non-specific problem solving therapy suggested that both

treatments were effective in reducing psychotic symptoms but the cognitive therapy produced a greater reduction of symptoms (Tarrier et al, 1993)

The use of insight oriented psychotherapy in the treatment of psychotic illness has produced largely negative results (Goldstein 1991). In what has become a classical study, Gunderson et al (1984) made a controlled comparison of "psychodynamic-expressive therapy" with supportive therapy aimed at helping patients to cope with problems of daily living, the latter appeared to be significantly more helpful.

1.7.3 The family

There are several important social factors which lead to relapse in schizophrenia. These are stress, life events and the level of emotion (particularly hostility) expressed by families or carers of patients. Relatives who express high levels of emotion may adversely affect the patient by creating an unpredictable environment. A reduction in contact with relatives or education of relatives to enable them reduce their level of criticism, may prevent relapse in schizophrenia (Kuipers & Bebbington 1988). Interventions focusing on the burden imposed on the family caring for the patient have also been shown to prevent relapse and improve functioning (Leff J, 1994). Working with the relatives alone, however, may be as effective as family therapy which includes the patient (Leff et al. 1990). Social intervention to reduce stress between relatives and patients in combination with antipsychotic drugs appears to be superior to antipsychotic drugs used alone (Leff

et al. 1985). A meta-analysis of family intervention trials has shown a substantial decrease in relapses in the group receiving the interventions, with pooled odds ratios of 0.3(95% CI= 0.06-0.71) at six months, 0.22 (95% CI= 0.09-0.37) at nine months and 0.17 (95% CI= 0.1-0.35) at two years (Mari & Streiner, 1994).

In view of the general practitioners' knowledge and contact with the families and friends of patients with schizophrenia, they could play a significant part in improving the understanding of psychotic disorders and reducing the strains on the carers of the patients. In this study I attempt to assess the level of involvement of general practitioners with the families and their carers of patients with schizophrenia.

1.7.4 Social skills training

The negative symptoms of schizophrenia, such as withdrawal and apathy, may lead to considerable social isolation for patients. The positive symptoms such as hallucinations and over-activity may also lead to avoidance by others and increasing loneliness. Although patients have been taught how to improve their interaction with families, friends and work colleagues, such training appears to have limited impact. Benton & Schroder (1990) conducted a meta-analysis of 23 studies in which social skills interventions were characterised by modelling, rehearsal and homework assignments. While factors closely allied to the treatment such as self-rated assertiveness improved, symptoms, general

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functioning and relapse rates showed little change.

The success of most of the therapies described in this section are entirely dependent on the general practitioner's knowledge of the value and the effectiveness of each intervention. Good liaison between the general practitioner and all the health professionals involved in the care of patients with schizophrenia is also an essential element of good management. In this study, I have made an assessment of the general practitioner's training, views and current involvement in the care of patients with schizophrenia and other related psychosis.

1.8 Care of psychosis:the role of the general practitioner

General practitioners have been involved in the care of patients with schizophrenia since very early days (Parkes et al, 1962). Figures from the National Morbidity Survey in General Practice (RCGP/OPCS/DHSS, 1986) demonstrate that about 1% of all general practice consultations are related to psychosis. Little is known, however, about the level and type of care offered by general practitioners to patients with schizophrenia.

1.8.1 Involvement of general practitioners over the past 40 years

We have little information on what proportion of chronic schizophrenics are treated in primary care without recourse to hospital follow-up. One of the earliest studies was done by a Leicestershire general practitioner, in his rural practice

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with a fairly static population of 8000 people (Watts, 1973).
Using a broad definition of schizophrenia, he collected 72
cases in 25 years or 2.9 new cases each year. He reported
that most were in contact with the psychiatric services at
some time but 11 (or 15%) refused to see a consultant and were
cared for only in general practice.

Colin Murray Parkes and colleagues made a detailed study
of contacts over a period of one year between general
practitioners and 96 patients with schizophrenia, who were
recently discharged from hospital (1962). Twenty-six (27%)
patients had no contact with their general practitioner and
40(42%) had no contact with the psychiatric outpatient clinic.
Of those who did have contact with the psychiatric services,
over half were seen fewer than 5 times in the year. Parkes
and his colleagues concluded that the responsibility for the
daily care of the patient rested with his or her GP,
especially in a crisis such as when a deterioration in the
patient's mental state occurred. Their conclusions, however,
require further validation.

There is evidence to suggest that patients with a
psychiatric diagnosis are frequent attenders in general
practice. Hassall and Stilwell (1977) showed that 96% of
patients on a psychiatric case register, one third of whom has
a diagnosis of psychosis, were in contact with their general
practitioner over a 2 year period. Half of these patients had
no contact with psychiatric services over the same period.
Furthermore, these patients had almost twice as much contact
with their general practitioner over this 2 year period as the

control patients. These results are not specific to patients with schizophrenia or related psychoses and hence further studies need to be done with a focus on this group of patients. The workload generated by patients with schizophrenia in general practice must also be examined in relation to other patients with chronic physical disease. This is hence, another of the important aims of the study described in this thesis.

There is continued evidence that a core of the chronically mentally ill are not seen in psychiatric practice. Johnstone and her colleagues (1984) published the results of a 5 year follow-up of a cohort of 120 schizophrenic patients discharged from hospital. Although they found that severe psychological, social and financial difficulties were commonplace, 27% of patients had no contact with medical or social services, a further 14% saw only community nurses and 24% only their general practitioner. Most patients were reluctant to return to hospital and even relatives, who faced considerable difficulties resulting from patients' illness rarely suggested their return to hospital. Relatives were often of the view that the psychiatric services were overloaded and poorly equipped to cope. Unfortunately, this study was conducted from the perspective of hospital specialists and hence provided a poor account of the work of general practitioners with these patients, especially those patients who were only in contact with their general practitioner.

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1.8.2. Recent evidence for change

Psychiatric services have improved in recent times, but there remains a core group of chronically mentally ill who may drop out of psychiatric care. Two recent studies of outcome of patients discharged from hospital care provide us with a glimpse of current practice. In the first, 140 patients discharged in two London boroughs were followed up 1 year later (Melzer et al, 1991). Sixty-four per cent had been ill for 5 years or more, yet few had been former long stay inpatients. One year later, 55% were actively psychotic and 22% were seriously socially handicapped and only 23% of those eligible had used day care facilities. Fifty-two per cent of patients had consulted their general practitioner at least once in the 3 months before the interview with the researcher. This figure was the highest level of contact reported for any of all the professionals involved in the care of the patient. Contact with community psychiatric nurses had occurred in only 22%, and day hospital attendance in only 8%, of the cases.

In the second study, almost all 532 patients with schizophrenia discharged from inpatient and outpatient services in Harrow, North London, between 1975 and 1985 were successfully traced (Johnstone, 1991). This study primarily aimed to assess outcome in terms of mental state, cognitive functioning and social disability. Half the sample experienced some level of psychotic symptoms, only 20% were in full time work and 60% were unmarried. More than 90% received some form of medical or social input and 45% were supervised by a consultant psychiatrist, an improvement on figure

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reported 5 years earlier (Johnstone et al, 1984). The proportion of patients in contact with only the general practitioner and no other professional had dropped from 24% at the five year follow up (Johnstone et al, 1984) to 13.4%, at the 10 year follow up (Johnstone, 1991). The evidence from this study suggests that extension and better organization of community psychiatric services can lead to less isolation of general practitioners in the care of patients with schizophrenia.

The outcome of patients after discharge from hospitals may not reflect the status of all patients in the community. Two recent studies assessed the point prevalence of schizophrenia within an inner London borough (Campbell et al, 1990; Pantelis et al, 1988). One of these, the Hampstead Schizophrenia Survey, was instigated as a result of a 10 year closure plan announced in 1982 for Friern hospital, a large mental hospital in North London. The survey aimed to identify all those individuals believed to suffer from schizophrenia and to assess their psychopathology and social difficulties (Campbell et al, 1990). Patients were located by a comprehensive contact with providers of mental health services throughout the district. Five hundred and ninety patients aged 18 or over were identified on the census day in July 1986, a point prevalence of 5.62 per 1000 persons at risk. A large proportion of patients were reported to have delusions and hallucinations while one half were reported by informants to have limited concentration and difficulty with communication skills. Twenty-three per cent of the patients

were only in contact with their general practitioner, a similar finding to that of the 1980s (Johnstone et al, 1984). Eight per cent had never had a psychiatric admission and a further 5% had not been in hospital over the preceding 10 years.

Similar work has been conducted in the North of England involving a comparison of the point prevalence and service utilization of two cohorts of schizophrenic patients identified in 1974 and 1984. A rise in point prevalence from 4.56 per 1000 to 6.26 per 1000 was offset by greater contact with psychiatrists, community psychiatric nurses and social workers between the two defined study periods. Only 7 of the 557 patients studied in 1984, as compared to 50 of the 418 studied in 1974, were in contact only with their general practitioner (Bamrah et al, 1991), supporting the findings of Johnstone (1991) that primary care is becoming less isolated in the care of the long term mentally ill.

Most of the research studies described above, highlight the importance of the GP in the care of patients with schizophrenia. Most of the patients in these studies, however, were recruited from hospital, thus excluding a large number of cases who were only in contact with the general practitioners. Moreover, there was little information on the work of the GP with these patients. My study was done from the general practitioner's perspective. All subjects were recruited from general practice surgeries and the main focus of the study was to obtain a clearer account of the involvement of general practitioners in the care of patients

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with schizophrenia, registered with their practices.

1.8.3 Developments in community care and general practice

1.8.3(a) Case registers and computers in general practice

The value of disease registers for the management of chronic disorders such as diabetes in general practice has been well demonstrated. Although case registers for the chronic mentally ill are necessary in general practice, few practices keep registers of such patients. The case register should contain information on the patient's mental illness, the extent of his or her contact with psychiatric services and the degree of his or her psychological and social disability. The use of general practice computer systems as an effective way of developing such information systems need further exploration.

Although computers have been used in general practice in the United Kingdom for over 10 years, they were not widely available until the introduction of the National Health Service general practitioners' contract in 1990. Over a period of three years computerisation of general practice records rose from a quarter of all practices (Statistics and Management Information Division, Department of Health, 1989) in 1989 to approximately three quarters (Statistics and Management Information Division, Department of Health, 1993) in 1993. Regional variations ranging from 40% of Welsh practices (Groves et al, 1991) to 90% of Scottish general practice (Taylor et al, 1991) have been observed. The increased investment by general practitioners in computer

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technology (Bradley & Watkins, 1989) will eventually lead to universal computerisation. Despite this widespread trend, the full potential of these systems is infrequently utilized (Pringle, 1990).

There exist a range of computer systems currently used in general practice. At the time of doing my study, approximately 30% of all computerised general practices in the United Kingdom are supplied with VAMP (Value Added Medical Products) computer systems (Gray, 1992). This system was offered to general practitioners without charge between 1987 and 1991, provided they entered data according to specified guidelines. The information to be recorded included demographic information, medical diagnoses, all prescriptions issued and an indication for any newly prescribed drug. After the general practitioners had received a 10-12 month trial period with instructions when necessary, the quality of the information recorded on the computer was examined. The practices were able to retain their computers at no cost only if their data achieved at least a 90 percent level of completeness and accuracy (Mann et al, 1991). When the results of the initial tests proved satisfactory, a practice was classified as "up to standard" for research purposes. After a practice was recruited onto the VAMP Research Bank, the accuracy of the recorded information was monitored regularly by the company. One in three VAMP practices are of research standard (Pringle, 1990). Since March 1991, these computers are no longer offered at no cost, but practices using these systems are offered a regular payment for their

data. The management of the VAMP Research database was entirely taken over by the Office of National Statistics of the Department of Health in 1993.

The practices on the VAMP Research Bank are representative of those nationwide with respect to the age and sex distribution of both patients and general practitioners (Mann et al. 1992). Patterns of morbidity are also broadly representative. For example, specific epidemiological studies of diabetes (Harrow Health District Department of Public Health, 1991) and congenital malformations (Mann et al. 1992), have revealed a prevalence similar to national figures.

Computerised information systems such as VAMP have widespread clinical and research applications in general practice. Although the potential of these systems for major epidemiological studies has been recognised (Marcus, 1988), doubts have been raised about the quality of data entered (Johnson et al, 1991). A comparison of the incidence of influenza during the 1989 epidemic derived from an AAH Meditel computerised database with that derived from the Royal College of General Practitioner's weekly returns services (Fleming & Crombie, 1985) - a well established manual surveillance system, indicated a degree of under reporting in the computerised data. This often occurred because of lack of motivation and/or experience in disease surveillance on the part of the general practitioner and haphazard computer entries, particularly of consultations that took place outside of the surgery and consultations that did not result in a prescription, as well as overestimation of the population

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under surveillance. Another validation study, however, of the VAMP computer systems, in which clinical diagnoses written in letters received from hospital consultants were compared with diagnoses entered on computer, suggested that the clinical information held on these systems was satisfactory for most clinical studies (Jick et al, 1991). Although both these studies made a thorough assessment of the level of recording by the general practitioners, no attempt has been made to independently verify the accuracy of the diagnoses entered on computer systems for either acute or chronic medical conditions.

In the study described in this thesis the accuracy of the diagnosis entered on the VAMP computer system is examined, so as to ascertain whether this is a valid method of data collection for developing an accurate register of patients with psychosis in general practice.

1.8.3 a (i) Recent developments in general practice computing

Since the completion of the study described in this thesis, the VAMP Research Database has been taken over by the Office of National Statistics (formerly known as the Office of Population Census and Survey) of the Department of Health. It is now called the General Practice Research Database (GPRD). It currently contains anonymised medical records on over 3.5 million patients from 550 practices which covers about 6.5% of the population of England and Wales. Most of the records extend back to 1991 and some of the earliest go back to 1987, giving over 15 million patient years of observation (Hollowell

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J, 1996). Further validation of this database has shown that the quality of the data is still of a good standard (Jick et al, 1993, Van Staa et al, 1994, Hollowell, 1997). Over the last five years a range of research studies have been published using data from this source. Most of them have been in the area of adverse drug reactions (Jick et al, 1995, Derby et al, 1996, Jick et al, 1996, Jick et al, 1997). Other have been descriptive studies such as the prescribing practices of general practitioners in the United Kingdom (Lloyd et al, 1995) and the level of care offered to patients with eating disorders (Turnbull, 1996). There is still a potential for further research in the area of psychosis.

Another development since 1993, has been the validation of other general practice databases in various parts of the country. One such exercise was done on the GPASS (general practice administration system for Scotland). The recording of morbidity data relating to nineteen diagnosis, six surgical procedures and forty areas of repeat prescribing in a group of 41 highly computerised selected practices on GPASS was found to be about 75% complete and accurate (Whitelaw et al, 1996). About 78% of all Scottish practices are currently using this software package (Henderson et al, 1994). There exists a great potential in the future for the use of this system for clinical and research purposes.

Another study in Somerset on 11 practices examining a range of computer software systems revealed a high level of data recording. During the study period from April 1994 to March 1995, 94% of the 1090 validated records had appropriate

episode types and 87% appropriate diagnostic codes (Pearson et al, 1996). Similarly, a check on completeness in computer recording of diabetes mellitus and glaucoma were found to be 97% and 92% respectively in four practices using the EMIS (egton medical information system) general practice system in the Trent Region (Pringle et al, 1995). Despite these encouraging results, doubts are still voiced about the variability of data entered on the computer records. An audit in the east end of London revealed that recording of blood pressure and smoking in the medical notes were only entered on the computer in 53% and 54% of the 1346 patients studied (Robson et al, 1996).

With the exception of the study on the GPASS (Whitelaw et al 1996), none of the studies described in the previous paragraph specifically examined the accuracy of recording of schizophrenia. Moreover, the gold standard used for schizophrenia by Whitelaw et al (1996) was less rigorous than that used in the study described in this thesis. Any entry of a diagnosis either on the clinical summary sheet of the general practice written records or a hospital letter was accepted as a definite diagnosis. The value obtained for median sensitivity and positive predictive value for schizophrenia was 0.83 (95% CI 0.5 -1.00) and predictive value was 1 (95% CI 1.00-1.00) respectively. There is a need to explore the use of the GPASS for clinical or research purposes in the area of psychosis.

1.8.3(b) Shared Care

A recent survey of family doctors in London suggested that they were enthusiastic about shared care of patients with long term mental illness (Kendrick et al, 1991). Most general practitioners wanted the consultant psychiatrist to take the responsibility for monitoring psychiatric health and the community psychiatric nurse to act as the key worker, coordinating overall management. This survey was essentially a postal questionnaire circulated to 507 family doctors of whom 73% replied. Although data from postal surveys are generally subject to limitations in interpretation, 110 doctors had noticed an effect on their practice, usually an extra workload, from increasing numbers of patients discharged from mental hospitals in the process of closure. Eighty-two per cent of doctors wanted clinical responsibility for patients to remain with the psychiatrist, but most were prepared to share care of such patients by taking responsibility for physical problems. Only nine doctors had specific practices policies for the care of the chronically mentally ill. Thus, general practitioners in the UK are reluctant to take on much of the day to day psychological care of patients and would prefer overall clinical responsibility to rest with the consultant psychiatrist.

The next section will provide an account of some of more recent innovative shared care programmes available to patients with schizophrenia and other related psychotic illnesses.

1.8.3(b).i. Shared information cards

There is only one known published pilot study of the use of shared information cards which summarise the patient's treatment and are carried by the patient to all consultations (Essex et al, 1990). This is in line with the shared care model which is well developed in the field of antenatal care in Britain (Horder, 1988). Shared care of patients with schizophrenia, however, is inherently more difficult than that for patients with physical disorders. Information on diagnosis and mental state is particularly sensitive for many patients and confidentiality could be compromised should the card be read by those not directly concerned in their care. Patients might be too disorganized or ill to keep the card in their possession or to bring it with them to relevant consultations. Nevertheless, the pilot study demonstrated that patients are enthusiastic about shared care cards (Essex et al, 1990). They value knowing what is recorded and consider that they are in a better position to challenge the doctor, particularly about prescriptions of drugs. Fifty five per cent of patients carried their records to more than three quarters of all follow up visits. Although responses from psychiatric staff were almost universally negative, it was claimed that communication between health care staff was improved by the shared care record which aided in the identification of potentially dangerous drug interactions.

In the study described in this thesis I sought the views of both the patients and general practitioners on the use of shared care cards in clinical practice.

