

Testing and evaluating **Manuals**

Making health learning materials more useful



H.R. Folmer, MD, MPH, PhD

M.N. Moynihan, MA, McommH

P.M. Schothorst, Med

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Abbreviations

EPI	expanded programme on immunization
HLM	health learning materials
NGO	non-governmental organization
PHC	primary health care
TBA	traditional birth attendant
WHO	World Health Organization

Foreword

The Royal Tropical Institute in Amsterdam is one of a small, select number of institutions in the health sector that collaborate closely with the Health Learning Materials (HLM) Programme of the World Health Organization in Geneva. The Institute provides technical support to the work of the HLM Programme in human resource development, collaborating with a growing number of national HLM projects in ministries of health and health science institutions throughout the world.

The staff of the Royal Tropical Institute have visited several of the more than thirty country HLM projects participating in the Programme. They got to know many more HLM staff at inter-country meetings and workshops. Through their close collaboration with health trainers, managers and field staff in a wide range of developing country situations, Institute staff have built up an in-depth understanding of the needs of health personnel in these countries for training and training materials specifically adapted to the local conditions.

This manual is a direct result of the Institute's work with health staff and their trainers in developing countries. As a joint publication of the World Health Organization and the Royal Tropical Institute, it reflects the partnership of the two organizations in a common venture to raise the level of health in developing countries, through an investment in better training and better information on health.

R. Ritson
M.A.C. Dowling

WORLD HEALTH ORGANIZATION
GENEVA

Introduction

The World Health Organization (WHO) has been helping countries make training and learning materials for many years. A specific section has been created for health learning materials (HLM). Many of these materials are meant for health workers in more remote regions, involved in primary health care - people with fewer resources than their colleagues, and often bigger problems.

There has been a recent boom in production of health learning materials. However, the quantity of these materials is often greater than their quality. Until recently, many of the manuals used in the developing world have been imported. Often they have not been adapted to fit the new country where they are being used. In consequence, WHO has increased its support to emerging national units involved with health learning materials. As a part of this effort, the Royal Tropical Institute in Amsterdam has been asked to find experienced people to work with these units. This has given the writers of this manual a chance to work with counterparts in Africa and Asia. Together we have identified and tried out a number of ways to test learning materials, particularly manuals. This book, which suggests ways to check the quality of various aspects of a manual, and to plan how it can be improved, is one result.

This manual has two parts: the first looks at the aspects of a good manual. We argue that a good manual must have the right contents, to make it usable (right for the reader, and of good quality) and applicable (can be applied in the work of the user); it must have the right method, form and structure, to make it accessible; and the manual must be available when needed.

Part II covers the process of testing. In testing, you need to know the strong and weak points of the manual itself, and to know if it is (or will be) available where it is needed. Thus the types of questions to ask and what they tell you are included. This part looks at when and where to test, and how to test manuals for non-literates.

In the text, a number of examples are used. These are all fictional, although they are based on situations we have seen.=

Who should read this manual?

This manual has been written for the many people now involved in making learning materials, either making new materials or revising and improving existing ones. Many new tools are being developed for testing. This manual is for people interested in learning to use such tools. But learning is not one-way. We hope that you will in return teach us. Please fill in the questionnaire at the end of this manual, giving your assessment. If you complete and return it, along with your comments, criticisms and suggestions, it will help us to improve the next edition.

Herman Folmer, Maeve Moynihan, Petrus Schothorst

Part one *What makes a good manual?*

1 What is testing manuals about?

What is a manual?

A manual is a book of instructions and information. To be helpful, a manual should be there when you want it, and easy to use; and it should contain the information you need. In the health sector, such books fill a great range of functions - manuals tell us how to maintain a refrigerator, manuals help us deliver babies, and manuals suggest how to organize a community to prepare for victims of AIDS.

Types of manuals

There are three basic kinds of manuals. It is important to see the differences for two reasons. First, when you must decide whether a manual is good or not, what you look at depends to some extent on the kind of manual being judged. Second, when a new manual must be written, you need to decide which type of manual it will be before beginning to write. This will help you choose contents and methods of presentation suitable for the type of manual you need. The three types of manual are:

1. Reference manuals:

- store information that is too detailed to remember (for example, books listing all available drugs and dosages);
- update old information or remind of things that might be forgotten;
- sum up what is known about a subject (for example, a manual on emergency care of burns).

2. Instruction manuals:

- teach new knowledge and skills (for example, manuals explaining how to build measles vaccination into an existing EPI - expanded programme on immunization - programme);
- show how to do something (for example, a manual that tells how to use a new pressure cooker);
- introduce new ways of looking at a job (for example, the manual that tells step by step how to do an analysis of the community, asking you to make observations and maps, collect information, etc).

3. Teaching manuals:

- teach you information you will pass on to others (for example, 'Primary Child Care, Book One', M.King);
- teach you how to teach others (for example, 'Primary Child Care, Book Two', M.King);
- teach you to teach yourself (for example, a manual used to teach yourself a language).

This book is mostly about instruction manuals and teaching manuals. However, much of the information can also be used in assessing reference manuals.

EXERCISE 1

As an exercise for this section, pick out some manuals from your own books, or from the library of your regional hospital or college. Find at least one for each of the categories above. You may find that some - such as a manual on laboratory techniques - belong in both the first and second categories (and perhaps the third as well!) These manuals can be used for practice as you go through this book.

What is 'testing'? Why test?

By testing we mean a critical, organized assessment of a manual. There are many reasons for testing. You may want to improve a manual. But you may need to decide if it is right for a new use. Or health workers may be making mistakes, and you may need to know if the manual is part of the problem. Or a manual may be unpopular, and you need to know why. In all of these cases, an assessment can help. This book suggests ways to organize such an assessment.

In the last ten years, manuals have been produced in great numbers - produced for every country in South America, Africa and Asia, made for every level of health staff, printed in all kinds of formats and tackling all kinds of subjects. But the preparation that went into these manuals was often haphazard.

In business, products must be needed and wanted, or no one will buy them. Therefore target groups - those who are expected to be using the products - are defined and their needs are studied. The content and format of the products are tested at every stage. But in non-profit systems, a manual is sometimes developed with none of these preparations. Even if a manual is a failure, there may be no major consequences for those who wrote it - they may not even know what went wrong.

If you tour the library of a national health institution, you can see the results. It will be easy to find several manuals that have been opened only once, or that immediately look unsuited to the needs of the workers.

On the other hand, you may also find a few manuals which are really useful. You can see people have been using them. They are clearly presented books containing vital information.



How not to test a manual

EXAMPLE 1

In Country A the librarian of a small provincial school of nursing is glad that doctors and health care staff often borrow the WHO manuals on organizing Expanded Programmes on Immunization. But he has a problem: the books often disappear! Now he has decided to order 12 more copies, hoping to keep some on hand.

When should testing be done?

Testing, we have said, means looking at the materials you have in a critical and organized way. If one is involved in developing and adapting materials, this is something he or she should do all the time. But certain moments are especially important:

- when an outline has been made for a manual to be written for a particular sort of worker. This outline must be discussed with people involved in doing the job, with the supervisors of those workers, with the trainers and with some of the workers themselves, to make sure that the outline is complete and includes what is needed (see Example 12, in Chapter 3);
- when the manuscript of the manual is finished and about to be published;
- when a manual is in use and is about to be printed again, or given a second edition;
- when considering adapting a book from a nearby country or region (see Example 2, below);
- manuals and textbooks that are in use and cover subjects that need regular review and updating, for example prevention of AIDS and treatment of cancer, should be tested regularly (see Example 4, in Chapter 2).

EXAMPLE 2

In Country B, it was decided to use a manual for village health workers more widely. The manual had been developed in the north and was very popular there. It was translated for use in the south. There was no testing before it was printed. On the whole it worked well. However, there were two problems:

- southerners dress differently from northerners, but the pictures had not been adapted. Village workers in the south said they could not use the pictures for health education, because the people did not recognize themselves.

- some children were admitted to hospital when dehydration with diarrhoea became worse. It turned out that the standard cups used in the south are much smaller than the cups used in the north. Village health workers were teaching mothers to make rehydration drink that was much too concentrated.

Building a library of examples

As suggested by Exercise 1, one good way to learn more about manuals is to collect a small library of examples. You may already have the beginnings of such a library. To get more examples, you can contact international organizations in your country, like UNICEF and WHO, as well as non-governmental organizations (NGOs) working in health. Sometimes small groups make the most interesting materials. It is also worth looking to nearby countries with somewhat similar cultures. Three other sources of materials are Teaching Aids at Low Cost (TALC), the Voluntary Health Association of India and the African Medical and Research Foundation (the addresses of these and other organizations are given in Appendix 3).

