Orignal Article

What is happening in Cape Town Family Medicine/Primary Care Practice?

– A Morbidity Survey with ICPC

Prof Pierre JT de Villiers MBChB; DOM; MFam Med.
Dr J du Plessis MBChB, M Fam Med
Dr S Saban MBChB, M Fam Med
Dr MR de Villiers MBChB, M Fam Med
Dr A Reid MBChB
Dr HJ van Staden MBChB

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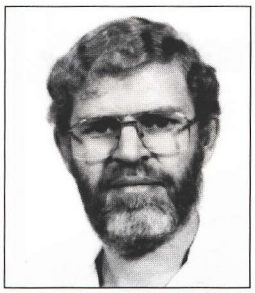

Curriculum Vitae

Pierre de Villiers was born in Walvis Bay. His school career was in Paarl and he completed his MBChB (1979) at the University of Stellenbosch. He also acquired the M Arts Med (1987) and the DBG (1989) from the same university. After his internship at the Tygerberg Hospital (1980-1981) and experience at the State Hospital in Oshakati, he took up private practice in Brackenfell from 1983-1990.. In 1990-1991 he was appointed as Occupational Health Consultant for industry in the Western Cape.

The Department of Family Medicine,
Faculty of Medicine
PO Box 19063
Tygerberg, 7505

Summary

The discipline of Family Medicine-Primary Care is in need of more research for its healthy development. Patterns of morbidity and health care utilisation are important indicators of need, and as such essential for health care planning. Measuring morbidity at primary care level with ICPC has been done successfully elsewhere in the world, and field studies are needed to prove its worth in the South African context. Two morbidity surveys were conducted in Cape Town primary care services at Mitchell's Plain, Bishop Lavis and Elsiesrivier. They were intended as field studies for morbidity surveys with ICPC in both the private and public funded sectors, and to identify further areas for research. ICPC proved to be a suitable coding instrument through both direct and indirect (central) coding methods. Several further areas for research were identified in these limited studies: the need for morbidity based information in both the private and public primary care services, the health seeking behaviour of the different age groups, and the real differences between the private practices and day hospitals with regard to morbidity profiles.

Introduction

Family Medicine/Primary Care is a young and developing discipline in South Africa, and as such research into its structure, process and outcome is important to ensure its healthy development. The family/general practitioner is an important health care provider in South Africa, both in the public and private sectors. The private sector provides mainly for the middle classes (20% of the

population) who generally have private medical insurance.[1] It was however found that in a typical urban setting like Mitchell's Plain, 50% of first contact medical care for children attending a state academic hospital were provided by private GPs.[2]

Rational decisions concerning the allocation of resources within health care systems cannot be made without good information about patterns of health needs.[3] Measuring health needs through epidemiology forms the basis of community-oriented primary health care.[4] Unfortunately there is a lack of morbidity, mortality and population data in this country,[5] particularly on the practice patterns of the large number of GPs in private practice.[1]

The relevancy of this problem is currently one of the major health issues in South Africa.[6] It is therefore a paradox that in this country the cost of health care is considered to be too high, yet at the same time very little information is available. We need to know which intervention for which patient at what moment during an episode of a defined disease could be considered as too expensive, useless or even dangerous.[7]

Knowledge of patterns of morbidity in primary care is essential as the system of health care in this country is increasingly based on the primary health care approach, in which the primary health care team, including the GP, plays a key role. Few studies concerning morbidity profiles in South African general practice could be identified from the literature[8,9] and the quality and structuring of available data often prohibit practical use.[10]

Apart from the practical problem of gathering data in primary care, the need for a suitable classification system arises. In this study we have made use of the International Classification of Primary Care (ICPC).[11] The ICPC fulfils the criteria of a suitable coding system for primary care settings: reliability (independant coders assign the same code number to the same complaint), adequate (cover all individual complaints and problems presented by their patients) and feasibility (requiring a minimum of time and effort from busy practitioners).[7,9,10,12,13] The ICPC provides a structure for the empirical description of the problem solving process in primary health care and thus opens new roads to further research and development in this area.

