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THE MORBIDITY PATTERNS OF PATIENTS ATTENDING GENERAL PRACTICES IN SOWETO

Dr Rehana Hoosain

A research report submitted to the Faculty of Health Sciences, University of the Witwatersrand, Johannesburg, in partial fulfilment of the requirements for the degree of Master of Family Medicine.

DECLARATION

I, Rehana Hoosain, declare that this report is my own work. It is being submitted in partial fulfilment for the degree of Master of Family Medicine at the University of the Witwatersrand, Johannesburg. It has not been submitted before for any degree or examination at this or any other University.

……

1st day of April 2008

DEDICATION

I would like to dedicate this work to my parents Mariam and Mohamed Essack Hoosain who have been an inspiration to me.

ABSTRACT

Background: Morbidity patterns of patients attending general practices in Soweto, a suburban township south of Johannesburg, were studied using the international classification of primary care (ICPC) as a coding instrument. The ICPC was used to code reasons for encounter and diagnosis. One hundred and one private practices were in Soweto at the time of the survey and thirty-one of these practices were selected using random number tables to obtain as wide a distribution of geographical and socio economic groups as possible.

Aim: The aim of this study is to determine the morbidity patterns of patients attending general practices in Soweto during a week in November of the summer of 1997; and a week in June of the winter of 1998.

Objectives:

1) To determine demographic details of responding general practitioners in Soweto including sex, age and area of practice.
2) To determine socio-demographic features of patients attending practitioners in Soweto including age, sex, highest educational level, and occupation. Township of residence, housing details, namely number of rooms in residence, and number of persons living in residence.
3) To determine the initiator of the consultation, namely whether it was doctor initiated, patient initiated, or referred to the practitioner from another practitioner or clinic.

4) To determine factors related to the condition for which the patient consulted the doctor, including reason for encounter, diagnosis and whether the presenting problem was a new or an ongoing problem.
5) To determine the relationships between the above variables.

Design: A prospective descriptive study design was employed in which doctors completed a survey questionnaire of all patients attended to in their practices during two weeks, one week in summer and one week in winter.

Results: The 25 doctors in summer and the 20 doctors in winter, included in the survey described 4,432 encounters. These patients presented with 5,710 problems. Forty point three percent of patients (1780) were male and 59,7% patients (2,632) were female. Fifty two percent of patients (2306) were seen in summer and 48% (2,125) patients were seen in winter allowing the comparison of seasonal variation in morbidity patterns. The majority of patients were in the 20 to 50 year age group, followed by those under ten years of age. In all age groups, except children under the age of ten years, there were more encounters with females than males. In under ten year olds, male encounters were more than female encounters for all ages and twice as frequent as female encounters in the group under the age of one year. Most patients had a secondary education and lived in four roomed houses. Upper respiratory tract infections constituted, 16% (767) of the diagnoses and cough accounted for 16.1% (901) of all the reasons for encounter in all age groups especially in children below the age of 10 years. Digestive complaints were second most common reason for encounter and

diagnoses in the younger children especially in boys. Encounters and diagnoses associated with the eye, male genital system, female genital system, pregnancy and child bearing, ear, psychological, social and blood immune system disorders each accounted for less than 2% of the encounters experienced. Complaints of the musculoskeletal system were frequent in older patients. Family planning, vaginal discharge and painful urination occurred in the 10 to 50 year old age groups. As for encounters, diagnoses were age related with hypertension and osteoarthritis being the most common chronic disease afflicting patients over 30 years of age.

Nineteen point seven percent (870) of the patients belonged to the trade and technical occupation, 13.6% (604) of the patients were children, 12.2% (539) of patients were unemployed, 9.6% (423) of patients were scholars, 9.4% (414) were professional, 8.6% (379) of patients were students, 8.1% (360) were pensioners and 7.6% (338) were office workers. Seven point three percent of the patients (325) were Labourers, and 3.9% (172) of the patients were housewives.

Thirteen point seven percent of the patients (605) were from Meadowlands, 13% (577) from Dobsonville, 7.2% (318) from other areas outside Soweto, 6.7% (298) were from Orlando East, 6.6% (294) were from Zola and 6.1% (270) from Chiawelo. Less then 5% of the patients came from the remaining townships.

Discussion: The present survey recorded encounters of 25 general practitioners in Summer and 20 general practitioners in Winter, with 4,432 patients and 5,710

problems. The week time period of the present survey is similar to that of Bourne et al. which determined the morbidity spectrum seen by a representative sample of 8% of the medical practitioners in South Africa in 1985. The sample size of the present study is considerably smaller than the comprehensive Cape Morbidity study, which was conducted over 1 year and recorded 49,347 diagnoses by 15 practitioners. This survey included 38,368 white patients and 14,979 patients of mixed racial origin but no blacks were included. The same limitation applies to the pilot survey conducted by Bloom et al in Cape Town between 1984 and 1988, where 13 practices recorded 64,959 encounters. Studies conducted outside South Africa are similar to those conducted within the country. This survey in comparison with other countries reflects consistency in the incidence of illness encountered by the family practitioner and also contemporary trends in morbidity seen in general practice. Most of the inhabitants of Soweto still make use of coal-stove fires and the town ship is usually enveloped in pall of heavy smoke coming from these coal stove fires. The main impression of Soweto is that of overcrowding and poverty, and still struggling in providing basic services including potable toilets to its poorer districts. Schools in Soweto remain largely without flushed toilets, furniture and electricity. Most of Soweto still has row upon row of so call matchbox houses crowded into unpaved dusty streets that are poorly lit. The above conditions explain the high reasons for encounter and diagnoses of respiratory and digestive conditions among the patients attending the private practices. This study shows that an enormous amount of everyday illness occurs in children and therefore education and advice for parents on how to cope with illness in their children remains important.

Study Limitation: This survey was conducted in an impoverished township community where many people would attend clinics. It has selected encounters where the patients have the ability to pay for the services of a medical doctor.

Conclusion: Few studies appear to be as comprehensive as this study where the reasons of encounter, the diagnosis, patient demographic and socio-economic data was recorded. This is also the largest survey conducted in an urbanized South African township. This survey has found a similar trend in the spectrum of disease, therefore providing a significant analysis of morbidity patterns encountered by the family practitioner in Soweto. There is an on going concern of the role of sexually transmitted diseases in the transmission of HIV, and this study has shown a significant burden of sexually transmitted disease in the asymptomatic population, particularly women in the age group 20 to 30 and 30 to 40 years. The overall burden of diseases in Soweto shows that respiratory problems are significant in all age groups. Chronic diseases such hypertension, osteoarthritis, presumed gastrointestinal infections, asthma and malignant neoplasm of the stomach as well as the anxiety disorders also featured prominently in the top 20 reasons for encounter and diagnoses. Information about mental health status in South Africa is scanty and has possibly led to an inadequate identification of a potential problem. This study has shown anxiety disorder/anxiety state as being a common reason for encounter and diagnoses in adults attending private practices in Soweto. To determine whether this survey reflects the morbidity patterns in this population as a whole would require additional data from the Government hospitals and clinics.

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NOMENCLATURE

G.P.	General practitioner – Doctor working in the private practice sector.
ICPC 2	International Classification of Primary Care version 2, published by Wonca (World Organisation of Family Doctors)
New Problem	A patient consulting a doctor with a new problem.
Ongoing Problem	A patient consulting a doctor for a condition for which he has been treated previously by that doctor.
RFE	Reasons for encounter. This is the underlying reason for consultation and is not necessarily the same as the main complaint expressed by the patient

1 INTRODUCTION

Soweto is a cluster of townships in Johannesburg, Gauteng province, South Africa whose northern boundary begins about 15km south-west of central Johannesburg. The name Soweto is an acronym for South –Western –Townships.

Soweto was created in the 1930s, and the first township established was Orlando. The phenomenal growth of Soweto was unplanned. It is the most populous black urban residential area in the country. It comprises about forty townships developed into a city as a result of territorial and political segregation by South Africa's white dominated government. The discovery of gold in the year 1886 was a turning point in the history of South Africa. The Anglo-Boer war started in 1899. This period of instability which ended in 1902 forced black and white migrant workers to leave the country side in search of employment. They arrived in Johannesburg to escape the poverty and shortages and lived in the crowded and unhygienic inner-city slums. The slum areas were considered as health hazards and areas of inter-racial mixing by the authorities. When bubonic plague broke out among the black residents in the Vrededorp slum in 1904, the Johannesburg Town Council saw this as an opportunity to clear out the slums, and forced the ill to move to a settlement more than 10kms to the southwest of Johannesburg, which is the present day Soweto. [1]

The Group Areas Act 41 was passed in 1950, and gave the South African government the power to segregate the entire country by allocating separate areas to the different population groups.[2] Part of this plan involved the development of

the ten ethnically based homelands. Smaller areas such as townships which were on the outskirts of towns were designated for the black population to live in. [1]

To implement this policy, the act provided for the forced removal and resettlement of black people from areas designated for whites. Since 1948, four million people have been forcibly removed from their homes, with 3.5 million forcibly removed between 1960 and 1983. The policy of separate development in South Africa was intended to keep each of the racial groups separate, and in particular to keep the black people from uniting in defence of their rights. [1]

Soweto presently is 95km^2 in extent and home to an estimated 3 million people, many of whom still live in overcrowded and often unhygienic conditions. Region D encompasses the whole of Soweto.

There is relatively little data available on morbidity patterns seen in general practice in Soweto. This reflects the lack of morbidity data in general practice in South Africa as a whole. This is paradoxical in the sense that in South Africa the health care costs are considered to be high, and yet data of practice patterns of general practitioners which could influence these costs are lacking.[3]

Epidemiological Surveys have been conducted in a few primary care settings. These surveys have provided useful data such as identifying specific areas for further research, the training of present and future healthcare providers and most important of all, the rational planning of health services and the allocation of resources. [4]

Primary care physicians in both the private and public sector have a vast amount of experience with regard to illness in the community and this resource can be mobilized in the interest of improving the health of the community.[4]

1.1 RATIONALE FOR RESEARCH

The perennial problems of Soweto have, since its inception, included poor housing, overcrowding, high unemployment and poor infrastructure.[1] Epidemiological studies in private practices in Soweto could assist in an understanding of health, illness and the burden of disease in that community. Private practitioners are in a unique position to deal with the common health conditions facing the community, such as respiratory illnesses, diabetes, hypertension, asthma, HIV, low backache, skin problems, and depression. To understand the context of the disease burden in the community it is also important to understand the socio-demographic distribution of conditions. An understanding of the reasons for encounter by patients attending doctors could give some understanding of patients' health seeking behaviour. It is the intention of the researcher therefore, to establish the reason for consultation, the diagnosis, and initiator of the consultation and their relationship to socio-demographic factors.

1.2 AIMS AND OBJECTIVES FOR RESEARCH

1.2.1 Aims

The aim of this study is to determine the morbidity patterns of patients attending general practices in Soweto during a week in November of the summer of 1997, and a week in June of the winter of 1998.

1.2.2 Objectives

The objectives are:

1) To determine details of responding general practitioners in Soweto including sex, age and area of practice.
2) To determine demographic features of patients attending practitioners in Soweto including age, sex, highest educational level, occupation, township of residence, and housing details, namely number of rooms in residence and number of persons living in residence.
3) To determine the initiator of the consultation, namely whether it was:
    a) Doctor-initiated
    b) Patient-initiated
    c) Referred to the practitioner from another practitioner or clinic.
4) To determine factors related to the condition for which the patient consulted the doctor, including
    a) Reason for encounter
    b) Diagnosis
    c) Whether the presenting problem was a “new” or an “ongoing” problem.
5) To determine the relationships between the above variables.

2 LITERATURE REVIEW

To provide adequate health care to communities, information is required regarding the heath status of these communities as well as the use of such health services by the communities. Previously the health status of a community was determined by quantifying mortality data but subsequently it was realized that mortality data did not reflect the health status and needs of individuals living in a community. The health of communities is affected by both environmental factors and socio-economic factors.[5, 6]

Carefully designed and executed morbidity surveys and studies have demonstrated that there is a wealth of reliable statistical information available in general practice.[7] Such studies emphasize the importance of general practice and primary health care in the community as well as provision of overall health care. Morbidity surveys also determine the groups of patients seen, the spectrum of illnesses seen and their severity in the community, which will determine the training requirements of medical practitioners.[8]

Although there is an ongoing collection of morbidity statistics, involving family practitioners on a regional as well as on a national basis in many first world countries, this is not the case in South Africa.[9] Several morbidity surveys done in South Africa have attempted to redress this situation.[3,8,9,10,11,12,13]

Apart from morbidity surveys organized by government and academic centres, most medical practitioners have little access to information about the diagnostic content of medical practice generally and their own practices particularly in South

Africa. In developed countries such as Australia[14], general practitioners' records provide the best source of morbidity data since they originate with the usual doctor of first contact, through whose hands a large proportion of morbidity will pass.

Morbidity surveys vary considerably with respect to the samples size, the population or community, time span of the survey, survey design and the number of medical practitioners involved.

Depending on the survey design and desired information required, parameters measured vary and may include age, sex, and method of payment and smoking status.[13] In addition, depending on the community, racial community may be important in countries such as South Africa.

Obtaining a representative sample of practices to include in surveys maybe difficult, particularly in South Africa because of lack of incentive for the medical practitioners involved.[8] In the Cape Morbidity Study for example, 24 general practitioners offered their services but, only 15 completed the survey.[8] In contrast other surveys have involved up to 75 randomly selected general practitioners.[15] Shepard et al.[16] noted this lack of incentive was responsible for the low acceptance rates of general practitioners to take part in community health research groups. To overcome this difficulty the amount of input requested from the general practitioner is minimized and simplifying to a level where more general practitioners would be willing to take part. Alternatively reducing the time for which the participating doctor would be required to record and keep the survey could be reduced.[16]

2.1 SOUTH AFRICAN SURVEYS

South Africa's population was 37.7 million in 1991 and projected to grow to 47 million by the year 2000. The growth rate of the African population, which comprises 75% of the population, is 2.7% per annum compared to 0.7% in the white population.[17] In 1991, 13% of the South African population were under 4 years of age, 36% under 14 years of age and 46% under 19 years of age. The proportion of women is 52.7% with an even higher proportion living in rural areas. Good quality data on population needs, on local communities and in particular sub-groups are essential for rational planning and evaluation of services. Many areas of South Africa are undergoing demographic transition.[17]

Socio-economic factors have been shown to influence the health of communities.[5,6] This is of particular importance in the South African context where quantitative information from practitioners working in socio-economically deprived communities is not available. With the responsible governmental and provincial health authorities having to provide adequate health facilities such surveys will provide a basis for planning and allocating resources.

The health status of most South Africans is poor when compared to other middle-income countries[17]. It is therefore essential that quantitative information on health status of communities, their use of health services and socio-economic and environmental factors affecting health is available. In contrast to Western countries where health surveys are regularly carried out,

the equivalent health service statistics are often inadequate, unreliable and incomplete in South Africa[17].

As in other countries, various surveys have been conducted in various communities in South Africa, varying in size from several hundred encounters to thousands[3,9,12,13]. In keeping with overseas surveys, the international statistical classification of diseases has generally been used to record injuries and causes of death. The classification has been modified in some surveys to include diagnoses pertinent to general practice and illnesses encountered in South Africa[8].

However, relatively few family practice surveys in South Africa have been conducted and most of these have been carried out in the Western Cape in relatively select communities.[3,8,9,10,11,12] One survey [13] has been conducted in Umtata General Hospital in the Eastern Cape.

The Cape morbidity survey, carried out between May 1966 and April 1967 by Silbert[8] was designed to make recommendations for training of general practitioners. The most important objective of the survey was to provide factual material for use in undergraduate and teaching curricula and was administered by general practitioners in active practice. Of the 24 general practitioners who offered their services, 15 completed the survey with the lack of incentive for the medical practitioners involved being cited as a problem in obtaining a representative sample of practices. A total number of 49,347 diagnoses were recorded according to the international statistical

classification of diseases, including diagnoses pertinent to South Africa. Of the analysed diagnoses 38,368 were from whites and 14,979 from coloureds, but other race groups, i.e., from the black African population group and others were not represented because of the paucity of numbers.

De Villiers et al[3] surveyed morbidity patterns in two independent private family practices Mitchell's Plain and day hospitals at Bishop-Lavis and Elsie's River in the Western Cape. This field study was conducted in a middle to lower income coloured community. A total of 680 encounters were recorded in the day Hospitals with 552 (81%) first encounter and 128 (19%) follow-up encounters. In the private practices 3,718 encounters were recorded with 2,838 (77%) first encounters and 883 follow-up encounters.

One of the most important and comprehensive health surveys carried out in South Africa has been the Mamre community survey by Hofmann and co-workers [9,10,18]. It surveyed the morbidity profile of the Mamre, a village in the Western Cape with a population of 4,623 residents. Socio-economic as well as morbidity data was collected by trained interviewers by means of door-to-door household interviews [10]. Adult members of the household at home at the time of the interview provided personal information, instances of acute morbidity (illness or injury) in the 2 weeks prior to the survey as well as chronic conditions for which they were receiving treatment.

This study reflected morbidity patterns in a poor socio-economic working class community undergoing urbanization.[10] High rates of tuberculosis were

reported due to overcrowding and poverty. Chronic medications were being taken for conditions associated with urbanization, i.e. hypertension, diabetes and psycho-social problems. The frequency of morbidity increased with age and was reported more frequently for women than men, which was in keeping with similar international studies.[10] Acute illness due to respiratory and digestive complaints and injury from accidents, poisoning and violence were the major reasons for community members consulting practitioners in the 2 weeks prior to the survey. [10]

Bloom et al [11] studied morbidity patterns from general practice in the Cape Town area. Thirteen practices supplied data for this pilot survey, which was undertaken by the physicians between 1984-1988. To record the data, each participating doctor completed specially prepared forms recording a sequential code number, the date of consultation, the age, sex and area of residence of the patient and a space for a brief long-hand description of the reason for the encounter. The diagnostic criteria and rubrics for coding were according to the *International Classification of Health Problems in Primary Care* (ICHPPC-2). A total of 64,959 contacts were recorded. In this study acute upper respiratory tract infections, bronchitis and bronchiolitis were the commonest reasons for contacts. Hypertension and backache were the only two chronic conditions of high incidences as reflected by the number of contacts.

The South African Sentinel Practitioner Research Network (SASPREN) primary care survey described the selected characteristics of patients

consulting family doctors, affiliated the network in the Western Cape.[4] A cross-sectional survey design was employed in which practitioners completed a structured questionnaire during or immediately after each consultation. A total of 2,473 encounters of all patient encounters with the doctor were recorded. Most patients were under the age of 14 years or between 25 and 44 years, the highest utilization of general practitioner services was found to be at the extremes of the age distribution. This utilization pattern was demonstrated for both sexes and all races. Females outnumbered males for all race groups except black Africans where they comprised 48% of patient encounters.

Bourne et al[12] surveyed the morbidity spectrum seen by general practitioners in South Africa. Information was obtained from a representative sample of 8% of the medical practitioners in South Africa during 1985. Practitioners recorded all reasons for contact, diagnosis, whether a contact was new or a repeat and demographic details of the patient over a 1-week period. Of the reported 64,764 contacts, diabetes and circulatory problems were the commonest chronic diseases for which patients consulted general practitioners. Respiratory (19.2%), circulatory (8.2%) and genito-urinary system (9.8%) diseases were reported as the most common first reason for contact.

The descriptive study by Ragavan on the disease profile for adult patients seen in the Department of Family Medicine at the Umtata General Hospital, included only Black South Africans.[13] The survey recorded encounters with

8,785 patients with 9,793 health problems. Upper respiratory tract infection and uncomplicated hypertension were the commonest problems encountered. Injuries and adverse effects and respiratory diseases were the commonest diagnostic categories. It was also found that 12.6% of the problems were related to sexually transmitted disease.

A study was conducted by first – year postgraduate Masters students of the department of Family Medicine , University of the Witwatersrand 2005,and 8335 consultations in primary care using the International Classification of Primary Care (ICPC) were recorded between 1999 and 2004. (Unpublished data Sparks, BLW, Wright, AE)[19]

Thus the findings of South African surveys[3,8,9,10,11,12,13] find upper respiratory tract infections the commonest reason for patients consulting doctors and this is in common with surveys conducted elsewhere in the world.[14,15,20,21,22]

2.2 HEALTH SURVEYS OUTSIDE SOUTH AFRICA

Smith[23] surveyed morbidity from the general practitioner work analysis in Tauranga, New Zealand with a population of 34,100. There were three doctors. The doctor completed a clinical data sheet which identified the patient, the type of contact, the clinical condition, its severity and whether it was new or follow-up, the tests and treatments undertaken, and the referrals to or from the practice nurses or other doctors. The data was collected over a period of one year, 18 October 1976 to 17 October 1977. There were 22,029

doctor-patient contacts, which yielded 26,753 clinical conditions. Patients frequently presented with more than one clinical condition.

In this study there were 3,192 registered patients of which 55.6% were female and 44.4% were male. Large proportions of the doctor-patient contacts were elderly and female. Other factors such as maternity care, contraceptive advice, childcare and suburban isolation probably contribute to the higher female contact rate. New Zealand has a population grouped according to employment, 10.2% of the patients were high socio-economic groups, 76.3% middle class and 14.4% low socio-economic group.[23]

A recent survey in one-day general practice morbidity was done in Sri Lanka by De Silva and Mendes.[24] The objectives of this survey were to identify people's needs by determining the reasons for encounter or the demand for care with general practitioners. It also aimed to illustrate the pattern of morbidity in general practice and to determine the average daily workload of general practitioners in Sri Lanka. The estimated number of full-time general practitioners according to a survey done in 1987 was 550. A descriptive and cross-sectional study design was used. A random sample of 75 general practitioners was drawn from the member's list of the College of General Practitioners of Sri Lanka which had a total of 279 members. General practitioners were requested to complete a practitioner's profile questionnaire and to record on an encounter form, the reason for encounter and problems managed during all consultations on 4 July. Central coding of the reasons for

encounter (RFE) and problems defined was done using the international classifications of primary care.

Schellevis et al[15] studied consultation rates and morbidity among patients with chronic disease such as hypertension, chronic ischaemic heart disease, diabetes mellitus, chronic respiratory disease and osteoarthritis in general practice in the Netherlands. General practitioners working in seven practices screened the records of all patients who were included in this study. The total practice population consisted of 23,534 people at the start of the study. Five cohorts were defined on the basis of the following criteria: diagnosis made before 1 January 1988, diagnosis in agreement with the diagnostic inclusion criteria of ICH PPC-2 defined and patient not receiving follow-up care for the chronic disease from a specialist at the time of the study. Patients who left the practice during the 21-month study period were excluded [15].

Studies have shown lower socio-economic status is associated with greater biopsychosocial morbidity which has implications for physicians working with under-served patients.[5] The methodology used to collect data was by means of a survey mailed to patients who received care at a family medicine centre and through a follow-up survey mailed two years later. Patients were eligible for inclusion in the study if they had a cholesterol value in the database, had made at least two visits in the eighteen months before March 1991, and were at least 33 years of age at the time of the study. These criteria identified 1,480 patients. Data were available from 922 active family medicine patients who responded to the initial survey and 655 who responded to the follow-up survey.

A study on socio demographic characteristics and physical morbidity of frequent attendants at Finnish public primary healthcare stations, was done by Karlsson et al.[6] This study was a sub-project of a large joint Nordic study on psychiatric morbidity in primary care which was being conducted in Denmark, Finland, Norway and Sweden. The Finnish part of the study was carried out in two public primary health care stations in Turku, a city in south-western Finland with approximately 160,000 inhabitants. Twelve general practitioners were employed at these stations, with a population base of 28,000 inhabitants. A sample of 1 000 patients was randomly selected from these patients who had called for an appointment with a general practitioner because of a complaint at these health care stations. The collection period ran from November 1989 to the end of February 1990. Altogether 117 patients refused to take part in the study.[6]

The inclusion criteria were that the patients had made two or more visits to a physician (including visits to both the study health care station and to other physicians), during the previous twelve months, and that the patients were between 18 and 65 years of age.[6]

A study by Bertakis et al [25] was done on sex differences in the utilization of health care services. Previous studies on this subject have shown that women use more health care services than men. This particular study used independent variables such as patient socio demographics and health status to investigate sex differences in the use and costs of these services.

The study population consisted of 509 patients requesting out patient appointments at a university medical centre. After a study period of one year, patients were contacted and asked to complete exit interviews. A total of 417 (82%) returned follow-up questionnaires. Self-reported health status measures provided patient outcome data on changes in health status during the study period[25].

Bruijnzeels et al.[20] did a study on everyday symptoms in childhood, the occurrence and general practitioner consultation rates. The aim of this study was to investigate the occurrence of and consultation rates for specific symptoms in childhood in relation to age, sex, birth order and place of residence of the child, and season of the year. Data was collected in four months, spread over different seasons: June, September, December and March. The parents of 1,805 children kept a health diary over three weeks and recorded symptoms and consultation behaviour. The symptoms and consultation were later combined into illness episodes. Children's age was divided into categories according to international standards: 0-4 years, 5-9 years and 10-14 years. For birth order, children were combined into first born and later born. Results of this study showed that a GP was consulted most often for ear (36%) and skin (28%) problems. Young children (0-4 years) were taken to a GP twice as often as older children (10-14 years)[20]

A study to determine leading causes and patterns of morbidity in a remote rural setting on disease patterns among Canadian Aboriginal children was done by Harris et al.[21] The setting was an isolated Aboriginal community

located in Canada, North Western Ontario. The study design was a retrospective review of logbooks and patient charts extracted from nursing station records for all visits to the community's nursing station between April 1990 and March 1991[21].

Data was collected from an Australian survey[26] in Queensland which analysed 83 003 patient contacts from 387 doctors. This survey provided demographic data on patients, particularly their age and sex distribution. According to the results, children under the age of 5 and older patients over 55 years old were the greatest users of general practitioner services[26].

