educational objectives 1

the concept of educational objectives

The aims of this first chapter are to show the advantages of defining educational objectives; to show that if precision and clarity of educational objectives are important, relevance to health problems is even more so; and to show that an approach based on objectives will ensure that health personnel are better prepared to perform professional tasks corresponding to the health problems of society.

Those interested in this approach should read the following works by R.F. Mager.

- Preparing instructional objectives (1962).
- Goal analysis (1972).
- Measuring instructional intent (1973) (Chapter III, pages 15 to 46) Fearon Publishers, California, U.S.A.

And the following publication by the World Health Organization.

- Criteria for the evaluation of objectives in the education of health personnel, WHO, Technical Report Series, 1977, No. 608.

After having studied this chapter and the reference documents mentioned you should be able to:

1. Define the following terms: professional task, activities, functions, role, institutional objectives; specific objective; domains of practical skills, communication skills and intellectual skills.

2. List the qualities of an educational objective and the sources necessary to ensure its relevance.

3. Define the professional functions of a member of the health team whom your teaching institution is responsible for training (*general* educational objectives) so as to deal with the health problems of society.

4. Analyse a ~~major~~ professional function by defining the various *intermediate* components (activities) making it up.

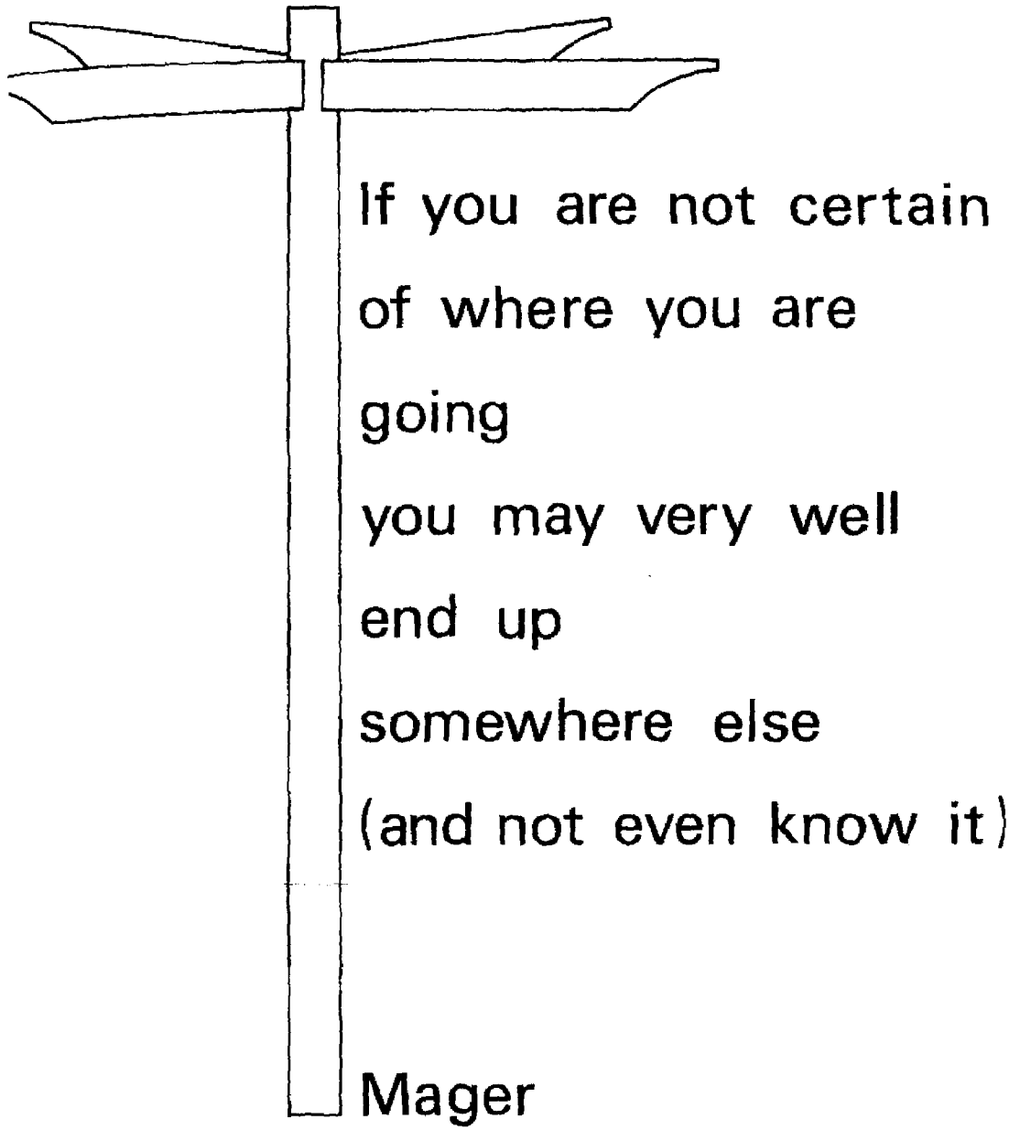
5. Define a professional task and identify its components (domains of practical skills, communication skills and intellectual skills).

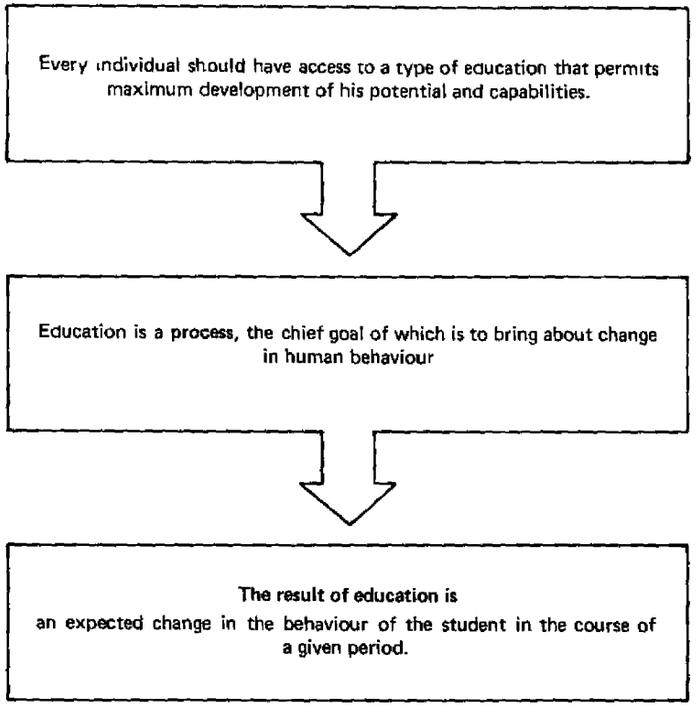
6. Draw up a list of the *specific* educational objectives relating to a professional task, stating explicitly what you feel the student should be able to "do" after a given course of instruction (that he was not able to do previously) and corresponding to the domains of the communication skills or practical skills involved in this activity.

