



Republic of Zambia
Ministry of Health

Budget Allocation for Periodical Preventive Maintenance of Medical Equipment and Infrastructure

Guidebook

Directorate of Policy Planning

Ministry of Health

Republic of Zambia

Guidebook
Budget Allocation for
Periodical Preventive Maintenance
of Medical Equipment and Infrastructure

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1. Introduction / background

Japan International Cooperation Agency (JICA) under the government of Japan continuously supports effective health capital investment in Zambia through several projects; such as Health Facility Census and Health Capital Investment Project. In Health Capital Investment Support Project (2009 – 2011), medical equipment and infrastructure management system were established based on Medical Equipment Management guideline and Health Facility Management Guidelines. However, some challenges are remaining, especially adequate linkage between the management system and budget planning.

This handbook was developed for planning evidence based annual budget and MTEF of medical equipment and infrastructure utilizing the guidelines mentioned above.

Target readers of the handbook are person in-charge of medical equipment and infrastructure at District Health Office (DHO) and 1st level hospitals. The handbook describes how to develop a budget allocation plan for the maintenance of medical equipment and infrastructure at district level.

2. Budget Formulation schedule

The budget planning activities are start from May to August. For the district hospital, Activity 2, 4, 5, 11, 13, 14, 15 and 16 are important. For the District Health Office, Activity 2, 3, 4, 5, 11, 17, 18, 19, 20, 21, and 22 are important.

This guidebook is utilized to review next year's departmental allocations and planning launch on Activity 13. For considering the maintenance budget on each department, annual action plan for maintenance which is developed based on the guidebook will be an evidence of the budget planning.

And the annual action plan for maintenance is also useful when the budget plan is submitting to District Health Management Team (DHMT) on Activity 15 and presenting the plan on Activity 16 as evidence.

Table 1 Annual Planning Schedule

Activity	Timeline
1. MoH HQ gives PHOs information on financial ceilings, technical planning guidelines and HMIS analysed data for the previous year.	1 st wk. May
2. Provincial Health Office meets with DHMTs and hospitals to review programme guidance and provide other updates (Step 1).	3 rd wk. May
3. DHMT meets with the District Health Advisory Committees to review the previous year's experiences and to obtain their inputs to the next year's plan (Step 2).	4 th wk. May
<u>4. DHMT meets with hospitals providing first level referral services to negotiate bed purchase and agree on the terms of the Memorandums of Understanding (MoUs) (Step 3).</u>	4 th wk. May
5. DHMT brief <u>first level hospitals</u> , health centre/health post in-charges on programme and any planning updates (Step 4).	4 th wk. May
6. Health centres meet with community representatives to review achievements and problems and to brief on any updates.	1 st wk. Jun
7. Community representatives meet with community to review experiences, determine priorities and to agree on community actions.	2 nd wk. Jun
8. Community representatives meet with health centre staff to draft community action plan.	2 nd wk. Jun
9. 2 nd and 3 rd level hospitals meet with their Health Advisory Committees to review progress in the first half year and to receive their input to the next year's plan.	2 nd wk. Jun
<u>10. Hospitals form core planning teams which brief their Departmental Heads.</u>	2 nd wk. Jun
11. DHMT meets with health centres, <u>hospitals</u> , health training institutions and NGOs <u>to draft plans</u> (Step 5)	2 nd wk. Jun
12. Health centres meet with community representatives to provide feedback on the projected budget and final community action plan.	3 rd wk. Jun
<u>13. Core hospital planning team meets Departmental Heads to review next year's departmental allocations and planning launch.</u>	4 th wk. Jun
<u>14. Hospital departments draft their plans and submit to hospital core planning team.</u>	1 st wk. Jul
15. 2 nd and 3 rd level hospitals present plan to the Hospital Advisory Committee; and first level hospitals submit completed plan to DHMT.	1 st wk. Jul
16. 2 nd and 3 rd level hospitals present their plans to the Provincial Office; first level hospitals present their plans to their DHMT.	2 nd wk. Jul

Activity	Timeline
17. <u>DHMT drafts the district health office plan (training, supervision, advisory committee expenses, epidemic preparedness, etc. (Step 6).</u>	2nd wk. Jul
18. DHMT consolidates district action plan and budget (Step 7).	3th wk. Jul
19. DHMT presents and defends the District Health Plan and budget to the Health Advisory Committee and District Development Coordinating Committee (Step 8).	4th wk. Jul
20. DHMT submits the District Action Plan to the District Commissioner.	1st wk. Aug
21. DHMT submits the District Action Plan to the PHO (Step 9).	1st wk. Aug
22. PHO reviews District, Training Institutions, 2nd and 3rd level hospital plans and institutions revise/finalise their plans and resubmit to PHO (Step 10).	2nd wk. Aug
23. Provinces approve plans, sign MoUs and submit consolidated copies of district, training institutions and 2nd and 3rd level hospital plans to MoH.	3rd wk. Aug
24. MoH HQ consolidates and submits Health Sector plan and budget to MoFNP.	2nd wk. September

From ACTION PLANNING HANDBOOK FOR DISTRICT HEALTH TEAMS 5th edition

3. Periodical Preventive Maintenance

Although the management system of medical equipment and infrastructures includes several components, this handbook is mainly dealing with Periodical Preventive Maintenance (PPM) and action plan with budget allocation plan

PPM is preventive action based on periodical monitoring and checking of the condition of medical equipment and infrastructures. Corrective maintenance is the action taken when damaged equipment or facilities are identified. PPM aims at anticipating possible damages before they occur.

PPM procedures are described on following chapters.

4. PPM for Infrastructure

4.1. Utility List and Site Map

At first, the person in charge of infrastructure (generally, the Environmental Health Officer) checks the current condition of hospital utilities and edits a site map with building information (Form 1 and Form 2). If there is no name of the building block, EHO and management team shall give the name of the building block officially.

In terms of utilizing “Google Earth”, internal usages, such as reports for the company, presentation, proposal and business documents, are possible. However even in such a case, it is always necessary to describe the right attribution of Google and the data provider.

This year’s data must be revised based on last year’s data, to include any updated information. Regarding rehabilitation data on Form 2, a column for this year’s data was added and the data from 5 years ago was aggregated on one column

Form 1

Infrastructure Monitoring sheet		2015		Change the year	
Facility Code					
Facility Name	Chipata District Hospital	Province	Lusaka		
Facility Type	1st Level hospital	District	Lusaka		
Establishment Year					
Utility					
Main Power	<input checked="" type="checkbox"/> National Grid <input type="checkbox"/> Solar <input type="checkbox"/> Other				
Generator: 1	Availability: <input checked="" type="checkbox"/> Yes (<input checked="" type="checkbox"/> Working <input type="checkbox"/> Not working) <input type="checkbox"/> No				
Water	<input type="checkbox"/> Council Mains Supply <input checked="" type="checkbox"/> Borehole :1				
Sewage	<input type="checkbox"/> Council sewer <input checked="" type="checkbox"/> Septic tanks <input type="checkbox"/> Sewage ponds				
Incinerator	Availability: <input checked="" type="checkbox"/> Yes (<input checked="" type="checkbox"/> Working <input type="checkbox"/> Not working) <input type="checkbox"/> No				
Communication	<input type="checkbox"/> Land line <input type="checkbox"/> Cell phone <input checked="" type="checkbox"/> HF/VHF radio				
Cost for Rehabilitation work				Kwacha/ 2016	
Fill the budget and actual amount if possible					

4.2. Monitoring Sheet of Hospital Infrastructure

Then, the names of rooms are put on the monitoring sheet (Form 3-1). Necessary rows for writing the names of rooms are added in building’s lines. Last year’s data is also utilized for this year (form3-2).

SITE MAP: Satellite Image from Google, Digital Globe

Not delete the right attribution



Numbering

Building Block

No	Building Name		Year built	Storey	Rehabilitation				
					before 2011	2012	2013	2014	2015
1	Matron's office		1982	1					
2	Screening room, Registration		1982	1					
3	Pharmacy, Treatment room		1990	1					
4	Screening room for children, Dental		1982	1					
5	Laboratory	Fill by building block	1982	1					
6	Labor ward			1					
7	Guardroom			1					
8	VCT, EHT Office, Zambart project office		2000	1					
9	X-ray, Ultrasound, TB office, male circumcision room		2000	1					
10	TB Shelter		2011	1					
11	Store		1986	1					
12	Theater			1					
13	Impatient(General)		1986	1					
14	Surgical ward / ART triage		1986	1					
15	Laundry			1					
16	Old incenerator			1					
17	ART (Pharmacy, laboratory)		1982	1					
18	ART shelter			1					
19	Medicine Container			1					
20	Mother and Child Health		1982	1					
21	ART record store			1					
22	Mortury			1					
23	Incenerator		2014	1					

Next year Before 2012 2013 2014 2015 2016

Toilet & Shower

Fill place or activity

4.3. Hospital Round

The person in charge of infrastructure is going around the hospital to check for infrastructure's damage or trouble and fill-in the monitoring sheet. Pictures of the damaged or troubled areas should be taken, especially when the problem is serious.

The condition of building structures is filled-in by building blocks. Regarding the foundation of the building, distortion of the outer wall and erosion of the land must be checked. If there is a crack on the outer wall, the possibility of a crack on the inner wall should also be checked. Regarding the roof condition, it has to be checked not only from outside but also from inside, removing the maintenance plates on the ceiling, especially in case of water leaking from the ceiling. The roof structure (beams) should be checked removing the maintenance plates on the ceiling and the joints to the outer wall.

Damaged utilities, such as electric outlet, water tap, shower, pipe, wash basin, are mentioned on the sheet and as well as any trouble situation such as leakage of electricity, water leakage, sewage clogging and so on.

Regarding the interior of the rooms, floor damage, such as peeling tiles, scraping surface, unevenness, distortion and cracks, wall damage, such as peeling, crack, ash, mold and dust, ceiling damage, such as hole, distortion, crack, mold, water leakage and peeling must be checked. The presence of bird's nests, beehives and ant's nests in the toe room must also be checked. Troubles on doors and windows must also be noted on the monitoring sheet.

Regarding cracks and leakages, the degree of damage must also be described (example; L=Large Damage, S=Small Damage). L means serious trouble and needs to be repaired as soon as possible. S means minor trouble and it is possible to look at the situation.

