



EAR AND HEARING CARE

**PLANNING &
MONITORING OF
NATIONAL
STRATEGIES
A MANUAL**



**World Health
Organization**

The cover image has been developed in collaboration with the IDA Institute and the China Research and Rehabilitation Centre for Deaf Children, Beijing China.



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ACRONYMS USED IN THIS MANUAL

CBR	community-based rehabilitation
COM	chronic otitis media
EHCSAT	Ear and Hearing Care Situation Analysis Tool
ENT	ear, nose and throat
NCEHH	national committee for ear and hearing health
NEHC	national ear and hearing health coordinator
NGO	nongovernmental organization
PEHC	primary ear and hearing care
PEHCTR	Primary Ear and Hearing Care Training Resource
SOP	standard operating procedures
SWOT	strengths, weaknesses, opportunities and threats
UNICEF	United Nations Children's Fund

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EXECUTIVE SUMMARY

Many causes of hearing loss can be prevented or mitigated. In addition, people who develop hearing loss can benefit from appropriate and timely interventions. The profile and causes of hearing loss vary greatly across and within regions, as does the availability of infrastructure and resources to address it. Hence, it is essential that each country develop its own strategic plan to deal with hearing loss and its causes.

A national ear and hearing care strategy should seek to reduce the prevalence, incidence and impact of hearing loss in the community, through public health approaches that are integrated with the country's health system and service delivery. The development of a holistic and integrated strategic plan is the first step towards 'provision of effective and sustainable ear and hearing care services.

This manual provides guidance on developing and implementing such a strategy. The manual can be used in combination with the Ear and Hearing Care Situation Analysis Tool, which provides a detailed framework for an initial situation analysis.

The planning process for a national ear and hearing care strategy comprises the following phases.

1. PRE-PLANNING PHASE

Advocacy about the need to address hearing loss and ear diseases is essential to sensitize and mobilize the key stakeholders. Good advocacy includes effective communication to raise awareness, tailored and targeted separately to the general public, policy-makers, programme managers and funding providers. This will help to mobilize both political commitment and the resources required for planning and strategy development.

The planning and implementation process should be led by the ministry of health, but with a clear mandate to engage with other sectors. A national ear and hearing health coordinator should be appointed in the ministry of health to be in charge of the planning and implementation process, and should be supported by a strong administrative structure. A formal multisectoral national committee for ear and hearing health should be set up, chaired by the ministry of health. The members of the committee should include key stakeholders identified in a stakeholder analysis. The national committee should support the coordinator and the coordinator should be accountable to the committee.

The national committee may set up a small task force to draft sections of the national strategy document. Other subgroups may be established to deal with technical aspects, training, infrastructure development, equipment, finance, advocacy monitoring and other aspects, as appropriate. Overall coordination should be done by the national coordinator's office.

2. PLANNING

The planning process can be framed around the following questions.

- **Where are we now?** Carry out a situation analysis of needs and resources, as well as a strengths, weaknesses, opportunities and threats (SWOT) analysis to describe your present situation in relation to ear and hearing health. The Ear and Hearing Care Situation Analysis Tool can be used for this first step.
- **Where do we want to be?** Priorities should be determined on the basis of the magnitude and impact of various causes of hearing loss, as well as the feasibility and estimated cost of interventions. A clear vision statement should be developed in collaboration with all stakeholders. The aim and SMART^a objectives of the strategy should then be defined.
- **How will we get there?** Determine the activities required to achieve each of the strategic objectives. For each activity, identify the steps in implementation, set out as a list of clear and logical actions with a timeline, draw up a budget, and identify the people responsible. Develop indicators and monitoring tools simultaneously. Secure resources for the programme.

Once the plan has been approved, implementation can start, ideally in phases. A pilot phase can be undertaken in a limited population or geographical area. On the basis of feedback, changes can be made and other interventions added in the expansion phase. Human and financial resources need to be carefully managed throughout.

3. MONITORING AND EVALUATION

- Monitoring is an ongoing process, which compares the current status of a project with its stated goals, objectives and activities. It provides regular feedback on what milestones have been achieved and gives early warning of problems. Monitoring should be coordinated by the national coordinator, using an appropriate set of indicators and monitoring tools that measure the day-to-day activities and achievements. It is important that the information gained through monitoring is fed back to the teams in the field who have collected the data.
- Evaluation is a time-bound exercise, which systematically and objectively assesses the relevance, performance and success of the strategic plan. The timing of the evaluation, its terms of reference and cost should be determined during the planning phase and resources allocated. The outcomes of the evaluation should feed back into the strategic plan, which should be modified accordingly.

^aSMART: specific, measurable, achievable, reliable and time-bound.



INTRODUCTION

An estimated 360 million people around the world have disabling hearing loss. Hearing loss has an impact not only on the individual concerned but also the family, the community and the country.

Many causes of hearing loss can be prevented or mitigated, including otitis media, exposure to excessive noise, exposure to ototoxic substances, and vaccine-preventable infectious diseases, such as meningitis, measles, mumps and rubella. It is important that hearing loss is diagnosed early and that appropriate interventions are implemented. Many ear conditions, such as otitis media, can be effectively managed through medical and surgical approaches. In other cases, people with hearing loss can benefit from the use of hearing devices, such as hearing aids, assistive listening devices and cochlear implants. Service provision needs to go beyond the clinician and to be integrated across the health system and beyond, to support educational and occupational services.

A recent WHO report^a revealed a lack of national strategic plans to address ear diseases and hearing loss in WHO Member States. Human resources for ear and hearing care are unequally distributed, with a much greater concentration in high- and upper-middle-income countries than in low- and lower-middle-income countries. In 1995, the World Health Assembly adopted resolution WHA48.9, which urged Member States to prepare national plans for the prevention and control of major causes of avoidable hearing loss, and for its early detection and management within the framework of the primary health care system. A consultation on promotion of ear and hearing care in Member States was held at WHO Headquarters in Geneva, Switzerland, on 1–2 April 2015. During this meeting it was agreed that WHO should develop technical tools to support Member States in the planning and implementation of national ear and hearing care strategies.

This manual is one such tool and provides guidance on the development of a national ear and hearing care strategy. It outlines the planning process, with a special focus on practical aspects, recognizing that each country has its own particular priorities and available resources. It is one of a series of publications on planning and monitoring of ear and hearing care services. It is accompanied by a tool that facilitates situation analysis for ear and hearing care within the health system. Future publications will include one on the components of national ear and hearing care plans.

The term “ear and hearing care” refers to comprehensive, evidence-based interventions to prevent, identify and treat ear diseases and hearing loss, and to habilitate or rehabilitate and support persons with hearing loss through the health system and in collaboration with other systems. Primary ear and hearing care is defined as effective and cost-effective interventions against ear and hearing disorders that can be implemented at the primary level by trained primary ear and hearing care workers or primary health care workers or their equivalent, and that will have a major impact on the burden of ear disease and hearing loss if used on a large scale.

A national ear and hearing care strategy should seek to reduce the prevalence, incidence and impact of hearing loss in the community, through public health approaches that are integrated in the country’s health system and service delivery. It should focus on:

- prevention of hearing loss, including primordial prevention^b;
- early identification and treatment;
- habilitation and rehabilitation;
- support services.

Ear and hearing care strategies should give priority to service provision at the community and primary level of health care, together with strengthening of the secondary and tertiary levels of the health care infrastructure to ensure comprehensive care at all levels. They should be based on the principles of universal health coverage.

^a *Multi-country assessment of national capacity to provide hearing care.* Geneva, World Health Organization, 2013 (http://www.who.int/pbd/publications/WHOReportHearingCare_Englishweb.pdf?ua=1; accessed 6 November 2015).

^b Primordial prevention aspires to establish and maintain conditions to minimize hazards to health. It consists of actions and measures that inhibit the emergence and establishment of environmental, economic, social and behavioural conditions, and cultural patterns of living known to increase the risk of disease. (From: Last J, *A dictionary of public health*, Oxford, Oxford University Press, 2007.)



**DEVELOPMENT &
IMPLEMENTATION OF
A NATIONAL STRATEGY
FOR EAR & HEARING
CARE**

The development and implementation of a national strategic plan for ear and hearing care will usually be led or coordinated by the national government, often in collaboration with local or international nongovernmental organizations (NGOs).

