

## PART III

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### Managing resources



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## Introduction

Management is part of the daily activities of every kind of organization.

The preceding chapters discuss concepts of management. However, concepts must be turned into action. All management actions depend upon the objectives they are intended to achieve, and the objectives must therefore be clear. All other aspects of management must be seen in relation to the objectives.

The performance of daily activities requires that many elements — people, time, equipment, material, drugs, etc. — are brought together to achieve an objective, to carry out the work.

The successful performance of activities and the achievement of objectives depend upon the application of knowledge and skills to problem-solving, using all the necessary resources in the most efficient way. Efficiency depends upon how these different elements are managed. For instance, if there is no more ointment because the person responsible did not order it in time, if poor organization of the waiting room means that patients waiting in the treatment room are disturbing the work, if there is no water because the pump has broken down and no steps have been taken to repair it, the work cannot be carried out properly. In terms of management concepts, limitations of this sort will prevent the full attainment of objectives. Proper attention to such details will ensure that, when knowledge and skills are applied to a problem, they will be supported by resources that function and a system or organization that enables the work to run smoothly.

## CHAPTER 1

## Managing equipment

## Learning objectives

**After studying this chapter and doing Exercises 37–41 on pages 233–237, the health worker should be able to:**

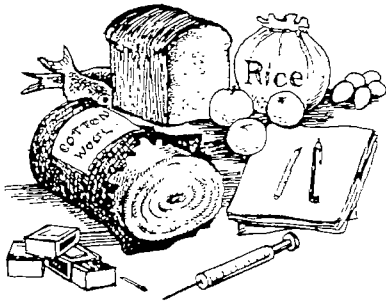
- **explain the difference between the two main types of equipment — expendable and non-expendable**
- **name the four main procedures in the management of equipment**
- **complete an order-form (requisition form) after using the correct catalogue and making a cost-estimate**
- **keep a stock record**
- **record the necessary details when issuing equipment**
- **use an inspection checklist for the control of expendable equipment and maintenance of non-expendable equipment**
- **explain the value and uses of accurate equipment records.**

The two main types of material equipment are known as:

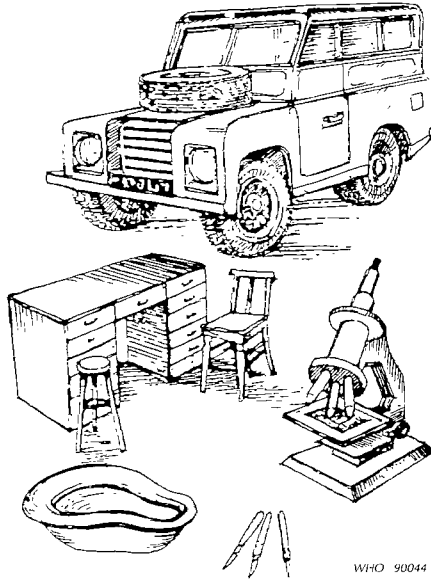
- expendable (also called consumable or recurrent), and
- non-expendable (also called capital or non-recurrent)

Expendable equipment is equipment that is used within a short time, e.g. matches, cotton wool, laboratory stains, paper, disposable syringes.

Non-expendable equipment is equipment that lasts for several years and needs care and maintenance, e.g. microscopes, scalpels, furniture, weighing scales, vehicles, bedpans.