Serious troubles are pointed out by numbers on the sheet and the pictures of the numbering points are put on Infrastructure Monitoring Photo Sheet (Form 4)

Form 3-1

Monitoring Sheet															
Name: Chipata District Hospital		L= Large damage and needs repair soon													
Date: 16-Oct-15		S= small damage													
Surveyor:															
Building Name	Level	Room	Main Structure				Utility				GF Interior				
			Foundation	Wall	Roof	Roof Structure	Power	Water supply	Drainage	Sanitary	Floor	Wall	Ceiling	D/W	
1	Matron's office														
2	Screening room, Registration														
3	Pharmacy, Treatment room														
4	Screening room for children, Dental														
5	Laboratory														
6	Labor ward														
7	Guardroom														
8	VCT, EHT Office, Zambart project office														
9	X-ray, Ultrasound, TB office, male circumcision room														
10	TB Shelter														
11	Store														
12	Theater														
13	Inpatient (General)														
14	Surgical ward / ART triage														
15	Laundry														
16	OH incenerator														
17	ART (Pharmacy, laboratory)														
18	ART shelter														
19	Medicine Container														
20	Mother and Child Health														
21	ART record store														
22	Mortuary														
23	Incenerator														

Form 3-2

Monitoring Sheet																		
Name: Chipata District Hospital		L= Large damage and needs repair soon																
Date: 16-Oct-15		S= small damage																
Surveyor:																		
Building Name	Level	Room	Main Structure				Utility				GF Interior							
			Foundation	Wall	Roof	Roof Structure	Power	Water supply	Drainage	Sanitary	Floor	Wall	Ceiling	D/W				
1	Matron's office	1																
2	Screening room, Registration	1	Screening room															
		1	Toilet															
		1	registry															
3	Pharmacy, Treatment room	1	Pharmacy															
		1	Treatment room															
4	Screening room for children, Dental	1	Screening room for children															
		1	Dental															
		1	Corridor															
5	Laboratory	1																
6	Labor ward	1	Postnatal ward															
		1	Checking room															
		1	Delivery room															
		1	Sluice															
7	Guardroom	1	Corridor															
		1																
8	VCT, EHT Office, Zambart project office	1	VCT office															
		1	EHT office															
		1	Zambart project office															
9	X-ray, Ultrasound, TB office, male circumcision room	1	X-ray room															
		1	Ultrasound															
		1	TB office															
10	TB Shelter	1	Male Circumcision room															
		1																
11	Store	1																

Monitoring Sheet

Name: Chipata District Hospital

Date: 16-Oct-15

Surveyor: _____

L= Large damage and needs repair soon
S= small damage

Building Name	Level	Room	Main Structure			Utility				GF Interior							
			Foundation	Wall	Roof Structure	Roof	Roof Structure	Power	Water supply	Drainage	Sanitary	Floor	Wall	Ceiling	D/W		
1 Matron's office	1	Screening room															
2 Screening room, Registration	1	Toilet							Loose tap								D/W broken
3 Pharmacy, Treatment room	1	registry				S hole							Peel paint Mold 14				Two W/glass missing
	1	Pharmacy											L clack 12				
	1	Treatment room				Fill condition									Distortion 13		W/broken
4 Screening room for children, Dental	1	Screening room for children															
	1	Dental															
	1	Corridor					Leak 1										
5 Laboratory	1	Corridor							Loose tap								
	1	Postnatal ward															
	1	Checking room															
6 Labor ward	1	Delivery room															
	1	Sluice															
	1	Corridor															
7 Guardroom	1	Corridor															
	1	VCT office															
8 VCT, EHT Office, Zambart project office	1	EHT office								No light							
	1	Zambart project office								No light							
	1	X-ray room															
	1	Ultrasound															
9 X-ray, Ultrasound, TB office, male circumcution room	1	TB office															
	1	Male Circumcision room															
	1	Male Circumcision room															

Infrastructure Monitoring Photo Sheet; Chipata 1st level Hospital

1. Screening Corridor Leak

Number / Room / Condition



2. MCH ceiling clack



3. MCH ceiling gap



4. ART Pharmacy Clack



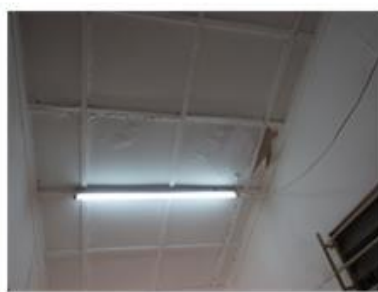
5. ART shelter corridor floor



6. ART corridor erosion



7. ART triage ceiling



8. ART triage toilet wall



9. Surgical ward entrance



10. Laboratory distortion



4.4. Priority Analysis

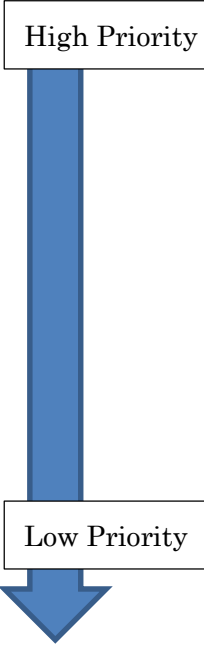
Based on the results of monitoring (hospital round), the places to repair will be prioritized. First of all, the places to be repaired in the next three years must be selected and prioritized the locations to be repaired from among them (Form 5). The form is also utilized for infrastructure maintenance plan on MTEF.

For example, the degree of priority is considerable in the following situations:

- A problem which has already caused the enormous damages to the structure of the building and for which immediate measures are implemented. The absence of measures will cause the roof and walls to collapse.
- A trouble which restricts the provision of a necessary service to the department.
- A problem affecting a department which should be maintained preferentially

Form-5

Infrastructure Maintenance Plan			
Priority	Building Name	Room	Condition
1			
2			
3			
4			
5			
6			
7			
8			
9			
10			
11			
12			
13			
14			
15			
16			
17			



4.5. Infrastructure Maintenance Plan

Actual repair methods and procedures should be considered for prioritized troubles (Form 6). It is possible to confirm the repair methods to ask the maintenance companies and also to request the estimation of the cost of the repair if necessary.

Form 6

Infrastructure Maintenance Plan								
Priority	Building Name	Room	Condition	Repair method	Repair period	Constrains	Alternatives against Constrains	Remarks
1								
2								
3								
4								
5								
6								
7								
8								
9								
10								
11								
12								
13								
14								
15								
16								
17								

Add These Column

4.6. Annual Plan

Annual action plan for infrastructure maintenance is completed on Form 6 with cost data (Form7). Annual action has to be segregated works by the district and request to Provincial Health Office on the plan.

Form 7

Infrastructure Maintenance Annual Plan									
Priority	Building Name	Room	Condition	Repair method	Repair period	Constrains	Alternatives against Constrains	Estimated Cost	Remarks
1									
2									
3									
4									
5									
6									
7									
8									
9									
10									
11									
12									
13									
14									
15									
16									
17									

Add This Column

5. PPM for Medical Equipment

5.1. Inventory of Medical Equipment

The person in charge of medical equipment (generally, medical equipment technician) checks the conditions of all of the medical equipment in the hospital using the inventory form of medical equipment guidelines (Form 8). The inventory of the medical equipment is organized at each department. It is possible to use the previous collected data if there is no updated equipment. If there are any updated data, the inventory shall be revised. The inventory shall be saved as an electronic file, and the person in charge can use it to print out when necessary.

Form 8

Equipment Inventory Checksheet (Hospitals)						Checked by :		Sheet of : / (e.g. 1/12)												
Facility Name : <i>District Hospital</i>			Facility Code :			Day/Month/Year														
Department	Item (Equipment name)	Manufacture	Model	Serial No.	Country	Manufacturing Year	Commission Year	Manuals (Mark (x), if available.)		Condition (Mark (x) for applicable status.)					Frequency of usage			Temporary Inventory No. GRZ ID #		
								Service Manual	Operation Manual	Working	Minor repairer	Major repairer	Not working	Uncommissioned	Everyday	Few times per week	Few times per month		Not used (Choose the reasons from the list in the instruction.)	
Operation Theatre Major Surgery	Resusitator	Drager	Air Shields Resusiatraire RW82-1C	EG05433	USA	2011			x	x						x				
	Suction Machine	-	Blue	-	-	-		x	x	x						x				
	Suction Machine	-	Electric Suction Apparatus	-	-	-			x	x						x				
	Examination Light	-	YD01A	-	-	-			x	x						x				

5.1.1 Steps to Update the Inventory:

Medical equipment technician will also collect the following data in addition to the daily works.

- (1) To register newly purchased equipment on the Equipment Acceptance record (Form 9) at the time the new equipment has arrived at the hospital.
- (2) To update the inventory sheet when the equipment is maintained or repaired.
- (3) To update the inventory sheet when the equipment is discarded.

Equipment Acceptance Record

Date of Acceptance	8TH MAY,2015	
Equipment Information		
(1) Equipment name	INFANT INCUBATOR	
(2) Model name	BB - 100	
(3) Serial number	2120322178	
(4) Manufacturing date	MARCH 3,2015	
(5) Actual or estimated cost	US DOLLAR 12,000	
Manufacturer's information		
(1) Manufacturer name	DISON INFANT CARE	
(2) Supplier name	ASIAN MEDICALS	
(3) Contact of Supplier	0978170XXX	
(4) Name of person	MR. GUPTA SANDEP	
(5) Telephone	978170563	
Documents		
(1) Operation manual	<input type="checkbox"/> Yes <input type="checkbox"/> No, Type: <input type="checkbox"/> Hard copy <input type="checkbox"/> CD / soft copy	
(2) Service manual	<input type="checkbox"/> Yes <input type="checkbox"/> No, Type: <input type="checkbox"/> Hard copy <input type="checkbox"/> CD / soft copy	
(3) Other documents (Including Maintenance Service Contract and Insurance Documents)		
WARRANTY FOR ONE YEAR		Type: <input type="checkbox"/> Hard copy <input type="checkbox"/> CD / soft copy
		Type: <input type="checkbox"/> Hard copy <input type="checkbox"/> CD / soft copy
		Type: <input type="checkbox"/> Hard copy <input type="checkbox"/> CD / soft copy
Composition		
No.	Name	Q'ty
Accessories		
No.	Name	Q'ty
1	FUSES	6
2	FILTERS (SMALL PIECES)	2

Form 9-2

Maintenance instruction			
No.	Required maintenance work		Frequency
1	FILTER CLEANING		1/W
Consumables			
No.	Name of consumable	Consumed per / Need to replace every	
	NONE		
Spare parts			
No.	Name of spare parts	Parts number, Note for replacement	
1	FILTERS (SMALL PIECES)	541-0021	1/6M

5.1.2 Formal Update of the Inventory

The inventory updates are prospected twice a year and are implemented before the Equipment Development Plan is created. The inventory data is utilized for developing the Equipment Development Plan.

5.2. Inventory Analysis

Based on the revised inventory form (see above), the medical equipment which needs consumables and spare parts must be identified and the selected consumables and spare parts are filled on Consumables Planning Form (Form 10) and Spare parts Planning Form (Form11). Also, if there is new registered equipment, a new purchase equipment registration sheet will refer to the lists filled.

