

## What is a health system?

A health system consists of all the organizations, institutions, resources and people whose primary purpose is to improve health.<sup>1,2</sup> This includes efforts to influence determinants of health as well as more direct health-improvement activities. The health system delivers preventive, promotive, curative and rehabilitative interventions through a combination of public health actions and the pyramid of health care facilities that deliver personal health care — by both State and non-State actors. The actions of the health system should be responsive and financially fair, while treating people respectably. A health system needs staff, funds, information, supplies, transport, communications and overall guidance and direction to function. Strengthening health systems thus means addressing key constraints in each of these areas.

## Frameworks for monitoring health systems performance

The multifaceted nature of health systems and the spread of direct and indirect responsibilities across multiple sectors, pose challenges in monitoring performance. In response, over the past several years, the World Health Organization (WHO) and its partners have been working to reach a broad-based consensus on key indicators and effective methods and measures of health systems capacity, including “inputs”, “processes” and “outputs”, and to relate these to indicators of “outcome”. It is widely known that there are many potential advantages of a harmonized approach to health systems monitoring and evaluation, including reduced transaction costs, increased efficiency, and diminished pressures on countries. However, there are also identified practical issues to be addressed before greater harmonization can become a reality. The existence of multiple analytical and strategic frameworks for health systems results in considerable potential for duplication, overlap and confusion.<sup>3</sup> Existing frameworks include the WHO framework for health systems performance assessment (1); the World Bank control knobs framework (2); and the WHO building blocks framework (3). Such frameworks have varying starting points, resulting in emphases on different outcomes to be tracked. Work is on to develop conceptual frameworks for health systems strengthening and to create a taxonomy that would permit clarification of the indicators, data sources and collection methods, and the analytics underpinning monitoring and evaluation. However, the choice of the strategic framework does not necessarily substantively affect the monitoring and evaluation strategy. There are many commonalities in the various strategic frameworks for health systems that permit a coherent approach to the choice of indicators and measurement strategies.

## Health systems framework and building blocks

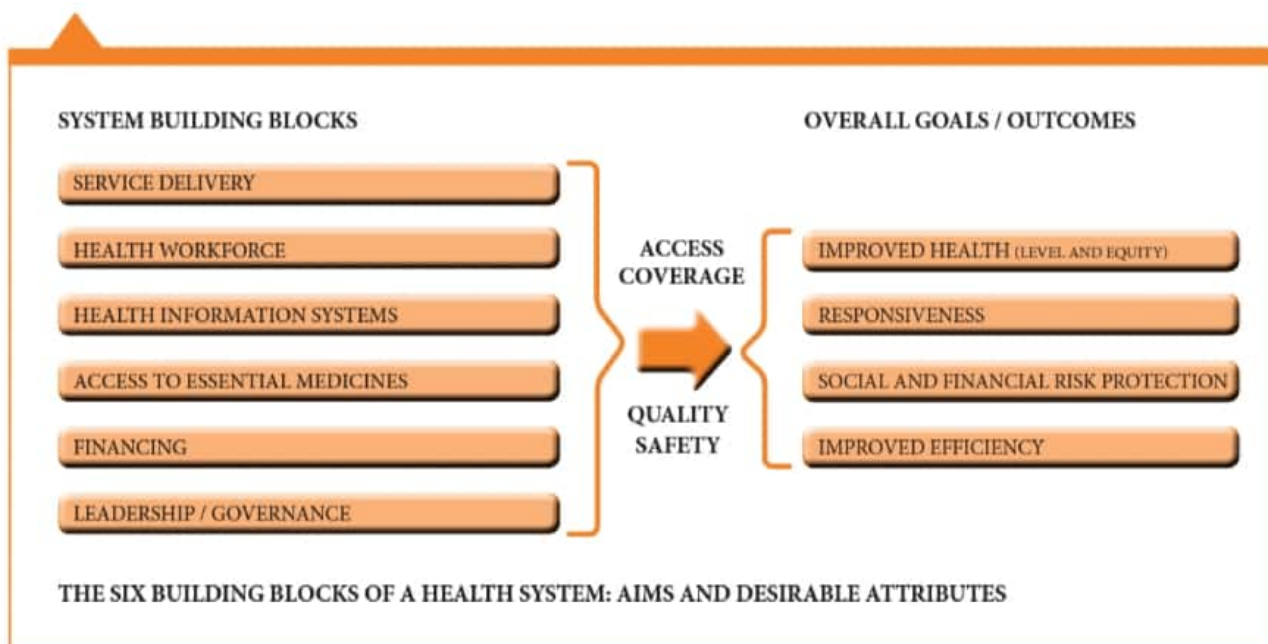
This handbook does not attempt to cover all components of the health system or deal with the various monitoring and evaluation frameworks. Instead, it is structured around the WHO framework that describes health systems in terms of six core components or “building blocks”: (i) service delivery, (ii) health workforce, (iii) health information systems, (iv) access to essential medicines, (v) financing, and (vi) leadership/governance (see Figure 1).

