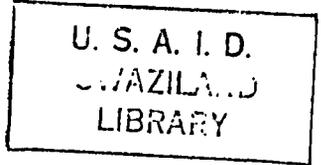


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SWAZILAND MINISTRY OF HEALTH

HEALTH SERVICES UNIT COSTING SYSTEM
TRAINING AND IMPLEMENTATION



Prepared for
Swaziland Ministry of Health
United States Agency for International Development
Management Sciences for Health
Primary Health Care Project

Prepared
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**Health Services Unit Costing System
Training and Implementation**

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ABSTRACT

This is the third element of the project to improve financial management within the Ministry of Health. The previous two sought to improve the level of knowledge and compliance with financial management policies and procedures through the production of a procedures manual and formal and on the job training. The purpose of this assignment is to implement the health services costing system through both formal and on the job training.

The health services costing system involves the collation of monthly management statements, details of personnel time allocation and patient contact information on customised spreadsheets. The resulting six monthly reports can be used to compare cost efficiency, plan the allocation of resources and to provide a basis for setting user fees.

To implement the system formal courses were presented to administrative and accounting staff while counterparts also attended introductory and intermediate spreadsheet courses. In addition all participating responsibility centres were visited to provide on the job training and to collect details of personnel time allocation and patient contacts. This information was used to test the costing spreadsheets and to produce the national base line data for all participating responsibility centres for the year ended 31 March 1991.

Some of the detailed information required to cost services was not previously maintained and estimates were therefore made in conjunction with responsibility centre staff. Now that the system has been implemented and a Health Services Unit Costing Procedures Manual produced, detailed input information should be available on an ongoing basis for the production of six month summary reports.

The base line data produced should give the Ministry a clearer view of how its resources were allocated during the year ended 31 March 1991. It should also enhance the quality of subsequent unit costs by providing a standard against which to monitor the relationship between financial inputs in the form of personnel, drugs and other resources and health services delivered.

1 OBJECTIVES

The purpose of this assignment was to implement the Health Services Unit Costing System through both formal and on the job training. The objectives were to;

- o enhance the Ministry's budgeting process through documenting the actual cost of services provided
- o improve the monitoring and control of expenditure by enabling the comparison of actual expenditure against calculated average costs
- o provide detailed managerial accounting information on the use of resources in service delivery
- o evaluate the use and allocation of the Ministry's scarce resources for the provision of services
- c provide information for use by the Ministry in determining appropriate fee policies for cost recovery

2 METHODOLOGY

To achieve the above objectives the following approach was adopted.

- 2.1 Prepare and present formal introductory training courses to the following;
 - a) Warrant holders and administrators
 - b) Public health unit supervisors
 - c) Clinic supervisors
 - d) Cost accounting staff
 - e) Dispensary staff
- 2.2 Together with cost accounts staff, visit warrant holders at their responsibility centres to provide on the job training and to collect information to produce national base line data.
- 2.3 Test the costing spreadsheets and familiarise cost accounting staff with their operation by producing national base line data for the year ending 31 March 1991.
- 2.4 Review the costing spreadsheets and make any changes necessitated by the base line data exercise.
- 2.5 Produce a Unit Costing Procedures Manual for inclusion in the Financial Management and Procedures Manual.
- 2.6 Assess the level of knowledge attained and compliance with the system.
- 2.7 Produce a final summary report.

3 FORMAL TRAINING COURSES

3.1 Objectives

Formal training courses aimed to familiarise staff with the Health Services Unit Costing System by;

- a) explaining the origins and objectives of the costing system.
- b) convincing staff of the benefits of monitoring and evaluating resource allocation on a regular basis at responsibility centre and national level.
- c) teaching, through lectures, practical case studies and discussion the concept of unit costing and its application to the Ministry of Health.
- d) explaining the main features of the system such as procedures for the capture of data at responsibility centres and its processing into six monthly national reports.
- e) arranging computer training for cost accounts staff responsible for data entry to the costing spreadsheets.

Two courses were developed, one for warrant holders and cost accounts staff and one for dispensary staff while cost accounts staff received basic and intermediate computer training.

3.2 Warrant holders and cost accounts staff

Warrant holders are responsible for collecting details of patient contacts, personnel time allocation, drug charges and monthly management statements. Cost accounts staff input these into costing spreadsheets to produce six monthly reports. This course introduced the main features of the costing features in preparation for visits to responsibility centres to collect inputs to the base line data. It was attended by;

- a) Hospital administrators
- b) Public health unit supervisors
- c) Clinic supervisors
- d) Cost accounting staff

Topics covered were;

- o concept of unit costing
- o objectives of the costing system
- o workings and administration of the system
- o definition of inputs and procedures for their collection

Formal Training Courses

Participants completed a pre and post course evaluation and a four part case study (Appendix B - course notes).

Four courses were held.

In addition, the five cost accounts staff responsible for data input and six monthly reports were given an introductory computer course by the consultant followed by an introductory spreadsheet course at an outside firm. They received certificates of completion and two staff were subsequently sent on an intermediate spreadsheet course.

3.3 Dispensary staff

This course was developed to introduce the drugs and medical supplies section of the costing system and to explain the new procedures for maintaining drug costing records.

Topics covered were;

- o concept of unit costing
- o objectives of the costing system with emphasis on the drugs and medical supplies section
- o workings and administration of the system
- o new documentation to support the drugs and medical supplies section
- o procedures for their maintenance

Participants completed a pre and post course evaluation and a three part case study (Appendix C - course notes).

Two courses were held.

4 ON THE JOB TRAINING

4.1 Objectives

It was decided that the best way to provide on the job training was to use the system to produce base line data with the most recent available data. In this way staff would gain hands on experience in the system's workings while their duties and responsibilities could be clearly established. The exercise had three elements;

- 1 Visit warrant holders at their responsibility centres to collect and review base line data inputs.
- 2 Train counterparts in the collection and entry of data and in the use of costing spreadsheets.
- 3 Visit hospital and health centre dispensaries to monitor the implementation of the drug costing system.
- 4 Produce and base line data for the year ended 31 March 1991.

4.2 Visit warrant holders

All hospital, health centre, public health unit and clinic responsibility centres were visited in addition to three mission hospitals. Visits were made by the consultant and the cost accounts person responsible for the particular region. The contents of the formal training courses were reviewed and inputs for the period 1 April to 31 March 1991 were collected where available. Where details of patient contacts and personnel time allocation were not available estimates were made.

4.3 Train counterparts

To enhance the long term sustainability of the costing system five counterparts were selected for training in the collection of data and the production of six monthly unit cost reports.

Counterparts initially attended the warrant holders and cost accounts staff course after which they accompanied the consultant on visits to responsibility centres. These visits established the unit costing responsibilities of warrant holders and counterparts and introduced counterparts to the origins of inputs to the costing spreadsheets. Counterparts also assisted in the collection of base line inputs.

On the Job Training

Counterparts were then given an introduction to computers and the disk operating system after which they attended an introductory spreadsheet course. To ensure that minor errors which may arise in the day to day use of the costing spreadsheets can be quickly dealt with without halting the unit costing process, the two counterparts at headquarters also attended an intermediate spreadsheet course.

The detailed workings of the costing spreadsheets were explained to counterparts and they were given examples of completed data input forms to enter.

4.4 Monitor the implementation of the drug costing system

During visits to hospitals and health centres the new forms used to document and cost drug issues was distributed to dispensary staff. Some responsibility centres were then revisited to monitor and their usage and to discuss the costs produced by them.

4.5 Produce base line data

Once costing inputs for the year ended 31 March 1991 had been discussed and collected at responsibility centres the consultant and counterparts input the data into the costing spreadsheets. Draft six monthly unit costing reports were then printed and checked by the consultant to the input forms and the Treasury management statements from which financial data was taken.

The consultant reviewed the preliminary six month unit cost reports and in some cases revisited responsibility centres to discuss the draft reports with counterparts and warrant holders.

Base line data is discussed in more detail in the next section of this report.

5 BASE LINE DATA

5.1 Introduction

National base line data for the year ended 31 March 1991 was compiled primarily as a means of testing the Health Services Unit Costing System and to familiarise staff with its workings.

During the period under review some of the procedures now prescribed in the Financial Management and Procedures Manual and the Health Services Unit Costing System were either not in place or were not consistently adhered to. The following considerations should therefore be borne in mind when reviewing the base line data and making comparisons with subsequent unit costing reports.

The unit costing system's allocation of indirect costs to services delivered is entirely dependent on the allocation of personnel time. Prior to the system's implementation this information was not collected in the detail required by the system. Estimates provided by supervisory staff were therefore used.

At many responsibility centres staff movements were not reported to the Salaries Section at Headquarters. As a result staff were paid under a one responsibility centre while working at another. The effect of is to artificially increase unit costs at the facility where the staff member is paid and to lower them at the responsibility centre where he or she is in fact working.

For base line data purposes only the actual staff working at a responsibility centre were taken into account. Consequently direct personnel costs, which should normally exceed fifty percent of a centre's total personnel and indirect costs are, in some cases, much less. This effect is reflected in the unit costs of centres such as Dvokolwako Health Centre and the Shiselweni Region clinics.

