

**GUIDELINES FOR EVALUATING A TRAINING PROGRAMME
FOR HEALTH PERSONNEL**

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INTRODUCTION

How do we evaluate an educational programme?

This question, frequently asked by persons engaged in training health personnel, has prompted the preparation of these guidelines, which attempt to provide an outline of the steps to be taken in planning and implementing the evaluation of an educational programme for health workers. These steps are not meant to be followed regardless of circumstances; rather they are meant to provide signposts to assist evaluators in making decisions - often complex ones - about how the evaluation should be conducted.

The question "how to evaluate" becomes relevant only if there has been an affirmative answer to a fundamental question - namely, should an evaluation be carried out? The posing of that question usually indicates that those engaged in training health manpower are concerned to ensure that what they are doing is effective, efficient, and makes a significant contribution to the health care of the target population. Such judgements about effectiveness, efficiency and impact can only be made if there is a sound information base. Moreover, all persons involved in the programme, not only those responsible for it, can gain from the very process of examining what is happening, by identifying problems and constraints as well as achievements, and by clarifying the issues. Evaluation becomes the means of documenting what is going on, and analysing the problems and identifying alternatives for their solution.

Since this approach to evaluation is perhaps different from that with which the reader is familiar, a brief explanation is called for:

- "Programme evaluation" is a process of making informed judgements about the character and the quality of an educational programme or parts thereof.
- The term "informed" is used to indicate that the data or information on which judgements are based are reliable; that the method of gathering information and the sources and qualities of that information can sustain critical analysis.
- The use of the term "judgement" implies that the decisions made are arrived at by a process which involves the weighing of alternatives, the use of sound scales of comparison (criteria), and - most important - consideration of all relevant data from as many sources as possible.

This concept differs from the traditional view of evaluation simply as an assessment or measurement of the extent to which specific objectives have been achieved, or how well the results of a programme meet prespecified criteria. Evaluation is not just concerned with whether a programme's objectives are attained or not, but with how the programme functions, in what context it operates, what problems or issues it encounters, what unintended outcomes it produces, and what elements are facilitating or impeding its success. By attempting thus to understand what is happening (the character of the programme) the evaluator may arrive at judgements about quality; he is not merely concerned with whether the programme worked or not, but with understanding what the programme really consists of, whom it reaches, how it functions and in what context. As with the action of a drug, it is not enough to ask the simple, though important question - does it work? One needs to know the drug's attributes, such as speed and duration of action, nature and extent of effect, and frequency and seriousness of side-effects. Only by understanding what really happens can one make the necessary judgements about value.

An important implication of this approach to evaluation is that the evaluator is not an "inspector" who assesses achievements and to whom those in a programme justify their actions. Rather, the evaluator clarifies the issues, makes explicit what is implicit, assists in identifying what is happening and thereby provides feedback to all concerned. In many cases the evaluation can be conducted by persons engaged in the programme, as part of planning and implementation. In some cases an "outsider" may be able to view the programme dispassionately and identify issues or problems more easily from his different standpoint. However, it is essential - and this point cannot be too heavily stressed - that all who are engaged in the programme have an opportunity to take part in the evaluation if it is to be successful.

The role of the evaluator will vary from situation to situation, and each evaluation will be unique, requiring a particular approach and a special methodology. Questions may well have to be formulated, reformulated, and adapted to changing requirements, often as a result of the activities or of feedback provided by the evaluator. Evaluation then becomes an important component of any education programme, more complex, more demanding, but also more useful to all those responsible for and engaged in an educational venture.

Finally, a word of caution: it is unlikely that in any evaluation all the steps set out in these guidelines will or should be carried out. However, it is essential that the evaluator should examine each recommended step and then make the necessary decision upon the feasibility, appropriateness and necessity of the action.

How to use the guidelines

The guidelines are meant to be comprehensive and general; the evaluator must be realistic and decide in each case what is essential for fulfilment of specific requirements.

The guidelines are presented under four general headings corresponding to the phases of the evaluation:

1. Orientation
2. Design of the evaluation
3. Collection of information about the programme and its effects
4. Analysis and reporting.

The guidelines in each section are preceded by a brief explanatory note. Each guideline outlines procedures which might be used, followed in most instances by comments drawing attention to special problems.

Although the guidelines are presented as a sequence of actions, in practice the order of events will often be different. Indeed it is essential in any evaluation study for the evaluator continuously to reexamine the information he has obtained, reformulate his questions, and - most important - reconsider his judgements. Hence the evaluator is often retracing his steps and, ideally, his orientation.

In the first phase, "Orientation", the guidelines outline procedures for assessing the feasibility of the evaluation and its requirements, and for designing the evaluation. This essentially involves an exploration of the programme and of the potential for successful evaluation.

To gain an orientation to the programme, the evaluator assembles general information about how and why the programme was developed, its objectives, the resources used, and the processes applied. To gain an understanding of the proposed evaluation study, he attempts to ascertain why the study was commissioned, defines what information will be needed, and identifies the financial and personnel resources at his disposal and his role as defined by others and himself. This permits an assessment of what would be involved were the evaluation to be carried out.

In the second phase, "Design of the evaluation", the guidelines contain procedures for elaborating a set of specifications for the study, leading the investigator through a process that involves: (1) listing questions and issues requiring consideration; (2) identifying sources and procedures for gathering relevant information; (3) designing the evaluation; and (4) formulating an evaluation schedule and budget.

In the third phase, "Collection of information about the programme and its effects", the guidelines are presented in four subsections that describe: (1) context and objectives; (2) characteristics of the students on enrolment; (3) resources and training processes; and (4) effects and impact.

Finally, in phase four, "Analysis and reporting", the guidelines contain procedures for a full description of the programme, its functioning and the problems encountered, and give a strategy for analysis of the interrelationship of different elements of the programme as a means of judging the quality of the programme.

The Annex contains suggestions for the application of the guidelines for an evaluation. The Annex is presented as an example which is intended to illustrate procedures rather than provide a model evaluation report.

PHASE I - ORIENTATION

The first phase is exploratory. In it the evaluator attempts to gain a general impression of the programme and of his own role. The impression is likely to be superficial, but should permit him to make some important preliminary decisions, not least as to whether an evaluation is appropriate and feasible.

First he must gain an understanding of what the programme is all about - its goals, its educational practices and principles, the administrative structure, teachers and students, financial resources and physical facilities - and of what is expected of him and of the evaluation study. He will therefore need to find out why the evaluation has been requested, what kind of information is sought by those commissioning the study, what resources are available, and how others see his role and functions.

He should at this stage consult as many sources of information as possible, including any written material on the programme (e.g., handbooks and programme bulletins), as well as the persons who have commissioned the study and others associated with the programme. It is emphasized, however, that such information is sought in order to gain an orientation, an initial impression. The evaluator is counselled to seek advice and general information rather than detailed or specific information.

On the basis of this orientation, he will be in a position to make a preliminary assessment of the nature of the proposed evaluation study.

