



Case Study

HEUTOWN DISTRICT: PLANNING AND RESOURCE ALLOCATION

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OBJECTIVES

- To develop skills in undertaking a situation analysis, including:
 - ◆ Evaluating the distribution of health care resources between health services;
 - ◆ Evaluating the distribution of health care resources between geographic areas;
 - ◆ Assessing staff workload patterns; and
 - ◆ Evaluating utilisation patterns.
- To develop skills in health service planning, with a focus on resource allocation.

OVERVIEW OF CASE STUDY

You have recently been appointed as the health manager for a district called Heutown. You have been given the attached background information on this district. (Although Heutown is a “hypothetical” district, the data in this background document is based on information derived from an existing health district in a middle-income African country).

Phase 1

Using the information contained in this document, evaluate the adequacy and appropriateness of the existing health services in your district. Although there are different health authorities (namely the Provincial Administration and local authorities) providing health services in your district, all health services will soon be brought under your control; i.e. you should evaluate all health services.

In particular, you should evaluate:

- The current distribution of health care resources between different health services;
- The current distribution of health care resources between different geographic areas;
- The relative workload of personnel at different facilities/services; and
- The relative utilisation patterns between different geographic areas.

You have been provided with pro-forma tables to assist you with this evaluation.

Phase 2

Using the information contained in the background document and the analysis conducted in Phase 1, develop a plan for the restructuring of health services in this district to improve the access of the resident population to primary care services.

You should take the following aspects into account when developing your plan:

- You should focus on redistributing health care resources (especially personnel) currently available within the district, but you may seek additional funding if adequately motivated;
- You should briefly comment on potential additional sources of finance for covering any increase in budget you may require to implement your plan; and
- You should specifically comment on the possibility of improved utilisation of private general practitioners for service delivery in your district.

Prepare a detailed proposal for the Regional Director documenting your plan and budget. This should contain:

- a brief situation *analysis* of your district (highlighting the health care needs of the resident population and the problems with the current distribution of health care resources);

- a detailed outline of your plan for restructuring health services in your district (including the aim and objectives of the plan and details of how services will be changed); and
- the estimated budget for the next financial year that will be required for you to implement the planned service restructuring, and a brief review of potential additional sources of finance.

BACKGROUND INFORMATION

Heutown is a rural district in a middle-income African country. It covers an area of approximately 18,000 km², and the population density is approximately 3.5 people per km². Most of the area is arid, with sheep and goat farming being the major activity. There are a small number of commercial farms in the south of the district which grow crops using irrigation methods. Along the coast, fishing is the major economic activity.

The main town in this district is Heutown, which is located 173 km from a major city in a neighbouring district. There is another “large” town (Tomstown), three smaller towns (Bupsville, Nicsinrivier and Solidorp), and a number of small settlements/villages (see Map).

The main access road (tarred) to the district runs from South to North through the middle of the district. All the towns and settlements in Heutown district are connected by gravel roads. The settlements in the south-east of the district are difficult to access, due to a large mountain range in this area.

DEMOGRAPHIC PROFILE

The population of the district is estimated to be 62,571. Approximately 50.4% of the population are males (31,538) and 49.6% are females (31,033). Table 1 indicates the age structure of the population.

Table 1: Age structure of Heutown district

Age group	Number of people
0-4	6,968
5-14	13,816
15-64	38,880
65+	2,907
TOTAL	62,571

The distribution of the population between the various towns is as follows:

Heutown:	16,577
Tomstown:	12,827
Bupsville:	5,120
Solidorp:	5,025
Nicsinrivier:	4,107
Rural settlements (north):	12,014
Rural settlements (south):	6,901

(Refer to Map of HEUTown District in resalloc1map.doc)

The average literacy rate is 61%. The unemployment rate in the district is 43%, and the average per capita income is \$1,010.

It has been estimated that approximately 8% of the population are members of private health insurance schemes.

HEALTH STATUS AND MAJOR HEALTH PROBLEMS

Table 2 provide information on the number of deaths and the potential years of life lost (PYLL), according to the Chapters of the ICD-9 classification system.