Form 10

Consumables planning form												
Name of facility District Hospital											1-every day	
Date of draft 12/17/11											2-few times per week	
Department MCH											3- few times per month	
											4-few times per year	
No.	Equipment name	Manufacturer	Model	S/No.	Equipment condition	Name of consumables	Reference No. if any	Usage (quantity) per year	Required quantity	Frequency of usage	Estimated unit cost	Estimated total cost/year
1	Fridge	Dometic	RCW50EK	705011	1	wick	Size 32	10	10	1	K95	K950
						burner	Size 32	1	1	1	K750	K750
						blow glass	Size 32	2	2	1	K350	K700
2	BP Machine				1	Batteries	Double A	4 pairs	4pairs	1	K15	K60
3	Thermometers				1	Batteries	SG 6	6	6	1	K15	K90
	TOTAL											K2,550

Form 11

Spare parts planning form												
Name of facility District Hospital											1-every day	
Date of draft 1 15/11/2015											2-few times per week	
Department Laboratory											3- few times per month	
											4-few times per year	
No.	Equipment name	Manufacturer	Model	S/No.	Equipment condition	Name of spare parts	Reference No. if any	Required quantity	Date of trouble	Frequency of usage	Estimated unit cost	Estimated total cost/year
1	Microscopy	Olympus optica	CX32RBSF		1	Solar battery	N70	1	May-15	1	K950	K950
						Regulator	20 amps	1	May-15	1	K450	K450
						Inventor	300W	1	May-15	1	K550	K550
	TOTAL											K1,950

5.3. ME Development Plan (MDP)

5.3.1 Development of MDP

Based on comparing the inventory and the standard equipment list, procurement for shortage equipment is prioritized on MDP (Form 12). MDP shall be developed including the consideration of the following information on the inventory.

- (1) Equipment which is required for the provision of a necessary service
- (2) Equipment which is difficult to repair and which can only be replaced by a new one
- (3) Equipment which maintenance service has expired and which needs additional purchase of the equipment

It is necessary to evaluate whether the selected equipment should be purchased this year or on the medium or long-term budget plan.

Form 12

Medical Equipment Developing Plan Planning Sheet														
Name of Facility :		District Hospital					Short term : 1 year							
Date of Draft :		Apr-12					Middle/long term : 3-5 years							
Department or Room :														
No.	Information						Technical team advice		Cost for action					
	Equipment name	Model	Manufacturer	S/No.	Condition of equipment	Commissioning year (estimate)	Short term action required?	Middle term action required?	Cost of short term action	Contents of action	Expected source of funds	Cost of middle term action	Contents of action	Expected source of funds
1	Analyser	Nova 5		No5599350	Not working			Replacement					Obsolate	GRZ
2	Calorimeter	Bilread		4N530	Not working			Replacement					Obsolate	GRZ
3	Autoclave	EAC2300		9510024	Not working			Replacement				10,000,000	No spares	GRZ
4	Centrifuge			1014				Replacement				8,000,000	Obsolate	GRZ
5	Oxygen concentrator	Newlife			Not working			Replacement				11,000,000	Obsolate	GRZ

5.3.2 Budget estimation based on MDP

Budget for medical equipment shall be comprehensively estimated based on following information.

- (1) Price of Main body of equipment
- (2) Price of Accessories
Accessories, manuals, consumables, spare parts, training fee, etc.
- (3) Transportation cost
Package cost, land transportation, sea transportation, customs clearance, taxation, etc.
- (4) Installation cost
- (5) Maintenance fee
Maintenance contract, service charge, etc.

5.3.3 Budget formulation of replacement of equipment

All medical equipment has a life span, and it depends on the type of equipment. For example, it is around 5 years for the patient monitor, around 10 years for the aspirator, around 15 years for the operating table and around 20 years for the generator. Since it is difficult to repair equipment that exceeded their life span, there is sometimes no other alternative than to replace the equipment.

Annual cost of equipment replacement is estimated as follows.

The replacement budget is

$$\frac{\text{Equipment stock value}}{\text{Equipment life time}} = \text{Replacement budget required each year}$$

Examples:

A) Assume- Our Equipment Stock Value (Current Equipment on Our Inventory is
ZMW 500,000.00

Assume- All equipment had only a life of 1 year

Then we would need ZMW 500,000.00 each year to replace our equipment.

B) But- if the life of the equipment is in fact 5 years

Assume- the equipment will NOT all reach the end of its life at the same time

So then- We can spread our replacement budget over equipment lifetime as follows:

$$\text{Replacement budget each year} = \frac{\text{Value of stock}}{\text{Lifetime}}$$

$$\text{e.g. Replacement Budget per Annum} = \frac{\text{ZMW 500,000.00}}{5 \text{ year}} =$$

ZMW 100,000.00 per Annum,

Given however that, our stock will actually be made up of different types of equipment, with different life-times; some 5 years, some 10 years, some 15 years and some 20 years. Based on such lifetimes an average life time is often taken to be 10 years thus a rough estimate of the replacement budget will be the 10% of the equipment stock value each year.

To make more exact estimates, it will be necessary to be more specific and undertake calculations for each different type of equipment.

Equipment can reach its end of life within a short time if it is poorly maintained hence maintenance enhances the value for money spent on equipment, the replacement budget per annum is closely related to the budget you must spend for maintenance to avert or post-pond replacement.

5.4. Annual plan

Annual action plan for medical equipment maintenance is developed on (Form13). Annual action has to be segregated works by the district and request to Provincial Health Office on the plan.

Form 13

Action Plan for Medical equipment Maintenance

Name of facility :

No.	Department / HC / HP	Equipment	Consumables / spare parts	Quantity	Unit cost (estimate)	Total cost (estimate)	Required due date	Note
1	Lab	Olympus Optical	Solar battery	1	950	950	2M	
2			Regulator	1	450	450	2M	
3			Invertor	1	550	550	2M	
	TOTAL					1950		

5.5. Decommissioning

Based on the inventory analysis, the hospital contacts to the board of survey from the Ministry of Transport, Works, Supply and Communications (MTWSC) for the decommission list. Relevant authorities should be notified of this activity. Decommissioning will be implemented by following procedure:

- (1) List up decommissioning items
- (2) Submit the proposal of decommission to regional MTWSC.
- (3) MTWSC acknowledges the proposal and decide the schedule of survey mission.
- (4) Survey mission confirms decommissioning equipment item by item.
- (5) MTWSC sends Approval letter of decommission with BOD number.

6. Budget allocation in the District

Annual action plans for infrastructure and medical equipment are referred to Action Plan of the district hospital. Even though the annual plan of the hospital shall be developed based on the prioritized component in the hospital, minimal budget allocation for the maintenance of infrastructure and medical equipment shall be secured utilizing the annual action plans with harmonizing to the other budget components as much as possible. Though the budget of the district hospitals are finally designated by District Health Office (DHO) as a part of the budget of the district health, the management team of the district hospital has to discuss to DHO to secure necessary budget allocation for infrastructure and medical equipment on Budget Planning Activity 16 (Table 1).

7. Budget request for Provincial Health Office

Maintenance activities which is not able to be dealt by the district hospital and DHO; such as purchasing new medical device, construction of building and so on, shall be requested to Provincial Health Office (PHO). Even though requesting the activities to PHO, annual action plan has to be utilized for evidence based budget planning of PHO. Since the budget of PHO will be fixed before developing the budget of DHO, the management team of the district hospitals and DHO shall discuss the request for maintenance activities to PHO in the provincial budget launch between 3rd weeks of May (Activity 2).

8. For the Practical Users

As mentioned, the purpose of the guidebook is to secure the necessary budget of maintenance for infrastructure and medical equipment. The book is guiding how to summarize the evidences to convince the hospital management team necessity of the budget allocation for the maintenance. Filling the forms on the Guidebook is not important. The most important matter on the guidebook is description of evidence based budget plan to secure the budget allocation. You, Medical equipment technicians and Environmental health officers, understand the troubles on the infrastructure and medical equipment through daily maintenance work. However the other hospital staff does not know how severe the trouble is like you, and then you has to explain the conditions properly with proper tools for explanation. The guidebook is not only supporting to your effort for budget collection of maintaining infrastructure and medical equipment but also reducing unnecessary your work burden for budget issues in the maintenance. We hope you to utilize the guidebook for good maintenance work.

Annex.

Form 1

Infrastructure Monitoring sheet		Year	
Facility Code			
Facility Name		Province	
Facility Type		District	
Establishment Year			
Utility			
Main Power	<input type="checkbox"/> National Grid <input type="checkbox"/> Solar <input type="checkbox"/> Other		
Generator:	Availability <input type="checkbox"/> Yes (<input type="checkbox"/> Working <input type="checkbox"/> Not working) <input type="checkbox"/> No		
Water	<input type="checkbox"/> Council Mains Supply <input type="checkbox"/> Borehole :		
Sewage	<input type="checkbox"/> Council sewer <input type="checkbox"/> Septic tanks <input type="checkbox"/> Sewage ponds		
Incinerator	Availability: <input type="checkbox"/> Yes (<input type="checkbox"/> Working <input type="checkbox"/> Not working) <input type="checkbox"/> No		
Communication	<input type="checkbox"/> Land line <input type="checkbox"/> Cell phone <input type="checkbox"/> HF/VHF radio		
Cost for Rehabilitation work			Kwacha/

SITE MAP: Satellite Image from Google, Digital Globe

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10

Building Block								
No	Building Name	Year built	Storey	Rehabilitation				
				before 20	20	20	20	20
1								
2								
3								
4								
5								
6								
7								
8								
9								
10								

Monitoring Sheet

Name: _____
 Date: _____
 Surveyer: _____

L= Large damage and needs repair soon
 S= small damage

	Building Name	Level	Room	Main Structure				Utility				GF Interior						
				Foundation	Wall	Roof	Roof Structure	Power	Water supply	Drainage	Sanitary	Floor	Wall	Ceiling	D/W			
1																		
2																		
3																		
4																		
5																		
6																		
7																		
8																		
9																		
10																		
11																		
12																		
13																		
14																		
15																		

Annex.

Form 4

Infrastructure Monitoring PhotoSheet			Name of Hospital:		
Date:					
1	2	3			
4	5	6			
7	8	9			
10	11	12			
13	14	15			

Annex.
Form 5

Infrastructure Maintenance Plan

Priority	Building Name	Room	Condition
1			
2			
3			
4			
5			
6			
7			
8			
9			
10			
11			
12			
13			
14			
15			
16			
17			
18			
19			
20			

Annex.
Form 6

Infrastructure Maintenance Plan									
Priority	Building Name	Room	Condition	Repair method	Repair period	Constrains	Alternatives against Constrain	Remarks	
1									
2									
3									
4									
5									
6									
7									
8									
9									
10									
11									
12									
13									
14									
15									
16									
17									
18									
19									
20									

Infrastructure Maintenance Annual Plan										
Priority	Building Name	Room	Condition	Repair method	Repair period	Constrains	Alternatives against Constrain	Estimated Cost	Remarks	
1										
2										
3										
4										
5										
6										
7										
8										
9										
10										
11										
12										
13										
14										
15										
16										
17										
18										
19										
20										

Annex.

Form 8 Medical Equipment Inventory Check sheet for Hospitals

Equipment Inventory Checksheet (Hospitals) Facility Name :		Facility Code :		Checked by :			Day/Month/Year		Sheet of : / (e.g. 1/12)	Temporary Inventory No.													
							Manufacturing Year	Commission Year		Service Manual	Operation Manual												
Department	Item (Equipment name)	Manufacture	Model	Serial No.	Country	Condition (Mark (x) for applicable status.)		Frequency of usage															
						Working	Minor repairer	Major repairer	Not working	Uncommissioned	Everyday	Few times per week	Few times per month	Not used (Choose the reasons from the list in the instruction.)									

