The practice of medicine at a district hospital emergency room: Middelburg Hospital, Mpumalanga Province

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Abstract

Background: The aim of this study was to establish the type of clinical work done by the doctors in the emergency room at a district hospital in an underserved area. The findings of the study would assist the management in planning for training, recruitment and allocation of medical and nursing personnel.

Methods: This was a prospective and descriptive study undertaken in the emergency department of Middelburg Hospital in Mpumalanga Province, South Africa. The subjects were patients who presented to the emergency room during the period of the study, in January 2005.

Results: The findings of this survey show clearly that Middelburg Hospital in Mpumalanga receives patients with life-threatening and non-life-threatening conditions in the emergency room every day. The top diagnoses made during the one month of the study were assault-related injuries, motor vehicle accident-related injuries, respiratory tract infections, lacerations, soft tissues injuries, gastroenteritis, fractures, poisoning, hypertension and parasuicide.

Conclusion: The challenges of practising at a district hospital are that a practitioner has to be knowledgeable and skilful in a wide range of disciplines. To remain in touch with the changing environment of medicine, one has to keep on learning and sometimes attend refresher courses far away from the place of work. The rewarding part of the practice is that many junior doctors benefit from the experience of the senior colleagues, who teach them basic skills. A practitioner wishing to work at Middelburg Hospital should be skilful in managing common trauma patients, patients with complicated medical conditions, e.g. diabetes mellitus and hypertension, and in managing acute poisoning, respiratory infections and gastroenteritis.. In other words, the practitioner must have adequate diagnostic and therapeutic skills.

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Introduction

Family medicine is the backbone of medical practice in most countries. In South Africa, a family physician, if not working as a private practitioner, will find himself/herself working as a hospital doctor in a state-run healthcare institution.

Besides consultations in the outpatient department or the clinics, and follow-up of admitted patients, the family physician at a district hospital will take responsibility for patients in the emergency room. Throughout the world, district hospitals are at the forefront of rendering comprehensive medical care to the population. In North America, family physicians are the major or sole providers of medical services to rural communities.[1] Family physicians are encouraged to take up posts at these hospitals to assist with training and skills-building for junior doctors and nursing personnel.[1]

This study wished to establish the type of clinical work done by the doctors in the emergency room at a district hospital in an underserved area. The findings of the study would assist the management in planning for training, recruitment and allocation of medical and nursing personnel.

Background and setting

Middelburg Hospital is situated in the Highveld region of Mpumalanga in South Africa, and is one of the district hospitals in the Nkangala administrative district of the province. The hospital is situated approximately 30 kilometres from Witbank Hospital in the same district. The national road (N4) to Nelspruit and Maputo is just five kilometres away. Middelburg town is part of the Steve Tswete Municipality, which includes the Mhluzi Township and the surrounding informal settlements. The district municipality is home to about 200 000 people, the majority of whom have a low income or no income at all. Most rely on this provincial hospital for their health care.

Middelburg Hospital is a referral centre for a number of primary healthcare clinics and two small hospitals within a radius of 100 kilometres. The hospital has a capacity of 230 beds, although only 190 beds are active because one ward is closed for renovation.

Service delivery is mainly rendered by primary care practitioners, medical officers, who constitute the bulk of the full-time doctors of the hospital, and two family physicians. Among the full-time doctors is a professor of family medicine, who heads the department of family medicine in Mpumalanga province.

The author of this study is a family physician at the hospital and functions as deputy to the medical manager as well as coordinator of the medical services at the hospital. The other medical officers hold different positions, ranging from junior medical officers to principal medical officers. A few private general practitioners participate in the after-hours duties in the hospital.

Methods

This was a descriptive and prospective study. Data were collected from the registers of the emergency room records of the patients admitted to the unit on the day of admission. Casualty data were collected for a period of one month (January 2005) due to the large number of patients seen at the unit. The casualty data were recorded to show the most commonly-made diagnoses and the patient's gender and age.

The emergency room (casualty) is a 24-hour unit in the hospital where patients whose conditions needing emergency and urgent treatment are seen. The unit also receives walk-in/walk-out patients on weekends and public holidays because the city of Middelburg does not have a 24-hour public health centre where minor ailments may be seen. On some public holidays or weekends, the casualty department may look like a medical outpatient department.

Results

The data collected were recorded on Microsoft Excel spreadsheets and analysed with the district health information system (DHIS) statistics package. This was done with the help of the hospital statistician.

Tables I, II and III represent the patients' distribution according to gender, age and the most common diagnoses made in casualty department respectively.

