A SURVEY OF HOSPITAL OUTPATIENT SERVICES FOR CHRONIC DISEASES IN GAUTENG

W J Kalk, Y Veriawa, C Osler

Objectives. The rapid evaluation of hospital-based services for chronic non-communicable diseases, in particular aspects of the organisation of services, and indirect indicators of patient care.

Design. A postal survey of services for asthma, epilepsy, diabetes and hypertension at nine hospitals. Assessment over 1 week of single blood pressure (BP) and blood glucose readings at the hypertension and diabetes clinics at one regional hospital.

Setting. Nine community and secondary hospitals in Gauteng.

Results. Eight hospitals responded. Most did not provide specific clinics for each condition. None of the professional staff had received additional training in chronic disease management, and 7 considered their services to be understaffed. On average, nurses managed 33 patients per day (range 19 - 50), and doctors 53 (20 - 80). Mean consultation time was 9 minutes (4 - 20 minutes). Management guidelines were used for all conditions in 5 hospitals. Modern routine assessments were seldom employed. Estimates of regular patient attendance ranged from 25% to 75%. At the single hospital surveyed, hypertension ($N = 233$) was controlled in 42.5% of patients using World Health Organisation criteria (BP < 160/95), but in only 24.5% of patients by The Joint National Committee on Prevention, Detection, Evaluation and Treatment of High Blood Pressure (JNC6) standards (BP < 140/90). Random blood glucose was satisfactory (< 10 mmol/l) in 45.2% of diabetic patients ($N = 157$) while hypertension ($N = 100$) was well controlled (< 140/90) in 10% of hypertensive diabetic patients.

Conclusions. Services for chronic diseases at non-academic hospitals in Gauteng were characterised by perceived inadequate staff numbers and training, short consultation times, infrequent use of management guidelines and standard assessments, little patient education with regard to self care, and perceived low rates of regular attendance (and hence compliance with medication). At one hospital there was a low rate of hypertension control, and unsatisfactory rates of acceptable glycaemic and BP control among diabetic patients. There is an urgent need for restructuring of services for chronic diseases and for more detailed outcomes research.

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Department of Medicine, University of the Witwatersrand, Johannesburg
W J Kalk, MB BCh, FRCP (Lond)
Y Veriawa, MB BCh, FCP (SA)
C Osler, RN

Several chronic non-communicable diseases are common and costly because of their acute and long-term complications. Their costs can be measured in terms of how they affect individual patients and their families, in lost work days and productivity, and as direct costs to health and social services.[1-4] Acute and chronic morbidity and some premature mortality arise from complications of these conditions, but are largely preventable by effective management. This should include a measure of self care, mostly necessitating regular lifelong medication. Although not yet demonstrated in South Africa, this approach, i.e. of careful secondary prevention of complications, should prove to be cost-effective in the long run,[1-5] and should therefore be incorporated into all levels of our health services as they are restructured. Moreover, it is anticipated that local demand for effective chronic disease services will increase in the immediate future because of greater public awareness and expectations, improved life expectancy, increasing prevalence of certain conditions,[6-8] and the expansion of primary health care facilities. While some information is available on primary health services for chronic disorders,[9-12] little is known about these services based at non-academic hospitals.

In late 1994 the Strategic Management Team for Health in Gauteng commissioned an investigation into service provision for chronic non-communicable diseases in the province. This paper reports on some of the findings from a postal survey conducted in December 1994 among non-academic hospitals that provided ambulatory services for patients with common chronic disorders. The purpose of the study was to evaluate rapidly the organisation of services as well as several indirect measures of patient care, and to obtain an overall perception from the staff as to the adequacy of the functions they provided. A second brief on-site survey was conducted some months later into aspects of the quality of care for hypertensive and diabetic patients provided at one busy regional hospital in the east Rand.

METHODS

Nine community and non-academic regional hospitals were selected according to their geographical distribution so as to provide information from smaller towns in the province as well

Table I. Hospitals surveyed, and their distribution in Gauteng

Hospital	District
AG Visser	Heidelberg
Mamelodi	Pretoria
Nigel	Nigel
Pholosong	Springs
Sebokeng	Vanderbijlpark
South Rand	Johannesburg
Sybrand van Niekerk	Carletonville
Vereeniging	Vereeniging

as from the Johannesburg and Pretoria areas, and from both smaller and larger 'secondary' hospitals (Table I). They were surveyed by means of a questionnaire sent to both senior nursing administrators and superintendents. The questionnaire requested information on four chronic diseases — hypertension, diabetes, asthma and epilepsy. Questions related to the organisation of services, viz. the existence of separate clinics for each disorder, patient and staff numbers, disease-specific training of staff, and staff perceptions regarding the adequacy of their numbers and facilities. Secondly, the potential for quality care was surveyed in terms of estimated average consultation times; the use of treatment protocols, including emergency management, for each condition; the provision of specific patient education and routine evaluations; and the availability of relevant laboratory services and of referral pathways. Lastly, staff were questioned regarding their perception of regular patient attendance, and the desirability of patient-retained records as an aid to continuity of care.

