How cheap is primary health care? Cost per script at the Heidedal Community Health Centre and National District Hospital in Bloemfontein

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Abstract

Background: It is essential to manage and budget for primary health care in order to deliver a sustainable, accessible and quality health service to the majority of the population. The aim of the study was to establish the cost per script at the Heidedal Community Health Centre (HCHC) and at the National District Hospital (NDH) in Bloemfontein and to evaluate prescribing patterns, the protocols and use of the Essential Drug List (EDL) and Standard Treatment Guidelines (STGs) and to budget more accurately for medicine.

Methods: During a two-month period, every fifth script dispensed at HCHC and NDH was included in the study and analysed until we had included 1 000 scripts from each facility.

Results: The mean number of items per script at the CHC was 3.3 and at the DH was 4.1, and the mean cost was R14.66 versus R64.69 respectively. At HCHC, 62 025 prescriptions were dispensed and at NDH 56 312 were dispensed at an estimated total value of R 4.5 million during 2002.

Conclusion: Many problem areas and incorrect prescribing patterns were identified and need to be addressed. Although the cost per script at primary care level is not high, the number of patients that need treatment is enormous. Primary health care is actually very expensive and good quality control is necessary.

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Background

It is essential to manage and budget for primary health care in order to deliver a sustainable, accessible and quality health service to the majority of the population. Medication and prescriptions are aspects that can be monitored and addressed, as guidelines for prescribing are available in the Essential Drug List (EDL) and the Standard Treatment Guidelines (STGs).[1] Little published information is available on this subject in South Africa.[2,3] Literature and studies from other countries are not appropriate, as health systems elsewhere differ a great deal from the system in South Africa.[4,5]

There are 23 clinics, 2 community health centres, a district, a secondary and a tertiary hospital in Bloemfontein.

Aim

The aim of this study was to establish the cost per script at the Heidedal Community Health Centre (HCHC) and at the National District Hospital (NDH) in Bloemfontein and to evaluate prescribing patterns, the protocols and the use of the EDL and STGs in order to budget more accurately for medicine. Differences in these between a community health centre (CHC) and a district hospital (DH) were identified for management purposes.

Setting and Methods

Heidedal Community Health Centre (HCHC):
This is a 12-hour-a-day outpatient clinic, with a 24-hour maternity service. Doctors are available only eight hours a day. Professional nurses manage adult preventative and curative services, such as the treatment of minor ailments and the follow-up of chronic conditions. Professional nurses manage the Mother and Child Unit, which consists of the Integrated Management of Childhood Illness (IMCI) clinic and a midwife obstetric unit (MOU). Doctors only manage referred patients already seen by professional nurses, private practitioners or secondary and tertiary specialists and work on an appointment basis. The doctor service is also curative. Only prescriptions from the curative sections and the IMCI clinic were included in the study, as the preventative clinics, like family planning, dispense their own drugs

and work only on carry cards. Medico-legal cases and applications for disability grants were also excluded from the study, as these are mainly administrative functions and medication is seldom issued.

National District Hospital (NDH): This hospital consists of a 24-hour casualty section, a victim support unit, and maternity, male, female and paediatric wards. A theatre for minor procedures and termination of pregnancy runs during the daytime. The outpatient division consists of an IMCI clinic, an antenatal and postnatal clinic, and adult curative and preventative services. Doctors also handle complicated cases and patients on secondary and tertiary drugs. All repeat prescriptions for secondary and tertiary drugs in Bloemfontein and its catchment areas were dispensed at NDH at the time of the study. Medico-legal cases, disability grant applications and family planning, as well as all prescriptions from the casualty and inpatient sections, were excluded from the study. As there is no community health centre in the part of the city where the hospital is situated, patients are referred to the District Hospital instead of to a community health centre for logistical reasons.

Scripts dispensed at the HCHC and NDH pharmacies were evaluated with a specific data form in order to obtain the required data. Every fifth script dispensed in a two-month period was included in the study until 1 000 scripts had been collected at each facility, first at the HCHC and then at the NDH. This was done during 2002.

Results

The demographic data of the patients are illustrated in Table I. At both facilities, females constituted close to 60% of the patients. The mean age of the patients at the NDH was 14 years older than at the HCHC.

According to the services rendered at the different facilities, nurses should see the majority of patients at the CHC, while doctors should see the majority at the DH. Table II indicates the different prescribers.

The mean number of items per script at the CHC was 3.3 and at the DH it was 4.1, with a mean cost of R14.66 and R64.69 respectively. Table III compares the different age groups regarding items and cost at the different facilities.

At the CHC, 84% of the prescriptions were for acute conditions, and at the DH, 69% of the prescriptions were for chronic conditions. The main differences between the HCHC and the NDH are that 17% of patients at the HCHC and 45% at the NDH received medication for hypertension or a cardiac problem. At the HCHC, chronic patients represent 16% of patients and are seen mainly by professional nurses, while at the NDH, chronic patients represent 68% of the patients and are mainly seen by doctors.

Regarding chronic conditions, Table IV illustrates the differences in cost between the facilities.

There were more patients with chronic conditions at the DH than at the CHC, especially with hypertension and cardiac conditions, as 167 such patients were included at the HCHC and 450 at the NDH.

The cheapest prescription at the HCHC was 49c for paracetamol and at the NDH it was 85c for vitamins. The most expensive prescription at the HCHC was R139.11 for 11 items for a diabetic patient with hypertension and an acute respiratory tract infection. At the NDH it was R881.70 for a dermatology prescription for a non-life threatening condition. The average cost per acute script at Heidedal was R11.04 and at NDH it was R27.36.

The use of the EDL and STGs were followed in the majority of cases at HCHC. At the NDH, first-line treatment guidelines were usually followed, but second-line treatment and the guidelines for gastrointestinal conditions were not followed.