Some responsibility centres recorded only the number of inpatients and not the number of inpatient days required by the system. Averages of the length of inpatient stays have used in such instances. Estimates were also used where details of patient contacts at outreaches conducted by public health units were not available.

Base Line Data

A further consideration is that because many responsibility centres did not submit monthly management statements during the period under review, costs were entered from monthly statements provided by the Treasury. These include charges from the Central Medical Stores, the Central Transport Authority and Government Central Stores which are processed one month in arrears. The corresponding charges shown on the costing spreadsheets for the six months to September 1990 are therefore for only five months while charges for the subsequent six months are for seven months.

Average drug and medical supplies figures are therefore slightly understated for the first six month period and correspondingly overstated in the second. This is also true to a lesser extent of indirect costs which include transport and stores charges.

5.2 Interpretation of unit costs

The Health Services Unit Costing System provides estimates of the value of individual services provided at health facilities. They indicate the relationship between the costs of personnel, drugs and medical supplies, outside services and consumable stores and services provided at hospitals, public health units and clinics. The six monthly unit cost reports can be used to compare cost efficiency, to plan the allocation of resources and to set user fees.

To compare cost efficiency, comparisons should be made between departments providing the same services at different facilities. Comparisons should also be made over a period of time so as to track fluctuations within departments from one period to another. Unit costs of specific services which vary significantly from the national averages should then be investigated.

The greatest cost element within the Ministry of Health is personnel. Direct personnel costs should therefore account for at least half of a facility's costs. Where this is not so the facility may be operating without its full complement of staff. This is true in some facilities where staff paid at responsibility centres are in fact working elsewhere. Alternatively the level of other indirect resources allocated to the facility may be unusually high and should be checked.

Base Line Data

In reviewing the level of total personnel and indirect costs account should also be taken of the level and quality of patient care. Referral centres generally provide a higher level of care than do more remote facilities resulting in higher unit costs. However, if attendance rose sharply at a remote centre and was not matched by the allocation of additional resources; unit costs would fall as presumably would the quality of patient care provided.

The next highest single cost component is drugs and medical supplies. Variances in the value of drugs dispensed by departments arise from differing levels of service provided. Outpatients, for example, generally require less drugs than patients undergoing operations. Some facilities may show lower than average unit costs as a result of sound drug management and prescribing practices. However, drug costs will also be low if no supplies were available. Where drug stocks are incorrectly managed unit costs will rise to reflect consequent wastage.

Comparisons should also be made between the costs of services provided at hospitals, public health units and clinics. For example, the cost of providing curative outpatient services is lowest at clinics and highest at hospitals. A further possibility is to compare the current cost of ancillary services such as catering with the prices charged by private sector organisations to provide them.

Base line data is reviewed in detail in appendix E.

6 ASSESSMENT OF IMPACT

6.1 Level of knowledge

To assess the level of knowledge attained on both formal courses a course evaluation questionnaire was drafted and attached to the course notes (appendices B and C). Participants completed it at the beginning of each course and again at the end.

The results were;

	No of participants	Average mark
Pre course	42	57 %
Post course	42	82 %
Gain		25 %

6.2 Compliance with the system

The level of compliance with the Health Services Unit Costing system can only be fully assessed at the end of each six months when unit cost summary reports must be produced. Because the system was only introduced at the beginning of this assignment, no six monthly summary six monthly reports are due yet.

However, details of personnel time allocation and patient contacts were being kept in the new formats at those responsibility centres which were revisited to discuss preliminary unit costs produced during the base line data exercise.

The distribution of the Health Services Unit Costing manual should enhance the level of compliance with the system.

7 AMENDMENTS TO THE COSTING SYSTEM

As a result of the base line data exercise a number of changes and enhancements were made to the unit costing system.

7.1 Health Information System Financial Report

As a counter check to patient contact data provided by responsibility centres and as a backstop should some facilities not submit such data timeously, the Primary Health Care Project produced a programme to summarise, on a six monthly basis, patient contact data collected by the Health Information System.

7.2 Costing spreadsheets

Some minor changes were made to the format of the costing spreadsheets. For example, printouts now show the name of the operator and the date of production.

7.3 Unit Costing manual

The unit costing manual has been reworked and combined into the format of the Financial Management Policies and Procedures Manual. It includes the drug costing system.

8 RECOMMENDATION

The momentum generated by the implementation of the Health Services Unit Costing System should be maintained. There are two significant threats to the sustainability of the system.

The first is that some errors in data and file manipulation are likely to occur over time as cost accounts staff continue to learn the intricacies of what is a complex spreadsheet system. Such errors may result in a loss of user confidence in the integrity of the six monthly figures produced by the system.

The second is that as report users become familiar with the information produced they may request changes in the format and detail of reports and calculations necessitating complex changes to the structure of spreadsheets. If the system cannot be successfully enhanced users may similarly make less use of its output.

To prevent either of the above it is suggested that someone, preferably within the civil service, with a thorough knowledge of the spreadsheet programme used and the concept of unit costing be identified and briefed as to its workings. The person identified should be able to give a day or two of their time each month as required for approximately six months. This time would be used to resolve any medium term teething problems which may occur and more importantly to assist cost accounts staff in making any changes to spreadsheet structure requested by the system's report users.

Consideration should be given to identifying such a person either in the Government Computer Centre or in the form of a local accounting firm.

APPENDIX A

SCOPE OF WORK
FOR

UNIT COSTING SYSTEM TRAINING AND
IMPLEMENTATION CONSULTANCY

A) Purpose of the Consultancy

It is planned that this consultancy will achieve the following:

- i. Improve the Ministry's budgeting process;
- ii. Improve expenditure control;
- iii. Provide detailed managerial accounting information on the use of resources in the provision of services;
- iv. Provide information for use by the Ministry in determining appropriate fee policies for cost recovery.

B) Methodology

- i. Visit each region, and each programme/support unit, and through formal seminars and on-the-job training, implement the unit costing system.
- ii. carry out an assessment to test the level of knowledge attained and the compliance with the system

January 09, 1991

APPENDIX B

Swaziland Primary Health Care Project

Ministry of Health
Mbabane
Swaziland

Implementation of Health Service Costing System

COURSE NOTES

HOSPITAL ADMINISTRATORS AND NURSING SUPERVISORS

1 Introduction

Course leader introduces himself and asks participants to do the same.

Course leader sets out the objectives of the course. To ensure that participants know;

- o what is meant by unit costing
- o objectives of the health service costing system
- o how to collect data for the ministry's health service costing system

2 Completion of pre course evaluation forms

Distribute the evaluation questionnaire for completion by participants.

3 What is meant by unit costing?

The process of unit costing is the calculation of the estimated cost of each individual unit of service from summary information such as total costs and total units of service.

In the health service costing system expenditure on personnel and consumable stores represents the cost. Outpatient visits, inpatient days and contacts with service departments are units of service.

The unit costs produced by this system are therefore the estimated values of units of service provided per patient contact at cost centres.

4 Case study

See the attached case study.

Implementation of Health Service Costing System

5 Objectives of the health service costing system

The aims of the health service costing system are to;

- a) evaluate the use and allocation of the ministry's scarce resources for the provision of services
- b) improve the ministry's budgeting process through documenting the actual cost of services provided
- c) improve the monitoring and control of expenditure by comparing actual expenditure (by facility type or health service element) against calculated average costs
- d) provide detailed managerial accounting information on the use of resources in the provision of services (direct and indirect)
- e) provide information for use by the ministry in determining appropriate fee policies for cost recovery

6 Elements of the health service costing system

- a) Costing systems are produced on computer and have been developed for the three levels of service;
 - hospitals and health centres
 - public health units
 - clinics
- b) Reports are produced for each level of service every six months in regional and national detail. Distribution is as follows;
 - Regional - each facility included in the report
 - Regional Health Management Team
 - National - all Regional Health Management Teams
 - all hospitals and health centres get hospital report
 - all public health units get PHU report
 - all Clinic Supervisors get clinics report
 - senior ministry staff get all reports
- c) Only recurrent ministry of health expenditure is taken into account. The following indirect cost items are excluded from unit cost calculations;
 - office equipment and furniture
 - machinery and equipment
 - provision for depreciation
 - donor contributions

Implementation of Health Service Costing System

d) The system is controlled by the Financial Controller. Day to day responsibility for collecting input information, calculating unit costs and producing reports rests with the headquarters cost accounts person. She is assisted by four regional cost accounts people.

7 Inputs to the health service costing system

Units - See definition of units

Costs - Direct (eg food, drugs and medical supplies and personnel costs)

- Indirect (eg CTA charges, communication and travelling costs)

NB Personnel time allocation

The SMO, PHU or clinic supervisor must estimate the amount of time that each member of staff spends on each service activity.

