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MANAGEMENT IN HEALTH CARE PRACTICE A Handbook for Teachers, Researchers and Health Professionals	
Title	**MANAGEMENT CYCLE: FROM PLANNING TO EVALUATION**
Module: 2..1	**ECTS (suggested): 0.3**
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Keywords	Health management, Health planning, Evaluation
Learning objectives	After completing this module students should: • know to list the elements and their characteristics of the management cycle; • be familiar with the steps of the cycle; • be familiar with the content of elements of the cycle.
Abstract	The planning process in health care known as management cycle or cycle of organization and management is described. The cycle is divided in four main elements: planning, organization, implementation and evaluation. Each element is defined and described.
Teaching methods	Introductory lecture, small groups work, individual work and panel discussion.
Specific recommendations for teachers	• work under teacher supervision/individual students' work proportion: 50%/50%; • facilities: a computer room; • equipment: computers (1 computer on 2-3 students), LCD projection equipment, internet connection, access to the bibliographic data-bases; • training materials: recommended readings or other related readings; • target audience: master degree students according to Bologna scheme.
Assessment of students	The final mark should be derived from the quality of individual work and assessment of the contribution to the group discussions.

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Luka Kovačić, Želimir Jakšić

THEORETICAL BACKGROUND

Introduction

Health care is a set of measures, goods and services designed to promote health, including "preventive, curative and palliative interventions, whether directed to individuals or to populations" (1). In order to maximize effects and minimize cost of applied measures health care should be planned. The planning process includes several steps making a cycle. The cycle is known as management cycle or cycle of organization and management. The health care planning cycle could be divided into different number of steps or elements, depending on the level on which the health care is organized. Here are presented four main steps for the illustration of the management cycle (Fig 1).
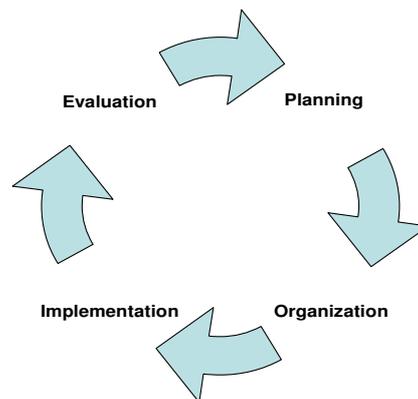
Fig 1. Four main elements of the management cycle

In each step there are several functions, and the cycle can be divided into more elements.

Each step has specific characteristic and tasks of those involved in the step of the cycle. In different parts of the cycle different actors are involved. Elements of the cycle followed each other, some tasks are common for two or more cycles and some are overlapping, what makes the health care system very complex.

Planning

Although in the reality at one moment the planning cycle could be in the different steps, for the purpose of the training we will start with **planning** step.

In this first steps the main task is setting aims, defining the goals, identification of health problems, select priorities among them and choose the strategic course of interventions. This is the task of **health policy** and the process is usually done on country or province level.

This step of the cycle is based on the careful analysis of present health situation, on health situation assessment, which could be also a separate step in the cycle. Good and comprehensive diagnosis will lead to effective and efficient intervention.

In this part of the political process the economic possibilities and constrains should be analyzed, political interest of different social and professional groups taken into account, feasibility of health care services calculated, and other elements must be analyzed and taken into consideration. This political process is responsibility of representative and/or political bodies (parliament, government, political parties).   Health professional organizations (or their representatives) are usually involved (chambers, association of health workers, etc). From technical point of view the outcome of this part of the cycle should be a set of indicators and milestones to be reached in certain period of time (short-term, middle-term or long-term period). The indicators are set up mostly as aims and goals for the region, state or larger region for longer period of time, while objectives and targets are set up for smaller areas and shorter period of time. It is important to set up the level of indicators which are realistic and reachable in defined period of time to prevent social disappointment in the future when planning time will pass.

To come to the reachable and realistic level of health indicators it is recommended to analyze the situation in neighbouring countries and countries with similar economic and social situation. Besides the set of health indicators in this part of the cycle it should be also defined the main strategy (e.g. support the primary health care, introduction of DRG system, implementation of screening programs for certain diseases, share of GDP for health, etc.), involvement of citizens in decision making process, and other important issues.