Table 2: Distribution of deaths and potential years of life lost (PYLLs) in Heutown by ICD-9 chapter

ICD Chapter	% of deaths	% of PYLLS
Infectious and parasitic diseases	15.96	22.84
Neoplasms	12.21	4.09
Endocrine, nutritional & metabolic diseases & immunity disorders	2.03	0.65
Diseases of the blood and blood-forming organs	0.31	0.25
Mental disorders	0.16	0.22
Diseases of the nervous system and sense organs	1.72	2.82
Diseases of the circulatory system	28.95	6.36
Diseases of the respiratory system	8.29	10.49
Diseases of the digestive system	1.72	1.66
Diseases of the genito-urinary system	1.72	1.37
Complications of pregnancy, childbirth and puerperium	0.16	0.18
Diseases of the skin and subcutaneous tissue	0.31	1.04
Diseases of the muscoskeletal system & connective tissue	0.00	0.00
Congenital anomalies	0.94	3.00
Certain conditions originating in the perinatal period	5.63	18.67
Symptoms, signs and ill-defined conditions	6.10	2.75
Accidents, poisoning and violence (external causes)	13.77	23.61

The infant mortality rate is 52 per 1,000 live births. Average life expectancy is 64.8 years. The teenage birth rate (i.e. percentage of all live births to women younger than 20 years of age) is 26%. The fertility rate is 3.1.

HEALTH SERVICES

The services available in Heutown district are described in detail below, according to geographic areas. There are two Provincial Administration community hospitals in the district (at Heutown and at Tomstown). There is also a Provincial Administration community health centre in Solidorp. These are the only curative facilities that are open on a daily basis. The main service providers in the rest of the Heutown district are the relevant local authorities. They visit each area which doesn't have a full-time service on a regular basis, and either provide services from a room located in a general amenities public service building, or from a mobile clinic.

All of these services are staffed by full-time nursing personnel, and there are no full-time doctors employed by the Provincial Administration or the local authorities. All medical officer cover is provided by local general practitioners, who work on a sessional basis in the two hospitals. All general practitioners work in these hospitals, as they use the facilities for treating their private patients. *Some* of the general practitioners also work as part-time District Primary Care Practitioners (DPCP).

The main component of these doctors' DPCP work is the provision of curative primary care services, largely to patients classified as indigent (i.e. they have obtained a certificate of indigency from the local magistrate) and social pensioners. These services are provided in the doctors' private consulting rooms.

The Provincial Administration supplies DPCPs with medicine and certain other medical supplies for state patients free of charge. Part-time DPCPs are paid on a fee-for-service basis and they submit statistics on the number of patients seen and procedures performed. DPCPs also receive a fee for dispensing medicines.

The specialist/regional hospital which serves this district is located 109km from Heutown and 351 km from the most northern settlement in the district. It serves as the referral hospital for a population of approximately 513,000. The following details are available for this hospital for the year under review:

Number of beds:	298
Number of inpatients:	20,543
Number of inpatient days:	80,323
Number of outpatient visits:	13,154
Total expenditure:	\$32,934,894
Cost per inpatient day:	\$388.81
Cost per outpatient visit:	\$129.60

Heutown

Hospital-based services

There is one community hospital in Heutown, which provides non-specialist medical and surgical services, and has casualty, maternity, x-ray, and pharmacy facilities. The following information was provided for this hospital:

Number of beds:	104
Number of inpatients:	5,416
Number of inpatient days:	29,152
Number of outpatient visits:	6,914
Total expenditure:	\$3,754,563
Cost per inpatient day:	\$119.36
Cost per outpatient visit:	\$39.79

The distribution of inpatient days, outpatient visits and patient day equivalents (i.e. a combination of inpatient and outpatient data) by geographic area was as follows:

Geographic area	Inpatient days	Outpatient visits	Patient day equivalents
Heutown	85%	92%	85.52%
Solidorp	5%	2%	4.78%
Rural settlements (south)	10%	6%	9.71%

There are no full-time medical officers at this hospital. Local private general practitioners provide medical cover, and are paid on a sessional basis (there are 6 GPs in Heutown). The nursing staff establishment was as follows:

Nursing services manager	1
Chief professional nurse	2
Senior professional nurse	4
Professional nurse	12
Senior staff nurse	8
Staff nurse	13
Senior nursing assistant	15
Nursing assistant	30

The distribution of the hospital's expenditure was as follows:

Sessional payments to doctors	\$284,569
Nursing staff	\$1,860,190
Support staff	\$R256,245
Pharmaceutical products	\$606,362
Other supplies	\$210,256
Other expenditure	<u>\$536,941</u>
TOTAL	\$3,754,563

The hospital was able to collect \$704,356 in patient fee revenue during the year under review. This money was returned to the provincial treasury (i.e. the hospital could not retain any of this revenue).