Teng Liaw [14] did a survey on the diagnostic profile of a South Australian rural practice. The study area was a rural town in South Australia with a population of about 4 500. The study period was nine months from February to October 1988. All reasons for encounter were coded using ICH PPC-2. The predominance of women aged between 15 and 45 years was consistent with the findings from the 1977 to 1978 Australian Health Survey [27] and other similar studies that showed that women in this age group, even allowing for pregnancy related reasons for encounter utilize health services at a higher rate than the rest of the population.

Women have been portrayed as having a worse health status than men from the results shown by Health Surveys. Van Wijk, et al.[28] did a study on male and female morbidity in general practice: the nature of sex differences. The

authors performed analysis on the data derived from a continuous registration of morbidity as presented in four general practices in the Netherlands.

Information on 4,723 male and 4,963 female patterns enlisted in the four practices from 1984-1988 was obtained from the diagnosis made by the physician. Four diagnostic categories such as sex specific conditions, trauma, symptoms without disease and prevention and diagnostics were distinguished in order to gain insight in the nature of sex differences. Results showed that over 40% of the significantly higher overall female morbidity was accounted for by gynaecological and obstetrical diagnosis and that more than a quarter could be explained by prevention and diagnostics. 'Vague' or psychosomatic symptoms accounted for less than 20% of the overall sex differences.[28]

Van den Bosch et al[22] did a study on the morbidity in early childhood: differences between girls and boys under 10 years old. The data used in this study came from the continuous morbidity registration project of the Department of General Practice of the University of Vijmegan. The registration project involves four general practices (seven general practitioners). The following information is available for each patient, date of birth, sex, family composition and family social class. Every episode of illness presented to the general practitioner is included in the database. The general practitioner was responsible for classifying each episode of illness. The morbidity of children had been categorized into three levels of seriousness of diagnosis and fifteen diagnostic groups as part of the registration project. The

results of this study showed that boys presented more morbidity than girls in the first years of their lives. For the age group 0-4 years this was true for all levels of severity of the diagnosis except the most serious. In the age group 0-4 years more boys than girls suffered from respiratory diseases, behaviour disorders, gastroenteritis, and accidents. Girls suffered from more episodes of urinary infections than boys in both age groups. [22]

Similar patterns can be found in national studies in the United Kingdom. In the third national morbidity study a distinction was also made between serious, moderately serious and trivial diagnosis. Little is known about this cause of sex differences in mortality and morbidity [29].

Studies have been completed in remote communities such as the Falkland Islands[30]. The 12 month study in the community of a population of 1,800 consists almost entirely of British immigrants, some from families who have lived in the islands for several generations. Notes on all patients who have sought medical attention are kept at the hospital at Stanley. A file on each subject records each consultation, diagnosis and treatment and details the place and method of consultation. By examining these files, it was possible to collect details of all health related events occurring in the islands and for which help was sought[30]

To broaden the scope of the exercise, the results were compared with similar data collected from British general practices during the second national morbidity study[31]. After transfer to punch cards, the data were analysed on

the University of London computer, using the statistical package for Social Sciences (SPSS). In order to examine the cause-specific morbidity, standardized morbidity ratios (SMRs) were calculated for eighteen major disease categories. The SMR for infectious and parasitic diseases was low for males but higher for females.

The second National Morbidity Survey in the UK was based on the Standard College of General Practitioners Disease Index because the record system for routine reporting of infectious and communicable diseases was maintained by this record system. The survey involved 115 practitioners from 60 practices with a base of 292,000 patients in the first year and 101 practitioners with 256,000 patients in the second year. All patient reasons for encounters were recorded [31]

The principal statistic from the two studies were as follows: Females in the 15-44 age group stand out as the only group in which the proportion consulting rose significantly during the interval from 1955-56 to 1970-71. Close examination reveals that this is mainly due to an increase in non-illness. Largely accounted for by routine antenatal care and oral contraceptive advice. The only group in which the proportion consulting fell substantially was females over 65 year's old[31].

In contrast with the generally sustainable proportion of patients consulting, the consultation rate per person fell from 3.75 to 3.01. This fall is consistent with the decline in consultation rates that has been reported elsewhere. Since the

proportion of the population at risk who consult has remained almost unchanged while the episode rate arising from the study population has risen, it follows that the episode rate person consulting has risen even more. The illness groupings with the smallest percentage increase or in some cases reductions include diseases of the blood and the blood forming organs, diseases of the nervous system and sense organs, disease of the circulatory system, diseases of the digestive systems and accidents, poisoning and violence. These findings suggest that there was no evidence for any general increase in the rates of serious morbidity between the surveys, instead increases in reported morbidity are probably due mainly to a reduced threshold of awareness and/.or consultation for perceived illness[31].

3 METHODS

3.1 STUDY DESIGN

A cross sectional study of two periods - summer and winter was employed with randomly selected practices representative of the Soweto area.

Data was collected by family practitioners, who spend most of their working time in private practice in Soweto. The selected doctors completed a structured questionnaire during and immediately after each consultation.

Two time periods, one week in summer (November 1998) and one week in winter (June 1999), were selected to determine seasonal difference in the doctor-patient encounter.

3.2 SELECTION OF PRACTICES

One hundred and one private family practices were in the Soweto area at the time of the survey. Information on the number of townships in Soweto was obtained from the Soweto Administration Office of the Gauteng Government situated at the Diepkloof Peoples Centre in Talani street, Zone 1, Diepkloof.[32] The information on the number of practices in Soweto at the time was obtained from Lancet laboratory and from the offices of the Soweto Independent Practitioners Association (SOIPA). Thirty-one practices were selected on the advice of the statistician, using random number tables in an attempt to obtain as wide a distribution of geographical and socio-economic groups as possible. Each of the thirty-one practitioners was personally

contacted and recruited by the researcher and 26 doctors agreed to participate in the (first) summer survey. Of the original 26 doctors who had participated in the summer survey, one doctor submitted incomplete data which could not be used, resulting in useable data from 25 doctors (overall response rate of 80.64%).

Prior to the winter data collection, the 25 doctors from the summer survey were contacted once more. Three doctors declined to participate in the winter survey, and were replaced by the three doctors from the back-up random list. Five doctors did not submit the questionnaires in the winter survey, because of time pressure and forgetting to fill in the questionnaires, leaving a total of 20 doctors whose data was usable for the winter survey (Overall response rate 80% for winter). There were 17 doctors who participated in both summer and winter studies. All doctors were in solo practices.

3.3 MEASURING INSTRUMENT

A survey data collection form, ("Patient Profile Sheet") was designed to record details of patient-doctor encounters at private practices in the Greater Soweto area.

Doctors who agreed to participate in the survey were supplied with data collection forms. Those who declined to participate were replaced by a back-up list, also using the same random number tables.

The data collection sheet consisted of the following areas to record details of all consecutive face-to-face encounters during the study period:

1. Date of consultation
2. Doctor's personal code,
3. Consecutive patient number
4. Age and sex of patient
5. Reason/s for encounter (RFE)
6. Encounter diagnosis
7. Type of consultation
    a. Doctor initiated
    b. Patient initiated
    c. Referred to G.P
8. Problem
    a. New Problem
    b. Ongoing problem
9. Occupation
10. Socio-economic data including the patient's occupation, educational status, the number of rooms and people occupying the residence, as well as the suburb in which the patient was resident.

The demographic details of the doctor was recorded on a separate form included age, sex and locality of practice.

The data sheet was designed to be as simple as possible and could be quickly completed by the doctor. The data sheet was submitted for critical

review by members of the department. Two doctors tested the form for ease of use, but no formal pilot study was performed.

RFE and diagnosis were coded using the International Classification of Primary Care 2 (ICPC2) by the researcher. The ICPC is a classification and was designed as an epidemiological tool. It reflects the distribution and content of aspects of primary care and is used to classify data about three important elements of the health care encounter, that is reasons for encounter (RFE), diagnosis or problem, and the process of care. ICPC is divided in 17 chapters based on body systems, with additional chapters for psychological and social problems.[33]

The chapters are as follows, A- General, B- Blood and Immune mechanism, D- Digestive, F-Eye, H-Hearing, K- Circulatory, L-Musculoskeletal, N-Neurological, P-psychological, R-Respiratory, S-Skin, T-Endocrine, U-Urological, W-Pregnancy, X-Female Genital, Y-Male Genital, Z-Social Problems, Processes.

3.4 DATA COLLECTION

Doctors who had been randomly selected from Soweto, completed anonymous data forms on all patients seen during one week, Monday to Sunday in summer and one week, Monday to Sunday in winter. These forms were supplied to the practitioners by the researcher. (Appendix D)

3.5 ETHICAL CONSIDERATIONS

Informed consent from patients was not deemed necessary by the Committee for Research on Human Subjects (CRHS), because the questions asked were normal questions asked during consultations and the data obtained were part of normal clinical practice. The entries were anonymous thus maintaining confidentially of the patients. Consent to participate by the doctors was assumed by their participation. A Subject Information Sheet (Appendix C) was distributed to all participants. A copy of the Ethical Clearance Certificate is attached as Appendix G.

3.6 METHOD OF DATA ANALYSIS

As noted, the reason for encounter (variable *RFE*) and the doctor's diagnosis (variable *DIAG*) recorded by the doctor were coded using the ICPC-2. Data was captured on Microsoft Excel (version 6) and transferred to Epi Info (Version 6) for analysis. Frequencies and cross-correlations were performed yielding chi-squared and p-values results.

3.7 LIMITATIONS OF THE STUDY

This study was conducted using private general practitioners, where a fee was payable, in an impoverished township community where many people would normally attend free clinics. Therefore the study may not reflect the demographics and clinical profiles of all patients in Soweto.

The sample population, being predominantly, urban-based, black, lower socio economic class, is not representative of all South African communities.

To determine whether this survey reflects the morbidity patterns in this population, or the country as a whole would require additional data of patients attending state owned primary care facilities.

4 RESULTS

4.1 ADEQUACY OF COMPLETION OF STUDY QUESTIONNAIRE

All entries were completed on 90.2% (4004) questionnaires returned. Data was incomplete in some returns for the educational status, rooms of the residence, and persons occupying the residence and for the diagnosis Table 1 For this reason the total numbers for these variables may differ from the total of 4432 patient encounters.

Table 1: Details of Completeness of Questionnaire

Variable description	Missing entries by patient (n=4432)	
	Frequency	% of Frequency
Problem number	-	-
Age of patient	197	5.3
Sex of patient	20	0.5
Occupation of patient	9	0.2
Suburb of patient	-	-
Patient initiated visit	28	0.6
Doctor initiated visit	27	0.6
Referred by GP	28	0.6
New problem	28	0.6
Ongoing problem	32	0.0
Educational status	575	13.0
Rooms in house	178	4.0
Persons in house	181	4.1
Reason for encounter	43	1.0
Diagnosis	271	6.1
Season	-	-

4.2 DEMOGRAPHIC FEATURES OF DOCTORS

The sex distribution of the practitioners was six females and nineteen males. The ages of the doctors ranged from 29 years to 50 years. Data were collected from 40 townships in Soweto (Table 1)

4.2.1 Locality of practices

The practice areas within the Soweto area were grouped into geographical localities (Table 2). Patients did not necessarily attend a practice within their residential area. Dobsonville lies to the west of Meadowlands, a part of Diepmeadow, and is adjacent to Mofolo North and Zondi, suburbs of Soweto, on its southern border. A large number of patients were from Meadowlands and Dobsonville.

Table 2: Locality of doctors' practice in the Soweto Survey and the number of patient encounters by area and suburb.

Locality	Area	Number of Doctors	Patients	
			Numbers	Totals
North	Dobson	2	577	1303
	Meadowlands	2	605	
	Zondi	1	98	
	Snakepark	1	22	
	Mmesi Park	1	1	
North-West	Jabulani	1	117	441
	Zola	1	294	
	Rockville	1	30	
North-East	Phumalong	1	1	4
	Mzimhlophe	1	3	
South	Chiawelo	1	270	361
	Dhlamini	1	91	
South-West	Mapetla	1	35	269
	Phiri	1	22	
	Protea North	1	62	
	Protea Glen	1	61	
	Protea South	1	21	
	Senoane	1	46	
	Protea	1	22	
South-East	Klipspruit	1	105	338
	Pimville	1	214	
	Motsoaledi	1	9	
	Freedom Park	1	4	
	Power Park	1	6	
East	Diepkloof	1	214	645
	Diepkloof Etension	1	47	
	Orlando East	1	298	
	Orlando West	1	86	
West	Doornkop	1	2	310
	Moletsani	1	17	
	Dladi	1	71	
	Naledi	2	87	
	Emdeni	1	133	
Central	Dube	2	72	443
	White City	2	20	
	Mofolo Central	1	111	
	CWJ	1	152	
	Molapo	1	75	
	Moroka	1	11	
	Jabavu	1	2	
Other				318
Total		**45**		**4432**

The frequency of patients attending doctors in their area of residence is indicated in Table 3. Recording of residential suburbs allowed geographic comparison of morbidity patterns in Soweto only in regard to the patients' choice of practice. The majority of patients attended a doctor near their homes with the exception of patients living in the South-Eastern and Central part of Soweto with only 37.3% (126) and 38.6% (171) patients respectively attending the doctor in the area where they lived.

Table 3: Locality of patients' residences related to locality of the doctor consulted.

	Locality of Doctors Practice					
Suburb of Residence of Patients	**North and North Western**	**Eastern**	**South Eastern**	**South Western**	**Western**	**Central**
North and North Western	**1162 (66.5%)**	183 (14.3%)	77 (6.0%)	17 (1.3%)	83 (6.5%)	226 (17.7%)
Eastern	6 (1.1%)	**512 (79.4%)**	4 (0.7%)	34 (6.0%)	72 (12.7%)	17 (3.0%)
South Eastern	8 (2.0%)	34 (8.7%)	**126 (37.3%)**	87 (22.2%)	72 (12.7%)	11 (2.8%)
South Western	7 (1.3%)	13 (.2.5%)	3 (0.6%)	**162 (60.2%)**	53 (13.4%)	31 (5.9%)
Western	36 (8.4%)	10 (2.3%)	1 (0.2%)	34 (8.0%)	**127 (50.0%)**	102 (23.9%)
Central	21 (3.9%)	23 (4.3%)	43 (8.0%)	33 (6.1%)	152 (28.3%)	**171 (38.6%)**
Other	66 (16.6%)	66 (16.6%)	20 (5.0%)	124 (31.2%)	53 (13.4%)	68 (17.1%)

4.2.2 Frequency of Patients per doctor

The mean number of patients consulted by the doctors was 92.2 for a week in summer and 106.4 for a week in winter with an overall mean of 98.5 (range 63 – 382). The distribution of patients per doctor is demonstrated in Figure 1. Note that the doctor ID Number is the same for summer and winter for most doctors, except for 3 doctors (ID 5, 10, and 18), who were

replaced by 3 others in the same suburb, during winter. Five doctors did not submit winter data despite accepting participation.

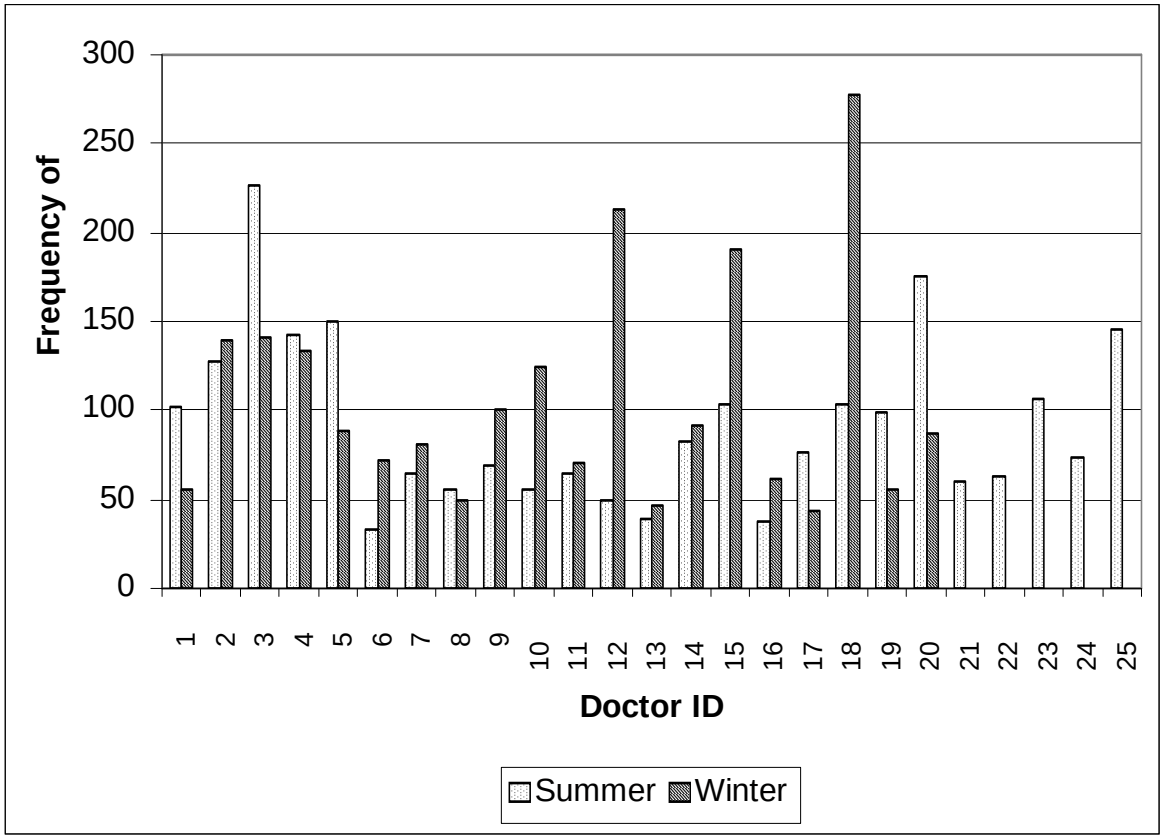


Figure 1: Frequency of patients per doctor in summer and winter. (n=4432)

4.3 DEMOGRAPHIC FEATURES OF PATIENTS.

4.3.1 Summary of demographic parameters

The survey describes encounters with 4,432 patients of whom 59.7% (2632) were female, and 40.3% (1780) were male. The average age was 31.5 years. A majority of patients had a secondary education, 43.6% (1750). Thirty-three point eight percent of patients (1448) lived in 4-roomed houses, and 22.5% (958) of households had 4 persons per house (Table 4). Most of the patients 19.7% (870) worked in trade/technical occupations.

Table 4: Summary of Patient Demographics

Parameter	Frequency or mean [range]
Number of patients (n)	4432
Education (n; %):	
Not recorded	418 (13.0%)
No Education (0)	96 (2.4%)
Primary school (1)	1049 (26.1%)
Secondary school (2)	1750 (43.6%)
Tertiary education (3)	555 (13.8%)
Occupation:	
Child < 7 years of age	604 (13.6%)
Housewife	172 (3.9%)
Scholar	423 (9.6%)
Labourer	326 (7.3%)
Office/Clerical	339 (7.6%)
Professional	414 (9.4%)
Retired/Pensioner	360 (8.1%)
Student	379 (8.6%)
Trade/Technical	870 (19.7%)
Unemployed	539 (12.2%)
Rooms in dwelling:	
1	335 (7.8%)
2	560 (13.0%)
3	915 (21.4%)
4	1448 (34.0%)
5	468 (10.9%)
6	318 (7.4%)
7	122 (2.8%)
8	85 (2.0%)
9	11 (0.3%)
10	9 (0.2%)
11	1 (0%)
12	5 (0.1%)

15	1 (0%)
18	1 (0%)
TOTAL	4279 (100%)
Sex and Age	
Male (%)	1780 (40.3%)
Female (%)	2632 (59.7%)
Mean age [range])	31.5 ± 19.3 years [3 weeks-90 years]
Child <7years	564 (14.1%)
Persons per House	(range 1 – 20)
1	137 (3.2%)
2	361 (8.4%)
3	696 (16.3%)
4	958 (22.4%)
5	783 (18.3%)
6	537 (12.6%)
7	270 (6.3%)
8	277 (6.5%)
9	90 (2.1)
10	94 (2.2%)
11	26 (0.6%)
12	17 (0.4%)
13	9 (0.2%)
14	11 (0.3%)
15	4 (0.1%)
16	2 (0%)
17	1 (0%)
18	1 (0%)
20	1 (0%)
TOTAL	4275 (100%)

4.3.2 Age and sexual distribution of patients

The sampled population of 4,432 patients had an age-group distribution as shown in Figure 2. The majority of patients were in the 30 to 39 year age groups, 20.6% (912) followed by 17.8% (788) were between 20 and 29 years of age. The patients under 10 constituted 16.8% (741) of the patients. The average age was 31.5 years.

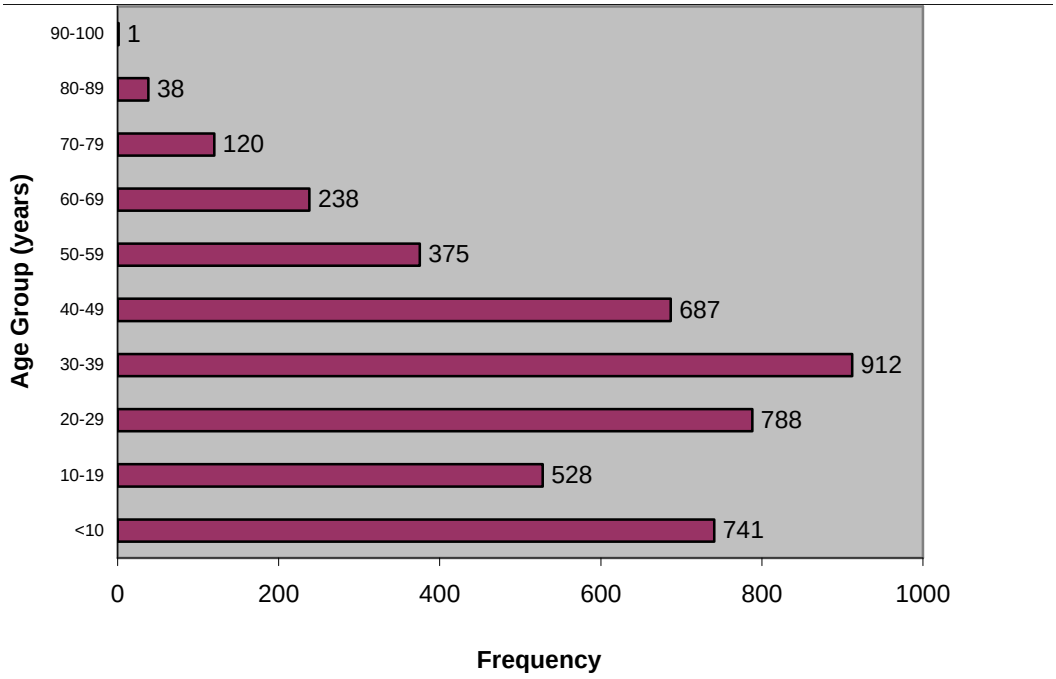


Figure 2: Age Group of Patients (n=4428)

Female patients consulted more frequently 59.6%, (2631) than male patients 40.3%, (1778). In all age groups, except children under the age of 10 years, there were more encounters with females than males as indicated in Table 6. In patients under 10 years old, male encounters were more than females.

Table 5: Gender by Age Group (n=4409)

Age Group	Male (1) (%)	Female (2) (%)	Total (%)
0-9 years	412 (9.3)	323 (7.3)	735 (100)
10-19 years	186 (4.2)	341 (7.7)	527 (100)
20-29 years	246 (5.5)	539 (12.2)	785 (100)
30-39 years	350 (7.9)	558 (12.6)	908 (100)
40-49 years	288 (6.5)	398 (9.02)	686 (100)
50-59 years	148 (3.3)	226 (5.1)	374 (100)
60-69 years	94 (2.1)	142 (3.2)	236 (100)
70-79 years	38 (0.8)	81 (1.8)	119 (100)
80-89 years	16 (0.3)	22 (0.4)	38 (100)
>90 years	0	1 (100)	1 (100)
Total	**1778 (40.3)**	**2631 (59.6)**	**4409 (100)**

Table 6: Age distribution of patients by sex

Age group	Totals		Males			Females		
	Freq	% of total	Freq	% of age group	% of males	Freq	% of age group	% of females
<10	735	16.6	412	56.1	23.1	323	43.9	12.3
10-19	527	11.9	186	35.3	10.4	341	64.7	13.0
20-29	785	17.7	246	31.3	13.8	539	68.7	20.5
30-39	908	20.5	350	38.5	19.7	558	61.5	21.2
40-49	686	15.5	288	42.0	16.2	398	58.0	15.1
50-59	374	8.4	148	39.6	8.3	226	60.4	8.6
60-69	236	5.3	94	39.8	5.3	142	60.2	5.4
70-79	119	2.7	38	31.9	2.1	81	68.1	3.1
> 80	39	0.9	16	41.0	0.9	23	59.0	0.9
Total	**4409**	**100.00**	**1778**	**40.3**	**99.89**	**2631**	**59.7**	**100**

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In the under 10-year age group, the one year old patients had the most number of consultations. Figure 3.The least number of consultations in the under 10 years of age patients were among the nine year old patients, and those under one year of age. The low frequency of consultation for the patients below one year of age could be due to attendance at the primary health clinics for immunization.