In this step of the cycle all actors should understand their role and responsibility, should be familiar with the planning process and work together with all political actors. Public health professionals should explain and inform them, and not take their role in defining aims and goals instead of them.

Ones health policy is defined, the health managers are responsible for reaching them through the next steps, **organization, implementation and evaluation**, usually on a lower level of the country organizational structure, district, county or municipality.

Any health planner faced with the task of formulating long term goals, objectives and setting targets needs some assessment of the present situation, some description of the point he is to regard as starting point, and some knowledge of the processes which have led to the present situation.

The **planning and programming** is a part of the management circle dealing with arrangement for carrying out some **future** activity. From the point of management it is an unavoidable and everywhere existing part of the managerial process. Often we are not conscious of it, as in planning some routine everyday activities. On the other side it is a major formal procedure involving many people to work together and even prescribed by laws and regulations.

The meaning of words planning and programming is practically the same and used interchangeably, however, to a certain extent there is a different connotation. The word programming is coming to us from a Greek word and is more underlining contents and goals of future activities. The word planning is originally a French word and is underlining different arrangements of resources, time, etc., necessary for implementation of future activities. Considering hierarchy of these terms in technical jargons one will find that the word program is used to define the goals and orientation defined at the highest level, based on what plans are designed. There is for instance program of a political party, of a president or prime minister. That program will be later elaborated into plans. Some groups of experts might feel that planning is indicating a higher level than programming, because usually the state plans are further elaborated into programs of different organizations and institutions. Actually both groups are right. To avoid misunderstandings in the national managerial

process the WHO escaped to use both terms and preference was given to programming. The programming could be split in the three sub-processes: **the broad programming, detailed programming, and plan of action.** These words distinguish also three phases in the process of planning. One has to differentiate:

1. Choosing and defining objectives along with the given policies and strategies (the closest is the word programming or broad programming);
2. Arranging ways and means of activities to reach objectives and targets under given conditions (the closest are the words planning or detailed programming);
3. Detailing and scheduling of activities (plan of action).

Broad programming can be described as translation of health policies into strategies for achieving clearly stated objectives.

Detailed programming is conversion of strategies into technology, manpower, infrastructure, financial resources and time required to implement programs.

Plan of action is formulation of lines of action to be taken by different subjects.

The desired end-states (outcomes) are defined as goals, objectives and targets.

Goal is the most general, not constrained by time and existing resources, rather descriptive than quantified, not necessarily attainable, but an ultimate, desired state expected as a result of a policy or broad programming.

Objective is the intermediate, specified in time, usually measurable and attainable end-result expected of broad or detailed programming.

Target is the most specific, measurable with precision in short- term periods, useful as an indicator for monitoring the detailed program achievements. They may be used in different horizons of time as milestones along the way toward an objective.

The planning/programming process varies according to circumstances in which it is carried out so that several classifications are possible. Among the most important are classifications by:

Subjects who perform planning:
- central planning/programming;
- decentralized planning/programming;
- participatory planning/programming;
- convergent planning/programming.

Period for which it is envisaged (horizon):
- long-term or perspective (10-20 years);
- medium-term or strategic (5-/10/ years);
- short-term or tactic or operative (1-3 years).

Basic orientation in resource allocation:
- input planning (oriented towards existing resources);
- impact planning (oriented toward end-results);
- output planning (oriented toward processes, e.g. work of health services);

There are numerous inter-relations and combinations of different types of planning/programming. For instance, the central national plans tend to be long-term or at least strategic. They are also more oriented to impact and development of inputs, than to outputs.

According to circumstances the middle-level managers perform planning (programming) in a special way, differently from national as well as grass-root managers.

Specific characteristics of middle-level (regional, district) planning/programming

Specific characteristics of planning the middle level are:
- short-term horizon;
- input (resource) orientation;
- intuitive solutions of complex problems;

- flexibility;
- detailed planning;
- stress on implementation;
- community participation;
- reserve for interventions in unpredictable crises.

It depends on the socio-political situation and administrative arrangements in each particular place how many decisions and in which areas are given to the middle-level management. In a decentralized system there will be more freedom and that will be reflected in deciding on targets and allocation of resources. In a centralized system the planning would cover mostly detail scheduling of activities and distribution of tasks and duties. However, in both situations the result of planning is formulated as **plan of action** and has the same elements.