1.8.3(b).ii.   Mental Health Professionals in primary care

Outreach clinics, in which hospital specialists provide consultation and treatment services in general practice rather than the hospital, have become common (Bailey et al. 1994). Some of the earliest clinics were developed in psychiatry (Strathdee & Williams 1983, Pullen & Yellowlees 1988) and were well received by general practitioners (Brown & Tower 1990). Psychologists, community psychiatric nurses and social workers have also formed primary care attachments, sometimes working independently of mental health teams.

The introduction of the purchaser-provider split and budget management by general practitioners has accelerated the development of outreach clinics in most specialties. In a study of a random sample of provider units across England and Wales, Bailey et al. (1994) reported that half of all hospitals had at least one specialist providing an outreach clinic. Outreach clinics in medicine and surgery were often initiated by fund holding general practitioners and were restricted to the base clinic. Clinics in non-fund holding practices were more often available to neighbouring practices. The perceived advantages of such clinics, according to the professionals, were decreased waiting times for appointments, less travel and greater communication with the primary care staff. However, little direct contact between family doctors and specialists occurred, as few general practitioners attended the clinics. The considerable demands placed on travel time for the specialist and the reduction in their available time at the hospital, were perceived as

disadvantages (Bailey et al. 1994). It is clear that most general practices will never have direct contact with a psychiatrist as there are simply insufficient numbers (Thomas & Corney 1992).

Despite the increase in numbers of mental health professionals working in general practice their efforts have seldom been assessed. Psychologists were the first to evaluate their work (Earll & Kincy 1982, Teasdale et al. 1984, Robson et al. 1984), but only with regard to treatment of patients with non-psychotic disorders. Although the results have not always indicated clear superiority of a psychologist over routine treatment from the family doctor, clinical improvement may be more rapid, or patient satisfaction greater, in those patients treated by psychologists (Anonymous, 1991b).

Evaluation of psychiatrists working in primary care has been even less thorough. Strathdee et al. (1990) interviewed patients referred to a psychiatrist working in general practice and those referred to the adjacent psychiatric outpatient service. Patients seen in the two settings were comparable in the severity and chronicity of their illnesses, allaying fears that patients treated in general practice were milder cases (Mitchell 1985, Low & Pullen 1988). Chronic schizophrenia and substance abuse were commonest in the general practice clinics while personality and major mood disorders predominated in hospital referrals. One recent, controlled evaluation of a community mental health team based in general practice has again raised concern about milder

disorders predominating in general practice clinics. The service led to a four fold increase in new referrals and twice as many former patients re-entered care, but the greatest increase occurred for patients with relatively mild psychiatric disorders (Jackson et al. 1993). The service costs considerably more than a traditional hospital based service and the general practitioners gained few skills in helping such patients (Goldberg & Jackson 1992). Little change occurred in the number of admissions to the local psychiatric unit, usually because admissions occurred out of hours or were otherwise unavoidable.

Community psychiatric nurses usually work as part of a community mental health team but are often attached to specific general practices. There are estimated to be at least 4500 community psychiatric nurses in the United Kingdom (White 1991). Up to half of general practices surveyed in one study reported links with a community psychiatric nurse (Thomas & Corney 1992). Concern has been expressed about their move from the care of the chronic mentally ill to those with neurotic or reactive emotional problems (Brooker 1990, White 1991). Their psychotherapeutic training is usually less comprehensive than that undertaken by generic counsellors. The results of one controlled study indicate that they are not particularly effective in the role of providing psychotherapeutic intervention to their patients (Gournay & Brooking 1994). Even when community nurses commit themselves to intensive work with patients with chronic schizophrenia, there may be little additional benefit for patients (Muijen,

1994). Nurses with limited training and poor resources can do little more than support this disabled group of patients.

The level of patients' contacts with the various mental health professional, their views of the services received from each profession and the value of outreach clinics in general practices is not known. I hence set out to examine the opinions of a sample of patients with psychosis and their general practitioners on these aspects of clinical care.

1.8.3(b).iii. Good practice guidelines

Guidelines for the management of the long term mentally ill in general practice are necessary. There is a need to develop and evaluate simple checklists which can be used by doctors and practice nurses to monitor physical and mental health status and medication used and its side effects. Brief check lists could be followed in a health clinic for the long term mentally ill. Education of patients and their relatives, monitoring of stress in families, prevention of disability, relapse and non-compliance with treatment can all be provided more systematically within a clinic setting.

Before developing a care plan in general practice for patients with schizophrenia and related psychosis, it is essential to assess the services currently provided by general practitioners to such patients, the views of patients and professionals on care currently available and on some of the recent innovations in the management of the mentally ill in primary care. The feasibility of developing disease registers in general practice must also be studied. All these issues

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will be covered in the study described by me in next section of this thesis.

The information from this study could then be combined with a systematic review of other research conducted in this area so that clinical guidelines in general practice for the care of patients with schizophrenia and other related psychosis can be developed. The next step would be to test the feasibility and acceptability of such guidelines in general practice before considering widespread implementation. This will be discussed further in the final section of this thesis.

1.8.3 c Recent developments in community care

1.8.3 c (i) Community mental health teams

One of the most important developments since the completion of the study is the community mental health team in which psychiatrists, psychologists, community psychiatric nurses, social workers and other professionals work closely together in teams in the community. In many areas, however, staffing levels have been inconsistent, depending on funding, local enthusiasm and the model of care promoted. Treatment is offered to patients at their homes, day hospitals, community mental health centres or general practice surgeries. Home visits enable assessments and treatment in the context of the patient's family. Interventions include physical, pharmacological and psychotherapeutic treatments. Skills training, education and advocacy are provided to help patients and their families cope with daily life. Care is co-ordinated

by a key worker and crises intervention is offered wherever the patient lives, with brief hospital admissions where it is unavoidable.

Does community care of this type bring greater benefits to patients with schizophrenia and is it cost effective? Several controlled studies have demonstrated that care in the community leads to similar or better outcomes on a range of clinical and social measures and is more cost-effective than traditional hospital-based care (Stein & Test, 1980, Hoult J, 1986, Merson et al, 1992, Simpson et al 1993, Burns et al 1993, Marks et al, 1994, Wilkinson G et al, 1995). Each of these programmes, however, was a research study set up by enthusiasts in which the interventions were well resourced and comprised of co-ordinated assertive outreach services. It still remains uncertain whether community care leads to similar or better outcomes in more mundane circumstances of the National Health Services.

Although care in the community is cheaper than care in the hospital (Knapp M, 1996), it has been argued that when costs are detailed according to the patients' diagnosis or level of their impairment, inpatient treatment may be cheaper for society by producing greater overall benefit (Goldberg D, 1991).

1.8.3 c (ii) Commissioning for services for the chronic mentally ill

The development of the community health team has not always led to closer working with general practice. Many

general practitioners, however, are unaware of the function of such teams and may encounter some difficulties with liaison with other professionals. General practice fundholders and commissioning agencies are rapidly developing prototype contracts that define how primary care and mental health teams might best work together. Contracts can be adapted to meet local needs, but must include, details of the nature of services purchased, waiting times after referral and communication channels between primary and secondary care. In some areas of the country these are well developed but as yet under evaluated (C Alessi, personal communication). There is a need for practice agreements between primary care and community mental health teams, which can be audited and reviewed. Similarly, further research on the role of both the fundholder and non-fundholding general practitioner in the community health team is required.

Innovative, non-experimental schemes continue to be set in the community. In one North London initiative funded jointly by the National Schizophrenia Fellowship and a local health authority, mental health workers are being trained in cognitive behavioural skills and placed in general practice to work only with patients with severe mental illness (C Burford, personal communication).

1.8.3 c (iii) Care Programme Approach

Community care is more difficult to organise than a centralised, hospital based service and requires different administrative skills and the development of a new role for

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the psychiatrist (Muijen M, 1993). Although the consultant psychiatrist may not lead the team, he or she is still presumed to have clinical and legal responsibility for patient care. Without clear lines of management, conflict or indecision easily arise. Initiatives such as care management was introduced in the United Kingdom in April 1993, as a central element of the government's care in the community programme (Department of Health and Social Services Inspectorate, 1991). Care management is linked to the care programme approach. This care package applies to all those involved in treatment with specialist psychiatrist services whether or not they are seen by a doctor (Anonymous, 1995). The care programme approach requires district health authorities (DHAs) in collaboration with local authority social services departments (LASSDs), to put in place specified arrangements for the care of mentally ill people in the community. The four main element to the CPA are:

1) Systematic arrangements for assessing the health and social needs of people accepted by the specialist psychiatric services (ie members of the community mental health team).

2) The formulation of a care plan which addresses and identifies health and social care needs and involves both the user and the carer

3) The appointment of a key worker to keep in close touch with the patient and monitor care. General practitioners can take on this role but are often not aware that they can do so.

4) Regular review and if necessary changes to the care plan, these changes are made after agreement of all parties

concerned.

Patients with longer term, more severe difficulties and those who have a potential for dangerous or risk taking behaviour are now placed on supervision registers. Such patients need to have assessments of their progress made at least every six months. The introduction of this register has received a mixed response from psychiatrists, who have voiced concerns about assessing the degree and duration of risk, the legal implications when things go wrong and rights of the patients placed on registers (Harrison & Bartlett, 1994). For those who are discharged after compulsory admission under the Mental Health Act, additional procedures are now mandatory covered by section 117 of the Mental Health Act. This included a detailed assessment of risk to self and others, as well as agreed plans for treatment follow up and monitoring and audit (National Health Service, 1994).

Concerns have been expressed about the care programme approach in the UK which focus on standard case management involving fairly low intensity interventions rather that a structured and co-ordinated multidisplinary assertive outreach interventions as described in the previous section on community mental health teams (Anonymous, 1995, Marshall, 1996, Burns 1996). The review by Marshalll et al (1996) states that the evidence from the world literature on nine randomised controlled and two well designed non-randomised controlled studies trials on standard case management have produced largely negative findings. On the other hand information from the 13 randomised controlled trials done on

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assertive community treatment have suggested a definite benefit from this approach compared to routine care (Marshall, 1996). The results of the only published randomised controlled trial of the care programme approach done in London suggests that although such an intervention produces a reduction in drop outs from care, an increase in hospital admission rates occurred (Tyrer,1995). The success of the care programme approach will rely on adequate resourcing and the development of the multidisplinary community mental health team.

The role of the general practitioner in the care programme approach is poorly defined. The guidance recently issued to general practitioners by the General Medical Services Committee (GMSC, 1996) is over defensive (Kendrick & Burns, 1996). The GMSC report states that general practitioners are discharged of their responsibility once they have assessed patients and identified a need to refer them elsewhere. Subsequently, they are obliged only to treat intercurrent illness unrelated to their mental condition and to draw to the attention of those operating the mental health service, all other requests for help. General practitioners are also advised not to prescribe medication for mental conditions because in doing so they accept responsibility for monitoring treatment which they do not control. Patients who are violent and not detained under the Mental health Act can be removed from a doctor's list on the grounds that their violence may not be due to mental illness. This guidance effectively gives general practitioners permission to wash

their hands of people with severe mental illness. The defensive stance taken by the GMSC, reflects the difficulties experienced in obtaining specialist care in some areas of the country and the worries of general practitioners about their personal safety. If their suggestions, however, were to applied it would hinder efficient co-ordination of community services and result in a dramatic increase in the workload of the community mental health teams. The guidance also ignores the current involvement of the general practitioner in the care of patients with schizophrenia as described in this thesis. The GMSC has now set up a task force to prepare a more detailed report. Any further recommendation made by the committee must be informed by a proper dialogue between the primary and secondary mental health services (Kendrick & Burns, 1996).

1.9 Background to the methods

The study described in the thesis was done between 1990 to 1993 and hence the research instruments used were those available at the time of the study design. The diagnostic schedules, the ICD 9, DSM IIIR and the Syndrome Check List were widely used both in clinical and research practice in the early 1990s. Since then, there has been an update of these diagnostic instruments. Details of each of these diagnostic tools will be provided in the next section.

Similarly, the interview schedules used to obtain information from general practitioners and patients were derived from those interviews that were previously used in

community psychiatric and general practice research. The interviews with patients and the general practitioners were structured and provided only a small section for open comments or suggestion which were transcribed on paper. The structure imposed on these interview schedules was based on the methodologies used at that time. Each interview was structured on the basis of those factors believed to important to the aims of the interviews. A structured interview allows a standardised format of questioning and is easy to analyse. Further details of the interviews used are described in section 2.4. Since the completion of the study described in this thesis however, there has been an explosion of interest in the use of qualitative methods of research in general practice (Britten, 1995). Such methodologies often do not impose a structure to the interview and the interviews are generally developed without any assumptions of the factors believed to relevant to the aims of the interview. The data collected from the qualitative interviews are audio or video taped and the data is content analysed in order to develop relevant themes and concepts. Although, such interviews are often time consuming and difficult to analyse, they provide a wealth of information which could offer a useful insight into the subject under investigation. This has been described in further details in chapter 5 under limitations of the study (section 5.2.2 e). As this type of interview

CHAPTER TWO

AIMS AND METHOD OF THE STUDY

2.1 Hypotheses

The hypotheses of this study are

1) The diagnoses of schizophrenia and other related psychoses as recorded on a group of London VAMP computer systems are accurate

2) Patients with schizophrenia present a considerable workload to the general practitioner especially in the inner cities but the care offered to such patients is unstructured.

2.2 Objectives

The main objectives of this study are:

1) To determine the accuracy (sensitivity, specificity and predictive value) of the diagnoses for schizophrenia and non affective psychosis entered on the VAMP computerised records and to compare the level of recording of clinical events on the computer with the written records.

2) To assess the prevalence of schizophrenia and related psychosis in general practice.

3) To assess the views and psychiatric and social profile of patients with a diagnosis of schizophrenia.

4) To assess the general practitioners' and patients' attitudes to the care provided to these patients.

5) To identify the factors influencing these patients' use of services.

6) To make a controlled evaluation of services offered by general practitioners to their patients with schizophrenia and those with chronic physical diseases and patients randomly selected from the general practice age/sex register.

2.3 3 Accuracy of computerised records

Practices on the VAMP Research Bank were recruited to the study.   Clinical diagnoses and events are recorded on the VAMP computers by the Oxmis (Oxford Medical Information Systems) (Perry J, 1971) coding system.   These codes were developed for the computerisation of presenting problems, symptoms and diagnoses in general practice.   There are approximately 28,000 possible entries in total, which can all be readily cross referenced to the eight edition of the International Classification of Disease (WHO, 1978).

All London practices on the VAMP Research Bank that had 90% accurate and complete records between 1st April 1990 and 30th September 1990 were sent a letter briefly explaining the nature of the study and inviting them to participate.   The general practitioners who failed to respond to the initial letter, were sent a reminder in two weeks followed by a telephone call.   I then visited all practices that expressed an interest to discuss further details of the study.   After a practice was recruited, a computer search of all patients with a diagnosis of a non organic psychosis was conducted by me in each of the study practices.   The following groups of subjects were then identified:

1) Schizophrenia (OXMIS codes cross referenced to ICD 9 code 295.0-295.9)

2) Other psychoses namely Paranoid States and Psychoses Not Otherwise Specified (OXMIS codes cross referenced to ICD 9 codes 297.0-297.9 & 298.0-298.9)

3) Affective Psychosis (OXMIS codes cross referenced to ICD 9 codes 296.0-296.9)

2.3.1 Verification of computer diagnoses

The case notes of a random 1 in 2 sample of patients with schizophrenia (because of the large number of patients identified in this category) and all patients with other non affective psychoses and finally those with affective psychoses were examined. The information was used to make a life time diagnosis based on criteria for mental disorders contained in:

1) The ninth edition of the International Classification of Diseases (WHO, 1978).

2) The Diagnostic and Statistical Manual of the American Psychiatric Association, 3rd edition revised (DSMIIIR) (American Psychiatric Association, 1987).

3) The Syndrome Checklist (SCL), derived from the Present State Examination (PSE) which enables recording of important symptoms from the case-notes in order to make a retrospective assessment or diagnosis (Wing JK et al, 1974) .

Information from practice records relating to clinical observations made after contact with both the psychiatrists and the general practitioners was collected in a standardised manner by a review of all the letters received from the specialist and all entries made by the general practitioner. Following this, a consensus rating was made for each patient by discussion with a psychiatrist (Michael King), who remained blind to the computer category of each patient. The final diagnosis was eventually arrived at using the following criteria:

a) *Strict criteria*: patients positive on all three ICD9, DSMIIIR and SCL, representing the most rigid diagnostic schedule.

b) *Broad criteria*: patients positive on one or more criteria (ICD9, DSMIIIR or SCL) representing a less rigorous diagnostic schedule.

2.3.2 Identification of patients not entered on computer

An assessment was made of the case notes of all patients prescribed drugs commonly used in the treatment of psychosis and who were not identified by the computer search under either of the following categories: schizophrenia (ICD 295-295.9), other non-affective psychosis (ICD 297-298.9) or affective psychosis (296-296.9).

A random selection of 8000 case notes of patients 16 years of age and over were also examined, to identify all patients with psychosis who had not been entered on the computer. This sample size was calculated in order to detect, with a 95% probability, a miss rate of 0.5 patients per 1000 for an estimated prevalence of schizophrenia of 2.5 per 1000. This figure was based on the estimated period prevalence of 2-4 per 1000 of population as described in the last section of this thesis (Jablensky & Sartorius 1975). The search was undertaken by a single trained observer (Luiza Rangel) under my supervision. The records of all patients who appeared to have suffered a psychosis based on information entered in the general practice case notes or hospital letters or who had been prescribed anti-psychotic medication, were subjected to

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a detailed diagnostic assessment.

2.3.3 Computer entries compared with written records

Patients with a diagnosis of schizophrenia were matched for age (in a 5 year band) and sex in each practice, with two types of control patients. This will be described in further detail in the method section of case control study of general practice records. The first was randomly selected from a pool of patients with chronic physical disease namely epilepsy, diabetes, rheumatoid arthritis and multiple sclerosis. These diagnostic categories were chosen because they are common causes of physical disease and disability within the age range of the patients with schizophrenia. The second was randomly selected from the computer register. This sample allowed us to study the entries made on the computer against written entries in patients' case notes. This range of patient records avoided any systematic bias, for example, some of the difficult consultations with patients with schizophrenia may have resulted in a more thorough record of information than would have otherwise occurred with other chronic disease patients or the average patient on the general practitioner list. In a random 1 in 4 sample of these records, I examined the number of computer entries made on a daily basis under presenting complaints (history display) and drugs received (treatment display), commencing from the date the practice computers were accepted as being "up to standard", and compared this with the written records. The number of entries made only on the computer or only on the written records was

calculated by subtracting those entries common to both the computer and the written record from the total number of entries made on each of the systems. Thus, the mean proportion of total entries made only on computer or the written notes and the entries common to both were calculated.