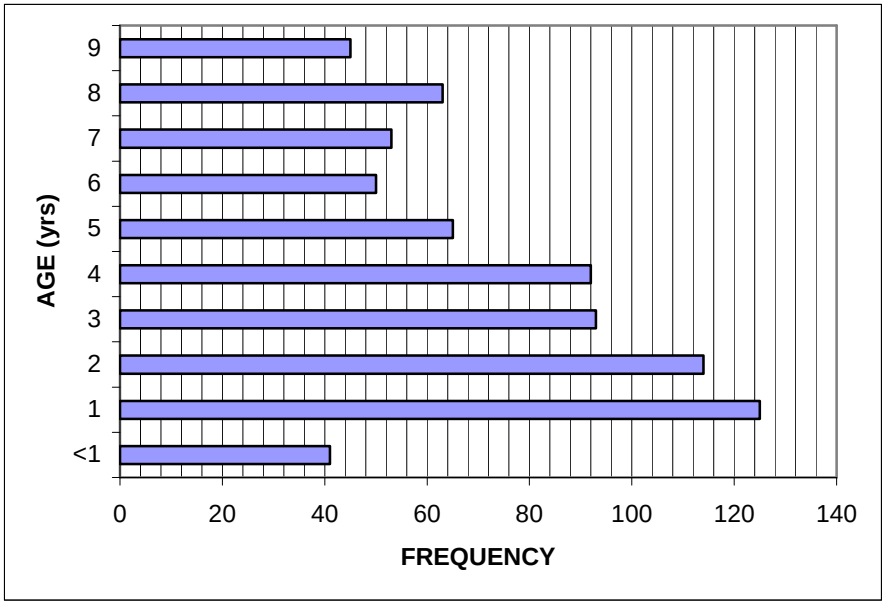


Figure 3: Frequency of Patients under 10 years of age (n=735)

In patients under 10 years of age male encounters were more frequent than female encounters for all ages except the 3-year-old age group (Figure 4)

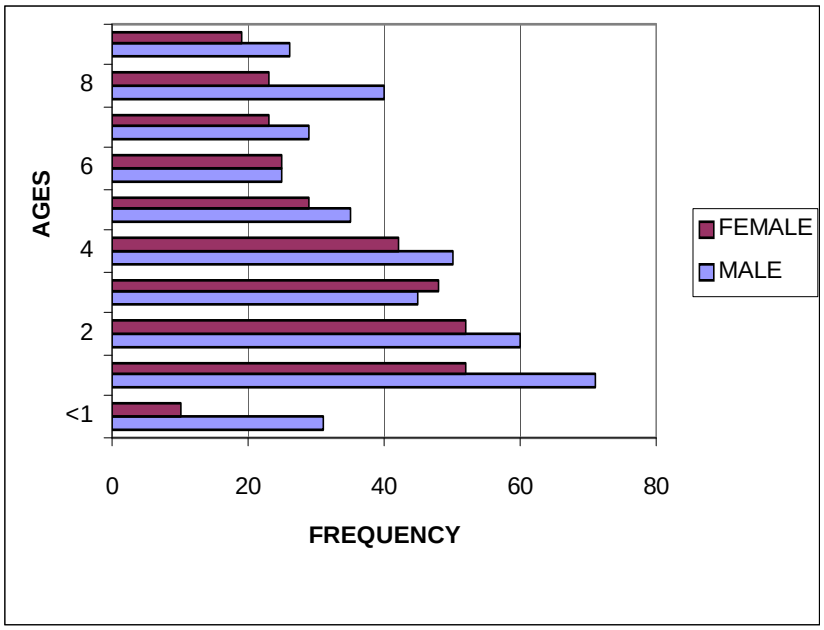


Figure 4: Age and sex distribution of patients under 10 years of age (n= 735)

4.3.3 Locality of patients

The locality of the patient residence has been referred to earlier in section 4.2.1, and in Table 2 and Table 3.

4.3.4 Occupation of the patients

The frequency of occupation of the subjects is demonstrated in Figure 5. Nineteen point seven percent of the patients (870) had a trade or technical occupation, and were the most frequently seen occupational group. Children who were not yet attending school, constituted 13.6% (604) of the patients seen by the doctors. Twelve point two percent of the patients (539) were unemployed. School going children and scholars constituted 9.6% (423) of the patients seen. Nine point four percent (414) patients having a professional occupation were seen. Students who had finished schooling

and were studying further constituted 8.6% (379) of the patients seen. Eight point one percent of the patients (360) were pensioners and retired people. Seven point six percent (338) patients were doing office and clerical work. Labourers constituted 7.3% (325) of the patients seen, and housewives were the least number of the patients seen 3.9% (172).

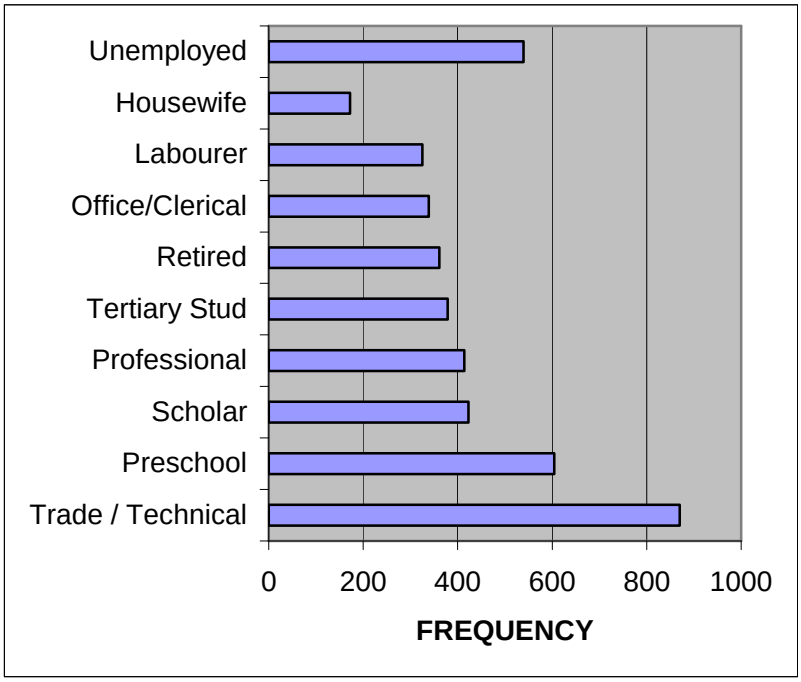


Figure 5: Frequency of Occupation of Patients in this Survey (n=4426)

Housewives constituted only 172 of the patients seen, and were mostly in the 30-39 year age group. The unemployed represented 539 patients seen and most of these patients (177) were in the 20-29 year age group. Labourers were mostly in the 30-39 year age group. Children below 9 years of age comprised a large group of 583 of the patients attended to.

Table 7: Occupation and Age group (n=4422)

	AGE GROUP IN YEARS										
	0-9	**10-19**	**20-29**	**30-39**	**40-49**	**50-59**	**60-69**	**70-79**	**80-89**	**>89**	**TOTAL**
OCCUPATION											
Child <7	583	18	1	2	0	0	0	0	0	0	604
Scholar	120	263	40	0	0	0	0	0	0	0	423
Student	31	213	121	14	0	0	0	0	0	0	379
Housewife	1	2	31	50	42	36	4	5	0	0	171
Labourer	1	0	46	112	100	51	13	1	0	0	324
Office Worker	2	1	108	120	76	30	2	0	0	0	339
Trade / Technical	0	6	195	313	236	104	13	2	0	0	869
Professional	0	1	67	156	124	54	9	3	0	0	414
Retired	0	1	1	1	5	29	176	108	38	1	360
Unemployed	2	22	177	143	104	69	21	1	0	0	539
TOTAL	740	527	787	911	687	373	238	120	38	1	4422

4.3.5 Sex and Occupation

Nineteen point seven percent of patients (866) belonged to the trade and technical occupation. This was the largest group and had the most number of consultations with 57.5% (498) males consulting and 42.5% (368) females consulting. Thirteen point six percent, (599) of the consultations were with children below seven years of age. Fifty-five point four percent (332) were males and 44.6% (267), were female patients.

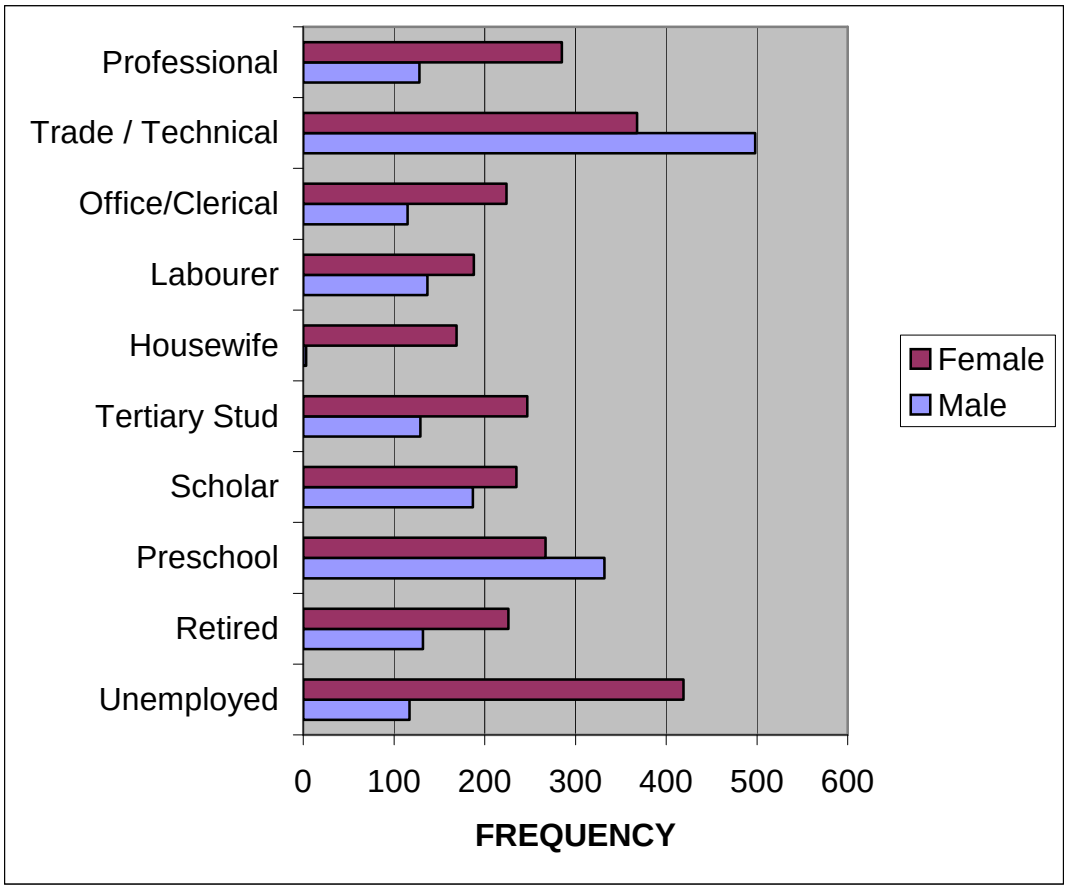


Figure 6: Sex and Occupation (n=4406)

In all occupations the percentage of females was more than males except for the trade/technical occupation and children under seven (Table 8)

There were more female patients who were unemployed than male patients. Seventy eight point one percent of female patients (419) were unemployed and 21.9% (117) male patients were unemployed. Unemployment was more common in the 20-29 year age group as compared to other age groups.

Table 8: Sexual distribution of the occupations (n=4406)

	SEX		
Occupation	**Male**	**Female**	**TOTAL**
Preschool	**332**	**267**	**599**
Scholar	**187**	**235**	**422**
Tertiary Stud	**129**	**247**	**376**
Housewife	**3**	**169**	**172**
Labourer	**137**	**188**	**325**
Trade / Technical	**498**	**368**	**866**
Office/Clerical	**115**	**224**	**339**
Professional	**128**	**285**	**413**
Retired	**132**	**226**	**358**
Unemployed	**117**	**419**	**536**
TOTAL	**1778**	**2628**	**4406**

4.3.6 Educational status of patients

Most patients 43.6% (1750) had a secondary education. Twenty six point one percent (1049) of patients had a primary school education. Children below age 7, constituted 14.1% (564) of the patients seen, and 13.8% patients (555) had a tertiary education. Patients with no formal education constituted 2.4% (96) of the patients. Note that in 418 patients the educational status was not recorded.

Table 9: Educational Status (n=4014)

Educational Status	**Frequency**
No Education	96 (2.4%)
Preschool children	564 (14.1%)
Primary school	1049 (26.1%)
Secondary school	1750 (43.6%)
Tertiary education	555 (13.8%)

Most patients had a secondary education as the highest level of education. Ninety-Six patients were recorded as having no education, and 28 of these patients were below nine years of age.

Table 10: Highest level of education and Age group (n= 4011)

	AGE GROUP IN YEARS										
	0-9	**10-19**	**20-29**	**30-39**	**40-49**	**50-59**	**60-69**	**70-79**	**80-89**	**>90**	**TOTAL**
EDUCATION											
No Education (0)	28	0	5	4	13	15	14	10	6	0	95
Row %	30	0	5.3	4.2	14	16	15	11	6.3	0	100
Col %	30	0	5.3	4.2	14	16	15	11	6.3	0	2.4
Primary School (1)	150	211	95	160	147	118	107	46	18	1	1053
Row %	14	20	9.1	15	14	11	10	4.4	1.7	0.1	1100
Col %	20	43	14	20	25	35	51	45	56	100	26.1
Secondary School (2)	0	257	400	481	312	173	75	41	7	0	1750
Row %	0.2	15	23	28	18	9.9	4.3	2.3	0.4	0	100
Col %	0.5	52	58	59	53	51	36	40	22	0	43.6
Tertiary Education (3)	0	20	192	169	117	35	13	6	1	0	554
Row %	0.2	3.6	35	31	21	6.3	2.3	1.1	0.2	0	100
Col %	0.1	4.1	28	21	20	10	6.2	5.8	3.1	0	13.8
Pre-School Children (4)	555	4	1	1	3	0	0	0	0	0	564
Row %	98	0.7	0.2	0.2	0.5	0	0	0	0	0	100
Col %	76	0.8	0.1	0.1	0.5	0	0	0	0	0	14.1
TOTAL	733	492	693	815	592	341	209	103	32	1	4011
Row %	18	12	17	20	15	8.5	5.2	2.6	0.8	0	100
Col %	100	100	100	100	100	100	100	100	100	100	100

At the preschool level, there were more male patients than female patients who were brought for consultation. Fifty four point eight percent (306) were male patients and 45.2% (253) were female patients.

Forty three point six percent of patients (1740) who consulted had a secondary education, with more female patients having a primary, secondary and tertiary education than male patients. There were 38.6% (671) consultations among males with a secondary education and 61.4% (1069) female patients had a secondary education. There were 26.1%

patients (1045) with a primary education who consulted and 41.9% (437) were male, and 58.1% (608) were female patients. Sixteen point seven percent (735) patients under 9 years of age were seen, and 56% (412) were male, and 44% (323) were female patients. Thirteen point nine percent of patients (554) who consulted had a tertiary education, and 30.7% (170) were male patients and 69.3% (384) were female patients. There were a total of 2.4% (96) patients with no education, and 49% (47) were male patients, and 51% (49) were female patients. Figure 7.

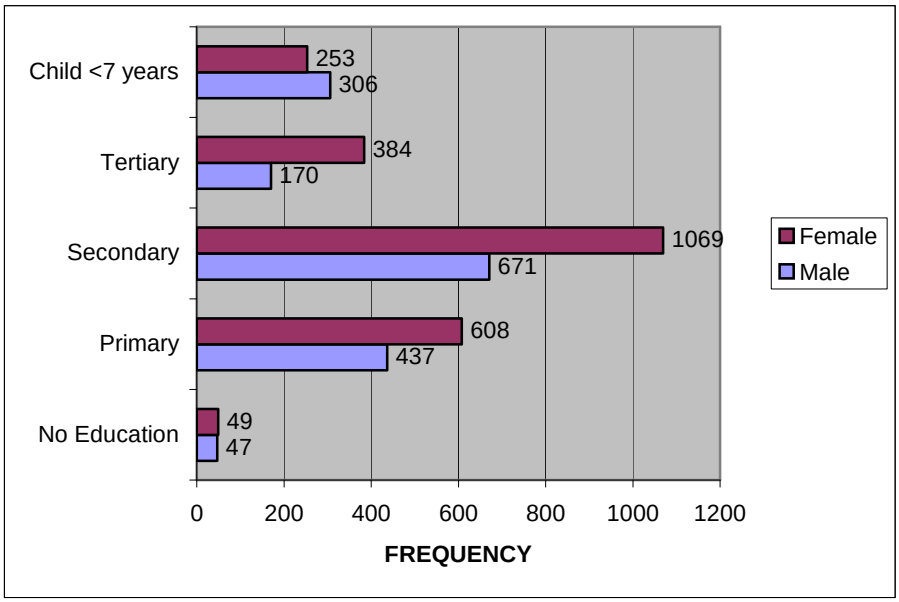


Figure 7: Frequency of Education by Gender (n=3994)

The proportions were similar in patients over 18 years old with 55.3% (1526) encounters with patients having secondary schooling, 25.0% (689) encounters with patients having primary schooling, 19.5% (539) patient encounters with tertiary education, and 0.2% (6) encounters with patients without education. Males with a secondary education also consulted more frequently 38.0% (824) then males in the other age groups. Sixteen point

seven percent of patients (735) patients below 9 years of age were seen, and male patients outnumbered female patients. Fifty six percent of the patients (412) were male patients, and 44% (323) were female patients. Twenty point six percent (908) patients were between 30 and 39 years of age were seen, of which 38.5% (350) were male patients and 61.4% (558) were female patients.

4.3.7 Seasonal distribution

There were more patient encounters in summer, which were 52.0% (2305) than winter, which was 48.0% (2127). More female patients consulted in Summer and Winter. The sex distribution in summer was 50.6% (1114) male patients and 51.3% (1865) female patients. In winter there were 49.4% (1088) males and 48.7% (1599) females.

Patients in the 30-39 year age group had the most number of consultations as compared to the other age groups. Patients below 19 years of age, 60-69 year age group and 80-89 year age group consulted more in Winter as compared to Summer.

Table 11: Season and Age Group (n= 4428)

	AGE GROUP IN YEARS										
Seasons	**0-9**	**10-19**	**20-29**	**30-39**	**40-49**	**50-59**	**60-69**	**70-79**	**80-89**	**>90**	**TOTAL**
Summer	345	219	447	505	358	226	117	67	16	1	2301
Winter	396	309	341	407	329	149	121	53	22	0	2127
TOTAL	741	528	788	912	687	375	238	120	38	1	4428

4.3.8 Residential and Social status of patients

Thirty-three point eight percent of patients, (1448), lived in 4 roomed houses, which was the most common, followed by 21.4% (915), of the patients living in 3 roomed houses, and 13.1% (560) of the patients living in 2 roomed houses. Twenty- two point four percent (958) of patients lived in households having four people. Eighteen point three percent (783) patients lived in households that had 5 people. Only 16.3% (696) patients lived in households having 3 people. Most patients lived in homes with 2-5 rooms with those of tertiary education residing in residences with more rooms. The mean number of persons per room in the residence decreased with educational status. This corresponded to a decrease in the median number of rooms per person of residences of patients of professional status with tertiary qualifications.

Nineteen point seven percent of patients (870) belonging to the trade/ technical occupation which was the largest group and had the most consultations, with 57.5% (498) males consulting, and 42.5% (368) females consulting. Sixty five point five percent of patients (503) belonging to the trade/technical occupation had a secondary education.

Table 12: Social and Educational Status of All Patients (n=4008)

Social Class	Patients (n)	No Education	Primary	Secondary	Tertiary	Persons/Room (median)	Median number of rooms
Professional	380 (9.4%)	1 (0.2%)	5 (0.1%)	126 (3.1%)	248 (6.1%)	1	4
Trade/Technical	768 (19.1%)	9 (0.2%)	128 (3.1%)	503 (12.5%)	127 (3.1%)	1.25	4
Clerical	310 (7.7%)	0	4 (0.1%)	251 (6.2%)	52 (1.2%)	1.2	4
Labourer	297 (7.4%)	9 (0.2%)	167 (4.1%)	111 (2.7%)	7 (0.1%)	1.5	3
Housewife	164 (4.09%)	5 (0.1%)	59 (1.4%)	95 (2.3%)	4 (0.09%)	1.5	4
Retired	311 (7.7%)	30 (0.7%)	152 (3.7%)	117 (2.9%)	12 (0.2%)	1.3	4
Unemployed	420 (10.4%)	14 (0.3%)	171 (4.2%)	207 (5.1%)	25 (0.6%)	1.5	3

Patients lived mostly in 4-roomed homes. Thirty three point nine percent (1448) patients living in homes having 4 rooms were seen. Fifteen point two percent (51) patients below 9 years of age lived in homes having 1 room. Seven point eight percent (334) patients lived in overcrowded conditions, having one room per house.

Table 13: Rooms in home and Age Group (n= 4275)

	AGE GROUP IN YEARS										
Number Of Rooms In Home	**0-9**	**10-19**	**20-29**	**30-39**	**40-49**	**50-59**	**60-69**	**70-79**	**80-89**	**>90**	**TOTAL**
1	51	14	79	81	54	35	10	7	3	0	334
2	107	50	82	122	78	51	43	22	4	0	559
3	161	113	148	193	138	82	44	20	15	0	914
4	263	175	261	301	210	110	85	35	8	0	1448
5	62	67	75	87	89	43	27	11	6	1	468
6	48	40	61	59	51	28	15	14	1	0	317
7	12	21	27	18	23	10	6	4	1	0	122
8	15	13	19	9	19	6	0	4	0	0	85
9	3	2	1	3	1	0	1	0	0	0	11
10	0	2	3	1	2	0	0	1	0	0	9
11	0	0	1	0	0	0	0	0	0	0	1
12	0	3	1	0	0	1	0	0	0	0	5
15	0	0	0	0	0	0	1	0	0	0	1
18	0	0	0	1	0	0	0	0	0	0	1
TOTAL	722	500	758	875	665	366	232	118	38	1	4275

Twenty-four point eight percent (956) patients lived in homes having 4 people. Two point two percent (94) patients who were between less than 9 years of age, up-to 70-79 years of age lived in overcrowded homes having 10 people. Twenty- five point eight percent (185) patients below 10 years of age lived in homes having 4 people.

Table 14: Persons in home and Age Group (n= 4271)

	AGE GROUP IN YEARS										
Number of Persons per House	**0-9**	**10-19**	**20-29**	**30-39**	**40-49**	**50-59**	**60-69**	**70-79**	**80-89**	**>90**	**TOTAL**
1	2	3	44	32	26	14	10	5	1	0	137
2	37	20	70	87	67	41	22	11	6	0	361
3	106	65	131	162	116	54	34	23	4	0	695
4	185	125	140	224	136	66	53	21	5	1	956
5	142	90	133	158	124	65	40	21	10	0	783
6	98	83	90	86	88	48	30	8	6	0	537
7	52	32	43	44	44	33	13	7	1	0	269
8	53	42	58	34	33	25	17	10	5	0	277
9	18	12	16	21	9	8	3	3	0	0	90
10	10	16	20	16	15	7	4	6	0	0	94
11	3	4	5	5	1	5	3	0	0	0	26
12	3	4	2	3	4	0	1	0	0	0	17
13	3	1	0	2	1	0	0	2	0	0	9
14	2	1	4	0	0	1	2	1	0	0	11
15	1	1	0	0	2	0	0	0	0	0	4
16	1	1	0	0	0	0	0	0	0	0	2
17	1	0	0	0	0	0	0	0	0	0	1
18	1	0	0	0	0	0	0	0	0	0	1
20	0	0	0	1	0	0	0	0	0	0	1
TOTAL	718	500	756	875	666	367	232	118	38	1	4271

4.3.9 Age Group and place of Residence

A large number of patients were from Meadowlands, Dobsonville, Orlando East, Zola, Chiawelo and Pimville. These patients were mostly in the 30 to 40 year age group, belonged to the trade and technical occupation and had a secondary education. Seven hundred and forty one children below nine were seen in the townships, and 117 were from Meadowlands, and 113 from Dobsonville.

Patients living in the older and bigger townships consulted more than patients living in the smaller townships with poorer facilities, and who probably attended the primary health clinics.