The strategy should follow a health system-based approach and services should be integrated with the health care delivery system of the country. The approach to ear and hearing care should be multisectoral, evidence-based, culturally appropriate and in line with the recommendations of the UN Convention on Rights of Persons with Disabilities.^a It should take into consideration the latest advances in technology and use available networks to develop or strengthen capacity.

This manual details the steps in planning and implementing a national or subnational ear and hearing care strategy (see **Figure 1**):

1. PRE-PLANNING PHASE, including advocacy and setting up of the national committee;

2. PLANNING:

- situation analysis;
- priority-setting and definition of vision, aim and objectives;
- planning of activities, timelines and budget;

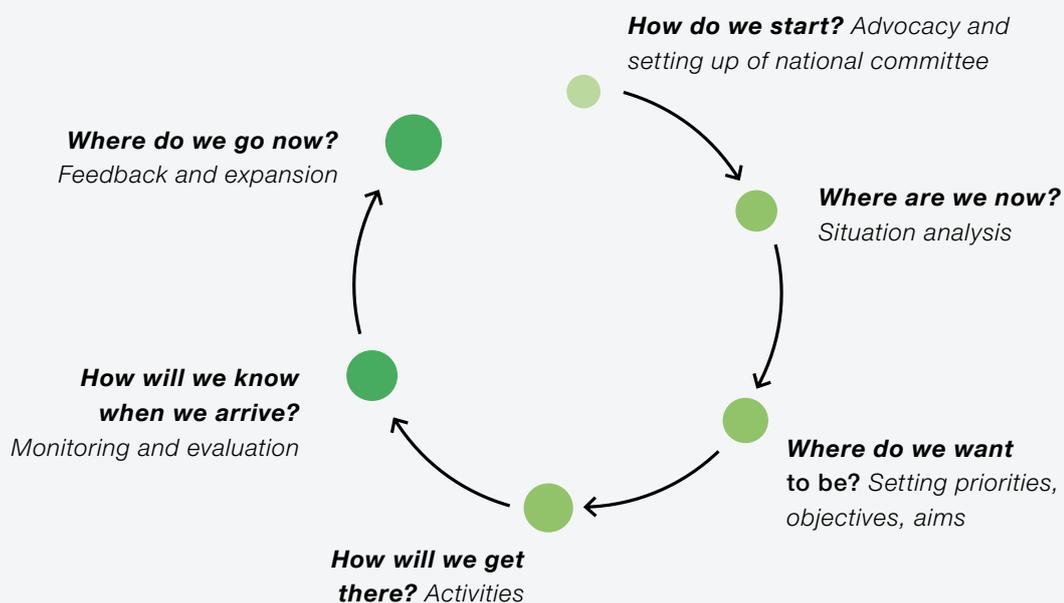
3. MONITORING AND EVALUATION:

- monitoring is a continuous process, using tools and indicators to assess the progress of the project and improve performance;
- evaluation provides an objective assessment of the success of the strategy.

Planning is a dynamic process and the cycle should be repeated at periodic intervals to take account of new developments.

^aConvention on the Rights of Persons with Disabilities, New York, United Nations, 2007 (<http://www.un.org/disabilities/convention/conventionfull.shtml>)."

FIG. 1. OVERVIEW OF THE PLANNING AND IMPLEMENTATION CYCLE FOR AN EAR AND HEARING CARE STRATEGY



1 PRE-PLANNING PHASE

Certain actions need to be initiated even before the planning process is set in motion.

1.1 INITIAL ADVOCACY

Advocacy about the need for a national strategy is likely to be necessary before planning commences. Local and global evidence should be used to raise awareness among decision-makers about the size of the problem, the opportunities for successful interventions, and the social and economic costs of doing nothing. This should help convince and gain support from the government and other stakeholders.

Good advocacy comprises effective communication to raise awareness, tailored and targeted separately to the general public, policy-makers, programme managers and funding providers. This will help to mobilize political commitment and the resources required for planning and strategy development.

The following evidence can support advocacy (this list is not exhaustive):

- an accurate estimate of the scale of the problem (e.g. from a rigorous population-based hearing survey);
- evidence of the links between hearing loss and poverty and of the impact on quality of life;
- the high cost-effectiveness of interventions against hearing loss;
- the documented economic benefits of preventing, treating and rehabilitating hearing loss, particularly through strengthened provision of ear and hearing health care;
- evidence of the success of such a strategy, e.g. in reducing the prevalence of hearing loss over time.

1.2 GOVERNANCE AT NATIONAL LEVEL

Once the decision has been made to go ahead with planning, the process should be led by the ministry of health, but with a clear mandate to engage with other sectors. The ministry should have a clear position that is shared by and involves all relevant health programmes (see **Box 1**).

A national ear and hearing health coordinator (NEHC) should be appointed to be in charge of the strategy development. This person, and the department in the ministry of health that will lead the planning process, should be clearly identified and have the skills needed for the task.

The key role of the coordinator is to help guide the planning and implementation process, ensuring that all those concerned work together towards the defined goal. If the national coordinator does not have technical or programme knowledge of the challenges in hearing loss prevention and management, an adviser with this knowledge should also be appointed.

The main responsibilities of the national coordinator are shown in **Box 2**.

BOX 1. HEALTH PROGRAMMES THAT SHOULD BE INVOLVED IN THE PLANNING OF THE EAR AND HEARING CARE STRATEGY

- Maternal health
- Child and adolescent health
- School health
- Occupational health
- Environmental health
- Public health
- Programmes for the elderly
- Mental health
- Tuberculosis and malaria control
- Control of noncommunicable diseases
- Disability and rehabilitation

BOX 2. MAIN RESPONSIBILITIES OF A NATIONAL EAR AND HEARING HEALTH COORDINATOR

- Develop policy and planning.
- Coordinate meetings of the national committee and task force groups.
- Support, supervise and monitoring staff of the national coordinator's office.
- Report progress of strategy planning and implementation to the national committee.
- Advocacy with all stakeholders.
- Maintain good communication with all stakeholders.
- Build capacity of staff and coordinators in the country.
- Facilitate procurement of necessary drugs and equipment.

The national coordinator should be accountable to a national committee (see below), which should, in turn, support the work of the coordinator's office. The coordinator will undertake communications, coordinate the subgroups and task forces (see section 1.3) and be available to respond to questions and concerns about the ear and hearing care strategy.

A formal multisectoral national committee for ear and hearing health (NCEHH) should be set up by the ministry of health and chaired by an enthusiastic and influential person from the ministry. He or she should have the authority to influence planning decisions within the ministry, and the capacity to inspire different stakeholders to work together. The members of the committee should include key stakeholders identified through a stakeholder analysis. Internal and external stakeholders can be selected on the basis of their levels of interest and capacity to influence change at a local level. The likely members are listed in **Box 3** and the primary roles of the committee are listed in **Box 4**.

It is very useful if members of the committee understand how decision-making occurs and how resources are allocated in government. This may require the involvement of other offices, such as foreign affairs, and the office of the president or prime minister.

BOX 3. POTENTIAL MEMBERS OF A NATIONAL COMMITTEE FOR EAR AND HEARING HEALTH

A. GOVERNMENTAL AGENCIES

- Ministry of Health
- Ministry of Social Welfare or Justice and Empowerment
- Ministry of Education
- Ministry of Labour
- Ministry of Environment
- Ministry of Finance or Planning
- Ministry of Works
- Provincial or state health regulators (if the system is decentralized)

B. OTHER AGENCIES

- Agencies of the United Nations, such as WHO and the United Nations Children's Fund (UNICEF)
- International and national NGOs working in the field of hearing, vision, disability, child care and others
- Major donors

C. PROFESSIONALS AND ACADEMICIANS

- Experts from academic and research institutions, including biomedical, economic and operational researchers
- Key experts in otology, audiology, child health, maternal health, geriatrics, health training
- Public health experts
- Representatives of national professional organizations of otolaryngologists, audiologists, speech pathologists, relevant technicians, hearing aid providers, teachers and other relevant professional groups in the country
- Representatives of the private health sector

D. CIVIL SOCIETY GROUPS

- Associations of people who are deaf or hard of hearing
- Disability advocacy and rights groups
- Parents' associations

E. INDUSTRY PARTNERS

- Manufacturers of hearing devices and medical instruments

F. FINANCIAL SPONSORS

BOX 4. RESPONSIBILITIES OF THE NATIONAL COMMITTEE FOR EAR AND HEARING HEALTH

- **Oversee the planning process and provide guidance for specific programmes**
- **Develop advocacy strategy and obtain political commitment**
- **Monitor the implementation of the national strategy and evaluate its impact**
- **Determine resource requirements and mobilize resources**
- **Oversee training and human resource development**

1.3 TASK FORCES AND SUBGROUPS

A small task force may be set up by the national committee to undertake the drafting of the national strategy document. The members of the task force need collectively to have knowledge about the country's health system and public health approach to ear and hearing care, as well as its medical, surgical, rehabilitative and social aspects. It should work closely with all stakeholders and members of the national committee, and give due consideration to the views and interests of all stakeholders involved in strategy development.