The format of the plan of action has 10 elements. The format is usually prescribed by rules and regulations, but essentially they include always the same elements:
1. objectives and targets;
2. covered population;
3. legal and administrative requirements;
4. specification of activities to be performed;
5. time-table for their implementation;
6. budget;
7. manpower (incl. recruitment, training, management);
8. constructions, transport, equipment, supplies, logistics;
9. evaluation and monitoring;
10. information support.

The effective planning is negatively influenced by **obstacles and constraints**. **Obstacle** is a created difficulty preventing the planned activity. It is mostly created by an opposing interest group and often is an expression of political conflicts or tensions. **Constraint** is a set of limits due to economic, social, administrative, professional and cultural conditions. They are common in all levels of management, but the following are quite typical for middle-level planning either because of imposed limitations or poor knowledge and motivation of local planners:
- poor data analysis;
- priority given to centrally planned (vertical) services;
- orientation to services and not to communities;
- limited powers in allocation of resources;
- competition or poor cooperation with other sectors;
- strong influence of "local authorities";
- limited influence on infrastructure (training, logistics etc.).

The circumstances in which we assume that future activities will be performed are determining **feasibility of our plans.** Feasibility has the same meaning as possibility. A plan is feasible when we have the power and resources to implement it, to make it possible. The examination of feasibility is done in a systematic way, scrutinizing all possible obstacles and constraints.

Priority setting
Priority setting means the different problems are listed according to priority. It is an important task as not all problems can be attacked simultaneously. The setting of priorities requires the planner to formulate the criteria own wishes to use when choosing priorities.

Very elaborate lists of criteria do exist, but each planner does well to establish his own criteria. However some criteria often used are:
- the size of the problem (in terms of people affected by the problem);
- the severity of the problem (how serious is the problem affecting people);
- the inter-linkage of the problem with other problems (what are the chances that attacking that problem will also influence and diminish other problems);
- the cost-effectiveness of the measures likely to attack the problem;
- the technical feasibility of attacking the problem;
- the trend in the size of the problem (is it an increasing problem or a problem which is already on its way to diminish by itself).

When all criteria have been chosen, the planner has to decide for himself whether he considers all his criteria equally important or not. In other words, he has to give relative weight to his criteria. Only after this weighing has been done (e.g. with the aid of a simple numerical scale ranging from one to three, or by expressing it in %), the rating of the problems (again by putting them in a scale, according to the different criteria can be undertaken. The process of rating the problems in order of overall priority finally gives the planner the final picture, the comprehensive diagnosis.

Although this numerical rating is a helpful tool for the planner, he is advised to check with his own feelings whether, after the whole process the outcome is consistent with his intuition.

Just as in clinical medicine, the more comprehensive the diagnosis can be established the more it will be possible to realize an effective and causal therapy. Treating hypertension with drugs lowering the blood pressure is not as effective and causal as combining this with reducing the patient's overweight, changing his diet and trying to diminish the stress in his life. In health planning this is even more so. The processes and factors linked to health are complex, the time spans during which decisions have their consequences are long and usually a considerable number of people are affected by the decisions and significant amounts of resources are involved. A wrong or superficial "symptom diagnosis" like "a shortage of hospital beds" can divert and mislead the planner from the real underlying causes and withdraw valuable resources from essential causal measures attacking the roots of the problem like preventing diseases or treating these at earlier stages.

Yet unfortunately, often health planners, even when they know the comprehensive diagnosis, must content themselves with symptomatic measures because the measures necessary to eliminate the underlying causes are beyond their direct control. Even in these cases, however, knowledge of the comprehensive diagnosis is essential for the health planner. It enables him to proportionate his symptomatic measures and to enter the dialogue with those whose influence is closer to the roots of the problem.

Diagnosis without consequences is useless and costly, consuming time and resources. However, both in clinical and in administrative health work, an un-proportionally big effort is often spent in diagnostic procedures, without adequate influence in practice. Either the diagnosis is "overdone" (more examinations, data, etc. than necessary for decision), or the proposed solutions are not relevant (because available resources and other general conditions do not permit their application).