1 World Health Organization, <http://www.who.int/healthsystems/about/en/> accessed June 2010.

2 The terms “health system” and “health sector” are often used interchangeably with the latter interpreted as restricted to the actions of the government. This handbook focuses on aspects of the health system that are under the responsibility of ministries of health, including the provision of personal health services by both State and non-State actors.

3 For a recent overview see Shakerishvili G. *Building on health systems frameworks for developing a common approach to health systems strengthening*. Prepared for the World Bank, Global Fund to Fight AIDS, Tuberculosis and Malaria, and GAVI Alliance, Technical Workshop on Health Systems Strengthening, Washington, DC, June 25–27, 2009.

**Figure 1. The WHO Health Systems Framework**



Source: (3)

The six building blocks contribute to the strengthening of health systems in different ways. Some cross-cutting components, such as *leadership/governance* and *health information systems*, provide the basis for the overall policy and regulation of all the other health system blocks. Key input components to the health system include specifically, *financing* and the *health workforce*. A third group, namely *medical products and technologies* and *service delivery*, reflects the immediate outputs of the health system, i.e. the availability and distribution of care.

Inevitably, any type of division of a complex construct such as the health system is fraught with problems. This is also true for the framework, which focuses on health sector actions and underplays the importance of actions in other sectors. It does not take into account actions that influence peoples' behaviours, both in promoting and protecting health and the use of health-care services. The framework does not address the underlying social and economic determinants of health, such as gender inequities or education, and also does not deal with the substantial and dynamic links and interactions that exist across each component.

On the other hand, focusing on these separate components helps put boundaries around this complex construct and permits the identification of indicators and measurement strategies for monitoring progress.

## **Towards a common monitoring and evaluation framework**

Interest in a common monitoring and evaluation framework was stimulated as a result of the International Health Partnership and related initiatives (IHP+).<sup>4</sup> Launched in September 2007, the IHP+ aims to better harmonize donor funding commitments, and improve the way in which international agencies, donors and developing countries work together to develop and implement national health plans. The IHP+ has developed a common monitoring and evaluation framework to enable targeted monitoring and evaluation of health system strengthening efforts (Figure 2). This framework is country-focused and supportive of country needs while also providing a basis for global monitoring.

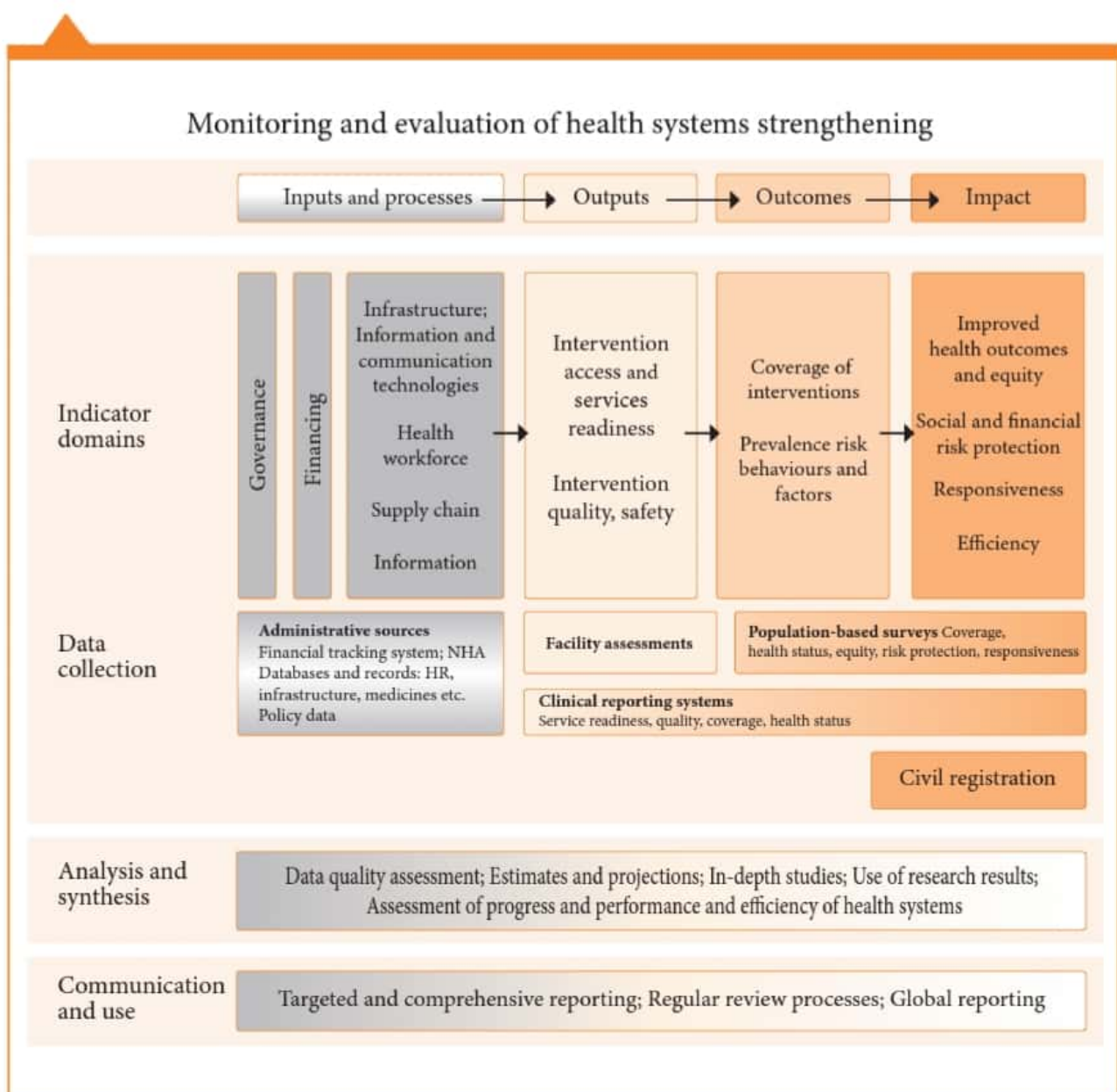
4 For more information, visit <http://www.internationalhealthpartnership.net/en/home>, accessed May 21, 2010.