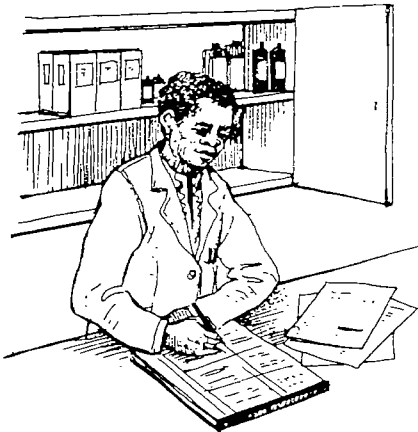
**Expendable equipment**



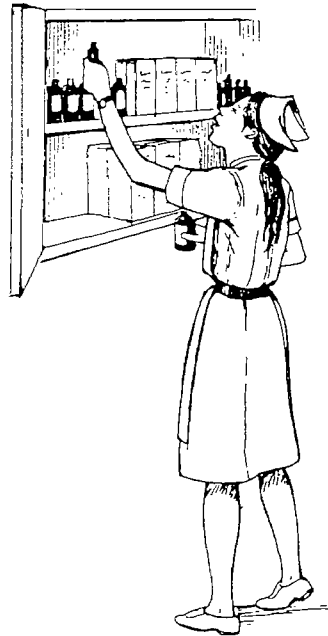
**Non-expendable equipment**

The four main procedures in the management of equipment are:

- *ordering* (obtaining equipment from stores or shops)
- *storing* (recording, labelling and holding equipment in a stock or store-room)



**Ordering**



**Storing**



**Controlling**



**Issuing**

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- *issuing* (giving out, recording the issue and the balance of remaining stock, and receiving a signed issue voucher)
- *controlling/maintaining* (controlling expendable equipment, maintaining and repairing non-expendable equipment).

## 1.1 Ordering equipment

Only some health workers (usually senior staff) are authorized to order equipment; ordering requires the following skills:

- listing requirements, from a knowledge of past use and estimates of present use
- balancing requirements with available resources and making cost-estimates
- use of a catalogue
- completion of order-forms or requisition forms.

### Making lists

Several lists of required items should be made, according to the expected place of purchase; for example:

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- matches are bought from a local shop
  - thermometers are bought from a pharmacy or medical store
  - paper is bought from the government office or a stationer.

The exact required type of each item should be written down; for example:

- torch battery, 1.5 volts
- syringe, 5 ml Luer fitting.

The quantity of each item should be estimated, which makes it necessary to know:

- how frequently the order can be placed (purchasing interval); for example:
  - kerosene — local purchase, a weekly order;
  - thermometers — from a distant store, order every 6 months
- how much is normally used during the purchasing interval; for example, five rolls of cotton wool per month for a treatment room
- whether the amount used is reasonable or whether it seems extravagant or excessive.

The quantity of an item used depends on the number of people using it and can be estimated from experience or by asking an experienced person. Since resources are always limited, consumable items should be used economically.

## Balancing needs and resources

Health services all over the world are short of resources. Priorities must therefore be established among needs, and the needs must be balanced against resources (available funds). Sometimes more funds can be obtained, for instance if the budget is increased or a new programme is started. Usually, the amounts or kinds of materials that the health worker wants to order must be reduced until they correspond with the funds available to purchase them. For this, a cost-estimate must be made before completing the order-form.

### **Making a cost-estimate**

The items required, and the quantity, price per unit and total price should be listed in tabular form as shown on the next page.

Items	Quantity	Price per unit (\$)	Total price (\$)
Thermometers	20	4.50	90.00
Sphygmomanometers	2	65.00	130.00
Sterilizer	1	35.00	35.00
Syringes, 5 ml	10	5.00	50.00
Syringes, 2 ml	40	3.50	140.00
Needles, size 10	200	0.30	60.00
Total price:			505.00

In the event that less money, say only \$435, is available, the list must be revised by reducing or omitting items, until the total matches this amount.

### Using a catalogue

A catalogue is a book that contains a list of articles available for purchase from a certain place. It is used whenever things are ordered at a distance. A catalogue may be published by a government store or by a private firm, manufacturer or shop.

Equipment for rural health services is normally obtained through a catalogue order because shops in rural areas are small and do not stock the type of equipment required. Catalogue ordering is also used when purchasing is done through government stores or departments.

A disadvantage of purchasing from a catalogue is that the purchaser does not see the articles being ordered. Often there are several types of the same item (e.g. six different kinds of scalpel or forceps). Articles may also be made of different materials (e.g. kidney dishes in stainless steel, enamel or plastic). The catalogue must therefore be studied with great care and the exact item number, description and price carefully noted.