At a tenth hospital, not included in the postal survey, data on blood pressure (BP), random blood glucose, and medication for hypertension and diabetes were collected systematically by clinic staff for every patient attending the hypertension and diabetes clinics over a period of 1 week.

BP was measured by nurses or doctors of the respective clinics, with the patients sitting, using mercury sphygmomanometers. Satisfactory control of hypertension was assessed at two levels — according to World Health Organisation (WHO) criteria (BP < 160/95 mmHg),[13] and according to the recommendations of the Joint National Committee on Prevention, Detection, Evaluation, and Treatment of High Blood Pressure (JNC6) (BP < 140/90 mmHg).[14] The definition of satisfactorily controlled diabetes was a random capillary blood glucose level (Haemoglukotest; Boehringer Mannheim) of 10 mmol/l or lower;[15] very poorly controlled diabetes, often requiring at least short-term insulin therapy[15] was defined as a blood glucose level of 15 mmol/l or more.

RESULTS

Replies were obtained from 8 of the 9 hospitals surveyed. Table II provides information on the organisation of services, patient numbers, and some of the indicators of quality of care that were used. Patients who were not seen at special clinics, including all those with epilepsy, were managed at polyclinics, medical outpatient departments, casualty departments, or attached primary health care clinics. None of the professionals staffing the clinics had received specific training in chronic disease management apart from that included in the instruction given to primary health care nurses. Supplies of medication for treatment of these four conditions were reportedly adequate.

Table II . Information from 8 hospitals on the provision and organisation of services for 4 chronic diseases

	Hypertension	Asthma	Diabetes	Epilepsy
Separate clinics	1	3	5	0
Patients per week	140	35	94	27
(range)	(42 - 200)	(8 - 70)	(26 - 200)	(4 - 55)
Consultation time	10	10	10	7.5
(min) (range)	(4 - 15)	(3 - 20)	(4 - 15)	(3 - 15)
Use of guidelines	5	6	6	5
Emergency protocols	6	6	6	5
Patient education	4	6	6	3

Hypertension (44.7% of the patients evaluated) was the most frequent condition, followed by diabetes (35.8%), asthma (13.2%), and epilepsy (7.1%). The estimated number of patients managed by nurses averaged 33 per day (range 19 - 50, data available from 5 sites only), and for doctors 53 per day (range 20 - 80, from 7 sites). The mean consultation time was 9 minutes, with 2 sites estimating that consultations averaged 4 minutes per patient for each illness. The superintendent of only 1 hospital was satisfied with the staff complement; the others all asserted that they were substantially understaffed for the patient load.

The use of management guidelines varied: 5 hospitals used protocols for all 4 conditions, 2 for hypertension and diabetes only, and 1 for asthma only.

Specific services

The provision of specific services was evaluated for asthma, diabetes and epilepsy. Seven of the 8 hospitals taught patients how to use asthma inhalers, 6 provided information on when patients should seek urgent help, but only 1 hospital measured peak expiratory flow rates. Peak flow meters were apparently unavailable at the other hospitals; however, 7 of the 8 hospitals had sufficient baumanometers and stethoscopes for the evaluation of hypertension.

Seven clinics provided some patient education with regard to diabetes management, but only 3 clinics offered home blood glucose monitoring to selected patients, while 2 did not even offer urine glucose self-monitoring. All the clinics checked BP and urine for the presence of glucose and protein, and 7 monitored random blood glucose levels as well. Measurement of glycated haemoglobin was almost never done. The presence of diabetic complications was not evaluated in a systematic manner at any of the sites, but was sought only if the patient had a specific complaint. Lack of skills, such as those necessary for the performance of fundoscopy, was cited by 1 respondent as a reason.

Three hospitals provided patient education on epilepsy, and 4 apparently never measured plasma concentrations of anticonvulsants.

Patient attendance

Respondents estimated the proportion of patients that regularly attended their clinics. Six of the 8 hospitals estimated a global 75% consistent attendance; the 2 others put the figure at 50% and 25% respectively, commenting further that attendance at their hospitals was extremely erratic. Lack of appreciation of the chronicity of these illnesses was cited in several responses as a probable reason for non-compliance with appointments and medication.

Services and referrals

Three of the 8 hospitals claimed to have no access to laboratory services. Two out of 7 replies indicated that they did not have a referral pathway for problem patients, and 2 claimed not to have any transport for outpatients.

Comments from respondents

In response to a request for the enumeration of positive aspects of their hospitals, 5 respondents indicated that a satisfactory service was provided by competent staff, and 3 that interpersonal relations between staff were good. One respondent commented on patient satisfaction.