Non-hospital based primary care services

District Primary Care Practitioners (DPCP)

Two of the six GPs work as part-time DPCPs in Heutown. One only sees patients in Heutown, while the other visits one rural settlement once a week and another rural settlement once every four weeks. The relevant data for this DPCP work is as follows:

Total expenditure:	\$472,199
<i>Reported</i> number of visits:	21,689
No. of visits by Heutown residents:	19,086
No. of visits by residents of southern rural settlements:	2,603
Average cost per visit (including medicines and transport):	\$21.77

Note:

1. Total expenditure includes the cost of medicine dispensed and all DPCP fees;
2. the number of visits are those *reported* by DPCPs for purposes of claiming reimbursement - there is currently poor monitoring to determine whether these reflect actual services provided.

Local authority

There is a full-time preventive/promotive clinic run by the local authority in Heutown. This clinic employs 5 professional nurses, 4 nursing assistants, and an environmental health officer. The following data are available for the year under review:

Total expenditure:	\$754,896
Total number of visits:	19,762
Average cost per visit:	\$38.20

Tomstown

Hospital-based services

There is one community hospital in Tomstown, which provides non-specialist medical and surgical services, and has casualty, maternity, x-ray, laboratory, and pharmacy facilities. The following information was provided for this hospital:

Number of beds:	86
Number of inpatients:	5,934
Number of inpatient days:	20,591
Number of outpatient visits:	5,277
Total expenditure:	\$4,338,947
Cost per inpatient day:	\$194.14
Cost per outpatient visit:	\$64.71

The distribution of inpatient days, outpatient visits and patient day equivalents (i.e. a combination of inpatient and outpatient data) by geographic area was as follows:

Geographic area	Inpatient days	Outpatient visits	Patient day equivalents
Tomstown	69%	85%	70.26%
Bupsville	13%	7%	12.53%
Nicsinrivier	8%	5%	7.77%
Rural settlements (north)	10%	3%	9.45%

There are no full-time medical officers at this hospital. Local private general practitioners provide medical cover, and are paid on a sessional basis (there are 8 GPs in Tomstown). The nursing staff establishment was as follows:

Nursing services manager	1
Chief professional nurse	2
Senior professional nurse	5
Professional nurse	13
Senior staff nurse	9
Staff nurse	15
Senior nursing assistant	18
Nursing assistant	32

The distribution of the hospital's expenditure was as follows:

Sessional payments to doctors	\$350,100
Nursing staff	\$2,082,045
Support staff	\$325,542
Pharmaceutical products	\$752,236
Other supplies	\$242,981
Other expenditure	<u>\$586,043</u>
TOTAL	\$4,338,947

The hospital was able to collect \$1,008,171 in patient fee revenue during the year under review. This money was returned to the provincial treasury.

Non-hospital based primary care services

District Primary Care Practitioners (DPCP)

One of the eight GPs works as a part-time DPCP in Tomstown. He only sees patients in Tomstown, but some patients come from out of town to see him. The relevant data for this DPCP work in the year under review is as follows:

Total expenditure:	\$R189,444
<i>Reported</i> number of visits:	9 631
No. of visits by Tomstown residents:	8,683
No. of visits by residents of northern rural settlements:	948
Average cost per visit (including medicines and transport):	\$19.67

Note:

1. Total expenditure includes the cost of medicine dispensed and all DPCP fees;
2. the number of visits are those *reported* by the DPCP for purposes of claiming reimbursement - there is currently poor monitoring to determine whether these reflect actual services provided.