Because of that, during the diagnostic procedure the probable outcomes and consecutive interventions have to be envisaged (tentative diagnosis, alternative solution, hypotheses). In real life an inseparable part of diagnostic thinking is what one has to do later: how to help a patient, or, which strategy to choose in controlling an epidemic. Contemporary research has shown that a manager, similarly to a doctor or other health worker, will come to better diagnosis if:
- he/she during examination keeps in mind the **wider range of possible measures** to be taken after diagnosis;
- he/she is critically analyzing **existing opportunities and constraints (feasibility)**;
- he/she is **flexible to play with concepts,** relations and combinations of facts even if it appears strange, unusual and "lateral".

6

A good manager needs an openness, "brain-storming" initiative, and creativeness together with a strict, critical and logical internal evaluation of facts: a combination of imagination and realistic experiences, initiative and hierarchical discipline, together with a clear vision of goals.

Intervention

Intervention means interfering with the usual, "natural" course of events. Often the diagnostic process by itself makes the first part of intervention. For instance an epidemiological survey is at the same time a health education activity. Intervention means a change. How intensive and deep that change will be, is determined by the intervention model we have to use.

Listing of all possible interventions or actions which can help in counteracting each of the problems listed in earlier step. It is useful to indicate also at which level each action should be undertaken (national, provincial or local level).

Selection of those interventions which are likely to have influence on as many problems as possible and which can be considered as technically feasible. These can be regarded as the "building blocs" for the strategy.

All selected interventions are now grouped in a logical time-scale in which levels and "critical pathways" are indicated.

Critical pathways indicate the sequence of different interventions which can only be realized in one given order. For this purpose it can be used scheduling and network planning techniques such as Gantt chart, PERT, CPM and others.

Organization

In this part of management cycle the manager has to deals with an **organization as a process**, and an **organization as a structure.** The organization as a process is the arrangement of parts which form an effective whole. The organization as a structure is a group of people with a special purpose, e.g. a unit of health services, an institution.

The organization may be regarded as an open dynamic **socio-technical system**. It is a dialectical relation of a given technology and social aspects of its application, i.e. work connected with that technology (division of labour, relations toward means of production, inter-personal and group relations). Because of that, the organizations of the health units with different types of technology have different work relations and different organizational problems. For instance, a big hospital in comparison with a health centre.

The organization may also be regarded as having different characteristics as the consequence of size, level of complexity and phase of development. Macro-organization will deals with big overall systems, and micro-organization with small units (e.g. a rural hospital or a district health centre). In every-day life expressions such as "young organization", "traditional organization", "handicapped organization", etc. are used and they indicate the lively social dynamics of organizations.

Organizing implies the ability to coordinate activities necessary for implementation in such a way that:
- the right things are done;
- in the right place;
- at the right time;
- in the right way and
- by the right people.

To reach that, a manager has to observe:
1. **Objectives** - each group of tasks in an organization must have an objective that contributes to the main objective/s/ of the organization, the system or the program;
2. **Definition of tasks** - each group and individual must have clearly defined tasks so that everyone knows exactly his tasks and duties;

3. **Command** - each group must have one person in charge and all concerned must know who this person is.

There are a several important rules related to command:
- Responsibility - the person in charge is responsible for the performance of the people in his group;
- Authority - each person in charge of a group must have authority equal to his responsibility;
- Span of control - no person in charge of a group should be expected to control more people than his knowledge, time, energy and effectiveness permit (1:5 - 15);

4. **Balance** - the person in charge of several groups must see that the groups' interests, opportunities and conditions of work are in balance.

Evaluation

Evaluation could be simply defined as "**finding out the value of something**". The same meaning has the terms to assess or to appraise.

Evaluation is a systematic process of assessing the extent to which an action achieved its objectives and/or to which extent it is regarded as beneficial. This broad definition includes two possible types of evaluation: the one in which the objectives are not well specified in advance (close to general goals or aims) and the second in which objectives are predetermined explicitly (close to targets). In both situations the information generated by evaluation is serving as a feedback to planners and concerned about future activities.

The evaluation process consists of:
1. comparing the objectives and outcomes of activities; and
2. adding a value judgment to obtained results.

