

Workbook

Self-Assessment of the Human Resources for Health Planning Process

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Introduction

In connection with the 10th meeting of the Technical Commission for Human Resources Development in Central America and the Dominican Republic, a three-day workshop was held to help identify the current situation in each country regarding the human resource planning process and capacity-building to measure gaps in achieving universal access and coverage objectives.

This workshop was designed to make attendees familiar with the self-assessment process related to the planning of Human Resources for Health (HRH) in uncertain situations and with fragmented systems, as well as to raise awareness about the need to map actors involved in the planning process. During the workshop, participants worked sequentially on different phases of the self-assessment process. After the workshop was over, each country was encouraged to voluntarily conduct the self-assessment exercise.

To facilitate and catalyze the self-assessment exercise on HRH planning, this workbook was prepared to methodologically guide the process.

The workbook is structured in four sections, the first three exclusively related to the self-assessment exercise.

To supplement the process, each team can receive feedback on the work carried out according to the guide proposed by its PAHO Representative Office and, if this work is completed between June and October 2017, the country will receive a specific feedback from the regional PAHO office and the Andalusian School of Public Health (EASP).

Workbook's Structure

The self-assessment process is organized in three phases. The process begins with what is referred to as "*Phase 0 Beginning the Planning Process*", which is key for tackling the project. This phase includes the composition of the *Coordinating Committee* as well as the definition of the objective of the process and its general timeline.

Next is *Phase 1 Analysis of the HRH Planning Context and Actors Involved*, which seeks to guide the description process, strategic assessment, and actors, required to ensure appropriate HRH Planning. This phase also includes an analysis of the health care model and the higher education system.

The next section of the guide is *Phase 2 Base Year Analysis*, which is the **core objective** of this workbook. It seeks to identify the supply and demand for professionals in the country in the base year. This involves being familiar with and describing all accessible information systems and identifying the variables that influence supply and demand. **This is the final phase of the self-assessment exercise.**

The last section of the workbook is *Phase 3 Building a Reference Model for HRH Planning*, which guides activities for projecting supply and demand and measuring the gap between them. As indicated, this phase is not part of the self-assessment exercise per se, but it is introduced in order to guide participants and focus on the steps to follow in an uncertain environment.

Phase 0 Beginning the Planning Process

- Establishment of the Coordinating Committee for the process.
- Identification of the objectives of planning process.
- Timeline and work plan.

Phase 1 Analysis of the HRH Planning Context and Actors Involved

- Subphase 1.1 Formulation of a SWOT matrix to describe the current HRH Planning situation in each country from the perspective of the responsible entity, i.e. the Ministries of Health. The formulation of strategies that maximize the strengths and minimize the weaknesses of the process is also included.
- Subphase 1.2 Mapping of actors.