Annex.

Form 9 Equipment Acceptance Record (1)

Date of Acceptance		
Equipment Information		
(1) Equipment name		
(2) Model name		
(3) Serial number		
(4) Manufacturing date		
(5) Actual or estimated cost		
Manufacturer's information		
(1) Manufacturer name		
(2) Supplier name		
(3) Contact of Suppler		
(4) Name of person		
(5) Telephone		
Documents		
(1) Operation manual	<input type="checkbox"/> Yes <input type="checkbox"/> No, Type: <input type="checkbox"/> Hard copy <input type="checkbox"/> CD / soft copy	
(2) Service manual	<input type="checkbox"/> Yes <input type="checkbox"/> No, Type: <input type="checkbox"/> Hard copy <input type="checkbox"/> CD / soft copy	
(3) Other documents		
		Type: <input type="checkbox"/> Hard copy <input type="checkbox"/> CD / soft copy
		Type: <input type="checkbox"/> Hard copy <input type="checkbox"/> CD / soft copy
		Type: <input type="checkbox"/> Hard copy <input type="checkbox"/> CD / soft copy
Composition		
No.	Name	Q'ty
Accessories		
No.	Name	Q'ty

Annex.

Form 9 Equipment Acceptance Record (2)

Maintenance instruction		
No.	Required maintenance work	Frequency
Consumables		
No.	Name of consumable	Consumed per / Need to replace every
Spare parts		
No.	Name of spare parts	Parts number, Note for replacement

Annex.
Form 10

Consumables planning form

1-every day
2-few times per week
3- few times per month
4-few times per year

1 - Not functioning
2 - Working properly

Name of facility :
Date of draft :

No.	Department/HC/HP	Equipment name	Manufacturer	Model	S/No.	Equipment condition	Name of consumables	Reference No. if any	Usage (quantity) per year	Required quantity	Frequency of usage	Estimated unit cost	Estimated total cost/year	Re-order level

Annex.
Form 11

Spare parts planning form

- 1-every day
- 2-few times per week
- 3- few times per month
- 4- few times per year

Name of facility :
Date of draft :

No.	Department/ HC/HP	Equipment name	Manufacturer	Model	S/No.	1 - Not functioning properly							2 - Working properly		Re-order level			
						Equipment condition	Name of spare parts	Reference No. if any	Required quantity	Date of trouble	Frequency of usage	Estimated unit cost	Estimated total cost/year					

Medical Equipment Developing Plan planning sheet

Name of facility :

Date of draft :

Short term : 1-2 years

Middle/long term : 3-5 years

No.	Information of Equipment						Technical team advice		Judgement by MEMC					
	Department/H C/HP	Equipment name	Manufacturer	Model S/No.	Condition of equipment	Commissioning year (estimate)	Short term action	Middle term action	Cost	Action decided by MEMC	Expected source of funds	Cost	Action decided by MEMC	Expected source of funds

Action Plan for Medical equipment Maintenance

Name of facility :

No.	Department / HC / HP	Equipment	Consumables / spare parts	Quantity	Unit cost (estimate)	Total cost (estimate)	Required due date	Note

Annex 1: Equipment Standards Guidelines

Standard Equipment For Health Post

STANDARD EQUIPMENT FOR HEALTH POST

Items	Method to calculate adequate quantity for HP with qualified staff (CO, nurse or EHT)	Priority Ranking
Screening room and pre-and postnatal room		
Ambu bag for adults (resuscitator)	1 per HP	5
Ambu bag for children (resuscitator)	1 per HP	5
Autoclave, electrical, small (if electricity available)	1 per HP	5
Autoclave, non-electrical, 39 litres (if no electricity)	1 per HP	5
Bed-side screen	2 per HP	4
BP machine, adult	1 per HP	5
Chair for consulting staff	1 per HP	5
Chair for patient	2 per HP	5
Desk for consulting staff	1 per HP	5
Drainage set	1 per HP	5
Dressing set	1 per HP	5
Dressing tray	1 per HP	5
Ear syringe	1 per HP	3
Equipment cabinet	1 per HP	3
Examination couch without leg holders	1 per HP	5
Examination light	1 at HP with electricity or suitable solar energy supply	4
Gallipots, large	2 in addition to sets	3
Gallipots, medium	2 in addition to sets	5
Hospital bed, health centre/health post model	1 for observation	5
Indicator, TST control spot, pac 300	1 per HP	5
Instrument tray, large	1 per HP	3
Instrument tray, medium	1 per HP	5
Instrument trolley	1 per HP	2
Kidney dish, large	1 in addition to sets	3
Kidney dish, medium	1 in addition to sets	5
Meter, arm circumference	1 per HP	4
Otoscope set in case	1 per HP	4
Salter scale	1 per HP	5
Sterilising drum, small	1 per HP	5
Stethoscope	1 per HP	5

Equipment Planning and Monitoring Procedures Manual

STANDARD EQUIPMENT FOR HEALTH POST

Items	Method to calculate adequate quantity for HP with qualified staff (CO, nurse or EHT)	Priority Ranking
Stove, kerosene, single burner	1 per HP	5
Stretcher, folding type	1 per HP	3
Suction pump, foot operated	1 per HP	5
Suturing set	1 per HP	5
Thermometer jar	1 per HP	3
Thermometer, digital	1 per HP	5
Timer, 60 min	1 per HP	5
Torch, medical, pen-sized	1 per HP	5
Vaginal speculum, large	2 per HP	4
Vaginal speculum, medium	2 per HP	5
Vaginal speculum, small	2 per HP	3
Wastebin with lid	3 per HP	3
Weighing scale, adult	1 per HP	5
Weighing trousers	5 per salter scale (because they are sold this way only)	5
Equipment specifically for delivery room		
Bed pan	2 per HP	3
Bowl, lotion, large	1 per HP	4
Bowl, lotion, medium	2 per HP	5
Bowl, lotion, small	1 per HP	3
Bucket, stainless steel	1 per HP	4
Delivery bed	2 per HP	5
Drip stand	1 per HP	5
Footstool, one-step	2 per HP	4
Stethoscope, foetal, Pinard	1 per HP	5
Vaginal delivery/episiotomy set	2 per HP	5
Wall clock	1 per HP	5
Weighing scale, infant, beam type	1 per HP	5
Equipment specifically for ante-/postnatal room		
Bed-side cabinet (locker), health centre/health post model	1 per bed	3
Hospital bed bednet, treated	1 per bed	3
Hospital bed, health centre/health post model, with mattress	2 for ante/postnatal room	5
Infant cot bednet, treated	1 per cot	3
Infant cot with mattress	1 per post-natal bed	3
Pharmacy		
20 ml medicine cup	1 per HP	3

Equipment Planning and Monitoring Procedures Manual

STANDARD EQUIPMENT FOR HEALTH POST

Items	Method to calculate adequate quantity for HP with qualified staff (CO, nurse or EHT)	Priority Ranking
Lockable drug cabinet	1 per HP	4
Refrigerator for vaccines	1 per HP	5
Vaccine carrier	1 per HP	5
Vaccine coldbox	1 per HP	5
Laboratory equipment		
Glucometer	1 per HP	5
Haemoglobinometer	1 per HP	5
Rapid Diagnostic Test kit for malaria		5
RPR shaker, electric if possible	1 per HP	5
Environmental health equipment		
Bucket for mixing chemicals	3 per HP	5
Food and water sample box	1 per HP	5
Lovibond Comparator	1 per HP	5
Measuring jar	3 per HP	5
Meat inspection kit	1 per HP	5
Personal Protective Equipment	1 per staff involved in EH activities	5
Rodent control apparatus	1 per HP	3
Squirt gun	1 per HP	5
Tape measure	1 per HP	5
Vector control sprayer	1 per HP	5
Water level meter	1 per HP	5
Miscellaneous equipment		
Camping equipment set	1 per HP	5
Fire extinguisher	1 per HP	2
Health Post solar power supply system for light, cold chain and laboratory	1 per HP	5
Health Post/Health Centre maintenance kit	1 per HP	2
Hurricane lamp	1 per HP	1

Standard Equipment For Health Centres

STANDARD EQUIPMENT FOR HEALTH CENTRES

Items	Method to calculate adequate quantity	Priority rating
Equipment and furniture for OPD and wards, including maternity		
Ambu bag for adults (resuscitator)	2 per HC: 1 for OPD/wards + 1 for maternity ward	5
Ambu bag for children (resuscitator)	1 per HC	5
Autoclave, electrical, small	1 at OPD and 1 for wards	5
Autoclave, non-electrical, 39 litres	1 per HC	5
Bed pan	1 per 4 beds	4
Bed-side cabinet (locker), health centre/health post model	1 per hospital bed	3
Bed-side screen	1 per consulting room and 1 per 4 beds in wards	2
Bowl, lotion, large	2 per HC	4
Bowl, lotion, medium	3 per HC	5
Bowl, lotion, small	2 per HC	3
BP machine, adult	1 per qualified staff, minimum 2	5
Bucket, stainless steel	1 per delivery bed	4
Chair for consulting staff	1 per consulting room, 1 per ward	5
Chair for patient	2 per consulting room + 1 per beds in wards	5
Delivery bed	1 per delivery room	5
Desk for consulting staff	1 per consulting room, 1 per ward	5
Drainage set	1 per HC	5
Dressing set	1 for OPD + 1 for wards	5
Dressing tray, medium	1 for OPD + 1 for wards	5
Drip stand	1 per 4 beds, including couches	5
Ear syringe	1 per HC	3
Equipment cabinet	2 per HC	3
Examination couch without leg holders	1 per consulting room	5
Examination couch, gynaecological	1 per HC	5
Examination light	1 per consulting room at HC with electricity or suitable solar energy supply	2
Foot stool, one-step	1 per delivery bed	4
Gallipots, large	2 per HC as part of sets +1 as loose item	3
Gallipots, medium	2 per HC as part of sets + 1 as loose item	5
Hospital bed back rest	1 per 4 beds	2 or 3
Hospital bed bednet, treated	1 per hospital bed	3
Hospital bed, health centre/health post model, with mattress	no planning guidelines available	5
Indicator, TST control spot, pac-300	consumable	5
Infant cot bednet, treated	1 per infant cot	3
Infant cot with mattress	1 per post-natal bed	3
Infection prevention trolley	?	?
Instrument tray, large	1 per treatment room	3