Local authority

There is a full-time preventive/promotive clinic run by the local authority in Tomstown. This clinic employs 1 senior professional nurse, 2 professional nurses, 2 nursing assistants, and an environmental health officer. The following data are available for the year under review:

Total expenditure:	\$563,666
Total number of visits:	13,307
Average cost per visit:	\$42.36

Bupsville

Hospital-based services

The Tomstown hospital is the nearest inpatient facility to Bupsville.

Non-hospital based primary care services

District Primary Care Practitioners (DPCP)

There are four GPs in Bupsville, two of whom work as part-time DPCPs. Both visit other towns or rural settlements: one visits Nicsinrivier once a week, and the other visits two rural settlements twice a month each. The relevant data for this DPCP work is as follows:

Total expenditure:	\$300,211
<i>Reported</i> number of visits:	10,252
No. of visits by Bupsville residents:	8,202
No. of visits by Nicsinrivier residents:	1,128
No. of visits by residents of northern rural settlements:	922
Average cost per visit (including medicines and transport):	\$29.28

Note:

1. Total expenditure includes the cost of medicine dispensed and all DPCP fees;
2. the number of visits are those *reported* by DPCPs for purposes of claiming reimbursement - there is currently poor monitoring to determine whether these reflect actual services provided.

Local authority

The preventive/promotive clinic, run by the local authority in Bupsville, is open 2 days a week. This clinic is staffed by 1 professional nurse, a nursing assistant, and an environmental health officer. They spend the rest of their time offering mobile services in the rural areas. The following data, for the services offered in Bupsville, are available for the year under review.

Total expenditure:	\$218,568
Total number of visits:	7,558
Average cost per visit:	\$28.92

Solidorp

Hospital-based services

The Heutown hospital is the nearest inpatient facility to Solidorp.

Non-hospital based primary care services

District Primary Care Practitioners (DPCP)

One of the two GPs in Solidorp works as a part-time DPCP. He visits one other fishing village on a weekly basis. In addition, some residents of nearby rural settlements come to visit him in Solidorp. The relevant data for this DPCP work is as follows:

Total expenditure:	\$215,770
<i>Reported</i> number of visits:	6,830
No. of visits by Solidorp residents:	5,737
No. of visits by residents of southern rural settlements:	1,093
Average cost per visit (including medicines and transport):	\$31.59

Note:

1. Total expenditure includes the cost of medicine dispensed and all DPCP fees;
2. the number of visits are those *reported* by the DPCP for purposes of claiming reimbursement - there is currently poor monitoring to determine whether these reflect actual services provided.

Provincial Administration Community Health Centre

There is a full-time curative Community Health Centre (CHC), which provides only ambulatory services, in Solidorp run by the Provincial Administration. This CHC employs 2 professional nurses and 3 nursing assistants. The following data are available for the year under review:

Total expenditure:	\$231,770
Total number of visits:	6,542
Average cost per visit:	\$35.43

Local authority

There is a full-time preventive/promotive clinic run by the local authority in Solidorp. This clinic employs 1 professional nurse. The following data are available:

Total expenditure:	\$58,358
Total number of visits:	3,164
Average cost per visit:	\$18.44

Nicsinrivier

Hospital-based services

The Tomstown hospital is the nearest inpatient facility to Nicsinrivier.

Non-hospital based primary care services

There are no district primary care practitioners located in Nicsinrivier. One of the part-time DPCPs located in Bupsville visits Nicsinrivier once a week. A general practitioner recently established a practice in Nicsinrivier, but is not contracted with the Provincial Administration to provide DPCP services.

Local authority

The clinic run by the local authority in Nicsinrivier is open 4 days a week. It provides mainly preventive/promotive services, but offers *very limited* curative care for minor ailments. This clinic is staffed by 2 professional nurses and 1 nursing assistant. They spend the rest of their time offering mobile services in the rural areas. The following data, for the services offered in Nicsinrivier, are available for the year under review:

Total expenditure:	\$251,550
Total number of visits:	7,488
Average cost per visit:	\$33.59

Rural settlements (North)

Hospital-based services

The Tomstown hospital is the nearest inpatient facility for residents of rural settlements in the north of the Heutown District.