2.4 Interviews with patients and general practitioners

All patients with a diagnosis of schizophrenia entered on computer were identified in each of the study practices. In view of the numbers of patients identified under this category, a one in two random sample of patients was chosen for interview, either at the practice or at home. Data were collected as follows:

2.4.1 Interviews with patients

2.4.1 a Sociodemographic details: of each patient were collected by means of a structured interview designed in a previous community survey of schizophrenia. Details were collected on age, sex, civil status, country of birth and upbringing, current accommodation and the type and level of social contacts. A copy of this schedule is in the Appendix (Campbell et al, 1989) (appendix 1).

2.4.1 b Psychiatric state was evaluated using **The Present State Examination (PSE) 9th Edition** (Wing et al, 1974). This is a structured clinical interview designed to assess the "present mental state" of adult patients suffering from one of the neuroses or functional psychoses. The PSE was developed

in the late 1950's and went through five editions before information was first published about it in 1967 (Wing, 1967). The seventh and eighth edition were used in two large scale international studies, The United States - United Kingdom Project (Cooper et al, 1972) and the International Pilot Study of Schizophrenia (WHO, 1973). The ninth edition of the PSE, used in this study, can be used to generate a diagnosis according to the International Classification of Diseases (ICD-9) (WHO, 1978). Adequate training in the use of this standardised interview ensures good inter-rater reliability (Wing, 1974). Information collected, during the PSE interview, is coded and processed by a CATEGO computer programme. An abbreviated form of the Present State Examination Schedule applied to case records, is the Syndrome Check List which makes a retrospective rating of symptoms during the most severe episode or the whole illness. In the ninth edition of the PSE, the interviewer rates 140 items including psychotic and neurotic symptoms and observations of appearance, speech and behaviour. There are 54 obligatory stem questions. Positive responses are then followed up with careful exploration and supplementary probes to test whether a positive rating can be made. If responses to the stem question are negative then additional questions below a cut-off point need not be asked. There is a comprehensive glossary of definitions for each of the 140 items. Each applicable symptom is rated as 0 = symptom not present, 1 = symptom definitely present during the past month, but of moderate clinical intensity, or intense symptoms present for

less than 50% of the time, 2 = symptom clinically intense more than 50% of the past month. The PSE takes approximately an hour to administer, depending on the number of symptoms found.

Data from the PSE are processed by a computer programme known as CATEGO-ID, an expert system which incorporates rules for processing the data prior to statistical analysis. The programme produces total symptom scores, summarises the data into 38 syndromes and nine classes, and gives an indication of caseness called the Index of Definition. The index of definition has eight levels which are defined by number, type and severity of symptoms found. Level 5 is the threshold level of caseness. Above this it becomes increasingly certain that the patient's disturbance can be classified as a functional psychosis or neurosis and a postulated diagnostic category of the ICD-9 is generated by the programme.

High levels of reliability of the PSE have been established when used by trained interviewers. Wing et al (1967), described levels of agreement for psychiatric diagnosis generated by the PSE of over 80% for both inter rater and test- retest reliability. The kappa statistic (k) (Cohen, 1960) is a measure which corrects raw agreement for chance agreement, on a scale of 0 = no agreement better than chance to 1 = perfect agreement. Levels above 0.5 are usually regarded as satisfactory (negative kappas indicate agreement is worse than chance). Kendell et al (1968) reported mean kappas of 0.71 for inter-rater and 0.41 for test-retest reliability when PSE was used with inpatients. Cooper et al (1977) reported corresponding kappas of 0.74 and 0.54 when the

PSE was used with outpatients. They also demonstrated that non psychiatrists could be trained to use the instrument as reliably as psychiatrists. The lower kappas for test-retest reliability were thought at least in part to reflect true changes in patients' scores as their conditions fluctuated in severity over time. Wing and colleagues (1977) reported inter-rater reliability kappas of 0.89 for total symptom scores and 0.89 for ratings of the Index of Definition when medically trained and non medically trained interviewers independently rated audiotaped interviews in a study of the prevalence of the disorder in the general population.

The PSE also displays good criterion validity. Mean symptoms scores and the prevalence of cases according to the CATEGO-ID have been found to be higher among acute psychiatric inpatients (Hirsh 1979) than levels along psychiatric outpatients (Hurry et al, 1987) which in turn were higher than the levels in the general population (Bebbington et al, 1981).

This evidence suggests that as long as the training guidelines for the use of the PSE are adhered to, the interview can provide an acceptable degree of inter-rater reliability and repeatability for all stages of the diagnostic process.

The decision to use the Present State Examination in this study was made because it has been widely used in this country and has been found to be an acceptable and reliable instrument to use on patients with psychosis. The interview was administered by a psychiatrist (Sara Davies) who received special training in the use of the PSE, over a period of one

week, at The Psychiatry Unit of the Medical Research Council at Northwick Park Hospital, London. The interviews were done under my supervision and that of Professor M King.

2.4.1 c Utilization of medical services provided by the general practitioner, psychiatrist, community psychiatric nurse and social worker was explored in an interview designed for the study (appendix 2). Schedules available for needs assessments of the chronic mentally ill do not focus on general practice (Brewin et al, 1988). The purpose of this interview was to supplement the information collected from the case notes. An outline draft was initially developed by me after discussion with two psychiatrists (Michael King & Sara Davies). Modifications were then made after further discussion with eight local general practitioners and four psychiatrists. A preliminary version of the interview was piloted with ten patients before finalising the exact content of the interview.

The interview was made up of closed and open ended questions. Patients were asked about the reasons and frequency of contact with their general practitioners, psychiatrists and community psychiatric nurses. Their satisfaction with the services offered by each of these professionals was also measured (appendix 2).

2.4.2 Patients' general practice case notes

i) **Clinical information** collected from the case-notes was used to establish a life time diagnosis using the ICD 9, DSMIIIR

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and SCL criteria as described in the previous section.

ii) **Annual consultation rates in the surgery**: the median and mean number of contacts made with the GP by each patient each year was calculated from a count of the total number of attendances at the surgery over the previous four years.

2.4.3 Interviews with general practitioners

Each general practitioner was asked to take part in a semi-structured interview adapted from a format used to collect information on HIV care in general practice (King, 1989). This interview schedule was used as there was no other instrument available to collect information on the care of schizophrenia in general practice. Moreover, the areas covered in the HIV interview closely matched our requirements. The interview was hence adapted to collect information on the general practitioners' interests in psychiatry; their use of secondary services and voluntary agencies; the nature of recent consultations with patients, their carers and families; their attitudes to patients with chronic psychoses and their views on recent management innovations in the care of schizophrenia in the community. All interviews were done by me. A copy of the interview used with the general practitioners is in the appendix of the thesis (appendix 3).

Interviews with both the general practitioners and the patients were conducted primarily to supplement the information collected from the case notes and secondly to draw comparisons between the views of the patients and the general practitioners.

2.5 Case control study of general practice case records

Patients with a diagnosis of schizophrenia identified by a search of the computerised records as described previously, were age matched (within a 5 year band) and sex matched with two comparison patients in the same practice. The first was selected using random numbers from a pool of patients with chronic physical disease namely epilepsy, diabetes, rheumatoid arthritis and multiple sclerosis. These diagnostic categories were chosen because they are common causes of physical disease and disability within the age range of the patients with schizophrenia. Patients in the second comparison group were randomly selected from the practice register. These two groups will be referred to as the chronic disease controls and randomly selected controls respectively.

Information was collected on demography (especially information relating to age, sex country of birth, social and civil status), consultations (i.e total consultation rates and a breakdown of numbers of contact made for physical and mental health reasons), numbers of repeat prescriptions issued, the clinical care offered and the general practitioners' communications with hospital and other services for the preceding 4 years. There is no absolute time period for data review and hence it seemed advisable to opt for 4 years as this would provide a pragmatic time span for the evaluation of a reasonable period of care without producing an overwhelming volume of information. Data were recorded in a standardised format by a review of the practice notes. A copy of this

schedule is in the appendix of this thesis (appendix 4).

All entries in the notes of patients with a diagnosis of schizophrenia relating to sleep disturbance, life events, emotional problems, family disharmony or mental state observations made by the doctor were accepted as disorder related assessments. In a similar way for the chronic disease controls, any entry relevant to the disease in question was classified as a clinical assessment for the disease. For all three groups of patients, entries in the notes pertaining to housing, employment, finances or social contacts were recorded as a social entry. Communication between the practice and hospital consultants was measured by a count of the hospital letters received from the hospital consultant specifically involved in the management of the index disease. Finally all prescriptions issued by the surgery, without direct patient contact, were classed as repeat prescriptions.

The next chapter will review some of the statistical concepts and tests used in the analysis of the study.

CHAPTER THREE

ANALYSIS

3.1 Estimation of the accuracy of computerised records

In order to evaluate the accuracy of the diagnosis
recorded on the computer, the computer entry must be assessed
in two groups of subjects: those with an indisputable
diagnosis of the condition and those from the population who
show no evidence of the condition. The results can then be
expressed in the form of a table which is often referred to as
the decision matrix (table 7) (Altman, 1991).

TABLE 7: POSSIBLE RESULTS OF A DIAGNOSTIC TEST

	PATIENTS WITH PSYCHOSIS		
DIAGNOSIS ENTERED ON COMPUTER Total	Yes	No	
Positive	True positive(TP)	False positive(FP)	TP+FP
Negative	False negative(FN)	True negative (TN)	TN+FN
TOTAL	TP+FN	TN+FP	

In this context, sensitivity is the proportion of true
positives that are correctly identified by the test :

$$\text{Sensitivity} = \frac{\text{Number correctly diagnosed as affected}}{\text{Total Number affected}} = \frac{TP}{TP+FN}$$

and specificity is the proportion of true negatives that are correctly identified by the test:

Specificity = Number correctly diagnosed as unaffected = __TN__
                      Total Number Unaffected   TN+FP

It is also important to know the probability of a correct or incorrect diagnosis being entered on the computer. The proportions used for this purpose are: the positive predictive value (PPV) which is the proportion of patients with a diagnosis of psychosis correctly entered on the computer.

PPV = Number of affected persons with positive test = __TP__
            Number of persons with positive test   TP+FP

and the Negative predictive value (NPV) which is the proportion of patients without a diagnosis of schizophrenia correctly entered on the computer .

NPV = Number of unaffected persons with negative test = __TN__
            Number of persons with negative test   TN+FN

In this study, the sensitivity of three diagnostic classes (ie schizophrenia, non affective psychosis and non organic psychosis) was calculated by dividing the total number of patients correctly classified on the computer out of the 8000 records searched by the total number of patients given that diagnosis in the 8000 records searched. Thus, the denominator included those misclassified in other categories. Specificity for each computer diagnostic category was calculated by dividing all patients correctly classified as

not having the diagnosis by the total number of patients without that diagnosis in the 8000 records. Sensitivity and specificity were calculated using strict and broad diagnostic criteria. These measures were used as the accuracy of the computer diagnosis was judged against the "gold standards" applied by the research team. Measures of agreement such as kappa which are designed to assess the extent to which the diagnosis entered on the computer differs from a diagnosis made on strict or broad criteria are less useful as it fails to distinguish between false positive and false negative errors.

3.2 Prevalence estimates

It is possible to calculate the prevalence of each of the three diagnostic classes (schizophrenia, non-affective psychosis and non organic psychosis, using the decision matrix presented in table 7) as follows:

$$\text{Prevalence} = \frac{TP + FN}{TP + FP + TN + FN}$$

3.3 Analysis of data from interviews with patients and general practitioners

All data were entered and analysed on the Statistical Package for Social Sciences (SPSS/PC). Those variables most likely to influence general practice consultation rates and contact with the psychiatrists were examined using univariate analysis. The distribution of all continuous variables were

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initially examined to assess normality. The Student's T-Test was used for the analysis of all normally distributed variables and the Mann Whitney U statistic for all non-parametric variables. The Chi squared statistic was used for all categorical variable. Multivariate analysis was then used to explore factors influencing general practice annual consultation rates and contact with mental health professionals (dependent variables). The main aim of multivariate analysis is to simultaneously examine the dependence of one outcome variable (dependent variable) on two or more other variables (independent variable). This analysis was done to control for the possible effects of the various independent variables on the dependent variable and to then identify the extent to which these independent variables are predictors of the dependent variable of interest (Altman, 1991). Multiple regression was used when the dependent variable was continuous and normally distributed, and logistic regression when the dependent variable was binary. The independent variables in the regression analyses were either continuous or categorical. Associations between the various independent variable were statistically examined before inclusion in the regression model (Altman, 1991).

3.4 Case control study - statistics
3.4.1 Power calculations

The power of a test is the probability that a study of a given size would detect as statistically significant a real difference of a given magnitude. Two possible errors can be

made when interpreting the p value. Firstly we can obtain a significant result and thus reject the null hypothesis, when the null hypothesis is in fact true. This is called a type I error or a "false positive" result. Alternatively we may fail to get a non significant result when the null hypothesis is not true, in which case we make a Type II error or a "false negative" finding.

The probabilities of Type I and Type II errors are sometimes called **alpha** and **beta**. For any hypothesis test the value of alpha is determined in advance, usually as 5%. The value of beta depends upon the size of the effect that one is interested in and the size of the sample. The power of the study is hence often expressed in terms of detecting a specified effect where the power is 1-Beta, or as a percentage 100 X (1-Beta)%.

In order to estimate the sample size for paired studies, the following quantities must be known:

1) Standard deviation of the mean differences observed between the two groups (SD)

2) Clinically relevant difference (delta)

3) The significance level (alpha - two sided)

4) The power (1- beta)

The standardised difference is then calculated as the ratio of the difference of interest to the standard deviation, that is delta/SD. The sample size was calculated using the results of the pilot project, in which a comparative assessment of the attendance rates of patients with schizophrenia and matched diabetics and a group of matched patients selected from the

age sex register were made. This study was done in one group practice and the data was collected in much the same way as described in the previous chapter, under section 2.6. The difference in the mean total attendance rates between the patients with schizophrenia and diabetes was 1.8 attendance per patient per year and the standard deviation observed was 6.7 (Nazareth et al, 1992), so that the standardised difference was 0.27. Thus, in order to detect a difference of 1.8 attendances per patient per year at 80% power and a 5% level of significance, it was calculated that at least 190 subjects would have to be recruited in each group.

3.4.2 Analysis of matched case control studies

The analysis of matched case control studies must employ statistical techniques that take into account the matched nature of the data. Analysing matched data as if they were unmatched will generally lead to biased estimates of the odds ratios (Siegel & Greenhouse, 1973). Analysis by conditional logistic regression (Breslow et al, 1980) for matched case control studies, available in the EGRET statistical package are hence particularly designed for this purpose and was used in this study.

The variables examined were total, physical and mental consultation rates, disease related assessments, social entries made in the notes, repeat prescriptions issued and letters received from specialists. These variables were analysed on their own and then with adjustments for possible confounders. The aim of the regression was to determine

factors predicting membership of each diagnostic group. Variables of interest were dichotomised around the median (as the data was not normally distributed) of the respective control group's observations as this was the comparison group. All independent variables were dichotomised as it was felt that results obtained using such data would be more meaningful clinically than if the continuity of the variables were to be maintained. For example, the odds of belonging to the schizophrenic group per unit rise in attendance rate is a less meaningful concept as compared to a similar value for attendance rate above a certain figure (ie the median of the control group). For example, in the analysis of mental health consultation rates the dependent variable would be the group of the patient (ie Schizophrenia or Chronic disease control) and the independent variable would be the mental health consultation rates dichotomised at the median of the control group. Thus, if the median mental health consultation rate for patients with schizophrenia were greater than the chronic control, the regression analysis would predict membership of that diagnostic group. These analyses were also repeated with the continuity of the independent predictor variables being maintained. This was done in order to detect any changes in results that might have occurred on account of the dichotomisation of the variables as described above.

The next stage in the analysis was to control for other possible factors for example, if marital status, social class, activity of illness and duration of illness could influence the mental health consultation rates then it would be

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necessary to do further analysis on the data. This is
achieved by using a similar regression model in which the
independent variables are all the factors to be controlled for
in addition to mental health consultation and the dependent
variable is still the diagnostic grouping of the patient.

CHAPTER FOUR

RESULTS

Sixteen general practices in London reached VAMP research standards one year before the start of the study which was from 1990 to 1991. Thirteen (81%), consisting of 28 general practitioners and 72,000 patients, agreed to take part. Two single handed and one practice with two partners, refused to participate as they felt overwhelmed by the changes brought about by the new contract for general practitioners and hence had little desire to be engaged in any new activity.

4.1 Accuracy of computerised records

A computer search of the records in each participating practice identified the following numbers of patients under each category:

1) Schizophrenia: 212

2) Other Non Affective Psychosis: 88

3) Affective Psychosis: 78

4.1.1 Comparisons between diagnosis entered on computer and study diagnosis

Four patients with schizophrenia, 10 with other psychoses and 7 with affective psychoses were excluded because of incomplete information on SCL, ICD9 or DSMIIIR. Hence a diagnostic classification was made on 102 (96.2%), 78 (88.6%) and 71 (91%) patients in each of the categories schizophrenia (295-295.9), other psychosis (297-298.9) and affective psychosis (296-296.9) respectively (table 8 and 9). The diagnoses

TABLE 8: COMPARISON OF DIAGNOSIS OF SCHIZOPHRENIA AND AFFECTIVE PSYCHOSIS RECORDED ON COMPUTER WITH DIAGNOSIS DETERMINED BY INDEPENDENT ASSESSMENT OF CASE NOTES

STUDY DIAGNOSTIC CATEGORY		DIAGNOSIS BY	ENTERED GENERAL	ON COMPUTER PRACTITIONERS
		SCHIZOPHRENIA ICD 295 (N=102)	OTHER NON AFFECTIVE PSYCHOSIS ICD 297, 298 (N=78)	AFFECTIVE PSYCHOSIS ICD 296 (N=71)
SCHIZOPHRENIA (295)				
strict*	N # % 95%CI	65 63.7% 53.6-72.8%	24 30.8% 21.1-42.4%	2 2.8% 0.5-10.7%
broad*	N % 95%CI	91 89.2% 81.1-94.2%	36 46.1% 35.5-57.8%	14 19.7% 11.6-31.2%
AFFECTIVE PSYCHOSIS (296)				
strict*	N % 95%CI	2 2% 0.3-7.6%	8 10.3% 4.8-19.7%	41 57.8% 45.5-69.2%
broad*	N % 95%CI	6 5.9% 2.4-12.9%	20 25.6% 16.7-37%	57 80.3% 68.8-88.4%

* criteria used for diagnostic definition (see text)
# N=numbers of patients, %=percentage of total, 95%CI= 95% confidence intervals

entered on the computer by the general practitioner were based on information contained in the practice notes which often included letters from mental health specialists. Misclassifications were more often due to diagnostic uncertainties of the disorder in question than as a consequence of incorrect computer entries. Only 3 of the 251 cases of psychoses concerned patients who had not had contact at some time with the mental health services and in all 3 cases the general practitioners' diagnosis was incorrect.