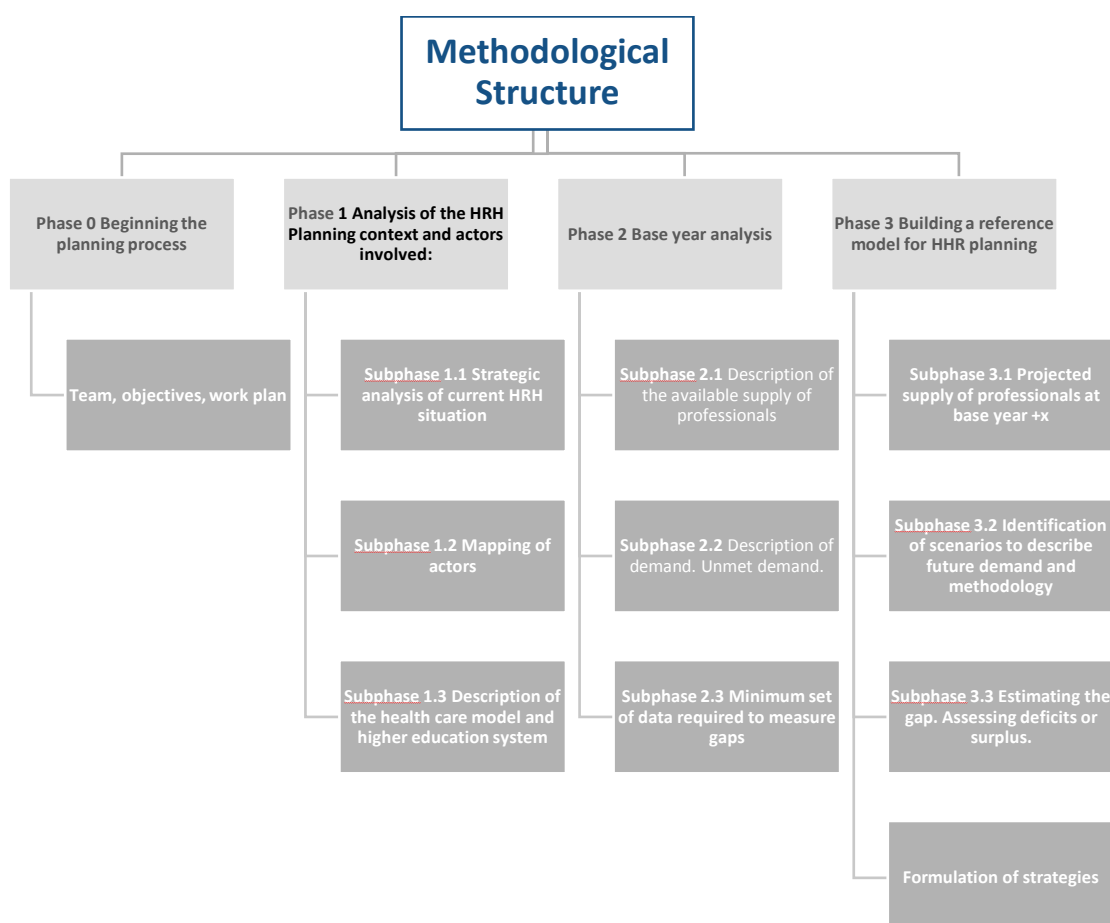
- Subphase 1.3 Description of the healthcare model and higher education systems.

Phase 2 Base Year Analysis

- Subphase 2.1 Description of available supply of professionals.
- Subphase 2.2 Description of demand. Unmet demand.
- Subphase 2.3 Minimum set of data required to measure gaps

Phase 3 Building a Reference Model for HRH Planning

- Subphase 3.1 Projected supply of professionals at base year +x
- Subphase 3.2 Identification of scenarios to describe future demand and methodology
- Subphase 3.3 Estimating the gap. Assessing deficits or surplus
- Formulation of strategies



Phase 0 Beginning the Planning Process

This is the preparation phase of the planning process. Its proper execution will largely determine the success of the project. In this phase, we need to successfully organize the process that we are going to undertake. To do this, we recommend setting up a permanent Committee for the Strategic Planning of Human Resources in Health in order to guarantee that this process is included in the agenda of academic, labor, professional and ministerial institutions. This Committee should be integrated by representatives of those institutions influencing/regulating the supply and demand of professionals.

The offer of professionals depends not only on the academic institutions regulating the undergraduate but also on the postgraduate and specialized training (influencing the number of places, cycle duration, profiles and curricula). The professionals' needs are specified by the Ministry of Health as well as by the major suppliers of Public Health Services (Social Security, Military Health, etc.) and relevant private institutions. We should also take into account every college and professional society which play a relevant role.

The responsibility of the process lies in the representative skilled in this subject, usually belonging to the Ministry of Health of the countries as the governing body of the process. For this purpose, it is recommended the creation of a coordinating team integrated by representatives of different areas of the Ministry of Health (with Planning, Public Health and Service Management profiles). This team is usually in charge of leading the technical process in order to identify data sources, do the analysis of the base situation and carry out future projections according to the scenarios established by the Strategic Planning Committee. It is also responsible for enhancing and articulating the proper coordination of the various agents involved. Furthermore, they should count with the support of computer technicians with a proper management of databases (there will be many bases to be integrated) together with a mathematical/statistical profile enabling to perform data analysis and the approach of a projection model according to the algorithms defined by the strategic committee.