7. Taking a specific objective in a non-cognitive domain (i.e., practical or communicative skills), define in terms of specific educational objectives what theoretical *knowledge* you feel the student should possess if he is to attain that objective.

8. Make a critical analysis of specific educational objectives (listed by a colleague), indicating in particular whether they include all the requisite elements (act, content, condition, criteria).

9. Draw up a list of the possible reactions of colleagues with whom you work in your faculty to the idea of having to define educational objectives derived from professional tasks and propose strategies for overcoming those reactions.





The Educational Spiral

- This "behaviour" will be defined explicitly in the form of educational *objectives* derived from professional tasks.
- An *evaluation* system will be planned so that better educational decisions can be taken.
- A *programme* will be prepared and implemented to facilitate attainment of educational objectives by the students.
- *The evaluation process* will be used to measure the extent to which the objectives have been achieved . . it will measure the student's *final abilities* . . . and the effectiveness of programme and teachers.

the educational spiral

Programme reform has been a source of concern for many years to those training health personnel and the alarm has often been sounded. However, the strength of the traditions impeding necessary reforms has been such that it has not been possible to avoid serious disturbance in many universities throughout the world, always caused by a reaction in face of the apparent diehard conservatism of the system.

It would, however, be negative and dangerous merely to accuse of incompetence those at present in positions of teaching responsibility. They should be offered help.

Societies change and have always been changing, but until the present century their evolution was relatively slow and adaptation to change was possible without unduly violent disorders.

The form of teaching has remained unchanged for centuries. The university has wrapped itself in its privileges and remained deaf to the cry from without The needs of society, the practical side of the matter, have been left to chance, whereas specific features of the situation in each country are changing ever more rapidly. Hitherto, unfortunately, little or no account has been taken of those features and the training of health personnel has followed traditional systems. What is required now is to make sure that educational programmes are relevant.

There can be no question of continuing to copy the models of the past or, in the case of developing countries, foreign models.

The educational system leading to the development of health personnel, at all levels, must be re-examined within the context of the needs of the country concerned.[1]

No educational system can be effective unless its purposes are clearly defined. The members of the health team ***must be trained specifically for the tasks they will have to perform,*** taking into account the circumstances under which they will work

These tasks can only be defined ***in accordance with a plan*** in which the nature of the services to be provided is specified, priorities are allotted, the staff needed to provide these services determined, etc

Professional training programmes must then be tailored to meet these needs

There is room for some degree of optimism in this sphere, for no financial assistance is needed for a move in the right direction. All that is needed is a resource distributed more or less equally around the world: mental ability. The management of that resource is the art of organizing talent and of coping intelligently with change

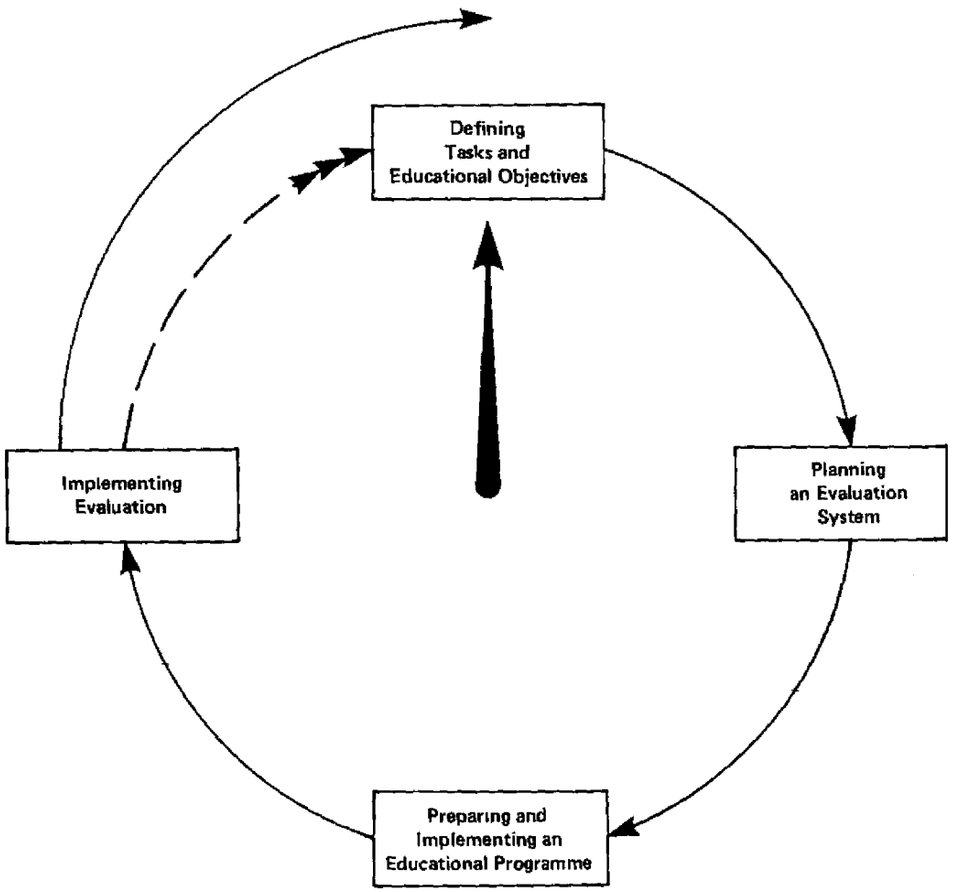
Defining the ***professional tasks*** of health personnel to be trained, the very basis of the educational objectives of training centres, is of crucial importance.

Thus an educational ***programme***, instead of being the result of a non-selective accumulation of knowledge built up over the centuries, must be shaped selectively ***in terms of the goal to be achieved.*** If that goal is modified in the course of time, the programme must also be modified accordingly

Definition of professional tasks must proceed from a study of needs, take account of available resources and indicate clearly and precisely what various categories of personnel will be called upon to do during their professional careers in a given type of health service.

[1] The study of needs, organization of health services and definition of tasks and functions are, however, not dealt with in this Handbook. Consequently, specialized texts should be consulted concerning those aspects (see Bibliography, p 7 01).

the educational spiral



importance of defining professional tasks

If we stress the importance of the prior definition of professional tasks, it is because this is a precondition for ensuring that training programmes are really designed to meet the population's health needs Over the last 10 years or so teachers, under the cloak of an educational revival, have used the title of educational objectives to disguise what they had been in the habit of teaching in the past Such educational objectives have favoured the creation or continuation of training programmes which only too often seem hardly relevant to the needs of the population.

Indeed, if educational objectives are based on faulty principles, then the "best" system of training may well give "bad" results. There is even a danger that a "bad" message will be "better" communicated, and this is certainly not the goal sought.

We therefore propose to demonstrate that the ***professional tasks*** of a member of the health team and the ***educational objectives*** providing a basis for construction of his training programme must be almost identical.