The proportion of patients, under each diagnostic class, correctly entered on the computers when assessed against the strict and broad validation criteria used in this study, are listed in table 8 and 9. Patients entered on the computer with a diagnosis of schizophrenia and affective psychosis were 63.7% (65/102) and 57.8% (41/71) accurate in accordance with strict diagnostic criteria. These figures rose to at least 80% if broader diagnostic criteria were used. Using either the strict or broad diagnostic criteria, the computer entries were at least 86% correct when assessing the more general categories of non-affective psychosis (ICD 295, 297,298) and non organic psychosis (ICD 295-298.9). Conversely, only a small proportion of patients with schizophrenia were incorrectly entered on the computer under affective psychosis (2 out of 102) and similarly 2 of the 71 patients were misclassified on the computer as affective psychosis when they had schizophrenia.

TABLE 9: COMPARISON OF DIAGNOSIS OF BROADER CATEGORIES OF PSYCHOSIS RECORDED ON COMPUTER WITH DIAGNOSIS DETERMINED BY INDEPENDENT ASSESSMENT OF CASE NOTES

STUDY DIAGNOSTIC CATEGORY		DIAGNOSIS BY	ENTERED GENERAL	ON COMPUTER PRACTITIONERS
		SCHIZOPHRENIA ICD 295 (N=102)	OTHER NON AFFECTIVE PSYCHOSIS ICD 297, 298 (N=78)	AFFECTIVE PSYCHOSIS ICD 296 (N=71)
NON AFFECTIVE PSYCHOSIS (295,297 & 298)				
strict*	N # % 95%CI	87 85.3% 76.6-91.3%	49 62.8% 51.7-73.3%	5 7% 2.6-16.3%
broad*	N % 95%CI	98 91.2% 83.5-95.6%	65 83.3% 72.8-90.5%	17 24% 14.9-35.8%
NON-ORGANIC PSYCHOSIS (295-298)				
strict*	N % 95%CI	93 91.2% 83.5-95.6%	77 98.7% 92.1-99.9%	61 86% 75.2-92.7%
broad*	N % 95%CI	101 99% 93.9-99.9%	77 98.7% 92.1-99.9%	61 86% 75.2-92.7%

* criteria used for diagnostic definition (see text)
N=numbers of patients, %=percentage of total, 95%CI= 95% confidence intervals

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4.1.2 Patients on antipsychotic drugs without a computer diagnosis of non organic psychosis

One hundred and ninety four patients were treated with antipsychotic drugs during the 6 month study period and were not identified in the above categories A to C. Diagnostic assessment using SCL, DSMIIIR and ICD9 revealed that 18 suffered a psychotic disorder of whom 3 were accorded a diagnosis of schizophrenia, 9 affective psychosis and 5 an atypical psychosis. In one case the information in the case notes was inadequate for making a diagnosis.

4.1.3 Sensitivity, specificity and predictive value of diagnoses entered on computer

The search of the 8000 case records identified 50 patients with a probable psychosis for whom further diagnostic verification was necessary. Twenty-five patients had already been identified under the computer diagnostic category "Schizophrenia" (ICD 295), 10 under category "Other non affective psychosis" (ICD 297, 298) and 2 under category "affective psychosis" (ICD 296).

Thirteen remaining patients with a possible psychosis (from 8 different practices) had not been entered on the computer, 8 of whom had not attended the practice in the previous 4 years and hence were unlikely to be current patients of the general practitioners (table 10). Diagnostic categorisation was not possible for these patients due to inadequate information in the practice records and hence they

TABLE 10: DETAILS OF PATIENTS WITH PSYCHOSIS THOUGHT NOT TO BE REGISTERED WITH THE PRACTICES

Practice 1 (4 patients)
1) 60 yr male, diagnosis Schizophrenia 1960, seen regularly in surgery till January 1983, no attendance since.
2) 34 yr male, registered 1986 (seen 7 times over 6 month period) no entries in notes since February 1987, never seen by psychiatrist, diagnosis ?psychosis made by general practitioner.
3) 37 yr male, registered 1976, no attendances since registration, psychiatrist's letter 1977 suggests possible psychosis.
4) 39 yr male, registered 1987, no attendance since registration. Only one hospital assessment by psychiatrist (Dec 1987) overdose with benzodiazepines, few psychotic symptoms elicited associated with a long term background history of alcohol and hard drugs abuse.

Practice 2 (2 patients)
1) 65 yr male, registered 1978, seen regularly till 1979 but no attendances since, diagnosis of schizophrenia volunteered by patient on registration with practice.
2) 52 yr male registered 1987, 8 attendances till Jan 1988 but not seen since, diagnosis of psychosis made by psychiatrist.

Practice 3 (1 patient)
1) 70 yr male, last seen by general practitioner in 1963, diagnosis Schizophrenia made in 1961 by hospital psychiatrist.

Practice 4 (1 patient)
1) 31 yr male, registered Jan 1986, last seen Dec 1986, history of psychosis reported on registration, treated with antipsychotics over 8 month period with practice.

were excluded from the final calculations. This was considered to be reasonable as it is obvious from table 10 that they were "ghost patients" (ie although they were registered with the practice they had probably moved elsewhere and were receiving care from some other doctor). Of the remaining 5 patients, a definite diagnosis using SCL, ICD9 and DSMIIIR was established as follows: using strict criteria, 2 had an affective psychosis, 1 a drug related psychosis and 1 an atypical psychosis. A probable diagnosis of schizophrenia, using broad criteria was made on the last patient.

Thus taking into account these missed patients as well as those misclassified on the computer, sensitivity, specificity and the positive and negative predictive value for each diagnostic category using strict and broad criteria were calculated (tables 11 and 12). The sensitivity of the computer entry, in particular for schizophrenia, calculated for all the three categories was lower when broad diagnostic criteria were used. This occurred because of an increase in the numbers of entries classified as false negatives when using broad diagnostic criteria. The positive predictive values, however, increased when the broad diagnostic criteria were applied as this resulted in a decrease in the numbers of false positives. The specificity and negative predictive values for all categories was at least 99.9%. High levels of specificity were obtained on account of the low prevalence of the psychosis in the general practices (Tables 11 & 12).

None of the measures described above could be accurately

Table 11: COMPUTER DIAGNOSES: SENSITIVITY AND SPECIFICITY OF DIAGNOSTIC CATEGORISATION ON COMPUTER

COMPUTER DIAGNOSIS		SENSITIVITY	SPECIFICITY
SCHIZOPHRENIA (ICD9 CODE 295)	Strict*	88.2% (95% CI= 62.2-97.9%)	99.9% (95% CI=99.8-99.9%)
	Broad*	70.8% (95% CI= 48.7-86.6%)	99.9% (95% CI=99.8-99.9%)
NON AFFECTIVE PSYCHOSIS(ICD9 295,297,298)	Strict	92.6% (95% CI= 74.2-98.7%)	99.9% (95% CI=99.8-99.9%)
	Broad	90.6% (95% CI=73.8-97.5%)	99.9% (95% CI= 99.9-100%)
NON ORGANIC PSYCHOSIS (ICD9 295-298)	Strict	90.9% (95% CI=73.6-97.6%)	99.9% (95% CI=99.8-99.9%)
	Broad	89.2% (95% CI=73.6-96.5%)	100% (95% CI= 99.8-99.9%)

* criteria used for diagnostic definition (see text)

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Table 12: COMPUTER DIAGNOSES: POSITIVE AND NEGATIVE PREDICTIVE VALUES OF DIAGNOSTIC CATEGORISATION ON COMPUTER

COMPUTER DIAGNOSIS		POSITIVE PREDICTIVE VALUE	NEGATIVE PREDICTIVE VALUE
SCHIZOPHRENIA (ICD9 CODE 295)	Strict*	71.4% (95% CI= 47.7-87.8%)	99.9% (95% CI=99.9-100%)
	Broad*	81% (95% CI= 57.4-93.7%)	99.9% (95% CI=99.8-99.9%)
NON AFFECTIVE PSYCHOSIS(ICD9 295,297,298)	Strict	80.6% (95% CI= 61.9-91.9%)	99.9% (95% CI=99.9-100%)
	Broad	93.5% (95% CI=71.2-98.9%)	99.9% (95% CI= 99.8-99.9%)
NON ORGANIC PSYCHOSIS (ICD9 295-298)	Strict	90.9% (95% CI=73.6-97.6%)	99.9% (95% CI=99.8-99.9%)
	Broad	100% (95% CI=87-100%)	99.9% (95% CI= 99.8-99.9%)

* criteria used for diagnostic definition (see text)

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calculated for affective psychosis on account of the small numbers of subjects involved.

4.1.4 Computer entries compared with written records

Two of the 13 participating practices had to be excluded from this analysis as the doctors recorded all their clinical information only on computers and written notes were not maintained. In the remaining 11 practices, 141 computerised and written records were assessed. Of all recorded consultation and prescribing entries, the mean proportions made only on the written notes were 26.5% and 4.8% while those made only on the computerised notes were 24.9% and 58.3% respectively. One half (48.6%) of the consultation entries and one third (36.9%) of the prescribing entries were common to both computerised and written notes. Thus, the mean proportion of total consultation entries made on the written and computerised records was 75.1% and 73.5% respectively, while these proportions for prescribing entries were 41.7% and 95.2% respectively.

4.2 Prevalence of psychosis

The prevalence of psychosis was calculated under three main diagnostic categories: schizophrenia (ICD category 295), non-affective psychosis (ICD category 295, 297, 298) and non organic psychosis (295-298) (table 13). Similar estimates for affective psychosis was not possible on account of the small numbers of patients involved.

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TABLE 13: ESTIMATED PREVALENCE OF PSYCHOSIS

			PREVALENCE
SCHIZOPHRENIA (295)	strict*	N 95%CI	2.1/1000 1.2-3.5/1000
	broad	"	3.0/1000 2-4.5/1000
NON AFFECTIVE PSYCHOSIS (295,297,298)	strict	N 95% CI	3.4/1000 2-4.5/1000
	broad	"	3.9/1000 2.7-5.6/1000
NON ORGANIC PSYCHOSIS (295-298)	strict	N 95% CI	4.1/1000 2.9-5.9/1000
	broad	"	4.6/1000 3.3-6.4/1000

* criteria used for diagnostic definition (see text)

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TABLE 14: ESTIMATED PREVALENCE OF PSYCHOSIS IN INNER CITY AND SUBURBAN PRACTICES

	PREVALENCE	
	INNER CITY	SUBURBAN
SCHIZOPHRENIA (295) strict* N#	3.25/1000	1.25/1000
95%CI	1.9- 5.6/1000)	0.2-2.9/1000)
broad* N	3.75/1000	2.00/1000
95%CI	2.3-6.2/1000)	1.0-3.9/1000)
NON AFFECTIVE PSYCHOSIS(295,297, 298)		
strict* N	4.50/1000	2.25/1000
95%CI	2.8-7.1/1000)	1.2 -4.3/1000)
broad N	5.25/1000	2.25/1000
95%CI	3.4-8.0/1000)	1.2-4.3/1000)
NON ORGANIC PSYCHOSIS(295-298)		
strict N	5.25/1000	2.50/1000
95% CI	3.4 -8.0/1000)	1.4-4.6/1000)
broad N	5.50/1000	2.75/1000
95%CI	3.6-8.3/1000)	1.5-4.9/1000)

* criteria used for diagnostic definition (see text)
# N=prevalence figures, 95%CI=95% Confidence Intervals

The prevalence of schizophrenia was 2.1/1000 for schizophrenia (using strict diagnostic criteria). This figure, however, was almost double if all cases of non organic psychosis were considered (4.1/1000). These values were then individually calculated for inner city practices and suburban practices. There are no absolute criteria for deciding on the level of urbanisation of each practice. Nor is it possible to assign a precise under privileged area score for each practice (Jarman, 1984). Although an underprivileged score based on the location of the practice can be obtained, this score does not provide a measure of deprivation for the whole practice population which is often scattered over a wide and varied area. Moreover, a measure of deprivation does not necessarily provide an indicator of inner city or suburban location. Using indicators such as level of industrialisation and commercialisation, however, eight practices were located in the inner city and five were suburban. For example, Kings Cross was considered inner city and Harrow suburban. The eight inner city practices taking part in the study comprised three single handed practices, three two partner practices, one three and one four partner practices. The five suburban practices comprised one single handed practice, two partner practices and one five partner practice. The total list size of the inner city practices was 34, 000 patients and of the suburban was 38,000 patients (table 18).

The prevalence in the inner city practices, under each of the three diagnostic categories was about double that of the suburban practices, using both the strict as well as the broad

criteria (table 14).

4.3 Patients

A total of 212 patients with a computer diagnosis of schizophrenia identified in the 13 participating practices of whom 106 were randomly selected for interview. Of the 106 patients, three had died, six had moved away, 10 were not traceable and four refused to take part.

4.3.1 Demographic details

The 83(78%) patients who were interviewed did not differ significantly in terms of age, sex, marital status or ethnic group from the total population of 212 patients. Detailed demographic characteristics of the sample interviewed are outlined in table 15. There were equal proportions of male and female subjects with no significant age differences between the sexes. Thirty (36%) patients lived alone and 30 (36%) lived with relatives who in 20 cases were spouses or partners. The others lived in hostels (21) or were in-patients at the time of the study. Fifty two of the 83 patients (63%) were prescribed antipsychotic medication according to the computerised records.

4.3.2 Psychiatric status

A retrospective diagnosis based on information in the case notes confirmed that 71 (86%) patients had a life time diagnosis of schizophrenia according to at least one of the

TABLE 15. DEMOGRAPHIC DETAILS OF PATIENTS (WHOLE SAMPLE N=212 AND THOSE INTERVIEWED N=83) WITH A COMPUTER DIAGNOSIS OF SCHIZOPHRENIA

	N=83	N=212
MEAN AGE	50yrs 23-81yrs	48yrs 21-83yrs
SEX M	45(54%)	118(56%)
F	38(46%)	94(44%)
MARITAL STATUS		
Single	42(51%)	116(55%)
Married	6(7%)	32(15%)
Cohabiting	14(17%)	15(7%)
Separated/Divorced	14(17%)	36(17%)
Widowed	7(8%)	13(6%)
COUNTRY OF BIRTH		
UK	55(66%)	126(59%)
Ireland	10(12%)	32(15%)
West Indies	10(12%)	34(16%)
Africa	3(3%)	8(4%)
Others	5(6%)	12(6%)
ACCOMMODATION *		
Pvt owned/rented	30(36%)	-
Council	30(36%)	-
Hostel	21(25%)	-
In-patient	2(2%)	-
DAYTIME ACTIVITIES *		
Part/full time employed	13(16%)	-
Retired	4(5%)	-
Sheltered accommodation	2(2%)	-
Day centre/luncheon club	25(30%)	-
No daytime occupation	34(41%)	-
Others	5(6%)	-

* Information on the type of accommodation and the daytime activities of the whole sample n=212 was not available in the case notes

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diagnostic criteria: DSMIIIR, ICD9, and Syndrome Checklist of the PSE. According to the Present State Examination, 13(16%) patients had no current symptoms and non specific symptoms were identified in 17(20%) subjects. The rest were allocated to specific CATEGO classes, 43(52%) with psychoses and 10(12%) with neuroses. Further details of the CATEGO classes allocated to each patient are listed below with their index of definition in parenthesis (table 16). Thirty patients (36%) scored at or above the threshold level (index of definition greater than 5) of psychiatric pathology which constitutes the minimum basis for clinical classification into one of the categories of functional psychosis or neurosis.

4.3.2(a) Catego subclasses for those patients with psychoses

Fifteen of the 18 subjects with schizophrenic psychoses (S) had a nuclear syndrome (NS) (ie first rank symptoms) and the remaining three although exhibiting schizophrenia did not present any first rank symptomatology (DS). All the six subjects with paranoid psychoses(P) had a pure paranoid psychotic syndrome (DP) and the one with manic and mixed affective psychoses (M) had mania (MN). Two of the depressive psychoses (D) had psychotic depression (PD) and one had an affective psychosis (AP). Finally of the 12 subjects categorised under other psychoses (O), 12 had a possible borderline psychosis (UP/XP) and the remaining 3 had a residual syndrome (RS). Twenty-eight of the 43 patients with psychosis, except for 1 (ie the patients with Manic/mixed affective psychosis) scored at or above the threshold level

TABLE 16 CATEGO CLASS AND INDEX OF DEFINITION

Total numbers of subjects allocated a CATEGO class on PSE=53

CATEGO CLASS		INDEX OF DEFINITION
Schizophrenic Psychoses(S):	18(21.7%)	(all cases ID$\geq$5)
Paranoid Psychoses (P):	6(7.3%)	(all cases ID$\geq$5)
Depressive Psychoses (D):	3(3.6%)	(2 cases ID$\geq$5)
Other Psychoses (O):	15(18%)	(2 cases ID=5)
Manic/mixed		
Affective Psychoses (M):	1(1.2%)	(ID<5)
Neurotic Depression (D):	6(7.2%)	(all cases ID<5)
Anxiety States (A):	2(2.4%)	(Both cases ID=5)
Obsessional Neurosis(B):	1(1.2%)	(ID<5)
Retarded Depression (R):	1(1.2%)	(ID<5)

(ie index of definition equal or greater than 5) for psychiatric pathology.

4.3.2(b) Catego subclasses for those patients with neuroses

All six subjects with neurotic depression (N) had simple depression (SD), the one with retarded depression (R) had a reactive depressive syndrome (RD) while the subject with the obsessional neurosis (O) syndrome was a pure state (ON). In the remaining two subjects with anxiety states (A), an anxiety neurosis (AN) and a phobic neurosis (PN) were identified in the both subjects. Only 2 (ie those with anxiety states) of the 10 patients with neurosis scored above the threshold level (index of definition of 5 or more) for psychiatric pathology.