Morbidity and health care utilisation patterns are indicators of health care planning.

The aims of this study therefore were:

(a) to serve as a field study for describing the content of family practice through the use of the ICPC in South Africa,
(b) to describe the morbidity patterns in some primary care settings in the Western Cape, thus identifying specific areas for further research and training.

Methods

The bulk of primary health care services in the Cape Town metropolis are provided by the private GPs and the public service Day Hospitals.[2]

The results of two studies are reflected in this paper. A study was conducted in two private practices in Mitchell's Plain, and a second study in the day hospitals of Bishop Lavis and Elsiesrivier.

Mitchell's Plain is a densely populated residential area, about 27 kilometres from the central Cape Town. There is little local employment and the area functions as a dormitory suburb. The residents are predominantly "coloured" people in the middle to lower income group.

Two independant solo GP practices were chosen for the purpose of the study. The practices were three kilometres apart, and were both situated on the second floor of a business property without lift access. The study period was the 12 month period 1/9/91 to 31/8/92. The weeks of the year were randomly divided between the two practitioners, and during periods of leave or sickness the days were exchanged to ensure full coverage of the study period. Each practitioner selected a systematic sample of every third patient encounter on his daily list. Unrelated complaints/presenting problems during the same consultation were regarded as separate reasons-for-encounter.

The standard ICPC coding system were used in the comprehensive mode, coding reason for encounter, diagnosis and the process of management. A standard data sheet were used. The socio demographic data of the patient were also captured. In order to minimise inter-user variability, the two practitioners practiced together on sample patient encounters before commencement of the study.

Bishop Lavis and Elsiesrivier are two closely situated and densely populated residential areas about 5-10 kilometres to the south-west of the Tygerberg academic hospital. At the time of the study, both were rendering only curative services to a largely lower income group "coloured" population. Both were open from 07h30 to 17h00, as well as Saturday mornings, but Elsiesrivier also provided a 24 hour service over weekends.

In the day hospitals the study were conducted over a two month period only, from 1/3/93 to 1/5/93. A stratified sample of all the days were selected, in order to have two days to represent every day of the week. On the selected days a systematic sample of every third patient were selected. A standardised data form were used for data collection. The socio-demographic data were captured by the clerk and the nurse attending to the patient, while the attending doctor captured the reasons-for-encounter, diagnosis and process of management. The coding were done afterwards by two final year medical students.