The national committee or the task force itself should allocate responsibility for different aspects of the strategy to individual members of the task force. The task force should develop a strong mechanism of coordination, both among its members and between the different states or provinces and the centre.

It is important that the national committee sets timelines for the development of the strategy, the detailed programming and its implementation, and that these are agreed by all parties involved, and documented.

The national committee may need to set up other task forces or subgroups (Figure 2), such as:

- a technical group: to develop guidance for specific programmes that are part of the strategy, e.g. newborn and infant screening, school screening, hearing conservation;
- an advocacy group: to identify targets, devise key messages and prepare materials, e.g. for World Hearing Day;
- a finance and budget group: to oversee the development of budgets, and requests for and allocation of financial resources;
- a supply group: to procure supplies and improve logistics for system strengthening;
- a training and human resource development group: to develop and implement training schemes and to make recommendations for the development of suitable cadres of ear and hearing health professionals;
- a monitoring group: to develop monitoring tools and indicators and coordinate the monitoring and evaluation process.

These and other groups constituted by the national committee should report to the national committee.

The role of the national committee may differ to some extent according to the structure of the health system, the number of stakeholders, and the particular hearing health problems in the country. The committee should have clear terms of reference and well-defined working procedures. At the outset, it should establish a clear plan of work for the development, adoption, implementation and monitoring of the strategic plan, and for any other activities that it deems necessary.

The committee should meet regularly, e.g. every two or three months. The frequency can be altered according to need and the stage of the planning, implementation and monitoring process. For instance, meeting may need to be more frequent during the initial planning phase. If the committee is very large and difficult to convene quickly or frequently, it may be useful to set up a small executive committee, which can take decisions rapidly between meetings of the main committee. The executive committee should report and be answerable to the main committee.

If the planning process is to be effective, it is important to have a consensus among all stakeholders. The greater the involvement of stakeholders during the planning process, the greater the sense of ownership and motivation, and the higher the likelihood of consensus. Efforts must be made to engage with them and receive their inputs. If it is not possible for a particular group to be involved in the planning, it should nevertheless be kept informed of developments.

Figure 3 shows the process of development of the national strategy, culminating in an operational strategic plan. It may be useful to have a national workshop or consultative meeting before or after the development of the national strategy. The remit for this workshop would go beyond the

members of the national committee. Its purpose would be to raise awareness among all actors with an interest in the field and to consider the different viewpoints in the development of the strategy.

FIG. 2. POSSIBLE SUBGROUPS OF THE NATIONAL COMMITTEE

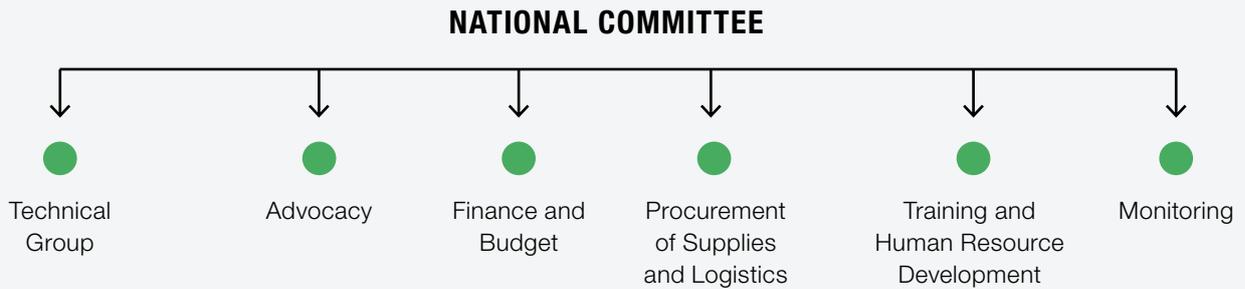
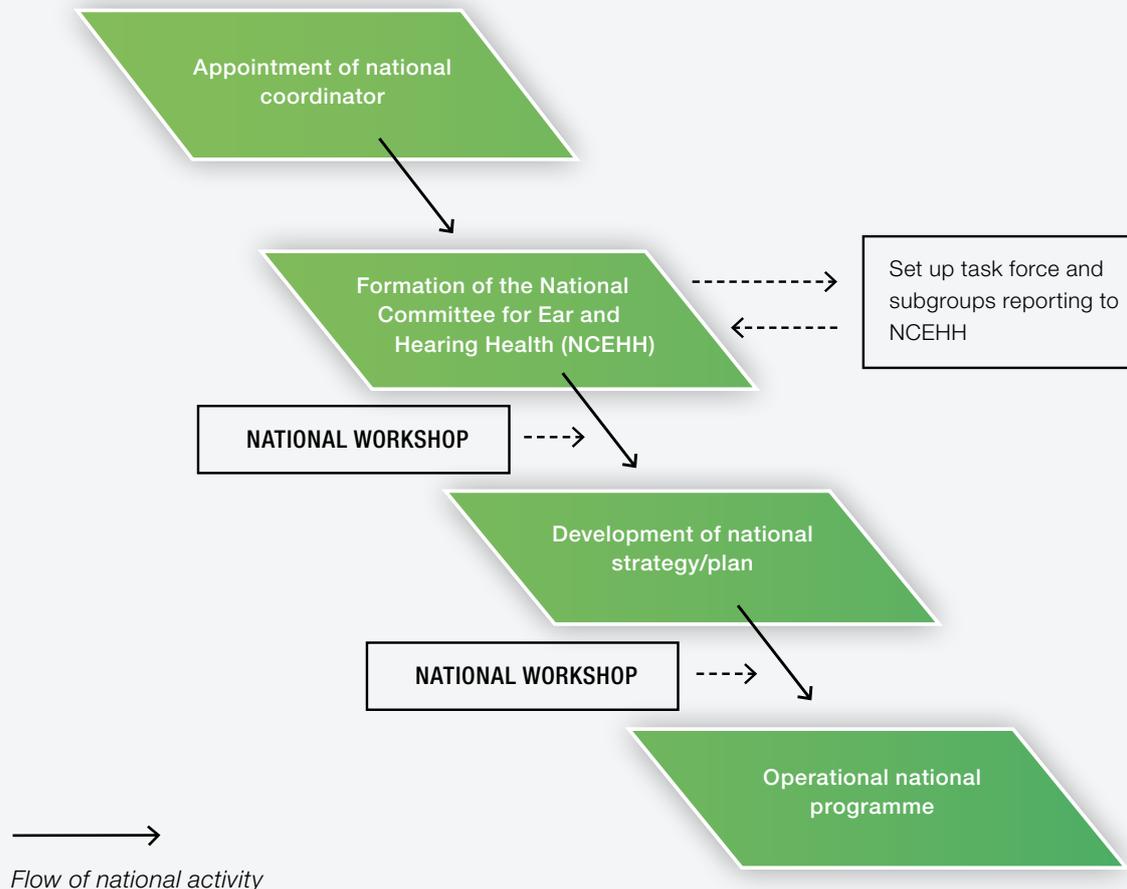


FIG. 3. PROCESS FOR DEVELOPMENT OF NATIONAL STRATEGIES FOR EAR AND HEARING CARE



2 PLANNING PHASE

The strategic plan should be easily understandable by all representatives of the different sectors participating in its development and implementation. It should avoid the use of overly technical words and contain a summary and a glossary of terms.

Figure 4 summarizes the steps involved in the planning phase.