Non-hospital based primary care services

District Primary Care Practitioners (DPCP)

One of the DPCPs in Bupsville visits two of the rural settlements twice a month (see information under Bupsville). In addition, there is one GP in a small rural settlement who works as a part-time DPCP. She visits other rural settlements in the area: 2 are visited once a week, while another is visited once every two weeks. The relevant data for this DPCP work is as follows:

Total expenditure:	\$236,911
<i>Reported</i> number of visits:	11,763
Average cost per visit (including medicines and transport):	\$20.14

Note:

1. Total expenditure includes the cost of medicine dispensed and all DPCP fees;
2. the number of visits are those *reported* by DPCPs for purposes of claiming reimbursement - there is currently poor monitoring to determine whether these reflect actual services provided.

Local authority

Each settlement in this rural area is visited on a regular basis, by staff based at the Nicsinrivier and Bupsville clinics. The frequency of visits depends on the location and size of the settlement, and ranges from once a week to once a month. Services are provided either from a room located in a general amenities public service building, or from a mobile clinic. This mobile/satellite service provides mainly preventive/promotive services, but offers *very limited* curative care for minor ailments. The staff involved in these services are 3 professional nurses and 2 nursing assistants (who spend part of their time working in fixed clinics in the larger towns). One of the professional nurses has received training as a primary health care nurse/nurse clinician.

The following data, for the services offered in the northern rural settlements, are available for the year under review:

Total expenditure:	\$268,960
Total number of visits:	6,328
Average cost per visit:	\$42.50

Rural settlements (South)

Hospital-based services

The Heutown hospital is the nearest inpatient facility for residents of rural settlements in the south of the Heutown District.

Non-hospital based primary care services

District Primary Care Practitioners (DPCP)

There are no part-time DPCPs located in any of the rural settlements in the south of the district. However, one of the DPCPs located in Heutown visits one rural settlement once a week and another rural settlement once every four weeks. In addition, the DPCP in Solidorp visits a fishing village once a week (see information under Heutown and Solidorp). There is one general practitioner who works in one of the rural settlements (near the mountain range) who does not presently have a contract with the Provincial Administration to undertake DPCP work.

Local authority

Each settlement in this rural area is visited on a regular basis, by a professional nurse employed specifically for this purpose. The frequency of visits depends on the location and size of the settlement, and ranges from once a week to once a month. Services are provided either from a room located in a general amenities public service building, or from a mobile clinic. This mobile/satellite service provides mainly preventive/promotive services, but offers *very limited* curative care for minor ailments. The professional nurse has *not* received training as a primary health care nurse/nurse clinician.

The following data, for the services offered in the southern rural settlements, are available for the year under review:

Total expenditure:	\$189,016
Total number of visits:	5,365
Average cost per visit:	\$35.23

Due to the inaccessibility of the settlement behind the mountain range, there is a full-time professional nurse based here. The following data, for the services offered by this nurse, are available:

Total expenditure:	\$167,700
Total number of visits:	2,869
Average cost per visit:	\$58.45

ADDITIONAL INFORMATION

The following information may be of assistance in evaluating the current service provision, and in developing a plan for restructuring the health services in Heutown district.

A useful measure of total activity levels within a hospital is that of “patient days”, which is a composite measure of inpatient and outpatient care. An assumption frequently used to calculate “patient days” is that an inpatient day costs three times as much as an outpatient visit. Therefore, “patient days” for a particular hospital = the number of inpatient days + 1/3 (a third) of the number of outpatient visits.

Salary scales for key clinical personnel are provided in Table 3. Note that the Provincial Administration and the local authorities pay their staff on different scales. The table reflects the average mid-point salaries for each category of personnel.

Table 3: Annual salary scales of key clinical personnel in full-time employ of the state

Personnel category	Provincial Administration	Local Authorities
Senior medical officer	64,980	102,708
Medical officer	52,170	---
Nursing services manager	57,443	71,408
Chief professional nurse	48,420	67,236
Senior professional nurse*	39,977	47,302
Professional nurse	30,273	46,736
Senior staff nurse	28,107	---
Staff nurse	20,859	29,400
Senior nursing assistant	18,000	---
Nursing assistant	13,890	25,467
Environmental health officer	---	50,071

* Primary health care nurses (nurse clinicians) are generally paid on the senior professional nurse salary scale.

