INTRODUCTION

In all decision making, one of the most important steps is to choose between various possibilities. In many cases, we choose using criteria that may not be obvious to us. Decisions of each individual affecting his or her own benefits may not be of interest to others. At the population level, or those working on subjects or issues affecting many other people, we certainly expect decisions to be based on a more systematic approach rather than ad-hoc or selfdetermined criteria or methods. An example of this type of decision would be one on resource allocation affecting the health of a number of people.

There are many steps that require rational decision making. One of them is to decide which health needs to address among the large pool of various health needs affecting different population groups. There are limited resources available to deal with the many problems facing these groups. Examples of such limited resources could be time, human resources or financial resources. Priority setting is the key to systematically decide on which health needs deserve primary attention. Priority setting helps us to decide what to do first. In the planning and management context, this means figuring out which health needs or groups of health needs to tackle first to make best use of the available resources.

PRIORITY SETTING AND NEEDS-BASED TECHNOLOGY ASSESSMENT

Those working on technology assessment also face the question of which technologies deserve attention or should be assessed in order to help guide decisions in health resource allocation or on how health technologies might be adopted or used. Decisions on which technologies receive priority attention should also go through some process of priority setting. However, such questions could be addressed in different ways that may reflect somewhat different concepts. In many instances, those working on technology assessment go about identifying health technologies that might deserve priority attention by trying to compare between various technologies using different criteria. Another possible approach is to start with health problems or health needs and compare between health needs to identify those that should receive priority attention. At this point, identification of technologies that could be used to tackle those priority health needs should be determined.

A COMPARISON OF PRIORITY SETTING

Two types of priority settings exist. The first one is priority setting to decide which technology is to be used in the health care system based on population needs. The second one is a setting of priorities on which technologies to assess. The following descriptions explain these forms of priority setting in more detail.

Needs-based technology assessment emphasizes starting with the priority health needs of the population. In needsbased technology assessment, as evident in the iterative loop, after all health needs have been identified, the next step is to decide which of those health needs will be addressed by first using the available resources. Obviously not all health needs can be met or solved; however, it is unnecessary to focus on a single health need. There is always a misinterpretation of priority setting as requiring to choose only a limited number among the many possible options. After priority health needs have been identified, the next step is to formulate ways and means to address those needs. The process involves identifying effective health technologies, developing models or health programs that will bring those technologies to

the population in need, then analyzing them based on different viewpoints. These viewpoints could be economic, managerial, or socio-political, based on which technology is being used, and how to best achieve the expected health gains. In this scenario, the work on technology assessment becomes an integral part of rational planning in identifying the most appropriate technologies, as well as service delivery models, to tackle the priority health needs of the population.

It can be seen that priority setting is certainly a step that must be carried out first by health planners and health program managers. After the priority health needs have been identified, related health technologies that need to be assessed will follow. The process of technology assessment will subsequently be carried out within those priorities. In many organizations working on health technology assessment, the managers responsible for the technology assessment decision making also face the requirement for priority setting. This differs from those planners and managers dealing with solving population health needs in general. These managers of health technology assessment programs or organizations have to make decisions about technology assessment. They could choose either to start with the previously stated technologies and thus try to make a choice using various criteria and processes. They may also address the question of which technology to assess by going through the TAIL (Technology Assessment Iterative Loop) which starts with the health problems or health needs in question, and then choosing between those health needs. This process may be adopted by any health planners or managers wanting to find ways and means of solving population health problems, who might not be aware of the need for specific techniques in health technology assessment.

Priority Setting Based on a Comparison of NBTA & Conventional TA.

Starting Point	**Health Needs or Problems**	**Health Technologies**
Key questions	• Which health needs? • Which priority health needs to assess? • What technologies required to address the priority health needs?	Which technologies
Dataset required	• Health needs • Health technologies	Health technologies
Key groups involved	• Health planners • Health managers • Service providers • Communities	• Service providers • Researchers • Payers • Communities
Criteria	See below and each individual tool	
Process	Exclusive or participatory	Exclusive or participatory

CONCEPTS FOR PRIORITY SETTING

The most important aspect in priority setting is the understanding of the core concepts, rather than the mastery of tools and techniques. There are three important aspects that need to be tackled and handled with flexibility: (1) the use of criteria, (2) the process, and; (3) the choices of people involved in priority setting. Priority setting should not be expected to provide ready-made answers that will nd all biases through the use of hard (quantitative) data or highly developed criteria and formula. It is therefore important to clearly understand the principles and the limitations as well as some practical aspects of the three major characteristics of the priority setting process.

(1) Criteria

Various criteria that depend on quantitative data are used to avoid subjective judgement. Scores are calculated for each of the health needs being considered. It is not always possible to have all criteria that can be quantified, let alone try to combine many different criteria on a quantitative basis. Some of the commonly used criteria include: (1) the magnitude of the health needs, (2) the severity (nature) of the health needs that may include many characteristics like contagiousness, fatality, complications, etc., (3) feasibility of solving the problems, and; (4) concern of the many crucial players such as the community, politicians, etc. Each of these four major criteria can be broken down into many sub-criteria, for example, feasibility could be technical, financial or managerial. Quantifiable criteria cannot be easily combined to determine a final quantitative score that will lead automatically to the possibility of definitive ranking of all the considered health needs. Because of these limitations, the final scores of any priority setting exercise is the best attempt to combine the relative ranking of all the major criteria employed. In these instances, the quantification process goes through two major simplifications. First, whatever quantitative data has been derived from each criteria, such as figures on prevalence, incidence, case fatality rate, etc. is formulated into a score of relative value within a sliding scale. Secondly, rules are established to combine the scores from each criteria through some weighting and summation. The two steps entail various assumptions and judgments, and could hardly be claimed to be value free. Thus the score obtained should be viewed with all these limitations in mind. Some attempts could be made to employ a different cut-off point for the first step as opposed to various weighting and summation rules in the second step to see if these lead to different results.