Table 15: Township and Age group (n= 4428)

	AGE GROUP IN YEARS										
TOWNSHIP	**0-9**	**10-19**	**20-29**	**30-39**	**40-49**	**50-59**	**60-69**	**70-79**	**80-89**	**>90**	**TOTAL**
Chiawelo	49	22	37	51	51	29	19	6	6	0	270
Central Western Jabavu	22	17	29	32	23	15	10	4	0	0	152
Diepkloof Extension	8	1	15	6	7	8	2	0	0	0	47
Dhlamini	16	13	21	17	7	10	5	2	0	0	91
Diepkloof	33	26	60	32	30	16	12	2	3	0	214
Doornkop	0	0	0	1	0	1	0	0	0	0	2
Dobsonville	113	105	71	133	123	25	5	2	0	0	577
Dube	16	13	11	11	5	5	6	4	1	0	72
Emdeni	14	20	32	28	7	16	12	4	0	0	133
Freedom Park	2	0	0	1	1	0	0	0	0	0	4
Jabavu	0	0	0	1	0	0	1	0	0	0	2
Jabulani	20	10	23	26	21	5	10	2	0	0	117
Klipspruit	14	6	14	19	20	19	7	6	0	0	105
Mapetla	8	2	4	6	5	4	5	1	0	0	35
Meadowlands	117	87	78	127	93	43	42	13	4	0	604
Mofolo	19	9	28	18	8	12	6	9	2	0	111
Molapo	14	7	16	15	5	9	5	3	0	0	74
Motsoaledi	1	0	1	2	2	1	0	1	1	0	9
Moroka	2	1	4	0	2	1	1	0	0	0	11
Moletsane	3	3	2	4	2	0	3	0	0	0	17
Mzimhlophe	0	0	0	1	0	0	0	2	0	0	3
Naledi	17	14	13	14	12	6	8	1	2	0	87
Orlando East	59	18	61	53	39	30	18	15	5	0	298
Orange Farm	0	0	0	0	0	0	0	1	0	0	1
Other	53	23	53	87	49	27	12	11	3	0	318
Orlando West	12	13	7	10	16	12	4	7	5	0	86
Protea Glen	7	4	15	20	10	3	2	0	0	0	61
Phomolong	6	2	5	4	1	2	2	1	0	0	23
Pimville	28	26	50	36	38	24	6	6	0	0	214
Protea North	9	9	7	10	15	5	5	0	2	0	62
Power Park	1	1	0	1	0	0	2	1	0	0	6
Protea	2	1	3	5	10	0	0	0	0	0	21
Protea South	1	4	2	7	5	1	0	0	0	1	21
Rockville	5	6	2	7	4	3	1	1	1	0	30
Senoane	6	8	8	5	9	5	3	2	0	0	46
Snake Park	7	1	3	8	0	2	0	0	1	0	22
Tladi	13	11	9	15	12	3	3	4	1	0	71
White City	2	2	2	6	4	3	0	1	0	0	20
Zondi	10	12	28	24	11	7	5	1	0	0	98
Zola	32	31	74	69	40	23	16	7	1	0	293
TOTAL	741	528	788	912	687	375	238	120	38	1	4428

4.4 PROFILE OF PATIENT ENCOUNTERS

4.4.1 Types of consultation

4.4.1.1 Who initiated the consultation?

Most consultations were patient initiated (PINI) and constituted 85.1% (3764) of the reasons for encounter. Doctor initiated (DINI) consultations represented only 12.1% (535) of the reasons for encounter. There were 2.1% (93) patients who were referred to the General Practitioner by other practitioners or the clinic. Most patients who had a DINI or a PINI reason for encounter were in the 30 to 39 year age group.

Table 16: Types of consultation and Age Group

	Age Gp Distrib		Doctor Initiated		Patient Initiated		Referred by GP		New Problem		Ongoing Problem	
Age Gp	Freq	%	Freq	%	Freq	%	Freq	%	Freq	%	Freq	%
<9	741	16.7	33	6.2	678	18.0	19	20.7	618	20.2	69	6.0
10-19	528	11.9	55	10.3	456	12.1	15	16.3	410	13.4	89	7.8
20-29	788	17.8	76	14.2	683	18.1	25	27.2	587	19.2	156	13.7
30-39	912	20.6	103	19.3	783	20.8	15	16.3	661	21.6	214	18.8
40-49	687	15.5	89	16.6	581	15.4	8	8.7	450	14.7	204	17.9
50-59	375	8.5	83	15.5	284	7.5	6	6.5	183	6.0	177	15.5
60-69	238	5.4	57	10.7	182	4.8	2	2.2	101	3.3	129	11.3
70-79	120	2.7	30	5.6	89	2.4	1	1.1	34	1.1	79	6.9
80-89	38	0.9	8	1.5	28	0.7	1	1.1	14	0.5	23	2.0
>90	1	0.0	1	0.2	0	0.0	0	0.0	0	0.0	1	0.1
Total	**4428**	**100**	**535**	**100**	**3764**	**100**	**92**	**100**	**3058**	**100**	**1141**	**100**

4.4.1.2 New or Old Problem?

There were more patients who consulted for a new problem than for an ongoing chronic condition. Sixty nine point two percent (3058) patients had a new reason for encounter and 72.6% (661) of these patients were in the 30 to 39 year age group. There were a total of 25.8% (1142) patients with an ongoing reason for encounter and 23.4% (214) of these patients were in the 30 to 39 year age group, and the rest being in the 40-59 year age group.

4.4.2 Reasons for Encounter (RFE)

Table 17: Top 21 Reasons For Encounter (RFE) (Those with a frequency equal to or greater than 1%) (N=5601)

	RFE CODE	RFE DESCRIPTION	Freq	% of all Rees
1	R05	Cough	909	16.2%
2	R21	Symptom/complaint/throat	254	4.5%
3	N01	Headache	215	3.8%
4	R80	Influenza	214	3.8%
5	K31	Circulatory Med Exam/health evaluation/partial	169	3.0%
6	R07	Sneezing/nasal congestion	162	2.9%
7	A03	Fever	149	2.7%
8	L02	Back symptoms/complaints	144	2.6%
9	D06	Other localized abdominal pain	124	2.2%
10	D02	Stomach pain/ache	117	2.1%
11	R08	Other symptom/complaint of nose	115	2.1%
12	A01	Pain generalized	112	2.0%
13	W14	Family planning/other	107	1.9%
14	D11	Diarrhea	103	1.8%
15	R01	Pain attrib to respiratory system	100	1.8%
16	L20	Symptom multiple/unspecified joints	96	1.7%
17	S07	Gen redness/ erythema /rash	94	1.7%
18	D10	Vomiting	88	1.6%
19	U01	Painful urination	84	1.5%
20	X14	Vaginal discharge	73	1.3%
21	A04	Weakness/tiredness general	58	1.0%

The most common reason for encounters were due to Respiratory causes. These included cough (R05), 16.2% (909) symptom complaint of throat (R21), 4.5% (254), sneezing /nasal congestion, 2.9% (162), other symptom/complaint of nose 2.1% (115), pain attributed to the respiratory system 1.8 (100) other symptom complaints of ear, 0.1% (4) and sinusitis (1) Other common reasons for encounter included headache, circulatory partial medical evaluation, and back symptoms and complaints.

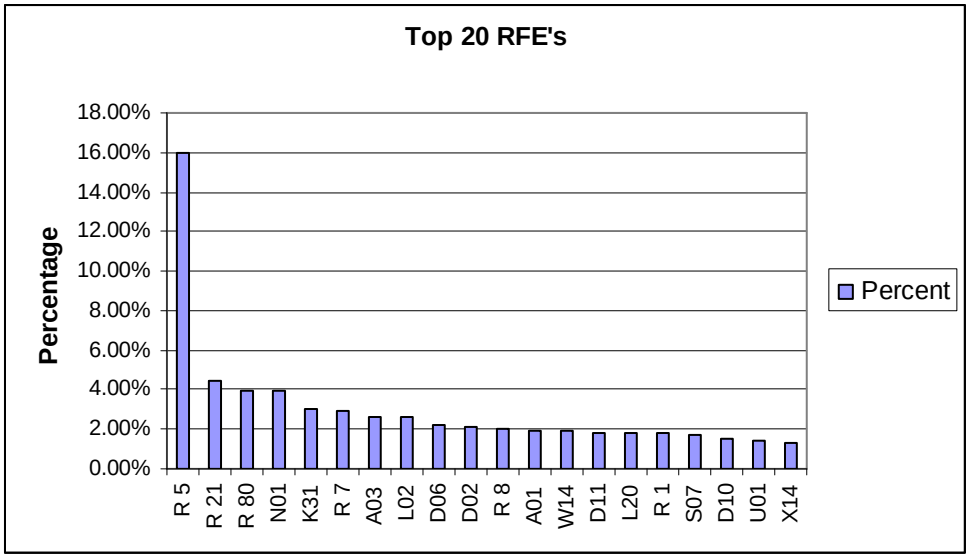


Figure 8: Top 20 Reasons for encounter (n=5601)

Table 18: Most frequent Reasons for Encounter (RFE) by ICPC-2 Chapters (n= 5601)

RFE Chapter	Frequency	Percent
Respiratory (R)	1996	35.6%
Digestive (D)	630	11.2%
Musculoskeletal (L)	612	10.9%
General and Unspecified (A)	486	8.7%
Skin (S)	353	6.3%
Neurological (N)	275	4.9%
Female Genital (X)	239	4.3%
Circulatory (K)	223	4.0%
Pregnancy/Childbearing (W)	163	2.9%
Urological (U)	128	2.3%
Endocrine (T)	127	2.3%
Eye (F)	87	1.6%
Male Genital (Y)	88	1.6%
Hearing/ Ear (H)	73	1.3%
Psychological (P)	70	1.2%
Social Problems (Z)	39	0.7%
Blood and Immune Mechanism (B)	12	0.2%
Total	5601	100%

Respiratory encounters accounted for 35.6% (1996 encounters). This was followed by encounters related to the digestive system (11.2%; n = 630) and musculoskeletal complaints (10.9%; n = 612). General encounters accounted for 8.7% of the consultations (n=486). Skin complaints accounted for 6.3% of the encounters (n=353). Neurological complaints constituted 4.9% of the encounters (n=-275). Female genital complaints were 4.3% of the encounters (n=239) and circulatory problems accounted for 4% of the encounters (n=223). Pregnancy and childbearing consultations were 2.9% of the encounters (n=163). Urological and endocrine problems jointly accounted for up to 2.3% of the top 10 reasons for encounter (n=128, n=127). Encounters associated with the eye (1.5%; n = 87), male genital system (1.5%; n = 88), ear (1.3%; n = 73), psychological

(1.2%; n = 70), social (0.7%; n = 39) and blood immune system (0.2%; n = 12) disorders each accounted for less than 2% of the encounters experienced.

4.4.2.1 Frequency of Reasons for Encounter

Table 19: Frequency of Reasons for Encounter (RFE)

RFE Chapters																		
RFE	**A**	**B**	**D**	**F**	**H**	**K**	**L**	**N**	**P**	**R**	**S**	**T**	**U**	**W**	**X**	**Y**	**Z**	**Total**
1	310	11	478	68	60	190	518	198	55	1584	316	84	87	157	197	81	32	4427
Total	310	11	478	68	60	190	518	198	55	1584	316	84	87	157	197	81	32	4427

A – General; B - Blood and Immune Mechanisms; D – Digestive;
F – Eye; H – Hearing; K – Circulatory;
L – Musculoskeletal; N – Neurological; P – Psychological
R – Respiratory; S – Skin; T – Endocrine/Metabolic;
U – Urological; W- Pregnancy; X – Female Genital;
Y – Male Genital; Z – Social Problems

Four thousand four hundred and twenty seven patients having at least one reason for encounter consulted during this study. Some patients were recorded as having more than one reason for encounter, resulting in a total of 5601 reasons of encounter. The respiratory ICPC chapter contributed to a large number of 35.6% (1996) reasons for encounter.

Table 20: **Number of Reasons for Encounter and RFE chapters**

	RFE Chapters																	
Number of RFE	A	B	D	F	H	K	L	N	P	R	S	T	U	W	X	Y	Z	Total
1	310	11	478	68	60	190	518	198	55	1584	316	84	87	157	197	82	32	4427
2	134	0	128	15	10	29	76	55	9	365	33	35	34	5	33	5	6	972
3	36	1	20	4	3	1	16	17	6	40	3	4	6	1	9	1	1	169
4	3	0	3	0	0	2	2	5	0	7	1	4	1	0	0	0	0	28
5	3	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	5
Total	486	12	630	87	73	223	612	275	70	1996	353	127	128	163	239	88	39	5601

A – General; B - Blood and Immune Mechanisms; D – Digestive;
F – Eye; H – Hearing; K – Circulatory;
L – Musculoskeletal; N – Neurological; P – Psychological
R – Respiratory; S – Skin; T – Endocrine/Metabolic;
U – Urological; W- Pregnancy; X – Female Genital;
Y – Male Genital; Z – Social Problems

4.4.2.2 Age distribution of reasons for encounter (RFE)

Nineteen point four percent of patients (1107) were between 30-39 years of age, and 20.6% (912) of them had one reason for encounter. One thousand and sixty one patients had two reasons for encounter, and most commonly, 33.5% (355) of the patients with 2 reasons for encounter were below nine years of age.

Table 21: Age Group and Number of Reasons for Encounter

(n=5710)

	NO. OF REASONS FOR ENCOUNTER					
AGE GROUPS	**1**	**2**	**3**	**4**	**5**	**Totals**
<10 yrs	745 (16.8%)	355 (33.5%)	74 (40.2%)	13 (46.4%)	2 (40.0%)	1189 (20.8%)
10-19 yrs	528 (11.9)	102 (9.6%)	16 (8.7%)	2 (7.1%)	0	648 (11.3%)
20-29 yrs	788 (17.8%)	141 (13.3%)	26 (14.1%)	6 (21.4%)	1 (20.0%)	962 (16.8%)
30-39 yrs	912 (20.6%)	170 (16.0%)	21 (11.4%)	3 (10.7%)	1 (20.0%)	1107 (19.4%)
40-49 yrs	687 (15.5%)	136 (12.8%)	25 (13.6%)	2 (7.1%)	0	850 (14.9%)
50-59 yrs	375 (8.5%)	71 (6.7%)	11 (6.0%)	2 (7.1%)	1 (20.0%)	460 (8.1%)
60-69 yrs	238 (5.4%)	48 (4.5%)	4 (2.2%)	0	0	290 (5.1%)
70-79 yrs	120 (2.7%)	25 (2.4%)	3 (1.6%)	0	0	148 (2.6%)
80-89 yrs	38 (0.9%)	12 (1.1%)	4 (2.2%)	0	0	54 (0.9%)
90-yrs >	1 (0.0%)	1 (0.1%)	0	0	0	2 (0.0%)
Totals	4432 (100.0)	1061 (100.0)	184 (100.0)	28 (100.0)	5 (100.0)	5710 (100.0)

Table 22: Age Distribution of Reasons for Encounter (RFE) (n=5430)

RFE Chapters																		
Age Group In Years	A	B	D	F	H	K	L	N	P	R	S	T	U	W	X	Y	Z	Total
0-9	109	2	146	24	28	0	13	11	2	513	100	21	5	0	3	3	2	982
10-19	44	1	46	15	6	4	15	32	9	308	77	2	8	39	29	7	2	644
20-29	70	4	124	19	13	6	54	53	14	282	54	9	35	76	98	27	12	950
30-39	82	5	147	13	5	24	112	73	14	378	62	16	27	42	63	27	8	1098
40-49	92	0	85	7	13	57	119	47	17	259	33	21	19	5	29	13	9	825
50-59	39	0	25	1	1	49	124	29	5	112	14	24	12	0	6	8	2	451
60-69	16	0	14	3	1	54	88	12	2	65	4	14	8	0	2	1	0	284
70-79	9	0	10	1	6	16	52	11	1	23	1	11	3	0	0	0	0	144
80-89	4	0	7	1	0	4	15	0	1	11	3	0	3	0	0	1	0	50
>90	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	2
Total	465	12	604	84	73	215	215	268	65	1951	348	118	120	162	230	87	35	5430

A – General; B - Blood and Immune Mechanisms; D – Digestive;
F – Eye; H – Hearing; K – Circulatory;
L – Musculoskeletal; N – Neurological; P – Psychological
R – Respiratory; S – Skin; T – Endocrine/Metabolic;
U – Urological; W- Pregnancy; X – Female Genital;
Y – Male Genital; Z – Social Problems

There were 35.9% (1951) respiratory reasons for encounter in all the age groups. Children below nine years of age had 52.2% (513) respiratory reasons for encounter. Thirty four point four percent (378) patients between 30 and 39 years of age had respiratory reasons for encounter and 47.8% of patients (308) between 10 and 19 years of age had a respiratory reason for encounter.

Fourteen point nine percent of patients (146) below nine years of age had a digestive reason for encounter. Thirteen point three percent of patients (147) between 30 and 39 years of age had a digestive reason for encounter. Thirteen point zero percent of patients (124) between 20 and 29 years of

age had a digestive reason for encounter.

Twenty seven point four percent of patients (124) between 50 and 59 years of age had a musculoskeletal reason for encounter. Fourteen point four percent of patients (119) between 40 and 49 years of age had a musculoskeletal reason for encounter. Ten point two percent of patients (112) between 30 and 39 years of age had a musculoskeletal reason for encounter.

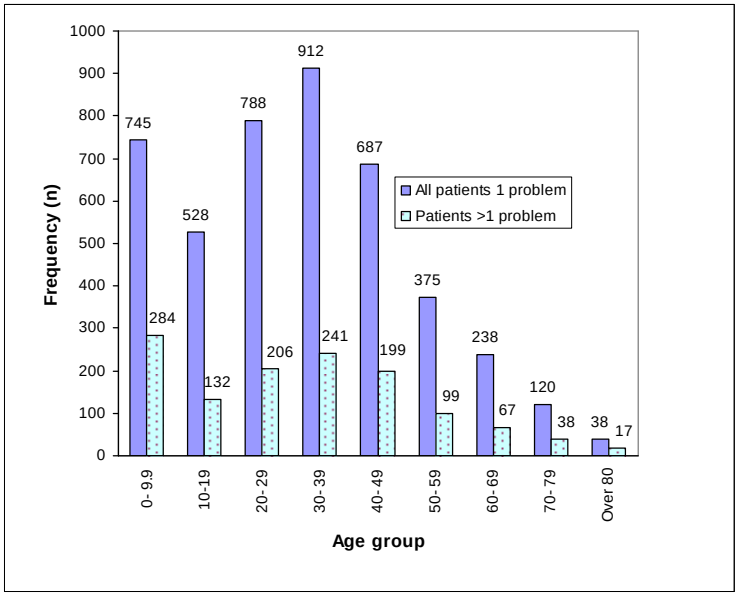


Figure 9: Age distribution of patients from 4432 encounters showing the distribution of patients with one or more reasons for encounter (n=5601)

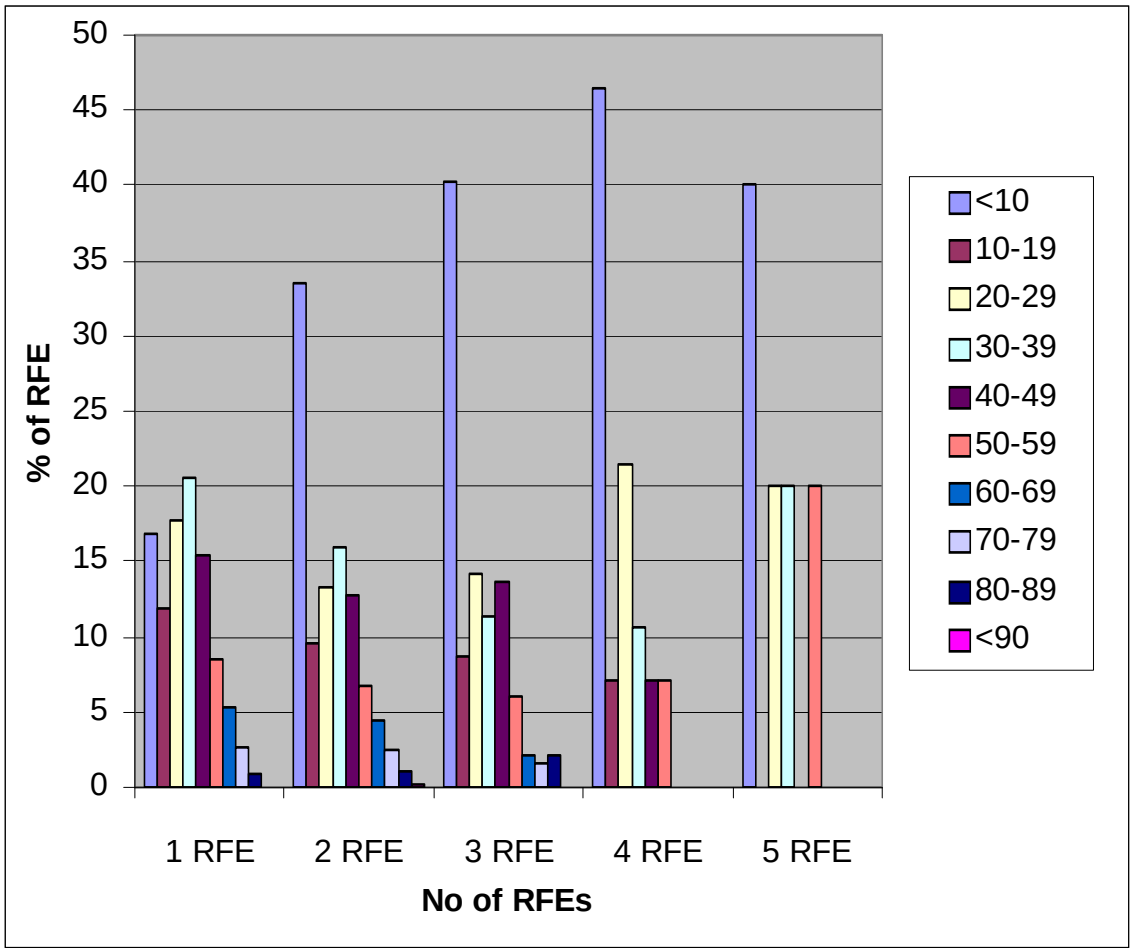


Figure 10: Age group and Number of Reasons for Encounter.

In the children under 10 years, most patients were in the under 6 years old age group. Children between 0 to <6 year old more frequently had more than one reason for encounter compared to those aged 6 to 10 years.

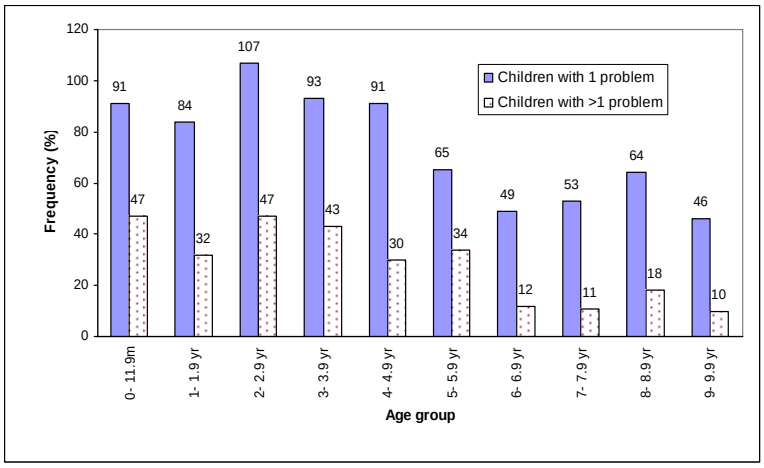


Figure 11: Age distribution of children (0 - <10 years old) encounters showing the distribution of patients with 1 or more reasons for encounter (n=1150)

Male patients outnumbered female patients, especially up to the 1 years of age, 2 and 8 years of age patients.

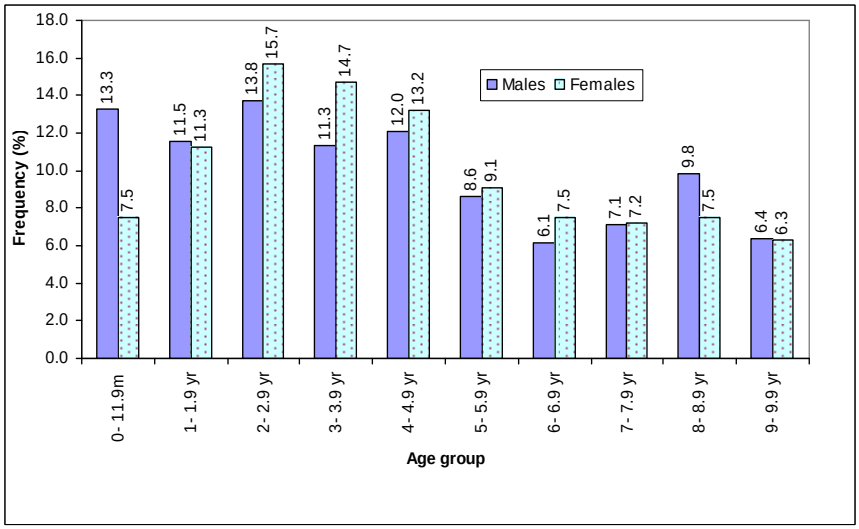


Figure 12: Age–sex distribution of Reasons for Encounter in children under 10 years old (n= 1150)

Table 23: Frequency of reason for encounters by organ system in children under 10 years of age. Comparison is made between boys (top panel) and girls (lower panel)

	0-11.9m	1y	2y	3y	4y	5y	6y	7y	8y	9y	Total
BOYS											
Respiratory	43	31	39	31	38	33	15	24	32	11	297
Digestive	19	14	12	6	6	3	4	1	2	3	70
General	8	10	9	8	5	11	3	1	6	1	62
Skin	3	6	5	9	10	5	5	2	3	6	54
Hearing	1	3	2	3	3	1	0	1	1	2	17
Eye	2	0	1	1	0	0	0	3	3	0	10
Endocrine	3	1	0	2	0	2	0	1	2		11
Neurological	1	0	1	1	0	1	0	0	2	1	7
Musculoskeletal	0	0	2	1	0	1	0	0	2	3	9
Blood/immune	0	0	0	0	1	0	0	0	0	1	2
Psychological	0	0	0	1	0	0	0	0	0	0	1
Male genital	0	0	0	0	0	0	1	0	0	0	1
Social	0	0	0	0	0	0	0	1	0	0	1
Total boys	80	65	71	63	63	57	28	34	53	28	542

Table 24: Frequency of reason for encounters by organ system in children under 10 years of age. Comparison is made between boys (top panel) and girls (lower panel).

	0-11.9m	1y	2y	3y	4y	5y	6y	7y	8y	9y	Total
GIRLS											
Respiratory	28	22	39	33	20	18	16	21	17	14	228
Digestive	9	14	15	11	8	7	1	2	3	2	72
General	8	3	9	8	10	3	3	3	2	2	51
Skin	2	4	4	7	10	6	5	0	3	4	45
Hearing	1	4	2	1	1	0	0	1	0	0	10
Eye	2	0	0	1	4	4	2	0	1	1	15
Endocrine	0	0	1	5	2	0	2	1	0	0	11
Neurological	0	0	4	0	0	0	3	0	0	2	9
Musculoskeletal	0	0	1	0	1	1	0	1	1	0	5
Urological	0	1	0	0	0	0	1	0	1	0	3
Female genital	0	1	0	1	0	0	0	0	0	1	3
Psychological	0	0	0	0	0	0	0	0	0	1	1
Total girls	50	49	75	67	56	39	33	29	28	27	453
Total	130	114	146	130	119	96	61	63	81	55	995

The data in Table 23 recorded more respiratory reasons for encounters with males under the age of 10 than females. Digestive and skin reasons for encounter were also common in children below 10 years of age.