4.3.2(c) Present State Examination scores

In patients with schizophrenic psychoses (S), the mean total score was 15 (range 3-40). Most subjects scored in the sub categories of delusion and hallucinations (DAH) and non specific neurosis (NSN). The mean sub score being 7.3 (range 1-14) for DAH and 5 (range 0-25) for NSN. In the categories of BSO and SNS, the scores were 1.3 (range 0-6) and 2 (range 0-11) respectively. These scores however, were considerably lower for those patients with Paranoid Psychoses(P), the mean total score being 7 (range 3-14) and the mean sub scores were 3 (range 1-6) for DAH , 1 (range 0-3) for BSO, 2.5 (range 0-7) for NSN and 0.6 (range 0-3) for SNS.

TABLE 17. FREQUENCY OF PROFESSIONAL CONTACT AS REPORTED BY PATIENT

	Up to once a month	Monthly to <3 monthly	3 monthly or less frequently	Hardly ever
General Practitioner	22(26%)	11(13%)	34(41%)	16(19%)
Psychiatrist*	12(14%)	37(45%)	-	-
Community psychiatric nurse	18(22%)	1(1%)	-	-

* 4 patients could not answer this question

4.3.3 Current contact with professionals

Thirty-three (39%) reported seeing their general practitioners up to three monthly, another 34 (41%) reported less frequent contact and 16(19%) hardly ever saw their general practitioner. Fifty-three (64%) patients were in contact with psychiatrists (table 17), two of these patients were in-patients. Of 19 (23%) patients in contact with community psychiatric nurses, only 10 were visited by the community psychiatric nurses in their homes. In all but one case, patients stated that contact with the nurse was primarily for administration of depot antipsychotic medication.

Eight patients were in touch with social workers (11%); 11 patients (13%) were in current contact with non-statutory bodies such as voluntary agencies, counselling organisations or religious groups.

4.4 The general practitioners and the patient

Thirty-one posts were available for general practitioners in the 13 practices but only 28 were filled at the time of the study (three were in the process of recruitment). Twenty-six of the 31 doctors in the 13 practices taking part, agreed to be interviewed (table 18); one general practitioner refused and one was away on long leave.

4.4.1 Services available in general practice

Where possible, doctors' and patients' attitudes to services will be presented together in order to draw comparisons between them.

TABLE 18. DETAILS OF GENERAL PRACTITIONERS PARTICIPATING IN STUDY

		Inner city	Suburban
PRACTICE SIZE	single	3	1
	two partner	3	2
	three partner	1	-
	four partner	1	-
	five partner	-	2
TOTAL LIST SIZE		34,000	38,000
TOTAL NUMBER OF GENERAL PRACTITIONERS		13/16 (8M,5F)	13/15 (8M,5F)
6 MONTHS PSYCHIATRY EXPERIENCE AS JUNIOR DOCTORS		2	6
OTHER EXPERTISE	P/T LECTURERS	1	2
	GP TRAINERS	2	2
MEAN AGE		42 years (SD=8.8)	
MEAN TIME SINCE REGISTRATION		16 years (SD=7.6)	
MEAN TIME IN GENERAL PRACTICE		12 years (SD=7.6)	

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4.4.1(a) Reasons for consultation and management

4.4.1(a)(i) Patients

Although the doctors usually referred all patients with a new onset psychosis for specialist assessment and advice, five general practitioners reported that they treated at least a quarter of such patients on first encounter. Twenty-one of the 26 had seen patients with schizophrenia in the previous month, of whom 14 had seen at least 1 patient in the preceding week.

In response to an open ended question, the main reasons given for the most recent consultation were psychological needs (eight doctors), physical problems (five), medication issues (five) and social consultations (four); one doctor gave two reasons. Medical certification (mentioned by seven doctors), administration of depot drugs (four) and general advice and counselling (seven) were the most common actions taken by the doctor. Four doctors reported carrying out a review of the patient's mental state in their last consultation. Four doctors had referred the patient to hospital for further care.

Patients main reasons for their most recent consultation with the GP were for help with physical complaints (36(43%)) and for a prescriptions (22(27%)). Less common consultations were for medical certification (eight patients, 10%), psychiatric problems (seven, 8%) and antipsychotic medication by depot injections (five, 6%). Five patients could not describe their reasons for their most recent visit.

4.4.1 a Carers and relatives

Sixteen practitioners reported having had consultations in the preceding month with patients' relatives, close friends or hostel staff. In 12 instances, anxiety about the patient's psychiatric state was the reason for attendance; the remainder consulted to discuss their own emotional problems or family difficulties resulting from the patient's condition.

4.4.2   Views on services in general practice

4.4.2 a Need for contact with health professionals

On the whole, the doctors were fairly consistent in their views about the level of care they and the community psychiatric nurse should provide to their patients with chronic psychoses, but were less uniform in their views regarding contact with other professionals (table 19). The common view of the general practitioners interviewed was that regular contact with the general practitioner and community psychiatric nurse was necessary, but that contact with the psychiatrist and social worker should occur as and when necessary. A quarter (7) of the general practitioners interviewed, however, felt that their contact was only necessary when required and a third (10) wanted regular six month review by the psychiatrists involved in their care. Just under half (11) the general practitioners interviewed did not want a counsellor to be involved in the care of patients with schizophrenia.

Seventy-three (88%) of the patients interviewed reported a continuing need for contact with their GP. Forty-two of the

TABLE 19. PROFESSIONAL CONTACT PERCEIVED NECESSARY BY THE GENERAL PRACTITIONERS

	Only when necessary	Up to 3 monthly	Up to 6 monthly	No contact necessary
General practitioner	7(27%)	17(65%)	1(4%)	1(4%)
Community psychiatric nurse	8(31%)	18(69%)	-	-
Psychiatrist	11(42%)	2(8%)	10(38%)	3(12%)
Social Worker#	14(52%)	5(19%)	2(8%)	3(12%)
Counsellor#	11(42%)	2(8%)	-	11(42%)

2 general practitioners could not answer these questions

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83 with a history of active illness in the last four years
(51%) expressed a current need to see a psychiatrist and 31
(37% of the need for contact with a community psychiatric
nurse.

4.4.2 b Views on shared care records

Twenty-three general practitioners were enthusiastic
about the possibility of introducing shared care records as
used in antenatal care, but 13 of the 28 general practitioner
interviewed, expressed doubts that patients would bring the
card to each consultation with a professional.

Of the 53 patients currently in contact with a mental
health professional, 18 favoured the use of shared care
records, nine were prepared to give the idea a try (17%), 16
(30%) were not in favour and 10 (19%) were undecided.

4.4.2 c Location of the psychiatric services

Although 19 doctors reported that they would welcome a
psychiatric liaison outreach service in their practice, only
one practice (single handed) had a visiting liaison
psychiatrist. Four of the 53 patients in contact with
psychiatrists (8%) were dissatisfied with the setting in which
they currently saw their consultant and 21 (40%) were opposed
to visiting the psychiatrist in their general practitioner's
surgery. The principal reasons for this opposition were a
concern that other attenders may realise they were seeing a
psychiatrist, a desire to remain in contact with a hospital
service and a wish for their psychiatric care to remain

devolved from their general practice care.

4.4.3 Predictors of level and type of care

A search was made for independent predictors of schizophrenic patients' annual consultation rates at the general practice over the preceding four years and schizophrenic patients' contact with a psychiatrist or a community psychiatric nurse. Based on observations made in other similar research in general practice, the factors considered most likely to influence use of general practitioner services (ie attendance rates) and of mental health professional were selected as follows:

a) Patients factors comprised increasing age, being a man, living alone, presence of symptoms on the Present State Examination, prescription of antipsychotic drugs as recorded in the notes and contact with mental health professionals (when the dependent variable was general practice consultation rate).

b) General practice factors comprised inner city location, being in a group practice, the doctor having received at least six months of hospital psychiatry training, the doctor favouring regular psychiatric review of patients and general practice attendance rates (when the dependent variable was contact with mental health professionals).

4.4.3a Factors influencing general practice attendance

Preliminary statistical tests were done in order to

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assess whether there was a relationship between the various independent variables. Inner city general practitioners were less likely to have completed a 6 month post in Psychiatry as a part of their training (% diff= 30%, X^2=32.4, df=1, 95%CI= 20.8-39.2). General practitioners who had not received at least 6 months training in Psychiatry were more likely to favour regular psychiatric review of patients (% diff= 44.6, X^2=47.19, df=1, 95% CI= 35.4-53.8). Lastly, doctors favouring regular psychiatric review of patients were more likely to be inner city general practitioners (% diff=9.5%, X^2=24.73, df=1, 95% CI= 0.5-18.5). As these three independent variables were closely related to each other, it was considered reasonable not to include all of them in the regression equation. Inner city location was the only one of the three variables finally used in the multiple regression analysis, as it was significantly associated with general practice attendances on univariate testing.

Univariate analysis revealed a trend for patients on antipsychotic medication to have a higher general practice attendance rate(table 20). On multiple regression analysis, current treatment with antipsychotic medication was independently predictive of a high attendance rate (table 20) although it explained only four per cent of the variance in attendance rate.

4.4.3 b Factors influencing contact with the mental health professionals

Significant univariate predictors of contact with a

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TABLE 20 FACTORS INFLUENCING GENERAL PRACTICE ATTENDANCES

FACTORS(INDEPENDENT VARIABLES)	RESULTS ON UNIVARIATE ANALYSIS (Student t test)	RESULTS ON MULTIVARIATE ANALYSIS
Male patients	F=1.6 T= 0.46 p= 0.64	B=1.9 95%CI=-0.01 -3.72 p=0.22
Age	----	B= -0.04 95%CI=-0.68-0.61 p=0.49
Subject living aloneOR	F= 1.2 T= 1.4 p= 0.18	B= 1.85 95%CI=-0.01-3.7 p= 0.17
Active symptoms on PSE	F= 2.2 T= 1.1 p= 0.3	B=-2.3 95%CI=-0.66- 3.9 p= 0.11
Subject on antipsychotic therapy	F= 2.2 T= -1.82 p= 0.07	B=4.06 95%CI=0.006-8.1 p=0.02
Inner city practices	F=2.3 T= 0.8 p=0.5	B=0.72 95%CI=-0.02-1.46 p=0.63
Group practices	F=1,7 T=0.9 P=0.4	B=0.39 95%CI=-1.54-0.74 p=0.78
Contact with psychiatrist	F=1.8 T= 0.01 P=0.9	B=0.91 95%CI=-2.08-026 p=0.60

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mental health professional were being a man, the presence of active psychotic symptoms on the Present State Examination, current treatment with antipsychotic drugs as recorded in the general practice notes and increasing general practice attendance rates (table 21). All the independent variables (excluding general practitioners having received at least six months of hospital psychiatry training and doctors favouring regular psychiatric review of patients) listed in table 21, together with age were then adjusted for in a logistic regression. These variables relating to general practitioners having received at least six months training in hospital psychiatry and doctors favouring regular psychiatric review of the patients were excluded because of their close relationship to each other as discussed in previous section. Regressions analysis resulted in little change to the odds ratios obtained except for increasing general practice attendances which became non significant on adjustment. The level of significance, however, for the three predictor variables obtained on univariate testing, substantially dropped (table 21). Hence, male sex and current prescription of antipsychotic drugs as recorded in the general practice notes, were the main predictors of contact with mental health professionals. There was a trend for patients with active psychiatric symptoms as identified on the Present State Examination Interview (p=0.095), to have a greater contact with a psychiatrists (Table 21).

TABLE 21   FACTORS INFLUENCING CONTACT WITH PSYCHIATRIC SERVICES

Factors (independent variables)		Odds ratios without adjustments	Odds ratios with adjustments
Male Patient	OR	6.8	5.32
	95%CI	2.5-19.1	1.4-20
	p	0.0001	0.015
Subject living alone	OR	1.0	1.13
	95%CI	0.4-2.5	0.3-4.1
	p	0.99	0.85
Active symptoms on PSE	OR	3.8	3.4
	95%CI	1.3-11.6	0.81-14
	p	0.01	0.095
Patients prescribed antipsychotic therapy	OR	13.1	8.5
	95%CI	4.2-40.6	2.1-34.8
	p	0.000001	0.003
Inner city practices	OR	0.4	0.5
	95%CI	0.1-1.2	0.11-2.04
	p	0.09	0.31
Group Practices	OR	1.7	0.7
	95%CI	0.7-4.6	0.2-2.62
	p	0.2	0.6
Increasing attendances in general practice	OR	3.7	0.96
	95%CI	1-13.8	0.85-1.08
	p	0.05	0.54
Increasing age	OR	2.4	0.98
	95%CI	0.9-6.4	0.9-1.02
	p	0.07	0.32

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4.5 Case control study

Of the 212 patients with a computer diagnosis of schizophrenia, 13 patients with schizophrenia could not be matched within a 5 year age band with a patient with chronic physical disorder and 11 could not be matched with a patient randomly selected from the GP age/sex register. In 35 instances the subjects randomly selected from the GP age/sex register control could not be matched with patients with chronic physical disorder. Only data on those patients successfully matched within the 5 year bands were used in the analysis of each comparison. Information collected from the patients' case notes categorised 89.2% (95% CI= 81.1-94.2%) of these patients as schizophrenic according to broad diagnostic criteria (table 8). Sociodemographic details of a 1 in 2 random sample of the population are reported in table 15. The median values and interquartile ranges for data collected from the case notes are shown by group in table 22. The median annual attendance rates of patients with schizophrenia (5.75 per patient per year) was marginally higher than that of the chronic disease controls (5 per patient per year) and substantially greater than that of the general practice age/sex register controls (2 per patient per year). Median attendance for physical reasons (4.75 per patient per year) was high in the chronic disease controls whereas attendances for mental health reasons hardly ever occurred in this group (upper quartile = 0.25 per patient per year). Patient with

TABLE 22 SUMMARY OF FINDINGS FROM GENERAL PRACTICE CASE NOTES

	Schizophrenia	Chronic control	Randomly selected control
Total attendanceLQ* rate M* visits/yr UQ*	3.25 5.75 9.44	3.0 5.0 8.0	0.25 2.00 4.00
Physical attendanceLQ rate M visits/yr UQ	1.25 2.75 5.48	2.67 4.75 7.50	0.25 1.75 3.75
Mental attendanceLQ rate M visits/yr UQ	0.27 1.50 3.63	0 0 0.25	0 0 0
Social entries inLQ notes M nos/yr UQ	0 0 0.25	0 0 0	- - -

Repeat
prescriptions
nos/yr   LQ
              M
              UQ
	0
	0.33
	0.91
		0
		0.51
		0.91
			0
			0
			0.38

Disease related LQ assessmentsM nos/yr UQ	0 0.11 0.31	0 0.25 0.73	NOT APPLICABLE
Letters LQ from M specialistUQ nos/yr	0 0.33 0.75	0 0.13 0.50	NOT APPLICABLE

*LQ - Lower quartile, M - Median, UQ - Upper quartile

schizophrenia attended frequently with both physical (Median = 2.75 per patient per year) and psychological (Median = 1.5 per patient per year) complaints. Repeat prescribing (SCZ Median = 0.33 per patient per year, Chronic disease Median = 0.51 per patient per year) and disease related assessments (SCZ Median = 0.11 per patient per year, Chr Disease Median = 0.25 per patient per year) occurred infrequently in both groups of patients.

4.5.1 Conditional logistic regression

was used for the following comparisons:

1) Schizophrenic patients with chronic disease controls.

2) Schizophrenic patients with general practice age/sex register controls.

3) Chronic controls with general practice age/sex register controls. This regression was conducted to serve as a check on the previous two comparisons.

In each of these comparisons the dependent variable was the diagnostic group to which the patient belonged (ie schizophrenia, chronic diseases or general practice age/sex control). Disease-related consultations and hospital letters received were not relevant for the general practice age/sex register controls who were not chosen on the basis of a chronic disorder. Social entries were also very infrequent in this group. Hence these independent variables were used only in the comparison between patients with schizophrenia and the chronic disease controls. As there were very few consultations for mental health reasons and repeat prescriptions in the randomly selected controls, these

TABLE 23 COMPARISON BETWEEN PATIENTS WITH SCHIZOPHRENIA AND CONTROLS WITH OTHER CHRONIC DISEASES

Factors (independent variables)*		Conditional Logistic Regression Without adjustments**	Conditional Logistic Regression With adjustments $
Total attendance	p # OR 95%CI	0.32 1.25 0.81-1.94	0.164 1.59 0.83-3.08
Physical attendance	p OR 95%CI	0.001 0.281 0.17-0.47	0.001 0.28 0.13-0.58
Mental attendance	p OR 95%CI	0.001 7.57 4.34-13.22	0.001 18.19 6.45-51.36
Social entries in notes	p OR 95%CI	0.002 2.29 1.37-3.82	0.005 2.64 1.34-5.2
Repeat prescriptions issued	p OR 95%CI	0.007 0.54 0.34-0.84	0.078 0.55 0.28-1.07
Disease related assessments undertaken	p OR 95%CI	0.002 0.52 0.34-0.78	0.057 0.54 0.29-1.02
Letters (disease related received from specialists)	p OR 95%CI	0.17 1.37 0.93-2.03	0.267 1.41 0.77-2.58

* dichotomised at median of chronic control group

p= p value, OR= Odds ratio, 95% CI= 95% Confidence intervals

$ adjustments made for civil and employment status and duration and activity of the illness (see text)

TABLE 24 CONDITIONAL LOGISTIC REGRESSION ANALYSIS WITH ADJUSTMENTS BETWEEN PATIENTS WITH SCHIZOPHRENIA AND CONTROLS WITH CHRONIC DISEASES

Factors (independent variables)*	Conditional Logistic Regression with adjustments for civil and employment status	Condition Logistic Regression with adjustments for activity & duration of illness
Total attendances # p OR 95% CI	0.22 1.5 0.8-2.9	0.21 1.3 0.85-2.1
Physical attendances p OR 95% CI	0.001 0.28 0.13-0.58	0.001 0.3 0.17-0.5
Mental attendances p OR 95% CI	0.001 12.13 5-29.5	0.001 11.8 6-23.2
Social entries in notes p OR 95%CI	0.008 2.5 1.3-4.83	0.001 2.5 1.5-4.2
Repeat prescriptions p issued OR 95%CI	0.1 0.6 0.3-1.1	0.005 0.5 0.3-0.8
Disease related assessments p undertaken OR 95%CI	0.05 0.6 0.32-0.99	0.07 0.7 0.4-1.3
Letters (disease related received from specialist) p OR 95%CI	0.4 1.3 0.7-2.3	0.2 1.2 0.67-2.8

*dichotomised at median of the chronic physical diseases control group

p=p value, OR= Odds ratio, 95%CI= 95% Confidence Intervals

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variables were dichotomised, corresponding to none or at least one such event.