Equipment Planning and Monitoring Procedures Manual

STANDARD EQUIPMENT FOR HEALTH CENTRES

Items	Method to calculate adequate quantity	Priority rating
Instrument tray, medium	1 per treatment room	5
Kidney dish, large	1 kidney dish per HC as part of sets + 1 as a loose item	3
Kidney dish, medium	1 kidney dish per HC as part of sets + 3 as a loose item	5
Otoscope set in case	1 per consulting room, maximum 2.	4
Salter scale	1 per consulting room and 3 for outreach activities	5
Sterilising drum, medium	1 per HC	5
Sterilising drum, small	1 per HC	4
Stethoscope	1 per qualified staff, minimum 2	5
Stethoscope, foetal, Pinard	1 per consulting room + 1 for maternity + 1 for outreach	5
Stove, kerosene, single burner	1 per HC	5
Stretcher, foldable	1 per HC	3
Suction pump, electrical	3 per HC: 1 for OPD/wards + 1 for maternity ward	4
Suction pump, foot -operated	2 per HC: 1 for OPD/wards + 1 for maternity ward	4
Suturing set	1 for OPD + 1 for wards	5
Thermometer jar	1 per consulting room, 1 per ward	3
Thermometer, digital	1 per consulting room, 1 per ward	5
Timer, 60 min	1 for wards and OPD together	5
Torch, medical, pen-sized	2 per HC	5
Trolley, medicine	1 per HC	4
Urinal, male	1 per 4 beds	3
Vaginal delivery/episiotomy set	3-5 per HC	5
Vaginal speculum, large	2 per HC	4
Vaginal speculum, medium	5 per HC	5
Vaginal speculum, small	1 per HC	3
Wall clock	1 for OPD + 1 for maternity ward	5
Wastebin with lid	1 per consulting room, 1 per ward	3
Weighing scale, adult	1 per consulting room	5
Weighing scale, infant, beam type	1 for OPD + 1 for maternity ward	5
Weighing trousers	1 set of 5 per salter scale (because they are sold this way)	5
Dental equipment		
Dental chair	1 per HC with dental therapist	2
Dental syringe	1 per HC with 1O trained in dental care	2
Mirror set	1 per HC with 1O trained in dental care	2
Molar extraction set	1 per HC with 1O trained in dental care	2
Probe set	1 per HC with 1O trained in dental care	2
Set of tweezers	1 per HC with 1O trained in dental care	2
Upper incisor forceps set	1 per HC with 1O trained in dental care	2
Pharmacy equipment		

Equipment Planning and Monitoring Procedures Manual

STANDARD EQUIPMENT FOR HEALTH CENTRES

Items	Method to calculate adequate quantity	Priority rating
20 ml medicine cup	2 per HC	3
Drug cabinet, lockable	1 per HC	4
Refrigerator, domestic	1 per HC	5
Tablet counting tray	1 per HC	3
Cold chain equipment		
Refrigerator for vaccines	1 per HC	5
Vaccine carrier	1 per HC	5
Vaccine coldbox		5
Laboratory Equipment		
Flammable liquid cabinet	1 per HC with laboratory	3
Autoclave, portable	1 per HC with laboratory technician or microscopist	4
Binocular microscope	1 per HC with laboratory technician or microscopist	5
Glucometer	1 per HC	5
Haemoglobinometer	1 per HC	5
Hand Tally counter	1 per HC with laboratory technician or microscopist	3
Manual centrifuge	1 per HC with laboratory technician or microscopist	4
Rapid Diagnostic Test for malaria	consumable	5
RPR rotator	1 per HC	5
Spirit lamp	1 per HC with laboratory technician or microscopist	5
Stool for laboratory worker	1 per laboratory worker	4
Timer	1 per HC with laboratory technician or microscopist	5
Tripple beam balance	1 per HC with laboratory technician or microscopist	5
Water distiller	1 per HC with laboratory technician or microscopist and no water filter; if none is available, the distiller is preferred option	3
Water filter	1 per HC with laboratory technician or microscopist and no water distiller, but water distiller is preferred option	3
Environmental health equipment		
Bucket for mixing chemicals	3 per HC	5
Food and water sample box	1 per HC	5
Lovibond Comparator	1 per HC	3
Measuring jar	3 per HC	5
Meat inspection kit	2 per HC	4
Personal Protective Equipment	2 per HC	5
Rodent control apparatus	1 per HC	3
Squirt gun	2 per HC	3
Tape measure	2 per HC	5
Vector control sprayer	1 per HC	5
Water level meter	1 per HC	5
Miscellaneous		
Camping equipment set	2 per Rural HC	2

Equipment Planning and Monitoring Procedures Manual

STANDARD EQUIPMENT FOR HEALTH CENTRES

Items	Method to calculate adequate quantity	Priority rating
Fire extinguisher	1 per designated area	1
Health Centre solar power supply system for light, cold chain and laboratory	1 per HC	5
Health Post/health centre maintenance kit	1 per HC	2
Hurricane lamp	1 per ward	1

Standard Equipment For Zonal Health Centres

STANDARD EQUIPMENT FOR ZONAL HEALTH CENTRES

Items	method to calculate adequate quantity	Priority rating
Equipment and furniture for OPD and wards, including maternity		
Ambu bag for adults (resuscitator)	1 for OPD + 1 per ward	5
Ambu bag for children (resuscitator)	3 per ZHC: 1 for OPD + 1 for paediatric ward + 1 for delivery room	5
Autoclave, electrical, small	3 at ZHC with electricity: 1 for OPD + 1 for wards + 1 for delivery room	5
Autoclave, non-electrical, 39 litres	3: 1 for OPD + 1 for wards + 1 for delivery room	5
Bed pan	1 per 4 beds	4
Bed-side cabinet (locker), health centre/health post model	1 per hospital bed	3
Bed-side screen	1 per consulting room and 1 per 4 beds in wards	4
Bowl, lotion, large	2 for OPD + 2 per ward	4
Bowl, lotion, medium	3 for OPD + 3 per ward	5
Bowl, lotion, small	2 for OPD + 2 per ward	3
BP machine, adult	1 per qualified staff, minimum 2	5
BP machine, child	1 per qualified staff, minimum 2	3
Bucket, stainless steel	1 per delivery bed	4
Chair for consulting staff	1 per consulting room, 1 per ward	5
Chair for patient	2 per consulting room + 1 per beds in wards	5
Delivery bed	2 per delivery room	5
Desk for consulting staff	1 per consulting room, 1 per ward	5
Diagnostic set	1 per consulting room, maximum 2.	4
Drainage set	2 per ZHC	5
Dressing set	2 per ZHC: 1 for OPD + 1 for wards	5
Dressing tray, medium	2 per ZHC: 1 for OPD + 1 for maternity ward	5
Drip stand	1 per 4 beds	5
Ear syringe	2 per ZHC	3
Equipment cabinet	1 for OPD and 1 per ward	3
Examination couch without leg holders	1 per consulting room	5
Examination couch, gynaecological	2 per ZHC	5
Examination light	1 per consulting room at HC with electricity or suitable solar energy supply	4
Foot stool, one-step	1 per delivery bed	4
Gallipots, large	3 per ZHC: 2 per HC as part of sets + 1 as loose item	3
Gallipots, medium	3 per ZHC: 2 per HC as part of sets + 1 as loose item	5
Hospital bed back rest	1 per 4 beds	2 or 3
Hospital bed bednet, treated	1 per hospital bed	3

Equipment Planning and Monitoring Procedures Manual

STANDARD EQUIPMENT FOR ZONAL HEALTH CENTRES

Items	method to calculate adequate quantity	Priority rating
Hospital bed, health centre/health post model, with mattress	no planning guidelines available	5
Indicator, TST control spot, pac-300	consumable	5
Infant cot bednet, treated	1 per infant cot	3
Infant cot with mattress	1 per post-natal bed	3
Infection control trolley	?	?
Instrument tray, large	1 per treatment room + 1 per ward	3
Instrument tray, medium	1 per treatment room + 1 per ward	5
Instrument trolley		B?
Kidney dish, large	2 kidney dishes per HC as part of sets + 1 as a loose item/ward	3
Kidney dish, medium	1 kidney dish per HC as part of sets + 1 as a loose item/ward	5
Mayo table	1 per ZHC	5
Medicine trolley	1 for OPD and 1 per ward	5
Salter scale	1 per consulting room and 3 for outreach activities	5
Sterilising drum, medium	2: 1 for OPD + 1 for delivery room	5
Sterilising drum, small	3: 1 for OPD + 1 for wards + 1 for delivery room	5
Stethoscope	1 per qualified staff, minimum 2	5
Stethoscope, foetal, Pinard	1 per consulting room + 2 for maternity + 1 for outreach	5
Stove, kerosene, single burner	1 per ZHC	5
Stretcher, foldable	2 per ZHC	3
Suction pump, electrical	3 per ZHC with electricity: 1 for OPD + 1 for wards + 1 for delivery room	4
Suction pump, foot -operated	3 per ZHC: 1 for OPD + 1 for wards + 1 for delivery room	4
Suturing set	3 per ZHC: 2 for OPD + 1 for wards	5
Thermometer jar	1 per consulting room, 1 per ward	3
Thermometer, digital	1 per consulting room, 1 per ward	5
Timer, 60 min	3: 1 for OPD + 1 for wards + 1 for delivery room	5
Torch, medical	1 at OPD and 2 for wards	5
Urinal, male	1 per 4 beds	3
Vacuum aspirator, manual (MVA)	2-4 per ZHC	5
Vaginal delivery/episiotomy set	3-5 per ZHC	5
Vaginal speculum, large	2 per ZHC	4
Vaginal speculum, medium	1 per consulting room, 3 for maternity and 4 for MCH room	5
Vaginal speculum, small	2 per ZHC	3
Wall clock	2 per ZHC: 1 for OPD + 1 for maternity ward	5
Wastebin with lid	1 per consulting room, 1 per ward	3

Equipment Planning and Monitoring Procedures Manual

STANDARD EQUIPMENT FOR ZONAL HEALTH CENTRES

Items	method to calculate adequate quantity	Priority rating
Weighing scale, adult	1 per consulting room +1 for wards	5
Weighing scale, infant, beam type	2 per ZHC: 1 for OPD + 1 for maternity ward	5
Weighing trousers	1 set of 5 per salter scale (they are sold this way)	5
Dental equipment		
Bench top autoclave	1 per ZHC with qualified dental practitioner	2
Dental amalgamator	1 per ZHC with qualified dental practitioner	2
Dental chair	1 per ZHC with qualified dental practitioner	2
Dental compressor	1 per ZHC with qualified dental practitioner	2
Dental film processor or developer	1 per ZHC with qualified dental practitioner	2
Dental instrument cabinet	1 per ZHC with qualified dental practitioner	2
Dental instrument set	2 per ZHC with qualified dental practitioner	2
Dental instrument tray	2 per ZHC with qualified dental practitioner	2
Dental light	1 per ZHC with qualified dental practitioner	2
Dental light curing unit	1 per ZHC with qualified dental practitioner	2
Dental syringe	2 per ZHC with qualified dental practitioner	2
Dental x-ray unit	1 per ZHC with qualified dental practitioner	2
Dentist stool	1 per ZHC with qualified dental practitioner	2
Treatment unit	1 per ZHC with qualified dental practitioner	2
Ultrasonic dental scaler	1 per ZHC with qualified dental practitioner	2
Pharmacy equipment		
20 ml medicine cup	5 per HC	3
Drug cabinet, lockable	1 per HC	4
Refrigerator, domestic	1 per HC	5
Tablet counting tray	2 per HC: 1 for pharmacy + 1 for ART pharmacy	3
Cold chain equipment		
Refrigerator for vaccines	1 per HC	5
Vaccine carrier	1 per HC	5
Vaccine coldbox		5
Laboratory Equipment		
Analytical balance	1 per ZHC with laboratory technician	5
Autoclave for laboratory, small	1 per ZHC with laboratory technician	A1 OR A2
Blood Bank Refrigerator	1 per ZHC with laboratory technician	5
Bunsen burner	1 per ZHC with laboratory technician	5
CD 4 Counting machine	1 per ZHC with laboratory technician	5
Centrifuge, electrical	1 per ZHC with electricity and laboratory technician or microscopist	4
Centrifuge, manual	1 per ZHC with laboratory technician or microscopist	4
Chair for administrative duties	1 per ZHC	2
Chemistry analyser	1 per ZHC with laboratory technician	5
Differential counter		NOT/
Flammable liquid cabinet	1 per ZHC	3
Glucometer	1 per ward	5