4.4.2.3 Age and sex distribution of reasons for encounter

Table 25: Sex and Reason for encounter by ICPC-2 chapters (n=5404)

	RFE Chapters																	
SEX	**A**	**B**	**D**	**F**	**H**	**K**	**L**	**N**	**P**	**R**	**S**	**T**	**U**	**W**	**X**	**Y**	**Z**	**Total**
Male	215	5	221	39	36	66	249	79	24	881	143	56	58	1	3	87	12	2175
Female	248	7	380	44	35	146	340	189	41	1059	204	62	61	161	227	1	24	3889
Total	463	12	601	83	71	212	589	268	65	1940	347	118	119	162	230	88	36	5404

A – General; B - Blood and Immune Mechanisms; D – Digestive;
F – Eye; H – Hearing; K – Circulatory;
L – Musculoskeletal; N – Neurological; P – Psychological
R – Respiratory; S – Skin; T – Endocrine/Metabolic;
U – Urological; W- Pregnancy; X – Female Genital;
Y – Male Genital; Z – Social Problems

One thousand nine hundred and forty male and female patients with a respiratory reason for encounter were seen, with more female patients presenting with respiratory reasons for encounter. Fifty four point six percent (1059) were female patients and 45.4% (881) were male patients. Six hundred and one male and female patients with a digestive reason for encounter were seen. Sixty three point two percent (380) were female patients and 36.8% (221) were male patients. Five hundred and eighty six male and female patients with a musculoskeletal reason for encounter were seen. Fifty seven point eight percent (339) were female patients and 42.2% (247) were male patients.

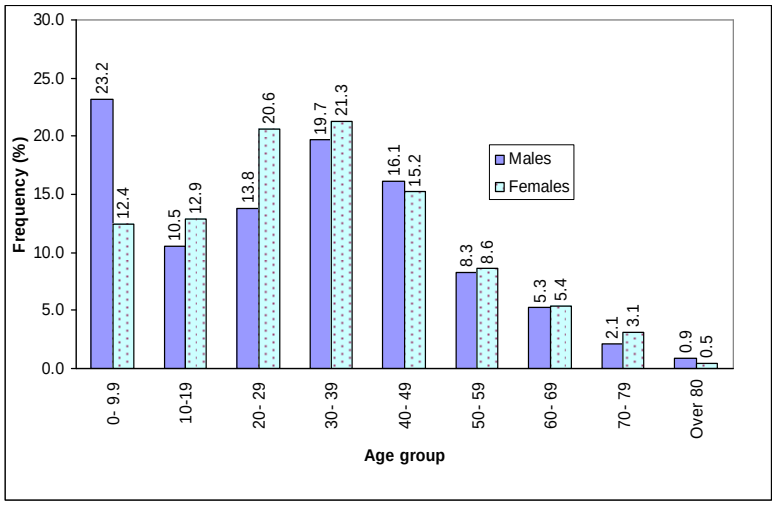


Figure 13: Age–sex distribution of all Reasons for encounter (n=5601)

4.4.2.4 Classification of reasons for encounters

The Respiratory RFE by ICPC-2 chapter was the most common reason for encounter with 35.6% (1996) patients. Eleven point two percent (630) of patients had digestive reasons for encounter, and 10.9% (612) patients having a musculoskeletal reason for encounter. Eight point seven percent of patients (486) had general/unspecified reasons for encounter. Six point three percent of patients (353) had consulted for skin problems and neurological reasons for encounter constituted 4.9% (275) of the reasons for encounter. Female genital reasons for encounter were 4.3% (239) of the reasons for encounter. Circulatory reasons for encounter were 4% (223) of reasons for encounter. The pregnancy, childbearing RFE by ICPC-2 chapters constituted 2.9% (163) reasons for encounter. The endocrine and urological RFE by ICPC-2 chapters were 2.3% (127 and 128) reasons for encounter respectively. The RFE by ICPC-2 chapters eye, male genital, ear and psychological reasons for encounter constituted 1.6% (87), 1.6% (88),

1.3% (73), 1.2% (70) reasons for encounter. The social problems RFE by ICPC chapter were 0.7% (39) reasons for encounter. The blood and immune RFE by ICPC chapter constituted 0.2% (12) of the reasons for encounter.

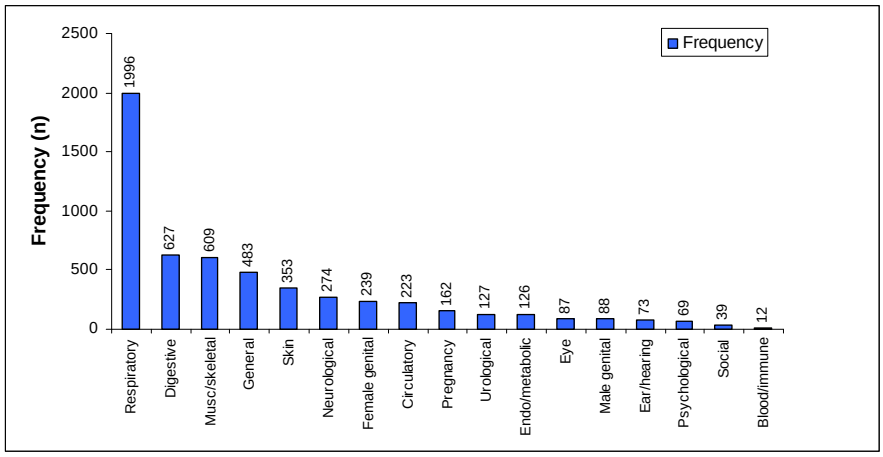


Figure 14: Frequency of Reasons for Encounters by ICPC chapters (n=5601)

The data from 5,601 RFE has been summarized in Figure 14, Figure 8 and Table 17. The respiratory RFE by ICPC-2 chapter was the most common in all the age groups, followed by digestive complaints and then musculoskeletal complaints.

There were more patient initiated consultations, 86.2% (4820) than doctor initiated consultations, 10.7% (770) of a total of 5590 reasons for encounter and the great majority of patient initiated consultations, 37.5% (1812) were for respiratory reasons. The doctor- initiated consultations were mostly for circulatory reasons for encounter, 20.3% (122)

There were more patients who consulted with new problems, 70.9% (3965) rather than ongoing problems, 24% (1344) out of total of 5589 reasons for

encounter. Most patients with new problems were of respiratory origin, 42% (1668). Most patients who consulted for ongoing problems were for musculoskeletal reasons for encounter, 19.3% (260)

Two thousand one hundred and fifty four patients having a secondary education were seen and 38% (667) had a respiratory reason for encounter. Patients with a secondary education had 38.6% (214) digestive reasons for encounter, and 48.3% (263) musculoskeletal reasons for encounter.

Thirty seven point four percent (708) patients with a respiratory reason for encounter lived in four-room homes and 37.6% (439) patients having respiratory reasons for encounter lived in households having four persons.

One thousand nine hundred and nine six patients with a respiratory reason for encounter were seen in both summer and winter. There were more patients presenting with respiratory reasons for encounter in winter than in summer. Sixty two point nine percent (1255) patients with respiratory reasons for encounter were seen in winter, and 37.1% (741) were seen in summer.

Table 26: Frequencies (n and (percentage)) of common (>1% of total) encounters by age (n=5429)

		Age group (years)								Total
Reason for Encounter	**Code**	**0 - <10**	**10 - <20**	**20 - <30**	**30 - <40**	**40 - <50**	**50 - <60**	**60 - <70**	**>70**	**N (%)**
Cough	R05	315	117	113	158	103	49	37	11	903 (16.24%)
Symptom/complaints throat	R21	31	61	45	62	41	8	4	2	254 (4.57%)
Influenza	R80	42	48	33	44	36	9	7	2	221 (3.98%)
Headache	N01	8	28	47	58	41	19	11	4	216 (3.89%)
Circulatory	K31	0	1	3	16	43	41	47	17	168 (3.02%)
Sneezing/nasal congestion	R07	45	29	33	28	18	6	3	1	162 (2.91%)
Fever	A03	86	15	13	13	10	7	3	1	148 (2.66%)
Back symptom. /complaints	L02	1	2	26	22	30	24	22	16	143 (2.57%)
Local abdominal pain (other)	D06	3	7	38	38	22	5	5	4	122 (2.19%)
Stomach ache/ pain	D02	4	9	30	40	15	9	5	3	115 (2.07%)
Symptom./complaints nose (other.)	R08	42	18	15	22	12	3	2	1	115 (2.07%)
Generalized pain	A01	4	3	14	24	33	16	5	7	106 (1.91%)
Family planning (other)	W14	0	31	45	23	4	0	0	0	103 (1.85%)
Pain attrib respiratory System	R01	16	7	11	27	21	11	3	3	99 (1.78%)
Symptom. Multi/ specific joints	L20	1	1	2	11	21	21	23	17	97 (1.74%)
General redness/rash	S07	35	15	17	13	7	4	0	1	92 (1.65%)
Vomiting	D10	41	7	7	16	9	3	1	2	86 (1.55%)
Painful urination	U01	3	4	25	19	15	8	5	4	83 (1.49%)
Vaginal discharge	X14	0	9	32	24	6	1	2	0	74 (1.33%)
Other		282	234	407	436	341	214	103	105	2122 (40.51%)
Totals		959 17.7%	646 11.90%)	956 (17.61%)	1094 (20.15%)	828 (15.25%)	458 (8.44%)	288 (5.30%)	201 (3.70%)	5429 (100.01%)

Encounters for a cough accounted for the majority of encounters 16.1% (901), followed by throat complaints and symptoms 4.5% (254) and influenza 3.8% (214). These encounters were associated with particular age groups. Respiratory encounters, cough (R05), sneezing and nasal congestion (R07), other nose symptoms and complaints (R08)) were

associated with children under the age of 10 years whereas complaints of the musculoskeletal system back symptoms and complaints (L02), symptoms associated with specific or multiple joints (L20) were frequent in older patients. Family planning (W14), vaginal discharge (X14) and painful urination (U01) occurred in the 10 – 50 year old age groups.

4.4.2.5 Relationship between residential area of patients and reasons for encounter.

Table 27: Frequency of common reasons for encounter by residential area

Reason for Encounter	North & NW	East	South East	South West	West	Central	Other	Total
Respiratory (R)	43.3% (680)	28.4% (196)	31.0% (141)	31.8% (204)	38.0% (212)	31.8% (234)	31.9% (164)	35.4% (1831)
Digestive (D)	9.7% (152)	14.9% (103)	10.35 (47)	12.3% (81)	8.8% (49)	12.1% (89)	11.5% (59)	11.2% (58)
Musculoskeletal (L)	9.4% (148)	12.6% (87)	11.4% (52)	10.9% (70)	11.8% (66)	12.8% (94)	11.3% (58)	11.1% (575)
General (A)	7.8% (123)	7.1% (49)	11.7% (53)	9.2% (59)	9.1% (51)	9.9% (73)	9.1% (47)	8.8% (455)
Skin (S)	6.8% (107)	6.7% (46)	5.7% (26)	4.8% (31)	6.8% (38)	5.2% (38)	8.2% (42)	6.4% (328)
Neurological (N)	4.2% (66)	4.9% (34)	5.1% (23)	4.5% (29)	5.4% (30)	6.3% (46)	6.0% (31)	5.0% (259)
Female genital (X)	2.7% (43)	6.5% (45)	5.7% (26)	5.1% (33)	5.0% (28)	2.5% (18)	4.5% (23)	4.2% (216)
Circulatory (K)	4.1% (64)	2.9% (20)	4.8% (22)	3.6% (23)	3.1% (17)	5.2% (38)	3.9% (20)	4.0% (204)
All other	14.0% (106)	16.1% (111)	12.0% (188)	13.6% (70)	14.3% (65)	17.1% (110)	12.0% (67)	13.9% (717)
Total Encounters	30.4% (1572)	13.3% (689)	8.8% (455)	12.4% (642)	10.8% (558)	14.2% (736)	10.0% (558)	100% (5168)

Forty one point three percent of patients (275) patients with the respiratory RFE group were from Dobsonville, which is in the North of Soweto. Ten point one percent of patients (67) of patients from Dobsonville had general /unspecified reasons for encounter. In Dobsonville, 8.7% (58) had digestive

reasons for encounter. Musculoskeletal reasons for encounter made up 7.5% (50) reasons for encounter in Dobsonville. Seven point five percent of patients (50), had skin reasons for encounter.

In Jabulani, which is in the North- West of Soweto, the respiratory RFE group was the most common reason for encounter with 36.0% (54) patients coming with this complaint. Twelve percent of patients (18), had musculoskeletal reasons for encounter, and 10.0% (15), had skin reasons for encounter. Eight point seven percent of patients (13) had general/unspecified reasons for encounter, and 6.7% (10) had digestive reasons for encounter.

Chiawelo, which is in the south of Soweto, had the following RFE groups. Thirty point seven percent of patients (98), had respiratory reasons for encounter, 12.9% (41), had musculoskeletal reasons for encounter, 6.3% (20) had skin reasons for encounter, 4.7% (15) had endocrine/metabolic reasons for encounter, and 2.5% (8), had circulatory as well as another 2.5% (8) having urological reasons for encounter.

Dhlamini, which is in the South of Soweto, had 26.7% (36) patients who had a respiratory reason for encounter. Fourteen point one percent patients (19), had a musculoskeletal reason for encounter, Eleven point one percent of patients (15), had general/unspecified reasons for encounter, and 9.6% of patients (13), had digestive reasons for encounter. Six point seven percent of patients (9) had neurological reasons for encounter.

Protea Glen which is in the South- West of Soweto, had 31.1% (23) patients who had respiratory reasons for encounter, 16.2% (12) of patients had digestive reasons for encounter. Five point four percent of patients (4) had circulatory reasons for encounter, and another 5.4% (4) of patients had musculoskeletal reasons for encounter.

Pimville, which is in the South-East of Soweto, had 28.6% (66) patients who had respiratory reasons for encounter, 13.0% (30) of patients had musculoskeletal reasons for encounter, and 10% of patients (23) had digestive reasons for encounter. Seven point eight percent of patients (18) had skin reasons for encounter, and 5.2% (12) of patients, had circulatory reasons for encounter.

Orlando East, which is in the east of Soweto, had the following RFE groups – 24.2% of the patients (86) had respiratory reasons for encounter. Twenty point two percent of patients (72) had digestive reasons for encounter. Thirteen point two percent of patients (47) had musculoskeletal reasons for encounter. Seven point nine percent of patients (28) has general / unspecified reasons for encounter. Six point seven percent of patients (24) had skin reasons for encounter.

Emdeni, which is the west of Soweto , had the following RFE groups. Thirty two point three percent of patients (52) had respiratory reasons for encounter. Sixteen point one percent of patients (26) had musculoskeletal

reasons for encounter. Eight point seven percent of patients (14) had general / unspecified reasons for encounter. Seven point five percent of patients (12) had skin reasons for encounter and six point eight percent of patients (11) had female genital reasons for encounter.

Central-Western Jabavu, which is centrally situated in Soweto, had 41.3% of patients (93) with respiratory reasons for encounter. Eleven point six percent of patients (26) had musculoskeletal reasons for encounter. Nine point three percent of patients (21) had neurological reasons for encounter. Eight point nine percent of patients (20) had general /unspecified reasons for encounter and 8.4% (19) had digestive reasons for encounter.

4.4.3 Diagnoses

Table 28: Top 22 Diagnosis (n=4918)

	Diagnosis	Diagnosis Description	Frequency	% of all Frequency
1	R74	Acute upper Respiratory Infection	808	16.4%
2	R80	Influenza	350	7.1%
3	K86	Hypertension Uncomplicated	234	4.8%
4	R78	Acute Bronchitis	167	3.4%
5	L91	Osteoarthritis other	193	3.9%
6	R76	Tonsillitis acute	172	3.5%
7	D73	Gastroenteritis Presumed infections	123	2.5%
8	X74	Pelvic Inflammatory disease	127	2.6%
9	W14	Contraception other	113	2.4%
10	U71	Cystitis/other urine infection	108	2.2%
11	R83	Respiratory infection other	98	2.0%
12	D87	Stomach function disorder	96	2.0%
13	L18	Muscle Pain	77	1.6%
14	R96	Asthma	67	1.4%
15	S88	Contact Dermatitis	62	1.3%
16	N95	Tension Headache	55	1.1%
17	H71	Acute otitis media	55	1.1%
18	P74	Anxiety disorder/ state	53	1.1%
19	T92	Gout	49	1.0%
20	R81	Pneumonia	50	1.0%
21	T89	Insulin Dependant diabetes	43	0.9%
22	T90	Non-Insulin dependant diabetes	42	0.9%

The respiratory diagnostic group constituted 37.7% (1855) of patients. Nine point eight percent of patients (484) had a musculoskeletal diagnosis. Eight point three percent of patients (407) had a digestive diagnosis. Six point six percent of patients (327) had a skin diagnosis. Six point three percent of patients (308) had a circulatory diagnosis. Five point eight percent of patients (283) had a female genital diagnosis. Four point six percent of patients (225) had general / unspecified diagnosis. Four point two percent of

patients (207) had pregnancy childbearing diagnosis. Three point three percent of patients (163) had urological diagnosis. Two point nine percent of patients (145) had endocrine / metabolic diagnosis. Two point seven percent of patients (131) had psychological diagnosis. Two point four percent of patients (116) had neurological diagnosis. One point seven percent of patients (83) had an ear diagnosis. One point four percent of patients (67) had male genital diagnosis. One point two percent of patients (59) had an eye diagnosis. Zero point three percent of patients (17) had social diagnosis problems.

4.4.3.1 Frequencies of Diagnoses by ICPC-2 Chapters

Table 29: Most frequent diagnoses by ICPC-2 Chapters (n=4918)

ICPC CHAPTER	Frequency	Percent
Respiratory	1855	37.7%
Musculoskeletal	484	9.8%
Digestive	407	8.3%
Skin	327	6.6%
Cardiovascular	308	6.3%
Female genital	283	5.8%
General/Unspecified	225	4.6%
Pregnancy/Childbearing	207	4.2%
Urological	163	3.3%
Endocrine	145	3.0%
Psychological	131	2.7%
Neurological	116	2.4%
Hearing/Ear	83	1.7%
Eye	59	1.2%
Male genital	67	1.4%
Social Problems	17	0.3%
Blood/immune mechanisms	41	0.8%
Total	**4918**	**100.0%**

4.4.3.2 Frequency of Diagnoses by ICPC-2 code

Acute upper respiratory tract infection (R74) constituted 16% (767) of the diagnosis. Six point seven percent (322) of patients had a diagnosis of Influenza (R80). Uncomplicated hypertension (K86) constituted 4.8% (232) of the diagnosis.

Patients with other osteoarthritis (L91) as a diagnosis constituted 4% (191) of the patients. Acute tonsillitis (R76) contributed to 3.6% (172) of the diagnosis. Acute bronchitis/bronchiolitis (R78) constituted 3.3% (160) of the patient diagnosis.

Pelvic inflammatory disease (X74) constituted 2.6% (127) of the diagnosis. Presumed gastrointestinal infection (D73) contributed to 2.5% (120) of the diagnosis. Two point four percent (113) of patients had other contraception (W14) as a diagnosis. Cystitis/other urinary infection (U71) contributed to 2.2% (105) of the diagnosis made.

Two percent (95) of patients had a diagnosis of other respiratory infection (R83). Stomach function disorder (D87) contributed to 2% (94) of the diagnosis. Asthma (R96) constituted 1.3% (64) of the diagnosis. Contact dermatitis/allergic (S88) contributed to 1.3% (61) of the patient diagnosis. One point one percent (54) of patients had tension headache (N95) as a diagnosis. Pneumonia (R81) constituted 1% (54) of the diagnosis.

Anxiety disorder/anxiety state (P74) was a common diagnosis with 1% (51) patients. Acute otitis media/myringitis (H71) constituted 1% (53) of the

diagnosis. Gout (T92) was a common endocrine/metabolic diagnosis with 1% (49) diagnosis.

The respiratory diagnostic group was the most common in all age groups, followed by the musculoskeletal diagnostic group, and then the digestive diagnostic group.

4.4.3.3 Diagnoses in doctor- patient encounters

Four thousand nine hundred and eighteen diagnoses have been recorded. Diagnosis of disease of the respiratory system were made 3.7 times more frequently than diagnoses of any other organ system (WONCA ICPC-2 code grouping; Fig. 4.7.). As for encounters, diagnoses associated with the ear (audio-; 1.7%; n = 80), male genital system (1.3%; n = 63), eye (1.2%; n = 57), blood immune system (0.8%; n = 37) and social (0.4%; n = 17), and disorders each accounted for less than 2% of the encounters experienced.

Upper respiratory tract infections accounted for 16% (n = 767) of all diagnoses, with influenza accounting for another 6.7% (n = 322) of diagnoses.

Table 30: Diagnosis by ICPC-2 Chapters and Age Group (n= 4708)

	AGE GROUP										
Diagnosis by ICPC Chapters	**0-9**	**10-19**	**20-29**	**30-39**	**40-49**	**50-59**	**60-69**	**70-79**	**80-89**	**99-99**	**TOTAL**
RESPIRATORY	472 27	272 15,6	255 14.6	335 19.1%	229 13.1%	96 5.4%	57 3.3%	22 1.3%	9 0.5%	0	1747 37.1
MUSCULOSKELRTAL	8 1.7	14 3	31 6.6	80 17	103 21.9	108 23	68 14.4	45 9.5	13 2.8	1 0.2	471 10
DIGESTIVE	108 27.4	30 7.6	64 16.2	95 24.1	56 14.2	21 5.3	8 2.03	6 1.52	6 1.52	0	394 8.3
SKIN	80 25.1	69 21.6	47 14.8	56 17.6	40 12.6	14 4.4	7 2.2	2 0.6	3 0.9	0	318 6.8
CIRCULATORY	1 0.3	5 1.7	8 2.7	39 13.1	76 25.6	63 21.2	65 22	31 10.4	7 2.4	1 0.3	296 6.3
FEMALE GENITAL	2 0.8	28 10.5	99 37.2	75 28.1	48 18	8 3	3 1.1	1 0.3	2 0.75	0	266 5.6
GENERAL	38 17	32 143	49 22	48 21.5	32 14.3	12 5.3	8 3.6	2 0.8	2 0.8	0 0	223 4.8
PREGNANCY/CHILD-BEARING	0 0	45 22	98 48	56 27.4	5 2.4	0 0	0 0	0 0	0 0	0 0	204 4.3
UROLOGICAL	7 4.6	10 6.53	45 29.4	43 28.1	25 16.3	14 9.1	6 3.9	1 0.65	2 1.3	0 0	153 3.2
ENDOCRINE/METABOLIC	1 0.7	1 0.7	5 3.6	16 11.4	37 26.4	34 24.2	27 19.2	16 11.4	3 2.1	0 0	140 3
PSYCHOLOGICAL	0 0	14 11	23 18	36 28.1	34 26.5	13 10.1	3 2.3	4 3.1	1 0.7	0 0	128 2.7
NEUROLOGICAL	7 6.2	9 8	25 22.3	31 27.6	24 21.4	12 10.7	3 2.6	1 0.9	0 0	0 0	112 2.4
EAR/HEARING	37 46.2	7 8.8	14 17.5	5 6.2	9 11.2	1 1.2	1 1.2	6 7.5	0 0	0 0	80 1.6
MALE GENITAL	4 6.1	5 7.6	19 29.2	11 17	10 15.3	7 1.0	5 7.7	2 3.0	2 3.0	0 0	65 1.3
EYE	16 28.6	10 17.9	14 25	5 8.9	6 10.7	1 1.8	2 3.6	1 1.8	1 1.8	0 0	56 1.1
BLOOD/IMMUNE MECHANISMS	2 5.4	2 5.4	10 27	14 37.8	8 21.6	1 2.7	0 0	0 0	0 0	0 0	37 0.7
SOCIAL PROBLEMS	2 12.5	2 12.5	6 37.5	4 25	1 6.25	0 0	1 6.25	0 0	0 0	0 0	16 0.3
TOTAL	785 16.6	555 11.8	813 17.2	949 20.1	744 15.8	405 8.6	264 5.6	140 3	51 1.0	2 0.04	4708

4.4.3.4 Age distribution of diagnoses

As for encounters, diagnoses were age related with hypertension 4.8% (n = 232) and osteoarthritis 4.0% (n = 191) afflicting patients over 30 years old.

The respiratory diagnosis was most common in children below seven years of age 23.3% (370) followed by patients in the trade and technical occupation 18.2% (290) and 14% (223) in scholars.

The musculoskeletal diagnosis was most common in patients belonging to patients in the trade and technical occupation 24.8% (111) followed by the retired patients 23.7% (106) and unemployed 12.5% (56).

The digestive diagnosis was most common in children below seven years of age 26.4% (99) followed by patients in the trade and technical occupation 17.1% (64) and by the unemployed 11.5% (43).

Table 31: Frequencies (n and (percentage)) of diagnoses by age group.