Six respondent hospital administrators felt that their service provision would be improved if they had more medical staff, both nurses and doctors, with specific training in the management of chronic diseases. Three wanted more physical clinic space, with greater privacy for patients. Disease-specific clinics were requested by those hospitals without them, and better transport systems enabling indigent patients to visit specialist services were also requested. Two respondents commented that better primary services for routine care, with an appropriate supply of medicines, should be established away from their hospitals, which should then be reserved for the management of uncontrolled patients. Two respondents mentioned the need to provide better opportunities and facilities for patient education, with 1 respondent specifically mentioning the need to educate patients with regard to regular hospital attendance.

Seven of the 8 respondents felt that patient-retained records would be helpful in terms of improving patient care. Some cited very inadequate hospital record systems as being a major problem.

Effectiveness of services

In the single hospital surveyed for the effectiveness of treatment, data on BP levels were recorded by the staff in 233 consecutive hypertensive and 157 diabetic subjects during a 1-week period. By WHO criteria, hypertension was controlled in 42.5% of patients, but by JNC6 standards it was only controlled in 24.5%. On the day of evaluation severe hypertension (diastolic BP > 115 mmHg) was noted in 6.9% of patients. Among the 100 diabetic subjects with associated hypertension (63.7% of diabetic patients), BP was controlled in 32.0% (WHO), but in only 10% by the stricter JNC6 criteria. Glycaemic control was satisfactory (random capillary blood glucose < 10 mmol/l) in 45.2% of patients. Among the 22 patients with substantial hyperglycaemia (random blood glucose > 15 mmol/l), half were not treated with insulin. Glycated haemoglobin was not measured in any patient.

DISCUSSION

This rapid preliminary survey of the state of clinical services for certain chronic non-communicable diseases in hospitals in Gauteng at the end of 1994 complements the dismal picture of services provided by primary health care in South Africa.[9-12] It is probable that the current situation remains largely unchanged in Gauteng and the other provinces, although major efforts to reorganise services are in progress throughout the country.

This survey found that these chronic disorders were commonly managed at hospital level, but that there were insufficient and inadequately trained clinical staff to deal with patient numbers, and that several hospitals did not use available standard treatment guidelines. Secondly, patient education with regard to self care, now established as being essential to the proper management of these conditions, was not undertaken by these hospitals. The very short average consultation time would not have allowed space for an assessment of complications, or for patients to ask questions, let alone be offered formal education and instruction on the importance of adherence to therapy and changes in lifestyle essential to the non-drug management of asthma, hypertension and diabetes.[13-17] Moreover, it was evident that no time was available to address patients' psychological well-being, now established as one of the cornerstones of their care.[18] Thirdly, tools considered essential for the modern treatment of asthma (measurement of peak expiratory flow), epilepsy (plasma levels of anticonvulsants) and diabetes (glycated haemoglobin,

annual clinical audit) were seldom used. Lastly, clinic attendance was assessed as being erratic at best for a substantial minority of patients.

The assessment of services for hypertension and diabetes in 1 busy regional hospital revealed that by WHO criteria[13] just over 40% of hypertensive patients were adequately treated,[13] but only some 25% by the stringent standards of JCN6.[14] Fewer than 50% of diabetic patients had acceptable blood glucose values on the day of the study (not necessarily a reflection of long-term control),[19] and only 10% of those with associated hypertension had good BP control.[14] Moreover, significant proportions of subjects with each condition had seriously uncontrolled disease. On the basis of the high recorded blood glucose levels many patients with diabetes seemed to require, but did not receive, insulin therapy.

The pattern of high rates of irregular attendance documented at the other sites, probably underestimated at around 25%, and hence non-compliance with daily medication, must have contributed to these poor outcomes. Similar patterns of non-attendance have been described recently at several primary health care clinics.[9] The concomitant non-compliance with medication is one of the most serious problems facing health care in general,[20] and remains a major reason for costly[21] acute diabetic hospital admissions in Gauteng.[22,23] Although lack of understanding of the lifelong nature of chronic diseases has been cited in this and other studies[9] as being an important reason for patient non-adherence to medical advice, it must be remembered that many adverse behaviours do not arise from ethnic and cultural backgrounds. In this country patients have cited difficulty getting time off work once a month, expensive transport and clinic fees as reasons for erratic attendance.[9] Non-compliance may also be a consequence of poverty, lack of education, unemployment, poor housing and exposure to high rates of crime, in this country as elsewhere.[24]

Recent diabetes research illustrates the importance of preventive aspects of patient care. In addition to the expense of acute admissions,[21] the major costs of diabetes derive from the medical management of its long-term complications.[25] A substantial reduction in the incidence of diabetic complications is made possible by reducing known and readily managed risk factors, such as inadequate control of blood glucose and BP,[26] and erratic clinic attendance; as well as by providing patient education on self care[27] and by screening for retinopathy[28] and foot pathology.[29] Thus great potential exists for long-term cost reduction in diabetic care[4,6] and management of other chronic diseases.[2,4]

Several obvious conclusions can be drawn from this preliminary survey. There is a great need to improve the quality of services for chronic diseases in Gauteng, and probably in the rest of the country as well.[9] There is a need for more detailed research into existing services, especially with regard to their effectiveness, in order to delineate what staff and additional training, and what laboratory, consultation and transport services, will be required at both primary[10] and hospital levels. Such information is essential for the planning of quality services for chronic disease patients.