The value judgment is based on objective findings, but also takes into account complex set of factors influencing results, consider marginal opportunities and benefits, and apply the value system of those who perform evaluation. In this way evaluation is a combination of objective finding and subjective (moral, political) interpretation. Obviously it is most important who is doing evaluation and why. For instance, if evaluation of health services is done only by health administration the result may differ from those by users. The second important consequence is that the process is not completely "objective" and "scientific" as it is usually suggested in managerial text books.

The comparisons of predetermined objectives and obtained results may be considered as objective but it cannot cover the whole range of evaluation in health care. The question is who is predetermining the objectives, and how one is judging the difference between findings and objectives. For instance, the budget for operation of primary health care units in a district was not completely used and 10% of "savings" are accounted. There are several possibilities in evaluation of that finding:
1. It may be regarded as very positive (e.g. by district health authorities), because the savings are considered as results of better organization of work;
2. The results could be judged as negative (again by higher health authorities), because "savings" are result of acceptable, but incomplete, fulfilment of requirements;
3. The results may be regarded as negative (e.g. by users), because the work of health units being poor quality and "cheap", below of expectations;
4. It could be regarded as positive (e.g. by local health workers), because health outcomes measured as change in infant mortality rates shows improvements. The question is which position we will take in evaluation. All may be right to a certain extent. In principle, the right decision should be based on understanding the main purpose of evaluation, i.e. the future improvements of health care.

Evaluation should be a continuous process, but for practical reasons it has to be summarized and reported at given times and specified intervals, coinciding with data

collection routine, preparation of new plans, new budgeting periods and similar. For narrow operations and programs it will be more frequent (weekly or monthly), for national policy formulation every 3-5 years.

In routine activities the evaluation has to be done in specified regular intervals, as part of monitoring activities. Besides, it is recommendable from time to time to have a review, a comprehensive ("in dept") evaluation.

In special project and when new activities are introduced the evaluation should be applied when plan is completed (**preliminary evaluation**), based on a theoretical consideration of probable outcomes), during the implementation (**process or formative** evaluation), and at the end (**final or outcome** evaluation).

The comparison of findings is most important part and basis for value judgments. In most cases it will be the comparison with expected, planned and predetermined targets. In some cases, and also as a useful addition, two further types of comparisons are useful: the before/after comparison (comparison with findings obtained last time, e.g. last year, or obtained before start of activities we would like to evaluate), and the comparison with other areas, where similar activities have been undertaken.

The measures used in evaluation are based on relation between main elements of the working process. The main elements are needs, input, process, output and outcome.
In process of health services it is particularly important not to mix output and outcome.

Output is product in terms of services, supplies etc., and outcome is effect or result of these services.

The most frequently measures used in evaluation, specified as indicators, could be grouped in the following groups, described the specific results of health services:

Relevance is assessed by relating needs and outcomes. It should answer the question: Does the working process satisfy the needs? Relevance is one of the most important indicators, the very basic one, because if health services not satisfying real needs, all other measures are irrelevant, or change their meaning. For instance, if we evaluate some laboratory procedures we may come to conclusion that they are effective and cheap in identifying a disease (e.g. malaria), but this is worthless and even very costly if applied in situation with no malaria. Relevance is most important in evaluation the costly high-tech procedures, but it is rarely done.
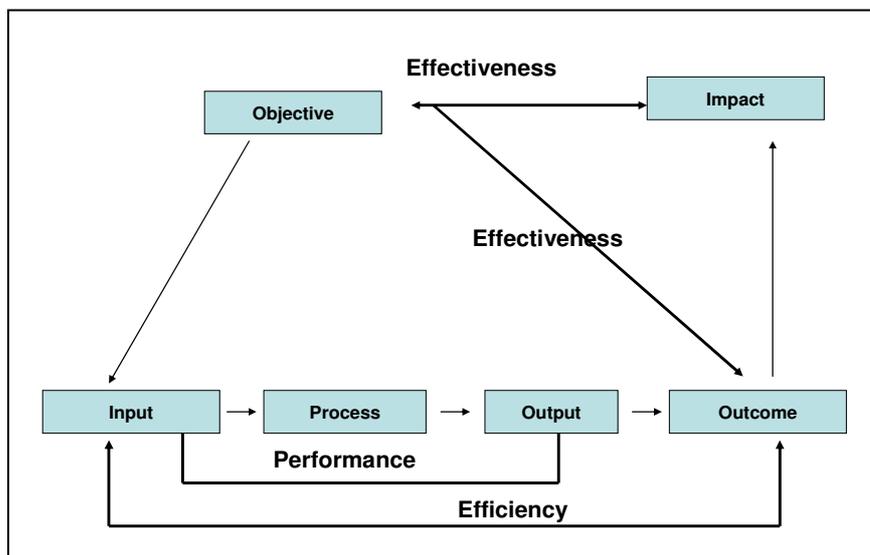
Figure 2. Relations between main elements of the health care process (adapted to Wollas)