Implementation of Health Service Costing System

Units of service

Hospitals and Health Centres

1	Wards	inpatient day
2	Operating theatre	operation
3	General & private outpatients	visit (first and reattendances)
4	Laboratory	laboratory test
5	X Ray	patient who uses X ray department
6	Dental, psychiatric, eye and physiotherapy units	patient visit
7	Orthopaedic workshop	appliance
8	Mortuary	body
9	Mobile clinics and outreach	patient contact
10	Catering services	inpatient day (include lodgers)
xx	Drugs and medical supplies (calculated under separate system)	

Public health units

Only two units;	1	PHU (curative and preventative)
	2	outreach services

Include the following;

Curative - new cases
Curative - reattendances
Antenatal - first attendances
Child health
Immunizations
Family planning

xx Drugs and medical supplies (calculated under separate system)

Implementation of Health Service Costing System

Clinics

Only service contacts;

Curative - new cases

Curative - reattendances

Antenatal - first attendances

Child health

Immunizations

Family planning

xx Drugs and medical supplies (calculated under separate system)

Swaziland Primary Health Care Project

Ministry of Health
Mbabane
Swaziland

Implementation of Health Service Costing System

HEALTH SERVICE COSTING SYSTEM

CASE STUDY

You are the administrator responsible for compiling inputs to the Health Services Costing System at Wedza Health Centre.

Part 1

There are twelve nursing staff stationed at the health centre. The average monthly personnel cost for these staff is E 13 200.

You estimate that during April nursing staff spent approximately 30 % of their time attending to outpatients, 40 % on inpatients and the remainder on other services and administration.

A total of 990 outpatient attendances were seen and 800 inpatient days were recorded.

What are the unit costs of personnel for outpatients and inpatients for April?

What will be the effect of changing the staff allocation to 35 % outpatients and 35 % inpatients?

Where possible quantify the effects.

Part 2

The catering officer gives you the following information.

- At the beginning of April there were catering stocks worth E 1 500 on hand.
- During the month supplies worth E 4 500 were received.
- Included in the supplies received were damaged goods charged at E 300 which were returned to the supplier.
- After taking stock at the end of April you calculate that the remaining stock is worth E 1 200.

Calculate the value of food consumed during April.

Implementation of Health Service Costing System

Part 3

You establish from staff at the registry that the total number of inpatient and lodger days for April was 900.

What was the unit cost of catering services for April?

Part 4

Write down what you think the effects would be of the following:

- a) staff at the registry inadvertently included the 50 inpatient and lodger days for the 1 and 2 May in the above calculations
- b) including the cost of the damaged stock received in your calculations
- c) omitting to count perishable supplies worth E 400 which are kept in the cold room outside the catering supplies store

Where possible quantify your answer by calculating the effects of the above.

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Swaziland

Implementation of Health Service Costing System

HEALTH SERVICE COSTING SYSTEM,

COURSE EVALUATION QUESTIONNAIRE

State whether each of the following is either true or false.

- 1 A unit cost is the actual, exact cost of a unit of service.
- 2 The allocation of personnel costs has no effect on the unit cost of outpatient services provided.
- 3 Unit costing is a computer programme.
- 4 Unit costs are a useful budgeting input.
- 5 Unit costs are based on fixed costs.
- 6 The unit costing system is used by the Treasury to calculate salaries payable.
- 7 Unit costs for drugs and medical supplies are roughly equivalent to tender board prices.
- 8 A nurse's salary is a unit cost.
- 9 Unit costs for catering supplies are determined by the Tender Board at the beginning of each year.
- 10 A unit cost represents the relationship between total cost and total allocated units.
- 11 An inpatient day is a unit of service.
- 12 If a direct cost is excluded from a unit cost calculation the resulting unit cost will be understated.

APPENDIX C

Ministry of Health
Mbabane
Swaziland

Implementation of Health Service Costing System

COURSE NOTES

HEALTH SERVICE COSTING SYSTEM
DRUGS AND MEDICAL SUPPLIES SECTION

1 Introduction

Course leader introduces himself and asks participants to do the same.

Course leader sets out the objectives of the course. To introduce:

- o the drugs and medical supplies section of the health service costing system
- o the procedures for maintaining records of:
 - requisitions from wards and departments
 - prescriptions dispensed to inpatients and outpatients
 - issues to wards and departments

2 Completion of pre course evaluation forms

Distribute the evaluation questionnaire for completion by participants.

3 What is meant by unit costing?

The process of unit costing is the calculation from summary information, such as total costs and total units of service, of the estimated cost of each individual unit of service.

In the drugs and medical supplies section the value of drugs and medical supplies issued to patients represents the cost. Outpatient visits or inpatient days are units of service.

The unit cost produced by this system is therefore the estimated value of drugs provided per outpatient contact or inpatient day.

4 Case study

See the attached case study.

5 Objectives of the drugs and medical supplies section of the health service costing system

The aims of the health service costing system are to:

-
- a) evaluate the use and allocation of drugs and medical supplies in the provision of health services
 - b) improve the ministry's budgeting process through documenting the actual cost of drugs and medical supplies provided
 - c) improve the monitoring and control of expenditure on drugs and medical supplies by comparing actual expenditure against calculated average costs
 - d) provide detailed managerial accounting information on the use of drugs and medical supplies
 - e) provide information for use by the ministry in determining appropriate fee policies for cost recovery

6 Elements of the drugs and medical supplies section of the health service costing system

- a) The drugs and medical supplies system is a component of the health service costing system. The system is computerised and has been developed for the three levels of service:
 - hospitals and health centres
 - public health units
 - clinics
- b) The health services costing system only takes into account recurrent ministry of health expenditure. The following indirect cost items are excluded from unit cost calculations:
 - office equipment and furniture
 - machinery and equipment
 - provision for depreciation
 - donor contributions
 - expenditure incurred by other ministries
- c) The system is controlled by the Financial Controller. Day to day responsibility for collecting input information, calculating unit costs and producing reports rests with the headquarters cost accounts person. She is assisted by four regional cost accounts people.
- d) Reports are produced for each level of service every six months in regional and national detail. Distribution is as follows:
 - Regional - each facility included in the report
 - Regional Health Management Team
 - National - all regional Health Management Teams
 - all hospitals and health centres get hospital report

-
- all public health units get PHU report
 - all Clinic Supervisors get clinics report
 - senior ministry staff get all reports

7 New forms to support the drugs and medical supplies costing system

- ward / department requisitions
- register of quantities of drugs and medical supplies
- drugs and medical supplies quantities and cost register

Refer to section three (page 5) of the Health Service Costing System - Drugs and Medical Supplies Section.

8 Procedures for maintaining the following:

- tally cards
- requisitions from wards and departments
- register of quantities of drugs and medical supplies
- issues to wards and departments
- counting and costing stock
- drugs and medical supplies control account

Refer to section three, four, five and six of the Health Service Costing System - Drugs and Medical Supplies Section.

9 Summary

Review the steps to be followed to implement the drugs and medical supplies costing system:

- records of stock held
- details of requisitions and issues
- regular stock counts
- calculation of summary values
- maintenance of control account
- inclusion of data in six monthly costing reports

Ministry of Health
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Swaziland

Implementation of Health Service Costing System

HEALTH SERVICE COSTING SYSTEM
DRUGS AND MEDICAL SUPPLIES SECTION

CASE STUDY

Part 1

You are the dispenser at Wedza health centre.

- At the beginning of April you had drugs and medical supplies worth E 1 500 on hand.
- During the month you received supplies worth E 4 500.
- Included in the supplies received was expired stock charged at E 300 which you returned to the supplier.
- After taking stock at the end of April you calculate that the remaining stock is worth E 1 200.

Calculate the value of stock issued during April.

Part 2

You establish from staff at the registry that a total of 1 800 patients visited the health centre during April.

What was the unit cost of drugs issued during April?

Part 3

Write down what you think the effects would be of the following:

- a) including the 100 patients who attended the health centre on the 1 and 2 May in the above calculations
- b) including the cost of the expired stock received in your calculations
- c) omitting to count perishable supplies worth E 600 which are kept in a fridge outside the drugs and medical supplies store

Where possible quantify your answer by calculating the effects of the above.

BEST AVAILABLE DOCUMENT

Ministry of Health
Mbabane
Swaziland

Implementation of Health Service Costing System

**HEALTH SERVICE COSTING SYSTEM
DRUGS AND MEDICAL SUPPLIES SECTION**

COURSE EVALUATION QUESTIONNAIRE

State whether each of the following is either true or false.

- 1 A unit cost is the actual, exact cost of a unit of drugs.
- 2 The number of outpatient services provided has no effect on the unit cost of drugs.
- 3 Unit costing is a computer programme.
- 4 Unit costs are a useful budgeting input.
- 5 Unit costs are based on fixed costs.
- 6 The unit costing system is used by the Treasury to calculate salaries payable.
- 7 Unit costs for drugs and medical supplies are roughly equivalent to tender board prices.
- 8 A dispenser's salary is a unit cost.
- 9 Unit costs for drugs and medical supplies are determined by the Tender Board at the beginning of each year.
- 10 A unit cost represents the relationship between total cost and total allocated units.
- 11 An inpatient day is a unit of service.
- 12 If a direct cost is excluded from a unit cost calculation the resulting unit cost will be understated.

APPENDIX D

Appendix D

Record of attendance at training courses

The following attended the Warrant holders and Cost accounts staff courses.