The Coordinating Committee will determine how to operate as well as the distribution of roles. One member will act as spokesperson, lead the team, and be responsible for calling any meetings required during the process. It is important to remember that this is a methodologically-assisted self-assessment exercise: its success depends on the work performed

by the Strategic Committee and the Coordinating Committee, which is the main actor in this proposal.

The Committee's duties and commitments include the following:

During the implementation stage, the Committee will:

1. Identify the objective of the planning process. This project is being implemented to address a strategic aspect of the health system. It is essential that the team clearly define the objectives to be achieved and outcomes to be obtained.
2. Determine the structure and define the professional profiles that will provide technical support for the process and clearly identify the activities and duties.
3. Assess the implications for the organization. The implementation of this process will generate certain expectations, workloads, etc., which must be taken into account.
4. Organize the process: timeline and *appointment of responsibilities*.

During the course of the process:

1. Activities Monitoring
2. Incident management

Conclusion of the process

1. Outcomes presentation
2. Discussion and conclusions
3. Process evaluation of the process
4. Drafting of proposals for improving the process

Expected outcomes Phase 0:

1. Communication of the establishment of the Coordinating Committee, its duties and roles. *This information should be provided at the beginning of the process in order to give access to the specific communication are available on the Virtual Campus for Public Health**https://cursos.campusvirtualsp.org/course/view.php?id=2_06§ion=1
2. Objective of the planning process

3. Professional profiles that will provide technical support and identification of the specific activities to be carried out by those professionals
4. Assessment of implications of the implementation of this process for the Organization in terms of resources, expectations, communication
5. Timeline and coordinators of the activities

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Phase 1 Analysis of the HRH Planning Context and Actors Involved

Subphase 1.1 Formulation of a SWOT matrix

The objective is to describe the current situation of HRH planning in each country from the perspective of the responsible entity. This involves conducting a strategic analysis to obtain structured knowledge about the current state of the planning process.

To this end, we recommend using the SWOT analysis method to examine the situation from both an internal and external perspective.

The first perspective analyzes the strengths and weaknesses of the public health system (internal environment), taking into consideration the surrounding circumstances and based always on real and objective facts. In this subphase, we analyze resources and capacities, considering a wide diversity of factors related to the delivery of care, financing, general organization, etc.

The second perspective is when the Ministry or HRH planning regulatory authority identifies the current threats and opportunities present in the health sector (external environment), not only in order to solve them but also to take advantage of them with anticipation. This process involves flexibility and dynamics and requires the definition of parameters of movement and the recognition of “competitors” to confront.

- WEAKNESSES AND STRENGTHS:
 - **Internal** factors in the Ministry of Health that affect the possibilities of the Human Resources development planning process.
- THREATS AND OPPORTUNITIES:
 - **External** conditions and influences that affect the future development of the Human Resources planning process.

Examples:

- Weakness:
 - Fragmented HRH information system.
 - Shortage of qualified HRH to undertake the planning process.
- Strength:

- Team of professionals in the Ministry of Health strongly committed with the development of strategic HRH management processes.
- Threats:
 - Union disputes
 - Growth of the private health sector
- Opportunities:
 - Favorable trends in the country's development.

To summarize, the idea is to identify what the negative points are - threats and weaknesses-, what the positive points are -opportunities and strengths - and what is achieved.

Subphase 1.2 Mapping of actors.

The objective of this subphase is to **map the actors who should be involved in the different phases of the process**. The implementation of a HRH Planning process that includes different perspectives is indispensable to ensure acceptance of the results of the planning process and establish future scenarios in terms of supply or demand needs. Participation is the key to success in uncertain environments. Furthermore, participation in decision-making will help implement any proposed changes to the model. The possible self-exclusion of professional and union groups should be considered, in some cases related to a lack of motivation and alignment with the changes to be introduced.