Having a library like this helps to develop your own standards. Having examples also makes discussions about how manuals might be developed or changed easier. Sometimes it even means you can meet a need for a new manual very quickly, because you have something available that is appropriate or nearly appropriate.

2 What are the aspects of a good manual?

In the simplest terms, you need to know if a manual does what it is supposed to do. In general, you must find out:

- is the right material included?
- is it presented well?
- is the manual available when and where it is needed?

But what material is 'right', how it should be presented, and where it should be available all depend on who will be using the manual. So the first step is always to think about the users and their needs. Next you must know what the aim of the manual is - the reason it was written. The questions below help to decide whether a manual reaches this goal.

EXERCISE 2

Take one (or more) of the manuals you selected. Find answers to the following questions:

- does the manual clearly say for whom it was written - who are the users? Or is this easy to see?

- why was the manual written? (what problem is it trying to solve?) Is it clear at the beginning what information and skills will be presented?

- how does it look? When they look at the cover and title, do you think the target group will want to read the manual? How about the appearance of the pages?

In testing and evaluating manuals, we have said that certain aspects are essential. These are listed briefly here; they are explained more fully below.

Usability and applicability have to do with content...

1. Usability of the manual

Are the contents relevant and at the right level for the reader? Is the quality of the contents good?

2. Applicability

Do contents help users apply the material? If needed, does the manual explain how to teach the material to others?

Accessibility has to do with methods, form, and structure...

3. Accessibility

Is the information well structured and easy to find?

Is the text readable?

Are illustrations and layout used well?

Is the user involved? How is the manual introduced?

Availability is important overall...

4. Availability

Do users have a copy when they need it?

All of these aspects are related, so they are difficult to separate. The differences will become clearer in the following pages. Here we will look at each aspect by listing some questions to ask when assessing a manual. Remember questions listed under 'usability' and 'applicability' are used to test the contents of a manual; questions under 'accessibility' are used to test for methods, form and structure.

Usability of the manual

Under usability, you test to see if the right material is included in the manual. The big questions here: are the contents relevant - are they what is really needed by the user? Is the quality good? Are the contents presented at the right level for users?

Is the information relevant?

To see whether the information is relevant, you need to know more about who the future users will be and what work they do:

- does the manual make clear who the intended users are?
- are advice and suggestions in the manual related to the job the user is expected to do?
- are examples relevant to the work of the user?
- do the advice and suggestions assume the user has certain equipment, transport, or whatever? Is this a reasonable assumption?
- what qualifications and level of responsibility do the intended users have? Will the user be qualified and authorized to make use of the information and suggestions given?

EXAMPLE 3

Country C recognized that about one-third of children under five were malnourished, and that female nursing auxiliaries visiting homes needed guidance. So a manual was designed by a group of nutritionists at the university. It had more than enough information on amino acids and vitamin quotients. However, there was nothing in the book that helped the auxiliaries give sensible advice when they went to see mothers. Fortunately, the auxiliaries saw the problem: they insisted the manual be rewritten, and they asked to be involved in the rewriting.



Manuals that are not relevant take a lot of space - but stay on the shelf

Is the quality of the contents good?

An important part of the value of any manual is, of course, the technical quality of its contents. To check for good quality, you ask the following questions:

- are the facts correct?
- are the views, opinions and theories based on the best and most up to date information? (To ensure this, did those making the manual work with experts when developing it?)
- is the manual free of hidden values or attitudes? (Many books about family planning, for example, are not.)
- is the amount of information right? (Not too much, not too little.)

EXAMPLE 4

In Country D, the ministry produced a manual on health education. It included a section on AIDS, written when AID5 first became a problem. That was a number of years ago. It says for example that you can only get AIDS from sexual contact. Health workers know this is not true. It also says that only 1 out of 10 HIV infected people is likely to develop AIDS. This information is out of date. Now the health workers don't know how much of the other information they should trust.

Is the level right for the reader?

You also need to find out if the manual makes the right assumptions about the level of the reader. This is especially important for instruction manuals and teaching manuals. A good manual should be based on what the user already

knows. So you can ask:

- does the user have sufficient existing knowledge to make sense of the new information given?
- or does the manual underestimate the level of the user, who will quickly become bored?
- are the examples used likely to make sense to users?

In some situations it may also be important to ask:

- how does the manual relate to the ministry's career structure for the workers involved?

EXAMPLE 5

In country E, medical attendants in charge of health centres can, after some years of service, apply to train as doctors. When a manual was being prepared for this group, some put on pressure: they wanted a book written in English, and at a level suitable for doctors. Then it would also serve as preparation for their entrance exam into medical school. Unfortunately, as a result, many workers cannot understand the manual, which is their main reference text: the level is too high.

EXERCISE 3

Take one of the manuals from Exercise 1. Select one with a subject familiar to you. Try to find a teaching or instruction manual that clearly states the target group. If possible, it should also be one that gives the aim of the manual.

Pretend you are a supervisor of health workers who will use the book. Go through the contents: is the quality good? What about the level of the information and the relevance to the job? Make a judgement: from what you have seen, would you want this manual to be reprinted without revision?

Applicability of the manual

In testing for applicability, you want to know if the contents of the manual will help the reader apply the material. You also need to look at how the material is introduced.

Can the user apply the contents?

- does the manual help readers understand how the information will help them? Can they see how to apply the information? How to develop their skills? Information is needed on technical points, but also, for example, on the social skills required to work with a community.
- does the manual take into account the knowledge and skills available to the typical user? What about their time and motivation?
- does the manual tell how to present the contents? A teaching manual - one designed to help the user educate others by passing on the contents (such as a health education manual) - should do this. In making an assessment, one must ask if the manual clearly states how to present the material. Also, does it help the user think about how to change his or her approach to match the group being taught?

How is the manual introduced?

- is there a written introduction? Does this help the user understand how to use the manual?
- is a written introduction enough? Or would training be needed to make the manual useful to the user?
- is the manual now used during training?

EXAMPLE 6

In Country F a manual/workbook was produced by an Important Person. It was to be used by community nurses, who supervise four PHC (primary health care) villages each. The manual told the nurses to build up community involvement in PHC, to get each village health committee to map its village, do a morbidity survey, and identify its own problems and solutions.

The manual only told the community nurses what to do. It did not tell them how to do it. And they had not been trained for this work. They only saw their supervisor once every six months (if they were lucky). They were used to dealing with a few people at one time. The village health committees were not working very well. Most of the nurses' motor bikes were broken, and they had no allowance for petrol.

One year later, the Important Person was promoted to an international organization - but nothing had changed in the villages.

IF YOU WANT A GROUP OF HEALTH WORKERS TO BEGIN A NEW ACTIVITY ON THERE OWN, THEN A MANUAL, EVEN A GOOD MANUAL, IS NOT ENOUGH.

Accessibility of the manual

Accessibility has to do with the way the contents are presented: structure, method, and form. Health workers faced with a new manual must be able to find their way within the material. Emergency information, especially, must be easy to find and available when needed. The order of the contents must be logical, and users must be able to quickly find the section they need. The text must be readable. The contents and pictures must be attractive. The text should be presented in a way that involves the reader.

EXAMPLE 7

In Country G, a manual of high quality was produced for sanitary inspectors. A few inspectors had been consulted about contents, the manual was full of good new ideas, the layout, pictures and language were all appropriate. The books were sent out to each health centre. Three months later, though, the books were found to be admired, but hardly used. The sanitary inspectors had not had the chance to use the book during their training. This meant they did not think of using the book, and sometimes had difficulty finding the subjects they wanted. A series of short workshops had to be organized so that the sanitary inspectors could become familiar with the book and plan how to use its contents.

This example shows that even an accessible manual may need a good introduction during training to be really useful.

ONE OF THE BEST WAYS TO ENSURE THAT A MANUAL WLL BE PROPERLY USED IS TO MAKE IT A TEXTBOOK DURING A GOOD BASIC TRAINING COURSE.

Is information well structured and easy to find?

The 'structure' of a manual includes the order of the contents. It also means the division into chapters and paragraphs. A good structure helps the reader understand

the material. It helps make it easier to find what is needed. But other things like titles and indexes can help too. Some important questions:

- is the information given in an order that makes sense for the task of the user?
- do titles and subtitles help the reader understand the text? How about division into chapters and paragraphs? Does it help the reader?
- can users find the information they need easily and quickly? Is the table of contents clearly arranged and easy to use? Is it detailed enough to help, but not so full that it becomes confusing?
- is there an index at the end? Is it clear? Does it use the words a user would expect?

EXAMPLE 8

If we pick up a manual for midwives, we know that information on twin pregnancies should be there. So we look for the word 'twins' in the Table of Contents or in the Index. That should lead us to a section where a number of risk factors are listed or described. If the mother shows any of these, she needs more specialized help. The need to refer these cases should be stated very clearly and convincingly. If we find the right things listed in the Table of Contents and Index, we start to have some confidence in the content of the manual.