		Age Groups									
Diagnosis	**ICP Code**	**0 - <10 yrs**	**10 - <20 yrs**	**20 - <30 yrs**	**30 - <40 yrs**	**40 - <50 yrs**	**50 - <60 yrs**	**60 - <70 yrs**	**>70 yrs**	**Total**	**(%)**
URTI	R74	250	116	109	139	84	32	27	5	762	16.06
Influenza	R80	70	49	42	73	53	24	8	5	324	6.83
Hypertension	K86	1	2	2	29	58	54	58	29	233	4.91
Other osteoarthritis	L91	0	0	2	19	36	53	47	36	193	4.07
Tonsillitis	R76	37	44	32	38	18	2	0	1	172	3.63
Acute bronchitis/bronchiolitis	R78	56	14	17	19	22	14	12	5	159	3.35
Pelvic inflammatory disease	X74	0	6	47	53	20	3	2	0	131	2.76
Presumed GI Infection	D73	50	7	23	19	14	2	1	3	119	2.51
Family Planning	W14	0	36	42	26	2	0	0	0	106	2.23
Cystitis/other urinary infection	U71	6	6	29	27	19	11	3	3	104	2.19
Disorder stomach fn	D87	6	12	15	31	14	12	4	1	95	2.00
Other respirator y infect	R83	17	17	15	20	18	3	2	1	93	1.96
Muscle pain/fibrositis	L18	1	2	7	20	24	16	4	2	76	1.60
Asthma	R96	15	8	12	5	7	10	1	5	63	1.33
Contact dermatitis/ eczema	S88	17	8	8	11	7	3	3	0	57	1.20
Headache (tension)	N95	1	3	13	16	13	6	2	0	54	1.14
Acute otitis media/myringitis	H71	35	3	5	2	6	1	0	1	53	1.12
Anxiety disorder/state	P74	0	6	5	13	16	8	1	2	51	1.08
Other		227	218	397	391	314	163	95	94	1899	40.03
Total		**789**	**557**	**822**	**951**	**745**	**417**	**270**	**193**	**4744**	**100.00**

The respiratory diagnosis was most common in children below nine years of age 27.4% (482) followed by those between the age of 30 and 39 years 19.1% (335) and those between 10 and 19 years of age 15.5% (272). The musculoskeletal diagnosis was most common in patients between 50 and 59 years of age 22.6% (108) followed by patients between 40 and 49 years of age 21.6% (103) and patients between 30 and 39 years of age 16.8% (80). The digestive diagnosis was most common in children below nine years of

age 28.7% (115) followed by patients between 30 and 39 years of age 23.7% (95) and patients between 20 and 29 years of age 16% (64). The respiratory diagnosis was most common in female 54.6% (949) and male 45.4% (789) patients. Female patients had a 58.2% (272) diagnosis of the musculoskeletal system and males 41.8% (195). Female patients had a 55.2% (175) skin diagnosis and male patients had a 44.8% (142) skin diagnosis

4.4.3.5 Association of diagnoses and other demographic variables

The respiratory diagnosis was most common in patients with a secondary education 37.7% (590) followed by patients with a primary 24.7% (386) and tertiary education 13.6% (212). Musculoskeletal diagnosis was most common in patients with a secondary education 47.5% (201) followed by patients with a primary education 36.6% (155) and 7.8% (33) in patients with a tertiary education. Digestive diagnosis was most common in patients with a secondary education 35.9% (127) followed with patients with a primary education 22.6% (80) and patients with a tertiary education 11.9% (42). The respiratory diagnosis was most common in patients who lived in four-roomed houses 37.9% (643) and with four persons per household. Sixty one point three percent of patients (1077) had a respiratory diagnosis in winter and 38.7% of patients (680) had a respiratory diagnosis in summer. Sixty one point eight percent of patients (295) had a musculoskeletal diagnosis in summer and 38.2% of patients (182) in winter. Fifty nine point nine percent of patients (240) had a digestive diagnosis in summer and forty point one percent (161) in winter.

Table 32: Diagnoses: Frequency of ICPC-2 Chapter by age group.

ICPC Chapter	0 – 9 (%)	10 – 19 (%)	20 – 29 (%)	30 – 39 (%)	40 – 49 (%)	50 – 59 (%)	60 – 69 (%)	70 – 79 (%)	80 – 89 (%)	90 – 99 (%)	Total (%)
Respiratory	482 (27.4)	272 (15.5)	255 (14.5)	335 (19.1)	299 (13.0)	96 (5.5)	57 (3.2)	22 (1.3)	9 (0.5)	0	1757
Digestive	115 (28.7)	30 (7.5)	64 (16.0)	95 (23.7)	56 (14.0)	21 (5.2)	8 (2.0)	6 (1.5)	6 (1.5)	0	401
Musculoskeletal	14 (2.9)	14 (2.9)	31 (6.5)	80 (16.8)	103 (21.6)	108 (22.6)	68 (14.3)	45 (9.4)	13 (2.7)	1 (0.2)	477
General	38 (17.0)	32 (14.3)	49 (22.0)	48 (21.5)	32 (14.3)	12 (5.4)	8 (3.6)	2 (0.9)	2 (0.9)	0	223
Skin	85 (26.3)	69 (21.40	47 (14.6)	56 (17.3)	40 (12.4)	14 (4.3)	7 (2.2)	2 (0.6)	3 (0.9)	0	323
Neurological	10 (8.7)	9 (7.8)	25 921.7)	31 (27.0)	24 (20.9)	12 (910.4)	3 (2.6)	1 (0.9)	0	0	115
Female Genital	9 (3.3)	28 (10.3)	99 (36.3)	75 (27.5)	48 (17.6)	8 (2.9)	3 (1.1)	1 (0.4)	2 (0.7)	0	273
Circulatory	11 (3.6)	5 (1.6)	8 (2.6)	39 (12.7)	76 (24.8)	63 (20.6)	65 (21.2)	31 (10.10)	7 (2.3)	1 (0.3)	306
Pregnancy/ Child Bearing	1 (0.5)	45 (22.0)	98 (47.8)	56 (27.3)	5 (2.4)	0	0	0	0	0	205
Urological	12 (7.6)	10 (6.3)	45 (28.5)	43 (27.2)	25 (15.8)	14 (8.9)	6 (3.8)	1 (0.6)	2 (1.3)	0	158
Endocrine / Metabolic	6 (4.1)	1 (0.7)	5 (3.4)	16 (11.0)	37 (25.5)	34 (23.4)	27 (18.6)	16 (11.0)	3 (2.1)	0	145
Male Genital	5 (7.6)	5 (7.6)	19 (28.8)	11 (16.7)	10 (15.2)	7 (10.6)	5 (7.6)	2 (3.0)	2 (3.0)	0	66
Eye	17 (29.8)	10 (17.5)	14 (24.6)	5 (8.8)	6 (10.5)	1 (1.8)	2 (3.5)	1 (1.8)	1 (1.8)	0	57
Hearing	37 (46.3)	7 (8.8)	14 (17.5)	5 (6.3)	9 (11.3)	1 (1.3)	1 (1.3)	6 (7.5)	0	0	80
Psychological	2 (1.5)	14 (10.8)	23 (17.7)	36 (27.7)	34 (26.2)	13 (10.0)	3 (2.3)	4 (3.1)	1 (0.8)	0	130
Social	3 (17.6)	2 (11.8)	6 (35.3)	4 (23.5)	1 (5.9)	0	1 (5.9)	0	0	0	17
TOTAL	851 (17.8)	555 (11.6)	813 (17)	949 (19.9)	74 (15.6)	405 (98.5)	264 (5.5)	140 (2.9)	51 (1.1)	2 (0)	4774

4.4.4 Age and diagnoses

In males, the reason for encounter and diagnosis of respiratory complaints were most common in younger boys. Respiratory diagnoses in boys under 1 year of age (15.4% of respiratory diagnoses in children under 10 years of age) were nearly twice that of girls (9.0%) Table 24 Digestive complaints were the second most common reason for encounter and diagnosis in the younger children, especially in boys. Table 23

All other reasons for encounter and diagnoses, grouped according to the organ system showed little apparent trend with age or sex difference in children under the age of 10 years Table 23 and Table 24 However, the small sample sizes may *obscure* any trend.

Table 33: Frequency of diagnoses by organ system and comparison between boys (top panel) and girls (bottom panel) under 10 years of age.

	0-11.9m	1y	2-y	3y	4y	5y	6y	7y	8y	9y	Total
BOYS											
Respiratory	42	27	37	31	31	28	14	23	29	11	273
Digestive	13	12	8	5	5	1	3	0	2	2	51
Skin	3	6	6	6	10	6	6	1	3	4	51
General	2	0	2	3	2	2	1	1	2	4	19
Hearing	1	2	4	4	3	0	0	1	1	2	18
Eye	1	0	1	0	0	0	0	2	3	0	7
Musculoskeletal	0	0	2	0	0	1	0	0	2	1	6
Neurological	2	0	1	1	0	0	0	0	0	0	5
Male genital	0	0	1	2	0	0	1	0	0	0	4
Urological	0	0	1	1	0	1	0	1	0	0	4
Blood/immune	0	0	0	0	1	0	0	0	0	1	2
Social	0	0	0	0	0	0	0	1	0	0	1
Total boys	64	47	63	53	52	39	25	30	42	25	440

Table 34: Frequency of diagnosis by organ system and comparison between boys (top panel) and girls (bottom panel) under 10 years of age.

	0-11.9m	1y	2y	3y	4y	5y	6y	7y	8y	9y	Total
GIRLS											
Respiratory	18	19	34	29	22	16	16	19	14	14	201
Digestive	5	10	12	9	9	4	1	2	3	0	55
Skin	2	3	2	5	4	5	4	0	3	2	30
General	3	1	2	3	5	1	2	0	1	1	19
Hearing	1	6	3	3	2	0	0	1	1	1	18
Eye	2	0	0	0	2	2	1	0	1	1	9
Neurological	0	0	1	0	0	0	2	0	0	1	4
Urological	0	2	0	0	0	0	0	0	1	0	3
Musculoskeletal	0	0	0	0	0	1	0	1	0	0	2
Female genital	0	0	0	1	0	0	0	0	0	1	2
Endocrine	0	0	0	0	0	0	1	0	0	0	1
Social	0	0	1	0	0	0	0	0	0	0	1
Blood/immune	0	0	0	0	0	1	0	0	0	0	1
Circulatory	0	0	0	0	0	1	0	0	0	0	1
Total girls	**31**	**41**	**55**	**50**	**44**	**31**	**27**	**23**	**24**	**21**	**347**
Total	**95**	**88**	**118**	**103**	**96**	**70**	**52**	**53**	**66**	**46**	**787**

Further examination of the effect of sex on the frequency both respiratory and digestive diagnoses are summarized in Tables 17 and 18 respectively. As noted, more respiratory diagnoses were made in boys than girls (n=272 compared to 200 respectively). Upper respiratory tract infections accounted for more than 50% of diagnoses for both sex groups and afflicted boys under the age of 1 year. No other sex-age-diagnoses trends were readily apparent for the other respiratory diagnoses although small numbers limit any conclusions.

Respiratory diagnoses increased in boys from 104 in summer to 169 in winter and similarly for girls from 81 diagnoses in summer to 120 in winter. These increases were attributed to upper respiratory tract (head cold; R74; n=55 to 99 and 40 to 63 in boys and girls respectively) and influenza (R80; n=10 to 25 and 7 to 28 in boys and girls respectively) in both sexes. Acute bronchitis/bronchiolitis (R78) increased in boys from 11 to 22 diagnoses in boys from summer to winter, whereas no change was noted in girls (12 to 11).

No differences in the frequency of upper respiratory tract diagnoses were noted for young children, under the age of 5 years, between summer and winter for either sex (44 to 47 diagnoses for boys and 32 to 33 diagnoses for girls respectively). In contrast, the frequency of upper respiratory tract diagnoses increased in children aged 5-10 years old (11 to 44 and 8 to 30 for boys and girls respectively) from summer to winter. The summer to winter

increases in influenza diagnoses affected the younger and older children of either sex equally. Acute bronchitis/bronchiolitis (R78) increased equally in younger (0- <5 years; n=9 to 15) and older (0- <5 years; n=2 to 7 diagnoses) for boys from summer to winter. As noted above there were no differences for girls. The frequency of other respiratory tract diagnoses were too few to draw conclusions. Gastrointestinal infections accounted for 50% of diagnoses made in young children during the survey period. Although 5 diagnoses of constipation were noted in boys (none in girls), no other sex – age – diagnoses trends were readily apparent for the other digestive diagnoses although small numbers limit any conclusions.

Gastrointestinal infections accounted for 50% of digestive diagnoses made in young children during the survey period. Although 5 diagnoses of constipation were noted in boys (none in girls), no other sex-age-diagnose trends were readily apparent for the other digestive diagnoses although small numbers limit any conclusions.

Table 35: Frequency of diagnosis of respiratory complaints in children under 10 years of age. Abbreviations: URTI: upper respiratory tract infection.

Description	ICP Code	0- <1 years	1- <2 years	2- <3 years	3- <4 years	4- <5 years	5- <6 years	6- <7 years	7- <8 years	8- <9 years	9- <10 years	Totals	% of sex
BOYS													
URTI - head cold	R74	29	12	21	14	15	15	7	14	13	6	146	53.7
Influenza	R80	1	5	4	4	5	3	2	3	6	2	35	12.9
Acute bronchitis	R78	7	4	4	4	5	2	3	1	2	1	33	12.1
Tonsillitis	R76	2	1	3	3	1	4	1	3	0	1	19	7.0
Other resp. infection	R83	2	1	1	2	0	2	1	0	0	1	10	3.7
Pneumonia	R81	1	3	2	3	0	1	0	0	0	0	10	3.7
Asthma	R96	29	12	21	14	15	15	7	14	13	6	10	3.7
All other Respiratory		0	1	1	1	0	1	0	0	5	0	9	3.3
Subtotal males		42	27	37	31	31	28	14	22	29	11	272	100
GIRLS													
URTI - head cold	R74	15	8	16	15	11	7	9	8	8	6	103	51.5
Influenza	R80	1	9	6	5	2	2	3	4	1	2	35	17.5
Acute bronchitis	R78	1	0	9	3	3	3	0	2	2	0	23	11.5
Tonsillitis	R76	0	0	1	1	4	1	0	3	0	5	15	7.5
Other resp. infection	R83	0	2	1	0	0	0	2	0	1	0	6	3.0
Pneumonia	R81	0	0	0	4	0	0	1	0	0	0	5	2.5
Asthma	R96	0	0	0	1	0	2	0	1	1	0	5	2.5
All other respiratory*		1	0	1	0	2	1	1	0	1	1	8	4.0
Subtotal girls		18	19	34	29	22	16	16	18	14	14	200	100
Totals all		60	46	71	60	53	44	30	40	43	25	472	-

Table 36: Frequency of digestive diagnoses in children under 10 years of age. Abbreviations: GI : gastrointestinal.

Description	ICP code	<1 yrs	1- <2	2- <3 years	3- <4 years	4- <5 years	5- <6 years	6- <7 years	7- <8 years	8- <9 years	9- <10 years	Totals	% of sex
MALES													
GI infection	D73	5	4	2	4	3	1	2	0	1	0	22	43.1
Disease mouth, throat	D83	5	2	2	0	0	0	0	0	0	1	10	19.6
Diarrhea	D11	0	2	1	0	0	0	0	0	0	0	3	5.9
Hepatomegaly	D96	0	2	0	0	1	0	1	0	0	0	4	7.8
Disorder stomach dysfunction	D87	0	0	0	0	0	0	0	0	0	0	0	0.0
All other digestive*	D99	3	2	3	1	1	0	0	0	1	1	12	23.5
Subtotal males		13	12	8	5	5	1	3	0	2	2	51	100.0
FEMALES													
GI infection	D73	1	7	7	2	6	2	0	2	1	0	28	50.9
Disease mouth, throat	D83	1	1	2	1	1	0	0	0	0	0	6	10.9
Diarrhea	D11	1	1	2	1	0	0	1	0	0	0	6	10.9
Hepatomegaly	D96	0	0	1	1	0	1	0	0	1		4	7.3
Disorder stomach dysfunction	D87	2	1		3	0	0	0	0	0	0	6	10.9
All other digestive*	D99	0	0	0	1	2	1	0	0	1	0	5	9.1
Subtotal girls		5	10	12	9	9	4	1	2	3	0	55	100.0
Totals all		**18**	**22**	**20**	**14**	**14**	**5**	**4**	**2**	**5**	**2**	**106**	**-**

4.4.5 Relationship between residential area and diagnoses

As noted in the previous section the most common reason for encounter was head cough and the diagnosis of upper respiratory tract infection. The latter was noted in younger children in particular boys.

Excess encounters (680/1572 or 43.3% of encounters) and diagnoses (596/1376 or 43.3% of diagnoses) of respiratory complaints were noted in the Northern and North Western areas (Dobsonville, Meadowlands and Zondi) of Soweto during the Survey period (Table 1; Appendix 1). In other areas respiratory reasons for encounters ranged from 28.3% to 38.0% of encounters and 29.8% to 37.4% of made diagnoses. This was not attributable to sex or accounted for the more young boys visiting the private practitioner for upper respiratory tract infections. The latter was not accounted for by residential area (Table 4.19.). Influenza accounted for the excess of respiratory diagnoses in the Northern and North Western areas during the winter period of the survey.

Table 37: Frequency of common diagnoses (>4% of total and diagnoses (>4% of total) by residential area as percentage of total encounters or diagnoses for the area (n=number).

Diagnoses	North & Northwest	East	South East	South West	West	Central	Other	Total
Respiratory (R)	43.3% (596)	29.8% (174)	33.8% (138)	33.4% (185)	37.4% (178)	33.6% (205)	33.6% (144)	36.5% (1620)
Musculoskeletal (L)	9.2% (126)	8.7% (51)	11% (45)	8.3% (46)	12.2% (58)	12.6% (77)	10.5% (45)	10.1% (448)
Digestive (D)	8.3% (114)	11.5% (67)	5.9% (24)	9.6% (53)	6.5% (31)	8.9% (54)	7.2% (31)	8.4% (374)
Skin (S)	7.1% (97)	7.9% (46)	6.1% (25)	5.6% (31)	6.9% (33)	5.6% (34)	7.7% (33)	6.7% (299)
Circulatory (K)	6.1% (84)	4.8% (28)	7.6% (31)	4.9% (27)	5.5% (26)	9.0% (55)	7.0% (30)	6.34% (281)
Female genital (X)	4.2% (58)	8.6% (50)	7.1% (29)	8.1% (45)	6.5% (31)	4.1% (25)	6.1% (26)	6.0% (264)
General (A)	4.9% (67)	5.0% (29)	3.4% (14)	5.1% (28)	4.4% (21)	5.6% (34)	5.4% (23)	4.9% (216)
All other	13.5% (126)	14.9% (139)	25.1% (234)	10.3% (96)	10.9% (102)	14.5% (139)	10.5% (98)	21.1% (934)
Total Diagnoses	31.0% (1376)	13.2% (584)	9.2% (408)	12.5% (554)	10.7% (476)	13.8% (610)	9.7% (428)	100.0% (4432)

Patients from Dobsonville, which is the North of Soweto had 43.4% (262) respiratory diagnosis. Eight point nine percent of patients (54) had a musculoskeletal diagnosis. Eight point one percent of patients (45) had a skin diagnosis. Six point eight percent of patients (41) had a digestive diagnosis and 3.8% (23) had female genital diagnosis.

Jabulani which is in the North –West of Soweto had thirty nine point seven percent of patients (52) with respiratory diagnosis. Fourteen point five percent of patients (19) had musculoskeletal diagnosis. Eight point four percent of patients (11) had a skin diagnosis. Six point nine percent of

patients (9) had a circulatory diagnosis. Six point one percent of patients (8) had a female genital diagnosis.

Chiawelo, which is in the South of Soweto, had 32.9 % of patients (96) with a respiratory diagnosis. Ten point three percent of patients (30) had a digestive diagnosis. Nine point two percent of patients (27) had a female genital diagnosis. Eight point six percent of patients (25) had a musculoskeletal diagnosis. Six point two (18) had endocrine / metabolic diagnosis.

Protea Glen, which is in the South-West of Soweto, had twenty eight point eight percent of patients (19) with a respiratory diagnosis. Thirteen point six percent of patients (9) had a digestive diagnosis. Thirteen point six percent of patients (9) pregnancy childbearing diagnosis and 7,6% of patients (5) had a psychological diagnosis.

Pimville ,which in the South-East of Soweto, twenty nine point two percent of patients (64) had a respiratory diagnosis. Ten percent of patients (22) had female genital diagnosis. Nine point one percent of patients (20) had a musculoskeletal diagnosis. Seven point eight percent of patients (17) had a circulatory diagnosis. Seven point three percent of patients (16) had a skin diagnosis.

Diepkloof, which is in the East of Soweto, 36.8% of patients (84) had a respiratory diagnosis. Seven point five percent of patients (17) had a

digestive diagnosis. Seven percent of patients (16) had a musculoskeletal diagnosis. Six point six percent of patients (15) had a pregnancy childbearing diagnosis. Six point six percent of patients (15) had a skin diagnosis.

Emdeni, which is in the West of Soweto, had 31.9% of patients (46) had a respiratory diagnosis. Fourteen point six percent of patients (21) had a musculoskeletal diagnosis. Seven point six percent of patients (11) had a skin diagnosis. Six point nine percent of patients (10) had a digestive diagnosis. Six point three percent of patients (9) had a general / unspecified diagnosis.

Central-Western Jabavu, which is centrally situated in Soweto, had forty five point seven percent of patients (75) with a respiratory diagnosis. Twelve point two percent of patients (20) had a musculoskeletal diagnosis. Seven point three percent of patients (12) had a digestive diagnosis. Six point seven percent of patients (11) had a circulatory diagnosis. Four point three percent of patients (7) had a skin diagnosis.

Table 38: Frequency and percentage (of total diagnoses made) of respiratory and upper respiratory tract infection diagnoses made, according to residential area in children under 5 years of age

	RESIDENTIAL AREA							
	North & North west	**East**	**South East**	**South West**	**West**	**Central**	**Other**	**Total**
Boys								
Diagnoses made (n)	188	67	37	66	51	75	53	537
Respiratory infections	52.7% (99)	40.3% (27)	57.1% (20)	51.5% (34)	45.1% (23)	41.3% (31)	50.9% (27)	48.6% (261)
URTI	23.9% (45)	19.4% (13)	22.9% (8)	31.8% (21)	31.4% (16)	28.0% (21)	26.4% (14)	25.7% (138)
Girls								
Diagnoses made (n)	124	74	31	61	50	57	40	437
Respiratory infections	53.2% (66)	35.1% (26)	35.5% (11)	44.3% (27)	40.0% (20)	43.9% (25)	37.5% (15)	43.5% (190)
URTI	22.6% (28)	13.5% (10)	22.8% (7)	21.3% (13)	24.0% (12)	29.8% (17)	20.0% (8)	21.7% (95)

4.5 GENERAL SUMMARY OF RESULTS.

The 25 doctors included in the summer survey and the 20 doctors in the winter survey, described 4,431 patient encounters (average = 177; range 63 – 382 encounters per doctor (Table 39). These patients presented with 5,710 problems. Similar numbers of encounters were experienced in winter and summer allowing the comparison of seasonal variation in morbidity patterns. The overall response rate was 80.65%.

Table 39: Summary of the Survey

Parameter	Summer	Winter	Total
Number of doctor data forms returned	25	20	45
Number of patients	2305	2127	4432
Mean Number of patients/doctor	92.2	106.4	98.5
Number of reasons for encounter	2925	2665	5590
Number of encounter diagnoses	2514	2260	4774

5 DISCUSSION

5.1 STUDY DESIGN AND SAMPLING

The study questionnaire recorded details of the doctor, season of the encounter, patient data (residential area, age and sex), the reason for the referral, whether this was an existing or a new problem and the diagnosis. The questionnaire provides information on the socio-economic status of the patient including educational status, profession and an indication of income (number of rooms in the dwelling and the number of persons occupying the dwelling). The questionnaire was designed to provide as much information as possible, on a single form, of both demographic and socio-economic information of the patient and the encounter.

5.1.1 Reliability of Data

All entries on the questionnaire were completed in most cases (90.2%) reflecting the user-friendliness of the questionnaire. Doctors failed to complete educational status, the number of rooms in the patient's residence and the occupancy of the residence. It is speculated that this may reflect the doctors' perceiving these variables as being unimportant and were therefore left out.

Missing data (Table 1) in most cases, would only affect the variable in question and where it is linked to another variable (e.g. sex-age distribution where if either age or sex were missing). The numbers therefore in the Tables may therefore not add up to the total of patients or problems.

Two data checks were included on the questionnaire to determine the reliability of the data. There was agreement of 96.3% and 93.7% between these data checks.

Although replies for the variables *PINI* and *DINI* are not completely identical, the similarity is sufficient to give confidence in the result. A non-doctor – non-patient initiated result would include encounters where a friend or relative may have requested the patient to visit a doctor. Although replies to the variables new problems (*NEW*) and on-going (*ONG*) agreed in 93.7% of answered questionnaires, agreement could have been better as a new problem is equivalent to a non – on-going problem. In conclusion, from these data checks, at least 93% of replies were answered correctly.

Surveys such as the Cape Morbidity Survey [8]refer to the possibility of different doctors coding a disease under two codes (e.g. ‘viral infections’ or ‘diseases of the respiratory system’). The ICPC codes were completed by myself and therefore general codes referring to, for example, infection have been eliminated, as such replies are organ specific (e.g. upper respiratory tract infection).

The grouping of the suburbs within the Soweto Area into geographic localities achieved an even distribution of patients per locality of the doctors’ practice and the suburb of the patients residence (Table 2). This allowed geographic

comparison of private family practice morbidity patterns in Soweto (described in Chapter 5).

5.2 STUDY LIMITATIONS

This survey was conducted in an impoverished township community where many people would attend clinics. This survey has selected encounters where the patients have the ability to pay for the services of a medical doctor. To determine whether this survey reflects the morbidity patterns in this population as a whole would require additional data from the Government and hospital clinics.

5.3 SOCIO-ECONOMIC RELATIONSHIPS

The present survey recorded encounters of 25 general practitioners with 4,432 patients with 5,710 problems. The week time period of the present survey is similar to that Bourne et al[12]. which determined the morbidity spectrum seen by a representative sample of 8% of the medical practitioners in South Africa in 1985.