Guideline 1. Determine the general characteristics of the education programme

The evaluator's initial task is to explore or to gain some general impressions of the programme: its goals, the curriculum, personnel, and administrative structure. This should give him some idea of the programme's strengths and weaknesses.

Procedures. Interview those responsible for the programme and study documentary material (reports, statements, handbooks) in order to ascertain:

- what category of health worker is being trained by the programme, and what is known about the population to be served;
- what functions and responsibilities are envisaged for this type of health worker;
- what are the general goals of the programme, why it was established and what its future is expected to be;
- whether the programme consists of a series of subprogrammes corresponding to special tasks of subcategories of health personnel;
- what data are available about graduates of the programme - their number and current situation.

Prepare a brief description of the administrative structure, saying who has principal administrative responsibility and who actually runs the programme. Note any strengths and weaknesses of the programme as identified by those responsible for it.

Comments. In this initial exploration of the principal features of the educational programme it is particularly important to distinguish variations in training which constitute subprogrammes. For instance, one programme purporting to train village health workers in fact consisted of two quite distinct programmes for males and females. It is a common failing in evaluation to aggregate data from different programmes.

Guideline 2. Ascertain the general characteristics of the administrators, teachers and students

The evaluator will have to relate to administrators, teachers and students in the course of his study; an initial appraisal of the principals (administrators) and of general characteristics from readily available data on teachers and students will therefore constitute an important part of the orientation phase.

Procedures. Identify the programme's principal administrators and ascertain their nationality, professional background, degree of involvement in the programme, and attitude towards the evaluation, and any problems in the programme that they mention.

To the extent that the available data permit, describe the students, giving their age, sex, educational level, and previous training in health care. Note particularly any major differences within the student group, such as cultural background.

To the extent possible, describe the teachers, giving their age, sex, and relevant professional experience. Again note any cultural subgroupings. Are the teachers actively involved in health care as part of, or outside, the programme? Ascertain procedures for recruiting, selecting and training teachers.

Comments. The number of students and teachers provides useful guidance as to the scope of the evaluation.

The degree of similarity among the students (homogeneity) is an important factor in determining the effects of the programme, while characteristics such as the degree of literacy may determine what evaluation processes are appropriate.

The characteristics of administrators and teachers, their attitude to the programme and involvement in health care programmes, will have a significant impact on the programme and on the evaluation.

Guideline 3. Determine the programme's financial resources and physical facilities

The resources available for an educational programme define to some extent its limits and possibilities. They also provide some tangible evidence of the importance that is currently attached to the programme compared with other programmes.

Procedures. Ascertain by interview or from available budgetary accounts:

- the sources of finance;
- the total budget;
- the distribution of the available resources for recurrent and nonrecurrent expenses, including such items as salaries, learning materials, and administration;
- attitudes towards present financial status and to future possibilities: do particular areas appear to receive preferential treatment?

By observation or interview, ascertain present physical facilities. How were they obtained, and how adequate are they for the purpose?

What are the prevailing attitudes of administrators and teachers as to the adequacy of physical facilities?

Comments. The cost of a programme is an essential item of information for its evaluation. In this exploratory phase it is important that the evaluator should make some general assessments of the programme budget - the cost to date and the cost per student.

An initial assessment of the physical facilities, including sites for practical or field experience, is invaluable for gaining an overview of the programme's setting.

Guideline 4. Clarify the aims of the proposed evaluation

The information obtained by following Guidelines 1-3 will have given the evaluator an overview of the programme and indicated the scope of the necessary evaluations. However, the reasons for, the expectations of, and the support which can be anticipated for the evaluation will require further investigation.

The decision by those responsible for a programme to request an evaluation is itself an important factor, and the reasons for this decision should be fully explored. The decision may reflect a concern with the effectiveness of the programme or a desire to justify decisions already made - even a decision to cancel the programme. In some cases, an evaluation is commissioned simply as lip-service or as a ritual to be performed. Invariably persons requesting an evaluation have vested interests and expectations and the evaluator must be sensitive to their expectations, anxieties, and possible distrust. He must also know what options those responsible for the programme really have; some of these options may only become clear during the evaluation.

Procedures. Established by direct questions or by inference from other information:

- who commissioned the evaluation;
- why it was commissioned;
- what issues or problems concerning the educational programme may be affected by the evaluation;
- who will be affected by and/or interested in the report of the evaluation;
- how the cost of the evaluation will be met;
- what problems or issues concerning the programme have been identified by administrators, teachers, students;
- what options are open and what major changes can be made.

Comments. The stated reasons for requesting an evaluation often do not indicate the real motives. The evaluator must try to discover hidden motives and anxieties, and whether the aims of the evaluation are viewed differently by different parties - whether, for instance, it is viewed by some as an inspection or as a means of asserting control - and who is most likely to be affected by any criticism or suggested change.

Guideline 5. Identify the information that is readily available on the educational programme

The information readily available will vary considerably. In some cases detailed records will have been kept; in others there will be little on which to build or that can be accepted as reliable. Since the amount of useful data already available will be an important factor in determining the task of the evaluator, it is essential that an inventory be established.

Procedures. Note all information available, such as:

- records of students, including achievement records;
- records of curriculum planning activities;
- budgets and statements of expenditure;
- minutes of meetings.

Comments. The identification of all information available is an essential prerequisite for deciding on a design for the evaluation. Careful investigation often reveals that much useful information is already available.

Guideline 6. Determine the resources available for the evaluation and the time limit for its completion

The resources available for an evaluation determine its scope, and they are often minimal. Often, too, the cost of an evaluation is incorrectly or inappropriately assessed. The resources allocated, both financial and personnel, can tell the evaluator how much importance is assigned to the evaluation study. He must balance what is expected of the study with what can actually be done with those resources in the time allowed, and, if necessary, negotiate their appropriate allocation. In any case his eventual design must take full account of the resources at his disposal.

Procedures. Establish by interview with those responsible for the programme:

- the resources that have been allocated;
- any constraints to the use of these resources (e.g., other commitments of staff members or dependence of financial support on extrabudgetary sources of funds);
- the expected date of completion of the evaluation.

Ascertain what other personnel resources are available locally (within and outside the institution, other educational institutions, other ministries, etc.).

Comments. In many cases those commissioning an evaluation expect guidance from the evaluator as to the minimal resources needed, or as to the allocation of resources according to requirements he may submit. In such cases it may be advisable to relate resource requirements to alternative designs, indicating for each the minimal requirements. Such negotiations are an important part of an evaluation.

Guideline 7. Clarify the evaluator's role and the roles of other persons involved in the evaluation

The evaluator's role is unavoidably personal. To be effective he must deal comfortably with the other people involved. In the course of the orientation process he should gradually work out and finally specify his role vis-à-vis the programme administration and other personnel, his responsibilities, his access to information, the form and frequency of reporting, and his decision-making prerogatives.

It is equally important that the role of others should be clarified and made explicit.