To this end, we recommend answering the following questions in advance:

1. Who is responsible for HRH Planning in your country?
2. **Who should participate** in the planning process? Why?
 - Identify who should be politically and technically responsible, and how continuity can be ensured
3. **Who participates** in the HRH Planning process?
4. What happens if all the required actors are not involved? How do you propose dealing with this situation; in other words, what is your **Plan B**?

Next, the map of actors and incidence management should be prepared, by filling out the following table:

Who should participate	Principal function	Degree of responsibility (high, medium, low)	Do they currently participate in the planning process?	In the event of problems including this actor, What is your proposed plan B?

Subphase 1.3 Description of the health care model and higher education system

The availability of human resources for health is contingent on the health care model. Balancing the supply of and demand for health professionals from the perspective of obtaining better health outcomes is an extremely complex issue. This requires conducting an in-depth and rigorous analysis of numerous factors, and making appropriate and consistent decisions on those elements that can be modified.

The planning model designed should meet the objectives of each health system. The establishment of care standards and any other measures will depend on this model. For this reason, it is important to answer the following questions in phase one:

- Health system structure and coverage (public and private):
 - How is it financed?
 - Who manages financing?
 - Who are the health care providers?
 - How is care organized? Are there integrated networks?
 - Principal health service problems
 - Incorporation of gender perspective
- Main health policy issues and challenges in terms of universal access and coverage

The second major analysis involves describing the educational system for health professionals. For example, the essential objective of the HRH planning system in the countries of the Organization for Economic Cooperation and Development (OECD) is to strike a balance between supply and demand for a specific profession. This is why the variables that influence the availability of health professionals in a country must be identified and measured in the planning

process. The variables identified on the supply side are those that determine the number of graduates (e.g. incoming students and graduates from the faculties). Secondly, and in the case of specialists, there must be a balance between medical school graduates and the supply of specialized medical internships and other possible paths to specialization. Finally, all demographic factors, labor factors and migration flows that influence the availability of specialists in a country must be taken into consideration.

It is important to consider the following issues:

- Education system structure and coverage
 - Higher education model
 - Quality and accreditation of higher education
 - Financing
 - Description of the health professional education system:
 - Identification of key milestones in the system
 - Identification of perceived problems in the system

Expected outcomes

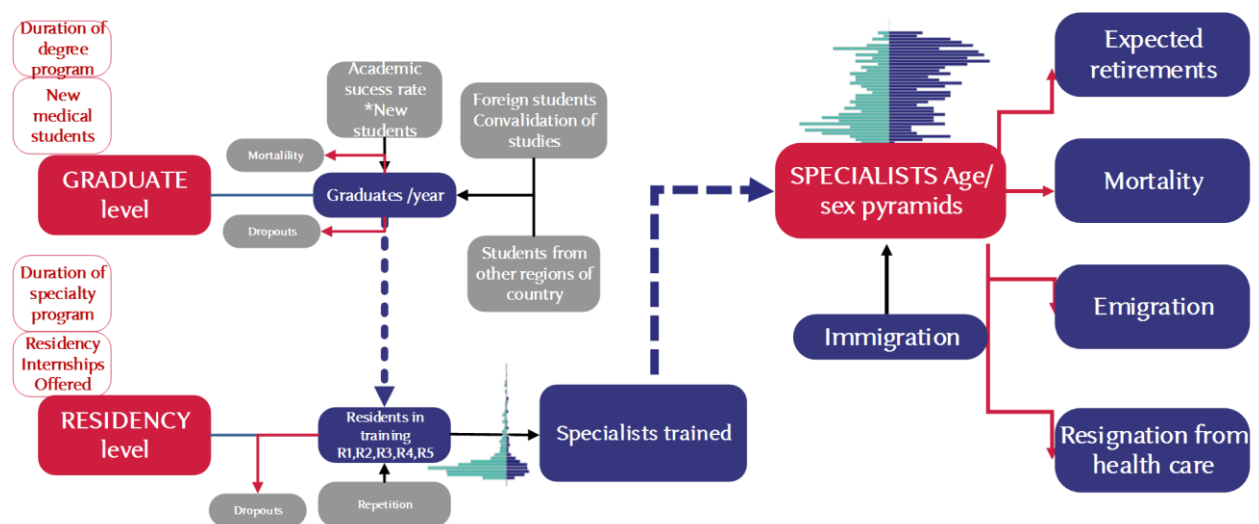
1. SWOT matrix and brief report on the methodology used, difficulties, and achievements
2. A brief actor mapping report that answers the following questions:
 - Who is responsible for HRH Planning in your country?
 - **Who should participate** in the planning process? Why? Identify who should be responsible for policy and technical issues, and how continuity can be ensured.
 - **Who participates** in the HRH Planning process?
 - What happens if all the required actors are not involved? How do you propose dealing with this situation? In other words, what is your **Plan B**?
 - Actor mapping table using the format indicated in Subphase 1.2
3. Description of the health care model and higher education system.
4. Health system structure and coverage (public and private):
 - a. How is it financed?
 - b. Who manages financing?
 - c. Who are the health care providers?
 - d. How is care organized?
 - e. Principal health service problems
 - f. Incorporation of gender perspective