1 Tavern Hotel - Mbabane 21 May 1991

B Mavuso (CAP)
M Mbuli (CAP)
M Khumalo
J Mlipha (CAP)
T Mavuso
Dr N Khayyam

2 George Hotel - Manzini 23 May 1991

A Kunene
D Simelane
T Nxumalo
E Langwenya
Dr L Mabuza
M Magagula
P Dlamini
Dr F Monadjem
Dr N Nkanza
J Tsela
A Shongwe
S Sibandze
N Person

3 Nhlanguano Health Centre 27 May 1991

C N Dube
T Maseko
R Shiba
L Ntiwane

4 George Hotel - Manzini 23 May 1991

D Luhlanga
A Dlamini
D Dlamini
W Gama
A Mndzebele
S Kunene
D Khumalo
I Magagula
S Mthupha

CAP denotes cost accounts staff.

Appendix D - Attendance at formal training courses

The following attended the Dispensers courses.

5 University of Swaziland - 17 May 1991

S Shabangu
M Makhubu
G Jele
B Dlamini
E Mkhwanazi
L Ndzabukelwako
J Dlamini
R Maseko
M Bhule

6 University of Swaziland - 24 May 1991

B Dube
M Nkonyane
S Dlamini
J Dube
L Thabede
S Banda

APPENDIX E

Appendix E

Analysis of base line data

The following observations were made during field visits and are in no way prescriptive. They are listed here simply to illustrate variances in unit costs between different centres.

a) Hospitals and Health Centres

i) Dvokolwako Health Centre

Costs for all services were significantly higher than national averages. Partly because the radiologist and laboratory technician employed under the centre's posts were in fact working elsewhere. Because their actual placement was not reflected in the salaries records the cost of their salaries was included in indirect personnel and other costs which are allocated to the four main departments.

Secondly, because there was no X ray or laboratory capability, many patients were referred to Pigg's Peak Hospital. Transport charges were therefore also higher than would be the case if the radiologist and laboratory technician had been at their posts.

Costs for patient food and for drugs and medical supplies should be monitored to ensure that wastage is kept to acceptable levels.

ii) Emkhuzweni Health Centre

Costs at this facility were generally lower than the national average. The facility was well used with some patients coming from areas far to the east. Once X ray, laboratory and surgical services are available Dvokolwako, attendance at this facility may fall slightly with a corresponding rise in unit costs.

The unit cost for surgery was particularly low as most surgical procedures were minor and were performed by staff nurses who are paid at a lower rate than doctors.

iii) Good Shepherd Hospital

Personnel and indirect costs for inpatient services were nearly half the national average. This was partly due to the number of refugees who were admitted. Many appear to have had minor ailments but remained as inpatients for some time recuperating. The number of inpatients was therefore particularly high while the level of service required was relatively un-intensive. This was reflected in a staff nurse to inpatient days ratio of 1 : 7 220 for the year reflected in the low unit costs.

Appendix E - Analysis of base line data

The unit cost of surgical operations was higher than average as many procedure were done by medical officers who are paid at higher salary grades.

Drug costs were low due perhaps to conservative prescribing practices or the large number of patients with relatively minor ailments.

iv) Hlatikulu Hospital

Inpatient service costs were approximately the same as the national averages. Given that the facility was without its full complement of doctors for some time unit costs should have fallen accordingly. This effect appears to have been offset by the number of serious inpatient cases referred from Nhlanguano Health Centre. Such cases normally require more intensive care utilising more staff time.

The high cost of outpatient services may have been due to the seriousness of ailments. Because there are many clinics in the catchment area minor cases are less likely to come to the hospital than to a clinic.

v) Mankayane Hospital

This hospital was without any doctors for some time. Consequently unit costs for inpatient services were lower than average.

By contrast the cost of laboratory services was higher than the national average. Partly because both staff members were at their posts and possibly because fewer tests were requested in the absence of medical officers. The same is true of X ray costs.

vi) Mbabane Hospital

Ward and outpatient department costs were generally at or slightly below the national average. One of the main reasons for this was that the hospital was a net borrower of staff from other responsibility centres whose movement was not reflected on the salaries records. The cost of such staff were thus reflected in higher unit costs at other centres.

Appendix E - Analysis of base line data

vii) Nhlngano Health Centre

Ward costs were slightly higher than average for two reasons. Firstly, patients with serious conditions requiring more intensive care are referred to Hlatikulu hospital. The average length of stay was therefore shorter than most hospitals at approximately three days. Secondly, some staff were involved in public health unit activities for which there was no separate responsibility centre or establishment. Some of their time is therefore reflected in the cost of inpatient care.

viii) Pigg's Peak Hospital

Although this hospital received many referrals from centres such as Emkhuzweni and Dvokolwako, its personnel and indirect costs were much higher than the national average as were its drug costs. They should be investigated.

ix) Raleigh Fitkin Hospital

In common with the other mission facilities, costs were generally below the national averages. The cost of operations was particularly high reflecting the high number of senior staff involved in operations.

The cost drugs was approximately half the national average and this may be because the hospital had a drug costing system in place for some time enabling it to effectively control their usage.

x) Sithobela Health Centre

Ward costs at this centre followed were close to the national averages as were drug costs.

b) Public Health Units

Unit costs calculated for public health units vary significantly between facilities and between the first and second six month periods.

The main reason for this is that supervisory staff spend a greater proportion of their time on indirect service activities which include national programmes, home visits and school health activities. Some of these activities are not reflected in the reporting format and the cost of such time is therefore allocated to direct services as indirect costs.

Appendix E - Analysis of base line data

Public health units were also affected by the non reporting of staff movements to the salaries section at headquarters resulting in distortions in staff costs between facilities.

The cost of drugs and medical supplies is particularly volatile. This is because such costs are only allocated to curative contacts. As a result where there is a low number of curative patients these costs will rise. This is evident at public health units adjacent to hospitals such as Pigg's Peak, Hlatikulu and Mankayane. The unit costs are much lower at Siteki for example as the nearest hospital is some distance away.

A further consideration is the completeness of the HIS data. Some HIS outreach data for the year under review was not available which has the effect of increasing the costs.

c) Clinics

Clinic unit costs are more stable than those of public health units. This is mainly because the level of indirect costs at clinic level are much lower than at other the levels of service.

Distortions of staff costs due to incorrect payroll details are therefore not accentuated to the same extent as in public health units above where only fifty percent of staff costs, on average can be allocated. In most clinics over seventy percent of staff costs can be directly allocated.

The one exception is the Mbabane region clinics where only fifty five percent of the staff costs can be directly allocated. This indicates that there are a higher percentage of staff involved in indirect services (for unit costing purposes) than at the other clinics.

One of the reasons why unit costs for personnel and indirect costs are generally lower than at public health units is because staff spend more time in direct contact with patients as nurses do not have to go to patients as is the case at outreaches, some which are distant but to which few people come.

Drug costs are allocated to curative contacts only, in the same way as public health units. However, partly because clinics see more curative contacts than public health units their drug and medical supply costs per contact are lower.

Appendix E - Analysis of base line data

Lastly it is useful to analyse the average costs for individual clinics. For example, the average expenditure per contact on transport for clinics is 18 cents, however at Pigg's Peak the figure is only 12 cents which indicates that less transport per patient is allocated to the region's clinics. To fully investigate such correlations factors such as population density and availability of other transport, from the hospital for example should be taken into account.

HOSPITALS
 1983 ANNUAL SUMMARY

UNIT COST REPORT

BEST AVAILABLE DOCUMENT

SUMMARY - EMPLOYERS FROM APRIL TO SEPTEMBER 1983

	MALE MED/SURG & ISOL WARDS	CHILD & FEMMED & SURG WARDS	MAT/ P/11 WARD	MALE OPTHO WARD	EYE WARD	PRIV WARD	OPER THEATRE	GEN OPD	PRIV OPD	LAB	X-RAY	DENTAL UNIT	PSYCH- IATRIC UNIT	EYE CLINIC	PHYSIO DEPT	ORTH W/SHOP	MORT	MOBILE CLINIC	CATERING SERVICES		
UNIT COSTS - INTR. AND INDIRECT	---	E48 00	E47 75	E48 28	N/A	N/A	N/A	E12 08	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	E96 48	N/A	E10 20		
DYONOLWALD HOSPITAL	---	E34 29	E19 24	E22 03	N/A	N/A	N/A	E27 73	E4 41	N/A	E2 48	E2 20	E13 99	N/A	N/A	N/A	N/A	N/A	E7 62	E2 01	
EMKRUZWEIR HEALTH CENTRE	---	E12 57	E10 43	E20 15	N/A	N/A	N/A	E103 07	E8 04	N/A	E1 86	E12 60	E8 07	E15 84	N/A	N/A	N/A	N/A	E2 65	E1 53	
GOOD SHEPHERD HOSPITAL	---	E29 93	E27 18	E35 21	N/A	N/A	N/A	E64 08	E15 15	N/A	E4 09	E17 02	E31 03	N/A	E33 78	N/A	N/A	N/A	E105 13	E1 21	
ILATHIKHALU HOSPITAL	---	E18 08	E21 81	E15 83	N/A	N/A	N/A	N/A	E11 08	N/A	E17 23	E27 13	E27 28	N/A	N/A	N/A	N/A	N/A	E98 58	E11 18	
MAKAYANE HOSPITAL	---	E26 54	E18 49	E32 84	E18 01	E48 18	E32 82	E107 82	E4 80	E18 31	E5 72	E4 35	E12 50	E28 86	E7 55	E30 03	E69 41	E68 02	E5 07	E0 58	
MBABANE HOSPITAL	---	E35 22	E31 29	E38 51	N/A	N/A	N/A	N/A	E8 51	N/A	N/A	E15 44	E11 77	E24 52	E22 39	N/A	N/A	N/A	E94 29	E8 18	E4 53
MBLALANDHO HOSPITAL	---	E40 00	E33 07	E38 01	N/A	N/A	N/A	E159 48	E10 18	N/A	E9 48	E10 18	E19 01	E13 09	E19 58	N/A	N/A	N/A	E99 57	N/A	E2 31
PIGGSPEAK HOSPITAL	---	E26 21	E26 42	E37 12	N/A	N/A	N/A	E91 06	E217 50	N/A	E9 38	N/A	E1 06	N/A	N/A	N/A	N/A	N/A	E108 20	N/A	E2 30
RALEIGH FITZGERALD MEMORIAL HOSPITAL	---	E22 07	E20 88	E25 22	N/A	N/A	N/A	N/A	N/A	N/A	E4 35	N/A	E1 70	N/A	N/A	N/A	N/A	N/A	E12 63	N/A	E3 42
SITHOBELA HOSPITAL	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---