Adequacy relates output of services with needs. The relation can be observed in terms of type (kind) and quality (appropriateness) and in terms of quality (sufficiency). The indicator should answer z

The question if there are right and sufficient services provided to satisfy needs. For instance, the adequate immunization would mean that sufficient number of children (e.g. 85%) where immunized in an appropriate way with fully valid vaccines. In this case even three factors are important: quality, quality of work, quality of vaccine.

Coverage is measuring population covered by services, and can be regarded as a special case of adequacy. It is a complex measure close to sufficiency. Needs are expressed

as number of people who need and/or demand different services (formal coverage), or who actually utilize services (actual coverage).

Coverage may be expressed in terms of total population, population having particular risks, certain population groups (social, professional, etc.), or defined territory (people who live in defined territory).

While coverage is a measure of formal nature, in real life situation, 3-A indicators would demonstrate what extent to which coverage is transformed into utilization is.

Accessibility is answering to the question to which extent and which services can be physically reached by people. The reason why people do not use services might be that services do not exist **(availability)**. Among barriers of different kinds, one most important is that people may not utilize available services because they are too costly **(affordability)**.

Effectiveness is measuring the desired effect of services, relating output and outcome elements of the working process. It is answering the question: Providing these services, how much will be reached of the desired health effects? For instance, by finishing the program of health education on health diet, how much will be changed regarding dieting and nutrition of the community. After screening a population for cancer, how many new case will be discover in right time for treatment. The effectiveness has usually a technical connotation. How effective are drugs or diagnostic procedures and tools, but it can also be used in a managerial meaning when we speak about organization. For instance, how effective is a hospital, or health centre, or epidemiological services.
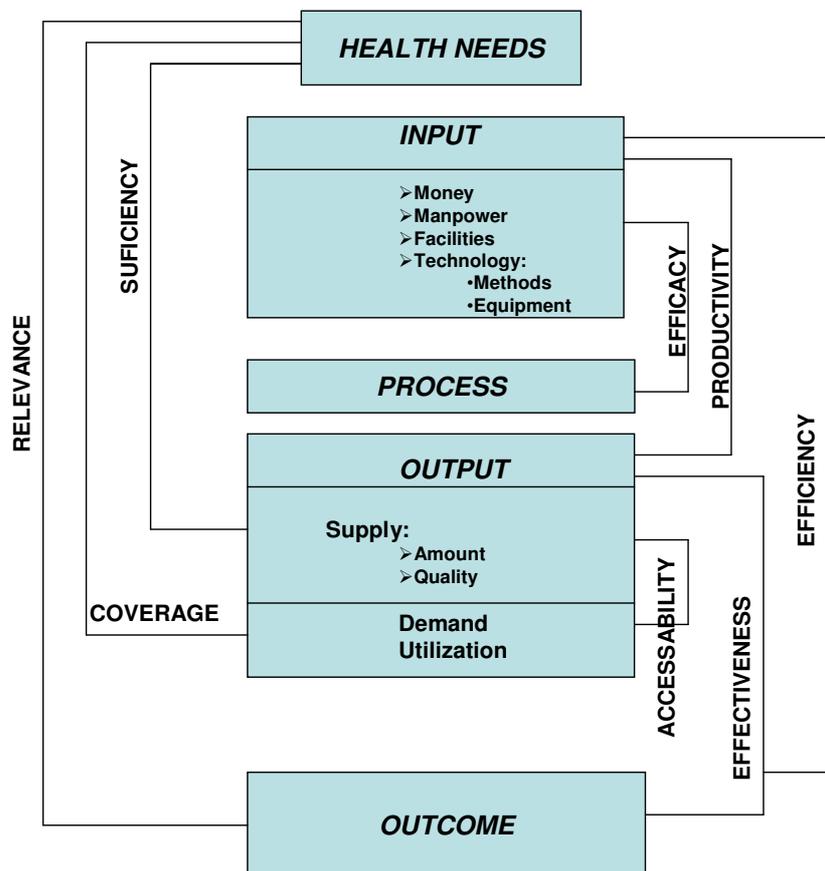
Figure 3. Measures for evaluation in the health care process