The sample size of the present study is considerably smaller than the comprehensive Cape Morbidity study which was conducted over 1 year and recorded 49,347 diagnoses by 15 practitioners[8]**.** This survey included 38,368 whites and 14,979 patients of mixed racial origin but, no blacks were included. The same limitation applies to the pilot survey conducted by Bloom et al[11] in Cape Town between 1984 and 1988, where 13 practices recorded 64,959

encounters. Other surveys conducted in the Western Cape include the Saspren primary care survey, which recorded only 2,473 encounters[4]. A descriptive study from the Department of Family Medicine at the Umtata General Hospital reported 9,793 health problems from 8,785 patients[13], appears to be one of the few surveys in adult black South African patients. Large studies investigating morbidity patterns in general family practice have been conducted in other countries[,5,6,7.]

The four year long Cape Town morbidity survey by Bloom et al [11]recorded age, sex and area of residence of the patient and a space for a brief long-hand description of the reason for contact**.** Other South African studies recorded all reasons for contact, diagnosis, whether a contact was new or a repeat and demographic details of the patient encounters over a 1-week period[11]. The main outcome measures of Volmink et al [4]were age, sex, race, and method of payment and smoking status. Studies conducted outside South Africa are similar to those conducted within the country[,3,4,9,10,11,12].

5.4 PATIENT POPULATION

Children and scholars made up 23% of encounters, in agreement with the 28.7% of encounters by patients under the age of 20 years. Similarly 8.1% of patients were retired is in agreement with the age groups over 60 years of age (9.7% of patients). Eleven percent unemployment may reflect an underestimate of unemployment in the community as these are private

practice encounters where patients would pay for the service of the practitioner.

Few previous surveys have not accounted for socio-economic status of the patients. This survey therefore provides an opportunity to investigate whether status influences the reason of patient encounter or outcome diagnosis in this population. The present survey is difficult to compare to the Mamre survey [9] as this was a community survey, not patient encounters at private practices.

In the present Soweto survey 19.7% of patients had some kind of trade or technical training and these patients mostly had a secondary education. 12.2% of patients were unemployed and 51.6% of these patients had a secondary education. 9.4% of the patients were professionals with 65.7% having a tertiary education. 8.1% of the patience were retired. 11.5% of the patients had clerical jobs and 81.7% of these had a secondary education. 7.3% of the patients were labourers and 58.7% of these had a primary education. Housewives made up only 3.9% of the patients and 61.7% had secondary education.

5.4.1 Age and Gender Distribution

The survey included encounters by patients of all age groups. This is in common with other surveys [3,4].The Cape Morbidity Survey [8]Children 0-12 years old made up 31% of white patient encounters and 25% of coloured encounters far more than 16.7% (children 0-10 year olds) in the present

survey. In the Mamre Community Survey, 17.1% of the community were younger than 14 years of age[9].

However, the sex distribution in this age group remains constant for whites (55% of encounters), coloureds 56% of encounters,[9] and blacks 56% in the present survey.

Patient encounters of females aged 20-29 years old made up 20.6% of female encounters in the present survey, similar to that of whites[9] (19%) but less than for coloured women (30%) reported for the Cape Morbidity Survey[8].

In Soweto poverty inadequate water and sanitation facilities and environmental problems, all impacted on women's health[34]. In South Africa 45% of households are headed by women. Women also make up more than half the country's population and almost half of the work force. In the South African surveys, and surveys done world wide, women make up the largest numbers of those who make use of the health services. Women in this Soweto survey were exposed to ill health due to low status, low paying and labour and intensive job. Women in Soweto take the major responsibility for child bearing, raising children and also work to supplement the household income.

5.4.2 Disease in Young Children

A study by Crombie in 1984 showed that young children and the elderly consult more than the those in the intermediate age and women of child bearing age consult more than their male counterparts.[39] In this study children under 10 years of age had a high incidence of respiratory problems. Also, in children under 10 years of age, male encounters were more than female for all ages and were twice as frequent as female encounters in the age group under the age of one year. This universal phenomenon is the reversed sex ratio of children where male children appear to have a higher morbidity than female children as shown in an Australian study and in a study done in the Netherlands[22],[23],[28].

In this study 13.6% of the encounters were from children below seven and scholars made up 9.6% of the consultation. In children under 10 years most patience were under 6 years old. Children between 0 to 6 years frequently had more than one problem, compared to those aged 6 to 10 years. In patients under 10 years old, male encounters were more than females for all ages and were twice as frequent as female encounters in the age group under the age of 1 year. In males the reason for encounter and diagnosis of respiratory complaints were most common in younger boys. Respiratory diagnosis in boys under 1 year of age is (15,4%) and the respiratory diagnosis in children under 10 years of age was nearly twice that of girls which is (9%).

Digestive complaints were the second most common reason for encounter and diagnosis in the younger children, especially in boys.

This study shows that an enormous amount of everyday illness occurs in children and therefore education and advice for parents on how to cope with illness in their children remains important. Other than for respiratory and digestive complaints, the small sample sizes may obscure any trend.

5.4.3 Locality of Home and Disease

Most of Soweto still has row upon row of so called ‘match-box’ houses crowded into unpaved dusty streets that are poorly lit.

A huge power station stands at the entrance to Orlando east, which generates electricity for the city of Johannesburg, yet much of Soweto is still not electrified. Most of the Inhabitants of Soweto still make use of coal-stove fires and the township is usually enveloped in a pall of heavy smoke coming from these coal-stove fires.

5.4.4 Encounters and Diagnoses

Respiratory complaints made up 35% of encounters and 36.9% of diagnoses, far more than the 21 – 26% reported in previous South African surveys[3,4] from the Cape. The present survey may differ from these surveys where the study populations were predominantly Caucasian or coloured[9,10,11,]

The next most common diagnosis was for musculoskeletal encounters (10% of diagnoses) more than that reported by Silbert[8] (5-8% for whites and coloureds), for South African general practice[12] (4.02%), Mamre[10] (2.3%) or the Cape Town general practices[11].

Eight and a half percent of diagnoses were for digestive complaints similar to the Cape Morbidity Study[8] (8.3%) and 7.7% for South African general practitioners[12] but fewer than the community survey in Mamre (15.7%)[10].

Skin diagnoses made up few diagnoses (1.2%) compared to 5.2% of diagnoses at Mamre[9]**,** 2.4% in the Cape Town area[11], 7% in the Cape Morbidity Survey [8]but similar to the prevalence from the general morbidity in the South African population[12].

In contrast to the Cape Morbidity Survey[8], emotional (9.6% of diagnoses for whites; 7.3% of diagnoses for coloureds) were much less common diagnoses (3.2% for psychological and social diagnoses) in the present survey.

Injury accounted for very few encounters (n=22; 0.7%) compared to the Mamre community survey [10](n=36; 20.9%) and may reflect the difference between a community based versus a private practice based survey.

Comparable data from Soweto could be obtained from provincial Hospital data.

In comparison to the Umtata Hospital[13] morbidity study found sexually related encounters (family planning etc.) made up 12% of encounters whereas the present study this made up less than 2% of encounters.

Hypertension accounted for 5% of diagnoses comparable to that reported by other South African studies[8,12] but less than that reported in Mamre[10] and *comparable to the rate at Umtata[13].*

Although comparison has been made to compare these data with other South African surveys, comparisons must be regarded with caution. The ethnic grouping of the present survey differs from those of other surveys[4,8,9,10]. Further the design of the survey may differ to other surveys (e.g. Mamre community survey[9,10]). Being a private practice based survey, the present survey may not reflect the true morbidity in the Soweto community. Further provincial Hospital based surveys are required to obtain morbidity data in Soweto and other townships in the Johannesburg area.

In conclusion, few studies appear to be as comprehensive as the present study where the reasons of encounter, the diagnosis as well as patient demographic and socio-economic data was recorded. This is also the largest survey conducted in an urbanized South African township.

6 CONCLUSION & RECOMMENDATIONS

Soweto was created early in this century when after an outbreak of illness, the authorities determined to separate blacks from whites, and move blacks away from Johannesburg to an area 15km away from the centre of Johannesburg. The Urban Areas Act no 21 of 1923 declared Soweto a ghetto for the black population of Johannesburg. [35]

The main impression of Soweto is that of great crowding and poverty, and still struggling in providing basic services including potable toilets to it's poorer districts. Schools in Soweto remain largely without flushed toilets, furniture and electricity. Illegal immigration from other parts of Africa has put a huge strain on South Africa's efforts to improve living conditions in Soweto.

The Soweto survey in comparison with other countries reflects consistency in the incidence of illnesses encountered by the family practitioner and also contemporary trends in morbidity seen in general practice. The present survey has found a similar trend in the spectrum of disease, therefore providing a significant analysis of morbidity patterns encountered by the family practitioner in Soweto. It is important that trends in general practice also reflect the teaching curricula, which would equip the general practitioner for his work in the community. Training for general practice should provide amenities where the lesser illnesses are taught and demonstrated with equal emphasis. These illnesses, as numerous morbidity surveys, have demonstrated occur more frequently and they, together with their associated

complications, take up the majority of the practitioners time. Thorough training in the rapid assessment and diagnosis by the practitioner of these common illnesses will considerably ease the practitioner's workload.[36] Unemployment and poverty is wide spread in South Africa with an estimated 30 to 40% of the economically active population being unemployed, thus exposing them to conditions conducive to ill health.[37] In this Soweto study 12.2% of patients were unemployed with 51.6% of them having secondary education. There is an on going concern of role of sexually transmitted diseases in the transmission of HIV, and this study has shown a significant burden of sexually transmitted disease in the asymptomatic population, particularly women in age group 20 to 30 and 30 to 40 years, thus HIV prevention and control measures need to be addressed. In this survey female genital, urological and male genital problems and blood & immune mechanisms were in the top 20 reasons for encounter and diagnoses therefore HIV/ Aids could be seen as an emerging health problem. The overall burden of diseases in Soweto shows that respiratory problems are significant in all age groups. Chronic diseases such hypertension, Osteoarthritis, presumed gastrointestinal infections, asthma and malignant neoplasm of the stomach as well as the anxiety disorders also featured prominently in the top 20 reasons for encounter and diagnoses.

Information about mental health status in South Africa is scanty and has possibly led to an inadequate identification of a potential problem.

This study has shown anxiety disorder / anxiety state as being a common reason for encounter and diagnoses in adults attending private practices in Soweto.

The study population in this survey was mainly middle-class and the prevalence of anxiety disorder / anxiety state could be the result of the strivings and inhibition characteristic of this group.

Studies[4,5] have shown that socio-economic factors can have a strong influence on the health of an individual, as well as that of a whole community. Research indicates that the lower socio-economic status of many ethnic minority groups has a large influence on health inequalities.[38] Studies[4,5] have shown that higher morbidity rates are found for all diseases in lower socio-economic groups, especially for diseases such as coronary heart disease, diabetes and hypertension. Studies done in South Africa have shown that economic factors can influence health by means of nutrition, housing and water supplies[3,4,8,9,10,11,12]. Most of these studies have shown an increase in the level of respiratory diseases. There is extensive data suggesting that socio-economic status is a good indicator of burden of disease, and that the lower the socio-economic status of a community the more likely it is to be unhealthy'[39,] In this study the unemployed constituted 12.2% of the total number of patients and 42,4% had a primary education only. Professional people constituted 13,8% of the total number of patients consulting the doctor. This is in keeping with other surveys which shows that there is a correlation between socio-economic status and health status[5,6,40]

Twelve point two percent of patients were unemployed. Most patients had a primary or secondary education and lived in homes which had a median number of four rooms. Those with tertiary education tending to reside in residences with more rooms. Also the number of persons per room in the residence \decrease with

education. Education is an important factor that influences health, and that those with higher level of education tend to be healthier than those of similar income who are less well educated[5],[6]. South Africa has an unregulated health care system, which means that there is no state intervention in personal health care; this results in an inadequate, inappropriate, ineffective and expensive system of health care[17].

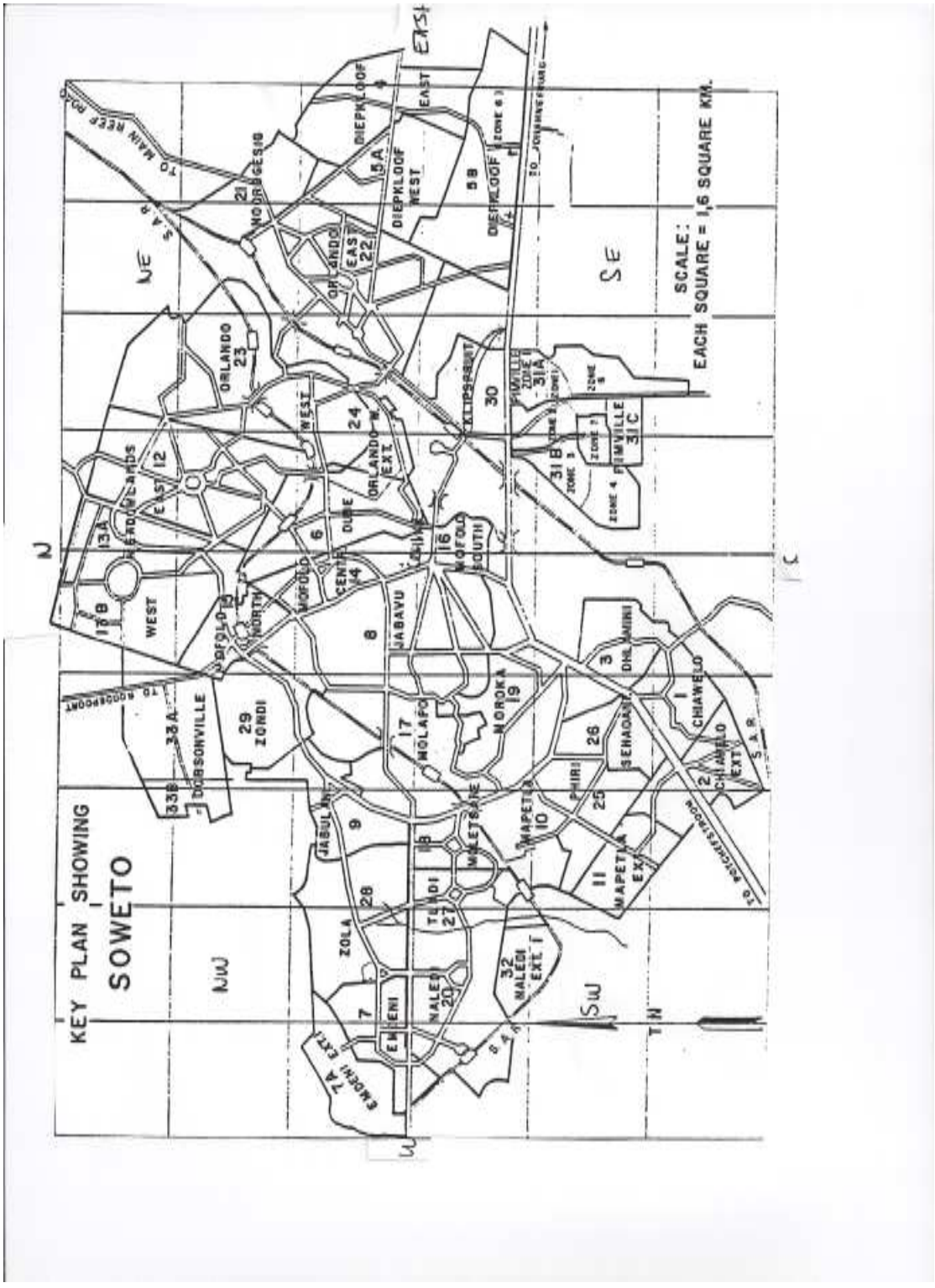
Analysing the existing situation in this Soweto survey, most of the inhabitants of Soweto live in an unhealthy environment, with inadequate health services, poor access to piped water inside the home, electricity, sanitation and nutrition. There is a high incidence of respiratory and diarrhoeal diseases. This study showed that the unemployed had poorer health than those in employment. In this study 13.6% of the encounters were from children and scholars 9.6% of the consultation.

The WHO report 2000[38] states that a greater investment in public health care is the most efficient way forward, and that a good system of primary care is essential in order to have an efficient and equitable health care system.

This study emphasizes the importance of general practice, and demonstrates the types of patients seen and the types of illnesses seen in this community. The reasons for encounter and diagnoses show that there is a wealth of statistical information available in general practice, and that accurate data on primary care and general practice morbidity should be made available to health policy planners. Recommendations for appropriate changes to medical practice and education can be made in order to meet the needs of the community.

7 APPENDICES

APPENDIX A: MAP OF SOWETO



APPENDIX B: LIST OF SOWETO TOWNSHIPS

WESTERN METROPOLITAN SUBSTRUCTURES	NORTHERN METROPOLITAN SUBSTRUCTURES	SOUTHERN METROPOLITAN SUBSTRUCTURES
Mmesi Park	Orlando East	Protea
Dobsonville	Klipspruit	Diepkloof East
Meadowlands	Pimville	Tladi
Orlando	Diepkloof	Mapetla
Snake Park	Diepkloof ext	Naledi
	Orlando West	Zola
	Freedom Park	Dhlamini
	Power Park	Dube
	Motsoaledi	Zondi
	Phumalong	Molapo
	Mzimhlophe	Moroko
		Senoane
		Orlando West
		Moletsane
		Central Western Jabavu
		Mofolo
		Chiawelo
		Protea North
		Protea Glen
		Protea South
		Phiri
		Mapetla
		Doornkop
		Emdeni
		White City
		Jabulani

APPENDIX C: SUBJECT INFORMATION SHEET

SUBJECT INFORMATION SHEET

Dear Doctor

I am doing a research study on moribidity patterns of patients attending general practices in Soweto as part of my M Fam Med degree in the Department of family Medicine at the University of the Witwatersrand.

There is no information available on the pattern of conditions seen in general practice, especially those seen by family practitioners in Soweto. This information is vital if we are to plan for health services, and present our point of view regarding the valuable service rendered by family practitioners to the community. In addition such information is invaluable in bargaining situations with official structure and managed care organizations.

I respectfully request your assistance in defining this morbidity profile.

You are requested to complete the attached forms for every consultation performed during one week in June and one in November.

Participation in this study is completely voluntary. This research study is anonymous. No names or numbers are attached to the questionnaire and nobody will know what you have answered. The information obtained will be kept strictly confidential.

While I hope that you will complete all the questions as fully as possible, you may withdraw at any time without prejudice.

This research, I hope, will bring about an awareness of what is happening in Soweto primary care practice which may benefit the care of patients in future.

If you have any questions or queries about this questionnaire, feel free to ask me personally, or you can contact me at the following telephone number.

Work : 011 988 1421

Home : 011 682 2794

Cell Phone : 083 280 1007

A brief report on the completed research will be available at a later date should you request it.

I appreciate your cooperation and interest in this matter.

Yours sincerely

Dr R Hoosain

APPENDIX D: DOCTORS DEMOGRAPHIC SHEET

DOCTORS DEMOGRAPHIC SHEET

Doctor Code : ……
Sex : …… Age : ……

Township/suburb of Soweto (eg Diepkloof, Zola) Are of Practice
……
……
……
……

If you wish to receive a report please mail/fax this form to me at:

Fax: 011 988 1452 Mail: P O Box 945, Mondeor, 2110

Please supply me with a brief report of the findings of this study:

Name : ……

Address : ……

Tel Number : ……

Fax Number : ……

APPENDIX E: DATA COLLECTION FORM USED IN SURVEY.

PATIENT PROFILE SHEET

DATE: ..... DOCTOR PERSONAL CODE: .....

Age	Sex	Reason/s for Encounter in PATIENT'S OWN WORDS for EACH problem. i.e. why the patient has come to you	Diagnosis, for EACH problem	Type of Consult: Doctor initiated e.g.called back	Type of Consult: Patient Initiated	Type of Consult: Referred to GP	Problem: New Problem	Problem: Ongoing Problem	Occupation	Highest educ: Primary	Highest educ: Secondary	Highest educ: Tertiary	Housing: Township of Residence	Housing: No of Rooms	Housing: No of Persons	For admin use only
43	M	Sore throat	Pharyngitis						Teacher				Zola	4	3	
		BP check	Hypertension													

N.B: Complete details for each problem/diagnosis of every patient during the week

APPENDIX F: INSTRUCTION ON COMPLETION OF PATIENT PROFILE

INSTRUCTION ON COMPLETION OF PATIENT PROFILE

Dear Doctors

Instructions on how to fill in the patient profile sheet.

1. Please start each day on a new patient profile sheet.
2. Complete details for each problem/diagnosis of every patient during the week.
3. Please be more specific as to why the patient has come to see you, in the patients own words.
4. Use more than one line for writing details, if necessary.
5. By number of rooms in the house, please exclude kitchen, bathroom, passage, storeroom and hall.
6. If a patient has been referred to you by the clinic, hospital or another doctor, please tick appropriate column.

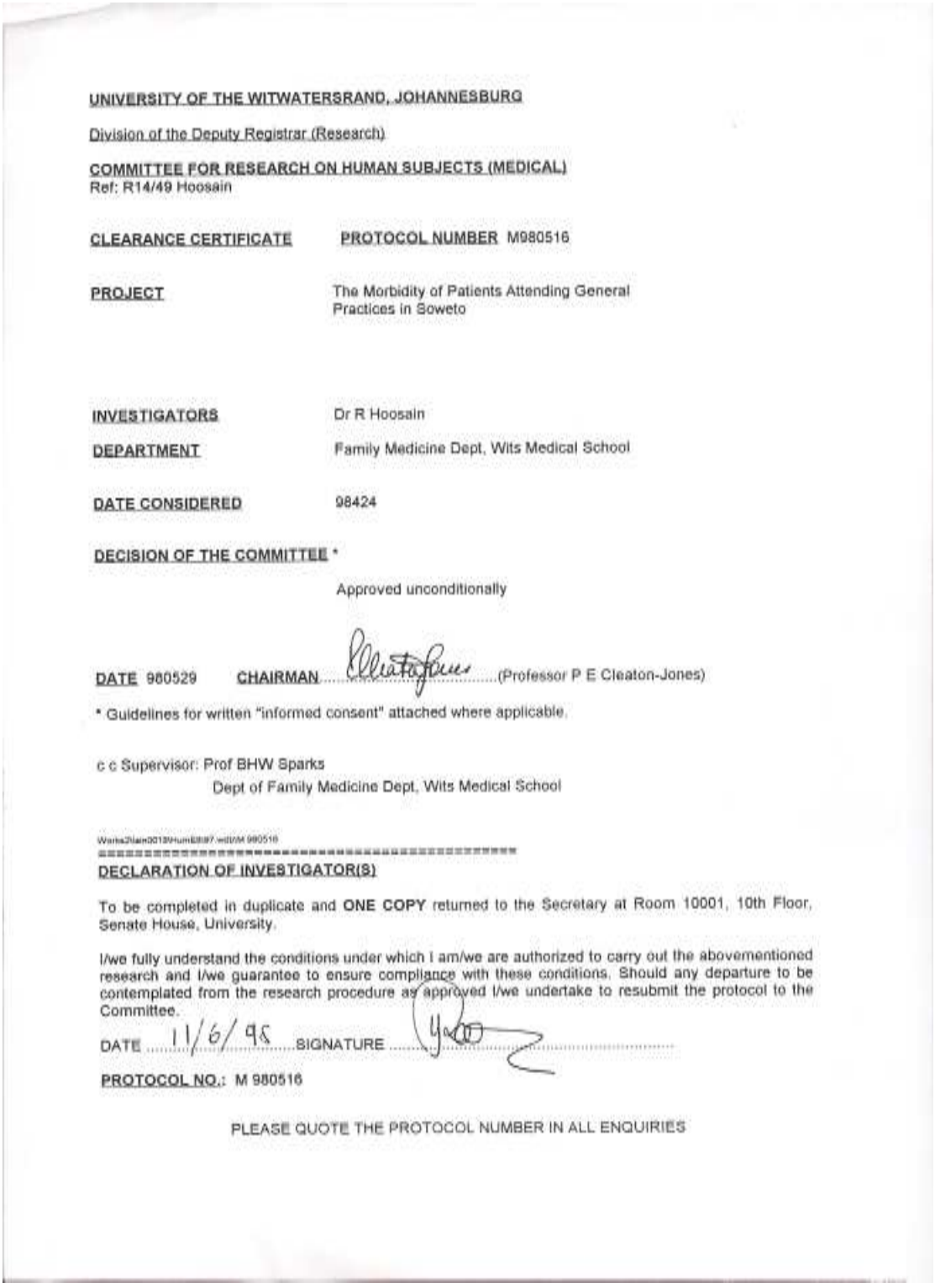
Thanking you for your participation in this research.

Yours sincerely

Dr R Hoosain

0832801007

APPENDIX G: ETHICAL CLEARANCE



UNIVERSITY OF THE WITWATERSRAND, JOHANNESBURG

Division of the Deputy Registrar (Research)

COMMITTEE FOR RESEARCH ON HUMAN SUBJECTS (MEDICAL)
Ref: R14/49 Hoosain

CLEARANCE CERTIFICATE PROTOCOL NUMBER M980516

PROJECT The Morbidity of Patients Attending General Practices in Soweto

INVESTIGATORS Dr R Hoosain

DEPARTMENT Family Medicine Dept, Wits Medical School

DATE CONSIDERED 98424

DECISION OF THE COMMITTEE *

Approved unconditionally

DATE 980529 CHAIRMAN ..... (Professor P E Cleaton-Jones)

* Guidelines for written "informed consent" attached where applicable.

c c Supervisor: Prof BHW Sparks
Dept of Family Medicine Dept, Wits Medical School

Works2\lain\0013\Hum\Ethi97.wd\M 980516

DECLARATION OF INVESTIGATOR(S)

To be completed in duplicate and **ONE COPY** returned to the Secretary at Room 10001, 10th Floor, Senate House, University.