Another important point to bear in mind is that it can be useless to try to change a programme or teaching methods without also changing the system of evaluation (particularly examinations). Experience has shown that if, on the other hand, the evaluation system is modified, this has a much greater impact on the nature of learning than has modification of the programme unaccompanied by any change in the evaluation system. Evaluation provides a sound basis for programme planning Therefore, an evaluation mechanism should be set up *before* proceeding to any reform of the programme This makes it possible to measure the level at the outset (prerequisite level) and the level at the finish and thus to determine whether the change has been positive or not This process can be represented by what is called the ***educational spiral.***

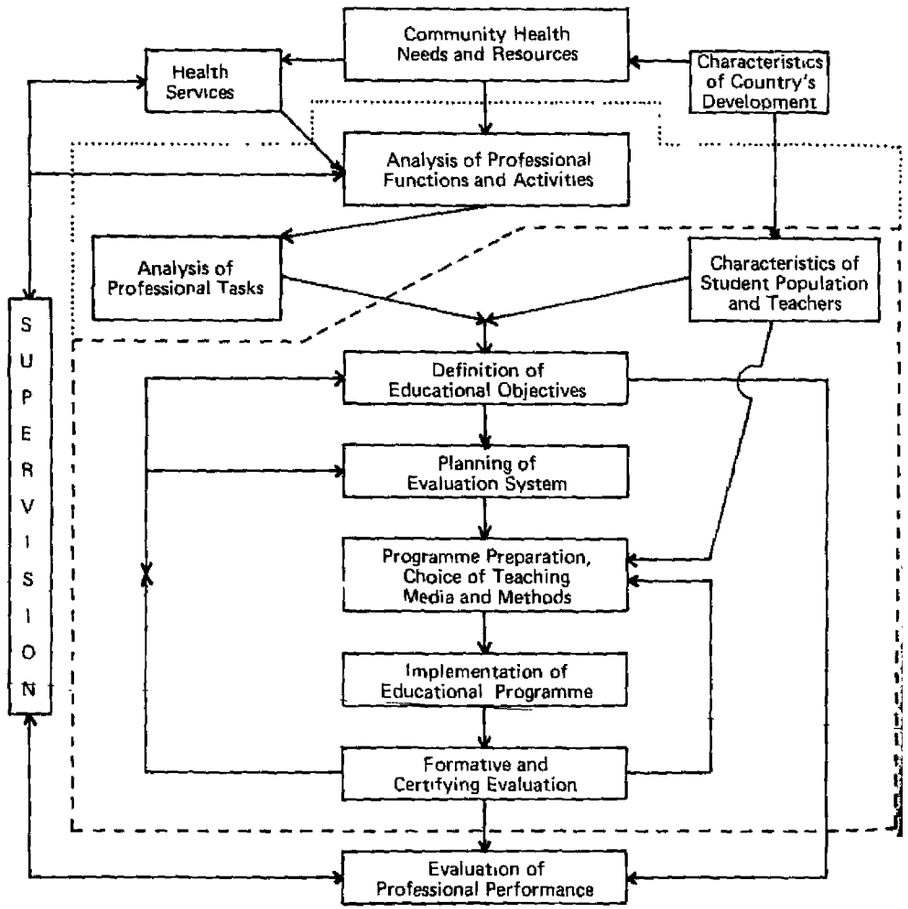
If the teaching staff are given an opportunity to gain the new knowledge they need and to acquire the appropriate modern teaching skills, they will feel more secure and instead of being confined to limited personal experience they will accept the use of more formal educational research methods.

This can be a powerful stimulus for institutional change, particularly when used by faculty members whose experience in the educational process has already alerted them to the ways in which educational innovation can be accomplished with the greatest possible enthusiasm and the least possible hostility on the part of their colleagues. Such innovation, based upon carefully gathered information and developed according to sound educational principles, could enable some medical education institutions to explore, in particular, non-traditional means of preparing the members of the health team for the professional tasks they will have to undertake. Without the incrusted educational tradition that long adherence to a single system creates, the opportunity for innovative experimentation is far greater.

This is a very difficult task which may well have daunted the most conscientious. We consider that teachers should be offered assistance in this field.

That is the main reason why this Handbook has been prepared and used during workshops on educational planning

Organizational diagram showing the relationship between the subsystem "Education" (inside the dotted line) and the subsystem "Health Service".



selection of training goals[1]

Traditionally, this selection has been made by relying on the judgment of experts to determine what a neophyte in the profession ought to know and ought to be able to do. In the past we have relied almost exclusively on this method. As a result curricula are crammed with an ever-burgeoning amount of new and highly specialized knowledge which the student perceives as irrelevant to his own goals and which, in fact, may be of little value to other than the super sub-specialist Certainly expert opinion is an important source of information about the knowledge and skills which trainees should be able to demonstrate, but it is also possible to make this decision on the basis of scientific evidence about what competent health personnel need to know and need to be able to do in order to fulfil their responsibilities. A number of procedures have now been developed for collecting such data which provide an empirical basis for working out a behavioural description of the essential components of professional competence. This is of great assistance to faculties in setting goals and designing curricula. Three of these procedures are of special interest: the critical incident technique, the method of task analysis and the method of analysis of epidemiological data.

The critical incident technique

This method consists in collecting data about specific types of behaviour that characterize professional effectiveness and ineffectiveness and using these data to make an objective, empirical assessment of the essential performance requirements of the profession. This technique is an outgrowth of studies in aviation psychology made in the United States during World War II In that programme it was found that in reporting the reasons for eliminating a trainee, pilot instructors and check pilots frequently offered such cliches and stereotypes as "lack of inherent flying ability", "poor judgment" or "unsuitable temperament" In an effort to determine the specific characteristics of personnel that contributed to success or failure, combat veterans were asked to report incidents observed by them that involved *behaviour which was especially helpful* or especially inadequate in accomplishing the assigned mission This request concluded with the statement "Describe the officer's action. What did he do?" The several thousand incidents submitted in response to this inquiry were analysed and categorized to provide a relatively objective and concrete description of the "critical requirements" of combat leadership.

To apply this method to the health professions, several thousand incidents describing observations of especially effective or ineffective colleague behaviour are collected from several hundred health workers representing various age groups, geographical areas, professional categories and specialty interests. For example, in a critical incident study of intern and resident performance (i.e. of the general practitioner) commissioned by the U S. National Board of Medical Examiners, the American Institute of Research which conducted the study collected over 3000 incidents from physicians across the country. The incidents submitted involved all areas of behaviour: practical, communication and intellectual skills They identified, for example, such general requisites of competence as "Skill in gathering clinical information," i.e., in taking a competent history and in performing an adequate physical examination, or "Skill in relating to the patient and in gaining his cooperation in a treatment plan". In a similar study conducted by the University of Illinois Center for Educational Development of the critical performance requirements in orthopaedic surgery, over 1700 incidents were collected from more than 1000 orthopaedic surgeons representing various practice settings and sub-specialty interests. An empirical classification defining 94 critical performance requirements, grouped into nine major categories of competence, was derived from the incidents. This operational and prospective definition of the essential components of competence could then be used to determine the goals of specialty training, the design of programmes for their achievement and the criteria and methodology for their evaluation. If

[1] From "An overview of applied research in medical education problems, principles and priorities" Christine H McGuire, WHO Report on the Workshop on the Needs for Research in Medical Education, Alexandria, March 1974

educational planning were regularly based on such operationally defined, empirically derived goals, educational programmes would look quite different

Task analysis

A second method of determining the essential components of professional competence which should define educational objectives consists in detailed task analysis of what various categories of health personnel actually do, and in deriving from that list of tasks a statement of the knowledge and *skills* (what *should be* done, not merely what *is* done) which they must have to perform competently Such a task analysis should be based on careful, systematic observations of the activities of a representative sample of various categories of staff or on the daily logs of a representative sample who report in minute detail the way in which they spend their working days over a specified period of time, or on some combination of these two approaches.