AVERAGE - CURRENT 6 MONTHS	---	E20 80	E25 52	E30 08	E18 01	E48 18	E62 86	E121 40	E8 78	E18 81	E5 55	E11 12	E18 07	E20 54	E20 83	E8 00	E8 84	E83 02	E15 21	E2 87
AVERAGE - PREVIOUS 6 MONTHS	---	E0 00	E0 00	E0 00	E0 00	E0 00	E0 00	E0 00	E0 00	E0 00	E0 00	E0 00	E0 00	E0 00						

	MALE MED/SURG & ISOL WARDS	CHILD & FEMMED & SURG WARDS	MAT/ P/11 WARD	MALE OPTHO WARD	EYE WARD	PRIV WARD	OPER THEATRE	GEN OPD	PRIV OPD	LAB	X-RAY	DENTAL UNIT	PSYCH- IATRIC UNIT	EYE CLINIC	PHYSIO DEPT	ORTH W/SHOP	MORT	MOBILE CLINIC	CATERING SERVICES	
UNIT COSTS - INTR. AND INDIRECT	E5 71	E14 89	E18 13	E13 52	N/A	N/A	N/A	N/A	E4 30	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
DYONOLWALD HOSPITAL	E2 44	E4 07	E3 92	E4 25	N/A	N/A	N/A	N/A	E28 52	E1 88	N/A	E1 02	E4 31	E8 88	N/A	N/A	N/A	N/A	N/A	E0 93
EMKRUZWEIR HEALTH CENTRE	E1 76	E1 38	E1 42	E1 35	N/A	N/A	N/A	N/A	E31 80	E2 32	N/A	E0 71	E2 39	E1 08	E4 61	N/A	N/A	N/A	N/A	E0 50
GOOD SHEPHERD HOSPITAL	E5 58	E4 39	E4 91	E4 31	N/A	N/A	N/A	N/A	E44 78	E7 94	N/A	E0 45	E2 24	E4 48	N/A	N/A	N/A	N/A	N/A	N/A
ILATHIKHALU HOSPITAL	E2 93	E1 42	E3 40	E2 93	N/A	N/A	N/A	N/A	N/A	E4 78	N/A	E1 42	E5 08	E2 12	N/A	N/A	N/A	N/A	N/A	N/A
MAKAYANE HOSPITAL	E3 97	E4 35	E3 51	E4 37	E3 27	E5 81	E8 27	E32 44	E4 87	E6 07	E0 60	E2 58	E3 17	E13 42	E2 56	N/A	N/A	N/A	N/A	N/A
MBABANE HOSPITAL	E2 33	E6 95	E7 08	E8 48	N/A	N/A	N/A	N/A	E4 07	N/A	N/A	E1 49	E1 27	E3 77	E1 72	N/A	N/A	N/A	N/A	N/A
MBLALANDHO HOSPITAL	E5 80	E6 04	E7 51	E5 07	N/A	N/A	N/A	N/A	E38 68	E5 30	N/A	E1 83	E1 35	E2 57	E4 62	E8 20	N/A	N/A	N/A	N/A
PIGGSPEAK HOSPITAL	E5 20	E7 47	E7 48	E7 48	N/A	N/A	N/A	N/A	E59 24	E5 03	N/A	E1 11	E2 78	N/A	N/A	N/A	N/A	N/A	N/A	E4 35
RALEIGH FITZGERALD MEMORIAL HOSPITAL	E3 18	E6 15	E5 99	E6 92	N/A	N/A	N/A	N/A	N/A	E3 92	N/A	E0 71	N/A	E2 45	N/A	N/A	N/A	N/A	N/A	E0 48
SITHOBELA HOSPITAL	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---

AVERAGE - CURRENT 6 MONTHS	E5 70	E5 80	E8 12	E5 88	E3 27	E5 81	E8 43	E38 91	E4 30	E6 07	E0 90	E2 95	E3 00	E8 61	E4 08	E0 00	E0 00	E0 00	E0 64	E0 00
AVERAGE - PREVIOUS 6 MONTHS	E0 00	E0 00	E0 00	E0 00	E0 00	E0 00	E0 00	E0 00	E0 00	E0 00	E0 00	E0 00	E0 00							

	MALE MED/SURG & ISOL WARDS	CHILD & FEMMED & SURG WARDS	MAT/ P/11 WARD	MALE OPTHO WARD	EYE WARD	PRIV WARD	OPER THEATRE	GEN OPD	PRIV OPD	LAB	X-RAY	DENTAL UNIT	PSYCH- IATRIC UNIT	EYE CLINIC	PHYSIO DEPT	ORTH W/SHOP	MORT	MOBILE CLINIC	CATERING SERVICES		
UNIT COSTS - PATIENT FOOD	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	E7 80	
DYONOLWALD HOSPITAL	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	E2 42
EMKRUZWEIR HEALTH CENTRE	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	E2 17
GOOD SHEPHERD HOSPITAL	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	E2 94
ILATHIKHALU HOSPITAL	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	E1 73
MAKAYANE HOSPITAL	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	E2 26
MBABANE HOSPITAL	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	E3 59
MBLALANDHO HOSPITAL	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	E3 25
PIGGSPEAK HOSPITAL	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	E4 28
RALEIGH FITZGERALD MEMORIAL HOSPITAL	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	E2 97
SITHOBELA HOSPITAL	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---

AVERAGE - CURRENT 6 MONTHS	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	E3 79
AVERAGE - PREVIOUS 6 MONTHS	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	E0 00

SERVICE INDICATORS	WDAYS	OPS	VISITS	VISITS	TESTS	PATIENTS	VISITS	VISITS	VISITS	VISITS	VISITS	BODIES	VISITS	LDAYS							
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TOTAL	MALE MED/SURG & ISOL WARDS	CHILD & FEMMED & SURG WARDS	MAT/ GYN WARD	MALE ORTHO WARD	EYE WARD	PRIV WARD	OPER THEATRE	GEN OPD	PRIV CPD	LAB	X-RAY	DEPTAL UNIT	PSYCH- IATRIC UNIT	EYE CLINIC	PHYSIO DEPT	ORTH W/SHCP	MORT	MOBILE CLINICS	CATERING SERVICES
UNIT COST - (M/F/S AND INDICES)																			
DVOKOLWAKO HEALTH CENTRE	---	E29 03	E22 37	E31 42	I/A	I/A	I/A	E9 48	I/A	I/A	I/A	I/A	I/A	I/A	I/A	I/A	E73 51	I/A	E5 96
EMKHAZWEHE HEALTH CENTRE	---	E24 93	E12 85	E19 89	I/A	I/A	I/A	E28 28	E3 74	I/A	E2 31	E1 61	E19 73	I/A	I/A	I/A	I/A	E5 78	E1 46
GOOD SHEPHERD HOSPITAL	---	E14 11	E9 43	E21 29	I/A	I/A	I/A	E126 92	E7 21	I/A	E2 15	E12 74	E9 80	E23 76	I/A	I/A	I/A	E55 78	E4 24
ILATIPHULU HOSPITAL	---	E27 28	E24 76	E32 09	I/A	I/A	I/A	E58 42	E102 81	E12 96	E3 73	E15 51	E29 89	I/A	E30 79	I/A	I/A	E25 83	I/A
MAIKWAYHE HOSPITAL	---	E11 09	E15 23	E11 43	I/A	I/A	I/A	I/A	I/A	E8 01	I/A	E14 12	E22 32	E22 44	I/A	I/A	I/A	E91 11	E10 11
MBABANE HOSPITAL	---	E22 90	E15 17	E32 00	E16 58	E80 37	E29 26	E88 20	E4 34	E27 76	E4 86	E3 85	E12 95	E27 90	E6 95	E37 95	E121 83	E66 98	E4 35
IBULANGANO HEALTH CENTRE	---	E30 87	E27 58	E33 45	I/A	I/A	I/A	I/A	E7 55	I/A	I/A	E13 32	E10 37	E20 97	I/A	I/A	I/A	E57 81	E4 83
PIGG'S PEAK HOSPITAL	---	E38 18	E37 70	E37 51	I/A	I/A	I/A	E180 14	E8 28	I/A	E10 05	E10 59	E23 60	E16 91	E15 82	I/A	I/A	E86 81	I/A
RALEIGH FITKIN MEMORIAL HOSPITAL	---	E20 84	E19 94	E35 88	I/A	I/A	I/A	E82 20	E188 17	E7 80	I/A	E9 13	I/A	I/A	I/A	I/A	I/A	E78 42	I/A
SITHOBELA HEALTH CENTRE	---	E27 80	E23 32	E28 85	I/A	I/A	I/A	I/A	E5 80	I/A	E2 00	I/A	E10 03	I/A	I/A	I/A	I/A	E79 42	E13 17
AVERAGE - CURRENT 8 MONTHS	---	E24 88	E21 04	E28 54	E18 53	E60 37	E32 79	E114 75	E7 52	E27 78	E5 04	E11 02	E17 23	E22 38	E17 85	E37 95	E121 83	E75 08	E7 21
AVERAGE - PREVIOUS 8 MONTHS	---	E28 89	E43 52	E30 88	E18 01	E49 16	E82 68	E121 40	E8 70	E18 31	E5 55	E11 12	E18 07	E20 58	E20 83	E3 00	E6 94	E63 02	E15 21