I/we fully understand the conditions under which I am/we are authorized to carry out the abovementioned research and I/we guarantee to ensure compliance with these conditions. Should any departure to be contemplated from the research procedure as approved I/we undertake to resubmit the protocol to the Committee.

DATE 11/6/98 SIGNATURE .....

PROTOCOL NO.: M 980516

PLEASE QUOTE THE PROTOCOL NUMBER IN ALL ENQUIRIES

APPENDIX H: ICPC2 CODES

WONCA ICPC-2 CODES ©

A GENERAL

A01 Pain generalized
A02 Chills
A03 Fever
A04 General weakness/tiredness
A05 Feeling ill
A06 Fainting/syncope
A07 Coma
A08 Swelling (excl K07)
A09 Sweating problems
A10 Bleeding site unspecified
A11 Chest Pain NOS
A13 Concern/Fear about treatment
A18 Concern about appearance
A20 Euthanasia request/discussion
A21 Risk Factor for malignancy
A23 Risk factor NOS
A25 Fear of death
A26 Fear of cancer NOS
A27 Fear of other disease NOS
A28 Limited function/disability NOS
A29 Other general sympt/complt
A70 Tuberculosis generalized (excl R70)
A71 Measles
A72 Chickenpox
A73 Malaria
A74 Rubella
A75 Infectious mononucleosis
A76 Other viral dis with exanthems
A77 Other viral diseases NOS
A78 Other infectious diseases NOS
A79 Carcinomatosis(unkn prim site)
A80 Accident/injury NOS
A81 Multiple trauma/internal inj
A82 Late effect of trauma
A84 Poisoning by medical agent
A85 Adv effect med agent proper dose
A86 Toxic effect other substances
A87 Complicat surg/med treatment
A88 Adv effects phys factors (excl H85)
A89 Effect prosthetic device
A90 Multiple cong anomalies
A91 Abnormal results investig NOS
A92 Allergy/allergic reaction
A93 Premature/immature newborn
A94 All other perinatal morbidity
A95 Perinatal mortality
A96 Death (excl perinatal)
A97 No disease
A98 Health maintenance/Preventive Medicine
A99 Other general/unspec diseases

B BLOOD & IMMUNE MECHANISMS

B02 Enlarged lymph gland(s)
B04 Sympt blood/lymph organs
B25 Fear of AIDS
B26 Fear cancer of blood/lymph org
B27 Fear other blood/lymph disease
B28 Limited function/disability
B29 Other sympt blood/spleen NOS
B70 Acute lymphadenitis
B71 Chronic/non spec lymphadenitis
B72 Hodgkins disease
B73 Leukemia
B74 Other malignant neoplasms
B75 Benign/unspec neoplasms
B76 Ruptured spleen
B77 Other injuries
B78 Hereditary hemolytic anemias
B79 Other congenital anomalies
B80 Iron deficiency anemia
B81 Pernic/folate deficiency anemias
B82 Anemia other/unspecified
B83 Purpura/coag defects/abn plate
B84 Abnormal white cells
B87 Splenomegaly
B90 HIV-infection (AIDS/ARC)
B99 Other disease blood/lymph/spleen

D DIGESTIVE

D01 Generalized abd pain/cramps
D02 Stomach pain/ache
D03 Heartburn
D04 Rectal/anal pain
D05 Perianal itching
D06 Other localized abdominal pain
D07 Dyspepsia/indigestion
D08 Flatulence/gas pain/belching
D09 Nausea
D10 Vomiting
D11 Diarrhea
D12 Constipation
D13 Jaundice
D14 Hematemesis/vomiting blood
D15 Melena/black tarry stools
D16 Rectal bleeding
D17 Incontinence of bowel
D18 Change in feces/bowel movements
D19 Sympt/complt teeth/gums
D20 Sympt/complt mouth/tongue/lip
D21 Swallowing problems
D23 Hepatomegally
D24 Abdominal mass NOS
D25 Change in abd size/distension
D26 Fear of cancer of digest system
D27 Fear of other digestive disease
D28 Limited function/disability
D29 Other sympt/complt digestive
D70 Infectious diarrhea/dysentery
D71 Mumps
D72 Viral hepatitis
D73 Presumed GI infection
D74 Malignant neoplasm stomach
D75 Malignant neoplasm colon/rectum
D76 Malignant neoplasm pancreas
D77 Malignant neoplasm other/unspec
D78 Benign neoplasms
D79 Foreign body through orifice
D80 Other injuries
D81 Congenital anomalies
D82 Disease of teeth/gums
D83 Disease of mouth/tongue/lips
D84 Disease of esophagus
D85 Duodenal ulcer
D86 Other peptic ulcers
D87 Disorder stomach function
D88 Appendicitis
D89 Inguinal hernia
D90 Diaphragmatic/hiatus hernia
D91 Other abdominal hernias
D92 Diverticular disease
D93 Irritable bowel syndrome
D94 Chronic enteritis/ulcerat colitis
D95 Anal fissure/perianal abscess
D96 Worms
D97 Cirrhosis/other liver disease
D98 Cholecystitis/cholelithiasis
D99 Other diseases digestive system

F EYE

F01 Eye pain
F02 Red eye
F03 Discharge from eye
F04 Visual floaters/spots
F05 Oth visual sympt/compl (excl F94)
F13 Abnormal sensations in eye
F14 Abnormal eye movements
F15 Abnormal appearence of eyes
F16 Symptoms/complaints of eyelids
F17 Symptoms/complaints glasses
F18 Sympt/complt contact lens
F27 Fear of eye disease
F28 Limited function/disability
F29 Other sympt/complt of eye
F70 Infectious conjunctivitis
F71 Allergic conjunctivitis
F72 Blepharitis/stye/chalazion
F73 Oth inf/inflam of eye (excl Herpes)
F74 Neoplasms of eye/adnexa
F75 Contusion/hemorrhage eye
F76 Foreign body in eye
F79 Other injuries
F80 Blocked lacrimal duct of infant
F81 Other congenital anomaly eye
F82 Detached retina
F83 Retinopathy
F84 Macular degeneration
F85 Corneal ulcer (incl herpetic)
F86 Trachoma
F91 Refractive errors
F92 Cataract
F93 Glaucoma
F94 Blindness all degrees/types
F95 Strabismus
F99 Other disease of eye

H EAR (HEARING)

H01 Ear pain/earache
H02 Hearing complaints (excl H84-86)
H03 Ringing/buzzing/tinnitus
H04 Discharge from ear
H05 Blood in/from ear
H13 Plugged feeling
H15 Concern with appearance of ears
H27 Fear of ear disease
H28 Limited function/disability
H29 Other sympt/complt of ear
H70 Otitis externa
H71 Acute otitis media/myringitis
H72 Serous otitis media/glue ear
H73 Eustachian salpingitis
H74 Chronic otitis other infect ear
H75 Neoplasm of ear
H76 Foreign body in ear
H77 Perforation tymp membrane
H78 Superficial injury of ear
H79 Other injuries
H80 Congenital anomalies of ear
H81 Excessive ear wax
H82 Vertiginous syndromes
H83 Otosclerosis
H84 Presbyacusis
H85 Acustic trauma
H86 Deafness all degrees NOS
H99 Other diseases of ear/mastoid

K CIRCULATORY

K01 Pain attributed to heart
K02 Pressure/tightness attr to heart
K03 Other pain attr to circulation
K04 Palpitations/aware of heartbeat
K05 Other abn/irreg heartbeat/pulse
K06 Prominent veins
K07 Swollen ankles/edema
K22 Risk factor for cardiovascular disease
K24 Fear of heart attack
K25 Fear of hypertension
K27 Fear other disease circ system
K28 Limited function/disability
K29 Other sympt heart/circ system
K70 Infectious dis circ system
K71 Rheumatic fever/heart disease
K72 Neoplasm circ system
K73 Cong anomalies heart/circ syst
K74 Ischaemic heart disease with angina
K75 Acute myocardial infarction
K76 Ischaemic heart disease w/out angina
K77 Heart failure
K78 Atrial fibrillation/flutter
K79 Paroxysmal tachycardia
K80 Cardiac arrythmia NOS
K81 Heart/arterial murmer NOS
K82 Pulmonary heart disease
K83 Heart valve dis non-rheum NOS
K84 Other disease of heart
K85 Elevated BP (excl K86 K87)
K86 Uncomplicated hypertension
K87 Hypert with involv targ organs
K88 Postural hypotension
K89 Transient cerebral ischemia
K90 Stroke/cerebrovasc accident
K92 Atherosclerosis/periph vasc dis
K93 Pulmonary embolism
K94 Phlebitis/thrombophlebitis
K95 Varicose veins of legs (excl S97)
K96 Hemorrhoids
K99 Other dis circulatory system

L MUSCULOSKELETAL (LOCOMOTION)

L01 Neck sympt/complt excl headache
L02 Back symptoms/complaints
L03 Low back complt excl radiation
L04 Chest symptoms/complaints
L05 Flank/axilla symptoms/complaints
L07 Jaw symptoms/complaints
L08 Shoulder symptoms/complaints
L09 Arm symptoms/complaints
L10 Elbow symptoms/complaints
L11 Wrist symptoms/complaints
L12 Hand & finger symptoms/complt
L13 Hip symptoms/complaints
L14 Leg/thigh symptoms/complaints
L15 Knee symptoms/complaints
L16 Ankle symptoms/complaints
L17 Foot & toe symptoms/complaints
L18 Muscle pain/fibrositis
L19 Other s/c multiple/unspec muscles
L20 Sympt multiple/unspec joints
L26 Fear of cancer
L27 Fear of oth musculoskeletal dis
L28 Limited function/disability
L29 Oth s/c mult/unspec musc/skel
L70 Infections
L71 Malignant Neoplasm
L72 Fracture radius/ulna
L73 Fracture tibia/fibula
L74 Fracture hand/foot bones
L75 Fracture femur
L76 Fracture other
L77 Sprains & strains of ankle
L78 Sprains & strains of knee
L79 Sprains & strains of other joint
L80 Dislocations
L81 Other injury
L82 Congenital anomalies
L83 Neck syndrome
L84 Back syndrome without radiation
L85 Acquired deformities of spine
L86 Disc lesion/back pain with radiation
L87 Bursitis/tendonitis/synovitis NOS
L88 Rheumatoid arthrit/allied cond
L89 Osteoarthritis of hip
L90 Osteoarthritis of knee
L91 Other osteoarthritis
L92 Shoulder syndrome
L93 Tennis elbow
L94 Osgood-Schlatter/osteochondros
L95 Osteoporosis
L96 Acute dam meniscus knee
L97 Neoplasm, benign/uncertain
L98 Acquired deformities of limbs
L99 Oth dis musculoskeletal system

N NEUROLOGICAL

N01 Headache (excl N02 N89 R09)
N03 Pain face
N04 Restless leg syndrome
N05 Tingling fingers/feet/toes
N06 Oth sensa distur/ab invol mov
N07 Convulsions/seizures
N08 Abnormal involuntary movements
N16 Disturbance of smell/taste
N17 Vertigo/dizziness (excl H82)
N18 Paralysis/weakness (excl A04)
N19 Disorder speech
N26 Fear of cancer neurol system
N27 Fear of other neurol disease
N28 Limited function/disability
N29 Other sympt/complt neurol system
N70 Poliomyelitis/oth enterovirus
N71 Meningitis/encephalitis
N72 Tetanus
N73 Other infect neurol system
N74 Malignant neoplasms
N75 Benign neoplasms
N76 Unspec neoplasms
N79 Concussion
N80 Head injury, other
N81 Other injuries
N85 Congenital anomalies
N86 Multiple sclerosis
N87 Parkinsonism
N88 Epilepsy all types
N89 Migraine
N90 Cluster headache
N91 Facial paralysis/Bells palsy
N92 Trigeminus neuralgia
N93 Carpal tunnel syndrome
N94 Other peripheral neuritis
N95 Tension headache
N99 Oth dis of neurol system

P PSYCHOLOGICAL

P01 Feeling anxious/nervous/tense
P02 Acute stress/trans/situat disturb
P03 Feeling depressed
P04 Feeling/behaving irritable
P05 Feeling/behaving old/senile
P06 Disturbances of sleep/insomnia
P07 Inhib/loss sexual desire
P08 Inhib/loss sexual fulfilment
P09 Concern sexual preference
P10 Stammering/stuttering/tics
P11 Eating problems in children
P12 Bedwetting/enuresis (excl U04)
P13 Encopresis
P15 Chronic alcohol abuse
P16 Acute alcohol abuse
P17 Tobacco abuse
P18 Medication abuse
P19 Drug abuse
P20 Disturb memory/concentration
P22 Oth concern behavior childhood
P23 Oth concern behavior adolescence
P24 Specific learning problems
P25 Phase of life problem adult
P27 Fear of mental disorder
P28 Limited function/disability
P29 Other psychological sympt/compl
P70 Dementia senile/Alzheimer
P71 Other organic psychosis
P72 Schizophrenia all types
P73 Affective psychosis
P74 Anxiety disorder/anxiety state
P75 Somatization Disorder
P76 Depressive disorder
P77 Suicide/suicide attempt
P78 Neurasthenia/surmenage
P79 Other neurotic disorder
P80 Personality disorder
P81 Hyperkinetic disorder
P82 Post-traumatic stress disorder
P85 Mental retardation
P86 Anorexia nervosa, bulimia
P98 Other/unspec psychosis
P99 Oth mental/psychol disorders

R RESPIRATORY

R01 Pain attrib to respir system
R02 Shortness of breath dyspnea
R03 Wheezing
R04 Other breathing problems
R05 Cough
R06 Nose bleed/epistaxis
R07 Sneezing/nasal congestion
R08 Other sympt/complt of nose
R09 Sympt/complt sinus (incl pain)
R21 Sympt/complt throat
R23 Voice sympt/complt
R24 Hemoptysis
R25 Abnormal sputum/phlegm
R26 Fear of cancer of respir system
R27 Fear of other respir disease
R28 Limited function/disability
R29 Other sympt/complt respir system
R70 Tuberculosis
R71 Whooping cough
R72 Strep throat
R73 Boil/abscess nose
R74 URI (head cold)
R75 Sinusitis acute/chron
R76 Tonsillitis acute
R77 Acute laryngitis/tracheitis
R78 Acute bronchitis/bronchiolitis
R79 Chr bronchitis
R80 Influenza
R81 Pneumonia
R82 Pleurisy/pleural effusion
R83 Other infections of resp system
R84 Malignant neopl bronchus/lung
R85 Other malignant neoplasm
R86 Benign neoplasm
R87 Foreign body nose/larynx/bronc
R88 Other injuries
R89 Congenital anomal resp system
R90 Hypertrophy/chr infect T & A
R92 Neoplasm resp, uncertain nature
R95 Emphysema/COPD
R96 Asthma
R97 Hayfever/allergic rhinitis
R98 Hyperventilation
R99 Other disease respir system

S SKIN

S01 Pain/tenderness of skin
S02 Pruritis (excl D05 X16)
S03 Warts
S04 Local swelling/papul/lump/mass
S05 Gen swelling/papul/lump/mass
S06 Local redness/erythema/rash
S07 Gen redness/erythema/rash
S08 Other changes in skin color
S09 Infected finger/toe/paronychia
S10 Boil/carbuncle/cellulitis local
S11 Wound infection, post traumatic
S12 Insect bite
S13 Animal/human bite
S14 Burns/scalds
S15 Foreign body in skin
S16 Bruise/contusion intact skin
S17 Abrasion/scratch/blister
S18 Laceration/cut
S19 Other injury to skin
S20 Corns/callosities
S21 Sympt/compl of skin texture
S22 Sympt/complt nails
S23 Baldness/losing hair
S24 Other sympt/complt hair & scalp
S26 Fear of cancer of skin
S27 Fear of having other skin dis
S28 Limited function/disability
S29 Other sympt/complt skin
S70 Herpes zoster
S71 Herpes simplex (excl F85 X90 Y72)
S72 Scabies and other acariases
S73 Pediculosis/other skin infest
S74 Dermatophytosis
S75 Moniliasis/candida (excl X72 Y75)
S76 Other infectious skin dis
S77 Malignant neoplasms of skin
S78 Lipoma
S79 Neoplasm skin
S80 Solar keratosis/sunburn
S81 Hemangioma/lymphangioma
S82 Nevus/mole
S83 Other congenital anomalies
S84 Impetigo
S85 Pilonidal cyst/fistula
S86 Seborrheic dermatitis
S87 Atopic dermatitis/eczema
S88 Contact dermatitis/other eczema
S89 Diaper rash
S90 Pityriasis rosea
S91 Psoriasis
S92 Pompholyx/dis sweat glands
S93 Sebaceous cyst
S94 Ingrown nail
S95 Mollusca contagiosa
S96 Acne
S97 Chronic ulcer skin (incl varicose)
S98 Urticaria
S99 Other dis skin/subcut tissue

T ENDOCRINE, METABOLIC & NUTRIT'

T01 Excessive thirst
T02 Excessive appetite
T03 Loss of appetite
T04 Feeding problem infant (excl P11)
T05 Feeding problem adult (excl T06)
T07 Weight gain
T08 Weight loss
T10 Failure to thrive
T11 Dehydration
T26 Fear of cancer of endoc system
T27 Fear of other endo nutri dis
T28 Limited function/disability
T29 Other sympt/complt endo nutri
T70 Infect dis endo metab nutri
T71 Malignant neoplasm thyroid
T72 Benign neoplasm thyroid
T73 Other/unspec neoplasms
T78 Thyroglossal duct/cyst/
T80 Other congenital anomalies
T81 Goiter (excl T85 T86)
T82 Obesity (BMI >=30)
T83 Overweight (BMI <30)
T85 Hyperthyroidism/thyrotoxicosis
T86 Hypothyroidism/myxedema
T87 Hypoglycemia
T89 Diabetes, insulin dependent
T90 Diabetes, non-insulin deendent
T91 Vitamin defic/other nutrit/dis
T92 Gout
T93 Lipid metabolism disorder
T99 Other endo metab nutri disease

U UROLOGICAL

U01 Painful urination
U02 Frequent/urgent urination
U04 Incontinence (excl P12)
U05 Other urination problems
U06 Blood in urine
U07 Other complaints of urine
U08 Urinary retension
U13 Other sympt/complt bladder
U14 Sympt/complt kidney
U26 Fear of cancer of urinary syst
U27 Fear of other urinary disease
U28 Limited function/disability
U29 Other sympt urinary system
U70 Pyelonephritis/pyelitis acute
U71 Cystitis/other urin infect NOS
U72 Urethritis non specific
U75 Malignant neoplasm of kidney
U76 Malignant neoplasm of bladder
U77 Other malign neopl urinary tract
U78 Benign neoplasm urinary tract
U79 Oth unspec neopl urinary tract
U80 Injuries
U85 Congenital anomalies urin tract
U88 Glomerulonephritis/nephrosis
U90 Orthostatic albuminuria
U95 Urin calculus all types/sites
U98 Abn urine test finding NOS
U99 Other disease urinary system

W PREGNANCY, CHILD-BEARING

W01 Question of pregnancy (excl W02)
W02 Fear of being pregnant
W03 Antepartum bleeding
W05 Vomiting/nausea of pregnancy
W10 Morning after pill
W11 Family plan/oral contraceptive
W12 Family planning/IUD
W13 Family planning/sterilization
W14 Family planning/other
W15 Complaints of infertility
W17 Heavy post-partum bleeding
W18 Other complt post-partum period
W19 Sympt/complt lactation
W21 Concern about body image in pregnancy
W27 Fear of complications of preg
W28 Limited function/disability
W29 Other sympt preg/family planning
W70 Puerperal infection/sepsis
W71 Other infectious conditions
W72 Malignant neoplasm
W73 Benign neoplasm
W75 Injuries complicating preg
W76 Cong anomalies of mother
W78 Pregnancy confirmed
W79 Unwanted pregnancy confirmed
W80 Ectopic pregnancy
W81 Toxemia (pre)eclampsia
W82 Abortion spontaneous
W83 Abortion induced
W84 Pregancy high risk
W85 Gestational diabetes
W90 Normal delivery liveborn
W91 Normal delivery deadborn
W92 Complicated delivery liveborn
W93 Complicated delivery deadborn
W94 Mastitis puerperalis
W95 Other disorders of breast
W96 Other complic of puerperium
W99 Other dis of preg/deliv/puerperium

X FEMALE GENITAL

X01 Genital pain
X02 Menstrual pain
X03 Intermenstrual pain
X04 Painful intercourse
X05 Menstruation absent/scanty
X06 Menstruation excessive
X07 Menstruation irregular/freq
X08 Intermenstrual bleeding
X09 Premenstrual symptoms
X10 Postponement of menstr
X11 Menopausal sympt/complt
X12 Postmenopausal bleeding
X13 Postcoital bleeding
X14 Vaginal discharge
X15 Other sympt/complt vagina
X16 Sympt/complt vulva
X17 Sympt/complt pelvis
X18 Breast pain
X19 Lump/mass breast
X20 Sympt/complt nipple
X21 Other sympt/complt breast
X22 Concern about breast appearance
X23 Fear of venereal dis
X24 Fear of sexual dysfunction
X25 Fear of genital cancer
X26 Fear of breast cancer
X27 Fear other genital/breast dis
X28 Limited function/disability
X29 Other sympt/genital system
X70 Syphilis female
X71 Gonorrhoea female
X72 Urogenital candidiasis proven
X73 Urogenital trichomoniasis prov
X74 Pelvic inflammatory disease
X75 Malignant neoplasm cervix
X76 Malignant neoplasm breast
X77 Other malignant neoplasms
X78 Fibroid/myoma (uterus/cervix)
X79 Benign neopl breast (excl X88)
X80 Other benign neopl fem genit
X81 Other/unspec neopl fem genit
X82 Injuries
X83 Congenital anomalies fem genit
X84 Vaginitis/vulvitis NOS
X85 Cervicitis/oth cerv dis
X86 Abnormal pap smear
X87 Uterovaginal prolapse
X88 Chronic cystic dis breast
X89 Premenstrual tension syndrome
X90 Herpes genitalis
X91 Condylomata acuminata
X92 Chlamydia infection, genital
X99 Other diseases fem genital system

Y MALE GENITAL

Y01 Pain in penis
Y02 Pain in testis/scrotum
Y03 Discharge from penis/urethra
Y04 Other sympt/compl of penis
Y05 Sympt/complt scrotum & testes
Y06 Sympt/complt prostate
Y07 Sympt/complt potency (excl P07 P08)
Y08 Other s/c sexual dysf(excl P07 P08)
Y10 Infertility/subfertility
Y13 Family planning/sterilization
Y14 Family planning/other
Y16 Sympt/complt male breast
Y24 Fear of sexual dysfunction
Y25 Fear of venereal disease
Y26 Fear of cancer male genital
Y27 Fear of other genital disease
Y28 Limited function/disability
Y29 Other sympt male reprod syst
Y70 Syphilis male
Y71 Gonorrhoea male
Y72 Herpes genitalis
Y73 Prostatitis/seminal vesiculitis
Y74 Orchitis/epididymitis
Y75 Balanitis
Y76 Condylomata acuminata
Y77 Malignant neoplasm prostate
Y78 Other malignant neoplasm
Y79 Benign neoplasm male genital
Y80 Injuries
Y81 Phimosis/redund prepuce
Y82 Hypospadia
Y83 Undesc testicle/cryptorchism
Y84 Other cong anomal male genit
Y85 Benign prostatic hypertrophy
Y86 Hydrocele
Y99 Other dis male gen incl breast

Z SOCIAL PROBLEMS

Z01 Poverty/financial problem
Z02 Problem food and water
Z03 Problem housing/neighborhood
Z04 Problem social/cultural system
Z05 Problem working conditions
Z06 Problem with being unemployed
Z07 Problem with education
Z08 Problem social insurance/welfare
Z09 Problem legal/police
Z10 Problem health care system/access
Z11 Problem with being ill
Z12 Relation problem partners
Z13 Problem with behav partner
Z14 Problem with partner being ill
Z15 Loss/death of partner
Z16 Relation problem with child
Z18 Problem with child being ill
Z19 Loss/death of child
Z20 Relat probl parent/other family
Z21 Probl behav parent/other family
Z22 Probl w parent/family being ill
Z23 Loss/death parent/family
Z24 Problems in relat w friends
Z25 Prob assaults/harmful events
Z27 Fear of having a social prob
Z28 Limited function/disability
Z29 Other social problem NOS

PROCESSES

Diagnostic, screening, prevention

-30 Med exam/health evalua/complete
-31 Med exam/health evalua/partial
-32 Sensitivity test
-33 Microbio/other immunol test
-34 Other blood test
-35 Other urine test
-36 Other feces test
-37 Histology/cytology
-38 Other laboratory test NOS
-39 Physical function test
-40 Diagnostic endoscopy
-41 Diagnostic radiology/imaging
-42 Electrical tracings
-43 Other diagnostic procedures
-44 Immunization/prevent medication
-45 Advice/health education
-46 Consult between prim care provid
-47 Consult provider with specialist
-49 Other preventive procedures

Medication, treatment, procedures

-50 Medication/prescript/injection
-51 Incision/drainage/aspiration
-52 Excision/biopsy/removal/cautery
-53 Cathet/intubat/dilat/instrument
-54 Repair/suture/cast/prost device
-55 Local injection/infiltration
-56 Dressing/compression/packing
-57 Physical medicine/manipulation
-58 Therap counselling/listening
-59 Other therapeutic procedure

Test results

-60 Results test/procedures
-61 Results exam/proc other provider

Administrative

-62 Administrative procedure

Referrals & other RFEs

-63 Follow-up encounter unspecified
-64 Provid init episode new/ongoing
-65 Other init episode new/ongoing
-66 Referral pc-provider (excl -67)
-67 Referral to m.d.
-68 Other referrals NOS
-69 Other reasons for encounter NOS

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