Is the text readable?

The main question is whether the contents are presented in a way the user can easily read and understand. Most manuals use language that is far too complicated. In English texts, for example, most sentences should be no longer than twenty words. Very few words of more than three syllables should be used. If the words and sentences are too long, the manual may need to be rewritten.

Questions to ask:

- is the language simple enough for users, without underestimating them; Do they use this sort of vocabulary? Could long words be replaced with simpler ones?
- if the text has words that are difficult or new for the user group, are these kept to a small number?
- are sentences short and clear?
- is the writing style not too different from everyday reading in newspapers, magazines or books?

EXAMPLE 9

Here is one paragraph from a manual:

'The increasing awareness of the potential impact of intersectorial cooperation at all levels in PHC, which, perhaps because of numerous attempts, made over the years with some success, to implement vertical, target-orientated approaches, has not yet resulted in global acceptance, should encourage us to maintain our firm belief that, given the vast resources of human potential and imagination, this impact will be realized.'

This is a good example of text that is not readable. Tests for readability are included in Chapter 6.

WE TEND TO THINK COMPLICATED WRITING IS A SIGN OF INTELLIGENCE, BUT THIS IS OFTEN NOT TRUE

Is the user involved?

Most manuals provide passive learning: that is, they lie on our tables, and it is up to us to use their information or not. But readers often need help in learning, and we all need to learn as quickly as possible. The way a manual is written can help. Some instruction manuals for example try to get readers involved. Readers are expected to think about answers and reach conclusions. They are given ways to check their own progress. In assessing a manual of this type, it is appropriate to ask:

- do the practice exercises, questionnaires or tests in the manual really help the user to gain information and/or skills?
- is the reader encouraged to think how the text applies to his or her own work situation?
- is the reader given a way to assess his or her progress?

EXERCISE 4

Look back at Example 6. Look only at the task of building community involvement. Imagine you are involved in re-writing this manual. Can you think of an exercise that could be included for the students to do? It should help them apply the theory to a situation something like what they will see in their work later.



Testing a manual

Are illustrations and layout used well?

Illustrations and the way they are used can make a manual attractive and easier to use. But if used badly, illustrations can lead to non-use of a manual. (See Examples 10 and 13.)

The way words are 'laid out' on pages also makes a difference. In making a manual, teams often want to include a lot of information. But if each page is full of words, the manual will be harder to read, and probably not very attractive to the user. White space should be used to make reading easier, and to help show what is important. We hope this manual is a good example of ways of doing this.

Because they are very important, illustrations are covered in a separate section in Chapter 6. Also see Chapter 7, on testing manuals for non-readers.

EXAMPLE 10

An artist was to illustrate a manual used in a country with Hindus, Moslems and Confucians. He was a Hindu, and all the health workers he drew were Hindu men. Health workers of other religions, and female health workers, felt the book was not for them.

In an African country, a European was brought in to draw illustrations. The health workers found the pictures of people a bit like cartoons, and some felt they were being laughed at.

EXERCISE 5

Take one or more manuals you used for Exercise 2. Look back at the questions above about accessibility: structure, finding information, readability, user involvement, and illustrations and layout. Use the questions to identify the strengths and weaknesses of the manual.

Availability of the manual

Here you must find out if the manual is around when needed. Without good planning, even a good manual may not reach the right users. In Chapter 4, you will see that questions of availability should be a part of any assessment or any planning for a new manual, from the very beginning.

Do users have a copy when they need it?

- is the manual easily available to the target group (not just kept in the director's office)?
- if the manual is meant to be used during routine work, are all workers given a copy? Is it easy to carry?
- is the manual available in the places a potential user would look - for example medical libraries or libraries of health facilities? This is especially important in remote areas where there are no bookshops.
- is the price reasonable for the organization or workers who must buy the manual?
- if the manual must be borrowed from the health centre library, is it easy to get? Who has the key?

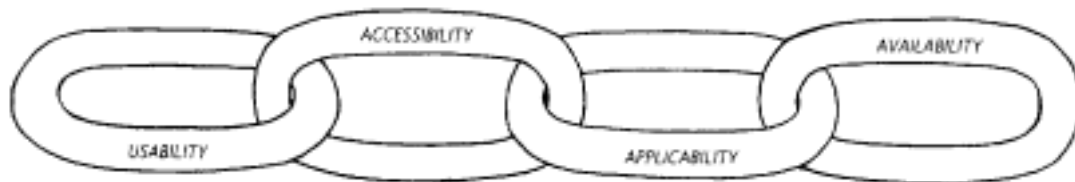
EXAMPLE 11

A health learning materials team in Country H developed a 'memory aid' for village health workers to take along on visits to patients. Everyone was very pleased with the contents of the manual. It was given to an agency to produce. The result was very beautiful, but also very expensive. So it was used only by a few NGOs.

In country I, on the other hand, community midwives decided what they needed was a book they could always keep in their pockets and turn to in emergencies. It was for them alone, so the print could be small and the paper thin. So the book was light in weight, and still contained a lot of information. The book looks like a pocket Bible or Koran. It is inexpensive, so each midwife has her own copy.

Conclusion

All these aspects of a manual are important and all can be tested. Most manuals are better in some areas than others. But if one aspect is very poor the rest suffer. For example, a manual may have excellent contents. But if it is not readable, the contents cannot really be used. You can think of the four aspects as parts of a chain that holds the manual together - but a chain is only as strong as its weakest link.



3 What makes a manual right for a group of workers?

We have been considering four aspects that are important to all manuals. Now these ideas must be seen in a real situation. A manual specifically designed for one cadre of workers will be used as an example. As you read this section, think about how usability and applicability may be affected by:

- the way a manual is developed, and by whom;
- the expectations of the employer - usually the ministry;
- the training received by the health workers; and
- the reality of the work situation.

EXAMPLE 12

In Country J, the ministry has shown interest in the development of a new manual for auxiliary nurses who work in the villages. They have asked a group to assess the situation and make a recommendation about a manual. Think of yourself as a member of this group.

To make the assessment, the group will need to collect information from several sources. You need to know more from the ministry, as well as the training schools, and the health workers themselves. You also need to understand the auxiliary nurses working conditions. (In a real situation, you would also need to talk to the supervisors before talking to the auxiliary nurses. You would need to think too if others had information you needed.)

What needs to be learned from the ministry

- is there an existing manual? Who developed it (the ministry, an NGO, a health learning materials team)?
- what led to the idea of a new manual?
- why does the ministry think a new manual is needed? What changes do they see as necessary?
- how many auxiliary nurses are there?

- is there a clear description of what they are supposed to do? (A job description would be ideal, but may not be available.)
- does the ministry think all of this description is realistic? If not, is a part of it realistic?
- what are the ages of this group of workers (mostly young, mostly older, or a mixture)? Are they all of one sex? What types of post-basic training have they had?

EXAMPLE 12 CONTINUED

Auxiliary nurses are women, mostly between 18 and 25 years old. They have had four years of secondary school, but no long-term professional training. The ministry is the employer. A brief job description gives the auxiliary nurses two tasks: a) to identify women with at-risk pregnancies and physically take them to hospital, and b) to supervise the traditional birth attendants (TBAs).

The ministry now wants them to do a third big task: to act as general health promoters for women and children. The proposed manual is meant to help them do this. The ministry sees the auxiliary nurses as the right people for the job because they are the only professionals living in the villages. Also the ministry assumes that because they are women, they will be able to work well with the village women.

What needs to be learned from the training schools

- what curriculum do the auxiliary nurses follow?
- does each school have a copy of the job description and use this in planning the training? (For example, if the job is supposed to concentrate on prevention, is this reflected in the timetable?)
- does their training provide the skills needed for each task the employers expect the auxiliary nurses to do?
- are the textbooks and manuals they will have in the field introduced? Do students get practice in using them?
- do the trainers think the manuals now used (if any) are good? (Do they find them usable, applicable, accessible, available?) What changes would they like to see?

EXAMPLE 12 CONTINUED

The training course for auxiliary nurses lasts nine months. This is a short time, so the two training schools concentrate on making the auxiliary nurses expert at doing normal deliveries. A manual on normal deliveries is used during the training. While they are students, auxiliary nurses may see complicated deliveries at the hospital next door, but do not make such deliveries. Field practice is not a part of the programme. Thus few auxiliary nurses have discussed their work with a TBA before beginning. There is no training in social skills.

What needs to be learned from health workers and their working conditions

- does each worker have a copy of the job description? Do they find it realistic? Is it followed? (If there had been no written description, you could have asked workers to describe the job.) Later, it will be interesting to compare what is said to what the ministry expects.
- do they have and use the manuals designed for them?