AVERAGE - CURRENT 8 MONTHS	---	E24 88	E21 04	E28 54	E18 53	E60 37	E32 79	E114 75	E7 52	E27 78	E5 04	E11 02	E17 23	E22 38	E17 85	E37 95	E121 83	E75 08	E7 21
AVERAGE - PREVIOUS 8 MONTHS	---	E28 89	E43 52	E30 88	E18 01	E49 16	E82 68	E121 40	E8 70	E18 31	E5 55	E11 12	E18 07	E20 58	E20 83	E3 00	E6 94	E63 02	E15 21

TOTAL	MALE MED/SURG & ISOL WARDS	CHILD & FEMMED & SURG WARDS	MAT/ GYN WARD	MALE ORTHO WARD	EYE WARD	PRIV WARD	OPER THEATRE	GEN OPD	PRIV CPD	LAB	X-RAY	DEPTAL UNIT	PSYCH- IATRIC UNIT	EYE CLINIC	PHYSIO DEPT	ORTH W/SHCP	MORT	MOBILE CLINICS	CATERING SERVICES
UNIT COST - (M/F/S AND INDICES)																			
DVOKOLWAKO HEALTH CENTRE	E5 11	E13 30	E9 56	E12 02	I/A	I/A	I/A	E4 04	I/A	I/A	I/A	I/A	I/A	I/A	I/A	I/A	I/A	I/A	I/A
EMKHAZWEHE HEALTH CENTRE	E4 90	E9 29	E7 30	E8 88	I/A	I/A	I/A	E44 97	E3 48	I/A	E2 32	E7 68	E2 84	I/A	I/A	I/A	I/A	I/A	E2 01
GOOD SHEPHERD HOSPITAL	E1 81	E1 21	E1 08	E1 12	I/A	I/A	I/A	E30 85	E2 10	I/A	E0 64	E1 88	E1 56	E5 41	I/A	I/A	I/A	I/A	E0 58
ILATIPHULU HOSPITAL	E8 01	E8 28	E7 03	E6 17	I/A	I/A	I/A	E8 02	E84 15	E9 89	I/A	E1 92	E5 41	E5 41	I/A	E5 35	I/A	I/A	I/A
MAIKWAYHE HOSPITAL	E4 88	E2 48	E5 98	E4 98	I/A	I/A	I/A	I/A	I/A	E7 72	I/A	E2 48	E9 93	E3 72	I/A	I/A	I/A	I/A	I/A
MBABANE HOSPITAL	E8 81	E6 98	E6 04	E7 38	E8 28	E13 28	E10 44	E48 25	E6 98	E17 13	E0 98	E4 23	E6 11	E24 14	E5 84	I/A	I/A	I/A	I/A
IBULANGANO HEALTH CENTRE	E3 87	E11 73	E12 07	E11 52	I/A	I/A	I/A	I/A	E7 00	I/A	I/A	E2 48	E2 17	E8 28	E2 56	I/A	I/A	I/A	I/A
PIGG'S PEAK HOSPITAL	E14 82	E15 22	E22 04	E13 97	I/A	I/A	I/A	E102 66	E11 39	I/A	E5 42	E3 73	E8 44	E15 75	E17 70	I/A	I/A	I/A	I/A
RALEIGH FITKIN MEMORIAL HOSPITAL	E3 00	E4 04	E4 06	E4 05	I/A	I/A	I/A	E4 14	E48 88	E2 82	I/A	E0 74	E4 78	I/A	I/A	I/A	I/A	I/A	E1 88
SITHOBELA HEALTH CENTRE	E4 78	E9 42	E8 79	E9 89	I/A	I/A	I/A	I/A	E8 20	I/A	E1 01	I/A	E3 52	I/A	I/A	I/A	I/A	I/A	E9 61
AVERAGE - CURRENT 8 MONTHS	E8 77	E8 00	E8 29	E9 00	E8 28	E13 28	E8 68	E58 26	E8 18	E17 13	E1 84	E5 14	E5 20	E12 88	E10 82	I/A	I/A	E9 21	
AVERAGE - PREVIOUS 8 MONTHS	E5 29	E5 89	E8 12	E5 66	E3 27	E5 81	E5 43	E38 91	E4 39	E6 07	E0 99	E2 95	E3 00	E5 61	E4 78	E0 00	E9 00	E0 53	

AVERAGE - CURRENT 8 MONTHS	E8 77	E8 00	E8 29	E9 00	E8 28	E13 28	E8 68	E58 26	E8 18	E17 13	E1 84	E5 14	E5 20	E12 88	E10 82	I/A	I/A	E9 21
AVERAGE - PREVIOUS 8 MONTHS	E5 29	E5 89	E8 12	E5 66	E3 27	E5 81	E5 43	E38 91	E4 39	E6 07	E0 99	E2 95	E3 00	E5 61	E4 78	E0 00	E9 00	E0 53

UNIT COST - PATIENT (X)	MALE MED/SURG & ISOL WARDS	CHILD & FEMMED & SURG WARDS	MAT/ GYN WARD	MALE ORTHO WARD	EYE WARD	PRIV WARD	OPER THEATRE	GEN OPD	PRIV CPD	LAB	X-RAY	DEPTAL UNIT	PSYCH- IATRIC UNIT	EYE CLINIC	PHYSIO DEPT	ORTH W/SHCP	MORT	MOBILE CLINICS	CATERING SERVICES
DVOKOLWAKO HEALTH CENTRE	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
EMKHAZWEHE HEALTH CENTRE	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
GOOD SHEPHERD HOSPITAL	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
ILATIPHULU HOSPITAL	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
MAIKWAYHE HOSPITAL	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
MBABANE HOSPITAL	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
IBULANGANO HEALTH CENTRE	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
PIGG'S PEAK HOSPITAL	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
RALEIGH FITKIN MEMORIAL HOSPITAL	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
SITHOBELA HEALTH CENTRE	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
AVERAGE - CURRENT 8 MONTHS	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
AVERAGE - PREVIOUS 8 MONTHS	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---

AVERAGE - CURRENT 8 MONTHS	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
AVERAGE - PREVIOUS 8 MONTHS	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---

SERVICE INDICATORS	WDAYS	LDAYS	WDAYS	WDAYS	WDAYS	WDAYS	WDAYS	OPS	VISITS	VISITS	TESTS	PARENTS	VISITS	VISITS	VISITS	VISITS	VISITS	REC'DS	VISITS	DAYS
AVERAGE - CURRENT 8 MONTHS	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
AVERAGE - PREVIOUS 8 MONTHS	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---