Special case of effectiveness is **efficacy** which is defined as effectiveness in real life situation. For instance, if a drug is very effective under experimental conditions, it does not mean that it will be as effective when applied in a rural hospital or at home. Or, a screening procedure applied in different population groups will not give the same effect.

Efficiency is related to use of resources, and the term has primarily a managerial connotation. It has to answer the question: How much of resources have to be used to reach the planned level of effectiveness? It relates input to output.

Efficiency is the major managerial tool. It includes all types of resources like financial, human, technical, and also time. For instance, we will tell that a service is more efficient either if less financial or other material resources are spent, or the work is done in less time, or by less people. Efficiency is the starting point to be specified as financial, organizational or other efficiency. However, often all different factors are translated into financial terms and expressed as cost.

There are two additional indicators of general nature on relating the observed activity (working process) as the whole in the relation to time and to the environment:

1. **Impact** is measuring the effect of evaluated activities on broader issues, the environment, on the overall health development, health status of the whole community and on related social and economic productivity, demographic changes etc.;

2. **Progress** is an indicator used for assessing development of project or services in relation to time. The question is: What are the changes occurring during the last year in terms of meeting project deadlines, but also other improvements of services, coverage, etc? It is an important measure of overall development in time, and not only control of planned schedule.

The evaluation is part of the control and administrative procedures, but it has to become also a contribution to technical improvements and social changes. This will be achieved only when the comprehensive evaluation is done in a participatory way, including into the process users, people and communities, and on the other side health workers whose work is evaluated, technical experts and professionals.

The evaluation has an impact on those whose work is evaluated, which is not always what was intended. Insisting on utilization of formal and objective data will pretty soon produce expected type of report, regardless what is happening in real practice. Data have to be used only after double checking and careful interpretation.

EXERCISES

Task 1: Selection of goals, objectives and targets

From WHO or other Data base select several indicators which will respond to goal, objective and target. Find their values as millennium goals, Europe, own country, district or county. Put the value in the table below. Discuss them in the group.

Indicator: _____

	Source	Goal	Objective	Target
Millennium goal				
Europe				
Own country				
District or county				

Indicator: _____

	Source	Goal	Objective	Target
Millennium goal				
Europe				
Own country				
District or county				

Indicator: _____

	Source	Goal	Objective	Target
Millennium goal				
Europe				
Own country				
District or county				

Indicator: _____

	Source	Goal	Objective	Target
Millennium goal				
Europe				
Own country				
District or county				

Task 2: Priority setting

In order to propose the new screening program in your country in a situation with limited resources (economic and health services) your task is to select two malignant diseases (cancers) to start the screening program. To solve this task you should do process of priority setting.

1. In a small group (3-4 participants) you decide by consensus after discussion:
Select and list criteria for assessment;
Give the relative weight to selected criteria (you can use a simple numerical scale);

List the diseases you think that screening is a relevant intervention.
2. Do ratings (give score for each disease and criteria).
3. In the same small group:
- – Compare your scorings;
- – After discussion construct the new scoring table (use consensus);
- – Select two diseases for the screening program;
- – Write comments (what additional criteria except "objective" scorings you use for your decision);
- – Present your decision in plenary.

Criteria	A	B	C	D	E	
Rel. weight						Score
D1						
D2						
D3						
D4						
D5						
D6						
D7						

Legend: D = Disease

Task 3: Evaluation of achievements in primary health care

Your task is to evaluate the success of health services and health workers in your district/county. You should select 1-3 indicators in order to evaluate the following categories: relevance, coverage, effectiveness, efficiency

Indicator category	Indicator 1	Indicator 2	Indicator 3
Relevance			
Coverage			
Effectiveness			
Efficiency			

Your comments:

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RECOMMENDED READINGS

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