Table I: Gender of casualty patients

Gender		
Male	871	57%
Female	657	43%
Total	1528	100%

Table II: Ages of patients seen in casualty

Ages of patients in survey		
< 1 yr	17	1,1%
1– 6 yrs	90	5,9%
7–12 yrs	93	6,1%
13–20 yrs	310	20,3%
21–30 yrs	454	29,7%
31–40 yrs	329	21,5%
41–50 yrs	90	5,9%
51–90 yrs	98	6,4%
Unknown	47	3,1%
Total	1528	100%

Table III: Most common diagnoses in casualty patients

Diagnosis	Number of patients	Percentage of sample
Assaults	367	24,0%
Motor vehicle accident	222	14,5%
Respiratory tract infections	181	11,8%
Lacerations	158	10,3%
Soft tissues injuries	132	8,6%
Gastroenteritis	98	6,4%
Fractures	81	5,3%
Poisoning	60	3,9%
Hypertension	58	3,8%
Parasuicide	51	3,3%

Discussion and recommendations

Data reported as unknown in the study were missing from the patients' files. Although the aim of this survey was not to audit the patients' files, the survey was an eye opener, as it became clear that an audit of the patients' medical records was needed.

Middelburg Hospital receives all types of patients in the emergency room, and the most common diagnoses made during the one-month period of the study were assault-related injuries, motor vehicle accident-related injuries, respiratory tract infections, lacerations, soft

tissues injuries, gastroenteritis, fractures, poisoning, hypertension and parasuicide. These findings are discussed below.

Assault-related injuries

The total number of assault-related injuries was 367 (24%) out of the 1 528 patients seen during the month of the survey. This number can be attributed to the younger age of the patients seen at this emergency room. The ages of the majority of the patients range from 13 to 40 years, contributing 71,5% (N = 1092) of the patients in the study. The gender of the patients may also play a role, as 57% (N = 871) of the patients were male. These findings correlate with those of a study conducted by the author at Witbank Hospital in 2000. Here the typical assault victim was found to be a male aged between 17 and 45 years, and alcohol consumption was a contributory factor.[2]

Motor vehicle accidents

The study found that 222 patients (14,5%) were treated for injuries sustained after motor vehicle accidents (MVAs). These findings correlate with those reported by Cameron et al.,[3] although they contrast with those of De Villiers and De Villiers[4] in a study done in the Western Cape, where MVAs was at the bottom of the list, accounting for about 1,4% of the patients treated by general practitioners in the latter study. Our findings may be explained by the proximity of Middelburg to a main highway, the N4 Maputo corridor road. The hospital is the only 24-hour district institution in the area; Witbank Hospital, which is a level 2 hospital, is 30 kilometres away.

Respiratory tract infections

A total of 11,8% of the patients in casualty were seen for respiratory tract infections. Respiratory tract infections in the third position of the conditions seen in the emergency room correlate with the findings of other researchers, who have found respiratory tract infections to be at the top of the lists of conditions seen in primary care.[5,6] It also supports the findings by Law and Yip that patients with minor ailments also visit emergency rooms.[7] The latter authors found that non-emergency use of the accident and emergency departments was the main cause of the over-utilisation of these services. Although the present study does not specifically look at the utilisation of the casualty service by patients with minor conditions, personal observations and comments from colleagues indicate that a sizeable number of patients present after hours and on weekends for conditions that can be successfully treated at a primary healthcare clinic or a community health centre (e.g. uncomplicated coughs and colds, urinary tract infections and sexually transmitted infections). The trend is the same at the Middelburg casualty room.

Lacerations

Lacerations are reported without specific reference to assault or MVA – they may be accidental or assault related. A total of 10,3% of the patients (N = 158) were treated for accidental lacerations. The discussion under assault injuries may apply here.

Soft tissue injuries

These are non-specified injuries, and 132 patients (8,6%) were treated for these conditions. The author suspects that bites, bruises and pain without visible injury post an accident fall into this category. The findings correlate with those from the study by De Villiers and De Villiers,[4] who found that lacerations, bites and bruises constituted 11,8% of the diagnoses made in casualty departments in Western Cape level 1 hospitals.

Gastroenteritis

A total of 6,4% (N = 98) of the patients were diagnosed with gastroenteritis. These findings contrast with those of Siddiqui and Ogbeide in Saudi Arabia, who found gastroenteritis as a cause of visits to the emergency room in 11% of the patients.[8] These authors considered gastroenteritis as a minor ailment, although the same cannot be said about the patients seen at Middelburg Hospital. Because of the scourge of HIV/AIDS, patients can present with gastroenteritis ranging from mild to severe dehydration, although the degree of dehydration was not specifically asked for. However, if the trend is that some patients with mild to moderate dehydration have visited the emergency room for their condition, there would be a need for patient education about the utilisation of emergency services. The managers of the health services in our district and in the province should consider opening a 24-hour community health centre for patients with minor ailments.