Wherever this method has been employed, the results have been most enlightening For example, in a limited pilot study of paediatricians in a typical small U S. city, researchers found that all the physicians had different but consistent patterns for taking a history and performing a physical examination. Of the 481 patient visits observed, 222 were well children; an average of 10.2 minutes was spent with these children (range: 7 5 minutes to 13 6 minutes) in contrast with an average of 8.1 minutes spent with ill children (range 7.4 minutes to 10 minutes). Of the 259 ill children, 104 (i.e. 40%) were diagnosed as having an infection of the upper respiratory tract, 15 had chronic illnesses and five had potentially dangerous diseases. For the total group of 481, optic fundi were examined only nine times and rectals were performed in only six cases, two physicians did not percuss the lung fields for any patient The greatest amount of time was spent in discussion of nutrition and child development The single most frequent topic on which advice was rendered in well-child care concerned toilet training. The authors of this study concluded, *"Few aspects of well-child care appear to require the skill of a physician the question is also raised as to whether current training programmes are aggravating the physician manpower shortage by over-training in relation to community health needs"*[1]

This is a question that could apply to all members of health teams in every country, only task analysis or comparable empirical studies will give us the answer

Epidemiological studies

One of the most interesting of the newer approaches to the use of such studies consists in combining three arbitrarily weighted factors — disease incidence, individual disability and social disruption — to define priorities in health care needs and, hence, in educational effort. As initially developed by Dr. John W Williamson[2] the three factors are computed as follows: disease incidence consists of a simple tabulation of the frequency of the disease (e.g pneumonia) or other medical condition (e.g pregnancy) in the target population Individual disability involves a determination of the extent of patient disability or risk associated with a given medical condition, an Individual Disability Weight (IDW) is calculated for each condition from three elements: the average length of hospital stay, mortality rates and complication rates Social disruption represents an estimate of the disruption that would be produced by a given disease or condition in the social group of which the patient is a member, it is based on such factors as cost of illness, age of patient and number of dependents, socioeconomic standing and the like. For each discharged patient a Total Priority Weight (TPW) is calculated combining these elements. This Total Priority Weight is then arbitrarily apportioned among patient diagnoses. Finally, a cumulative total for each diagnosis is calculated from the total patient sample. The resultant ranking represents a quantitative estimate of health care needs or priorities for the population at risk

[1] Bergman A, Probstfield, J and Wedgewood, R. Performance analysis in pediatric practice preliminary report *Journal of Medical Education*, Vol 42 262 (1967)

[2] Williamson, J. et al *Journal of American Medical Association*, Vol 201 938 (1967) and Vol. 204 303 (1968)

It is clear that even with unlimited resources not all of these needs could be met in the present state of our knowledge. The next step therefore consists of determining what portion of total health care needs can be met, given our present understanding of disease and our present treatment possibilities. This portion indicates the target area for application of professional skills and helps to define educational priorities. The goals of education for health service staff can therefore be defined as encompassing those areas of health care needs which cause the greatest total *preventable* disability — i.e. those which cause the greatest total disruption that could be reduced or minimized by early diagnosis and appropriate intervention

In his early studies using this method to review hospital practice in two large community hospitals in widely separated metropolitan areas in the United States, Dr Williamson found that pregnancy, including uncomplicated delivery, ranked first or second in priority in both hospitals, that cerebral vascular accidents ranked among the first five diagnostic categories in both hospitals and that fractures of the lower extremities ranked among the first five in one hospital These particular conditions are mentioned because in certain educational institutions there is a general tendency to reduce the amount of clinical instruction for the general medical student in some of these areas. For example, instruction in orthopaedic surgery is often elective despite the fact that trauma in general accounts for a very significant proportion of total preventable disability.

While the study reported above was limited to hospital practice, the same method could easily be applied to any level of health practice Secondly, while the findings from such epidemiological studies and the particular weights to be assigned to such factors as individual disability and social disruption will, of course, vary markedly in different parts of the world, the approach is clearly applicable to any society for which health personnel are being trained

In all parts of the world, use of such data will modify the goals and priorities of educational institutions and the emphases in curricula by focusing far greater attention on ambulatory medicine and on the more common causes of disability.

Implications of applied research on goals and priorities

It can be seen from the above that the means are now at hand for supplementing expert judgment with data derived from empirical studies to assist us in defining the roles and, hence, the skills required of students on completion of programmes If such studies were carried out as a matter of course and if the findings were used to develop explicit educational objectives for the health professions, we should see revolutionary changes in the kinds of health professionals produced and in their training programmes Furthermore, such changes would have a far greater impact on meeting health care needs than would simple expansion of educational facilities of the conventional type

Here we should mention some simpler but also more rapid and less costly techniques which can be used to complement or replace other methods. These methods are not mutually exclusive:

— Interviews with members of the profession, who are asked to describe what, in the light of their experience, *should* be the functions and tasks of any member of the health team.

— Questionnaires, made up of either open-answer questions (what are the functions of ... ?) or closed-answer questions (which of the tasks listed below . ?).

— The simplest method consists of asking each of a group of colleagues to put himself in the shoes of a person needing care and to describe the functions and tasks that he would wish a given member of the health services to be able to perform. Comparison of the lists submitted will lead to rapid agreement on a common list of sufficiently high quality to provide a basis for a productive discussion on the relevance of the programme, for example.

"Transformation of the present professionally oriented technologically dominated health system into a patient oriented system is the needed ingredient for any successful curriculum change The patient should be the primary concern of both education and service"

George A. Silver

example of services provided by rural health units*

Each health unit is meant to serve a population of 5000 persons, normally in one village and maybe a few smaller settlements around it. The *health team* of each of these rural health units is made up basically of:

One physician (in charge)
One assistant midwife
One assistant sanitarian, and
One laboratory assistant.

The rural health unit provides the basic health services for the population it serves, i.e.:

- Maternal and Child Health work
- Communicable Disease Control work
- Vital and Health Statistics work
- Environmental Sanitation work, and
- Medical Care work.

* Adapted from "Three approaches to the analysis of health manpower functions" HMD/79 1, pp.69 – 72
This list was obtained using the questionnaire method and refers to a survey carried out in Egypt in 1969.