4.5.1(a) Conditional logistic regression without adjustments

The results of a case control study is often expressed as odds ratios. The odds ratio (OR) is the odds of a case patient being at risk divided by the odds of a control patients being at risk. An odds ratio of 1 indicates no difference in risk in either of the groups. On the other hand, an odds ratio greater than one indicates that the cases are at a higher risk than the controls whereas an odds ratio less than 1 suggests the controls are at a greater risk than the cases.

Odds ratios for all three comparisons using independent variables dichotomised at the median of the control group are given in tables 23, 24, 25 and 26. For example, in the comparison between the patients with schizophrenia and the controls randomly selected from the general practice age/sex register (table 25) the total attendance rates above the median of the comparison control (2 attendances per year) predicted that a patient was 11-12 times more likely to belong to the schizophrenic group. Similarly, the results indicated that those who attended above the median attendance rates for physical reasons (1.75 attendance per year) for patients selected from the age sex general practice register and those who had more than one consultation for mental health reasons were twice and 22 times respectively more likely to belong to the schizophrenic group rather than the control group (table 25). In the comparison between the patients with

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TABLE 25 COMPARISON BETWEEN PATIENTS WITH SCHIZOPHRENIA AND CONTROLS RANDOMLY SELECTED FROM THE GP AGE SEX REGISTER

Factors (independent variables)*		Conditional Logistic Regression	Conditional $ Logistic Regression (with adjustments)
Total attendance rate	p # OR 95%CI	<0.001 11.13 5.4-22.93	<0.001 11.98 3.85-37.36
Physical attendance rate	p OR 95%CI	0.004 1.9 1.22-2.96	0.249 1.58 0.73-3.45
Mental attendance rate	p OR 95%CI	<0.001 21.83 9.63-49.49	<0.001 18.56 5.95-57.87
Repeat prescriptions issued	p OR 95%CI	0.014 2.75 1.22-6.18	0.011 8.72 1.65-46.24

* independent variables dichotomised at median of control group randomly selected from the GP age sex register

p= p value, OR= Odds ratio, 95% CI= 95% Confidence intervals

$ adjustments made for civil and employment status and (see text)

TABLE 26 COMPARISON BETWEEN THE CHRONIC DISEASE RANDOMLY SELECTED GP AGE SEX REGISTER CONTROLS

Factors (independent variables)*		Conditional Logistic Regression (without adjustments)	Conditional $ Logistic Regression (with adjustments)
Total attendance rate	p # OR 95%CI	<0.001 13.0 5.24-32.28	<0.001 9.14 2.75-30.37
Physical attendance rate	p OR 95%CI	<0.001 6.67 3.31-13.43	0.002 4.6 1.73-12.26
Mental attendance rate	p OR 95%CI	<0.001 3.33 1.75-6.35	0.01 2.82 1.29-6.17
Repeat prescriptions issued	p OR 95%CI	0.028 2.5 1.10-5.68	0.095 2.49 0.85-7.27

* dichotomised at median of control group randomly selected from the GP age sex register

p= p value, OR= Odds ratio, 95% CI= 95% Confidence intervals

$ adjustments made for civil and employment status (see text)

schizophrenia and the controls with chronic physical disease however, those who attended for physical problem above the median of the group of patients with chronic physical diseases (4.75 attendance per year) were 3-4 times more likely to belong to the group of patients with chronic physical diseases (table 23). Patients attending at least once each year for mental health problems were 7 times more likely to belong to the schizophrenic group. The presence of a social entry in the notes was associated with membership of the schizophrenic group rather than the chronic physical disease group. Repeat prescriptions and disease related assessments were predictive of belonging to the chronic physical disease control group (table 23).

The total attendance rate, which included physical and mental health consultations, was not a significant predictor of diagnostic group membership in the comparison between patients with schizophrenia and the chronic disease controls (table 23). No unexpected results were found in comparisons made between the chronic disease group and the controls randomly selected from the general practitioners' age/sex disease register (table 26). Total attendance rates, attendance for physical problems, attendances for mental health problems and repeat prescriptions above the median of the control group were significantly associated with chronic patients as compared to the controls.

When the continuity of the independent predictor variables was maintained in the analysis, no change in results was observed, except in the case of hospital letters received

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by the general practitioners in the comparison between patients with schizophrenia and chronic disease controls (table 23). On average, patients were significantly more likely to belong to the schizophrenic group with increasing number of letters received (p=0.009, odds ratio=1.53 per letter received, 95%CI=1.11-2.11). It was not possible, however, to predict the diagnostic group using the dichotomised variable (table 23).

4.5.1(b) Conditional logistic regression with adjustments

In the comparison between the patients with schizophrenia and the chronic disease controls, civil status (single versus ever married or cohabited), employment status (paid work or no work), activity of illness (treatment given within the past 4 years) and duration of illness (time since diagnosis) were regarded as 4 factors which might be expected to be confounders. If one were to assume that the confounding effects of civil and employment status were quite separate from the activity and duration of illness, then the analysis would need to be done separately for each pair of variables. Hence, each pair of variables (ie civil and employment status on one hand and activity and duration of illness on the other) and all the four variables were separately adjusted for in three different conditional logistic regression. Adjustments for all four variables are presented in tables 23, 24, 25 and 26.

Ethnic origin is also a possible confounder, but the issues with this variable are much more complex. The only

ethnic categorisation leaving sufficient numbers in the analysis was a division into those born in the United Kingdom or abroad. This division, however, is of little value as the various ethnic minorities carry disparate risks for illnesses and have different patterns of service utilisation (Iniichen 1990) (Gilliam et al, 1989). Thus, a decision was made not to control for this variable.

In the last two comparisons made between the patients with schizophrenia and chronic physical diseases and the controls selected from the general practice age/sex register (tables 25 & 26), adjustments for the length and duration of illness were not made as these variables were not relevant to these analyses. Since the control group in this comparison was not selected on the basis of a patients having an illness, adjustment was only made for the patients' civil and employment status.

In the comparison between patients with schizophrenia and the chronic disease controls, adjustment for all 4 factors produced some changes in the results. The odds ratios for the attendance rate for mental health reasons increased markedly; disease related assessments fell just short of significance and repeat prescribing was no longer significant (table 23). When this comparison was repeated, adjusting separately for two pairs of variables, namely, civil and employment status and activity and duration of illness, the direction of the results and their level of significance was no different than when adjustments were made for all four factors. Repeat prescribing, however, became significant when adjustment were

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made for the duration and activity of illness and disease related assessments reached significance when adjustments were made for patients' civil and employment status (table 24).

In the comparison between patients with schizophrenia and the controls randomly selected from the GP age/sex register only physical consultations became non-significant after the adjustment (table 25), otherwise the odds ratios remained fairly high. In the comparison between the chronic disease controls and the controls randomly selected from the age/sex register, these adjustments resulted in a slight reduction of odds ratios but only repeat prescriptions were no longer significant (table 26).

CHAPTER FIVE

DISCUSSION

This chapter will consist of three sections. In the first section, a summary outline of the main findings of the study will be presented. The next section will deal with the limitations of the results described in this thesis. This will be followed by a general discussion of the results specific to the aims of the study. Finally, the findings of this study will be discussed with reference to other literature published in this field so that recommendations can be made for the planning of clinical services and the development of further research in this important area of general practice.

5.1 SUMMARY OF MAIN RESULTS

The VAMP general practice computer system was found to be accurate and reliable. Applying strict diagnostic criteria, the sensitivity and positive predictive value of the computer diagnosis of schizophrenia were 88% (95% confidence intervals 62% to 98%) and 71% (95% confidence intervals 48% to 88%). For the broader category of non-affective psychosis, the sensitivity of computer diagnosis was 93% (95% confidence intervals 74 to 99%) and positive predictive value 81% (62% to 92%). In the broadest category of non-organic psychosis these estimates were 91% (95% confidence intervals 74% to 97%) and 91% (95% confidence intervals 74% to 98%) respectively. The

specificity and negative predictive value were high in all cases at 99.9%. The misclassification rate was generally low. A very high level of all medical entries were entered on computer. On average 95% of all known prescriptions and 74% of all consultations were recorded on computer compared with 42% and 75% in written records. The prevalence of schizophrenia and non-affective psychosis in this sample was 2.1/1000 (95% confidence intervals 1.2% to 3.5%) and 3.4/1000 (95% confidence intervals 2% to 4.5%). The estimated prevalence of each diagnostic category was almost double in the inner city practice populations as compared to suburban practice populations.

The interviews with patients with schizophrenia and their general practitioners revealed that 69 (83%) patients had active symptoms according to the Present State Examination interview and 52 (63%) were currently prescribed antipsychotic medication. Fifty three patients were in contact with a psychiatrist. Approximately one quarter were visited by a community psychiatric nurse; in 18 of these 19 cases, the main reason for contact was reported to be for administration of medication by depot injections. In all but one case, patients seeing a community psychiatric nurse were also being seen by a psychiatrist. Sixteen doctors reported having a consultation in the previous month with a patient's relative, friend or a member of the hostel staff. There were considerable differences between patients and their doctors in attitudes to the use of services. Of the 26 general practitioners, 23 were enthusiastic about the possibility of

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shared care records. Of the 54 patients in contact with a mental health professionals, only 18 favoured the use of shared care records. Most of the doctors (19, 73%) reported they would welcome a psychiatric liaison service in their practice but 21 (40%) of 53 patients said they would not. Patients receiving antipsychotic drugs attended their general practitioner more frequently than those not taking antipsychotic medication. Patients prescribed antipsychotic medication (adjusted odds ratio 8.5, 95% confidence interval 2.1 to 34.8. p=0.003), male sex (odds ratio 5.3, 95% confidence interval 1.4 to 20, p=0.015) and active symptoms on the present state examination (odds ratio 3.4, 95% confidence intervals 0.81-14, p=0.09) were all predictive of current contact with mental health professionals.

Lastly, an assessment of the case records revealed that patients with schizophrenia were in contact with general practitioners more often than the average patient but at a similar rate to patients with chronic physical disorders. The patients with schizophrenia attended more frequently for physical problems than the average patient but less often than patients with chronic physical disorders. This trend was also observed for the number of repeat prescriptions issued to each the three groups of patients. Although attendances relating to mental health occurred infrequently, they were significantly more often associated with patients with schizophrenia. Despite these trends, disease related assessments were more likely to done by the general practitioners for patients with chronic physical disorders

than patients with schizophrenia. Communications with hospital specialists, as measured by the number of letters received by the general practitioner, were infrequent in patients with either physical or psychiatric disorders.

5.2 LIMITATIONS OF THE STUDY

5.2.1 Representativeness of practices participating in the study

Before generalising the results of this study, it is important to assess the representativeness of the sample of practices taking part. The 13 (81%) London practices on the VAMP Research Bank were selected from the 16 that were eligible to participate. Only those general practitioners willing to take part were recruited. Previous research suggests that practices on the VAMP Research Bank are representative with respect to the age and sex distribution of patients and general practitioners of all practices in England and Wales (Mann, 1992). In this study, however, only London practices on the VAMP research bank were recruited to the study.

Twelve of the 13 practices were located in the former North East and North West Thames Regions and all 12 were distributed between four former London Family Health Services Authorities (FHSA), namely Brent and Harrow, Kensington Chelsea and Westminster, Camden and Islington and City and East London. The remaining practice was located in Southwark in the former South East Thames Region. The North Thames Region is a very large region composed of a mix of both inner

city and suburban London general practices together with a substantial number of practices in peripheral counties adjacent to North East and North West London. North London on the other hand, was composed of nine former FHSAs. General practices from four of these former FHSAs were represented in the study sample.

A comparison of the practices represented in the study sample (excluding the Southwark based practice) with the range of practices in the four former constituent FHSAs mentioned above and in the former North Thames Region as a whole was conducted. Data were individually collected from the four FHSAs. Information relating to the former North Thames Region, was obtained from the Health Personal and Social Services Statistics for England (Department of Health, 1992). A list of the numbers of principals practising in groups of 1, 2, 3, 4, 5+ partners, as well as the average numbers of patients per principal were obtained. Table 27 lists the numbers of principals working in practices of different sizes in the study sample, compared to the four former FHSAs listed above and the former North Thames (ie east and west) Region. The study sample appeared to be more representative of its former constituent FHSAs than the North Thames Region as a whole. Single handed and two partner practices were over-represented in the study sample when compared to the North Thames Region whereas single handed practices were marginally under represented when compared to the four former constituent FHSAs. The average list size of patients per principal in the study sample was 2322, which compared well with the average

TABLE 27 SIZE OF PARTNERSHIP IN STUDY SAMPLE COMPARED TO NORTH THAMES REGION AND FOUR CONSTITUENT FHSAs

	NUMBERS OF PRINCIPALS					
	Study sample		4 constituent FHSAs *		North Thames Region	
	n	%	n	%	n	%
Total	12	(100)	539	(100)	4048	(100)
Single-handed	4	(33)	254	(47%)	729	(18%)
In partnership						
2 doctors	4	(33)	140	(26%)	740	(18%)
3 doctors	1	(8.3)	66	(12.3%)	726	(18%)
4 doctors	1	(8.3)	34	(6.3%)	664	(16%)
5 or more doctors	2	(16.7)	45	(8.4%)	1189	(30%)
Average numbers of patients per GP Principal	2322		2300		2064	

These figures are derived from Health and Personal Social Services Statistics and from the four health authorities

* The four constituent FHSAs were Camden and Islington, Kensington, Chelsea and Westminster, Brent and Harrow and City and East London

list sizes for the four former constituent FHSAs (2300 patients per general practitioner) and the North Thames Region (2062 patients per general practitioner). Although differences between the study sample and the range of practices in the former North Thames Region were observed, the regional spread of practices from single handed to 5 partners, was represented in the study sample under each category. The similarities observed between the sample of practices used in the study and their four former constituent London FHSAs suggests that the study sample was probably more representative of London practices (table 27). It would hence be appropriate to extrapolate the finding of this study to the care of patients with schizophrenia in London general practices. On the other hand, the differences observed between the study sample and practice throughout the North Thames Region may suggest that the results described in this thesis may not reflect regional practice. This is because the North Thames Region is composed of a mix of inner city and suburban London practice together with a large number of outer London practices.

5.2.2 Validity and reliability of data collection

Another important aspect that needs to be considered is the validity and reliability of the data collected. In this study, attempts were made at each phase of the study, to obtain as accurate an account as possible of the care of patients with schizophrenia and associated psychosis in general practice. This was ensured by special attention to

the data collection process at each phase of the study, as outlined in the following pages.

5.2.2a Diagnosis retrospective review

The structured and focused format of each of the three diagnostic schedules, the ICD 9, the DSMIIIR and the Syndrome Check List facilitated accurate recording of patient information. Diagnostic categorisation of each patient was made after discussion with a psychiatrist (Michael King) who remained blind to the computer category of the patient. This process would have reduced any diagnostic bias that might have occurred, if the researcher was the only person responsible for arriving at a diagnosis.

The diagnostic criteria applied retrospectively to the patients' case notes provided a life time diagnosis for each patient. General practice records are a rich source of data which contain the written opinions of specialists, family doctors and allied professionals over many years. A longitudinal diagnosis of this type may be more accurate than one cross-sectional clinical assessment of a patient, a method often used in epidemiological studies.

5.2.2 b Process data collected from notes

The information on attendance rates, clinical care, communications with hospitals and other professional services was collected in a standardised manner. Data extracted from case notes, however, may not be a true reflection of the care provided in general practice. Not all consultations

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(particularly home visits and telephone consultations) are recorded and communications with medical or paramedical personnel in the specialist services may be spoken rather than written (Pullen & King 1992). However, the controlled nature of our comparison would have reduced the effect of this potential error.

One of the drawbacks of data extracted from general practice case notes is the lack of qualitative detail. This deficiency, however, was supplemented by the detailed interviews conducted with both the doctors and the patients.

5.2.2 c Patients' interviews

All interviews with patients were administered by a single researcher who was a trained psychiatric registrar (Sara Davies). The current psychiatric status was assessed using the Present State Examination which has been discussed in detail in the method section. This interview has been widely used and well validated in this country. The Present State Examination provided a profile of the patient's current mental state in contrast to the life time diagnosis obtained by the use of the syndrome check list, the ICD 9 and the DSM IIIR.

The other interview administered to patients was the service utilization interview assisted questionnaire which was developed for the study. The schedule was not tested for reliability or validity on account of constraints of time and resources imposed by the study timetable. The extent of this limitation remains unknown and is difficult to correct for.

It has been said that when assessing patients' views of a service, their comments and ratings obtained in response to questionnaires administered to them can be difficult to interpret as the data collected by such means may often prove inadequate. These difficulties, however, must not detract researchers from the main aim of involving patients in their health care (Sensky & Catalan, 1992).

5.2.2 d Interviews with general practitioners

This semi-structured interview (adapted for this study) was administered to general practitioners at their surgeries by me. During the interview with the general practitioners, responses to questions were transcribed on paper and then content analysed by myself at a later stage. A more accurate account of the general practitioners' responses may have been obtained through audiotaped interviews. The main aim of the interviews both with the patients and the general practitioners, however, was to supplement the data collected from the patients' case notes and, within the time constraints of the study, it would seem that this aim was successfully achieved.

5.2.2 e The use of qualitative methods - interviews with patients and general practitioners

The drawback of structured interviews used both with patients and general practitioners in the study described in this thesis could be overcome by using qualitative research techniques (section 2.4.1 c and section 2.4.2). Since the

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completion of this study, there has been an explosion of interest in the use of qualitative methods in general practice research (Britten, 1995). Qualitative research has a long history in anthropology, sociology and education (Helman, 1984). This method of investigation increasingly used in general practice and is particularly appropriate when researching a previously unexplored topic or one that is poorly understood or ill defined. The use of qualitative methods or a combination of both qualitative and quantitative techniques could be considered if one were to repeat the interviews with patients and general practitioners in order to examine their views of the services provided in general practice.

There are various qualitative methods used for research purposes. These are essentially semi-structured, depth interviews, focus groups or observational studies. Semi-structured interviews are conducted on the basis of a loose structure of open question which define the area to be explored. Depth interviews are less structured and cover only a few issues in great depth. Focus groups bring small groups of people (eg patients or general practitioners) together to discuss specific topics of interest proposed by the researcher. Lastly, observational studies could be used. These are either participant or non- participant lead and the methods used for this purpose include watching, listening, acting or video-taping a real situation.

The use of any of these qualitative methodologies could be used for a study on providers' or users' views of a

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service.   These techniques would produce a wealth of information and would reduce investigator bias that could occur if a structured interviews as employed in the study described in this thesis, were to be used.   The techniques employed for the data collection and analysis of qualitative research however, are often time consuming and adequate funding must be sought before embarking on such a project. Special training in research skills are also necessary in order to conduct this work satisfactorily.