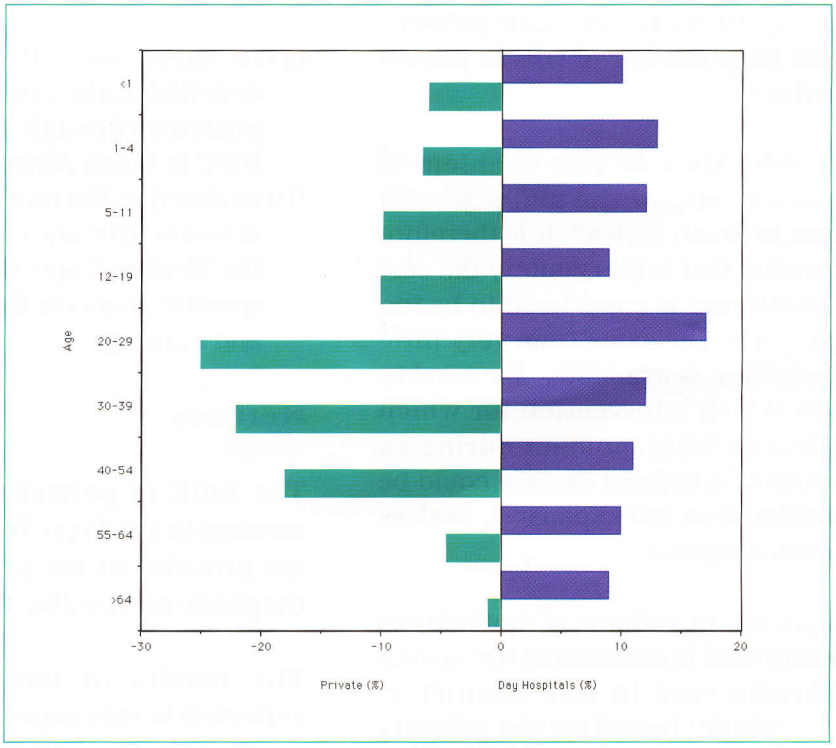

Figure 1. The population distributions of the patients in the private practice and day hospital settings

Results

A total of 680 encounters were recorded in the day hospitals with 552 (81%) first encounters and 128 (19%) follow-up encounters. In the private practices 3718 encounters were recorded with 2838 (77%) first encounters and 883 (23%) follow-up encounters.

Patients

The average age of the patients in the day hospitals was 28 years, and 27 years in the private practices. The population distributions are shown in Figure 1. In private practice 47% of the attending patients were between the ages of 20 and 39 years, compared to 30% in the day hospitals. The day hospitals also attended to a lot more children under the age of 12 (32%) than the private practices (18%). The same applies to the over 55 age group.

Medical Insurance

The patients attending the day hospitals were almost exclusively without any medical insurance, with 67% of breadwinners earning less than R500.00 per month. In the private practices 86% belonged to a medical scheme or benefit society, with 14% private paying patients.

Reason-for-encounter (RFE)

The distribution of the total RFEs over the chapters of ICPC are shown in Figure 2. In both settings the respiratory system gave rise to the most complaints (21% and 27%). It is noted, however, that the skin was much more involved in the day hospitals. The musculoskeletal and digestive systems were much more involved in the private practices.

The top ten RFEs for all visits are shown in Table 1. Cough (R05) was in both settings the most common complaint, while Pruritus/skin itching (S02) was the only other similarity on the top ten lists.

The most common RFE in the different age groups are tabulated in Table 2. In the under 5 age groups in both settings respiratory complaints were the most common RFE, whilst chronic disease like hypertension and