- what tasks do workers really do? Do they have the knowledge and skills needed for these tasks?

There is one caution here: when you talk to the health workers, you will probably hear a lot about their problems. Some of these will not be related to training problems or manuals. You can listen and be sympathetic, but must be clear about what you can and cannot change. Otherwise the health workers may expect much more than you can deliver, and end up disappointed.

EXAMPLE 12 CONTINUED

The group is able to visit five auxiliary nurses. All have the same problem. Village people do not have confidence or respect in them. They are young, and some are not married. This makes their status in the villages low. They have not been trained in working with village women. Also, they have had less experience than the TBAs, who do not want their supervision. However, sometimes they help with normal pregnancies. Auxiliary nurses feel they do not know enough about complicated pregnancies and deliveries to do their jobs properly. They have no books or manuals. They are under-used, frustrated, and not working very hard. They cannot see themselves as good health promoters.

When you are collecting information - as in this example - making a table may be a good way to get an overview. The table below has been filled in for the auxiliary nurses:

Task	Task is in job description	Training was adequate	Really practised
Normal deliveries	No	Yes	Sometimes
Complicated deliveries	No	No	No
Identifying 'At-risk' pregnancies	Yes	No	Sometimes
Supervising TBAs	Yes	No	Sometimes
Next Task	?	?	?
Next Task	?	?	?

Notice that for several tasks, some answers are 'yes' and some are 'no'. A mixture of yes and no answers on one line means the job description, the training, and/or the practice do not match. This means it is necessary to ask more questions, to find out *why*.

EXERCISE 6

What do you think the problems are in this case? Could a new manual solve these problems? How likely is it that a new manual can make the auxiliary nurses into good health promoters? And finally: what do you think the working group should suggest to the ministry?

Points to note in Example 12/Exercise 6

This example makes clear that one must collect a lot of information before assessing an existing manual or designing a new one. First you need to assess what is happening now. These two questions should not be asked directly, but you should be thinking about them:

- is there a real need for a new manual?

- will a manual solve the problem?

You need to see how the manual will fit in the situation. Thus you must understand the points listed at the beginning of this chapter in some detail:

- the type of manual;
- what training and skills workers now have;
- what the employers expect, and what information and skills need to be presented in the manual, to help workers do these tasks; and
- what the actual working conditions are.

But also it is necessary to recognize that the way a manual is developed, and who develops it, have an effect. For example, a manual may be developed without talking to workers. Then it is not surprising if the suggestions it makes cannot be used in the real work situation. Also, everyone involved will have their own views. A ministry and a training school may see things quite differently. Talking to all helps in understanding these differences.

When you talk to workers in the field, you may find that the training they had does not help them very much in their work. In Example 12, the auxiliary nurses have a number of problems. For example, the table shows that they must identify 'at risk' pregnancies, but their training has not prepared them for this. Also, they must supervise TBAs; they also were not trained for this. But you also know from talking with the auxiliary nurses that part of the problem is their status in the villages. Maybe they will need help and practice in how to work with villagers and how to become accepted and respected. Better social skills could increase their self esteem and motivation. Without this it will be hard for them to do a good job. If the existing problems cannot be solved, introducing yet another task will be difficult.

When skills are being learned and must be remembered, a manual can help. But training may be needed to learn the skills in the first place.

The fact that the auxiliary nurses visited did not have any books or manuals is another warning sign. There may be a problem in producing manuals. Or there may be plenty of manuals, but not where they are needed. The group needs to know what the problem is before thinking about making a new manual!

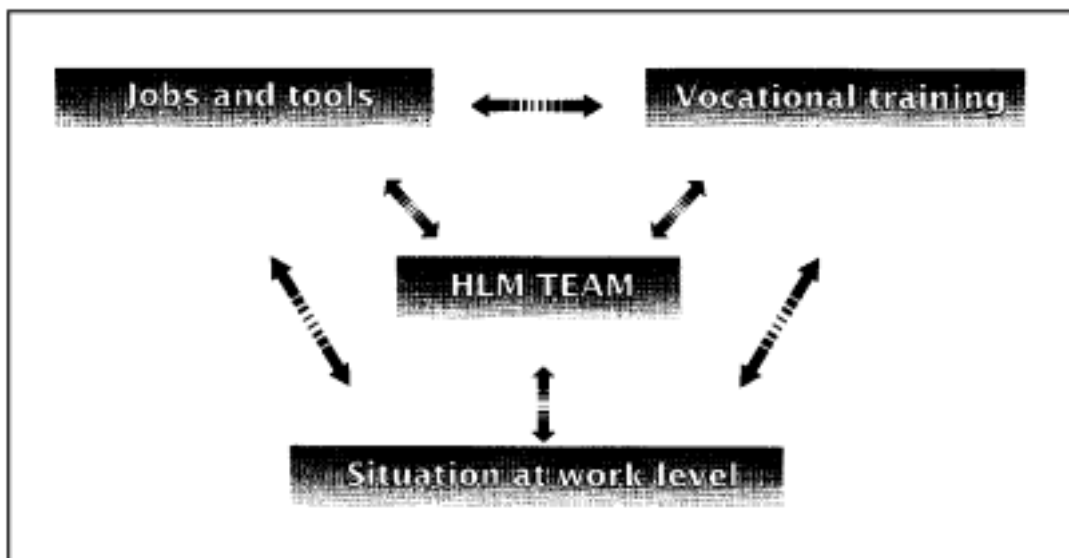
Part two *How can a manual be tested?*

4 Who should be involved in the team?

In developing training materials, it is important to build the right organization for the task - a good team, with the right links to others. For example, in looking at the auxiliary nurses (Example 12), we looked at three aspects of their work:

- their *jobs* (what was expected of the auxiliary nurses by their employers);
- their *training* and
- their *situation at work level*.

These three aspects of any sort of work can be seen as forming a triangle. The people who are to develop training materials - the HLM team - belong at the centre of this triangle:



The team should be made up of people who come from all three corners of the triangle. The organization of the team is very important when you need to assess or prepare a manual. A well-organized team will make it easier to:

- identify the weak points; and
- make important changes.

Moreover, a good team organization can also help to be sure a new or revised manual is:

- used during training;
- available to workers when and where they need it.

Team organization is important because the team needs the cooperation of quite a lot of people. You need to be sure they are involved and talking to each other. Try to include the right people from the very beginning, when discussions begin about the

possible need for a manual. Then they will be involved in the process and more committed to the results.

Perhaps the best way to organize the team is in two committees or groups. The *steering group* can include everyone. But it is helpful to also have an *editing group*, which is small enough that people can work together easily. The steering group can discuss general points. Then the editing group may be asked to work out a detailed plan. Or the editing group can work out proposals to be discussed later by the steering group.

A steering group will be usually be more effective if it is not too big. In a bigger group, it is harder to work together. Try to include no more than ten people. They might include:

- one or two representatives of the users. Users will probably enjoy being in the group. They should have a chance to do this. But they may find it difficult to talk in a big group including their seniors. If so, they can meet in a sub group and report through a spokesperson.
- someone with authority to make changes in training programmes. If they support the changes, the revised book is more likely to be used in future training.
- someone with authority to make sure copies get sent to every person expected to use the manual, and to their supervisors.
- an educator with training and/or experience in manual design, who can help in making the contents accessible to the users.
- an illustrator, if the manual will have pictures. Involve this person early. This may help him or her to understand better and produce better pictures.
- potential buyers of the manual - for example, a representative of NGOs who might use it.

The editing group should include from three to five people. At least one of these must know the subject covered by the manual very well. Also, at least one must be a good writer/editor.

5 Where do you test?

What can you test at your desk?

Working at your desk, you can check many of the points listed in Chapter 2. Here are two more ways to check:

Testing accessibility...

First impressions: First impressions are important. When you pick up a manual, ask yourself how it looks. First look at the cover. Is it attractive? Then flick through the pages. The reader needs to see clear, easy to read print. Big blocks of type are not attractive. Look at the pictures - would any of the target group of health workers be discouraged or misled by them? Also, look for a clear statement of what the manual can do, and for whom!

Testing usability...

Contents: AHLM team that is to make a manual needs a member who knows the job of the health worker for whom the manual is intended, or can get the information needed. Up to date information is needed from both workers and others concerned, such as the ministry. In every job, some pieces of information or skills are essential. If the team understands the job, you can pick a few of these. Then you can check to see how well they are covered and presented. If the manual fails the tests, a detailed study may be needed to see if it is really useful.

Remember too that the technical quality of the contents of a manual need to be checked from time to time by an expert, to see if they are still up to date.



You can begin testing a manual at your desk

EXERCISE 7

Look back at the questions in Chapter 2 on usability, applicability, accessibility and availability. Which of these can not be answered (or partly answered) in a desk test? Which answers must be found in another way?