5.3 IMPLICATION OF THE FINDINGS OF THIS STUDY

The results of the study will now be discussed with reference to other published literature in this area of general practice care. This will be done by taking each of the study aims in turn and exploring the results obtained in the light of current clinical practice and research.

5.3.1 The use of general practice computers in the care of patients with schizophrenia and other psychoses

The first aim of the study was to determine the accuracy of diagnosis of psychosis on the general practice computer system. I found that the diagnosis of schizophrenia and other related psychosis as entered on the GP computer systems was accurate. The rate of misclassification was low and very few cases were not entered on the computer by the general practitioner. The sensitivity, specificity and predictive value of the computer categories for schizophrenia, non-

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affective psychosis and all organic psychoses were high.
These parameters were a measure not only of the general
practitioners' ability to key in a given diagnosis but of the
ability of the doctors to decide on a diagnosis after taking
into account all letters and records in the patients' notes.
This study clearly indicates that given the right incentives,
general practitioners are capable of maintaining accurate
computerised records. Such records could be used for a range
of purposes.

These results together with some of the other validation
studies involving the VAMP computerised practices, suggest
that this database is a very useful general practice resource.
Jick et al (1991) examined the extent of agreement between
clinical information recorded on general practice VAMP surgery
computers with information found in the letters received from
the hospital consultants. In 1037 (87%) of the 1191 patients
studied, the entry on the practice computers reflected the
diagnosis stated in the letters from the hospital consultants.
A comparative analysis of the incidence of congenital
malformations on the VAMP database with figures reported in
RCGP(1975) and OPCS (1989) studies (Mann, 1992) suggests good
agreement. Similarly, other work on the incidence and
prevalence of diabetes in practices using VAMP databases in
Harrow, former North West Thames Region and England and Wales
suggested that the figures obtained in each of the three
locations compared well with the figures obtained from the
third National Morbidity Survey (RCGP/OPCS/DOH, 1986).

The accuracy of psychiatric case registers is lower

than that of these computerised records. Sensitivity for diagnosis of schizophrenia on the Camberwell case register may be as low as 50% by strict criteria (Farmer et al, 1992). This has important implications for the use of databases for epidemiological and health services research and clinical trials. With 4.3 million patients on the VAMP research bank throughout England and Wales, a large potential exists for research. For example, aetiological factors in schizophrenia could be examined on a large scale with a readily selected control population, using a case control methodology. Similarly, having identified a suitable population of patents with schizophrenia it would be possible to conduct randomised controlled trials for a variety of interventions.

The completeness of record keeping on computer was high. On average 95% of all known items issued on prescription were recorded on the computer. This may reflect the requirements of VAMP regarding accuracy of prescribing records. Despite the finding that consultations by patients were recorded less consistently on the computer, two of the practices had moved to computer only records. The legal implications of paperless records have been uncertain until now but changes in the current NHS regulations are under way which will allow this practice to become more common (Purves I, 1996).

The results of this study demonstrate that recording of psychotic illness by London practices on the VAMP Research Bank is accurate and compares favourably with psychiatric registers. Thus, well supported general practitioners can develop and use computer databases which could successfully

facilitate the delivery of clinical care in general practice. These databases could also be used for epidemiological and health service research and clinical trials.

5.3.2   Prevalence and psychiatric and social profile of subjects

The next two aims of the study were to estimate the prevalence of psychoses and to assess the psychiatric and social profile of the patients with schizophrenia recruited to this study. The prevalence of schizophrenia and other related psychosis in the study was 3.9 per 1000 which compares well with a community estimate of 5.2 per 1000 in North Camden (Campbell et al, 1990). This figure, however, is substantially lower than other estimates of 9.8 per 1000 made in South Camden, London and 6.26 per 1000 (Pantelis et al, 1988) in Salford, Manchester (Bamrah at al, 1991). As the identification of patients with non affective psychosis in this study was particularly rigorous, the shortfall is likely to be due to other factors. It is unlikely that all patients with schizophrenia and other related psychosis are registered with general practitioners. In the community surveys previously described in this thesis (Campbell, 1990, Pantelis, 1988, Bamrah, 1991), extensive efforts were made to identify patients from every primary and secondary care source and homeless agencies. About a quarter of all patients identified were not registered with a GP (Harvey et al, 1996). Other work indicates that 50% of homeless patients are not registered with a GP (Weller et al, 1989). These findings are

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supported by surveys conducted on patients admitted to hospital with an acute psychiatric disorder (Shaw and Holloway, 1991) where 20% of all acute admissions were not registered with a general practitioner. This figure rose to over 60% among those patients with a forensic psychiatric history. Most patients with schizophrenia as identified on the practice computers had a life time diagnosis of schizophrenia. Forty-three (52%) had active psychotic symptoms but only 30 (37%) of the patients had psychiatric symptoms (ie both neurotic and psychotic) above the "threshold level" (index of definition greater than 5). Thirteen patients (13%) were asymptomatic at the time of interview. This level of psychopathology is similar to that reported from other long term follow-up studies of patients treated in hospitals (Johnstone, 1991). Johnstone and colleagues followed a cohort of patients five years and ten years after discharge from Shenley hospital. About 18% of the sample were asymptomatic at 10 years and 50% had active psychiatric symptoms of which half were severe. The patients' demographic details and social circumstances in my study (ie age, civil status, employment status and living circumstances) were almost identical with the cohort studied by Johnstone at al. For example, in my study 34 (41%) of the patients did not have any daytime occupation compared with 39% in the cohort followed up by Johnstone et al.

The level of psychopathology found in community surveys, however, is different. In a census of all patients with schizophrenia in North Camden in the London Health District

two thirds of patients were reported to be actively psychotic and half were reported to have limited concentration and difficulty with communication (Campbell at al, 1989). In the North Camden study, a substantial number of patients who were currently out of touch with general practice services were included. Previous evidence suggests that this group of patients often contain a proportion of very ill patients who lead chaotic lifestyles (Caton et al, 1994). Hence the level of pathology described in this survey was considerably higher and more severe than that observed in my study sample. The results of my study can hence be explained in two ways. Patients with less severe psychopathology may maintain contact with their GP over the longer term. The other less likely alternative is that patients who are registered with general practitioners have a better clinical and social outcome. The clinical similarities between the study population and the cohort of patients followed up by Johnstone et al (1991) and the high proportion of severely ill patients not registered with a general practitioners (Weller et al, 1987, Shaw & Holloway, 1991) suggest that the patients who are in touch with general practitioners are more likely to be patients with long term disability and less severe psychopathology who live in fairly stable social circumstances.

5.3.3 Differences in estimates of prevalence between inner city and suburban practices

Since all the practices recruited to the study were based in London, it was not possible to examine the inner city rural

divide which has been well described in previous research (Lewis et al, 1992). In this study, however, a comparison was made between the prevalence of the disease in the inner city and suburban practices. Practices were classed as being inner city or suburban according to indicators of industrialisation as there are no definite criteria for geographical categorisation (personal communication, Sarah Curtis, Department of Geography, Queen Mary College, London). Despite the limitation of such a definition, the prevalence estimates in the inner city practices were at least double that of the suburban practices, for each of the main diagnostic categories (ie schizophrenia, non affective psychosis and non organic psychosis). Previous epidemiological work has shown that patients with schizophrenia often migrate to the inner city (Faris, 1950). This must have implication for doctors working in central London practices. In our study, there was a trend for patients registered in inner city practices to consult their general practitioners more frequently. Doctors working in the inner city practices, however, were less likely to have completed a six month post in psychiatry as a part of their general practice training. They were also more likely to favour regular contact between patients with schizophrenia and their psychiatrist. There are three possible explanation for this observation. Inner city doctors may be reluctant to take on the care of patients with schizophrenia on account of their lack of training in psychiatry. On the other hand, the need for their patients to have regular psychiatric contact could be explained by their increase in awareness of the importance

of good community care by appropriate use of psychiatric services. Lastly, inner city general practitioners may be overwhelmed by the workload presented to them by patients with schizophrenia and other mental health problems registered with their practices and hence would be most likely to opt for a greater input from psychiatrists. These findings thus indicate a need for further investigation of general practitioners' skills and training needs especially with respect to inner city practitioners, who are more actively involved in the daily management of patients with psychosis.

5.3.4 Views of the general practitioner and the patient

An important aim of the study was to examine the views of the patients and their general practitioners of the care offered in general practice. To my knowledge, this is the first study of current management of schizophrenia in general practice which takes account of the views of patients and their doctors.

Attitudes towards and use of services

There were considerable differences between patients and their doctors in their attitudes to the use of services. Patients' relative lack of enthusiasm for the use of shared care records or an expansion of liaison clinics in general practice may reflect resistance to change. In one study in which patients referred to a psychiatric outpatient department or to neighbouring general practice liaison clinics were asked where they would prefer to see the psychiatrist, most tended

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to choose the service they were currently receiving (Strathdee et al, 1990). Seeing a psychiatrist in the primary care setting, or use of shared care cards, may also imply seeing the psychiatrist more often. Forty-three per cent of patients with active symptoms as measured by the PSE stated that they did not need psychiatric contact. Consultation services run by psychiatrists in general practice are expanding (Pullen & Yellowlees, 1988) and are generally welcomed by family doctors (Brown et al, 1990). However, in the development of such services, one must be sensitive to patients' expressed needs.

Although 16 (19%) patients hardly ever saw their general practitioner, all doctors except for one favoured regular contact with their patients with schizophrenia. General practitioners perceived patients' regular contact with the community psychiatric nursing service as being more important than with the psychiatrist. In this study, however, information was not collected on what the general practitioners perceived was the role of the community psychiatric nurse. For example, the involvement of a community psychiatric nurse in the administration of depot injections is vastly different from structured and supportive psychiatric care of patient with schizophrenia (Brooker et al, 1994). Only 19 (23%) of the patients, however, were currently in contact with a community psychiatric nurse as compared with 49 (59%) in contact with a psychiatrist. Although previous reports have indicated that London general practitioners regard community psychiatric nurses as the most appropriate professional to act as case manager (Kendrick, 1991), it would

seem from the results of this study that patients did not particularly appreciate their input. This may simply reflect their lack of exposure to the skills of these professionals or that in those cases who had some contact with them, their care was often limited to the provision of depot medication. Insufficient numbers of community psychiatric nurses are accessible to patients with chronic psychotic disorders. Nurses have been criticised for abandoning their care in favour of psychotherapeutic interventions for patients with neurotic and social difficulties (White E, 1991, Gournay & Brooking, 1995). This may be due to the priorities of general practitioners who refer patients, more effective help seeking by those with minor psychiatric disorder, insufficient numbers of nurses or the interests of the nurses themselves. Community psychiatric nurses will need to be more consistently involved with the seriously mentally ill if they are to take up the role of case manager (Gournay K, 1995).

Patients' carers and relatives were often in touch with the general practitioners. People frequently suffer emotional and social problems as a result of caring for someone with a chronic mental illness (Scottish Research Group, 1987). Although their consultations may result in a greater workload for general practitioners, they can also provide an opportunity for family interventions. Pilot work on family intervention in general practice has demonstrated that they are effective in the management of the chronic mentally ill (Falloon I et al, 1990). There is a need, however, for further evaluation of such strategies in general practice

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settings.

General practice plays an important role in the care of
patients with schizophrenia and their relatives but greater
input is needed by mental health professionals particularly
community psychiatric nurses. General practitioners planning
a practice based care programme must consider the views of
their patients before implementing the service. The variance
in views of the health professionals with that of the patients
could explain some of difficulties encountered in getting
patient to adhere to innovative care programmes.

5.3.5 Workload in general practice

Lastly, I endeavoured to study the workload in general
practice of patients with schizophrenia in relation to both
other chronic patients and patients randomly selected from the
age sex register. These results were the first indication in
British general practice of the workload engendered by
patients with schizophrenia relative to other patients.
Patients with schizophrenia were in contact with the general
practitioner more often than the average patient but at a
similar rate to patients with chronic physical disorders.
They were characterised as a group by consultations for mental
health reasons. However, this occurred principally because
mental health consultations in the other two groups were so
infrequent. Even for patients with schizophrenia such
consultations made up only one third of all their
consultations in general practice. They attended more
frequently for physical reasons than the control patients

randomly selected from the age/sex register but less than the control patients with chronic physical diseases. This finding emphasises the high rate of physical problems in patients with chronic psychoses (Brugha, 1989, Allebeck, 1989). General practitioners appear to feel most confident dealing with the physical aspects of their care and prefer psychological issues to be managed by mental health professionals (Kendrick, 1991). Attendances relating to mental health occurred infrequently and repeat prescribing occurred more often for patients with chronic physical disorder. Patients with chronic physical disorder received almost twice the median number of repeat prescriptions as patients with schizophrenia. Put another way, as repeat prescribing increased so did the likelihood that the patient belonged to group of chronically physically ill patients.

What did the doctors do when their patients with schizophrenia consulted them? Consultation rates were more than twice that of the average patient but their mental disorder was monitored infrequently. Disease related assessments were made more often for patients with chronic physical disorder than for patients diagnosed as schizophrenic and was found to be a factor significantly differentiating the two groups. When the general practitioners were asked about their management at the most recent consultation with patients with schizophrenia, medical certification, administration of depot drugs and general advice and counselling (in descending order) were listed as the most common actions taken. Thus schizophrenic patients were frequent attenders to primary

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medical care but little was offered by the doctor in the way of planned psychological or social care for their mental disorder.

The doctors in this study had expressed a need for greater liaison with psychiatric services, preferably within the practice. My results demonstrate that communications with hospital specialists are infrequent for patients with physical or psychiatric disorder. Although there was a trend for general practitioners to receive more letters from psychiatrists concerning their schizophrenic patients than from other chronic disease specialists about their patients with chronic physical disorders, this factor did not significantly distinguish the diagnostic groups on conditional logistic regression analysis.

5.3.6 Factors determining use of services

Patients in contact with psychiatrists were more likely to have active psychiatric symptoms as measured on the present state examination and be receiving antipsychotic medication from the practice. However, receiving antipsychotic treatment was also linked to patients visiting their general practitioner more often, possibly to receive prescriptions (Hassall & Stillwell 1977). Irrespective of current symptomatology, men were more likely than women to be in contact with a mental health professional, supporting other evidence that the social impact of schizophrenia on men is greater, and that women may have a better prognosis (Shepherd et al, 1989). As previously reported, the prevalence of

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schizophrenia is higher in populations living in the inner cities (Pantelis, 1988, Campbell at al, 1989). As previously mentioned, patients with schizophrenia may drift into the inner city (Faris & Dunham, 1950) or inner city environments and this may lead to higher rates of schizophrenia (Lewis et al, 1992). This high prevalence of the illness in the inner city together suggests that the workload for inner city family doctors could be greater than other practices. This factor requires special consideration in the planning of health services for patients with schizophrenia and other related psychoses in general practice.

5.4 STRUCTURED CARE FOR SCHIZOPHRENIA IN GENERAL PRACTICE

These results support other calls for a more structured approach to the care of schizophrenia in general practice, with regular attention to physical and mental state assessments and a closer monitoring of drug treatment (Falloon et al, 1990). Although successive governments have overlooked the general practitioner in planning services for the severely mentally ill, the changes currently under way in the Health Service such as the commissioning of mental health care may eventually allow all family doctors to have an important say in how community care operates (Pollock & Majeed, 1995). The aim would not be to replace the work of the community psychiatric services but to complement it by improving the care offered by primary care physicians.

Prior to the implementation of a care programme for the management of patients with schizophrenia and other related

psychoses in general practice it is essential that the systems described below are developed in primary care.

5.4.1 Why structured assessments?

Even when patients with psychosis do consult, communication difficulties may interfere with taking a history and detecting their problems. Such patients might suffer from active hallucinations and paranoid delusions, which can inhibit them from volunteering information about their current well being. Many patients lack insight into their illness which may result in them not attributing current symptoms as part of their disease process. Moreover, they might suffer incoherence of thought and speech, inability to adhere to the point, slowness, poor verbal skills or body language and lack of self esteem or self confidence (Wing, 1989) hence making it difficult for them to discuss their problems with the general practitioner. Such communication difficulties may result in the problems being missed if general practitioners rely wholly on patients' lead consultations.

5.4.2 Disease Registers

As with other chronic diseases such as diabetes or asthma, general practitioners have to be able to initially identify and regularly update their lists of patients with schizophrenia and related psychoses, registered with the practice. The results of this study suggest that computerised systems could be used both to identify these patients and to periodically update the list. The service needs of such patients can then be assessed by developing a schedule in

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accordance with the practice requirements or by the use of instruments such as those used in this study or others that have more recently been developed for this purpose (Murray et al 1996). This is an essential pre-requisite for planning a new service or introducing innovative care programmes. Without an adequate patient database and an assessment of the patients need, it is difficult to deliver comprehensive patient care.

5.4.3 Development of clinical guidelines

Clinical guidelines have been introduced for the primary care of a range of physical disorders (Haines & Hurwitz, 1990). These guidelines, however, are poorly coordinated on a national scale and research evaluations suggest that they are infrequently followed (Haines & Feder, 1992). Nevertheless, there is a need to examine the place of guidelines in the care of patients with chronic psychoses by general practitioners. Guidelines for the management of schizophrenia in primary care must be assembled. Until now, most guidelines developed for the care of patients with schizophrenia in general practice, have been opinion based (Bridges K & Beresford F, 1994, Kendrick T et al, 1995). The development of a clinical guideline is a complex process (Grimshaw & Russell, 1993). There are several reviews that outline steps to be followed in order to ensure a useful result (Nuffield Inst of Health and the NHS Centre for Reviews, 1994, Thomson et al, 1995). It is generally accepted that a systematic review of the literature is first required

in order to evaluate current evidence of the best management
strategies for the general practice management of
schizophrenia. It is clear that more work must be done in
order to develop guidelines for patients with schizophrenia
and related psychosis in general practice. Guidelines should
be developed after incorporating both current and previous
research conducted in this area and the views expressed by
general practitioners and the patients in their care. Once
this has been achieved, the guidelines can be tailored to the
needs of the practice with a special emphasis on its location
and its practice population.

5.4.4 Implementation and evaluation of the guidelines

Primary care clinics for the management of diabetes are
common (Hart J, 1988, Whitfield et al, 1989) and most patients
now expect their general practitioners to be involved in their
continuing care (Kinmonth, 1989). The follow-up is believed
to be more systematic than that offered on an opportunistic
basis. Moreover, the workload is shared between a doctor and
a nurse. Evidence for the benefits of a structured approach
in collecting information comes from studies relating to the
primary care management of diabetes. Thorn and Russell (1973)
first described the diabetes mini-clinic system in
Wolverhampton in the 1970s. They concluded that a structured
protocol was an essential aspects of mini-clinics in general
practice. Diabetic control in these clinics were as good as
hospital clinics (Singh et al, 1984), unlike that achieved by
unstructured general practice care (Hayes & Harries, 1984).