Maternal and Child Health work

(a) *Prenatal Care activities:*

1 Comprehensive examination of new patients.
2 Follow up examination of patients.
3 Urine analysis (sugar and albumin, microscopic examination).
4 Taking blood samples and determination of haemoglobin percentage.
5 Weighing of pregnant women.
6 Measurement of blood pressure.
7 Prescription of treatment.
8 Referring patients to hospitals
9 Giving hypodermic, intramuscular and intravenous injections.
10 Supervision of cleanliness of pregnant women
11 Carrying out health education activities.
12 Home visiting for non-attendants and during the ninth month

(b) *Natal Care activities*

13 Preparation of delivery bags
14 Conducting normal deliveries at home.
15 Conducting abnormal labour, and transfer to hospital where necessary
16 Giving hypodermic, intramuscular and intravenous injections

(c) *Postnatal Care activities*

17 Home visiting for puerperal cases.
18 Detection and treatment of fever cases.
19 Giving hypodermic, intramuscular and intravenous injections.
20 Carrying out health education and family planning activities.

(d) *Child Care activities:*

21 Weighing of children.
22 Supervision of child cleanliness.
23 Vaccination against poliomyelitis, diphtheria and tuberculosis.
24 Temperature taking.
25 Carrying out medical examination.
26 Prescribing treatment.
27 Referring patients to hospitals.
28 Isolation of communicable disease cases.

29 Giving hypodermic, intramuscular and intravenous injections
30 Taking blood samples
31 Circumcision of male children.
32 Prescribing the diet.
33 Home visiting for non-attendants

(e) *Miscellaneous technical activities*

34 Preparing the clinic
35 Sterilization of instruments and supplies
36 Training of midwives and assistant midwives.
37 Preparation of drugs for distribution.

Communicable disease control work:

(a) *Activities related to cases.*

38 Isolation of cases.
39 Disinfection of cases (during and after treatment).
40 Dusting of cases (for disinfestation)
41 Giving instructions at home (education).
42 Supervision of domiciliary treatment of tuberculosis patients.
43 Recording in communicable disease register.
44 Search for the source of infection.

(b) *Activities related to contacts:*

45 Surveillance of contacts
46 Immunization of contacts.

(c) *General preventive activities:*

47 Vaccination against poliomyelitis, diphtheria and tuberculosis.
48 Noting names of non-attendants.
49 Preparation of list of families.
50 Carrying out periodic dusting.
51 Recording in disinfection and dusting registers.
52 Controlling insects and rodents.
53 Carrying out epidemiologic surveys for case finding.
54 Isolation of detected cases

(d) *Activities related to deaths*

55 Receiving notifications of deaths and search for relations.
56 Examination of the dead and establishment of death certificates.
57 Recording in the appropriate registers
58 Issuing of burial permits.

Vital and health statistics work:

59 Recording of births and deaths in the appropriate registers
60 Making weekly and monthly reports
61 Calculation of death ratios, etc.
62 Making statistical studies and interpretations.

Environmental sanitation work:

63 Numbering of houses and population census.
64 Mapping areas and facilities.
65 Ensuring cleanliness in and around dwellings.
66 Hygienic disposal of refuse.
67 Constructing latrines in village houses.
68 Control of bilharzial snails
69 Identification of breeding places of mosquitos.
70 Mapping breeding places of mosquitos.
71 Checking hygiene of public latrines.
72 Carrying out measures ordered by doctor
73 Supervision of environmental sanitation activities
74 Examination of food in public places.
75 Taking samples from food.
76 Destroying spoiled food
77 Surveillance of market and street vendors

78 Taking water samples from public standpipes

79 Enforcement of laws concerning cemeteries.

80 Examination and certification of food handlers.

81 Carrying out health education activities.

Medical care work

(a) Diagnosis activities

82 Preparing the patient

83 Taking the history

84 Recording clinical observations

85 Weighing the patient.

86 Taking the temperature.

87 Counting the respiration.

88 Counting the pulse

89 Measurement of blood pressure.

90 Clinical examination.

91 Requesting laboratory tests

92 Taking blood samples and administering transfusions.

93 Microscopic examination of blood and blood grouping.

94 Urine examination for parasites, chemical analysis and microscopic examination of urine

95 Requesting X-ray examination.

96 Examination of stools.

(b) Therapeutic activities

97 Prescribing treatment and/or diet.

98 Giving hypodermic, intramuscular and intravenous injections and drips.

99 Giving oral medication.

100 Applying artificial respiration.

101 Catheterization.

102 Application of hot and/or cold compresses.

103 Administration of enemas and use of stomach pump.

104 Suction of mucus

105 Making dressings

106 Eye painting and irrigation.

107 Making surgical stitches and performing minor operations

108 Removal of surgical stitches.

109 Carrying out health education and supervising patient's diet

110 Observing patient's condition.

111 Application of external treatment (ointment)

112 Radiotherapy.

113 Physiotherapy.

Administrative work.

114 Assignment of jobs and activities

115 Checking attendance.

116 Giving leave permits.

117 Conducting legal investigations

118 Management of equipment and supplies

119 Management of financial matters.

120 Filling in forms

121 Book-keeping.

122 Correspondence.

123 Preparation of monthly and annual reports

124 Recording attendance in waiting-room

125 Supervising housekeeping of the unit

126 Supervising transportation.

Please Note!

You are reminded that this list, drawn up in 1969, describes the services as they were and not as they *should have* been It might seem that preventive activities deserved greater prominence.

EXERCISE

1. Take *one* category of health personnel (e.g. physician, or nurse, or midwife, or medical assistant, or sanitarian and *circle* the items on the preceding list corresponding to the *activities which that category of staff is supposed to carry out* in your country at present.

2. Then think of some activities which that same category does not undertake at present but which you feel, in the light of your personal experience, *it should undertake* to improve the level of health of the population it serves. Draw a *square* around each of the corresponding items on the list.

3. Describe below any *unlisted* activities corresponding to the first two questions.

Personal Notes

educational objective (derived from professional tasks)