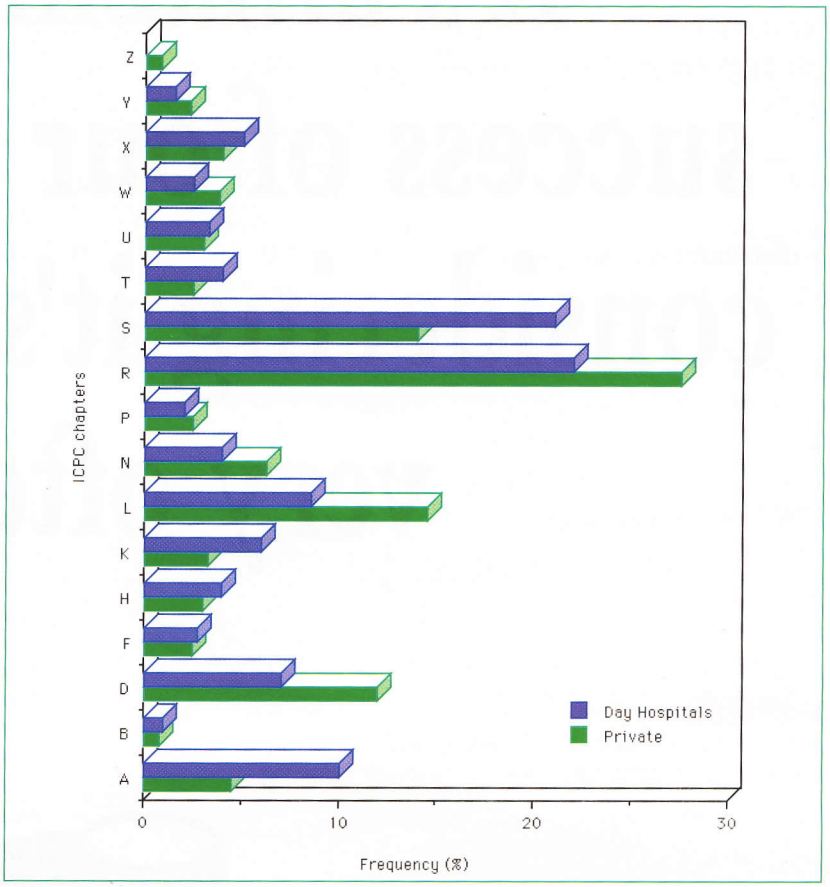

Figure 2. Reason for encounter: The relative frequency distribution of reasons for encounter over the ICPC chapters

ICPC Chapters (as explanation for Figures 2 and 3)

A = General and unspecified
B = Blood, blood-forming organs, lymphatic, spleen
D = Digestive
F = Eye
H = Ear
K = Circulatory
L = Musculoskeletal
N = Neurological
P = Psychological
R = Respiratory
S = Skin
T = Endocrine, metabolic and nutritional
U = Urology
W = Pregnancy, childbearing and family planning
X = Female genital system (including breast)
Y = Male genital system
Z = Social problems

musculoskeletal complaints were the most prevalent in the over 55 age groups.

Diagnosis

The distribution of the total diagnoses over the chapters of the ICPC are shown in Figure 3. The respiratory and skin chapters were the most prevalent in both settings. The skin was however much more involved in the day hospitals, while the digestive and musculoskeletal systems were much more involved in the private practices.

The top 10 diagnoses during all visits are tabulated in Table III. The top ten diagnoses account for 37% (private practice) and 46% (day hospitals) of all diagnoses. Five (5) diagnoses, Head cold (R74), Acute bronchitis/ bronchiolitis (R78), Boils (S10), Scabies (S72) and Tonsillitis (R76) appear on the list of both settings.

The top five diagnoses during the first visits are tabulated in Table IV. URI (head cold) (R74) are top on the list of both settings, while Scabies (S72) also appears on both lists. The top five diagnoses during the follow-up visits are tabulated in Table V. Hypertension (K86), Asthma (R96) and Diabetes mellitus (T90) appear on the list of both settings.

The most common diagnosis in the different age groups are tabulated in Table VI. It can be noted that skin problems are more common than respiratory problems in the 5-19 years day hospital group. Chronic diseases are in both settings the most common problems in the over 55 age group.

Discussion

Comparison between the morbidity profiles of private practices and the day hospitals in these studies cannot readily be made, due to the

A lack of morbidity, mortality and population data in RSA.

Table 1. Top 10 Reasons for Encounter: All Visits

Private practice (n=3721)				Day hospitals (n=668)			
Reason for Encounter		N	%	Reason for Encounter		N	%
R05	Cough	414	11.3	R05	Cough	75	11.2
R21	Symp/compl throat	151	4.7	A03	Fever	39	5.8
N01	Headache	148	4.0	K86	Uncompl. hypertension	25	3.7
R07	Sneezing/nasal Cong	126	3.4	S06	Local redness/erythema/rash	25	3.7
S02	Pruritis/skin itching	116	3.1	S10	Soil/Carbuncle/cellulitis local	25	3.7
D02	Stomach ache/pain	103	2.8	T90	Diabetes mellitus	23	3.4
L03	Low back pain wo radiation	101	2.7	R96	Asthma	21	3.1
L02	Back symptoms/compl	74	2.0	S02	Pruritis/skin itching	18	2.7
D11	Diarrhoea	74	2.0	A80	Accident/injury NOS	15	2.2
A04	Gen. weakness/tiredness	64	1.7	S18	Laceration/cut	14	2.1
	Total	1371	37.7		Total	280	41.6