### Completing an order-form or requisition-form

An order-form or requisition-form is usually supplied together with the catalogue. Different stores or firms have their own particular order-forms.

An order-form has a column for each of the following: item reference number, name of article, quantity ordered, price per unit, total price. An

example of an order-form is shown below.

Item no.	Name of article	Type	Unit	Quantity	Price per unit	Total

## 1.2 Storing equipment

Equipment is stored in two places:

- a main or reserve store where stocks are kept but not used
- the place of use, after issue

To store equipment the following skills are necessary:

- recording the receipt of new articles and the issue of articles
- keeping a stock-book or ledger in balance.

Receiving new items of equipment into store

A new item is usually delivered with a document, either an invoice if the item is not yet paid for or a delivery note if payment has been made. Sometimes both papers are delivered. (An invoice is a statement of the cost of the article.)

Invoices and delivery notes must be placed in separate files kept for this purpose and labelled appropriately.

The receipt of the item is then noted in the stock-book or ledger, which usually has a separate page for each item stocked. The record is divided into columns in which are noted:

- the date on which the item was received
- the reference number of the item (from the catalogue) and the place of purchase

- the number of the invoice or the statement of account
- the quantity of items.

Usually there are two ledgers, one for expendable and one for non-expendable equipment.

### Keeping a ledger balance

Each item is recorded on a separate page of the ledger. Every time an item is delivered, the quantity received is added to the total in stock. Each time an item is issued, the quantity is subtracted from the total stock. The resulting number is the balance in stock. The following table is an example:

Item	Date	Received from	Invoice	Quantity received	Quantity issued	Balance in stock
Gauze	1/4	GMS <sup>a</sup>	632	10 kg		12 kg
	5/4				2 kg	10 kg
	28/4				4 kg	6 kg

<sup>a</sup> GMS = government medical stores

## 1.3 Issuing equipment

A health centre may have several sections, such as a maternity ward, a treatment room, a laboratory, a mobile clinic. The health worker in charge of each section is responsible for the equipment in that section. Thus, a maternity nurse may be responsible for weighing-scales, syringes and vaccines, record cards, delivery kits and other apparatus, and a laboratory worker for the microscope, test-tubes, glass slides and stains.

After equipment has been ordered, received, and recorded in the stock-book or ledger, it is issued for use when it is needed. Three paperwork procedures are involved in issuing equipment:

- a ledger record (writing the issue in the stock ledger)
- issue of a voucher which must be signed.
- an inventory record of the section receiving and using the equipment.

### Ledger record

When an issue is entered in the stock ledger, the balance of items remaining in stock is calculated by subtracting the quantity issued from

the total in stock. When the balance reaches a certain low point, it is time to order new equipment. This is most important: unless issues are recorded in the stock ledger and the balance of stock remaining is calculated, it is very difficult to know when to order more stock.

### Issue voucher

The issue voucher is an official form on which are recorded:

- date of issue
- what is issued, in what quantity, and its page number in the ledger
- where it is to be used (section of health centre)
- who is responsible (usually head of section)
- signature of person responsible for its use.

The person who signs the issue voucher takes responsibility for the care of the apparatus or equipment. Issue vouchers must be filed and kept in the store. Duplicate copies are given to the department that receives the equipment.

### Inventory

An inventory is a list of items that are kept in a certain place. Each section of a health centre keeps an inventory of its non-expendable equipment.

New equipment issued must be added to the inventory, which is used at intervals to check stocks of equipment in use.

## 1.4 Controlling and maintaining equipment

Expendable equipment must be controlled to avoid wastage. Non-expendable equipment must be maintained, i.e. kept in good working condition.

To control and maintain equipment the following skills are needed:

- convincing staff that equipment must be cleaned, inspected, and kept in good order, that defects must be reported immediately, and that equipment must always be returned to its correct place after use
- using an inspection checklist and inspection schedule
- detecting discrepancies and explaining them.