SECTION 1		NATIONAL AVERAGE	MANKAYANE	MBABANE	HLATIKULU	KING SOBHUZA II	SITEKI	PIGG'S PEAK
A	DIRECT PERSONNEL COSTS (M)	59,108	38,848	91,576	47,808	75,852	62,353	38,208
B	INDIRECT PERSONNEL AND OTHER COSTS (P)	82,842	8,310	163,355	83,242	116,780	113,846	11,520
C	CTA TRANSPORT CHARGES (O)	34,387	12,310	99,767	20,946	38,384	20,280	14,634
D	TOTAL PERSONNEL AND INDIRECT COSTS (A+B+C)	E176,337	E59,468	E354,690	E151,996	E231,016	E196,479	E64,362
E	DRUGS AND MEDICAL SUPPLIES (Q)	24,781	E13,513	E27,120	E3,929	E37,553	E52,277	E14,293
F	CURATIVE CONTACTS (I*S/T) (AVERAGE PER SITE)	2,763	1,061	2,574	518	3,900	7,930	556
G	PREVENTIVE CONTACTS (J*S/T) (AVERAGE PER SITE)	18,473	6,767	30,904	19,474	19,644	12,013	23,037
H	TOTAL CONTACTS (F+G)	21,236	7,828	33,478	19,992	22,544	19,943	23,633
	UNIT COST - PERSONNEL AND INDIRECT (D/H)	E8.30	E7.60	E10.59	E7.60	E10.25	E9.85	E2.72
	UNIT COST - DRUGS AND MEDICAL SUPPLIES (E/H)	E8.97	E12.74	E10.54	E7.58	E9.63	E6.59	E23.98
	SERVICE INDICATORS	CONTACT	CONTACT	CONTACT	CONTACT	CONTACT	CONTACT	CONTACT
S	NUMBER OF P.H.U. AND OUTREACH SITES	10	10	9	14	10	8	9
T	NUMBER OF REPORTS RECEIVED	10	10	9	14	10	8	9
COMPARATIVE FIGURES FOR PREVIOUS 6 MONTHS								
	UNIT COST - PERSONNEL AND INDIRECT	E5.67	E8.73	E2.92	E6.41	E8.24	E6.30	E2.92
	UNIT COST - DRUGS AND MEDICAL SUPPLIES	E7.26	E12.71	E15.36	E21.69	E7.21	E4.08	E15.36

PUBLIC HEALTH UNITS
NATIONAL SUMMARY

UNIT COST REPORT
TOTAL FOR P.H.U. AND OUTREACH SERVICES
6 MONTHS - APRIL TO SEPT 1990

(EMALANGENI)

SECTION 1		NATIONAL AVERAGE	MANKAYANE	MBABANE	HLATIKULU	KING SOBHUZA II	SITEKI	PIGG'S PEAK
A	DIRECT PERSONNEL COSTS (M)	60,622	43,888	94,206	47,008	75,852	63,771	38,208
B	INDIRECT PERSONNEL AND OTHER COSTS (P)	72,848	5,546	135,680	87,990	129,839	57,231	20,699
C	CTA TRANSPORT CHARGES (O)	16,520	7,693	50,883	8,447	17,636	10,318	4,142
D	TOTAL PERSONNEL AND INDIRECT COSTS (A+B+C)	E149,990	E57,127	E280,769	E144,245	E223,427	E131,320	E63,049
E	DRUGS AND MEDICAL SUPPLIES (Q)	22,132	E10,119	E31,634	E11,306	E32,447	E32,377	E9,707
F	CURATIVE CONTACTS (I*S/T) (AVERAGE PER SITE)	2,864	766	2,554	761	4,498	7,945	632
G	PREVENTIVE CONTACTS (J*S/T) (AVERAGE PER SITE)	18,491	5,751	26,948	21,750	22,626	12,909	20,963
H	TOTAL CONTACTS (F+G)	21,356	6,547	29,502	22,511	27,124	20,854	21,595
	UNIT COST - PERSONNEL AND INDIRECT (D/H)	E7.02	E0.73	E9.52	E6.41	E0.24	E6.30	E2.92
	UNIT COST - DRUGS AND MEDICAL SUPPLIES (E/F)	E7.73	E12.71	E12.39	E21.63	E7.21	E4.08	E15.36
	SERVICE INDICATORS	CONTACT	CONTACT	CONTACT	CONTACT	CONTACT	CONTACT	CONTACT

S	NUMBER OF P.H.U. AND OUTREACH SITES	10	10	9	14	10	8	9
T	NUMBER OF REPORTS RECEIVED	10	10	9	14	10	8	9

COMPARATIVE FIGURES FOR PREVIOUS 6 MONTHS								
	UNIT COST - PERSONNEL AND INDIRECT	E0.00						
	UNIT COST - DRUGS AND MEDICAL SUPPLIES	E0.00						

CLINICE

UNIT COST REPORT

NATIONAL SUMMARY BY REGION AND SUB-REGION

6 MONTHS FROM OCT 1990 TO MARCH 1991

AVERAGES PER CLINIC

(EMALANGENI)

SECTION 1		NATIONAL AVERAGE	MANZINI	MBABANE	PIGG'S PEAK	SHISEL-WEJI	LUBOMBO
	SUMMARY						
A	DIRECT PERSONNEL COSTS (M)	14,505	12,228	14,472	18,593	11,943	15,269
B	INDIRECT PERSONNEL AND OTHER COSTS (R)	2,050	1,828	18,823	8,006	8,174	8,349
C	OTA TRANSPORT CHARGES (O)	2,288	1,751	2,678	1,677	2,730	2,603
D	TOTAL PERSONNEL AND INDIRECT COSTS (A+B+C)	E25,843	E15,807	E36,043	E28,276	E22,847	E26,241
E	DRUGS AND MEDICAL SUPPLIES (H)	E21,794	E11,100	E32,105	E26,740	E20,553	E18,670
F	CURATIVE CONTACTS (K)	4,651	2,876	4,649	6,422	3,111	
G	PREVENTIVE CONTACTS (L)	4,692	3,152	4,690	5,269	4,440	5,199
H	TOTAL CONTACTS (F+G)	9,349	6,028	9,338	11,691	7,551	10,398
	UNIT COST - PERSONNEL AND INDIRECT (D/H)	E2.76	E2.62	E3.86	E2.42	E2.57	E2.47
	UNIT COST - DRUGS AND MEDICAL SUPPLIES (E/H)	E4.69	E2.85	E5.91	E4.18	E4.95	E3.59
	SERVICE INDICATORS	CONTACT	CONTACT	CONTACT	CONTACT	CONTACT	CONTACT

DIRECT PERSONNEL ALLOCATION (BASED ON A)	N/A	N/A	N/A	N/A	N/A	N/A

I	NUMBER OF CLINICS	42	8	5	5	14	10
J	NUMBER OF REPORTS RECEIVED	42	3	5	5	14	10

COMPARATIVE FIGURES FOR PREVIOUS 6 MONTHS							
	UNIT COST - PERSONNEL AND INDIRECT (D/H)	E2.67	E2.64	E4.07	E2.83	E2.10	E1.92
	UNIT COST - DRUGS AND MEDICAL SUPPLIES (E/H)	E3.15	E2.85	E5.21	E2.82	E2.37	E2.60

CLINICS

UNIT COST REPORT

NATIONAL SUMMARY BY REGION AND SUB-REGION

6 MONTHS FROM APRIL 1990 TO SEPT 1990

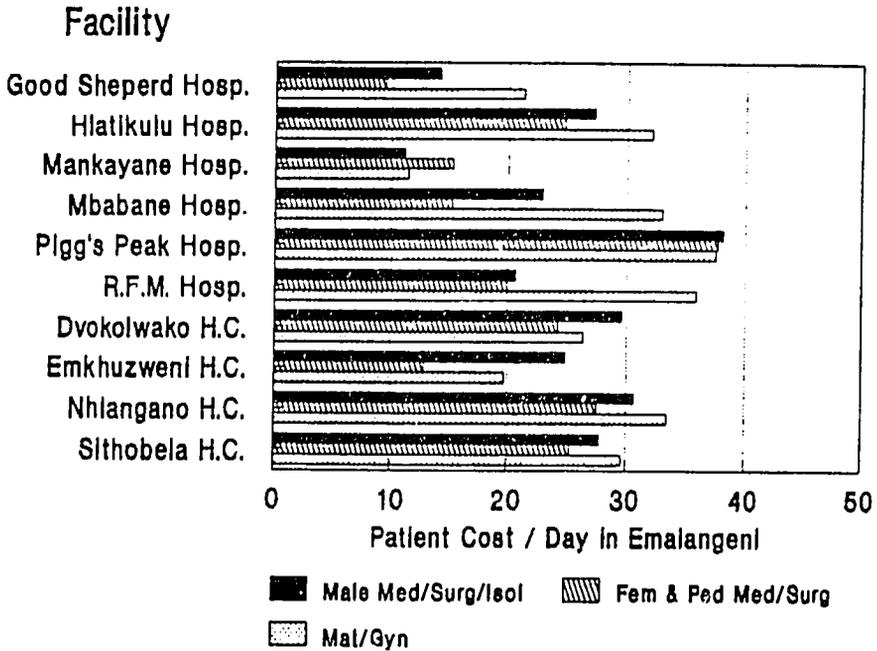
AVERAGES PER CLINIC

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SECTION 1		NATIONAL AVERAGE	MANZINI	MBABANE	PIGG'S PEAK	SHISEL - WETH	LUBI MED
	SUMMARY						
A	DIRECT PERSONNEL COSTS (M)	14,183	12,228	14,472	17,112	11,914	15,239
B	INDIRECT PERSONNEL AND OTHER COSTS (R)	9,606	2,847	18,407	13,773	8,703	4,298
C	OTA TRANSPORT CHARGES (Q)	791	357	639	1,137	1,185	637
D	TOTAL PERSONNEL AND INDIRECT COSTS (A+B+C)	E24,580	E15,432	E33,518	E32,022	E21,702	E29,224
E	DRUGS AND MEDICAL SUPPLIES (N)	E14,462	E8,048	E21,895	E17,767	E11,079	E13,303
F	CURATIVE CONTACTS (K)	4,641	2,823	4,204	6,302	4,741	5,136
G	PREVENTIVE CONTACTS (L)	4,610	3,016	4,030	4,956	5,609	5,395
H	TOTAL CONTACTS (F+G)	9,251	5,839	8,234	11,298	10,350	10,535
	UNIT COST - PERSONNEL AND INDIRECT (D/H)	E2.65	E2.64	E4.07	E2.83	E2.10	E1.92
	UNIT COST - DRUGS AND MEDICAL SUPPLIES (E/H)	E3.18	E2.85	E5.21	E2.82	E2.97	E2.60
	SERVICE INDICATORS	CONTACT	CONTACT	CONTACT	CONTACT	CONTACT	CONTACT
	DIRECT PERSONNEL ALLOCATION (BASED ON A)	N/A	N/A	N/A	N/A	N/A	N/A
I	NUMBER OF CLINICS	42	5	5	5	14	10
J	NUMBER OF REPORTS RECEIVED	42	8	5	5	14	10