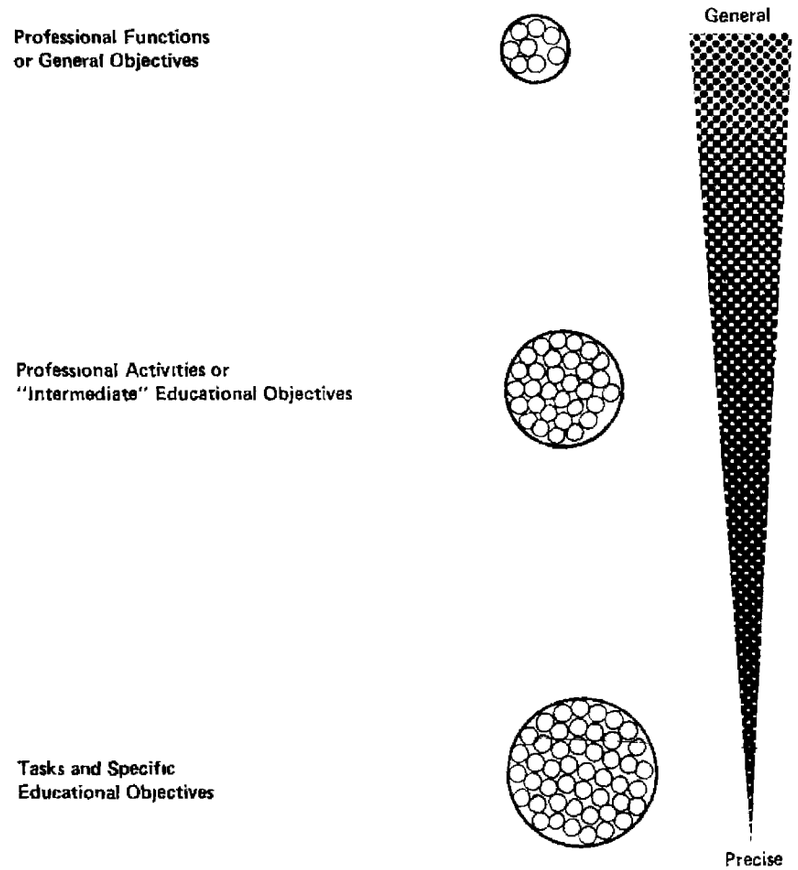
What the students should be able to do at the end of a learning period that they could not do beforehand.

Educational objectives are also called "learning objectives" as opposed to "teaching objectives".

They define what the *student,* not the teacher, should be able to do.

The definition of the objective of a course is that of the result sought, not a description or summary of the programme.

relationship between professional acts in the health field and educational objectives



Note: The size of the circles relates to the number of objectives: the more specific they are the more numerous they are. The triangle indicates that at the general level objectives are "wide", broad, vague, and that specific objectives are "punctual", narrow, precise.

types of educational objectives

1 **General objectives: Correspond to the functions of the type(s) of health personnel trained in an establishment.**

Example: Providing preventive and curative care to the individual and the community, in health and in sickness.

2 **"Intermediate" objectives: Arrived at by breaking down professional functions into components (activities) which together indicate the nature of those functions.**

Example: Planning and carrying out a blood sampling session for a group of adults in the community.

3 **Specific (or instructional) objectives: Corresponding to (or derived from) precise professional tasks whose results are observable and measurable against given criteria.**

Example: Using the syringe, to take a blood sample (5 ml.) from the cubital vein of an adult (criteria: absence of haematoma; amount of blood taken within 10% of the amount required, not more than two attempts).

To gain better understanding of these three levels of educational objectives and the relationship between them, study pp. 1.23 – 1.25 and 1.29 – 1 36.

data necessary for formulation of educational objectives

- **Health needs, demands and resources of society.**
- **Services to the patient** (list of tasks).
- **Service to the community** (list of tasks).
- **The profession itself.**
- **The students.**
- **Progress in sciences.**
- **The scientific method.**

  etc. . . . . .

For more details refer to: Criteria for the evaluation of learning objectives in the education of health personnel. Report of a WHO Study Group. *World Health Organization Technical Report Series*, 1977, No. 608. 47 pages*
and pp. 4.10 – 4.13 of this Handbook.

* An annex to the report clarifies what different authors mean by educational objectives, examines the different levels and types of objectives, lists the potential benefits of taking the trouble to formulate objectives and reviews the data considered necessary for this. There is also a short section on how to word objectives properly.

EXERCISE

Take the time to list the **main functions** of the category of health personnel that interests you (dentist, nurse, sanitary engineer, physician, pharmacist, midwife, etc.). Where possible, refer to documents published on the subject in your country (national health plan, professional publications, etc.). If no such data are available, rely on your own experience.

The professional functions of . . . . . * are as follows.

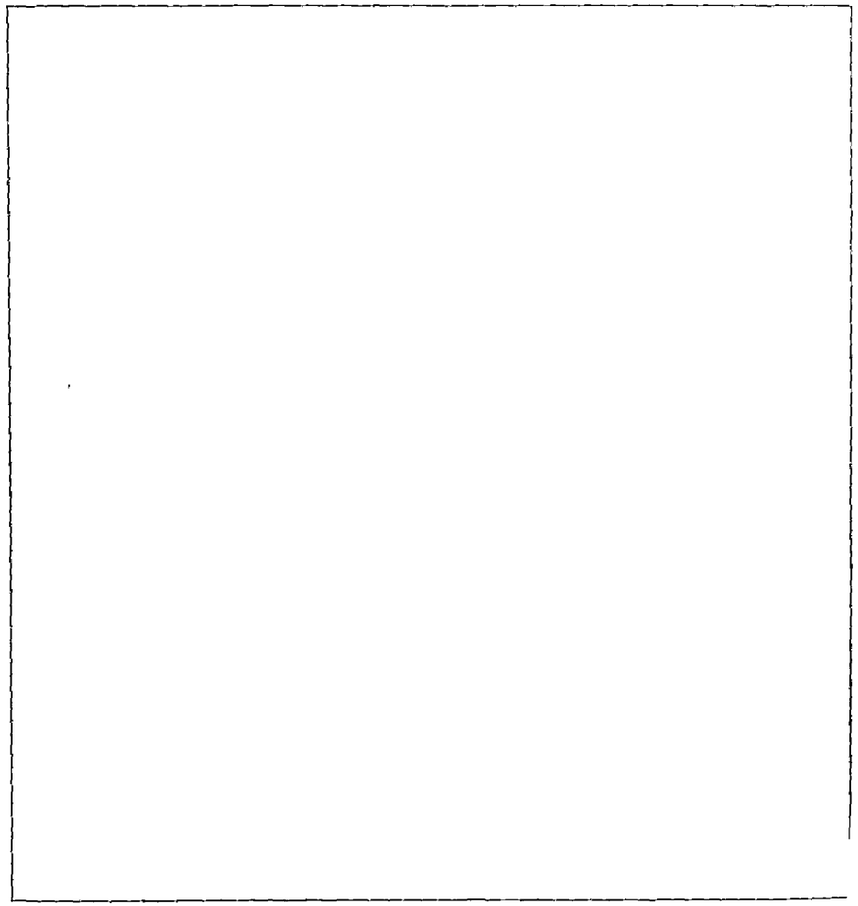
*insert the name of the profession in which you are interested. E.g., "the nurse", "the general practitioner", "the dentist", etc.

1. _____
2. _____
3. _____
4. _____
5. _____
6. _____
7. _____
8. _____

EXERCISE

Read the three following pages and revise if necessary your own list of functions.

The professional functions of .... are as follows:



Everyone who uses a word knows what he means by it. The problem is that everyone doesn't realize that other people may have different meanings for the same word.

Mager

general objectives professional functions

There will be as many lists of these as there are categories of staff trained in the institution concerned

The following examples of general educational objectives at the *institutional* level are real sets of objectives as formulated by health personnel training institutions.