Why test farther away?

The best way to build up expertise in improving health learning materials is to make use of a field testing site. These can be of two sorts. Training centres of all kinds are one possibility. Places where health care is delivered - a health centre, clinic or health post within easy reach of the HLM unit - are another. If possible, the field test site should have a normal level of resources and a normal range of health staff. It may be necessary to choose a centre near a city. Such a centre will probably get better supervision than other places, so you must be aware of this. If possible, avoid centres with other extras - for example the university field practice area, a health centre in a wealthy town, or one where a NGO is heavily involved.

A field testing site is a very good place to see manuals in use (or disuse). Visiting a site will often make the problems involved in making manuals and getting them used

clear. This is a good place to talk to health workers, even the most junior. They can say for themselves what their training needs are, and what kinds of manuals they would like. When a manual is being developed, each stage can be tested against the opinions of the health workers at the field test site. Observations can be made about contents, language, illustrations etc.

6 How do you field test?

Many sorts of field sites can increase our experience. But when a manual must be assessed in detail, the choice of sites is very important. It is worth working hard to find the people, time and transport to do the job in a way that gives sound and reliable results. In the first place, testing must be done at more than one site, because sites may be very different. Testing at just one site could be misleading. For example, a field test site near a big city might tell us very little about what would happen when using the manual in a poor rural area.

What is needed for good results

Good results depend on *careful preparation*. This begins before the team chooses or goes to field test sites. It includes covering the points made earlier in this manual. First of all, the target group of workers must be carefully identified. You need to know something about them - beginning with their age and sex.

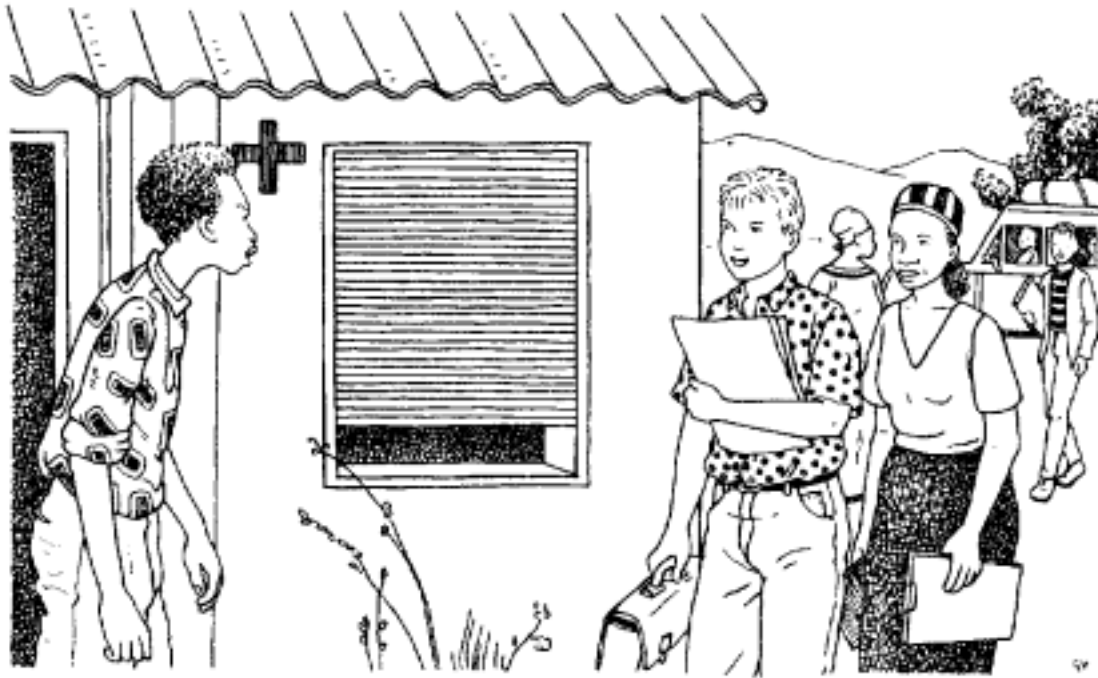
This information helps in choosing sites, and also in deciding what workers to talk to. The workers need to be 'representative' of the target group. For example, most people in the target group may be women, 25 to 35 years old, living in villages. Talking to a 50-year-old male health worker in a city will not give the information you need!

Just as in Example 12, it is important to know who the employers are, and what the employers expect. You must understand the training workers have had. And you must have begun to look at the manual involved, by doing a desk test.

Then you can begin putting this information together. What should the manual be able to do? Does it seem right for this group of workers? What more information is needed to answer detailed questions like those in Chapter 2? Review the information you have. Think carefully about what else you need to know.

Can you get this information at the field test sites? Or do you need to ask more questions (for example, of the ministry or the training institutes) before going there? To get good results from a visit to a test site, you must know what information you need most. Perhaps you will learn still more, but you need to be sure of getting basic facts.

Other very important parts of preparation are:
An effective team, meaning: Six people or fewer (health centres are often small); two or three people speaking any extra languages that will be needed; and at least one person of each sex.



A big team may be too much for a small health centre

A careful selection of places to be visited: The sites visited must really represent your target group and their typical workplaces - you must cover differences in age, sex, ethnic groups and geography.

A strategy for introducing the team and its task: Health workers need to understand that the manuals are being tested - not the health workers. Then they will be more willing to cooperate. It takes time to make this clear. One way is to explain that workers' names will not be written down when the team records their answers, and to be sure this is not done.

A strategy for understanding the work of the health workers: This might include:

- spending enough time so that people relax and talk;
- comparing the work being done to workers' job descriptions and training;
- observing the patient care skills health workers have, and whether they are using them;
- asking one or two health workers what they did during the last week. Was it a typical week? This will give us a picture of the work they really do;
- asking health workers about the last time they had a problem and what caused it;
- asking health workers for their own ideas on priorities for training or learning materials;
- getting information from the Attendance Record. This will tell us how busy the clinic is and what health problems it mainly sees. Those who attend can also be compared to the population, to see if some groups come and others do not.

A strategy for asking questions and recording the answers: especially if more than one person will ask questions, you need to decide ahead of time exactly what the questions will be. Also you need to decide how to record what is said. Otherwise you will not be able to compare the answers you get.

Testing readability

Readability is very important: if the user cannot read the text, it does not matter how good it is! Two tests of readability are given here. First, it is important to test to see if the words used fit the target group. Second, the Cloze Test can be used to check overall readability.

Testing vocabulary

Go through the manual and pick out any words you think might be difficult for readers. Make a list of these words. Beside the list, leave some space to record your assessment.

Again, you need to find people who are representative of the target group. When you talk to one of them, ask him or her to explain each word, as they understand it. Then mark your list to show if the word is understood, understood in part, or not understood. (When you talk to a second or third person, you can use a different colour ink.)

UNDERSTANDS

	<i>yes</i>	<i>partly</i>	<i>no</i>
Word A
Word B
Word C

The Cloze Test

The principle of the Cloze Test is this: it is easier for someone who is familiar with a given subject to understand messages about that subject. This is true even when the message is incomplete. Look at the two drawings below:



If you know Europe, the left-hand drawing will say 'windmill'. If you know any tropical country, the right-hand drawing will say 'palm-tree'. Both drawings are incomplete, but your previous information can be used to fill in the gaps.

It is the same with text. If a text is written in a style and language familiar to the reader, the meaning will be understood even if some words are missing, as they are in the Cloze Test below.

An example of the Cloze Test

To test a manual on teaching and assessing attitudes, we selected a part of the text and followed the rules given (after the example) to make it into a test.

A user can be asked -

Please fill in the missing words in the following passage:

Attitudes are partly based on logic and partly on emotions. So if you wish to encourage students to be more eager to communicate knowledge and skills, you can provide factual information which shows why this attitude is desirable. For example, you might tell your students about oral rehydration, how mothers can make up their own rehydration mixtures and how they can give it to their own children. You can quote estimates of the of deaths in infants which could been prevented if only mothers had what to do. All this is logical information which justifies an attitude sharing knowledge.

You might also show students a baby which is severely and on a drip in a ward, and explain how this baby's is the result of a health failure to share knowledge.

This second may be less logical and less accurate; but it may well have impact on the students' attitudes than and statistics.

Information and experience can provided by the teacher sharing his experience or data which have been but students should also have direct in the field by working in and meeting other health workers. In way they can observe the attitudes health workers and they can also the consequences of both effective and health care.

The text used here is from Teaching Health Care Workers, by Fred Abbatt and Rosemary McMahon, page 149.

The rules for making a Cloze Test

1. Find a passage in the text that is about 300 words long. It should be normal, continuous text with proper sentences. It should not be full of technical words, and not broken up by diagrams or short sub-titles. It is best to use the test with people who have never read this material before. Newly arrived students at a training institute would be good, if the text is not too technical.