2.1. STEP 1 WHERE ARE WE NOW?

SITUATION ANALYSIS

To determine the current situation, the needs of the population and the resources available need to be assessed. This includes (**Figure 5**):

- assessing the magnitude and profile (type, causes, age pattern, geographical distribution) of hearing loss and ear diseases;
- obtaining general country information, including population profile, socioeconomic profile and health indicators;

FIG. 4. STEPS OF THE PLANNING PHASE



- determining the health system infrastructure and organization;
- assessing the availability of human resources;
- determining what ear and hearing care services are available;
- performing stakeholder analysis.

The WHO Ear and Hearing Care Situation Analysis Tool (EHCSAT) provides a comprehensive framework for situation analysis. The EHCSAT can be used to obtain information that will support both advocacy and the strategy planning process.

GAP ASSESSMENT AND SWOT ANALYSIS

EHCSAT also provides baseline information for a gap analysis. On the basis of the information gained, a SWOT analysis can also be done – to determine strengths, weaknesses, opportunities and threats – for the

development of a national ear and hearing care strategy (see **Box 5**). This information can help identify the options available and determine priorities, allowing achievable aims and objectives to be set.

BOX 5. EXAMPLES OF FACTORS THAT MAY BE IDENTIFIED THROUGH A SWOT ANALYSIS

- Strength: availability of trained health workers working in the community who can be engaged to deliver ear and hearing care services.
- Weakness: lack of trained audiologists to provide specialized services.
- Opportunity: increasing engagement in the country of an NGO working in the field of hearing care.
- Threat: political unrest.

FIG. 5. COMPONENTS OF SITUATION ANALYSIS



2.2. STEP 2

WHERE DO WE WANT TO BE?

SET PRIORITIES

The situation analysis can help identify gaps in the current service provision or programme. This information can then be used to determine priorities for action.

One way to start to do this is by asking certain basic questions, for example:

- Can the needs be reduced?
- Can the extra resources needed to do that be obtained?
- Can prevention programmes be strengthened?
- Can the accessibility of hearing devices be improved?
- Should there be a focus on disease-specific action, e.g. primary prevention of otitis media?
- Should there be a focus on treatment or rehabilitation?
- Should there be a focus on neonates, children, special groups or the ageing population?
- Should there be a focus on developing human resources (numbers or distribution)?
- What needs to be done to strengthen early detection?
- What are the provider barriers to delivering a good service?
- What are the barriers to uptake of hearing impairment services in communities?

The possibilities need to be discussed by the task force and realistic choices made, in order to determine priorities.

A more systematic approach can also be adopted to determine priorities, as in the following example.

First, set out the main causes of hearing loss according to their prevalence in the country, determined on the basis of the situation analysis and available literature. **Table 1** shows an example of how this could be done.

Second, assign a score to the causes with high or moderate prevalence, according to their magnitude (prevalence), impact (stigma, social exclusion, lack of educational opportunities, etc.), and feasibility and cost of intervention against them (**Table 2**). Prevalence and cost of intervention can be represented on an ordinal scale based on available data and mutual discussions. The scores for impact and feasibility of intervention may not be so clear and will need to be determined through discussions with all stakeholders.

Priority should be given to the causes that have the highest total scores, obtained by summing the four scores. This approach could be adopted at both the national and district levels.

Note that there is no universal set of priorities; decisions must be based on the local situation.

TABLE 1. CAUSES OF HEARING LOSS IN A POPULATION ACCORDING TO THEIR FREQUENCY*

HIGH FREQUENCY	MODERATE FREQUENCY	LOW FREQUENCY
Inherited causes	Excessive noise	Nutritionally related
Chronic otitis media (COM)	Ototoxic drugs and chemicals	Trauma related
Presbycusis (age-related hearing loss)	Antenatal and perinatal problems	Ménière's disease
	Infectious causes	Tumours
	Wax, foreign bodies	Cerebrovascular disease

* The conditions listed are examples; the table should be completed on the basis of the situation analysis and available literature.

TABLE 2. ASSIGNING SCORES TO CAUSES OF HEARING LOSS*

	MAGNITUDE 0 low, 5 high	IMPACT 0 low, 5 high	FEASIBILITY OF TREATMENT 0 no treatment, 5 simple to treat	COST 0 expensive, 5 cheap
Presbycusis	4	3	4	3
Chronic otitis media	5	4	4	2
Ototoxicity	1	4	3	4

*The conditions and scores listed are examples; the table should be completed on the basis of the situation analysis and discussions with stakeholders.

DETERMINE VISION, AIM AND OBJECTIVES

Defining the vision is the first step in formulating the strategy. The vision identifies the ultimate goal of the strategy, in overall aspirational terms which are not time-bound. The vision statement should take into account the different views of the stakeholders and be agreed on by all. At the same time it should be simple and able to portray an image of the desired result. Below are some real examples of vision statements.

- To improve the quality of life of people in the country through better hearing.
- A productive country, with healthy people, free of ear diseases and hearing loss.
- To achieve improved ear and hearing health for all citizens of the country.

The aim (or goal) should be a statement of the overall result intended to be achieved through implementation of the strategy. The aim specifies the “destination” to be arrived at and gives the direction of the strategy. A time factor may be included, but is not essential. Below are some real examples of aims.

- To reduce the overall prevalence of hearing loss in the country by 25%.
- To provide equitable access and coverage of cost-effective, quality health services for ear and hearing care, as close to the people of the country as possible.
- To provide access to ear and hearing care services throughout the country.

The objectives provide a road map to achieve the aim. They should be based on specific targets expected to be achieved within a particular time, through implementation of the strategy.

Each of the relevant components, or building blocks, of the health system can be looked at in turn, to determine appropriate objectives. The building blocks are: service delivery; health workforce; information; medical products and health technologies; financing; leadership and governance (**Figure 6**).

FIG. 6. HEALTH SYSTEMS BUILDING BLOCKS



Annex 1 gives further information about the health system approach.

There may be many objectives, depending on the scope of the strategy. However, available resources and practical difficulties should be taken into consideration when defining the objectives and their time frame. An example of an objective relating to the aim 'to provide access to ear and hearing care services throughout the country ' would be "Train 100 health workers in each district on ear and hearing care by December 20xx". This objective is likely to be necessary – but not sufficient in itself – to achieve the aim.

Ideally, objectives should have certain attributes, which can be summarized with the acronym SMART:

- specific – clearly focused on a particular result;
- measurable – each objective should have a precise measurable target;
- achievable – the objective is feasible and can be achieved in the time set;
- realistic – there must be consideration of constraints such as resources, personnel, cost, and time frame
- time-bound – a timeline should be specified for their achievement.

There is no particular recommendation as to how many objectives there should be or how many activities each objective will have. These will depend on the complexity of the strategy. However it is important that each objective should have all the SMART attributes (see **Box 6** for an example).

BOX 6. AN EXAMPLE OF A SMART OBJECTIVE

Objective: Train 100 health workers in each district on ear and hearing care by December 20xx.

This objective is:

- specific: it pertains to the training of health workers in ear and hearing care;
- measurable: the number of health workers trained in each district can easily be measured through training records;
- achievable: as determined through the situation analysis and discussions with stakeholders;
- realistic – there must be consideration of constraints such as resources, personnel, cost, and time frame;
- time-bound: to be completed by December 20xx.

BOX 7. SETTING OUT THE ACTIVITIES NEEDED TO ACHIEVE AN OBJECTIVE

Objective: Train 100 health workers and community health workers in each district, i.e. primary health workers from every facility, on primary ear and hearing care by December 20xx. The following activities may be necessary to achieve this objective.

- Allocate or raise funds for training.
- Identify groups to be trained.
- Prepare relevant training materials.
- Identify training venue and trainers.
- Make a timetable for training of the 100 workers and identify training methods.
- Invite the participants.
- Conduct training.
- Follow up with participants to provide ongoing support at their work stations.

2.3. STEP 3

HOW WILL WE GET THERE?

SET ACTIVITIES

A number of activities will be required to achieve each objective. The activities will need to be decided on the basis of discussion and logical thinking (see **Box 7** for an example).

Once the key activities required to achieve an objective have been identified, each one should be considered in detail, to identify the steps/actions in implementation. (see **Box 8** for an example).

BOX 8. BREAKING EACH ACTIVITY INTO STEPS/ACTIONS

Activity: Prepare relevant training materials.

Steps:

- Identify available training materials eg WHO PEHC training resources.
- Set up a subgroup to adapt the training materials based on local requirements.
- Field test and validate the training materials.
- Translate.
- Print and distribute.