Equipment Planning and Monitoring Procedures Manual

STANDARD EQUIPMENT FOR ZONAL HEALTH CENTRES

Items	method to calculate adequate quantity	Priority rating
Haematology analyser	1 per ZHC with laboratory technician	5
Haemoglobinometer, Colorimeter type	?	4
Haemoglobinometer, Haemocue Hb 201+	1 per ZHC	4
Haemoglobinometer, Colour scale, WHO model	?	4
Hand tally counter	1 per ZHC with laboratory technician or microscopist	5
Hot air oven		5
Laboratory Refrigerator/freezer		5
Microhaematocrit centrifuge	1 per ZHC with laboratory technician	5
Microscope, binocular	2 per ZHC with laboratory technician and/or microscopist	5
pH meter		3
Rapid Diagnostic Test for malaria		4
RPR rotator	1 per ZHC	5
Spirit lamp	1 per ZHC with laboratory technician or microscopist	5
Stool for laboratory worker	1 per laboratory worker	2
Table for administrative duties	1 per laboratory	2
Timer	1 per ZHC with laboratory technician or microscopist	5
Water bath	1 per ZHC with laboratory technician or microscopist	A3 A1
Water distiller for laboratory	1 per ZHC with laboratory technician or microscopist and no water filter; in the absence of both, the distiller is the preferred option	4
Water filter for laboratory	1 per ZHC with laboratory technician or microscopist and no water distiller, but water distiller is preferred option	3
<i>Environmental health equipment</i>		
Bucket for mixing chemicals	3 per ZHC	5
Food and water sample box	2 per ZHC	5
Lovibond Comparator	1 per HC	3
Measuring jar	3 per ZHC	5
Meat inspection kit	2 per HC	4
Personal Protective Equipment	1 per sprayer and 1 per incinerator	5
Rodent control apparatus	20 per ZHC	3
Squirt gun	2 per HC	3
Tape measure	2 per HC	5
Vector control sprayer	3 per ZHC	5
Water level meter	1 per HC	5
<i>Kitchen equipment</i>		
Bain Marie		
Boiling pot		
Cooking pot of 10 litres		
Cooking pot of 20 litres		
Cooking pot of 40 litres		
Food trolley		
Freezer, domestic, chest model, for kitchen		
Heated Bain Marie Trolley		
Preparation table		
Stove, domestic, gas		

Equipment Planning and Monitoring Procedures Manual

STANDARD EQUIPMENT FOR ZONAL HEALTH CENTRES

Items	method to calculate adequate quantity	Priority rating
Stove, industrial		
Weighing Scale for kitchen, 0-120 kg		
<i>Laundry equipment</i>		
Clean linen trolley		
Industrial ironer		
Laundry press		
Laundry Trolley		
Sewing machine		
Tumble dryer		
Washer-extractor		
Water heater		
<i>Mortuary equipment</i>		
Mortuary fridge/unit (4 trays)		2
Mortuary trolley		1
<i>Miscellaneous</i>		
Camping equipment set	2 per ZHC (RURAL ZHC ONLY)	2
Fire extinguisher	1 per designated area	1
Health Centre solar power supply system for light, cold chain and laboratory	1 per ZHC	5
Health Post/Health Centre maintenance kit	2 per ZHC	2
Hurricane lamp	1 per ward	1

Standard Equipment And Furniture For First Referral Level Hospitals

STANDARD EQUIPMENT AND FURNITURE FOR FIRST REFERRAL LEVEL HOSPITALS

Items	Method to calculate adequate quantity (assuming qualified staff)	Priority rating
1. Hospital Affiliated Health Centre		
<i>1.1. Medical equipment and furniture</i>		
Desk for consulting staff	1 per consulting room + 1 per ward	A1
Chair for consulting staff	1 per consulting room + 1 per ward	A1
Chair for patient	2 per consulting room	A1
Wastebin with lid	1 per consulting room + 1 per ward	A3
Wall clock	1 for OPD and 1 for maternity	A3
Equipment cabinet	2 per HC	A3
Stretcher, folding type	1 per HC	A3
Examination couch, gynaecological	1 per HC	A1
Examination couch without leg holders	1 per consulting room	A1
Bed-side screen	1 per consulting room + 1 per ward	A2
Examination light	1 per consulting room at HC with electricity or suitable solar energy supply	A2
Torch, medical, pen-sized	2 per HC	A1
Thermometer, digital	1 per consulting room + 1 per ward	A1
Thermometer, mercury type	1 per consulting room + 1 per ward	A1
Thermometer jar	1 per consulting room + 1 per ward	A3
Salter scale	1 per consulting room and 3 for outreach activities	A1
Weighing trousers	1 set of 5 per salter scale (because they are sold this way)	A1
Weighing scale, adult	1 per consulting room	A1
Stethoscope, binaural	1 per qualified staff, minimum 2	A1
BP machine, adult	1 per qualified staff, minimum 2	A1
Ear syringe	1 per HAHC	A3
Otoscope set in case	1 per consulting room, maximum of 2	A2
Vaginal speculum, small	1 per HC	A3
Vaginal speculum, medium	5 per HC	A1
Vaginal speculum, large	2 per HC	A2
Trolley, medicine	1 per HC	A1
Autoclave, electric, small	1 per HC with electricity	A1
Autoclave, non-electric, small (39 litres)	1 per HC without electricity	A1
Sterilising drum, small	1 per HC	A2
Sterilising drum, medium	1 per HC	A1
Timer, 60 min	1 per HC	A1
Indicator, TST control spot	1 per HC	A1
Instrument tray, medium	1 per consulting/treatment room	A1
Instrument tray, large	1 per consulting/treatment room	A3
Suction pump, foot operated	1 per HC without electricity	A2
Suction pump, electric	1 per HC with electricity	A2
Ambu bag for adults (resuscitator)	2 per HC: 1 for OPD/wards + 1 for maternity ward	A1
Ambu bag for children (resuscitator)	1 per HC	A1
Drainage set	1 per HC	A1
Dressing set	1 for HAHC OPD + 1 for HAHC wards	A1
Dressing tray, medium	1 for HAHC OPD + 1 for HAHC wards	A1

Equipment Planning and Monitoring Procedures Manual

STANDARD EQUIPMENT AND FURNITURE FOR FIRST REFERRAL LEVEL HOSPITALS

Items	Method to calculate adequate quantity (assuming qualified staff)	Priority rating
Suturing set	1 for HAHC OPD + 1 for HAHC wards	A1
Bowl, lotion, small	2 per HC	A3
Bowl, lotion, medium	3 per HC	A1
Bowl, lotion, large	2 per HC	A2
Gallipots, medium	2 per HC as part of sets + 1 as loose item	A1
Gallipots, large	2 per HC as part of sets +1 as loose item	A3
Kidney dish, medium	1 kidney dish per HC as part of sets + 3 as a loose item	A1
Kidney dish, large	1 kidney dish per HC as part of sets + 1 as a loose item	A3
Bed pan	1 per 4 beds	A2
Urinal, male	1 per 4 beds	A3
Drip stand	1 per 4 beds, including couches	A1
Delivery bed	1 per delivery room	A1
Footstool, one-step	1 per delivery bed	A3
Stethoscope, foetal, Pinard	1 per consulting room + 1 for maternity + 1 for outreach	A1
Delivery/episiotomy set	3-5 per HC	A1
Weighing scale, infant, beam type	1 for OPD + 1 for maternity ward	A1
Hospital bed, health centre/health post model	NO STANDARDS POSSIBLE GIVEN VARIETY OF CATCHMENT AREAS AND SIZE OF BUILDINGS	A1
Hospital bed bednet, treated	1 per hospital bed	3
Hospital bed back rest	1 per 4 beds	A3 or B?
Infant cot with mattress	1 per post-natal bed	A3
Infant cot bednet, treated	1 per infant cot	3
Bed-side cabinet (locker), health centre/health post model	1 per bed	A3
1.2 Pharmacy equipment		
20 ml medicine cup	2 per HC	A3
Drug cabinet, lockable	1 per HC	A2
Refrigerator, domestic	1 per HC	A1
Tablet counting tray	1 per HC	A3
1.3 Cold chain equipment		
Refrigerator for vaccines	1 per HC	A1
Vaccine coldbox		A1
1.4. Environmental health equipment		
Bucket for mixing chemicals	3 per HC	A1
Food and water sample box	1 per HC	A1
Lovibond Comparator	1 per HC	A3
Measuring jar	3 per HC	A1
Meat inspection kit	2 per HC	A2
Personal Protective Equipment	2 per HC	A1
Rodent control apparatus	1 per HC	A3
Squirt gun	2 per HC	A3
Tape measure	2 per HC	A1
Vector control sprayer	1 per HC	A1
Water level meter	1 per HC	A1
1.5 Miscellaneous		
Camping equipment set	2 per Rural HAHC	B
Hurricane lamp	1 per ward	C
Fire extinguisher	1 per designated area	B