Fractures

A total of 5,3% (N = 81) of the patients were treated for fractures. The causes of the fractures were not specified, and could have been accidental or related to assault or MVA. The recurrent problem observed throughout the survey was incomplete patient records. This will need attention in an audit of the patient files at the hospital.

Poisoning

Patients treated for poisoning constituted 3,9% (N = 60) of the patients treated in casualty. The type of poisoning reported here is accidental poisoning, excluding parasuicide or suicide; see the discussion under parasuicide below.

Hypertension

Hypertension was found in 3,8% (N = 58) of the patients. The grade of hypertension was not specified, and it could be uncomplicated or complicated hypertension.

Parasuicide

This diagnosis was made in 3,3% (N = 51) of the patients treated in the emergency room during the period of the survey. In their study, De Villiers and De Villiers grouped poisoning and parasuicide together, and found that only 1,7% of patients were diagnosed as such.[4] The difference could be explained by the locations of the settings in which the studies were conducted; Middelburg in Mpumalanga is semi-rural, while the Western Cape is mostly urban.

Conclusions

Practising medicine at a district hospital is challenging and rewarding at the same time. The challenges are that a practitioner has to be knowledgeable and skilful in a wide range of disciplines. To remain in touch with the changing environment of medicine one has to keep on learning and sometimes attend refresher courses far away from the place of work.

The rewarding part of the practice is that many junior doctors benefit from the experience of the senior colleagues, who teach them basic skills. It is also rewarding to have students at this type of institution. Unlike tertiary hospital rotations, here the student is walked through different disciplines of medicine in a day's work in the casualty department. This is supported by Pierre Jaques, who wrote: "Seeing the amount of work and variety thereof at the district hospital, the latter constitutes an ideal set up for training in primary health care. Teaching

should take place in the set-up of rural hospital."[9] He added that if the concept of a 'university without walls' becomes a reality, there is no reason why rural doctors should not be accredited to a medical school with an appointment as part-time members of staff.[9] A district hospital is an ideal place for training doctors, especially junior doctors. George Kovacs said that skills taught to students at university, without "contextualising" the work place, are soon forgotten.[10] Cameron et al. postulated that a junior doctor usually learns the necessary skills as the need arises, as physicians are more often made aware of a given procedural need after they arrive in the community.[3]

The findings of this survey show clearly that a practitioner wishing to work at Middelburg Hospital should be skilful in managing common trauma patients and patients with complicated medical conditions, e.g. diabetes mellitus and hypertension, as well as managing acute poisoning, respiratory infections and gastroenteritis. In other words, the practitioner must have adequate diagnostic and therapeutic skills.

There is a need for competent doctors at district hospitals. Hill made an appeal to all generalists to obtain and maintain the necessary procedural skills pertaining to their type of practice and for the authorities governing the medical planning in this country to appreciate the absolute necessity of the "generalist" discipline.[11] Kelly reported that the scope of an expanded procedural skills set broadens with increased distance from a referral centre.[12] Because Middelburg Hospital is far away from the major tertiary institutions in the country, a wide range of procedures are performed daily by the casualty officer at the hospital, and acquiring and maintaining these skills is important to practice at this institution.

Acknowledging the contribution of remote hospitals to service delivery in Canada, Chiasson and Roy wrote: "we need to accept the expanded role that rural general practitioners play … These are necessary attributes for a healthy medical culture and will allow us to provide safe, high quality and cost effective medical care in the coming decades."[1] They recommended that support be provided to university departments to facilitate the creation of an adequate number of training positions that meet the needs of rural populations. My recommendation is that tertiary institutions in South Africa understand the role of the district hospital practitioners and make space for ongoing retraining of these physicians as the need arises.

The difficulty would be to recruit and retain professionals in the rural and underserved areas of South Africa. The difficulty of rendering health care to patients in remote communities is not peculiar to South Africa; it is experienced worldwide. Chiasson and Roy reported that "the difficulties in providing adequate health care to remote rural communities are not unique to Canada. In Australia the shortage of physicians in rural areas and the problem of health care delivery in non-urban settings have also been documented and a National Health Strategy has been documented".[1] I believe that most of the doctors emigrating from South Africa to Australia are recruited through this Strategy, as most of them work in the rural areas of Australia.

As South African practitioners we have a duty to support the RUDASA (Rural Doctors Association of Southern Africa) initiative to attract and retain doctors in the remote areas of the country to improve health care at our district hospitals, and to render health care to the large population that lives in rural areas.

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