The plan of activities may form a separate implementation plan, which is a practical, time-bound working document derived from the overall strategic framework. In a large country, in which different provinces, states or regions have different health systems and administrative profiles, the national committee may decide that each area should develop its own implementation plan.

Each activity should have a clear timeline and budget, and the persons responsible for it should be clearly identified.

The timeline can be depicted in a Gantt chart (**Figure 7**). This is a type of wall calendar, on which tasks or activities are listed vertically and rows are coloured in to show the planned start and end of each activity.

A list of possible activities that can be implemented is given in **Annex 2**. The items in the list are not necessarily essential or comprehensive. They include actions that have been undertaken in different settings, and that may be useful as a basis for discussions among the task force and stakeholders.

Here are some points to bear in mind when deciding on activities and timelines.

- Carry out training and procure necessary supplies before starting services.
- Establish services before advertising them.
- Ensure adherence to timelines.
- The capacity of different staff to deliver services may vary.

FIG.7. EXAMPLE OF A GANTT CHART DISPLAYING TIMELINES

Objective: Train 100 health workers and community health workers in each district

ACTIVITIES	YEAR 1				YEAR 2				YEAR 3			
	Quarter 1	2	3	4	1	2	3	4	1	2	3	4
Allocate or raise funds for training	█											
Identify groups to be trained	█											
Prepare relevant training materials		█										
Identify training venue and trainers		█										
Make a timetable for training of the 100 workers and identify training methods			█									
Invite the participants				█								
Conduct the training				█								
Follow up participants in their work stations					█			█				█

DEVELOPING INDICATORS AND MONITORING TOOLS

At the planning stage, it is essential to identify key indicators and develop suitable monitoring tools. An indicator is a parameter, expressed as a number, proportion, percentage or rate, that measures the extent to which planned activities have been conducted (input, process and output indicators) or programme objectives achieved (outcome and impact indicators). Indicators can be used both for monitoring and for evaluation of the strategy.

The task force should define appropriate indicators and develop monitoring tools, and determine how, by whom and how frequently data will be collected. The sources of the information should also be determined. It should be borne in mind that data collection is expensive and time-consuming, and that data may not always be readily available. **Box 9** shows how indicators relate to the overall aim, objectives and activities.

A number of possible indicators are given in **Annex 3**. These are not necessarily essential or comprehensive; other indicators may be needed, depending on the strategy and the circumstances of the country. All indicators should be tested in the field before being used on a wide scale.

Questionnaires and forms will be required to collect information from the different levels of the health care delivery system. These should be developed through a consultative process, and validated and pre-tested before being used in the field. **Figure 8** shows an example of a form that could be used to monitor a training programme for health workers.

DETERMINE BUDGET AND PHASES OF IMPLEMENTATION

An essential part of strategy development is to construct a budget. In order to develop a realistic budget, the components of each activity that require funds need to be identified. **Box 10** lists some factors to be considered in drawing up a budget. Both national and international funding sources should be identified.

BOX 9. DEVELOPING INDICATORS TO REFLECT THE AIM, OBJECTIVES AND ACTIVITIES

AIM	IMPACT INDICATOR	PERIODICITY	SOURCE OF INFORMATION
To reduce the overall prevalence of hearing loss in the country by 25%.	Prevalence of hearing loss and ear diseases in the country.	Once in 5 years	Population-based survey
SPECIFIC OBJECTIVE	OUTCOME INDICATOR	Annual	Monitoring proformas
Train 100 health workers and community health workers in each district, i.e. primary health workers from every facility, on primary ear and hearing care (PEHC) by December 20xx	Prevalence of hearing loss and ear diseases in the country.		
ACTIVITIES	OUTPUT / PROCESS INDICATOR	Quarterly	District coordinators' report or meeting
<ul style="list-style-type: none"> Prepare relevant training materials Identify training venue and trainers 	<ul style="list-style-type: none"> Number of percentage of districts in which training has been initiated 		
	INPUT INDICATOR	Quarterly	District coordinators' report or meeting
	<ul style="list-style-type: none"> Number of districts in which trainers have been identified. Number of local languages in which training materials have been translated. 	Quarterly	

The phases of implementation of the strategy will need to be agreed upon. Possible phases are described in the section 2.4.

SEEK APPROVAL AND ENDORSEMENT

When a national strategic plan for ear and hearing care has been completed, it needs to be approved by all stakeholders and then by the government. The approval of stakeholders should be obtained at a consultative meeting or workshop that brings together all the stakeholder groups to discuss the draft strategy. The finalized strategy document will then usually need to receive formal approval from the government before being implemented.

FIG. 8. EXAMPLE OF A FORM FOR MONITORING A TRAINING PROGRAMME FOR HEALTH WORKERS

National strategy for Ear and Hearing Care In XXXXX																
2015																
Monitoring proforma for training programmes																
<table border="1" style="width: 100%; border-collapse: collapse;"> <tr><td style="font-size: small;">District</td></tr> <tr><td style="font-size: small;">Date of training</td></tr> <tr><td style="font-size: small;">Training for primary level doctors/health workers/CBR workers</td></tr> <tr><td style="font-size: small;">Venue</td></tr> <tr><td style="font-size: small;">Trainer(s)</td></tr> <tr><td style="font-size: small;">Number of trainees</td></tr> <tr><td style="font-size: small;">Sessions held:</td></tr> <tr><td style="font-size: small;">Physiology of hearing: yes/no</td></tr> <tr><td style="font-size: small;">Hearing loss: causes and treatment: yes/no</td></tr> <tr><td style="font-size: small;">Identification of hearing loss: yes/no</td></tr> <tr><td style="font-size: small;">Raising awareness on hearing loss: yes/no</td></tr> <tr><td style="font-size: small;">Demonstration of hearing test: yes/no</td></tr> <tr><td style="font-size: small;">Skill building for hearing loss identification: yes/no</td></tr> <tr><td style="font-size: small;">Difficulties encountered:</td></tr> <tr><td style="font-size: small;">Feedback from participants:</td></tr> </table>	District	Date of training	Training for primary level doctors/health workers/CBR workers	Venue	Trainer(s)	Number of trainees	Sessions held:	Physiology of hearing: yes/no	Hearing loss: causes and treatment: yes/no	Identification of hearing loss: yes/no	Raising awareness on hearing loss: yes/no	Demonstration of hearing test: yes/no	Skill building for hearing loss identification: yes/no	Difficulties encountered:	Feedback from participants:	
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Demonstration of hearing test: yes/no																
Skill building for hearing loss identification: yes/no																
Difficulties encountered:																
Feedback from participants:																
Name of training co-ordinator:																
Signature:																
Report to be submitted on seventh of every month to the District coordinator																

BOX 10. FACTORS TO BE CONSIDERED WHEN DEVELOPING A BUDGET

1. Capital or one-off expenses, including:

- equipment,
- vehicles,
- buildings.

2. Recurrent expenses, including:

- salaries,
- incentives,
- consumables (medicines, devices, etc.),
- overheads (maintenance and repair).

3. Potential sources of income:

- government,
- international donors,
- local support,
- service fees,
- sales of devices.

2.4. STEP 4 GETTING THERE

START IMPLEMENTATION

Implementation of the strategy has three key phases.

a. Pilot phase. The feasibility of the strategy or plan and its proposed interventions should be tested in one or more parts of the country before it is applied on a national scale. This gives an opportunity to refine the plan on the basis of feedback from the field. The pilot phase needs to be closely monitored and evaluated.

b. Expansion phase. Feedback during the pilot phase should be used to refine each of the interventions. Some interventions may have to be dropped because they are impractical or unacceptable to the community. Others may be added if there is demand from the community. The modified interventions can then be expanded to a wider population.

c. Evaluation phase. As the designated period for implementation of the strategic plan comes to the end, it is essential to evaluate the overall implementation and impact of the strategy. More information on this is given in section 3.

2.5. OTHER IMPORTANT ISSUES

The following factors should be considered and included in the detailed strategy.