Table II. The Most Common RFE in Different Age Groups

	Private practice		Day hospitals	
Age	Reason for Encounter	%	Reason for Encounter	%
<1	R05 Cough	25.8	R05 Cough	32.4
1-4	R05 Cough	25.8	A03 Fever	24.7
5-11	R05 Cough	18.1	R05 Cough	11.1
12-19	R05 Cough	10.3	S06 Local redness/erythema/rash	9.1
20-29	R05 Cough	7.3	R05 Cough	5.5
30-39	R05 Cough	7.6	R05 Cough	10.2
40-54	R05 Cough	7.7	R96 Asthma	8.2
55-64	K50 Prescription for medication	11.5	K86 Uncomplicated hyptertension	16.7
>64	L20 Sympt.compl. mutliptle joints	7.1	K86 Uncomplicated hypertension	18.1

% = Proportion of total in same age group

Which intervention for which patient at which moment of his disease episode is too expensive or too dangerous?

Table III. Top 10 Diagnoses - All Visits

	Private practice (n=3721)			Day hospitals (n=668)		
	Diagnosis	N	%	Diagnosis	N	%
R78	Acute bronchitis/bronchiolitis	338	9.1	R74 URI (head cold)	95	14.0
R74	URI (head cold)	325	8.7	S72 Scabies & other acariases	31	4.6
R80	Influenza wo pneumonia	147	3.9	S84 Impetigo	31	4.6
L18	Muscle pain/myalgia/fibrositis	120	3.2	K86 Uncomplicated hypertension	29	4.3
S10	Boil/carbuncle/cellulitis local	90	2.4	R96 Asthma	28	4.1
S72	Scabies & other acariases	89	2.4	T90 Diabetes mellitus	25	3.7
R76	Tonsillitis, acute	83	2.2	R76 Tonsillitis, acute	25	3.7
U71	Cystitis/other UTI. Non vener	80	2.1	S10 Boil/carbuncle/cellulitis local	17	2.5
N02	Tension headache	70	1.9	R78 Acute bronchitis/bronchiolitis	16	2.4
D73	Other presumed GIT infections	68	1.8	S18 Laceration/cut	16	2.4
	Total	1410	37.7	Total	313	46.3

It takes 30 seconds to code an encounter – about 20 minutes per day for a GP.

differences in the study methods followed, and is not the purpose of this study. The sampling method used in the private practices was less biased, resulting in representation of a whole year, while coding by the doctor at the point of service (direct coding) should have lead to more accurate and reliable results. The day hospitals study was done over a selected two month period during autumn, leading to a seasonal bias, whilst coding was done by independent persons (central coding) after the consultations.

The two surveys nevertheless provided valuable insight into the application of ICPC as coding instrument in South African primary care and were used in both direct and indirect (central) coding methods. In both instances ICPC proved to be a quick and easy to understand coding system to use.

It does however take about 30 seconds to code an encounter in the comprehensive mode (reason-for-encounter, diagnosis and process), which could mean a coding time factor of 15-20 minutes per day for the average GP. If however the coding can be integrated in the normal writing up of the consultations for accounting and administrative purposes, it should reduce the time factor considerably.

Direct coding by the service provider can lead to inaccuracy due to a lack of time, with the coder using easily memorised regular codes, and sticking to one reason for encounter and diagnosis per encounter. On the other hand good motivation through a feedback-to-the-user policy, thorough training of the users and a clear, user friendly instrument like ICPC can lead to great accuracy. Inter-user variability can only be minimised through training on sample patient encounters. Video recorded patient encounters may prove to be especially helpful in this regard.

Some diagnosis codes need further expansion to make it more meaningful (eg R80.00 - Influenza (proven) without pneumonia), but care must be taken not to make it another bulky unusable coding system. There should also be standardisation of expansion, preferably on both international and national levels, in order to maintain conformity.