They are only examples Compare them with the functions you listed on p.1.21 You may find that some of the items are almost identical At this general level the acts required to meet the health *needs* of the population will have some points in common all over the world This is quite understandable. At this level of general *functions* it is not surprising that nurses, physicians, midwives or dentists, for example, should exercise similar types of functions, such as treatment, prevention, planning, education of the public, training of colleagues, etc. The differences between the professions will emerge from the more detailed list of intermediate objectives, describing the *activities* of each category and from the even more specific list of *tasks*. The different types of objectives form a whole. They are given meaning by their relationships and interdependence.

What should be noted at this stage is that all the examples are relatively *short* (one page) and rather vague. You will also note that they define everything the *students* should be able to do at the end of their training.

They do not define what the *teachers* do but rather what the institution's "end-product" is They are also known as institutional objectives

The fact that the examples that follow are numbered does not imply that they are classified in order of importance Obviously each function can be more or less important as compared with another, depending on the health system in which the qualified student will work and on the overall stage of development of the country.

The prominence of the function "health education of the public" will depend on the population's general level of education. Similarly, functions relating to planning will be very different depending on the development context and degree of organisation of the country. Physicians and nurses in less developed countries may have to assume greater responsibilities in this field than their counterparts working in more developed countries.

Whatever the relative importance of a given function, what counts at this stage is that it exists: you will find it useful to bear this in mind throughout the training process. Now read the examples that follow.

Institutional Objectives[1]

The graduates of the M.D programme should be able:

1. To identify health problems in their totality and to show skills in collecting, processing and presenting data pertaining to health problems, and subsequently to resolve and manage them, from the individual level through the family level to the community level.
2. To diagnose and manage frequently occurring diseases in the community (including emergencies), to identify and provide primary care in serious diseases, taking account of their physical, emotional and social aspects
3. To manage health centres at various levels and in a variety of settings and to work effectively and efficiently in health teams, in teaching, research and service, with available facilities.
4. To apply basic principles in health education in order to assist and lead the planning, implementation and evaluation of health programmes in promoting health, preventing disease, cure and rehabilitation, according to the needs of the community and local social, religious, customary and cultural values which can influence the state of health and disease
5. To identify personal limitations, and to nurture the capacity and interest in enhancing their knowledge and developing personal characteristics required for professional advancement through an awareness of personal assets and limitations.
6. To function as an effective and efficient member of a team with a sense of responsibility and dependability.

(1) Adapted from Gadjah Mada University Faculty of Medicine Yogyakarta, Indonesia.

Institutional Objectives[1]

At the end of his M.D. programme[1] the graduate will have acquired or developed the knowledge, abilities, and attitudes necessary to qualify for further education in any medical or related health career. The achievement of the general goals should enable a student:

1. To identify and define health problems at both an individual and a community level and to search for information to resolve or manage these problems.
2. To examine the underlying physical, biological and behavioural mechanisms of health problems. This includes a spectrum of phenomena from the molecular to those involving the patient's family and community
3. To investigate community health problems and to recommend efficient and effective approaches to deal with environmental, occupational, behavioural, and public policy issues.
4. To develop the clinical skills and methods required to define and manage the health problems of patients, including their physical, emotional, and social aspects, within the context of effective health care.
5. To recognize, maintain, and develop the personal characteristics and attitudes required for a career in a health profession. These include:
   a Awareness of personal assets, limitations, and emotional reactions.
   b Responsibility and dependability.
   c. Ability to relate to, and show concern for, other individuals.
6. To be a self-directed learner, recognizing personal educational needs, selecting appropriate learning resources, and evaluating personal progress.
7. To assess critically professional activity related to patient care, health care delivery, and health research.
8. To function as a productive member of a small group which is engaged in learning, research, or health care.
9. To work in a variety of health settings

(1) from McMaster University, Canada.

Institutional Objectives[1]

Description of Practitioner of Tomorrow (Nursing)

The graduate of the new baccalaureate nursing programme will be prepared to function as a generalist with beginning competencies in a specialized area of nursing.

The graduate will be prepared to function in a variety of settings and ***be able to***.

1. Obtain health histories and make general health assessments.
2. Provide safe and competent care in emergency situations and acute illnesses.
3. Provide supportive care to persons with chronic or terminal health problems.
4. Provide health teaching, guidance and counselling
5. Assist persons to maintain optimal health status.
6. Provide for continuity of health services.
7. Assume leadership responsibility for planning and evaluating nursing care
8. Work effectively with all persons concerned with health care problems.

This baccalaureate nurse, as a practitioner of nursing, will be accountable and responsible to clients for the quality of nursing whether administered directly or indirectly

(1) From the University of Washington School of Nursing.

These three examples of general educational objectives are from both developed and developing countries.

What is striking is the overall similarity between the *functions* listed, even if they are expressed in different terms

- **providing treatment**
- **providing preventive care**
- **planning services**
- **health education of the population**
- **collaboration with other services in the interests of overall development**
- **training of health personnel**
- **evaluation of own activities**
- **continuous development of own skills**

They were gathered during a recent ***world-wide*** survey designed to collect general educational objectives for nurses and physicians. Identical results were obtained, that is, the same functions came up in practically every case This collection of *functions* corresponds to the *role* that health services personnel are expected to fulfil

Throughout this Handbook you will be invited to use this list of functions (and others if necessary, depending on the health needs of the population in your country) as the *basis* for your future educational decision-making.

To demonstrate how such an obvious list can in fact be a very effective instrument, you are invited to use it at once in making a quick analysis on the next page

Personal Notes

EXERCISE

Tricky test to force you to think about the relevance of a programme

Take the *functions* you listed on p.1.21

For each function that corresponds to one of those listed in the table below, ask yourself the following two questions.

In the institution where I work

1. are teaching activities organized to help students acquire skills corresponding to each function listed?
2. do the examinations (counting towards award of diploma) effectively measure the students' abilities in relation to each function listed?

- Where you can answer YES (without blushing), mark a cross in the + column.
- If no corresponding activity is organized by your institution, mark a cross in the 0 column.
- If you are not sure, mark a cross in the "+ or -" column

Functions	Teaching activities that help student to perform function			Examinations providing effective measurement of function		
	+	+ or –	0	+	+ or –	0
Curative						
Preventive						
Planning						
Health Education						
Collaboration						
Training of other categories						
Evaluation						
Self-training						

Draw your own conclusions . . . . . .

General educational objectives provide a useful basis for preparation of a relevant programme

Personal Notes

professional activities and intermediate objectives

Intermediate educational objectives are obtained by breaking down each function (or general objective) into smaller components. These components are professional activities which in their turn can be broken down into more specific acts that are called professional tasks *as long as they can be measured against given criteria*. (See p. 1.35 *et seq.* for specific objectives). It can also be said that all objectives that are neither general nor specific are on the intermediate level. That is, there can be several intermediate levels rather than a single one.