5. Main health policy issues and challenges in terms of universal access and coverage.
6. Education system structure and coverage
 - a. Higher education model
 - b. Quality and accreditation of higher education
 - c. Financing
 - d. Description of the health professional education system:
 - i. Identification of key milestones in the system
 - ii. Identification of perceived problems in the system.

Phase 2 Base Year Analysis

HRH Planning, like any other attempt to plan for the future, is not an exact science. There is a need to make continuous improvements in the methodology and in data sources in order to improve the accuracy of projections as well as their usefulness in simulating different scenarios for future policies.

First of all, the theoretical model of HRH Planning and its causal relationships must be defined in order to portray the most relevant aspects and depict the system as it actually functions. The following image graphically illustrates a model and its relationships:



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Any planning model involves an analysis of the current situation in the base year and its possible behavior at base year + X.

Subphase 2.1 Supply of health professionals

The supply of health professionals refers to their availability in the labor market. Current and future supply of health professionals is affected by the number of people entering and leaving each profession, as well as by the activity rates of health professionals (working hours).

The list of variables that are taken into account in this "flow-stock" approach largely depends on the availability of data and the importance of the different variables in given countries for the different professions.

The participating countries are encouraged to use the Description of the Available Supply of Professionals in this workbook, by addressing the following elements:

- Selection of key professional roles to plan for.
- Identification of training courses offered and migration flows
- Identification of active professionals and working hours in the public and private sectors with a gender approach
 - Direct and indirect sources of information
 - Data structure
 - Descriptive study: What variables can be included? Why are they important?
 - Is it possible to determine the number of working hours per professional? If so, use full-time equivalent workers as the unit of measurement.
- Identification of people leaving the system.

Subphase 2.2 Demand for health professionals

The demand of health professionals is established after identifying the needs of the population in the context of the health care model defined by the health policies of the country. There are many factors that affect the current and future demand for health services and thus health workers. The principal factors are the following ones:

- demography
- morbidity (or epidemiology)
- the use of health services (or medical care needs in the case of systems that use a broader approach for measuring demand)
- the different health care delivery models (which may influence primary care workforce, hospitals and long-term care requirements)
- economic growth and associated increase in health expenditure (which will influence the ability to pay for health services from public or private sources).

Measuring these factors and their impact on the need for health professionals is a very complex task.

To determine **demand in the base year**, we recommend identifying the existence of unmet demand by answering the following questions:

- What demands are currently being met? This information can be calculated by at least identifying the supply of professional services in the public sector.
- Is there unmet demand? How is it measured or identified?