No data on practice patterns of GPs in RSA.

ICPC seems to be a suitable instrument for us in RSA.

Table IV. Top 5 Diagnoses (First Visits)

Private practice			Day hospitals		
Diagnosis		%	Diagnosis		%
R74	URI (head cold)	10.9	R74	URI (head cold)	17.2
R78	Acute bronchitis/bronchiolitis	9.6	S72	Scabies & acariases	5.6
R80	Influenza wo pneumonia	4.5	S84	Impetigo	5.6
L18	Muscle pain/myalgia/fibrositis	3.9	R76	Tonsillitis acute	4.5
S72	Scabies & acariases	2.8	S10	Soil/carbuncle/cellulitis	2.9
		Total 31.6			Total 35.9

Table V. Top 5 Diagnoses: (Follow-up Visits)

Private Practice			Day hospitals		
	Diagnosis	%		Diagnosis	%
R78	Acute/bronchitis/bronchiolitis	7.5	K86	Hypertension	20.0
K86	Hypertension	6.1	T90	Diabetes mellitus	18.8
R96	Asthma	4	R96	Asthma	17.2
T90	Diabetes mellitus	4	N88	Epilepsy, all types	7.8
S10	Boil/carbuncle/cellulitis	3	S18	Laceration/cut	6.4
	Total	24.5		Total	70.2

Table VI. The Most Common Diagnosis in the Different Age Groups

Private practice				Day hospitals		
Age	Diagnosis		%	Diagnosis		%
<1	R74	URI (head cold)	22.6	R74	URI (head cold)	53.3
1-4	R74	URI (head cold)	21.7	R74	URI (head cold)	24.7
5-11	R78	Acute bronchitis/bronchiolitis	18.1	S84	Impetigo	20.5
12-19	R74	URI (head cold)	8.6	S72	Scabies & acariases	16.4
20-29	R78	Acute bronchitiis/bronchiolitis	7.3	R74	URI (head cold)	7.3
30-39	R78	Acute bronchitis/bronchiolitis	7.0	R96	Asthma	7.7
40-54	R78	Acute bronchitis/bronchiolitis	7.0	R96	Asthma	9.6
55-64	K86	Uncomplicated hypertension	11.0	K86	Uncomplicated hypertension	15.6
> 64	T90	Diabetes mellitus	7.0	K86	Uncomplicated hypertension	20.0

% = Proportion of total in same age group

Coding by a person other than the service provider (indirect/central coding) will lead to the saving of expensive professional time. It could, however, be less accurate if too little information is provided by the service provider, since providers tend to minimise writing on forms, and notes are notoriously incomplete and illegible. Inter-user variability can however be greatly reduced by the application of a few well trained coders, with sufficient medical background.

What method of coding to be used in surveys of this nature will depend on several factors. The time constraint, level of motivation and the attainable level of training of the service providers are the most important factors. Proper medical record keeping combined with indirect (central) coding by well trained coders may prove to be the more feasible option in most settings.

Several areas for further research were identified in these two surveys. There seems to be a difference in the user profile (age/sex distribution) between the private and public primary care setting. The private practices in this study seemed to be used mainly (63%) by the adult population between 20 and 55 years. This differs markedly from the day hospital profile (Figure 1) in the somewhat poorer communities where the children and older people had much greater usage patterns. This needs to be confirmed in a more representative study, and if confirmed, the reasons behind it.

Differences between the morbidity profiles of different communities in close proximity are to be expected, especially when there are also differences in the average income and educational level. The pattern of differences between these two different kinds of settings needs further investigation. If confirmed, the reasons why there are such differences between the systems (Figures 2 and 3) involved (respiratory, skin, digestive and musculoskeletal) may need further investigation because it may point to failing of the health care system and/or the provision of certain basic needs.