The pages that follow give examples of intermediate objectives[1]. Unlike general objectives, whose vagueness makes them fairly universal, intermediate objectives reflect the health needs of a population living in a given *context*. This restrictive list of diseases, therefore, would have been different in the case of a general practitioner in Finland or in Cameroon because of the special geographical epidemiology of each country. The social and political system and the type of health services provided will also have an influence. These are the factors that ensure the relevance of educational objectives. Another important point to be taken into consideration: this list, like any other list of educational objectives, is only a means or working instrument and not an end in itself. It was drawn up as a basis for choosing instruments of evaluation for measuring the skills of students during their internship.

[1] Prepared by a multidisciplinary group of teachers from Algeria. Workshop on docimology, Timmoun, Algeria, February 1977.

Examples
of intermediate educational objectives

These intermediate educational objectives were derived from general objectives defining the functions of a general practitioner. They refer to the paediatric aspect of his work.

The general practitioner should be able to carry out the following activities:

1. Diagnose and treat major childhood disorders
   - abnormal development of the embryo or foetus
   - infections in newborn babies
   - emergency surgery on newborn babies
   - jaundice of the newborn
   - vomiting in infants
   - cardiac insufficiency
   - acute diarrhoea
   - dehydration
   - convulsions
   - purulent meningitis
   - tuberculous meningitis
   - tuberculosis
   - eruptive fevers
   - viral bronchopneumonia
   - bacterial pneumonia
   - septicaemia
   - childhood skin disorders
   - urinary infections
   - acute glomerular affections
   - abdominal tumours
   - enlargement of liver
   - enlargement of adenoids
   - enlargement of spleen
   - kala-azar
   - malaria
   - throat infections
   - otitis
   - orthopaedic problems in children

2. Carry out activities relating to patient care, taking of samples, laboratory work and use of equipment.

   2.1 Sampling techniques
   - blood (including blood from umbilical cord)
   - abcess
   - cerebrospinal fluid (CSF)
   - urine
   - puncture of ascites, pleura

   2.2 Techniques relating to patient care, preventive measures and laboratory work:
   - immunization
   - perfusion, intramuscular injection, transfusion
   - catheterization, enema
   - blood grouping
   - haematocrit
   - erythrocyte sedimentation rate

– CSF count

2.3 Use of equipment

– sphygmomanometer
– otoscope
– aerosol spray
– aspirator
– electrocardiograph
– ophthalmoscope

3. Distinguish between normal newborn babies and those at risk; organize prevention and early detection of possible dangers.

3.1 Plan care of a normal newborn baby.

3.2 Plan treatment of a newborn baby with a diabetic mother.

3.3 Plan treatment of a Rh negative newborn baby.

3.4 Plan treatment of a newborn baby with kidney disease.

3.5 Plan treatment of a newborn baby with low birth weight.

3.6 Plan treatment of a premature baby

3.7 Plan treatment of a baby born after abnormal labour.

4. Plan, in collaboration with the parents, individual and collective surveillance of growth, nutrition and psychomotor development in children (newborn babies, infants, children)

4.1 Recognize growth anomalies.

4.2 Recognize anomalies of psychomotor development.

4.3 Work out with the parents a diet suitable for the needs of their child.

4.4 Recognize dietary anomalies

4.5 Plan a surveillance programme for a normal child and for one at risk.

4.6 Enter findings in the child's medical record.

5. Identify somatic problems (particularly relating to growth and nutrition), psychomotor and emotional problems in a sick child on the basis of medical history and clinical examination.

5 1 Question parents of a sick child and make a record of the information obtained.

5 2 Examine a sick child.

5 3 Make a note of the findings.

5.4 On the basis of a clinical examination, determine the problems presented by a sick child (particularly relating to growth, nutrition and psychomotor development).

6 Protect children individually and collectively against the effects of hereditary conditions, communicable diseases and accidents.

6 1 Offer advice on genetic matters to parents.

6.2 Determine the mode of transmission of hereditary diseases.

6 3 Detect and treat hereditary diseases.

6.4 Investigate home conditions of a child with a communicable disease.

6.5 Examine contacts of a child with a communicable disease and apply preventive measures

6.6 Carry out all immunizations.

6.7 Draw up a schedule for a child never or inadequately immunized.

6.8 List, in order of frequency, the accidents that happen to children in a given sector.

6.9 Organize and participate in a campaign to prevent accidents to children.

7 Identify mental health problems in children, propose measures and participate in their application.

7 1 Determine the priority mental health problems in children of his own health sector.

7.2 Coordinate health, administrative and educational resources available for dealing with mental health problems in children (particularly those relating to maladjusted or abandoned children)

8 Evaluate the effects on child health of the environment, propose appropriate measures and ensure that they are applied, individually and collectively.

8 1 List environmental factors in his own area of work

8.2 Help improve environmental conditions in collaboration with the health authorities.

8.3 Identify a child seriously threatened by his environment

8.4 Detect and treat a disorder caused by the environment.

8.5 Advise parents on drawing optimum benefit from a favourable environment

9 Be accessible to the child and his family, providing health education and the support needed in case of disease or disability.

Organize his plan of work to ensure that:

9.1 He is accessible to the child and his family.

9 2 He has time to listen to them.

9.3 He has time to talk to them.

9.4 He has time to reassure them.

9.5 He has time and the ability to provide the child and his family with the necessary health education.

10 Organize prevention, detection and follow-up of deficiency diseases and chronic conditions.

10.1 Apply national regulations for the prevention of deficiency diseases.

10.2 Detect and treat the following deficiency diseases in a given population.

– protein and calorie malnutrition
marasmus
kwashiorkor
– hypovitaminoses
vitamin D deficiencies
(rickets)
vitamin A deficiencies
(hemeralopia, xeroma)
vitamin B complex deficiencies
(beriberi, pellagra, megaloblastic anaemia)
vitamin C deficiencies
(scurvy)
– iron deficiency
(anaemia due to lack of iron)

10 3 Detect and treat chronic conditions in children:

– diabetes
– haemoglobinopathy
– thalassaemia
– rheumatic conditions
– metabolic disorders
(phenylketonuria, glycogenosis, glucose 6-phosphate dehydrogenase deficiency, galactosaemia)
– congenital or acquired heart conditions
– chronic respiratory insufficiency
(mucoviscidosis, bronchial dilatation, deformations of the thorax, asthma . .)
– epilepsy
– haemophilia
– chronic allergic conditions
(eczema, allergies in the upper respiratory tract, asthma . . .)

11. Organize, participate in an evaluate treatment and preventive activities (medical and otherwise).

11 1 Allocate tasks among members of a health team in his area of work.

11 2.1 Carry out a paediatric consultation.

11.2 2 Decide to admit a patient to hospital

11.3 Work in a ward as part of a team.

11.4 Organize reception and surveillance of emergency cases.

11 5 Take part in the activities of a maternal and child health centre.

11.6 Deal with problems relating to drugs and equipment.

11.7 Help organize an immunization campaign.

11.8 Propose and ensure application of non-medical measures required to back up medical activities in the field of prevention and hygiene.

11.9 Set up a mechanism of periodic evaluation by all team members of his own and the team's activities, in terms of their objectives.