Procedures. Clarify by discussion with personnel of the programme:

- to whom the evaluator is responsible;
- his status vis-à-vis others in the programme;
- any limits to his decision-making prerogatives with respect to the administration of the evaluation study;
- limitations, if any, on access to relevant information and personnel;
- to whom the reports are to be submitted.

Comments. Clarification of the role of the evaluator and of others in the programme is necessary at this stage, although these roles will change as the evaluation proceeds and will be seen differently by different people, whose views will reflect the total context in which the programme functions. Definitions of other people's roles and their expectations will

depend on the organizational structure and the management and administrative climate of the programme.

In some cases the evaluator may be seen as a data-collector, in others as an agent of change. His own perception of his role is likely to be very different from that of the person commissioning the evaluation and from that of other personnel. The evaluator should define his role, in collaboration with those commissioning the study, after determining the likely effects of different roles.

Guideline 8. Carry out a preliminary assessment of the nature and the feasibility of the proposed evaluation

The evaluator, having explored both the major features of the programme and the requirements of the evaluation, now decides whether the evaluation is possible or not and - if the answer is "yes" - formulates some initial plans.

Procedures. Summarize the data obtained so far.

Formulate the objectives of the evaluation.

List the significant constraints on pursuing an evaluation study.

Decide whether the evaluation is feasible now and, if the answer is positive, draw up preliminary plans for the evaluation within the general limits of the available resources.

Comments. An evaluator often has little choice but to attempt an evaluation even if the conditions are not suitable. However, he has the choice of specifying and limiting the objectives of the study. It may be useful to prepare alternative plans, indicating the resources needed for each and leaving the choice to those commissioning the study.

PHASE II - DESIGN OF THE EVALUATION

The orientation phase will have acquainted the evaluator with the key elements of the programme, the questions it raises, the kind of information needed to answer them, and the expectations of those commissioning the study. He will have had an opportunity to establish relationships with the programme personnel and to define his role.

He is now in a position to evolve a strategy or overall design for the evaluation. This will involve as a minimum: (1) listing questions and issues requiring consideration; (2) identifying sources and procedures for gathering relevant information; (3) designing the evaluation; (4) formulating an evaluation schedule and budget.

The guidelines in this section are intended to assist the evaluator in developing a design or framework for the study. This will involve a number of important decisions on such questions as whether there should be a single terminal evaluation at a fixed point in time, or frequent evaluations at several specified points in time.

The evaluator must also decide upon the scope of the evaluation, whether to concentrate on one or two important features of the programme or to attempt a broad coverage.

Guideline 9. List questions and issues requiring consideration

The elaboration of a set of questions is undoubtedly the most crucial step in the evaluation process, all subsequent steps being oriented to providing answers to the problems thus identified.

Procedures. Summarize the major features of the programme as they emerge from the explorative investigation (Phase I).

List the issues or problems defined by the people who have commissioned the evaluation study.

Add to this list the other problems and issues that have become apparent in the orientation phase.

Examine the list in terms of the six aspects of an educational programme given below; these provide a framework useful both in clarifying problems already apparent and in identifying others (an evaluation may not deal in depth with all of these aspects, but all should be considered at this stage so as to ensure that certain features are not overlooked):

1. Context - in which the programme operates: the factors which determined the setting up of the programme.
2. Objectives - the aims, goals, implicit and explicit, which the programme is intended to achieve.
3. Student characteristics - at the start of the programme.
4. Resources - personnel, curricular material, physical facilities and financial resources.
5. Processes - the way the programme actually functions, including administration, teaching, learning and evaluation.
6. Effects - both intended and unintended, at various points in time.

Tabulation will permit the evaluator to check that all aspects are covered. The following example illustrates this:

TABLE 1. ASPECTS OF THE EDUCATIONAL PROGRAMME

Questions and issues	Context	Objectives	Student characteristics	Resources	Processes	Effects
Is there a need for the type of health worker being trained?	X	X				
How was this need determined?	X					
Are there other programmes with similar intents?	X					
Are there explicit objectives and how were they defined?	X	X				
Are the objectives realistic?		X				
Is the student selection process the best for achievement by trainees of required competence?			X			X
Are the programme's educational activities logically related to stated goals?					X	
Does the student evaluation process encourage learning of all required competencies?					X	
Is there a systematic analysis of progress as a basis for decision-making?					X	
To what extent are programme goals attained?						X
What unanticipated benefits or negative effects has the programme for students and for the people it covers?		X				X

Comments. The importance of listing questions and issues cannot be sufficiently stressed. It is not suggested that this is a final list, but it is a necessary condition for deciding on a design for the study. Tabulation aids the evaluator in identifying groups of related questions pertaining to each aspect as a preliminary framework for the subsequent stages of the evaluation.

Guideline 10. Identify sources and procedures for gathering relevant information

To make informed judgements on problems and issues listed in accordance with Guideline 9 the evaluator must have information from a variety of sources. At this initial stage it is useful to list all desirable information - i.e., that which would permit the realization of an ideal evaluation. Subsequently it will be necessary to decide on priorities.

Procedures. Add for each of the questions or issues listed in accordance with Guideline 9 the source of information and the procedures which might be used to obtain additional relevant information. A list of alternative procedures may prove useful as a checklist (the procedures might include - besides interviews and questionnaires - observation with or without prepared checklists, rating scales, and tests of achievements, ability, attitudes, etc.). For example:

Evaluation issue	Available information (specify source)					Procedure for additional data			
	Policy statements	Supervisor's report	Student test results	Task analysis	Country health plan	Interview	Questionnaire	Tests	Observation
Is there a need for the type of health worker trained?	X			X	X	X			
To what extent are programme goals attained?		X	X			X	X	X	X

Comments. At this stage the information-gathering process is idealistic - the ideal information for the evaluation is sought regardless of realistic considerations of availability, etc. The final decision as to what will be attempted depends in part on resources, and on an assessment of feasibility.

Guideline 11. Design the evaluation

The evaluator is now in a position to design the evaluation. This will involve his determining the most appropriate approach and defining the sampling procedures. The evaluator must weigh up the advantages and disadvantages of various procedures in relation to such factors as time, resources (budget and personnel), and expectations (attitudes) of personnel.

Procedures. Formulate a general framework for the evaluation design by selecting from among the elements specified in the table prepared for Guideline 10 the questions and issues to be considered and the sources of information and procedures for data collection to be used.

Prepare a new table to summarize the design framework, focusing on problems which are important and susceptible of solution.

Define the sampling procedures to be used in collecting information. Almost invariably sampling is necessary because time, budget and personnel do not permit full coverage of all aspects of interest. Sampling may be applied to:

- persons, e.g., administrators, teachers, students, health workers;
- locations, e.g., classrooms, field stations;
- records, e.g., reports on students, financial statements;
- stages of instruction, e.g., enrolment of students, end of first year, graduation.