Subphase 2.3 Minimum set of data required to measure gaps

Once the factors and variables needed for the HRH Planning model have been defined, the next major challenge is to identify the database systems and information sources in your country that contain that data. Therefore, in this section please identify these sources of information, the value contributed, and any limitations. To facilitate this task, you can fill out the following table:

Database or source of information	Description	IDs/Link	Unit of analysis	Variables	Limitations
EXAMPLE					
Medical Association Database in province XX	<i>Licensed physicians in the province of</i>	<i>Tax identificationNo .</i>	<i>Physician / Province</i>	<i>Age Sex Specialty</i>	<i>Impossible to differentiate practicing physicians from those who retired</i>

Expected outcomes

- Table in Subphase 2.3 filled out.
 1. If anything is missing from the information systems in terms of identifying the different variables that limit the measurement of gaps:
 - Proposal of a road map for building an information system.
 - Alternatives for inferring some of the data depending on the indicated limitations.
 2. If there is sufficient information:

For professionals' supply:

 - Population pyramid of health professionals studied in the base year.
 - Distribution of employees in the different geographical areas (total, public and private sectors).

- Calculation of the number of professionals per population served (total, public and private sectors).
- Value provided by the selected variables to describe the supply, both new arrivals (through immigration, new graduates, etc.) and exits (retirements, emigration, death, etc.).

For demand:

- Information on demand that is currently being met.
 - Information on unmet demand and estimation of the number of additional professionals and cost that would be required to meet this type of demand.
- Assessment of economic viability.

Phase 3 Building a Reference Model for HRH Planning

The self-assessment exercise ends in Phase 2. However, the following guidelines are provided to build a HRH Planning model.

Subphase 3.1 Projection of professional supply per year +x.

The projection of professionals supply can be approached using different methodologies. Each country, depending on its capacities and resources may recommend using whichever methodology it deems most appropriate. If the previous phases have been properly addressed, an affordable option would be to start with the population pyramid in the base year for the selected professional categories, and then project the stock of professionals over the next 10 years by adding new arrivals to the system and subtracting the professionals leaving it, based on the variables considered in Subphase 2.1.

	New Arrivals				Exits				Supply in previous year	Projected supply: Supply + Arrivals - Exits
	Variable 1	Variable 2	Variable 3	...	Variable 1	Variable 2	Variable 3	...		
2018									Supply calculated base year 2017	
2019									Projected supply 2018	
2020									Projected supply 2019	
2021									Projected supply 2020	
2022									Projected supply 2021	
2023									Projected supply 2022	
2024									Projected supply 2023	
2025									Projected supply 2024	
2026									Projected supply 2025	
2027									Projected supply 2026	

Subphase 3.2 Identification of scenarios to determine future demand and methodology

To determine **future demand**, we recommend using the following scenarios. The conditions and sources of information in each country will determine how these scenarios are assessed and the feasibility of using them.

Scenario 0. Demographic changes

Projections of the future number of physicians, nurses, and other health workers are primarily based on the age distribution of the current workforce, and the principal task will be to evaluate the need to replace those who expect to retire in the next few years.

On the demand side, the models are also based primarily on demographic changes at the most basic level and only take into account changes in population size. At a slightly more advanced level, they include changes in population structure (and the higher demand that could arise from an aging population).

To be able to use this scenario, we need to know, at least, what are the population growth estimates.

To this end, please answer the following questions:

- ▀ What sources of information are available?
- ▀ What are the limitations of this scenario?
- ▀ Who would be your partners in addressing this scenario?

Scenario 1: Epidemiological and sociocultural changes

This scenario adds the influence of epidemiological and sociocultural changes on the projection model. Epidemiological trends represent changes that occur in the prevalence and incidence of the disease. Lifestyle factors, for example, the influence on the incidence of certain diseases. Health statistics periodically published may be used. The real value of this factor can be defined as an annual rate of change (increase or decrease) in the demand for a profession due to epidemiological

changes between the base year and the target year. Experts can estimate this percentage by using the aforementioned sources and including their own expectations.

Sociocultural changes such as increases in patient empowerment and differences between ethnic groups in terms of health care demands. The existence of “patient activation” initiatives is an important element for achieving the transformation of health. These changes may lead to an increase in the real demand for health care and, subsequently, an extension in the offer of health services needed. The value of this factor can be defined as the annual rate of growth in the demand for health professionals due to these sociocultural changes, a rate that is also determined by experts.