Expected price increases between the year for which data are presented in this case study and the following year are as follows:

Salary increases: 6%
 Pharmaceuticals: 15%
 Other supplies: 12%

Any additional personnel costs associated with equalising salaries between staff currently employed by different health authorities will be borne out of the “Improving conditions of service” budget vote, and thus do not need to be taken into account in the health budget.

A Committee has recently reviewed the public sector’s pharmaceutical policy and has recommended implementing an Essential Drug List (EDL). If an EDL is implemented, it is predicted that the *present* expenditure on pharmaceutical products would be halved.

Your evaluation of health services in Heutown may be assisted by comparing Heutown indicators with the national averages (see Table 4).

Table 4: National averages of key health service indicators

HOSPITAL INDICATORS	
Beds per 1,000 population (Community Hospitals)	1.05
Beds per 1,000 population (All Acute Hospitals)	2.43
Inpatient days per capita (Community Hospitals)	0.26
Inpatient days per capita (All Acute Hospitals)	0.63
Bed occupancy (Community Hospitals)	68.3%
Average length of stay (Community Hospitals)	6.85
Nurses per bed (Community Hospitals)	0.7
Patient days per nurse (Community Hospitals)	473.97
AMBULATORY CARE INDICATORS	
Ambulatory visits per capita per year (All hospital OPDs, clinics & DPCPs)	1.8
Ambulatory visits per capita per year (Community hospital OPDs, clinics & DPCPs)	1.18
Non-hospital ambulatory visits per nurse per year	2,099
PERSONNEL AVAILABILITY INDICATORS	
Population per nurse (All health services)	368.75
Population per nurse (All services excluding academic and tertiary hospitals)	570.17
Population per environmental health officer	24,337
FINANCING INDICATORS	
Fee revenue as a proportion of recurrent expenditure (Community Hospitals)	11.1%

Table A: Distribution of Heutown health care resources by level of care

	Expenditure	% of Total	Professional Nurses*	Enrolled Nurses**	Total Nurses	% of Total
Community Hospitals						
Heutown						
Tomstown						
SUB-TOTAL						
Curative PHC services						
Solidorp Community Health Centre						
Heutown DPCPs						
Tomstown DPCPs						
Bupsville DPCPs						
Solidorp DPCPs						
Northern rural DPCPs						
SUB-TOTAL						
Preventive PHC services						
Heutown local authority clinic						
Tomstown local authority clinic						
Bupsville local authority clinic						
Solidorp local authority clinic						
Nicsinrivier local authority clinic						
Northern rural local authority services						
Southern rural local authority services						
SUB-TOTAL						
TOTAL						

* Professional nurse category: Assumed to include all professional nurses including nursing services manager

** Enrolled nurse category: Assumed to include all staff nurses and nursing assistants

Table B: Distribution of Heutown health care resources by geographic area

	Expenditure	Per capita Expend.	Nurses	Population Per Nurse	Population
Heutown					
Heutown Community Hospital-Inpatient	*		*		
Heutown Community Hospital-OPD	*				
Heutown DPCPs	*				
Heutown local authority clinic	*		*		
SUB-TOTAL	*		*		16,577
Tomstown					
Tomstown Community Hospital-Inpatient					
Tomstown Community Hospital-OPD					
Tomstown DPCPs					
Tomstown local authority clinic					
SUB-TOTAL					12,827
Bupsville					
Tomstown Community Hospital-Inpatient					
Tomstown Community Hospital-OPD					
Bupsville DPCPs					
Bupsville local authority clinic			*		
SUB-TOTAL					5,120
Solidorp					
Heutown Community Hospital-Inpatient					
Heutown Community Hospital-OPD					
Solidorp Community Health Centre					
Solidorp DPCPs					
Solidorp local authority clinic					
SUB-TOTAL					5,025
Nicsinrivier					
Tomstown Community Hospital-Inpatient					
Tomstown Community Hospital-OPD					
Bupsville DPCPs					
Nicsinrivier local authority clinic			*		
SUB-TOTAL					4,107
Rural settlements (North)					
Tomstown Community Hospital-Inpatient					
Tomstown Community Hospital-OPD					
Tomstown DPCPs					
Bupsville DPCPs					
Northern rural DPCPs					
Northern rural local authority services			*		
SUB-TOTAL					12,014
Rural settlements (South)					
Heutown Community Hospital-Inpatient					
Heutown Community Hospital-OPD					
Heutown DPCPs					
Solidorp DPCPs					
Southern rural local authority services					
SUB-TOTAL					6,901
TOTAL					62,571