Comments. It may be necessary to develop several alternative evaluation designs, if the evaluation is a matter for negotiation, in order to give a choice to those commissioning it.

The emphasis on sampling is justified by the importance which is attached to ensuring that a maximum amount of information is obtained from as many sources as possible. The type of sampling (representative, proportional or matrix) will depend on a number of factors, not least the extent to which the data vary.

Guideline 12. Formulate an evaluation schedule

Overall design or designs having been prepared, it is useful to develop a detailed work schedule or schedule of events (critical path).

Procedure. Prepare a detailed sequential schedule of activities - specifying points in time (dates) at which activities should be completed.

Relate the items of the evaluation to the stages of the programme.

Include dates for submission of reports.

Guideline 13. Formulate an evaluation budget

As a final step in preparing the evaluation plan a detailed estimate of the costs of the evaluation is necessary. If alternative designs have been prepared, their different budgets will be of major importance in arriving at a final decision.

Procedures. Prepare estimates of expenditure or total cost of the evaluation. Useful categories of items for such a budget are: personnel; supplies and services; equipment; and travel.

Guideline 14. Obtain feedback on the evaluation design, schedule and budget

To ensure maximum involvement in the evaluation of all concerned with the programme the design and requirements should be reviewed by as many persons as possible.

Procedures. Submit the evaluation design to the person or persons commissioning the evaluation. If possible, review the design proposal with other persons involved in the programme. Revise the proposal in the light of comments received.

Comments. If several evaluation designs have been prepared, as recommended in Guideline 11, the negotiations as to which is selected may prove particularly revealing for those commissioning the study as well as for the evaluator.

PHASE III - COLLECTION OF INFORMATION ABOUT THE
PROGRAMME AND ITS EFFECTS

The collection of information required to make informed judgements about the character and quality of an educational programme can now begin. The guidelines for this phase indicate ways in which the information might be obtained and organized so as to prepare for the final process of analysis described in Phase IV. They are presented in four subsections that describe:

1. Context and objectives;
2. Characteristics of the students on enrolment;
3. Resources and training processes;
4. Effects and impact.

1. Context and objectives

An educational programme has meaning only if viewed in the sociocultural context of which it is a part. Hence it is essential that a situational analysis should be carried out and that the physical and socioeconomic forces which have been and are shaping the programme should be reviewed. Of special interest is the influence of various features of the context on the objectives of the programme. Every programme has some explicit objectives; that is, statements about what the programme seeks to accomplish. These may take the form of general statements of intent, or of detailed projections of student accomplishments. There are also the unwritten goals or intentions of those responsible for the programme. In whatever form they are, they provide an indication of intent and hence of the desired outcome of the programme.

Guideline 15. Describe briefly the context in which the programme operates

The evaluator must try to gain some understanding of the forces which have been and are shaping the programme. Particularly relevant here is the analysis of the educational system and the existing health services. Important also are other sociocultural factors, such as the attitudes of the population to health care; the political system, and particularly the importance which is given in it to health care; the roles assigned to men and women and the power of existing professions.

Procedures. Through interviews with officials of the health ministry and analysis of documents and reports identify:

- the factors which were taken into account in setting up the programme;
- the relationship between the programme and other health manpower development programmes and the health services;
- the major conditions which shape the health service and health manpower development programmes;

Ascertain whether, in developing the programme:

- those responsible for planning sought and received assistance from persons engaged in the health services;
- personnel engaged in health care were consulted;
- epidemiological surveys had been carried out to identify health care requirements of the population;
- other educational programmes served as models.

Comments. The difficulties of the suggested situational analysis are recognized, yet without some understanding of "context" there can be no meaningful assessment of the programme's aims or of why it is developing along certain lines. By reviewing at least the major conditions the evaluator will gain an understanding of what is really happening in the programme.

Guideline 16. State objectives, listing: future job functions based on significant health problems to be dealt with and on the tasks and responsibilities related to each; and training objectives, related to major tasks that the trainee is to perform satisfactorily by the end of the training period

In some programmes, a detailed statement of institutional objectives will have been prepared; in others it will be necessary to infer what they are from the programme activities and from policy statements. In either case, the evaluator should formulate his own statement of the most important training objectives in relation to the expected job functions of those who have completed training.

Procedures. If an explicit statement of objectives exists, examine it. If such a statement does not exist, develop one after interviewing those responsible for the programme.

Review the existing or newly developed statement of objectives, itemizing the expected job functions of those who have been trained and the specific tasks and responsibilities which those functions entail.

List the major competencies needed for these tasks.

Prepare a statement of objectives, reviewing the functions for which students are being trained.

Comments. Although it is one of the evaluator's tasks to review and if necessary reformulate objectives of the programmes, this does not entail the development of lists of "instructional" or "learning" objectives but rather the formulation of general or institutional goals.

2. Characteristics of the students on enrolment

It is impossible to assess a programme, and particularly its effectiveness, without some knowledge of the characteristics of students when they start the training. Clearly the students' knowledge, attitudes, values, or predispositions are important factors affecting not only their receptivity to training but also many features of the training institutions. Too often homogeneity is assumed - in other words that upon starting training students have the same or similar abilities, the same orientation as a result of similar experience. This is illusory, the wishful thinking of teachers which only too often casts students in the same mould as if they all had an equal readiness to learn.

Guideline 17. Identify characteristics of the student that are likely to affect performance as a learner and subsequently as a health worker

A description of students starting training is necessary for all evaluation. Firstly, both the evaluator and the training staff need to know whether students begin training with relevant knowledge and skills, and whether they have the requisite ability to learn. Secondly, training may be more effective for some students than for others. In the final analysis of data (effects of training) information on initial differences between students can help to explain differences in performance after training. Thirdly, personal and social characteristics of students may influence their effectiveness in the ultimate work situations. Fourthly, the value of any evaluation is enhanced if its results can be generalized, and future programmes will benefit by applying training procedures similar to those found effective here (or avoiding those found ineffective) once the similarity of the student populations can be established.

Procedures. List all the characteristics of students at the commencement of their training that could be relevant; for example, and as a minimum:

- relevant knowledge and skills, including previous experience of health care;
- ability to learn - that is, evidence that students possess the level of learning ability assumed in the design of the training programme, including level of literacy, verbal skill as exhibited in oral expression, and depth of thought or ability to deal with conceptual complexities. Personal accomplishments in the home, in the community or at work may provide such evidence.
- cultural features in relation to the cultural framework of the training programme, e.g., religion, ethnic group, language, social class;
- degree of social skill;
- predisposition to independent constructive action;

Assign a priority to each of these characteristics.

(For further details see Guidelines 18 and 19.)

Comments. It is unlikely that any evaluation can cover all relevant characteristics of students starting training. Hence, the selection of what should be assessed becomes an important decision, the rightness of which depends on using the information obtained in Phase I - Orientation.