STANDARD EQUIPMENT AND FURNITURE FOR FIRST REFERRAL LEVEL HOSPITALS

Items	Method to calculate adequate quantity (assuming qualified staff)	Priority rating
2. OPD and Casualty		
<i>2.1. Hospital equipment</i>		
Wheelchair	2	A3
Stretcher, folding type	1 per ambulance/patient transporting vehicle	A2
<i>2.2 Office furniture and medical equipment for screening and consultation rooms (nurses, clinical officers, doctors)</i>		
Desk for Consulting staff	1 per consulting room	A1
Chair for Consulting staff	1 per consulting room	A1
Chair for patient	2 per consulting room	A1
Equipment Cabinet	1 per consulting room	A3
Wastebin with lid	1 per consulting room	A3
Examination couch, gynaecological	1 per consulting room	A1
Examination couch without leg holders	1 per consulting room	A1
Bed-side screen	1 per consulting room	A2
Examination light	1 per consulting room	A2
Torch, medical, pen-sized	1 per consulting room	A1
Thermometer, digital	1 per consulting room	A1
Thermometer, mercury type	1 per consulting room	A1
Thermometer Jar	1 per consulting room	A3
Salter scale	1 per consulting room	A1
Wheighing trousers	1 set of 5 per salter scale (because they are sold this way)	A1
Weighing scale, adult	1 per consulting room	A1
Stethoscope, binaural	1 per consulting room	A1
BP machine, adult	1 per consulting room	A1
BP machine, child	1 per consulting room	A1
Ear syringe	1 per consulting room	A3
Diagnostic set (otoscope and ophthalmoscope)	1 per consulting room	A1
Chart, vison-testing, Snellen type	1 per consulting room	A3
Patella hamer	1 per consulting room	A3
Vaginal speculum, small	1 per consulting room	A3
Vaginal speculum, medium	3 per consulting room	A1
Vaginal speculum, large	1 per consulting room	A2
Stethoscope, foetal, Pinard	1 for entire OPD	A1
Drip stand	1 at casualty and 1 at OPD	A1
Suction pump, foot-operated	1 for entire OPD without electricity	A2
Suction pump, electric	1 for entire OPD with electricity	A2
Ambu bag for adults (resuscitator)	1 at casualty and 1 at OPD	A1
Ambu bag for children (resuscitator)	1 at casualty and 1 at OPD	A1
Medicine trolley	1 at casualty and 1 at OPD	A1
<i>2.3 Medical equipment for dressing and injection rooms</i>		
Autoclave, electric, small	1 for entire OPD with electricity	A1
Autoclave, non-electric, small (39 litres)	1 for entire OPD without electricity	A1
Sterilising drum, small	1 for entire OPD	A1
Timer, 60 min	1 for entire OPD	A1
Indicator, TST control spot	1 for entire OPD	A1
Drainage set	3 per OPD (one in use, one being sterilised, one spare)	A1

STANDARD EQUIPMENT AND FURNITURE FOR FIRST REFERRAL LEVEL HOSPITALS

Items	Method to calculate adequate quantity (assuming qualified staff)	Priority rating
Dressing set	3 per OPD (one in use, one being sterilised, one spare)	A1
Suturing set	3 per OPD (one in use, one being sterilised, one spare)	A1
Instrument tray, medium	1 per consulting/treatment room	A1
Bowl, lotion, small	1 for entire OPD	A3
Bowl, lotion, medium	1 for entire OPD	A1
Bowl, lotion, large	1 for entire OPD	A2
2.4 Medical equipment for observation ward		
Hospital bed, hospital model, two-sectioned, with mattress	1 or 2 beds in prototype L1H? Elsewhere depending upon space	A1
Hospital bed bednet, treated	1 per observation bed	A3
Hospital bed cradle	1 per 4 beds	A3
Bed-side screen	1 per 4 beds	A2
Bed-side cabinet, hospital model	1 per bed	A3
Over-bed table	1 per bed	A2
Bed pan	1 per 4 beds	A2
Urinal, male	1 per 4 beds	A2
Sputum mug	1 per 5 beds	A3
Drip stand	1 per 4 beds	A1
Oxygen concentrator	1 for the observation ward	A2
Suction pump, foot operated	1 for the observation ward	A2
Suction pump, electric	1 for the observation ward at observation wards with electricity	A2
3. All wards, except maternity ward		
3.1. Nursing stations		
Cupboard, lockable	1 per nursing station	A3
Desk	1 per nursing station	A3 OR B?
Chair	4 per nursing station	A3
Equipment Cabinet	1 per nursing station	A3 OR B?
Wastebin with lid	1 per nursing station	
3.2 Wards		
Hospital bed, hospital model, two-sectioned, with mattress	no official guidelines anymore	A1
Hospital bed bednet, treated	1 per hospital bed	a3
Infant cot	2 per paediatric ward	A3
Infant cot bednet, treated	1 per infant cot	A3
Hospital bed back rest	1 per 4 hospital beds without head section (HP/HC model)	A3 OR B
Hospital bed cradle	1 per 5 beds	A3 OR B
Hospital bed elevator	1 per 4 beds	A3 OR B
Traction frame	1 per 20 beds, excluding maternity beds	A3 OR B
Bed-side screen	1 per 4 beds	A2
Bed-side cabinet, hospital model	1 per bed	A3
Over-bed table	1 per bed	A2
Bed pan	1 per 4 beds	A2
Urinal, male	1 per 4 beds	A2
Sputum mug	1 per 5 beds	A2
Thermometer, digital	5 per ward	A1
Thermometer jar	1 per ward	A3
Weighing scale, adult	1 per adult ward, excluding surgery	A2

STANDARD EQUIPMENT AND FURNITURE FOR FIRST REFERRAL LEVEL HOSPITALS

Items	Method to calculate adequate quantity (assuming qualified staff)	Priority rating
Salter scale	1 per paediatric ward	A1
Wheighing trousers	5 per scale/ward	A1
Stethoscope, binaural	2 per ward	A1
BP machine, adult	2 per ward	A1
BP machine, child	1 per paediatric ward	A1
Diagnostic set (otoscope and ophthalmoscope)	2 for all wards together	A1
Glucometer	1 per ward	A1
Rapid Diagnostic Test kits for malaria	1 per ward	A1
Trolley, medicine	1 per ward	A1
Autoclave, electric, small	1 per ward	A2
Sterilising drum, small	1 per ward	A3
Timer, 60 min	1 per ward	A2
Indicator, TST control spot	1 set per ward	A2
Instrument tray, medium	1 per ward	A2
Instrument tray, large	1 per ward	A3
Dressing tray, medium	1 per ward	A2
Dressing trolley	1 per ward	A2
Dressing set	2 per ward (or 3: including one spare set?)	A1
Bowl, lotion, small	2 per ward	A3
Bowl, lotion, medium	3 per ward	A1
Bowl, lotion, large	2 per ward	A2
Drip stand	1 per 4 beds	A1
Oxygen concentrator	1 for paediatric ward	A2
Oxygen cylinder	1 for paediatric ward	A1
Suction pump, foot operated	1 for all wards together	A1
Suction pump, electric	1 for all wards together (hospitals with electr.)	A1
3.3. Miscellaneous		
Heater, electric	1 per ward	C
Fire extinguisher	1 per ward	B
4. Equipment for labour ward/maternity		
4.1 Sister' office		
Desk for Consulting staff	1	A2
Chair for Consulting staff	2	A2
Chair for patient	2	A2
Cupboard, lockable	1	A2
Wastebin with lid	1	A3
4.2 First stage room		
Examination couch, gynaecological	1	A1
Footstool, one-step	1	A2
Bed-side screen	1	A2
CT machine	1	A1
Examination light	1	A1
Stethoscope, foetal, Pinard	2	A1
Foetal heart detector	1	A1
Vaginal speculum, smalll	1	A3
Vaginal speculum, medium	2	A1
Vaginal speculum, large	1	A2
RPR rotator	1	A1
4.3 Delivery room		

STANDARD EQUIPMENT AND FURNITURE FOR FIRST REFERRAL LEVEL HOSPITALS

Items	Method to calculate adequate quantity (assuming qualified staff)	Priority rating
Instrument cabinet	1	A3
Instrument trolley	2	A1
Delivery bed	1 per delivery bed, so: 2	A1
Drip stand	1	A1
Footstool, one-step	1	A2
Bed-side screen	1	A2
Operating stool, revolving	2	A2
Vaginal delivery /episiotomy set	5	A1
Kick-about bowl	2	A1
Manual vacuum aspiration (MVA) kit	5	A1
Vacuum extractor, manual	1	A2
Vacuum extractor, electrical	2	A1
Weighing scale, infant, beam type	1	A1
Wall clock	1	A2
Resuscitaire	1	A1
Neonatal incubator	2	A2
Suction pump, electric	1	A1
Suction pump, foot-operated	1	A1
<i>4.4 For recovery room</i>		
Hospital bed, hospital model, two-sectioned, with mattress	2	A1
Infant cot with mattress	1 per bed	A2
Bed-side screen	1	A2
Bed-side cabinet, hospital model	1 per bed	A3
Over-bed table	1 per bed	A2
Bed pan	1	A2
Drip stand	1	A1
<i>4.5 For postnatal ward</i>		
Hospital bed, hospital model, two-sectioned, with mattress	depends, prototype L1H: 10 beds	A1
Bednet, long lasting insecticide treated, for hospital bed	1 per bed	A1
Infant cot with mattress	1 for 4 beds	A2
Bednet, long lasting insecticide treated, for hospital cot?	1 per cot	A2
Bed-side screen	1 per 5 beds	A2
Bed-side cabinet, hospital model	1 per bed	A3
Over-bed table	1 per bed	A2
Bed pan	1 per 2 beds	A2
Phototherapy machine	1	NOT RATED
Oxygen concentrator	1	A1
Oxygen cylinder	4	A1
<i>4.6 Equipment for use in various parts of maternity ward</i>		
Vaginal speculum, small	2	A3
Vaginal speculum, medium	2	A1
Vaginal speculum, large	2	A2
Thermometer, digital	1 per 5 beds	A1
Thermometer jar	1 per 5 beds	B
Weighing scale, infant, beam type	1	A2
Stethoscope, binaural	2 per ward	A1
BP machine, adult	2 per ward	A1

STANDARD EQUIPMENT AND FURNITURE FOR FIRST REFERRAL LEVEL HOSPITALS

Items	Method to calculate adequate quantity (assuming qualified staff)	Priority rating
Glucometer	1	A3
Rapid Diagnostic Test kits for malaria	not done by group	A1
Medicine trolley	1 per ward	A1
Autoclave, electric, medium	1 per ward	A2
Sterilising drum, small	1 per ward	A3
Sterilising drum, medium	1 per ward	A2
Timer, 60 min	1 per ward	A1
Indicator, TST control spot	depend on consumption	A1
Instrument tray, medium	1 per ward	A2
Instrument tray, large	1 per ward	A3
Dressing tray, medium	1 per ward	A2
Dressing trolley	1 per ward	A2
Dressing set	2 per ward	A1
Bowl, lotion, small	2 per ward	A3
Bowl, lotion, medium	2 per ward	A1
Bowl, lotion, large	2 per ward	A2
Drip stand	1 per 5 beds or 1 per ward in prototype	A1
5. Operating theatre equipment (the operating unit may consist of one or more operating theatres)		
Ambu bag for adults (resuscitator)	1 per hospital operating unit	A1
Ambu bag for children (resuscitator)	1 per hospital operating unit	A1
Anaesthetic machine	2 per hospital	A1
Bowl, lotion, large	3 per operating table	A2
BP machine, adult	2 per hospital operating unit	A1
Bucket, stainless steel with cover	4 per operating table	A3
Coagulation Unit	1 per hospital operating unit	A2
Dangerous drugs, cabinet	1 per operating theatre	A3
Defibrillator	1 per hospital	A1
Dressing tray, large	3 per operating theatre	A1
Dressing tray, medium	2 per operating theatre	A2
Dressing tray, small	1 per operating theatre	A2
Dressing trolley	1 per operating theatre	A1
Drip stand	2 per operating table	A1
Ear syringe	1 for all wards (to be kept in minor theatre)	A3
Footstool, one-step	2 per operating table	A3
Instrument cabinet	1 per operating theatre	A3
Instrument tray, large	8 per operating unit	A1
Instrument trolley	1 per operating table	A1
Kick-about bowl	3 per operating table	A2
Laryngoscope set	5 per hospital	A1
Mayo table	2 per operating table	A1
Neonatal resuscitaire	1 per hospital operating unit	A2
Operating stools, revolving	3 per operating table	A2
Operating table	2 per hospital	A1
Operating-room light, fixed, ceiling mounted	1 per operating theatre	A1
Operating-room light, portable, with stand	2 per hospital	A2
Oxygen concentrator	2 per operating unit	A3
Oxygen cylinder	4 per operating unit	A3
Patient trolley	2 per operating unit	A1
Pulse oximeter, separate		A1