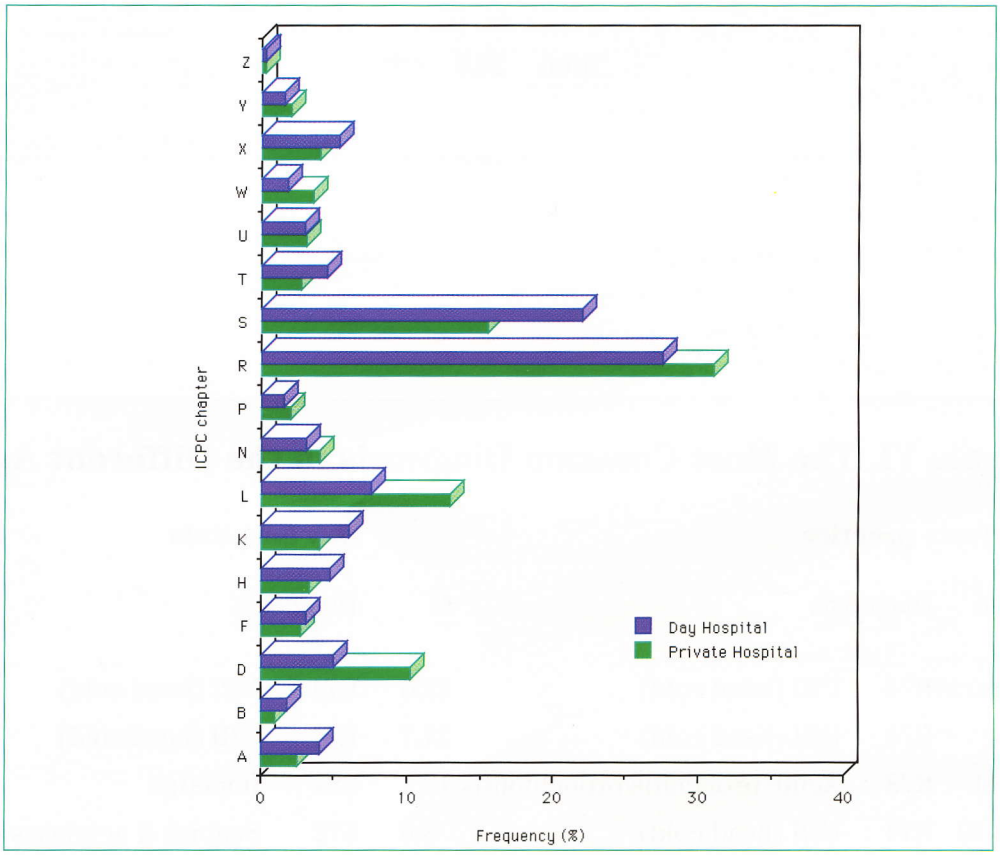

Figure 3. Diagnosis: The relative frequency distribution of diagnoses over the ICPC chapters

The top 10 reasons-for-encounter and/or diagnoses accounted for between 37% to 46% of morbidity in the study populations in this study. These were confirmed in studies elsewhere[12,14]. The implications for health care planning, service

provision and training are self evident. More representative studies can give more accurate answers to the morbidity profiles in different primary care settings in South Africa.

The process of care is not addressed in this report, although it is of major importance to all aspects of health care. The sampling method used in these surveys did not make the study of episodes of care[7] possible. ICPC can be used in the process mode to describe the process of care (management). When used together with the envisaged ICPC drug code list, the total management of patients with certain reasons for encounter and/or diagnoses can be described and studied. The coding of all patient encounters, or alternatively those following specific diagnoses or reasons for encounter, over time will be needed to study the management of episodes (initial as well as follow-up encounters for a specific complaint) of morbidity.

The findings of these studies show that ICPC is a suitable instrument for use in South African Family Practice/Primary care, and points to the need for a national Family Practice/Primary Care morbidity survey. Such a study will greatly assist in the planning of health care resource allocation and provide a valuable database for education and further research.

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