Guideline 18. Obtain information about students starting training

The information that is available about students at the time of entry is often minimal. It is true that careful study of applications and the selection procedures and reports often reveals some characteristics, especially those used as criteria of selection. These also indicate the importance which those responsible for the programme attach to such factors as ethnic background, experience in health or community development, experience of living in rural areas, as well as the more traditionally valued characteristics - academic achievement and ability. Nevertheless the evaluator will most probably have to obtain additional information.

Procedures. Examine the student records and list the information given about students when they started training.

Revise and apply procedures for gathering additional information (interviews, questionnaires, staff reports, simple tests of ability).

Comments. The assessment of students starting training often poses a logistic problem. Since it can only be carried out at one point in time, it may in some cases be necessary to carry out a retrospective analysis.

The evaluator is again reminded of the need to use sampling, both of students and of student characteristics.

Guideline 19. Summarize the characteristics of the student group(s)

The evaluator should attempt to answer the following questions:

- (1) What are the characteristics (student profile) which correlate with performance in training and eventual work?
- (2) What are the similarities and differences within the student group, and are there identifiable subgroups?

Procedures. Record information on student characteristics (e.g., knowledge and skills; accomplishments at school; oral or written skills; habits of study; attitude to health care; manner with patients). This information is best recorded quantitatively in tables.

Identify major variations among students. Identify any subgroups that exist.

Briefly describe the student group, referring to the population from which it is drawn and to the student population of similar programmes.

Comments. Information on students' characteristics is most important. Without it, it would be difficult to assess the efficiency of the learning process and the effect of the training. It is also a necessary means for teachers to ensure that the programme is relevant to the students.

3. Resources and training processes

The evaluator is now in a position to formulate with some precision a description of the programme - that is, of its training resources and training processes. The aim is to gain an understanding of the experiences a student has as he progresses through the programme - the influences likely to affect him and, in turn, the effects of his actions on the programme. This should lead to a concise and analytical "portrait" of the student's actual experiences with respect to:

- tasks undertaken by him, e.g., material studied, observations of patient diagnosis and management, interviews with patients, practice of skills such as injection-giving;
- role models - that is, persons (professional or social groups) who most influenced the trainee directly or indirectly, e.g., teachers who epitomize valued qualities of behaviour or thought. A professional group with which the trainee may have little direct contact may none the less act as a reference group the attributes of which the trainee may seek to emulate;
- incentives offered - that is, what behaviour is rewarded or punished, encouraged or discouraged, and how. For example, whether teachers reward mainly conforming behaviour or initiative; what behaviour is assessed by evaluation procedures (tests); whether the tests encourage competition or cooperation; whether remuneration is used as an incentive; what benefits or rewards are offered and can be obtained in the future job.

These three elements of an analytical "portrait" should assist the evaluator both in his selection of what to assess and - perhaps more important - in his interpretation of data which are often difficult to summarize meaningfully.

The following guidelines are intended to assist the evaluator in obtaining the necessary information and summarizing student experience.

Guideline 20. Identify the programme's resources and describe how they are allocated.

The resources of a programme include the instructional materials, physical facilities, and persons directly and indirectly contributing to the programme. By reviewing what the resources are and how they are used, the evaluator can gain considerable insight. For instance, there is often a disparity between what is and what is believed to be; resources are often available but not used; and there may also be important influences (resources) that remain unrecognized.

Procedures. Prepare a checklist of potential resources:

- instructional materials, e.g., syllabuses, manuals, teaching aids;
- evaluation instruments, e.g., tests, rating scales;

- facilities, e.g., classrooms, learning resource centres, library, student accommodation, field facilities, clinics, transport;
- personnel, e.g., teachers, supervisors, administrators, other students.

Indicate which of these resources are available and which are used, and describe how they are used.

Comments. Each resource is a potential environmental stimulus for students and for all who are involved in an educational programme. Each therefore needs to be given careful consideration by the evaluator in order to help him to gain an insight into what is happening in the programme.

Guideline 21. Examine and record the programme's training processes

The analysis of the educational process requires a considerable amount of skill in observing students in as well as outside the formal, scheduled training sessions and interpreting the findings.

Procedures. Examine programme outlines and syllabuses, hold interviews and observe classes and other activities of students and staff in order to review and describe:

- the instructional activities, such as numbers and form of scheduled classes and type of instruction, both in terms of what is prescribed and of what actually occurs;
- student/staff contacts and interactions according to their type, frequency and nature;
- student activities, including the type, frequency and nature of peer-group interactions and extracurricular activities.

Comments. To analyse, understand and describe the training process is an essential part of an evaluation, but often a difficult one because of the risk of becoming immersed in details.

Guideline 22. Summarize the information portraying student experience, using as themes the major tasks, role models and incentives

The information on the programme's resources and training processes, collected in accordance with Guidelines 20 and 21, must now be synthesized. Otherwise the data will be meaningless.

Procedures. Examine the information collected and write a succinct analytical description of the training processes.

Indicate differences in the experiences of, or processes used for different groups of students.

Comment. In building up a "portrait" of student experience, particular attention should be given to contradictions or discrepancies within the programme, e.g., between what is said and what is done; between what is done at different times; between classroom and field experience; between models provided by teachers and practitioners; and between what is taught and what is tested or assessed.

4. Effects and impact*

The assessment of the effects of training on student performance during and at the completion of the training is a crucial component of the evaluation study. The decisions about what, how and when to assess are likely to be important determinants of the effectiveness of the study. The evaluator must assess not only the intended effects, i.e., those recorded in the statement of objectives (see above), but also the effects that were not specifically intended. The important effects must be assessed at least three times: during training, at the completion of training, and in the subsequent work situation.

By determining what graduates of the programme actually do - what services they provide - one can gain some indications of their usefulness in meeting the health needs and demands of the population. A study of the community's response, the acceptability of the services, etc., provides further insight.

Any one educational programme has some effects on others, and its impact will also be evident from the reactions of other programmes and from those of practising health workers.

The assessment of impact is an important task for the evaluator - one which will vary in direct relationship to the type of programme, the length of time it has been in existence, the type and number of health personnel being trained, and the interaction of the programme with related training and service institutions.

Guideline 23. Identify the effects of the programme that are to be assessed

It is unlikely that any evaluation will attempt to cover all possible effects of an educational programme. Hence it is essential to specify which effects are to be assessed.

Procedures. List the major objectives of the educational programme as "intended effects". Identify these effects of training at different times, which may be arbitrarily set at three points: during training, after completion of training, and in the work situation.

List "unintended effects", i.e., other effects which were not intended by those planning the programme but which can reasonably be thought to have resulted from it.

Prepare in summary form a list of these training effects as illustrated in the following example, which tabulates possible training effects in maternal and child health care:

* The term "effect" is used here to denote any behaviour or event which reasonably can be said to have been influenced by some aspect of the training programme; it refers to the outcomes of a programme as evidenced by the performance of trainees, their knowledge, skills, attitudes.