Sometimes it is necessary to test an existing manual with people who are using it. The test will still work to some degree. But people may remember what they read before. So the results will be confusing: they may tell more about how well people remember than about readability.

2. Type out the passage. Include the complete text for the first few lines. Then begin leaving out some words (or blank them out afterwards with correcting fluid).

Check for typing mistakes!

- If the language is the first language of the group you are testing, leave out every fifth word.

- If the language is the second or third language of the group, leave out every seventh or tenth word.

3. Ask users who are representative of the target group (10 or 20 people) to fill in every blank space with the words that are missing.
4. When you are ready to score the test, count the number of filled-in words that are correct. 'Correct' means either the exact word or a word with a similar meaning was filled in. To figure the score: divide the number of correct words by the total number of missing words. Then multiply by 100 to remove the decimal point. (Suppose there were 45 missing words, and someone gave 27 correct answers. $27/45 = .6$; $.6 \times 100 = 60\%$.)

Drawing conclusions

If most people in the sample get 60% or more correct, the language of the text is right for them. Under 60% suggests the text should be rewritten. If the people who take the test have somewhat different scores, this is normal.

If your text has been tested with many people from the target group and their results are very different, it may mean they have different reading abilities. This is something to consider in assessing or designing a manual. Writing just one manual to be used by very different readers is difficult. Trying to write something suitable for all of them is likely to end up in something that does not suit any. It is usually best to write for the sub-group whose language skills are the most basic. At the same time, the text must not sound like it is "talking down" to people with more developed language skills.

The Cloze Test has been used in several Asian and African languages. It seems to work, but we have not proved that it is good for every language. If you want to use it in a language other than English, it is better to start by testing a text that is thought to be well written - perhaps from a popular newspaper or magazine. The words used and the length of the sentences should match the level of the readers.

If you try the Cloze Test in a new language and most scores are very high or very low, you will need to find out why. Perhaps only one-syllable words are included. Then the number of missing words might need to be greater. Or syllables may need to be grouped as they are spoken. Whatever the reason, you need to experiment until the test gives good results - that is, until you generally get high scores with easy texts and low scores with difficult texts.

Using a questionnaire

A written questionnaire is one way to be sure the same questions are asked of each worker. It is also a place to record answers consistently. A questionnaire can be used to test for several aspects of a manual.

Each testing situation is different, however. When you decide to use a questionnaire, you have to be sure the questions will give the information needed. Once again, look

back at Chapter 2. Do you need to test all aspects? Do some need to be tested in more detail than others? Here too, deciding what sort of information you need is an important step. Then you can decide what questions to ask. Perhaps you will be able to begin with the questionnaire below. But it is just an example. You must decide what fits your needs and what doesn't. Then it can be changed to fit your own situation.

If the manual being tested is very short, you may not need questions on accessibility, for example. Also, this questionnaire tests only how easy it is to find certain subjects, such as gas gangrene. You may be interested in other subjects. Or you may want to know whether the index helps users find the problems or symptoms they see in their work, even if they don't know the name of the illness. Then you will need to adapt the questionnaire, and perhaps add other questions.

Be sure each team member who will use the questionnaire has practised using it before the field tests begin. Everyone must have the same understanding of what the questions mean and how to record the answers.

Generally you would talk to the workers one at a time: one team member would ask one worker the questions in the questionnaire. Often you would not talk to all personnel but would select a few whose tasks, ages and sexes seem to represent the group as a whole. You will probably be interested in one group of health workers, and one or two manuals you think they may use.

To get information about the whole centre, you could make up a separate short list of questions to use with just one person. You could ask, to begin, the number of workers, their ages and sexes, and what tasks they do. To find out more about the manuals available, you could ask what books are available at the centre. Ask to see where they are kept. If they are locked up, who has the key? How easy is it to get the books? Are all of the workers allowed to use them? There may be a record of who uses the books. If so, look at it to see what books are being borrowed and how often.

A possible questionnaire and what it tests

On page 41, a questionnaire is given. It is one that has been used in the field. Below, you see the general questions it should help to answer, and the aspects tested. For example, questions 1 through 7 of the questionnaire test for usability. That is, they ask for answers about the workers who are expected to use the manual. This information helps to decide if the manual is right for its users.

Testing usability
Questions 1-7...

What is the profile of the health workers?

Questions 1-7 tell about the workers. Then you can see if the content of the manual fits their training and work experience. If you will talk to many people, you may need to give each interview a number (above question 1).

Testing availability
Question 8...

What books and manuals are available and used?

These might be the worker's own books or those that belong to the centre. If they have books and keep them at home, ask why. For safety, or do they have private practices? Here you may need to add the question, 'Do you have a copy of ...' (The manual you want to test). If they say no, ask 'Do you ever use someone else's copy?'

Testing availability
Questions 9-10...

In questions 9 and 10, you need to find out if they have owned the manual that interests you for a long time. If you can see it, you can judge whether it looks used. (Have a copy of the manual with you to use with later questions, in case no copies are available.)

Testing usability
Questions 11 & 15...

What do they need the manual for?

When they tried to use it, were the right contents there? In question 15, notice that if the worker just says 'yes', you need to ask for some examples of things they could not find.

A questionnaire designed to test a manual

This questionnaire was designed and used with the members of the Health Learning Materials Unit in Nepal, under Professor Dixit. It was intended to test the manual Medical Problems for Health Post Workers, designed for health assistants working in health posts.

Medical problems for Health Post Workers **Usability, applicability, accessibility and availability**

Number (if needed) Date

1. Name 2. Post
3. Age 4. Sex: male / female
5. Qualifications
6. Subsequent training
7. Length and type of service

8. Which books do you have (in the Health Centre or at home)?
.....
..... Can I see them?.....

9. How long have you owned 'Medical Problems?'
10. Observe: Does the book look used?

11. What are the most common complaints you meet?
For which of these do you refer to the book?
Complaint *Use of book (yes/no)*
.....
.....

12. Please find the section on tetanus.
Observe: finds easily.... a bit difficult.... difficult.... not found....

13. Please find the section on treatment of snakebite.
Observe: finds easily.... a bit difficult.... difficult.... not found....

14. Please find the section on preparing ORS.
Observe: finds easily.... a bit difficult.... difficult.... not found....

15. Have you ever looked for a topic that you did not find in the book?
.....

16. What do you think of the size of the print? Is it
easy to read.... bit difficult.... difficult....
(any comments).....

17. Please read silently the section on gas gangrene on Page 73 and 74. Then close
the book. Now please tell me the main messages you have learnt from that section.
Observe: gives all messages.... gives some.... none/hardly any....

18. Have you any suggestions for making the book more useful?
.....

Testing accessibility
Questions 12-14...

How easy-to-use is the manual?

Asking the health workers to find two or three topics will tell you how easy the book is to use. In re-writing the questionnaire, you might introduce question 12 by saying 'I would like to ask you to look up three sections in this book. First...'

Testing accessibility
Question 16...

If you are concerned about the size of the print, or other aspects of layout, you can ask users what they think.

Testing accessibility
Question 17...

In designing your questionnaire, select a section of the book to use here. In question 17, first ask the worker to read it. Then you ask them to explain in their own words what the section says. This gives a good idea of how readable the text is for these health workers. (Readability can also be checked with the two tests given earlier.)

Overall: user opinion
Question 18...

Here you ask for any other comments on how they would like the book to be improved. This is often a good source of suggestions for improvements.

Testing applicability...

Using this questionnaire, applicability has to be judged by the team, as observers. You compare what the manual recommends with what you see happening. Then you can judge if there are problems in applying the contents of the manual.

Here again, if you are concerned about applicability, the questionnaire could be changed. You might ask 'Are you able to carry out the suggestions in the manual?' If the answer is no, ask why not. Listen carefully to see if the user finds the suggestions in the manual too complicated, expensive, etc. (See the section on applicability.) Or there might be a social skills problem.

If teaching is important, you can ask: Do you teach this material to others? Does the material help you in teaching? What changes would you like?

Testing illustrations

Illustrations can be an important addition to a text. But you need to be sure they do what is intended. Just like written material, they need to be tested. Pictures can:

Illustrate complicated instructions: The pictures here show how to do something. This is clearer than words alone. To test such an illustration, you can put it to work: ask people to learn how to sterilise something in a pressure cooker, using these pictures. If this is not possible, you can ask people to 'read' the pictures and explain them in their own words.



Sterilizing with a pressure cooker

Present information in a different way: Some people, even if they read well, understand pictures better than words. A picture can also give an example or make clear what is meant by a text. And a picture or symbol often makes it easier to remember. To test, for example, whether a picture is a help in understanding, you can ask people to read a short text. Then ask them to explain the text in their own words. (This tells you if they understand it.) Next show the picture. Ask what the picture is about. Then compare the answers. You can see if the picture and text go together, and if the picture helps to understand the text better. (Also see 'testing signs' in the next chapter.)