STANDARD EQUIPMENT AND FURNITURE FOR FIRST REFERRAL LEVEL HOSPITALS

Items	Method to calculate adequate quantity (assuming qualified staff)	Priority rating
Recovery bed	1 per operating theatre	B
Stand, single bowl	2 per operating table	B
Stethoscope, binaural	2 per hospital operating unit	A1
Suction pump, electric	3 (one for surgeon, two for anaesthetist)	A1
Ventilator	1 per operating theatre	A1
Vital signs monitor, portable	1 per hospital	A1
Wall clock	1 per operating theatre	A1
X-Ray film viewing box (negatoscope)	1 per operating theatre	A3
Theatre instrument sets		
Set, amputation	2	A1
Set, bilateral tubal ligation	3 or 5?	A3
Set, caesarian section	4 or 10?	A1
Set, decapitation	1	A3
Set, dilatation and curetage Set (D+C set)	3 or 10?	A1
Set, general	6?	A1
Set, laparotomy	3 or 4?	A1
Set, minor surgery	3	A1
Sterilisation equipment		
Autoclave, electric, 400 litres	1 per operating theatre	A1
Bed pan washer	1 per ward	
Sterilising drum, large	2 per operating unit	A1
Sterilising drum, medium	2 per operating unit	A1
Ultrasonic cleaner	1 per operating theatre	A3
6. Dental unit		
Bench top autoclave	1	B
Dental amalgamator	1	B
Dental chair	1	B
Dental compressor	1	B
Dental film processor or developer	1	B
Dental instrument cabinet	1	C
Dental instrument set	1	B
Dental Instrument tray	2	B
Dental light	1	B
Dental light curing unit	1	B
Dental treatment trolley	1	C
Dental treatment unit	1	B
Dental x-ray unit	1	B
Dentist stool	1	B
Ultrasonic dental scaler	1	B
7. Pharmacy		
20 ml medicine cup	?	A3
Drug cabinet, lockable	1	A2
Graduated glass measure	?	B
Mixer	1	B
Mortar and pestle	2	B
Pharmacy balance	1	B
Pharmacy heavy duty trolley	1	B
Pharmacy refrigerator	1	A1
Tablet and capsule counter	1	B
Tablet counting tray	1	B
Vaccine refrigerator	1	A1

STANDARD EQUIPMENT AND FURNITURE FOR FIRST REFERRAL LEVEL HOSPITALS

Items	Method to calculate adequate quantity (assuming qualified staff)	Priority rating
Water distiller	1	B
Water filter	?	B
8. Equipment for the Medical Laboratory		
<i>8.1. Furniture for medical laboratory</i>		
Stool for laboratory worker	1 per laboratory staff, minimum 2	A2
Chair for laboratory worker (adm. duties)	1	A3
Table for laboratory worker (adm. Duties)	1	A3
<i>8.2. Laboratory equipment</i>		
Anaerobic jar	3	A1
Analytical balance	1	A1
Autoclave for labobatory, medium	1	A1
Binocular microscope	2	A1
Blood bank refrigerator	1	A1
Bunsen burner	1	A1
CD4 counting machine	1	A1
Centrifuge, small	1	A1
Chemistry analyser	1	A1
Differential counter	1	A2
Flammable liquid cabinet	1	A3
Haematology analyser	1	A1
Hot air oven	1	A2
Hot plate, controlled temperature	not done by group	A1
Laboratory incubator, medium	1	A1
Laboratory refrigerator/freezer	2	A2
Microhaematocrit centrifuge	1	A1
Micropipettes, automated	not done by group	A1
pH meter	1	A3
Roller/mixer	1	A1
RPR rotator	1	A1
Spirit lamp	2	A1
Timer	2	A1
Voltex for CD4 counting	not done by group	A1
Water bath	1	A3
Water distiller	1	A2
<i>8.3 Miscellaneous</i>		
Cold box for sample referral	1	B
Fire extinguisher	1	B
First aid box	1	B
Sharps boxes	not done by group	B
Voltage stabliliser/UPS on all electric equipment	1 for each electric device	A1
Wall clock	1	B
9. Radiology department		
Actinic marker	1	A1
Film processor, automatic	1	A2
Darkroom safety light holder	2	B
Dryer for manual film processor	1	A1
Electrolyte Silver Recovery Kit	1	B
Film hanger (set of five sizes)	4	A1
HSG kit	not done by group	not rated
Lead apron	1 for patient, 1 for staff	A1

STANDARD EQUIPMENT AND FURNITURE FOR FIRST REFERRAL LEVEL HOSPITALS

Items	Method to calculate adequate quantity (assuming qualified staff)	Priority rating
Lead gloves	1 pair	A1
Film processor, manual	1	A1
Protective lead shield or screen	1	A1
Quality assurance kit	not done by group	not rated
Ultrasound scanner with printer	1	A2
X-ray film stationery grid	1	A1
X-Ray film viewing box (negatoscope)	1	A1
X-Ray loading bench (Film hopper)	1	A1
X-ray unit, fixed	1	A1
X-ray unit, mobile	1	A3
10. Kitchen		
Bain Marie	1	C
Boiling Pot	2	B
Cooking pot of 10 litres	1	B
Cooking pot of 20 litres	1	B
Cooking pot of 40 litres	1	B
Fire extinguisher	1	B
Food trolley, basic	1	C
Freezer, domestic, chest model	1	B
Heated Bain Marie Trolley	1	C
Preparation table	2	B
Refrigerator, domestic		B
Stove, domestic, gaz (back up)	1	C
Stove, industrial	1	B
Weighing scale , 0-120 kg	1	C
11. Laundry department		
20 litre water urn	1	B
Clean Linen Trolley	1	B
Industrial Ironer	1	B
Laundry Press	1	C
Laundry trolley	4	C
Sewing Machine	1	C
Tumble Dryer	1	B
Washer Extractor	2	B
Water heater	1	C
12. Mortuary		
20 litre bucket	1	C
Autopsy saw	1	B
Autopsy set	1	B
Autopsy table	1	B
Mortuary fridge/unit (4 trays)	1	B
Mortuary trolley	1	B
Organ table	1	B
Spring balance	1	C

DHIS Equipment Budget Report

OU1	(All)					
Ownership	(All)					
OUType	(All)					
OURurUrb	(All)					
SortOrder	(All)					
IndicatorShort	(All)					
IndType	(All)					
yPeriod	(All)					
Sum of SumCalc1						dPeriod
IndGroup		IndicatorName				2008/01/01
Equipment - BHCP Essential		Ambu bag for adults budget				450.00
		Ambu bag for children budget				0.00
		Autoclave, electrical, small budget				162.00
		Autoclave, non-electrical, 39litres budget				0.00
		Bed pan budget				0.00
		Bed side screen budget				-460.00
		Bowl, lotion, large budget				20.00
		Bowl, lotion, medium budget				60.00
		BP machine adult budget				0.00
		Bucket, stainless steel budget				0.00
		Chair for consulting staff budget				-60.00
		Chair for patient budget				-60.00
		Delivery bed budget				200.00
		Desk for consulting staff budget				-200.00
		Drainage set budget				0.00
		Dressing set budget				-60.00
		Dressing tray, medium budget				144.00
		Drip stand budget				282.00
		Examination couch without leg holders budget				-600.00

Examination couch, gynaecological budget	-1,300.00
Examination light budget	-500.00
Foot stool, one-step budget	12.00
Galliport, medium budget	124.00
Hospital bed, health centre/health post model, with mattress budget	2,400.00
Indicator, TST control spot, pac-300 budget	-2.00
Instrument tray, medium budget	0.00
Kidney dish medium, budget	0.00
Medicine trolley budget	0.00
Sterilising drum, medium budget	0.00
Sterilising drum, small budget	0.00
Stethoscope, foetal, pinard budget	65.00
Stove, kerosene, single burner budget	0.00
Suction pump electrical budget	1,350.00
Thermometer digital budget	-52.00
Timer 60 min budget	0.00
Vaccine coldbox budget	0.00
Vaccine fridge budget	-6,200.00
Vaginal speculum large budget	60.00
Wall clock budget	15.00
Food and water sample box budget	0.00
Suction pump foot-operated budget	230.00
Suturing set budget	156.00
Vaginal delivery/episiotomy set budget	-8.00
Vaginal speculum medium budget	144.00
Torch medical budget	2.00
Weighing scale adult budget	100.00
Weighing trousers budget	180.00
Weighing scale infant beam type budget	300.00
Rapid diagnostic test for malaria budget	0.00
RPR rotator budget	-495.00
Spirit lamp budget	-40.00
Stool for laboratory worker budget	-60.00
Timer budget	0.00

Equipment Planning and Monitoring Procedures Manual

	Bucket for mixing chemicals budget	40.00
	Mayo table budget	0.00
		-3,601.00
Equipment - BHCP Essential Total		
Equipment - BHCP Non-Essential		
	Bed side cabinet locker budget	360.00
	Bowl, lotion, small budget	20.00
	BP machine child budget	0.00
	Ear syringe budget	0.00
	Equipment cabinet budget	2,500.00
	Galliport, large budget	136.00
	Lovibond comparator budget	0.00
	Stretcher, foldable budget	0.00
	Wastebin with lid budget	30.00
	Vaginal speculum small budget	10.00
	Thermometer jar budget	-12.00
	Infant cot bednet, treated budget	2.00
	Instrument tray, large budget	0.00
	Hospital bed back rest budget	0.00
	Urinal male budget	0.00
	Hospital bednet, treated budget	12.00
	Kidney dish large, budget	0.00
	Water filter for laboratory budget	0.00
	Water distiller for laboratory budget	0.00
		3,058.00
Equipment - BHCP Non-Essential Total		
Equipment - Non BHCP		
	Dental chair budget	0.00
	Dental syringe budget	0.00
	Bench top autoclave budget	10,000.00
	Instrument trolley budget	0.00
	Dental x-ray unit budget	0.00
	Dental amalgamator budget	0.00
	Dental film processor or developer budget	0.00
	Dental compressor budget	0.00
	Dentist stool budget	0.00
	Dental instrument cabinet budget	0.00
	Dental instrument tray budget	0.00
	Dental light curing unit budget	0.00

Equipment Planning and Monitoring Procedures Manual

	Dental light budget	0.00
	Dental instrument set budget	0.00
Equipment - Non BHCP Total		10,000
Grand Total		9,457.00