- ▀ How would you methodologically address this?
- ▀ What sources of information could you use?
- ▀ What is the advantage of using this scenario in the planning process?
- ▀ Who would you work with on this scenario?

Scenario 2: Technological progress, efficiency, and horizontal and vertical replacement

This scenario includes technological changes, efficiency, and horizontal and vertical placement after consulting with experts. Technological changes in the work process basically depend on the type of specialty/profession, and research and development. The proportional influence of this factor on future demand should be estimated by experts in the specific medical specialization area. In addition, the efficiency and productivity of services may be affected by technological developments per se.

The third element that we include in this scenario is a consideration of changes produced by horizontal replacement. Horizontal replacement refers to task-shifting between different professionals at the same occupational level, such as physical therapists and occupational therapists. Horizontal replacement may occur at either the hospital or primary care level. In the case of medical specialists, we have the concept of inter-specialized or pluri-specialized medical procedures, which are those that can be performed by practitioners with different specializations, so long as it can be demonstrated that they received training in that area and are competent to

perform them. The best way to include this in the model is to ask professional associations for their opinion regarding the value of this element.

The final element in the scenario is based on changes that may occur through vertical replacement. Vertical replacement is a shifting of activities between professionals at different occupational/educational-training levels, such as between family doctors and nursing professionals. As with horizontal replacement, information on references and the delegation of tasks are used to measure vertical replacement. Experts assess this component in terms of the percentage of the annual change expected in the demand for care.

It is evident that the elements described above completely depend on the estimates made by panels of experts and their ability to predict and plan. To avoid the domination of a particular interest group, the expert panels will be comprised of professional associations, educational institutions, licensing boards, public administration, unions, and patient experts. These experts must be instructed to base their opinions on their own experiences, while also using data from research on specific topics. The process of selecting these panels of experts will be done in a structured manner.¹

Using the information provided for this scenario, please reflect on the following:

- What methodology would you propose using to define this scenario in your country's projection model?
- How useful is this scenario?

Subphase 3 .3 Estimating the gap. Assessing deficits or surplus

The final step in the simulation model is to calculate the difference between the required supply (demand) and expected supply, and assess the magnitude of any discrepancy. The objective of the simulation model is to strike a balance by adjusting the number of HRH required in the future. The difference between supply and demand is the gap. This shows the disparity between the projected

¹ We recommend using qualitative research techniques as the nominal group technique, headed by a person familiar with the methodology. If there is a group willing to do this, specific support will be provided.

availability of professionals and the desired target value to be achieved by estimating a percent range for the deficit or surplus.

Gap = Supply-demand (projection year)

% Gap *or* Rate of need = (Supply-Need/Supply)*100 (projection year)

This entails quantifying whether or not the deficit or surplus is acceptable. For example, we could establish the following ranges:

- %balance \geq 25% difference = Severe Surplus
- 15%-25% = Moderate Surplus
- 0-15% = Equilibrium
- < 0% = Deficit

Taking these considerations into account, please answer the following questions:

- ▀ The determination of these ranges has a number of economic, social, and other implications. How would you quantify these implications?
- ▀ How much can be financially managed?

Formulation of Strategies

Given these scenarios and revisiting the SWOT analysis that was conducted, we must be able to answer the following questions in order to formulate any strategies: How can each strength be maximized? How can each opportunity be taken advantage of? How can each weakness be contained? How can we protect ourselves from each threat?

It is important to formulate **strategies that maximize strengths and minimize weaknesses in our process**, which can then be used by the Coordinating Committee to monitor the process.

	WEAKNESSES	STRENGTHS
THREATS	Survival strategies (avoidance and redesign)	Defensive strategies (maximize strengths)
OPPORTUNITIES	Reorientation strategies (internal adjustments)	Empowerment strategies (growth and innovation)

Methodology

The methodological approach in this subphase will be determined by each country, although **we recommend using a participatory process with group techniques**. By exploring the opinions of different interest groups in the health system, the current situation can be defined from different points of view.