- **Raising awareness.** Many people are not aware of the consequences of hearing loss, or of the possibilities for prevention and management. Myths and misinformation abound, often linked to unjustified stigma associated with hearing loss and use of hearing devices. It is therefore important to raise awareness about ear and hearing problems among individuals and communities.
- **Training.** This is a key aspect that should be included in every strategic plan. Ear and hearing health professionals should be trained to become master trainers, before they impart training to others. In addition, training should be given to general physicians, other health workers, teachers and community members. Hearing health professionals and planners should also be trained in public health planning for hearing impairment^a. Where possible, training should be integrated with existing programmes within the country's human resource development plan for health care.
- **Guidelines.** Clear guidance and relevant tools should be prepared for each activity. For example, if it is planned to screen for hearing problems in schools, standard operating procedures (SOPs) should be developed and screening questionnaires, tests and information materials prepared. SOPs should detail how, where and when people with a positive screening test should be referred.
- **Responsibility.** For each activity, one or more responsible persons should be designated. Many service providers may work in non-health sectors, such as education or social welfare. Their role in hearing health should be documented among their duties, and they should be appropriately trained, made accountable and remunerated in line with national policies.
- **Referral system.** The referral system may need to be strengthened to ensure that everyone identified as having hearing loss or ear disease attends the most appropriate health facility and receives suitable care.
- **Community focus.** The strategic focus for services should be at the community or primary level. Secondary and tertiary levels may need to be strengthened to be able to deal appropriately with referrals from the primary level.

^aFor example, Public health planning for hearing impairment, London, London School of Hygiene and Tropical Medicine (https://www.lshtm.ac.uk/study/cpd/hearing_health.html).

-
- **Intersectoral collaboration.** Efforts should be made to partner with different programmes in other sectors (see box 1), Integrated implementation can increase cost-effectiveness and sustainability of services.
 - **Workload.** It is important not to overburden service providers, including health workers and teachers. Wherever required, compensation for additional services should be provided in line with national policy.
 - **Learning lessons.** Lessons from successful interventions elsewhere may provide insights for future programming.
 - **Resources.** The availability of resources – including human resources, infrastructure and finance – is a key factor in the implementation of any strategic plan.
 - **Ethnic and cultural viewpoints:** the cultural context of the country or community for which the priorities are to be set must be considered during development and implementation of strategy.
 - **Management information.** If it does not already exist, a management information system for ear and hearing care should be set up as part of the national health information system. The system should be used to collect, analyse, and disseminate the data required for planning, management, monitoring and evaluation.

Possible features of a national plan are given in **Annex 4**

3 MONITORING AND EVALUATION

3.1 MONITORING

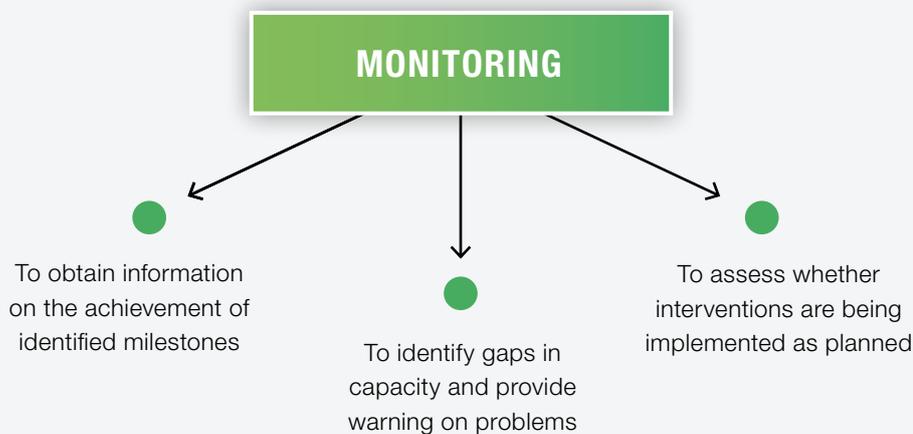
Monitoring is a continuous and systematic process to generate quantitative and qualitative data on the implementation of a strategy. The purpose of monitoring is to correct any deviation from the objectives and improve performance.

Monitoring answers the question, “*Are we doing what we said we would do?*” It compares the current status of a project with its stated goals, objectives and activities, and provides regular feedback on what milestones have been achieved. It assesses whether the interventions are being implemented as planned, identifies gaps in available capacity and gives early warning of problems (Figure 9). Some of the benefits and rules for monitoring are outlined in Box 11 and 12 respectively.

BOX 11. BENEFITS OF MONITORING

- Activities that are monitored are more likely to get done.
- If performance is not monitored, it is difficult to distinguish between success and failure.
- If success is not seen, it can't be rewarded.
- If failure is not recognized, it can't be corrected.
- If you can't demonstrate results, you can't sustain support for your actions.

FIG. 9. PURPOSES OF MONITORING



The NCEHH should monitor the development of strategy by the task force, to check that it is on track. If problems are found, it should assess what needs to be done to solve them while the planning is still going on, and before the strategy is finalized. The NCEHH should also monitor the implementation of the national strategy, using:

- an appropriate set of indicators that measures the day-to-day achievements of the strategy or process being monitored;
- monitoring tools that allow the systematic collection of relevant information.

The development of indicators and monitoring tools is discussed in section 2.3.

BOX 12. GOLDEN RULES FOR MONITORING

1. Do not collect data on too many indicators and do not collect data too often.
2. Use all the data collected on the monitoring indicators.
3. Use the data on the monitoring indicators at the level at which they are collected.
4. Educate staff about the need to collect data on monitoring indicators, and give feedback.
5. Don't make things worse! Don't destroy a monitoring system that works.

The national committee should also supervise the collation, analysis and interpretation of the data, and determine how the information is used to improve the further implementation of the strategy.

It is most important that information is fed back to the teams in the field that have collected the data, so that they feel their work is valued and their reports are used. Failure to do this can lead to poor collection of data in future and ultimately to failure of the monitoring process.

The national coordinator should lead and coordinate the monitoring process and ensure the timely collection of data.

Innovative methods of data collection, such as using mobile smart phones or email, may be appropriate. Specific personnel in the field should be made responsible and accountable for collecting data.

3.2 EVALUATION

Evaluation systematically and objectively assesses the relevance, performance and success of the strategic plan. It provides evidence of the overall achievement of the objectives and targets of the strategy, and helps to determine what worked well, what went wrong and why.

An evaluation is usually done at the end of a project or after several years of operation. It may be done as:

- ongoing evaluation: carried out at the end of a pre-agreed period or midway through a strategy or programme;
- terminal evaluation: within 6–12 months after completion of a programme;
- ex-post evaluation: after several years, when the full impact could be expected to have been realized.

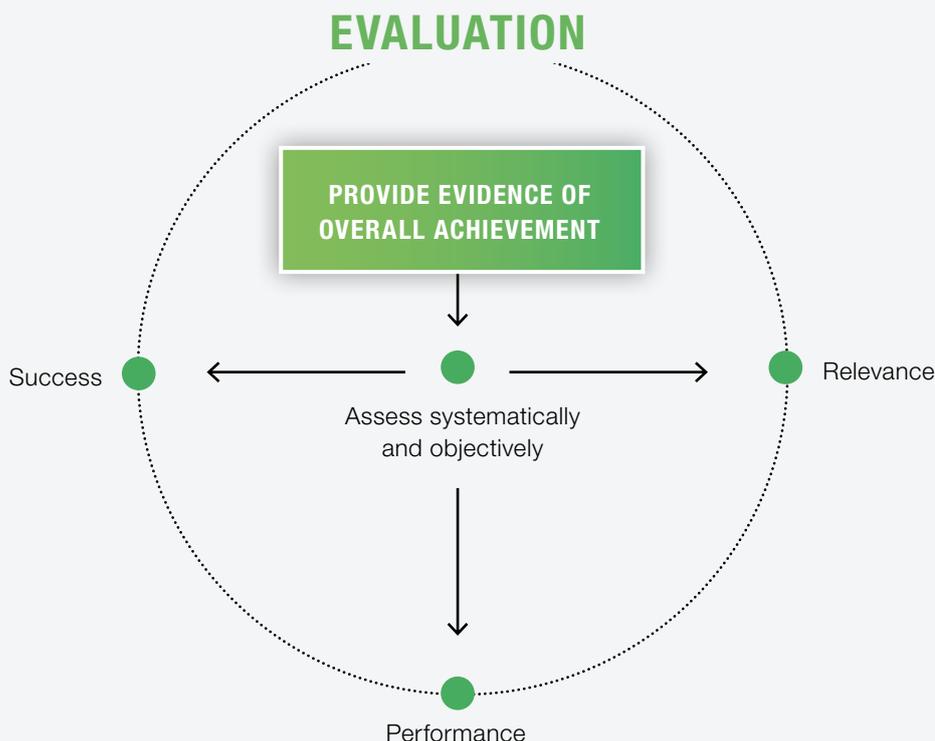
The timing of an evaluation, its terms of reference and its cost should be defined during the development of the strategy, before implementation starts. Resources should be allocated and ring-fenced, so that they cannot be used for any other purpose.