- Calculate only those cells containing an asterisk
- Expenditure on inpatients = (Inpatient days x % of inpatient days attributable to that town) x cost per inpatient day
- Expenditure on outpatients = (Outpatient visits x % of OPD visits attributable to that town) x cost per outpatient visit
- Nurses (hospital based) = Total nurses in hospital x % of patient day equivalents attributable to that town
- Nurses (local authorities) = Number of nurses x (number of days per week worked in that town or area / 5 days)

Table C: Relative workload of nurses by facility

	Nurses	Patient Day equivalents[#] or visits	Patient day equivalents or visits per Nurse
Heutown			
Heutown Community Hospital	85	*	*
Heutown local authority clinic	9	*	*
Tomstown			
Tomstown Community Hospital	95		
Tomstown local authority clinic	5		
Bupsville			
Bupsville local authority clinic	0.8	*	*
Solidorp			
Solidorp Community Health Centre	5		
Solidorp local authority clinic	1		
Nicsinrivier			
Nicsinrivier local authority clinic	2.4		
Rural settlements (North)			
Northern rural local authority services	1.8	*	*
Rural settlements (South)			
Southern rural local authority services	2		
TOTAL - HOSPITALS	180		
TOTAL - CLINICS	22		
TOTAL - CHCs	5		

Calculate only those cells containing an asterisk (*)

For hospitals, calculate "patient day equivalents" which = Inpatient days + 1/3 OPD visits. For clinics and CHCs, use actual number of visits

Table D: Relative service utilisation by facility and area

	Inpatient Days or no. of visits [#]	Population	Inpatient Days Per Capita	Ambulatory Visits Per Capita
Heutown		16 577		
Heutown Community Hospital-Inpatient	*		*	
Heutown Community Hospital-OPD	*			*
Heutown DPCPs	*			*
Heutown local authority clinic	*			*
Total ambulatory visits	*			*
Tomstown		12,827		
Tomstown Community Hospital-Inpatient				
Tomstown Community Hospital-OPD				
Tomstown DPCPs				
Tomstown local authority clinic				
Total ambulatory visits				
Bupsville		5,120		
Tomstown Community Hospital-Inpatient				
Tomstown Community Hospital-OPD				
Bupsville DPCPs				
Bupsville local authority clinic				
Total ambulatory visits				
Solidorp		5,025		
Heutown Community Hospital-Inpatient				
Heutown Community Hospital-OPD				
Solidorp Community Health Centre				
Solidorp DPCPs				
Solidorp local authority clinic				
Total ambulatory visits				
Nicsinrivier		4,107		
Tomstown Community Hospital-Inpatient				
Tomstown Community Hospital-OPD				
Bupsville DPCPs				
Nicsinrivier local authority clinic				
Total ambulatory visits				
Rural settlements (North)		12,014		
Tomstown Community Hospital-Inpatient				
Tomstown Community Hospital-OPD				
Tomstown DPCPs				
Bupsville DPCPs				
Northern rural DPCPs				
Northern rural local authority services				
Total ambulatory visits				
Rural settlements (South)		6,901		
Heutown Community Hospital-Inpatient	*		*	
Heutown Community Hospital-OPD	*			*
Heutown DPCPs	*			*
Solidorp DPCPs	*			*
Southern rural local authority services	*			*
Total ambulatory visits				*
TOTAL - HOSPITAL INPATIENTS				
TOTAL - HOSPITAL OPD				
TOTAL - DPCPs				
TOTAL - CLINICS & CHCs				
TOTAL - ALL AMBULATORY VISITS				

[#] Calculate only those cells containing an asterisk (*)
 For hospitals, calculate Inpatient days x % of inpatient days attributable to that town and outpatient visits x % of OPD visits attributable to that town