Make the manual more attractive: Many pictures are put in to cheer the reader, break up long pages of text, and look pleasant. The pictures on page 14 are an example. Even so, such pictures need to be tested. One way to test is to show people two or three pictures for each one you will use. Then ask which the worker likes best. Other tests for possible problems are given in the next paragraph.

An overall test for illustrations: If pictures are familiar, people are more likely to understand that the messages are for them. Also, pictures have a lot of power: you must be sure they say what you mean, and not something else. For example, pictures can be a problem if they show one sex or ethnic group in an unfavourable way. (Example 13.) And what looks nice to people in one village may be seen as not so good in another place.

In testing you need to see what the pictures mean to people who will be using the manual (health workers, villagers, or both). You can ask:

- what does this picture tell you?
- are the people in the picture from your village?
- are they women or men?

After these sorts of questions, you can ask health workers:

- do any of these pictures need to be changed, to make your work easier?
- do you think health workers here will like this picture? How about patients? Can you think of anybody who might not like it? Why not?
- Would any of the people here think it was making fun of them?

EXAMPLE 13

In Country K, the ministry produced a manual on family planning motivation and methods, to be used by health workers in the field. The majority of people in this country belong to the northern ethnic group, and so do almost all doctors and senior nurses (and writers of health manuals). In the manual, all of the patients in the pictures are from the south. The pictures of doctors and nurses all show northerners. In a discussion of how to motivate non-users, the non-users are described in the way northerners think of those from the south: the text suggests they are lazy, unable to plan ahead, and have other negative qualities. The pictures also emphasize this.

It will not be surprising if health workers in the south do not use this manual!

THREE QUALITIES - FAMILIARITY, SIMPLICITY AND REALISM - ARE USUALLY WHAT MAKE A DRAWING EFFECTIVE.

7 How can manuals for non-literates and semi-literates be tested?

Some health services workers such as village health workers, TBAs or community based distribution workers may be readers. Others may be semi-literate or non-literate. They will need special manuals. Also, materials without words may be needed for use in the community. Testing and adapting these materials is similar to working with materials for literate workers. However, here pictures are the text. Thus it is even more important to think and test carefully. This section gives some ideas about the best ways to present these materials.

Picture messages may be repeated in words as well, because:

- semi-literates can learn from the combination of words and pictures.
- non-literates can ask family members to read the manual to them;
- it can help non-literates who want to learn to read.

So the text in these manuals must also be tested.

Introducing and testing a manual

It is often better to introduce a manual as part of a training course. With manuals for non-literates, there must be training. Each manual has its own 'language' of pictures and signs, used in place of written words. Just as one must learn to read words, non-literates need to learn to 'read' pictures and signs. Also, these materials cannot be tested before their meaning has been explained.

Testing the manual

Overall test...

The *main test* for a manual for non-literates has three steps:

- go through the manual, to see where each 'message' begins and ends. (Exercise 8 gives an example of a message.)
- ask the user to 'read' the book, explaining each message;
- calculate the proportion of messages correctly understood (number of messages understood, divided by total number of messages), and decide if that is good enough.

Several other tests can also be used:

Testing usability...

Is the quality of contents good? The text must match the ability of the users. This may mean you have to make some compromises - for example, users may find it difficult to learn to estimate time periods - but the compromises should be as few as possible. These manuals too must have high quality contents. Quality can be judged in desk tests and/or by experts, as for manuals written in words.

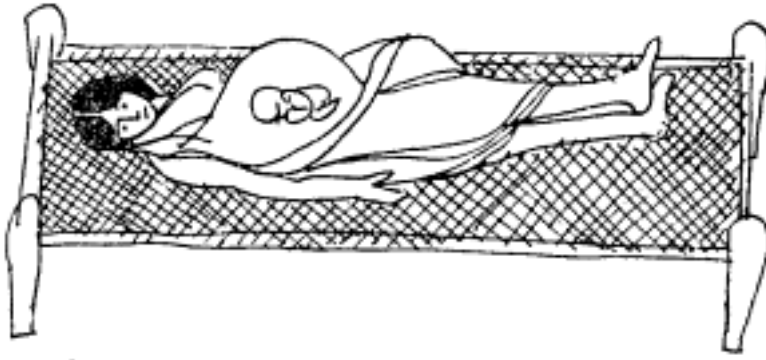
Testing usability...

Is the manual relevant? You can test for relevance to workers' tasks by asking if they have used the manual in the last two weeks. Was it used as a reference, or to learn something new? Did it help them? Are there pictures they need that are not in the manual?

EXERCISE 8

The set of pictures below is one message from a manual for TBAs in India. This is one of a series of pages showing risk factors in pregnancy. Assuming you cannot read Hindi, can you read the message? (Start with the baby.)

The birth attendants were taught that a snake means danger, a pointing finger means 'go to', and a red cross, in that society, means a health facility. Can you read the message now? Did you notice that the baby is lying the wrong way?



यदि बच्चे का लीर ऊपर की ओर है



तो खतरा है



Testing accessibility...

Are pictures well presented for the readers? In a desk test, you can ask if the artist worked (for example) in the villages while making the drawings. Do the drawings suggest the village reality - the clothes, hairstyles, and delivery practices?

The pictures need to be clear to the users. They can be tested, for example by asking non-literates what they mean. It is also important here to ask the questions in the 'overall test' at the end of Chapter 6. This helps to make sure the pictures are right for the users.

EXAMPLE 14

In Country L, health workers said posters showing advanced cases of leprosy discouraged possible patients. Instead of getting them to seek help, the pictures frightened them away.

Testing accessibility...

Is the format right? Non-readers are not used to looking at a page from left to right (or, in the Arabic world, from right to left), as in reading. They have to learn where to start. Therefore, when you open the book, it is very important to look at the layout. Is it easy for the user to see the right path from one sign to the next? One format that has been successful was print on just one side of the page. No more than two messages per page were used. In another example, pictures were put on the right, with the text (for use by people who can read a bit) on the left.

Testing accessibility...

If colour is used, is it used well? Colour makes a manual more attractive, but is more expensive to print. Colour can add information: it can show the difference between blood, urine and faeces. This may be especially important in manuals for those who cannot read. If possible, it is helpful to use the colours red, blue, green, yellow, and brown. Even these colours must be pre-tested. Colours have different meanings in different cultures. In a desk test, you can ask: were the colours in the manual tested where it will be used? In the field, the questions you ask to see if the pictures are right for the users may tell about colours too. If colours are not mentioned, you can ask: what about the colours? Are they the right colours to use? Do you like them?

Testing accessibility...

Testing the text. As noted above, manuals with pictures should also have some text. However:

- the text must be in very simple, non-technical language. To test for readability, you could take a sample of semi-literates similar to the health workers, ask them to read a message, and then explain what they have heard.
- the text should give the same message as the picture. Otherwise non-literates may feel the book is not really for them. You can do a desk test to check this.
- the text should be in big print, at least double the size of typewriter letters.

Using signs. Manuals for non-literates need signs that mean things like 'danger', 'good', 'bad', 'do this' or 'don't do this'. These signs must make sense in the culture where the manual is used. The skull and crossbones used in European cultures may not work. To choose the best signs to use, you can ask a group of non-literate people to look at some possible signs to give a message like 'good'. Then use the most popular. If none are liked, talk with the group. What sign says 'good' to them?



Testing signs

EXAMPLE 15

In the manual shown in Exercise 8, page 46, the 'danger' sign is a snake. When the manual was adapted for use in another part of India, this sign was tested. It did not work well. After asking local people which one of a group of signs meant 'danger' to them, the snake was replaced with a scorpion.

EXERCISE 9

Look back at the questionnaire in Chapter 6. Which questions could also be used in testing the pictures and signs in a manual for non-literates? Which could be used in testing the text? Could some of the questions be used if they were re-worded a bit?

Pictures which usually do not work

Sometimes non-readers find a manual hard to understand or remember. Then you should check for pictures that have caused problems in several cultures.

These include:

- pictures of parts of things. A leg alone is often not recognized or remembered. It is better to draw the whole person.
- pictures showing time. The moon works well to show one month, and the sun to show a day. Shorter periods like minutes and hours are more difficult.
- pictures with lots of contents, with perspective (that is, showing distance), and with half-hidden objects can also cause problems.

8 What problems can testing solve?

What problems can testing solve? The answer is none. Testing never solves problems. What it *can* do is to identify problems. But this is not enough. The people involved must be ready to solve them.