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A similar model for the health surveillance of schizophrenia and other non-affective psychosis can be developed in general practice.

Clinical guidelines for the care of patients with schizophrenia and related psychosis, developed in line with standard recommendations (Thomson et al, 1995) could be tested in such a setting. Structured care programmes so developed which involve regular monitoring of patients in general practice could result in an improvement in the quality of care of patients with chronic mental illness. My study demonstrates the need for the systematic management of patients with schizophrenia in primary care. Since patients with schizophrenia and allied psychosis consult their general practitioner frequently, it would be feasible to consider a more structured programme which involved the regular monitoring of patients in general practice by the use of a structured check list that has been systematically developed. This service will then need to be evaluated in a randomised controlled trial.

Since the completion of this study there have been two trials that have attempted to examine the effect of structured assessments of patients with schizophrenia in general practice. In the first study, the impact of teaching general practitioners to do structured assessments of their long term mentally ill patients was tested in a randomised controlled trial (Kendrick et al, 1995). Four hundred and forty patients were identified in 16 group practices in the South Thames Region. Patients were identified by the use of practice data

and with help from local psychiatric and social services. In eight practices, the practitioners were instructed on the use of a brief check list for long term mental illnesses, which was incorporated on a card and placed in the patients records. The general practitioners were advised to use this schedule on all their long term mentally ill patients every 6 months, for a period of two years. These assessments were performed during routine surgery appointments. Of the 373 patients followed up after two years, at least one structured assessment was recorded for 127 patients in the intervention group but only 29 had all four assessments. In general the participating practitioners found the assessments to be time consuming and reported that they did not often lead to changes in treatment or referral to other agencies. The outcome of the intervention on patients' care was examined by assessing the changes in patients' drug treatments, referral to hospital, general practice consultation rates and the general practitioners' recording of preventative health data over the two years of the study. Changes in drug treatment with neuroleptic drugs and referral to community psychiatric nurses were significantly more frequent in the intervention group. There were no differences, however, in psychiatric admissions, the use of the Mental Health Act, drug overdoses, prescriptions, referrals or admissions for physical problems, general practice consultation rates, continuity of care or recording of preventative data. The results of this study suggest that teaching general practitioners about the problems of the long term mentally ill patients may increase their

involvement in patients' psychiatric care without any change in the patients use of hospital services. Regular structured assessments, however, were not feasible in routine surgery appointments. No information was available in this study on changes in the patients clinical condition as a result of the intervention.

The second study was a progression of the work of this thesis (Nazareth et al, 1996). I investigated the feasibility, acceptability and effectiveness of a structured approach to the management of schizophrenia in general practice. A check list for the care of schizophrenia and related psychoses in general practice was initially developed by a review of the literature and from information derived from the results of this thesis. Four inner city general practices participated in the study. In the study practices, patients with non affective psychosis were identified by the practice computers and invited to an assessment by the general practitioner and practice nurse at the surgery. Two follow up assessments were offered at 3 and 6 months. Sixty seven patients with non-affective psychoses were identified. Thirty-three (81%) of the 41 patients in the two intervention practices attended the initial assessment by the doctor and the nurse. The attendance for the second review after 6 months was six out of 15 (40%) in one practice, but rose to 16 out of 18 (89%) in the other practice. Significant improvements were recorded in the intervention group on global assessment scale (GAS) and the behaviour, speech and other syndromes (BSO) subscore of the Present State Examination

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(PSE). There was also a significant increase in consultation rates for patients in the intervention practices.

Both these studies suggest that although health surveillance of patients with non-affective psychosis is possible in general practice, the approach has to be specific to the needs of patients and the constraints of busy general practice care. Teaching general practitioners about the problems of the long term mentally ill patients may increase their involvement in patients' psychiatric care. More training for general practitioners and increased resources for general practitioners and practice nurses may be required if the care of patients with schizophrenia in general practice is to be generalised.

5.5 Suggestion for future research

Any further research in the area of schizophrenia and other associated psychoses in general practice must take into account other research and service developments that have occurred since the completion of the study described in this thesis. In this respect, the evaluation of specific primary care interventions (Kendrick, 1995, Nazareth 1996) and the changes in the community care of the mentally ill that have happened in the last 5 years are particularly relevant (section 1.8.3 c).

Several factors could account for the disappointing results of both trials of general practice interventions (Kendrick, 1995, Nazareth 1996). Schizophrenia is a relative uncommon disease and most general practitioner do not have a

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particular interest in the management of this condition (Kendrick, 1992). Moreover, patients with schizophrenia are not very proactive in accessing medical care (section 5.4.1). The clinic format of assessing patients with schizophrenia and associated psychosis adapted from the diabetic clinic model, revealed that although the patient readily responded to the invitation to attend the first clinic, only about 40% attended the follow up clinics (Nazareth et al, 1996). An opportunistic model of care would hence seem to be a practical alternative especially since such patient are frequent general practice attenders as described in thesis (section 4.5). Opportunistic assessments however, are not feasible in a routine surgery appointment as assessment of patients are time consuming and often not possible within the time span of an average consultation (Kendrick, 1995). Further research is hence required on the development of effective but briefer check lists that can be routinely used in the general practice consultation. The views of the patients must be considered before piloting or implementing such check lists in the practice setting. The cost-effectiveness of monitoring patients with psychosis in general practice with adequate reimbursements from the health authorities (along the model used for asthma and diabetes) also requires evaluation. The use of general practice computers in the delivery of care also requires further investigation. Lastly, in light of the changes in the community care of patients with severe mental illness, it is important that any new model of general practice care is closely integrated with the care programme

approach (section 1.8.3 c). The role of the general practitioner in the care programme approach needs closer investigation. Further research on standard or assertive outreach interventions in the community (Marshall, 1996) for the severely mentally ill should include active participation of general practitioners.

In summary the areas for further investigation are:

1) Qualitative assessment (section 5.2.2 e) of the users and providers views of the services offered to patients with schizophrenia.

2) Views of general practitioners and their role in the care programme approach.

3) Development and piloting of a brief but valid and reliable clinical check list for monitoring patients with schizophrenia. This check list must incorporate the views of patients with schizophrenia and associated psychosis especially since the views of the doctors and the patients can differ, as described in this thesis.

4) Evaluation of such a check list by a randomised controlled trial in general practice.

5) Evaluation of the cost effectiveness of monitoring psychosis in general practice in a randomised controlled trial, using a model of reimbursement of general practitioners for the services provided. This would reflect the model currently in place for the care of other chronic diseases such as asthma and diabetes.

6) Evaluation of the acceptability and feasibility of using general practice computer in the identification of patients

with psychosis and the delivery of care by the use of computerised templates or decision support systems.

7) More randomised controlled trials of standard or assertive outreach intervention in the community in which general practitioners and their staff are an active part of the community mental health team.

5.7 Final thought

This study has highlighted the importance of general practice in the community care of patients with severe long term mental illness. As emphasised by Michael Shepherd in his well known statement made many years ago ".....rather than considering an expansion of psychiatric services, general practitioners must be strengthened in their management role of such patients" (Shepherd et al, 1966). General practitioners are determined to play an important part in the care of the long term mentally ill patients (RCPsyche/RCGP, 1994) but more research is required to demonstrate how this could be most successfully achieved.

MY CONTRIBUTION TO THE STUDY

I designed the study described in this thesis under the supervision of Professor Michael King and Professor Andrew Haines. At the start of the study, I initially made contact with the VAMP Research Bank in order to study the computer software and the research network of general practices involved. After I had identified the London VAMP practices, I contacted each of them personally to recruit them to the study. I then conducted a computer search in each of the participating practice, to identify subjects for the study. The general practice case notes were then scrutinised by me for the purpose of diagnostic categorisation. A manual search of a random 8000 records was simultaneously done by Luiza Rangel under my supervision, to identify patients who had not been entered on the computer system. In the next phase of the study, I designed the service component of the patients' interview schedule and the whole of the general practitioners' interview schedule. All patients were then interviewed by Sara Davies under my supervision and that of Professor Michael King. All participating general practitioners, however, were interviewed by me. Finally, I developed the data entry form and manually examined the case notes in the case control study of the general practitioners record. The statistical analysis of the data collected in the first and second phase of this study was done entirely by me with advise and supervision from Professor Andrew Haines, Professor Michael King and Mr Bob Blizard. The analysis of the case control study, however, was done both by me with help from Ms Sharon See Tai. The results of this study have resulted in three publications (Nazareth et al, 1993, Nazareth et al, 1993 and Nazareth et al, 1995).

Appendix 1   **PERSONAL DATA**

                                        Patient code no.

                                        Practice code no.

                        <u>Patient identification</u>

            <u>SURNAME</u>........................

            <u>OTHER NAMES</u>...................

A) <u>SEX</u>

        1=male

        2=female

B) <u>MARITAL STATUS</u>

        1= single

        2= cohabiting

        3= married

        4= separated or divorced

        5= widowed (and not cohabiting)

        99= not known

C) <u>COUNTRY OF BIRTH</u>

        1= UK

        2= Eire

        3= W Indies

        4= Cyprus

        5= Indian subcontinent

        6= Far East

        7= Africa

        77= Others (specify)

        99= not known

E) <u>PATIENT'S ACCOMMODATION</u>

<u>TYPE OF HOUSING:</u> Please indicate only one. If patients now in hospital indicate type of accommodation from which admitted.

<u>Temporary</u>

     1= living rough or wherever a bed can be found each night

     2= private hotel

     3= lodging with a friend

     4= homeless person hostel

<u>Permanent</u>

<u>a) Without professional supervision:</u>

     5= own house or flat (owner occupied)

     6= council accommodation

     7= privately rented house/flat

     8= privately rented bed sit

<u>b) With professional staff involvement</u> (not necessarily closely   supervised)

     9= supervised bed sit

    10= general hostel

    11= supervised hostel

    12= supervised hostel without resident staff at night

    13= group home

    14= adult foster care

    15= old people's home

    16= supervised council accommodation

    77= other (specify)

    99= not known

F) SOCIAL OPPORTUNITIES AT PLACE OF RESIDENCE

    0= lives essentially alone

    1= lives where some social contact could be sought

    2= lives with friend or other patients readily available

for   social contact (specialised hostels)

    3= lives with other family (eg some kind of foster care)

    4= lives with member(s) of own family

    5= cohabiting

    77= others (specify)

    99= not known

G) DOES PATIENT LIVE WITH RELATIVES

    0= No

    1= Yes

    99= not known

H) IF LIVING WITH RELATIVE(S), WHO LIVES WITH PATIENT?

    1= spouse or common law spouse

    2= father

    3= mother

    4= brother(s)

    5= sister(s)

    6= son(s)

    7= daughter(s)

    77= other (specify)

    88= not applicable

    99= not known

K) <u>DAILY OCCUPATION AND EMPLOYMENT STATUS</u>

0= attends no daytime occupation

1= attends lunch club, community centre or other facility, short of full daytime occupation

2= attends a day centre (without any remunerations)

3= attends day hospital

4= sporadic odd jobs for pay

5= some remunerations for sheltered work at day centre or industrial therapy unit

6= sheltered employment

7= full time or part time employment

77= other (specify)

99= not known

Appendix 2   **SERVICE USE & SATISFACTION**

Apart from your GP, who else do you receive help, support or treatment from?

    1= Psychiatrist
    2= CPN
    3= Social Workers
    4= Neighbours
    5= Priest or other religious figure
    6= Home help
    7= MIND
    8= Family members
    9= friends
    10= district nurse
    11= Health visitor
    12= Counsellor/ therapist
    77= Other (specify)

A GP INVOLVEMENT

A1. How often do you see your GP?

        1 : once a week or more
        2 : between once a week and once a month
        3 : every 2-3 months
        4 : less than once every 3 months

A 2.   What did you see your GP for on your last visit?

        1 : oral medication/ prescription
        2 : depot medication
        3 : sick note
        4 : physical complaints: specify
        5 : psychological complaints : specify
        77 : other ; specify
        99 ; don't know

A 3.   Would you like to continue receiving help/ support form your GP?

        1 : Yes
        2 : No
        99 : Don't know

B   PSYCHIATRIC   INVOLVEMENT   (only   ask   if   seeing   a psychiatrist)

B 1. How often do you see your psychiatrist?

        1 : every week
        2 : every two weeks
        3 : every month
        4 : every two months

```
            5  : less than once every 2 months
            99 : don't know
B 2.   Would you like to continue receiving help/ support form
       your psychiatrist?
            1  :  Yes
            2  :  No
            99 :  Don't know


B 3.   Where do you see your psychiatrist?
            1  : Hospital outpatients
            2  : day hospital
            3  : mental health clinic
            4  : community placement, specify
            5  : GP surgery
            6  : own home
            77 : others, specify
            99 : don't know

B 4. Would you like to see your psychiatrist in your GPs
surgery?
            1  : Yes
            2  : possibly
            3  : No
            99 : don't know

C.   CPN INVOLVEMENT (only ask if currently seeing a CPN)

C 1. For often do you see your CPN?
            1  : every week
            2  : every two weeks
            3  : every month
            4  : every two months
            5  : less than once every 2 months
            99 : don't know

C 2.   What did you see your CPN for on your last meeting?
            1  : depot medication
            2  : support/ advise/ counselling
            3  : practical help
            4  : to get me an appointment with another
specialist
            77 : others, specify
            99 : don't know

C 3.      Would you like to continue receiving help/ support
form         your CPN?
            1  :  Yes
            2  :  No
            99 :  Don't know


D  GENERAL SATISFACTION

D 1.  Do you think you need a CPN?
```

```
1  :  Yes
2  :  Maybe
3  :  No
4  :  don't know
```

D 2. Do you think you need a psychiatrist?
```
1  :  Yes
2  :  Maybe
3  :  No
4  :  don't know
```

D 3. Do you think you need a GP?
```
1  :  Yes
2  :  Maybe
3  :  No
4  :  don't know
```

D 4. Would you like to hold a record of the care that you get, so that you and other carers would know what care you are getting - eg. a card on which medication, diagnoses, services available to you, were written, that you could carry with you?
```
1  :  Yes
2  :  Maybe
3  :  No
4  :  don't know
```

D 5. Do you have any other major concerns that we have not talked about?
```
1  :  Yes
2  :  No
3  :  don't know
```

Appendix 3   **GENERAL PRACTITIONERS INTERVIEW**

GPs name:
Address:

Date:

Details of practitioner

Sex   Male/ Female   Age

Trainer/trainee/Principal/Assistant

Years since full registration_____
            in general practice_____

Details of practice

Partners: Numbers_____ F_____M

Group practice/ Single handed practice

List size _____

Shared/personal list

Any NHS hospital sessions   Yes/No
                    Speciality_____
                    Grade_____

Research interests?   Yes/NO

College interests?   Membership
                     Fellowship
                     College activities

**Did you do a 6 month post as a part of your general practice
training?   Yes/No**

Do you have a special interest in the management of
psychiatric problems in general practice?
      If YES, details

**Do you have a special interest in the management of
schizophrenia? Yes/NO**

Do you have a liaison psychiatrist service at your practice?
                    Yes/ No

Would you like to have a liaison psychiatrist attached to your practice?   Yes/NO

Do you know how many patients in your surgery have been given a diagnosis of schizophrenia? Yes/NO

If YES, how many

In the last week/month, how many patients have you seen with schizophrenia?

Overall numbers week_____ month_____

Where was the patients seen by you?
          Home/ Hostel/ Surgery

What did the consultation involve?

          Repeat script   Family support
          IM injection   Family therapy
          Medical certificate   Started a new drug
          Advice/counselling   Changed drug therapy
          Changed drug dosage   Treatment of side effects
          Review medication   Medical care

Referred to hospital
          acute in patient
          out patients
          MHS invoked

Referred to CPN
          Psychologist
          OPD
          Social services
          Others

Would you refer all your patients with a new onset of psychosis to the hospital psychiatrist or would you manage them on your
own?   Yes/NO

In the last week/month, have you had any contact with any of the relatives, family or friends of patients with schizophrenia?
          Yes/ NO

Overall numbers week_____ month_____

What did the contact involve?

          To discuss patients clinical condition
          To discuss own personal anxiety

To discuss family difficulties

If you were to plan a care programme for your patients with schizophrenia, what would your opinion be about the right level of contact necessary for good care?

CPN   Not at all/ Only at the start? Only during an emergency/ weekly/ Monthly/ < 3 months/ 3 monthly/ monthly/annually/ as and when necessary/ don't know

Social Worker
        not at all/ Only at the start? Only during an emergency/ weekly/ Monthly/ < 3 months/ 3 monthly/ 6 monthly/annually/ as and when necessary/ don't know

Counsellor
        not at all/ Only at the start? Only during an emergency/ weekly/ Monthly/ < 3 months/ 3 monthly/ 6 monthly/annually/ as and when necessary/ don't know

Psychiatrist
        not at all/ Only at the start? Only during an emergency/ weekly/ Monthly/ < 3 months/ 3 monthly/
        6 monthly/annually/ as and when necessary/ don't know

In the recent past some attention has been focused in the use of shared care card schemes (similar to those used in shared obstetric or diabetic care), in the management of the severely mentally ill, would you support this practice?
        Yes/ NO

If not, why?   (specify)

Are there any other aspects that have not been covered in this interview that you would like to comment on ?

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Appendix 4 **DATA COLLECTED FROM CASE RECORDS**

Patient Number:
Name:
Age:
Civil Status:
Occupation:
Country of Birth:

A count must be made under each of these categories for the four years by a search of both the manual and computerised general practice records

Numbers of entries in notes

Consultations

a) Physical:

b) Mental:

c) Total:

Repeat Prescriptions#:

Medical Certification issues:

Assessments made

a)*   Mental state assessments

b)** Chronic disease assessments

c)   Social Entries

Letters received from hospital##

a) Psychiatrists

b) Chronic disease specialist

c) Others

* All entries relating to sleep disturbances, life events, observations of emotional problems, family disharmony or any mental state observations can be accepted as mental state assessments

** Any entry relevant to the disease in question can be classified as a clinical assessments

Prescriptions issues without contact with the patients must be classified as repeat prescriptions

All letters received from hospital consultants in case of patients with schizophrenia, a psychiatrist and in the case of each chronic disease, the respective disease related medical consultant

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