Personel and Indirect Costs

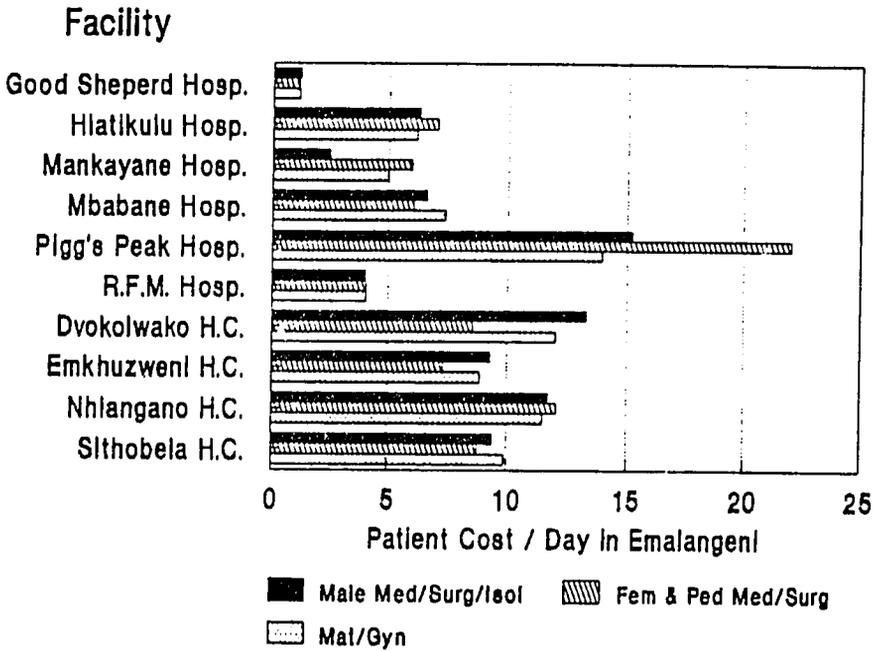
October 90 - March 91



Hospitals & Health Centers

Costs of Drugs and Med. Supplies

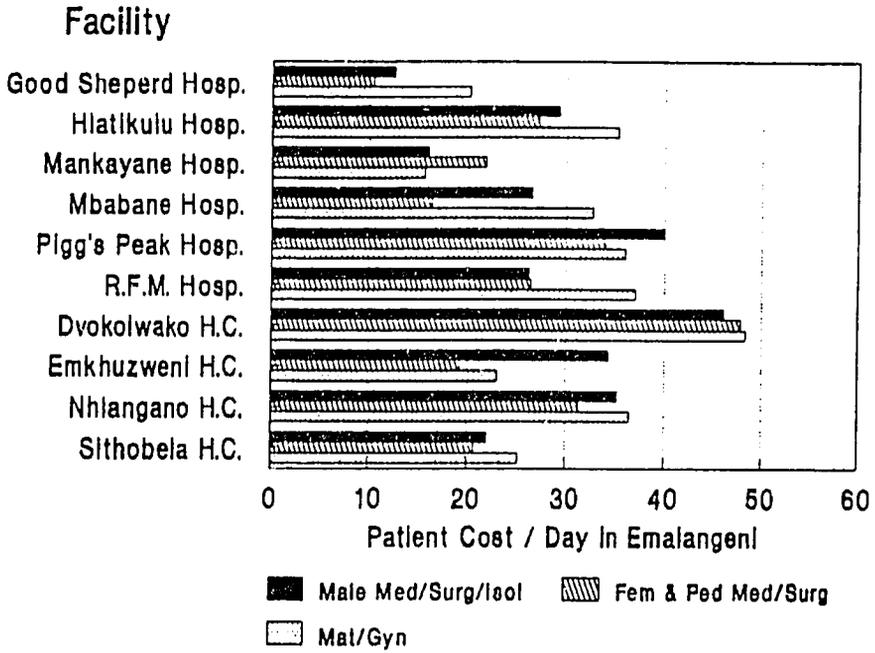
October 90 - March 91



Hospitals & Health Centers

Personel and Indirect Costs

April - September 1990

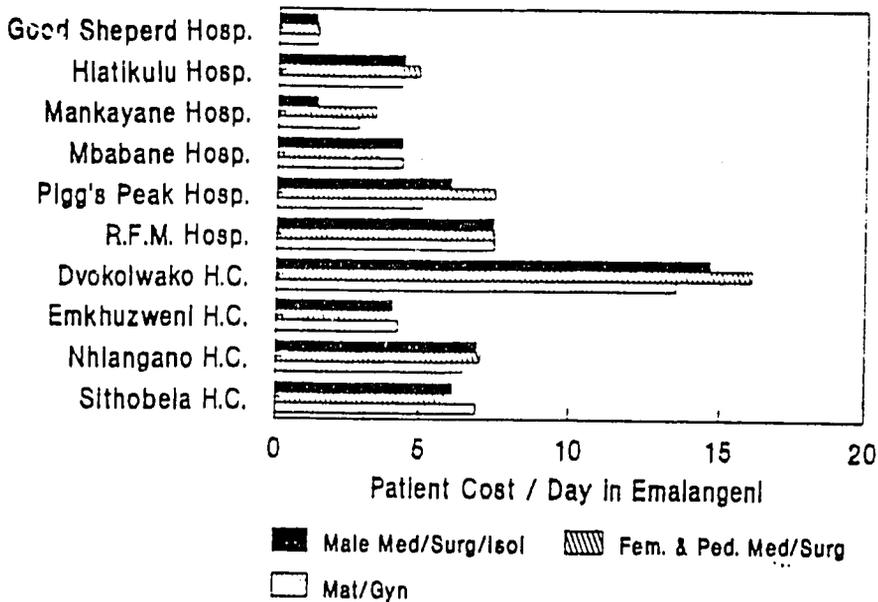


Hospitals & Health Centers

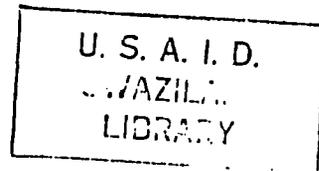
Costs of Drugs and Med. Supplies

April - September 1990

Facility



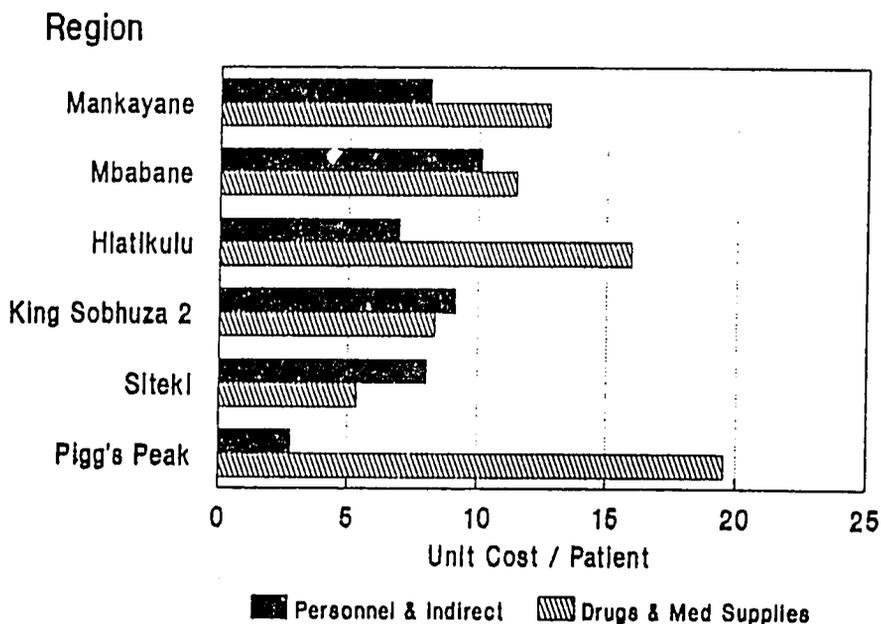
Hospitals & Health Centers



PHU UNIT COSTS

Personnel / Indirect and Drug Costs

April 90 to March 91



CLINIC UNIT COSTS

Personnel / Indirect & Drug Costs

April 90 to March 1991

Region