At the NDH, 26% of patients received six or more items per script. A minimum of 20 to 30 pain tablets, depending on the pre-pack, were dispensed for acute conditions such as headache or a muscle pain.

Twelve percent of issued prescriptions at both facilities were repeat prescriptions. The repeat of non-essential drugs and drugs for acute conditions occurred frequently during the period of the study.

Discussion

The doctors working at the HCHC and NDH are all part of the Department of Family Medicine of the University of

Table I: Demographic profile of patients

		Heidedal CHC	National DH
Gender:	Male	42%	36%
	Female	58%	64%
Age:	Youngest	14 days	8 days
	Oldest	94 years	98 years
	Mean	39 years	53 years

Table II: Profile of prescribers

Prescriber	Heidedal CHC	National DH
Professional Nurse	80%	19%
Family Medicine (FM) Doctor	20%	56%
Specialist	0%	17%
Specialist + FM doctor	0%	8%

Table III: Comparison of mean items per script and mean cost by age group

Age group	HCHC mean items/script	CHCH mean cost	NDH mean items/script	NDH mean cost
< 12 years	1.9 (n=116)	R8.02	2.6 (n=92)	R19.02
12-65 years	3.4 (n=793)	R14.82	4.0 (n=644)	R62.41
> 65 years	4.3 (n=91)	R21.68	5.0 (n=264)	R86.18

Table IV: Mean cost of chronic scripts

Condition	HCHC	NDH
Hypertension and cardiac	R28.54 (n=167)	R81.34 (n= 450)
Diabetes	R53.95 (n=52)	R117.02 (n=84)
Epilepsy	R34.53 (n=15)	R73.02 (n=30)
Asthma/COPD	R41.96 (n=15)	R99.58 (n=77)

the Free State and receive the same information and guidelines. They also rotate at the different service areas and are therefore comparable.

The demographic data of the patients at the different facilities represent the different catchment areas, but are not entirely comparable, as the mean age at NDH is 14 years higher and therefore represents a different type of patient. It is a well-known fact that, with increasing age, patients need more items and more expensive scripts.[6] In an article on the number of drugs an aged patient needs, it was found that a typical elderly patient takes 13 different medications each year.[7]

The prescribers differ a lot, but are acting according to the guidelines.[8] Patients use the HCHC mainly as a first point of contact and receive treatment for minor ailments or the follow-up of controlled chronic conditions. Professional nurses see all these patients. Doctors only see uncontrolled, referred patients. This compares well with the study at the Diepkloof CHC, where nurses managed 71% of all consultations.[2] At the NDH, doctors see the chronic patients on medication not available at the lower levels, as well as those with acute conditions, as there is no CHC in the catchment area. The secondary and tertiary medication for the region is also dispensed here, which contributes to the high number of specialist prescriptions.

According to provincial guidelines, the average number of items must be three per patient.[9] In this study, only curative prescriptions were included, thus all patients attending for family planning and those without prescriptions were excluded. Consequently, 3.3 items per script at the HCHC can be considered within the limit. A study at the Diepkloof CHC in Soweto during 1990 found that the average number of items was 2.82 and the average cost per script was R6.31.[2] A study at the Alexandra CHC in Soweto during the same period found that there was between 1.65 and 2.43 items per prescription, but all prescriptions were included.[3] It is therefore difficult to make any comparisons between the different studies. The number of 4.1 items per script at the NDH is a little above the guideline, but this could be viewed as being within the limit when taking into account that this hospital is the only one in the region where repeat secondary and tertiary drugs are dispensed.

According to Dr Ayanda Ntsaluba, director-general of Health in South Africa, R200 is available per patient per year at the primary health care level.[10] At the HCHC, the average expenditure per patient is R175.96 per year, while an average of R776.28 is spent per patient per year at the NDH, although most of this is for secondary and tertiary drugs. The average cost per script in the private sector was found to be 4.7 times more expensive when compared with what was dispensed at Alexandra Health Care Centre in 1990.[3]

The guidelines of the EDL and STGs were followed very closely for all conditions at the HCHC. At the NDH, more medication is available and therefore there is more opportunity for deviation from the guidelines. The guidelines for the chronic conditions were followed in Heidedal, but follow-up and control seemed to be problematic. This contributes to the high costs and was identified as a major problem area that needs to be addressed.

A particular problem at the NDH was the treatment of gastrointestinal side effects with other drugs and the potential this created for drug interactions. An article on the use of drugs in the elderly stated that with more than five drugs on a prescription, the chances of adverse drug interactions more than double.[7] The fact that more drugs are available at the NDH may contribute to this problem.

At the HCHC, 62 025 prescriptions were dispensed, compared with 56 312 at the NDH, at an estimated total cost of R4.5 million during 2002.

From this study, it is obvious that there are major differences between the HCHC and the NDH, but also some areas of overlap. Exact guidelines are therefore necessary to identify the role of each facility in order to have the correct service package and referral system in place and to manage each facility optimally.

Conclusion

From the prescribing patterns, the following areas were identified as needing attention:

1. The treatment and follow-up of hypertension and the use of anti-hypertensive drugs
2. Different types of insulin and diabetes monitoring
3. Gastrointestinal drugs
4. Drugs used that are not on the EDL
5. Number of tablets prescribed for acute conditions, e.g. pain tablets
6. Repeat prescriptions where acute or non-urgent drugs are also repeated
7. Drugs prescribed when cheaper or better alternatives are available on the EDL

Differences between different health care facilities need to be identified and the information made known to the community in order to prevent patients being sent from one facility to another and to increase the accessibility of health services.

Although the cost per script is not high, the number of patients that need treatment is enormous. Primary health care is actually very expensive!

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