The "impact" refers to the more general results of the programme and is distinguished here from the effects in order to stress the point that evaluation must also be concerned with the general consequences of a programme. These are varied and often difficult to detect. The most critical and also the most difficult are changes in the health services available to the population and (even more fundamental) in the very health of the population itself.

	During training	At the end of training	In the work situation
Intended effect	Knows basic principles of infant nutrition	In interview with a mother demonstrates skill in giving advice on nutrition	Meets regularly with village mothers and provides advice on nutrition
Unintended effect	Compulsively concentrates on terminology	Causes anxiety in mother regarding her competence in child care	Creates conflict between mothers and other family members

Comments. The task of the evaluator will be relatively easy if there is a detailed list of intended effects. If there is no such list, it should now be possible, by following the guidelines in Phases I and II to identify the major objectives.

Particular attention should be paid to the identification of unintended effects, which can only emerge from an evaluator's appreciation of what is happening in an educational programme, or from considering the application of various hypotheses. The evaluator is reminded to cast the net widely.

Guideline 24. Identify and critically analyse the assessment procedures already in use in the programme

Most programmes will include some procedures for the assessment of training effects. Unfortunately it is commonly found that the assessment is not comprehensive and that the reliability of the procedures is questionable. It is exceptional to find assessments of all the important, intended effects.

Procedures. List all assessments made. Examine their context (face validity) and their application - i.e., determine what they measure (validity) - and the degree of reliability which can be ascribed to the result.

Itemize in relation to what should be assessed (Guideline 23) what is in fact assessed and what is not.

Comments. In a critical appraisal of assessment procedures it is necessary to analyse the content of each procedure. Further, it is essential to ascertain which scoring system is used and how success and failure are judged. It is often helpful to review the whole process by which the assessments were planned.

Guideline 25. To the extent that the procedures in use are not adequate for the purposes of the present evaluation, develop and apply others

The development, application and interpretation of methods of assessment is a major task necessitating decisions as to the feasibility of procedures for the population of students, the type of sampling, the analysis that can be carried out given the resources available, and the relevance of the evaluation for all participants, especially students.

Procedures. Draw up a list of effects to be assessed owing to inadequacy of available information (Guidelines 23 and 24). Select appropriate procedures for the assessment of these effects. For this purpose consider the appropriateness of:

- oral tests;
- records of systematic observation of student performance in classroom;
- simulated work situations, or samples of work;

- interviews with students, patients, members of the community;
- relevant anecdotal information.

Apply the procedures selected, analyse and interpret results. If necessary develop additional procedures. Summarize results.

Comments. The interpretation of procedures for assessing the effects of a training programme is difficult not only because of the dearth of suitable procedures but because of variation within groups of students. Furthermore, it is often difficult to decide what is acceptable as "achievement". It may be useful to decide on some arbitrary standards such as 60% or 70% of the students showing the "effect" of the training.

Guideline 26. Develop a set of procedures for observing and describing the long-term impact of the programme, if this is to be evaluated*

The aim of a training programme is ultimately to provide service to the community which supports the programme or which it is meant to serve. The contribution of trainees both during and after training to this community hence provides some indication of impact.

Procedures. The following are suggestions as to possible indicators of the impact of the programme:

- services that the programme as a whole, or the staff and/or students provide for the community;
- performance of graduates, including type and quality of services rendered, place of work, continuing education activities;
- the community's acceptance of the services, its involvement in the programme.

The evaluator should also seek indicators of the programme's impact on other educational programmes.

Comments. Assessment of impact is difficult and usually requires considerable time. Yet it is crucial that some attempt should be made to ascertain what impact, if any, the programme has on the health status of the population, on the health service, and on the education of health workers generally.

It is often possible to detect at least a tendency, or to make inferences from the setting or context and from any changes attributable to the programme.

* See footnote on page 22.

PHASE IV - ANALYSIS AND REPORTING

Throughout the evaluation study the evaluator will by necessity have analysed and interpreted data. He is also likely to have sought feedback on his findings by making interim reports and receiving comments on them, and by discussion with participants in the programme. Now that the data collection phase is completed he can make a final analysis and report the results of the evaluation; namely, judgements on the programme and its quality.

The analysis is essentially a matter of interpreting the findings, showing the relationship between various features of the programme and thus developing a full and coherent description of it as it functions. At the same time the analysis will indicate the problems encountered, the issues to be resolved, and the tasks to be carried out.

Once the analysis has been carried out and reported upon, evaluative judgements can be made about the quality of the programme. Here, the task of the evaluator is to explain the basis for his judgements, indicating the criteria that can be used and the alternatives that have been considered. This will almost invariably entail the listing of strengths and weaknesses of the programme and will often call for suggestions for improvements.

Guideline 27. With information collected in Phase III prepare a concise description of the programme

The task will be facilitated by summarizing the data collected in Phases I-III and reviewing the relationship between elements or components of the same and of different phases.

Procedures. Outline the major elements of the programme; that is, describe as concisely as possible:

- why the programme was instituted;
- what its objectives are;
- who is being trained;
- what training resources exist;
- what training processes are used;
- what is the cost of the programme generally and what is the cost per graduate;
- what are the characteristics of students at the beginning, during and at the end of training, including actual and potential competencies, attitudes and skills;
- what are the effects of the programme on others: teachers, administrators, the community;
- what impact, if any, has the programme had on the health service, on the health status of the community.

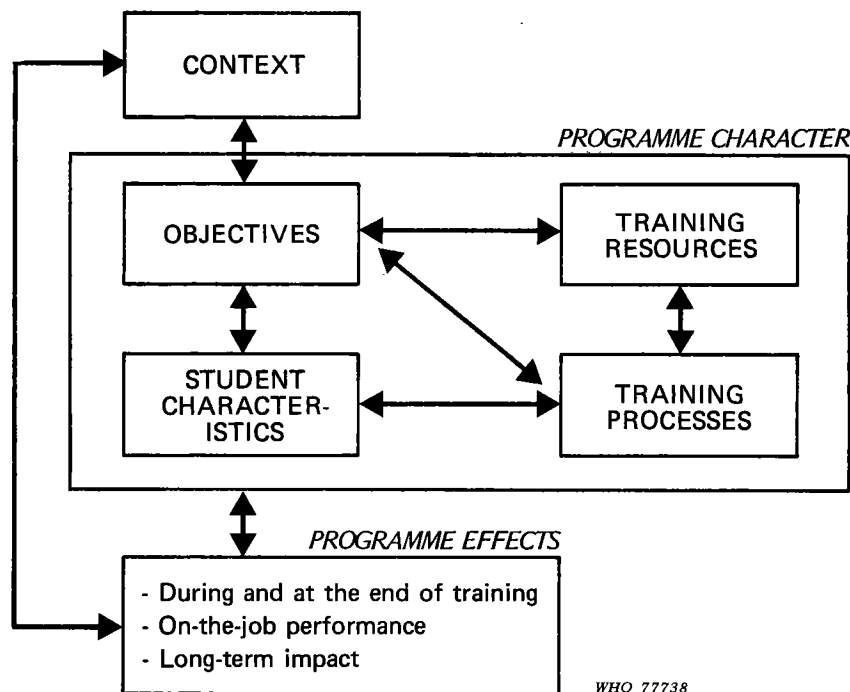
List all the problems identified, the solutions attempted (changes made), and the problems or issues which may arise in the future.