(2) The process

Priority setting should not be viewed as merely the process of applying a set of criteria to the selected list of health needs. The process of how the priority setting is being carried out determines the results of the exercise as much as, if not more than, the set of criteria used in the process. Such a process includes crucial steps such as (1) selection of participant for the exercise, (2) acquiring data and short-listing the health needs to be prioritised, (3) selection, (4) the extent of panellist participation in data provision of health needs selection, and; (4) the agreement of chosen criteria. Last but not least is the results of the quantification process, stemming from shortfalls and limitation of the participants.

The best process consists of the following:

- a panel of well-informed and well-prepared members;

- collection and compilation of relevant data with the possibility of checking the validation and reliability of the data to be used;
- possibility of debate in the various crucial steps of priority setting such as the selection of criteria, quantification and summation rules, sensitivity analysis of the results; and
- getting feedback on the results of priority setting from various crucial groups besides the panellist or participants in the exercise.

(3) The participants

In many instances, the acceptability of the results of priority setting come not from the criteria or the process, but from the participants themselves. The results of the priority setting process obtained from the participants also depends very much on the background of those involved. Debates among the participants in the exercise are essential to the results of the process.

Health staff or administrators from the supply side play a vital role in the process of priority setting. Financial resource officers are also very important. If the process is carried out in the government setting, the viewpoints will be influenced by that environment. As priority setting has extensive implications on many subsequent decisions to be made, such as: resource allocation, selection among the choices of available technologies, and research funding, it is too limited to involve only those who are the providers, let alone those in government.

One of the many concerns with regards to who is involved in the process of priority setting has to do with community involvement. In needs-based technology assessment this becomes even more crucial, as one of the basic principles is to address the priority health needs of the population. A professional belief exists that objective health assessment better reflects the needs of the people when they are properly represented and have their concerns known in the process of priority setting. Those who are affected have the most important need in priority setting.

Community representation depends very much on the socio-political background of each group. Decisions in health policies and planning essentially follow the same process of general politics. In a highly democratic society with a great degree of decentralization, there are more forums catering to communities that want to express their views. In countries where decisions are made in a highly centralized way, community involvement is diminished in the process. One of the ways to learn about the viewpoints of the community is through surveys or community consultations. However, this still leaves out the possibility of close interaction and thus better involvement in the ongoing process of priority setting, which is one of the key features of priority setting.

USING TECHNOLOGY ASSESSMENT FOLLOWING PRIORITY SETTING

After the health needs have been prioritised, the next step is to attempt to define the technologies to be used for the identified needs. This involves the following steps:

- identification of possible technologies that could be used to prioritize health needs. This could cover technologies for prevention, treatment, rehabilitation, health promotion or risk reduction/minimization related to each of the identified priorities;

- determination of appropriate technology to benefit the population in need (i.e. who are the users and beneficiaries and through what infrastructure each technology will be applied);
- assessment of the expected consequences (i.e. effectiveness, benefits, socio-political, cultural, etc.) in technology application through different models;
- calculating the cost of using each technology which will then allow for a comparison of cost-effectiveness, cost-benefits or any other economic criteria; and
- Select appropriate technology to address the need.

The next steps involve looking at effectiveness in community settings, cost-effectiveness and the realities of policy implementation.

PRIORITY SETTING TOOLS

The tools for priority setting compiled in this tool kit are mostly those that are used to guide the process of general health planning. It allows the identification of priority health needs and leads to the next step of identifying relevant technologies dealing with those health needs that have been identified. Some of the tools are parts of a more elaborate planning tool (such as PHC MAP which in itself is a tool for planning and management and has within it, a part on priority setting for health planning). Some are compilations and comparisons of various techniques used in the many steps of priority setting and thus reflect the many different possibilities of carrying out the process of priority setting or even give some ideas about the process and participants dealing with the steps of priority setting (the example is the ENHR experiences with priority setting which is an attempt to compile experiences with priority setting of health problems which is an essential step for planning essential national health research.

There is also another set of tools that deals directly with priority setting for technology assessment. They describe basically how managers of technology assessment programmes or organizations set about identifying priority technologies that need to be assessed. Most of these tools are comparable to the tools in priority setting of health needs. The basic difference is the set of criteria used but the other aspects are quite similar. They are compiled here for comparison purposes and to reflect other possible approaches to addressing the issues of which technology to be assessed given a limited budget. However those approaches did not start within the context of priority health needs and thus cover a wide range of technologies that deal with a wide range of health needs without having to take a comprehensive look at the many technologies that could be used in addressing a set of priority health needs.

In using each of the tools compiled in this section it is important to keep in mind the various degree of details contained in each of these tools. Some of them are quite conceptual without going into detail on a step-by-step basis, left alone providing a real tool in such a form or a template. Some are quite detailed describing the ways to try to quantify and calculate the final scores in order to help draw conclusions about priorities. Some provide comparison while most deal only with one particular approach or technique. The bottom line for the best use of these tools is not to take them literally or try to copy or follow the tool you like most, but to understand the concept and approach and take into account the context within which your priority setting process is taking place, and possibly redesign or modify some of the tools that you may find relevant in this tool kit.