Suppose your team has just produced a new, beautiful manual. It has taken six months of your lives, and now you think about testing. Can you face the possibility that the language is too complicated, and that you might have to rewrite the whole thing? This is difficult to think about when time and money are running out.

What you must do in designing a manual is to assume from the start that there will be problems. You must plan for testing. You can also make sure there is time and money in the budget for making revisions after testing is done.

Testing needs to be done at the right time, and you need to follow up on the results. Then testing can help, by showing what the problems are before the manual is printed and sent out to those you hope will use it.

Appendices

Appendix 1 Exercise 10 - Testing this manual

Here is a questionnaire designed to test this manual. Filling it in is a way to practice assessing a manual. Remember, the questionnaire is not a test of you, it is a test of the manual!

HLM Group, RTI
Mauritskade 63
1092AD Amsterdam
The Netherlands

QUESTIONNAIRE

1. What is your age?
2. What is your sex? Male / female
3. What is your highest educational qualification?
.....
4. Look at the cover of this manual, and read the Introduction and Table of Contents. For which group(s) was this manual written?
..... TESTING USABILITY

When you have written your answer, look at the bottom of the next page to see what was intended. (If your answer is different, then the writers did not make their ideas clear; or maybe the language is too complicated).

5. Did the cover, Table of Contents and Introduction encourage you to read further? Yes / No
6. Can you list the four main aspects of a manual (look back at chapter 2 if needed)?
 - a)
 - b) TESTING
 - c) ACCESSIBILITY
 - d)
7. Without looking it up, can you explain in your own words what the manual means when it talks about 'applicability'?
..... TESTING
..... ACCESSIBILITY

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8. Please write one example of how you might apply the contents of this manual.
..... TESTING
..... APPLICABILITY
.....
.....
.....
.....
.....
.....
9. Put your watch on the table to time yourself: now, how long does it take to find:
The rules for making a Cloze Test..... TESTING
Who should be in a steering group..... ACCESSIBILITY
10. Please comment: what did you like about the manual?
.....
.....
.....
- What parts, if any, did you find difficult?
.....
.....
.....

Question 4: The intended target group is: health workers who are involved in developing or revising and improving health learning materials, in a variety of countries.

Appendix 2 Further reading and sources of materials

Guides to making manuals

Doak, L.G., *Adapting Nutrition Education Materials for Patients With Limited Reading Skills. Nutrition Education Opportunities: Strategies to Help Patients With Limited Reading Skills.* Ross Laboratories, Columbus, OH:65-68, 1989.

Guide de l'Education pour la Santé: Manual pratique pour l'infirmier et éducateurs africains. Available from: Dr. F. Sillonville, B.P. 2238, Dakar, Senegal.

Haaland, A., *Pretesting Communication Materials.* Rangoon, UNICEF, 1984.

HLM Unit, University of Kathmandu Medical School, *Guidelines on How to Produce a Manual.* Kathmandu, Nepal, 1988.

Levy Lambert, E., *Les manuels de la santé, conception et réalisation,* Ceneva, WHO, 1987.

National Development Service and UNICEF. *Communicating with Pictures in Nepal.* Kathmandu, UNICEF, 1975.

US Department of Health and Human Services, Public Health Service, National Institute of Health. *Pretesting in Health Communications: Methods, Examples, and Resources for*

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Improving Health Messages and Materials. Bethesda, Maryland, National Cancer Institute, 1982.

WHO, Design Strategies for Educational Materials, Fournier, D., Dowling, M.A.C. and Ritson, R., HRH/91.11, 1991.

Zimmerman, M.L., and Perkin, C.W., Print Materials for Nonreaders: Experiences in Family Planning and Health. Piact Paper No. 8. Washington, D.C.: Program for Appropriate Technology in Health (PATH, third edition), 1986.

Zimmerman, M.L., Steckel, L. and Bashir, I.A., Developing Visual Communications Materials: Learning From the Target Population. Child Survival Action News, No. 3:2, 1986.

Books about training

Abbatt, F., Teaching for better learning, revised edition, WHO, 1992.

Abbatt, F., and McMahon, R., Teaching Health Care Workers revised edition. London, Macmillan, 1990.

Abbatt, F., and McMahon, R., Training Primary Health Care Workers. London, MacMillan, 1985.

Werner, D., and Bower B., Helping Health Workers Learn, Hesperian Foundation, California, 1982. This book gives lists of organizations that provide training materials.

Sources of health learning materials

This is by no means a complete list, but gives some addresses for a variety of topics and types of materials.

AHRTAC (Appropriate Health Resources and Technologies Action Group)
Three Castles House, 1 London Bridge Street, London SE1 9SG, United Kingdom
• Newsletters include: Aids Action, ARI News, CBR News, Dialogue on Diarrhoea, and Health Action. Many of these are available in a variety of languages, as are other AHRTAG publications.

APHA (American Public Health Association) clearing house
1015 15th street NW, Washington DC, 20005, USA
• Regular newsletters and catalogues on health materials: free journal, Mothers and children.

AMREF (African Medical and Research Foundation)
PO Box 30125, Nairobi, Kenya
• AMREF produces series of manuals called the Rural Health Series.

ASECSA
Apartado 27, Chimaltenango, Guatemala
• El Informador newsletter, pamphlets, posters, books, and filmstrips on health subjects and teaching methods. Pamphlets on many health subjects, latrines, medicinal herbs, acupuncture, All in Spanish.

Atelier de Material Didactique
Busiga, B.P. 18, Ngozi, Burundi
• Flip charts and teaching plans in French and local languages.

Centre pour le Promotion de la Santé
c/o Dr. J. Courtejoie
Kangu Majumbe, République du Zaïre
• Materials in French; also some in English and Portuguese. An extensive series of books for middle level health workers and nurses is also available.

Testing and evaluating **Manuals**

Community Health and Integration Project
Dept. of Health Services, Kathmandu, Nepal

- Illustrated book, Community Health Leader Training-cum-working Manual, in local language and English translation.

Editorial Pax-Mexico

Av. Cuauhtemoc, 1434, Mexico 13 D.F., Mexico

- Donde No Hay Doctor; other books and photonovels on nutrition, midwifery, family planning. In Spanish.

ENI Communication Centre

Box 2361, Addis Ababa, Ethiopia

- Education packages and visual aids about child health and nutrition.

The Hesperian Foundation

Box 1692, Palo Alto, CA 94302, USA

- Health books and materials in easy to read form. A list of addresses for ordering health education materials is also available.

INCUPO

Casilla de Correo 30, Reconquista, Santa Fe, Argentina

- Accion newsletter and various pamphlets on first aid, nutrition, and diarrhoea. In Spanish.

INMED

45449 Severn Way, Suite 161, Sterling VA 22075, USA

- Catalogue of free educational materials for health workers.

INTRAH

208 N Columbia St., Chapel Hill, NC27514, USA

- Books on PHC procedures and a list of free materials that can be ordered by health workers.

Kahayag Foundation

3-C Pag-Asa, Corner Ponce, Sta. Ana, Davao City, Philippines

- Slide shows and information about health and development problems; Mushawarah, a women's newsletter in local Muslim language.

Learning for Health

Educational Resource Group, Liverpool School of Tropical Medicine, Pembroke Place, Liverpool L3 5QA, United Kingdom

- Newsletter, Learning for Health, emphasizes practical ideas and lists books and organizations.

PATH (Program for Appropriate Technology in Health)

Communication Department, 1990 M Street, N.W., Suite 700, Washington, D.C. 20036, USA

- PATH specializes in techniques for the development of materials on health or family planning topic. Publications include the Materials development guide, which covers specific techniques.

Rotary Club of Dar Es Salaam

P.O. Box 1533, Dar Es Salaam, Tanzania

- Where There Is No Doctor in Swahili. Also The Defender, a newsletter with ideas for health education methods, and an excellent series of rural health books in English.

TALC (Teaching Aids at Low Cost)

PO Box 49, St. Albans, Herts AL1 4AX, United Kingdom

- Low cost health books, slides and teaching aids. List available.

Yayasan Indonesia Sejahtera

Central Java Rep., Jalan Kenanga 163, Solo, Indonesia

- VIBRO newsletter, in English.

Testing and evaluating **Manuals**

Voluntary Health Association of India (VHAI), C-14 Community Centre, Safdarjung Development Area, New Delhi 110016, India

- Flannel-board sets, books, flip charts; Where There Is No Doctor adapted for India, in English and local languages. List available.

UNICEF

UNICEF House, 3 UN Plaza, New York, N.Y.10017, USA

- A wide range of materials. Catalogue on request.

WHO International Health Learning Materials (HLM) Programme

Central Clearinghouse on HLM, Division of Development of Human Resources for Health (HRH), World Health Organization, 1211 Geneva 27, Switzerland

- The HLM Programme provides materials for training health workers or the general public. These include a newsletter and many booklets on procedures.