3.3 FEEDBACK AND CONSOLIDATION

Using the information gained from the evaluation, the strategic plan should be reviewed and revised through discussion with all stakeholders. The feedback should be critically analysed to understand the strengths and gaps in the interventions, as well as the feasibility of objectives. The results of the evaluation can also provide useful tools for advocacy.

It is important to understand that no strategy is perfect and all plans need to be refined over time, taking into account the context of the country and province. The next phase of the strategic plan should incorporate the lessons learnt from the previous phase.

FIG. 10. PURPOSES OF EVALUATION



ANNEXES

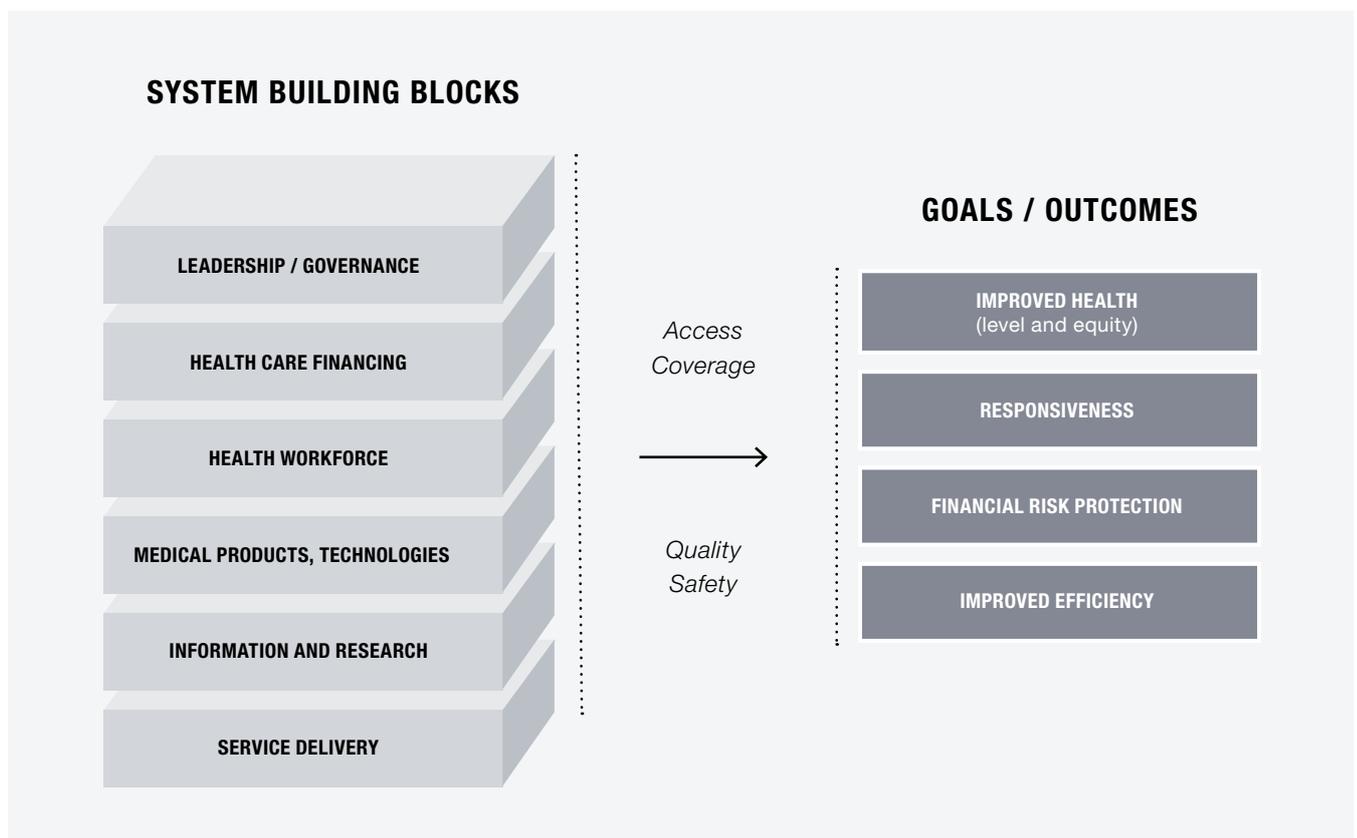
ANNEX 1. HEALTH SYSTEM APPROACH

A health system comprises all organizations, people and actions whose primary purpose is to promote, restore or maintain health. It delivers preventive, promotive, curative and rehabilitative interventions. The WHO framework for health systems consists of six “building blocks”, as shown below. The goals of the health system are to improve health, protect against financial risk, improve efficiency and be responsive to the needs of the people.

- Leadership and governance should ensure that strategic policy frameworks exist and are combined with effective oversight, coalition-building, appropriate regulations and incentives, attention to system design, and accountability.
- A good health financing system raises adequate funds for health, in ways that ensure that people can use needed services, and are protected from financial catastrophe or impoverishment as a result of having to pay for them.
- A well-performing health workforce is responsive, fair and efficient, and achieves the best health outcomes possible with the available resources and circumstances. There are sufficient numbers and an appropriate mix of staff, fairly distributed; the staff are competent, responsive and productive.

- A well-functioning health system ensures equitable access to essential medical products, vaccines and technologies of assured quality, safety, efficacy and cost-effectiveness, and their scientifically sound and cost-effective use.
- A well-functioning health information system ensures the production, analysis, dissemination and use of reliable and timely information on health determinants, health systems performance and health status.
- Good health service delivery provides effective, safe, quality, personal and non-personal health interventions to those who need them, when and where needed, with minimum waste of resources.

More information about the health system approach is available from the WHO Regional Office for the Western Pacific: http://www.wpro.who.int/health_services/health_systems_framework/en/



ANNEX 2. SERVICES

The matrix below can be used to list possible activities for ear and hearing care according to the approach (promotive, preventive, curative, etc.) and the level at which the activity should take place.

What follows is a list of relevant activities that can be undertaken at the various levels of health care. The activities listed are not necessarily comprehensive or essential. They may be used as a reference by countries that are seeking to define their objectives and plan activities. The services to be provided within the framework should be determined in the light of national priorities, available resources, and the ethnic and cultural context.

At each level, it is essential to know which cadres will be involved and what resources they require to carry out the activity.

COMMUNITY

Health promotion and disease prevention

- Antenatal, natal and postnatal care, awareness of risk factors for hearing loss.
- Raise awareness of language milestones, significance of delay.
- Raise awareness of ear diseases, hearing loss, and

healthy ear and hearing care habits, including personal hygiene, avoidance of foreign bodies and some traditional treatments, importance of breastfeeding, better nutrition.

- Raise awareness of vaccine-preventable ear and hearing disorders.
- Raise awareness of inherited causes of hearing loss and links with consanguineous (first cousin) marriage.
- Raise awareness of adverse effects of noise in occupational and social settings. Importance of hearing conservation programmes and legislation.
- Raise awareness that some antibiotics cause hearing loss (e.g. avoid injections from unlicensed practitioners).
- Include of hearing care in school health awareness programmes.
- Raise awareness of hearing loss related to ageing and its negative impact on communication, social and health.
- Implement initiatives such as World Hearing Day,^a Make Listening Safe^b and Less-Noise Cities^c.

Resources required:

- a range of promotional materials in the local language and adapted to the local setting; and
- training materials for health workers, e.g. a manual on primary ear and hearing care.

Level	Health promotion/ disease prevention	Curative (identification and management)	Rehabilitative	Supportive
Community				
Primary				
Secondary				
Tertiary				

^a <http://www.who.int/pbd/deafness/news/WHD2016/en/>

^b http://www.who.int/pbd/deafness/news/safe_listening/en/

^c http://www.soundhearing2030.org/less_noise_cities_recommendations.pdf

IDENTIFICATION AND MANAGEMENT OF EAR AND HEARING DISORDERS

- Identification of common ear diseases (such as ear discharge, impacted wax, foreign body in ear canal), hearing loss, and developmental disorders of speech and language by parents, teachers and community-level health workers, including traditional healers.
- Management of discharging ear and referral, as per established guidelines.
- Early identification of hearing loss and referral services, as per established guidelines.