Recommendations that could be immediately effected include an attempt to reduce the patient overload at many clinics. One safe method should be the identification of well-controlled individuals adhering to medication. These patients should be supplied with medication for 3 - 6 months and should be routinely assessed only 2 - 4 times annually, instead of monthly as is often the case at present. Such a dispensation would immediately reduce clinic attendance, making more time available for 'problem patients'. The latter could be offered brief, small group, disease-specific, educational and question and answer sessions, explaining, for example, the importance of regular medication and attendance, the recognition of warning signs of deterioration and the importance of early self-referral. The introduction of more clinics specifically for patients with chronic diseases, with an appointment system and follow-up by the same clinician (in this way providing important continuity of care), might improve rapport between patient and attendant and hence adherence,[30] and should also lead to more efficient patient contact time. Lastly, services provided at nominal cost, or free at the point of delivery for patients with chronic diseases, might improve clinic attendance rates, especially those of indigent individuals.

In the longer term, additional staff training in chronic disease management should be officially supported and formally recognised. Attendance and distance learning courses are available at universities in Johannesburg and in the private sector.

In order to initiate and expedite research and development in the field of chronic disease management (and management of many other conditions), we proposed that a few 'model clinics' be established at both primary and secondary hospital level. These clinics should be designed as laboratories to research the best clinic organisation for health care delivery — including appropriate time allocations for patients, frequency of clinic visits, and approaches to patient self-care education; the introduction and adaptation in practice of modern management guidelines; and the promotion of an understanding of the methods of assessment for quality of care, clinical audit, and cost efficiency. The expertise harvested from these models could then be extended incrementally to the other regional and provincial services (Kalk WJ, Veriawa Y, for Chronic Diseases Task Group. Report for the Chronic Diseases Task Group of the Strategic Management Team for Health, Gauteng, March 1995). Alternatives to current hospital clinic practices already exist, such as at the combined chronic diseases clinic at the Alexandra Health Centre and University Clinic near Johannesburg, run mainly by dedicated nurses. We suggest that experience gained from such model clinics can be used as an efficient and practical method for developing

effective, high-quality and affordable ambulatory health services for patients with chronic diseases at primary, secondary and tertiary levels.

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FOLLOW-UP OF PATIENTS WITH ARRHYTHMOGENIC RIGHT VENTRICULAR CARDIOMYOPATHY DYSPLASIA

Miroslav J Munclinger, Jai J Patel, Abdul S Mitha

Objective. The enlargement of data on the natural course and management of patients with arrhythmogenic right ventricular cardiomyopathy/dysplasia (ARVC/D).

Design. Retrospective and partly prospective observational study.

Setting. Cardiac Unit, Wentworth Hospital, Durban — the only unit in KwaZulu-Natal providing an arrhythmia and electrophysiology service.

Study population. Those included were: (*i*) patients referred for palpitations, unexplained syncope, or ventricular tachycardia and in whom ARVC/D was diagnosed according to multiple criteria; and (*ii*) family members of patients with ARVC/D in whom the disease was documented using the same criteria.

Main outcome and measurements. Diagnosis, management, morbidity and mortality were analysed.

Results. Twelve patients were diagnosed with ARVC/D over a period or 6 years. At the end of follow-up for 3.4 ± 3.2 years, 7 of them were well and alive on anti-arrhythmic medication, 2 were asymptomatic, and 3 had died. One death was sudden, 1 patient died due to left ventricular failure, and 1 patient died due to a low cardiac output syndrome 3 months after right ventricular isolation, i.e. the mortality rate was 25%. ARVC/D was found in all racial groups and was familial in 5 patients (42%). In all but one patient the correct diagnosis was not suspected by the referring institution, physician or cardiologist.

Conclusions. ARVC/D needs to be included into a differential diagnosis of unexplained syncope, palpitations, or ventricular tachycardia by all health service providers. Its management remains a complex challenge with varying results.

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Cardiac Unit, Wentworth Hospital and University of Natal, Durban
Miroslav J Munclinger, MD, PhD
Jai J Patel, FCP
Abdul S Mitha, FRCP