## Convincing staff of the importance of maintenance

There is no easy way to convince staff of the need to clean equipment and keep it in good condition. The best way is for the supervisor to set a good example and to emphasize that equipment must be cared for:

- to prevent transmission of infection, for instance by dirty instruments
- to keep it in good condition (dirty or damp equipment deteriorates more rapidly than equipment that is kept clean and dry)
- to economize.

It is economical to make the best use of equipment and supplies. Equipment that is well cared for lasts longer; material used correctly is not wasted. (Examples of wasting resources are: using cotton wool for cleaning purposes, not turning lamps down, or not turning off lights when they are not needed.) Equipment should be returned clean and in good order to its correct place after use; in this way it lasts longer and has to be replaced less often.

## Inspection checklist

Equipment in a department is inspected by checking what is present and comparing it with the inventory. How often equipment should be checked depends on whether it is consumable or long-lasting and whether it is liable to break down.

Consumable items need to be checked frequently to avoid wastage and extravagance. Long-lasting equipment such as beds, tables and chairs needs to be checked only once a year. Equipment and machinery that is liable to break down (e.g. sphygmomanometers, electric sterilizers, vehicles) need regular and more frequent check-ups.

Inspection is uninteresting work and is therefore often forgotten or overlooked. As a reminder to the supervisor, it is useful to have special set times for inspection, detailed on an inspection schedule.

## Detecting and interpreting discrepancies

A 'discrepancy' is a difference between what is reported and what is found, for instance a difference between the amount of something actually used and the amount normally expected to be used, or a difference between the

equipment entered on the inventory list and the equipment actually present.

### Example 1

The amount of carbol fuchsin stain in a laboratory is the same today as it was three months ago, and there is no record of any having been supplied since that time. This means that the carbol fuchsin has not been used.

It is normally expected that a laboratory in a busy health centre would use carbol fuchsin to stain slides for acid-fast bacilli.

This is a discrepancy in which less has been used than expected.

*Explanation.* During investigation many reasons might be found for this discrepancy.

- Perhaps no leprosy or tuberculosis patients have been sent for examination. If not, why not?
- The laboratory may have had no acid alcohol and therefore could not use the carbol fuchsin, as both are needed in the stain for acid-fast bacilli.
- There may be a new laboratory assistant who does not know how to perform the stain and is afraid to say so.

### Example 2

Twenty 2-ml non-disposable syringes were issued to a mobile clinic. After one month only five remain. This is a discrepancy.

*Explanation.* Again, there may be many reasons for the discrepancy.

- Perhaps the syringes were badly packed in a box and were broken in transport.
- The missing syringes may have been left behind in a distant clinic.
- Some health workers may have been careless and broken the missing syringes.
- The syringes may have been stolen.

**FIND THE CAUSE OF DISCREPANCIES  
AND TAKE APPROPRIATE ACTION**

## 1.5 The value and use of equipment records

Good management takes care of equipment by:

- instructing and motivating staff to feel responsible for the equipment they use
- ordering supplies when needed
- storing supplies safely
- controlling the use of supplies.

Why is it important to keep accurate records of equipment? Why take the trouble to keep requisition books, stock ledgers, issue vouchers and inventories? Is all the paperwork a waste of time and effort? In fact, there are several good reasons for doing the paperwork:

- Previous order records make subsequent orders, whether the following month or the following year, much quicker and easier. They show suppliers' addresses, item reference numbers, normal quantities required, etc.
- The balance in the stock ledger shows when to order more supplies. This prevents there being long periods without necessary equipment. Being 'out of stock' of equipment reduces the effectiveness of the health services.
- Issue vouchers encourage workers to take responsibility for equipment and can indicate who is accountable for loss or breakage.
- Inventories assist in the rapid checking of equipment in use and in the detection of discrepancies, wastage, extravagance and theft.

In summary, accurate records save time and contribute to the economy, efficiency and smooth functioning of the health service.

**KEEP ACCURATE EQUIPMENT RECORDS**