Comments. The thoroughness of the description of the programme will depend on the data available to the evaluator, but also on his own ability to sample, or to distinguish the important from the less important. The value of the description will further depend upon its communicating to those responsible for the programme, or to those who have commissioned the evaluation, the main features of the programme.

Guideline 28. Analyse the relationship between various aspects of the programme

The preceding description (Guideline 27) can now be used for an analysis of the programme. This is essentially a matter of considering the relationships between different elements of the programme, and will involve an assessment, based on critical review, of the relationships within what is described as aspects of a programme (context, objectives, training resources and processes, student characteristics, effects and impact) and between these aspects. For example, the evaluator will be concerned to assess whether the list of objectives is internally consistent or includes intentions which are incompatible, whether the training process is consistent with the objectives, and so on.

The following diagram presents in schematic form the various aspects of a programme and the main interrelationships which should be examined:



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Procedures. Examine and critically comment on relationships both within and between the elements of the programme.

List any inconsistencies or incompatibilities and outline the problems to which they may give rise.

Comment. Analysis consists in examining the interrelation of elements of a system as a basis for final evaluative comment (Guideline 29).

Guideline 29. Prepare an evaluative statement summarizing the qualities and achievements of the programme, the problems and difficulties the programme has encountered, and the available options or courses of action for its improvement

This is the final step in the evaluation - a general determination of the value of the programme. The evaluator, in making the necessary judgements, should refer to the criteria he has used or to the alternatives he has considered. The judgements of quality are based on all the information available. It is a diagnosis in which all the evidence has been carefully considered, in which the pros and cons of alternative actions have been examined. Finally, a personal decision (judgement) is made.

Procedures. Specify any criteria which can be used in assessing the worth of the programme. Identify and record all alternatives that have been considered.

Attempt to answer the evaluation questions formulated during Phase II.

Prepare a summary statement on the programme, its achievements and problems. Outline possible action to improve the programme, or, if necessary, recommend that the programme be discontinued.

Comments. The evaluator is reminded to consider again the expectations of those commissioning the study and to ensure that his report meets their requirements. Also, it is essential that each judgement made is substantiated by references to supporting information; many readers will read only the conclusions.

Annex

EXAMPLE OF APPLICATION OF THE GUIDELINES

The following example has been prepared to illustrate the application of the guidelines. It is not intended to be a written record of an evaluation process nor is it a report on an actual evaluation; the aim is rather to amplify some of the suggested steps and procedures.

Phase I - Orientation

By following Guidelines 1-3, the evaluator established the following by interviews and documentary analysis:

The persons being trained are going to man health centres in villages and will provide primary health care, involving the promotion of preventive health practices, treatment of a specified list of diseases, and the encouragement of the community to take responsibility for general health-related activities. The latter particularly emphasizes improvements in the supply of clean water and in nutrition, and participation in immunization campaigns, family planning and general sanitation.

It is intended that the graduates will not only have responsibility for the health care of a small community but be members of it, and be part of a network of such centres forming part of a provincial health system.

The programme was originally conceived by the staff of the department of community medicine of a university, but is now under the control of the provincial director of health services.

The programme started last year and now has 40 students in training, a staff of six, a director of studies and five teachers (supervisors).

The duration of the course is two years. In the first year there are blocks of instruction in a provincial centre alternating with on-the-job experience, each of two months' duration. The second year is supervised practice.

The director of studies is a physician with special training in community health programmes. The other staff members have professional training in nursing and sanitary engineering.

The students have had four years of primary education and were selected from a pool of applicants on the basis of apparent aptitude during an interview with the director of studies. At this stage there are: one building with three classrooms, a hostel accommodating 20 students, health centres in six villages (average distance from centre, 20 km). In addition, a small hospital staffed by two physicians and three nursing aides, which is part of the provincial health service, is associated in the programme, particularly as a referral centre. There are no books, few instructional aids.

An epidemiological survey was conducted two years prior to the development of the programme which has provided a fairly detailed assessment of the health status of the population.

The programme's budget is financed directly by the Ministry of Health and is approximately US\$ 50 000 per year. Most of this is used to pay salaries of staff but students receive a small living allowance. A small amount is available for instructional materials.

By following Guidelines 4-8, the evaluator established the following:

The study was commissioned by the provincial director of health services. He wants to know whether the programme should be continued, and if so, whether it should be extended to other parts of the province.

The report is to be submitted to him, with one copy to the supervisor of studies. The director intends to submit the report to the national Ministry of Health and apparently hopes to receive additional support for the programme, as he expects the study to show that it is effective and meets the real health needs of the population.

The study is financed from a special fund under the control of the director of health services: a sum of US\$ 4000 has been set aside.

A number of statements have been prepared which describe the programme, its objectives and educational principles, as well as a schedule of training events.

The evaluator is directly responsible to the director of health services but is expected to collaborate closely with the supervisor of studies. The latter is afraid that the evaluation may be critical of the training programme, especially as he feels himself to be under attack from some of his professional colleagues. However, both he and the director feel that it is necessary to have an evaluation to prove to others that the programme is viable as an alternative manpower development programme to meet the real requirements of the community.

An evaluation appears appropriate; it should consist of a detailed description of the programme, its objectives, educational process and effects. An assessment of impact would appear premature. Given the financial constraints, the study will have to be very limited but should meet the requirements of those commissioning the evaluation.

Phase II - Design of the evaluation

Guidelines 9 and 10. From the information obtained in Phase I, the following questions (examples only) were developed. The source of information for each is indicated next to the question:

	Aspects	Sources
1. Are the programme goals consistent with what is known about the health needs of the people for whom the programme is intended?	Context Objectives	Results of epidemiological survey; country health plan published 3 years ago; statement of programme objectives; interview with director.
2. Are the characteristics and abilities of the teaching staff consistent with the requirements of the programme?	Resources	Interview with staff; observation in classrooms.
3. What are the prevailing forms of instruction?	Process	Observation; examination of programme statements.
4. What are the prevailing forms of student learning activities?	Process	Observation; interview.

	Aspects	Sources
5. What is the total cost of the programme?	Resources	Budgetary analysis.
6. To what extent are programme goals being achieved?	Effects	Student records; observation in clinical situations; interview with members of community being served; interview with staff.
7. Are there other effects, e.g., - students becoming alienated from their community - students' dissatisfaction with their intended role after training - local physicians accepting possible contribution of primary health care workers?	Effects	Interviews; observation.
8. Has official support for the programme increased?	Context	Interview with Ministry of Health officials; analysis of plans.

Guideline 11. From the list of 50 questions and issues, the evaluator selected 10 which appeared feasible in the time and with the resources available.