Resources required:

- basic diagnostic equipment;
- syringing equipment;
- training materials for health workers;
- referral forms and SOP for management

REHABILITATION

- Provide loop systems (for use by people with a hearing aid) in schools and public venues.
- Educate schools regarding preferred seating for children with hearing loss.
- Promote the use of sign language and other visual communication methods.
- Provide training in appropriate use of hearing devices.
- Provide support for availability and purchase of hearing aid batteries.
- Provide support to follow recommended therapy (such as auditory training).
- Integrate with local community-based rehabilitation (CBR) programme if available.
- Provide vocational training.

Resources required:

- equipment;
- devices;
- training programmes.

SUPPORT

- Psychosocial peer support, peer support programmes, older children educating and monitoring younger children.
- Provide support and self-help groups for parents, users of hearing aids, mental health patients, prisoners.
- Provision of non-auditory indicators or assistive devices for safety (such as visual or vibratory fire alarms, visual indicators of a knock at the door and phone ringing).
- Provide access to communication through – loop systems, telephone systems, captioning (broadcast captioning), mobile phone texting.
- Provision of information about support services, disability benefits including occupational compensation, and human rights.

Service providers and others who can be trained or involved include:

- community-level health workers, including traditional healers;
- CBR workers;
- schoolchildren and students;
- parents;
- teachers, including teachers of the hearing-impaired;
- groups of people with hearing loss and parent groups;
- NGOs working in the community;
- any other relevant health care providers working at community level;
- community leaders, including religious leaders.

ANNEX 3. POSSIBLE INDICATORS

A number of indicators are listed below, which may be suitable for monitoring and evaluating national ear and hearing care strategies. They are intended only as examples; each country should develop its own indicators, tailored to the activities, objectives and aims of the strategy or programme. Not all these indicators should be monitored, since collection of too much data will overburden the health system. Equally, some indicators not listed here may be needed for particular local situations.

PROCESS INDICATORS

- National committee set up a national strategic plan for hearing care approved or reviewed by the committee (source: meeting records).
- Project strategy or protocol defined. (source: meeting records, strategy documents)
- Number of personnel trained and available, total and per 100 000 population, annually:
 - primary ear care workers;
 - CBR workers;
 - clinical officers in ENT or audiology;
 - ENT specialists;
 - audiologists, speech therapists;
 - audiological and hearing aid technicians.

(Sources: government, relevant councils and professional associations.)

- Number and distribution of people screened for ear diseases and hearing loss, total and per 100 000 population, quarterly or half-yearly:
 - neonates and infants;
 - schoolchildren;
 - persons over 65 years of age.(Source: reports from screening programmes.)
- Coverage of health education programme at district level, annually (source: district or regional routine data or project reports).

OUTCOME INDICATORS

- Number of patients treated for hearing-related problems at primary, secondary and tertiary facilities each year (source: reports and statistics from health facilities).
- Percentage of special and mainstream schools providing education to children with hearing loss (source: reports from education department).
- Percentage of patients with hearing loss benefiting from a hearing device,^a as a percentage of those fitted with a hearing device; proportion per 100 000 population
- Number of patients undergoing ear surgery at the secondary or tertiary level, per 100 000 population (to be correlated with the prevalence data) (source: reports and statistics from hospitals).
- Number referred or treated for complicated otitis media per 100 000 population per year (to be correlated with the prevalence data) (source: reports and statistics from hospitals).
- Number of deaf or hard of hearing children per 100 000 population graduating each year from:
 - special schools for the deaf;
 - mainstream schools.

(Source: data from education department or social welfare services responsible for special schools.)

IMPACT INDICATORS

- Reduction in prevalence of hearing loss and ear diseases in the country or in specific districts (source: epidemiological surveys).
- Proportion of people with hearing loss receiving or having received university education (source: national census).
- Proportion of people with hearing loss in formal employment (source: national census).

^a Return to facility for maintenance of device may be considered as evidence of benefit.

ANNEX 4. FEATURES OF A NATIONAL STRATEGIC PLAN

LEADERSHIP AND GOVERNANCE

- Establishment of a national committee or other authority to promote, initiate and coordinate ear and hearing care policy development.
- Establishment of an office of national coordination for operational planning, monitoring and evaluation.
- Validation and statement of a national strategy or policy for ear and hearing care and the prevention of deafness and hearing impairment.
- Identification of personnel, facilities and strategies or programmes already active in ear and hearing care.
- Formulation of a plan of action, with the identification and analysis of required tasks.

INFORMATION

- Assessment of ear disease and hearing loss through collection and review of existing information, and prevalence and cause surveys.
- Development of a comprehensive management information system.
- Evaluation of the time, cost and performance of activities:
 - measurement of the effect on prevalence of hearing loss and of specific disorders;
 - assessment of other useful indicators, such as the development of ear health services, community participation, and changes in social and economic factors related to hearing disability and its prevention.

SERVICE DELIVERY

- Implementation of a primary ear and hearing care approach.
- Strengthening of secondary and tertiary facilities to support primary ear and hearing care.
- Temporary use of mobile units if applicable, and organization of other outreach activities, such as school screening camps.
- Medical management and prevention of the major ear and hearing disorders.

HUMAN RESOURCES

- Training and continuing education of personnel:
 - primary health care workers;
 - teachers;
 - specialized audiological auxiliary staff;
 - general physicians, paediatricians and geriatricians;
 - audiologists and ENT specialists.
- Supervision, motivation and evaluation of personnel at all levels and the provision of suitable career structures.
- Promotion of health education and community participation.

FINANCE AND TECHNOLOGY

- Provision of salaries and necessary expenses for personnel, equipment, supplies and transport.
- Promotion of appropriate technology, e.g. affordable, high quality hearing devices, diagnostic equipment and surgical equipment.
- Mobilization of financial and other resources from national government, governmental and intergovernmental agencies, private funds or donations, and NGOs.

FURTHER READING

1. Chandler I. *Advocacy for eye health: a practical guide*. London, International Agency for the Prevention of Blindness, 2012 (http://www.iapb.org/sites/iapb.org/files/Advocacy_Guide_6%2020_0.pdf; accessed 6 November 2015).
2. *National eye health coordinator manual*. London, International Agency for the Prevention of Blindness (<http://www.iapb.org/sites/iapb.org/files/National%20Eye%20Health%20Coordinator%20Manual.pdf>; accessed 6 November 2015).
3. *Strategies for the prevention of blindness in national programmes. A primary health care approach*. 2nd ed. Geneva, World Health Organization, 1997 (<http://apps.who.int/iris/bitstream/10665/41887/1/9241544929.pdf>; accessed 6 November 2015).
4. Dyer G. *Planning for VISION 2020 at the district level. A manual*. London, International Centre for Eye Health, 2006 (http://www.iapb.org/sites/iapb.org/files/Planning%20for%20VISION%202020%20at%20the%20District%20Level_A%20Manual.pdf; accessed 6 November 2015).
5. *Ear and hearing care: situation analysis tool*. Geneva, World Organization, 2015.
6. *Primary ear and hearing care training resource*. Geneva, World Health Organization, 2006 (see especially Advanced level, Development of a national programme for prevention of deafness and hearing impairment, pp 86–90; http://www.who.int/pbd/deafness/activities/hearing_care/advanced.pdf; accessed 6 November 2015).
7. *Newborn and infant hearing screening. Current issues and guiding principles for action*. Geneva, World Health Organization, 2010 (http://www.who.int/blindness/publications/Newborn_and_Infant_Hearing_Screening_Report.pdf; accessed 6 November 2015).
8. *Monitoring the building blocks of health systems. A handbook of indicators and their measurement strategies*. Geneva, World Health Organization, 2010 (http://www.who.int/healthinfo/systems/WHO_MBHSS_2010_full_web.pdf; accessed 6 November 2015).
9. *Everybody's business. Strengthening health systems to improve health outcomes*. Geneva, World Health Organization, 2007 (http://www.who.int/healthsystems/strategy/everybodys_business.pdf; accessed 6 November 2015).

**FOR MORE INFORMATION,
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