Because of the small number of students, no sampling of the student population was thought necessary. However, it was deemed useful to sample stages of instruction, that is, to ascertain the characteristics of students at the following times: at enrolment, on commencement of the first practical period, at the end of the first practical period, at the end of the first year of the course.

Guideline 12. The following evaluation schedule was prepared:

Week	Programme	Evaluation tasks
1 2	Instruction in centre	Assessment of students at entry; analysis.
3 4		Observation of teaching; interviews of teachers.
5		Interview Ministry of Health
6 7		Documentary analysis; interview personnel at regional hospital.
8		Assessment of students.
9 10	Field experience	Observe in two centres; observe in two other centres.
11		Interview members of communities served by health centres.

Guideline 13. The following budget was prepared from 1 May 1977 to 30 April 1979:

	<u>Amount</u>
Personnel:	
Evaluator half-time	} 3 000
Secretarial assistance and research assistant provided by director	
Supplies and services:	
Paper and office supplies	} 500
Travel:	
Transport to health centres	} 500
Visit to Ministry of Health	
Total	4 000 =====

Guideline 14. The design was submitted to the director of health services and the staff of the programme. A number of suggestions were received for additional sources of information. Some anxiety was expressed about the proposed visit to the Ministry of Health. It was suggested that the director of the programme should accompany the evaluator.

Phase III - Collection of information about the programme and its effects

Guideline 15. The programme was originally conceived by Dr X, who was impressed by a programme in country Y. At the same time the results of a survey showing the poor "coverage" of the existing health service system were published.

The programme was therefore planned to meet the requirements for personnel able to provide health care to the people not served at present. The opposition to the scheme was and is considerable - both from persons within the Ministry of Health and from local physicians. However, it became operational as a research project of the university and Ministry of Health.

Guidelines 16-17. A statement of objectives had been prepared when the programme was planned, listing the major tasks which persons trained in the programme are expected to carry out. A number of objectives were added as a result of comments made by those responsible for the programme, the analysis of planning documents, and the annual report of the director. They provide:

- that the programme should train 30 persons per annum;
- that the personnel trained will be responsible for all first contacts with persons seeking health care;
- that graduates will have the competence to promote a community taking responsibility for health care.

Guidelines 17-18. The following characteristics of students were tabulated: age; sex; educational level; marital status; place of residence; father's and mother's occupation; previous experience of health-related work.

Other characteristics were ascertained by interview, by a short test of verbal fluency and by a questionnaire; they concerned vocational and other aspirations, language ability, facility in relations with others, reasons for enrolling, attitude to health problems, to health care and the health professions, learning styles.

Guideline 19. From the information gathered in accordance with Guidelines 17 and 18 it appears that there is considerable variation within the group of students starting training. On the basis of similarity in learning styles, reason for enrolling, attitude to health problems and parental background, four subgroups were identified and described.

Guidelines 20-21. There are two classrooms with tables and chairs arranged in rows facing the desk of the instructor; there is no library, no learning-resources centre. The instructors have some 50 books and journals for reference purposes. Other instructional materials are a blackboard, and some models and charts.

The instructors are highly motivated, believing that the programme can make a major contribution to health care in the area. They have developed a sketchy syllabus and plan their activities weekly. They have little previous experience of instruction or of educational theory. They report difficulties in communicating with students, but insist that with the high motivation of students the problems will be overcome. Most instruction in the first two months is by lectures, with occasional periods for demonstrations and for questions. In a sample of lessons observed, instructors talked for 95% of the time.

Guideline 22. In the first part of the course (two months) the students focus on the following tasks: identification of ten major symptoms or complaints which are common in the district; dressing of wounds; nutrition of children under five years old; sanitation in villages, etc. Information is absorbed in a passive way. There is emphasis on a set of procedures to be memorized and followed precisely. The women students appear to identify with the nurse instructors as shown by style of dress and speech. The males seem concerned about their intended role after training.

The four subgroups have continued to diverge. The subgroup with family background on enrolment representing a relatively high socioeconomic level and relatively high vocational aspirations appears to be less positive in its attitude to the programme than the other three subgroups.

Guideline 23. A list of major effects of the programme requiring assessment was prepared. This includes the ability of the students:

- to distinguish symptoms of ten major diseases after the first stage of instruction;
- to dress a simple wound;

- to list five symptoms of malnutrition in a three-year-old child;
- to elicit information from a villager as to major health problems of the community.

Guideline 24. The procedures used by the instructors to assess performance of students have not been formalized. A short written test (short-answer type) is given at the end of each instruction block. During practice periods the instructors and supervisors make notes on the students' behaviour.

The impression of each student formed by the instructors is reflected in the relations between them, and in the assessment of ability.

Guideline 25. Several rating scales and observation schedules were developed to systematize observation of the performance of students in the practice situations.

Five patient management problems developed elsewhere were adapted for use in assessing student performances.

A separate record was developed for each student to indicate individual development in relation to characteristics on enrolment.

Guideline 26. Not attempted.

Phase IV - Analysis and reporting

Guideline 27. A summary report describes the programme under the headings: context, objectives, resources, process, and effects. It not only summarizes the information gathered but notes some of the problems encountered.

Guideline 28. An examination of the relationship between the various elements of the programme indicates that there is considerable consistency as to the requirements specified in the original plan and the objectives derived from these requirements. However, it is questionable whether the objectives are realizable without major changes in the total health service system. There also appear to be inconsistencies in the process of instruction, which is not only inappropriate for meeting the objectives as defined, but also unsuited to the abilities of students. The present resources are similarly inadequate for meeting the objectives.

Guideline 29. In preparation for the final report, the initial evaluation questions and issues are reexamined. The information relevant to these questions is assembled and the criteria for quality are made explicit. For example:

- the overall programme is relevant to the documented health needs of the population;
- the objectives are clearly defined and consistent with the requirements;
- the activities of the programme reach those people in the community whose need for health service is greatest;
- the educational process consists of a well-conceived set of activities in which different components are integrated and priorities have been defined;
- planning of the programme is based on evaluations which have identified achievements and failures;
- the training of students is appropriate to the tasks that they will be expected to perform, and the educational process ensures the most effective and efficient forms of study;

- all those involved in the programme recognize their roles and the value of achieving the objectives of the programme;
- the programme achieves the objectives outlined earlier at a reasonable cost, and the allocation of resources reflects the priorities of the programme.

The final summary statement is prepared which, following the description of the programme, cites point by point the major strengths and weaknesses, using the criteria above. In addition, alternatives are reviewed. The report concludes with a series of recommendations, e.g.:

"The programme should continue, and consideration should be given to strengthening its impact by enlarging the output. This will require an allocation of additional resources.

"In order to promote the coordination of the programme with existing health services, health workers in the district should be invited to participate more actively in the programme planning and implementation.

"The educational process should be changed to reflect more closely the objectives of the programmes and to provide for identified differences among students."

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