The monitoring and evaluation framework shows how health inputs and processes (e.g. health workforce and infrastructure) are reflected in outputs (e.g. interventions and available services) that in turn are reflected in outcomes (e.g. coverage) and impact (morbidity and mortality). The added value of the framework is that it brings together indicators and data sources across the results chain in its entirety, i.e. from “inputs/processes”, “outputs”, and “outcomes”, to “impact”. It is designed to address monitoring and evaluation needs for different users and multiple purposes, including:

- monitoring of programme inputs, processes and results, required for the management of health system investments;
- health systems performance assessment, as the key for country decision-making processes; and
- evaluating the results of health reform investments and identifying which approaches work best.

**Figure 2. Monitoring and evaluation of health systems strengthening**



Source: (4)

## References

1. *World health report 2000. Health systems performance assessment.* Geneva, World Health Organization, 2000 (<http://www.who.int/whr/2000/en/index.html>, accessed 26 April 2010).
2. Roberts MJ, Hsiao W, Berman P, Reich MR. *Getting health reform right: a guide to improving performance and equity.* New York, Oxford University Press, 2008.
3. *Everybody's business — Strengthening health systems to improve health outcomes. WHO's framework for action.* Geneva, World Health Organization, 2007 ([http://www.who.int/healthsystems/strategy/everybodys\\_business.pdf](http://www.who.int/healthsystems/strategy/everybodys_business.pdf), accessed 26 April 2010).
4. *Monitoring and evaluation of health systems strengthening. An operational framework.* Paper prepared by WHO, World Bank, Global Alliance on Vaccines Initiative (GAVI) and Global Fund to Fight AIDS, Tuberculosis and Malaria (GFATM). ([http://www.who.int/healthinfo/HSS\\_MandE\\_framework\\_Nov\\_2009.pdf](http://www.who.int/healthinfo/HSS_MandE_framework_Nov_2009.pdf), accessed 15 June 2010).
5. *Health Metrics Network framework and standards for country health information systems.* Second edition. Geneva, World Health Organization, 2008 ([http://www.who.int/healthmetrics/documents/hmn\\_framework200803.pdf](http://www.who.int/healthmetrics/documents/hmn_framework200803.pdf), accessed 26 April 2010).

## Annex

**Table: List of recommended core indicators**

Building blocks and indicators	Data collection methods / Data sources
<b>1. Health Service Delivery</b>	
<ul style="list-style-type: none"> <li>• Number and distribution of health facilities per 10 000 population</li> <li>• Number and distribution of inpatient beds per 10 000 population</li> </ul>	District and national databases of health facilities. Special efforts — notably facility censuses — are often required to obtain the number of private facilities, especially if no registration system is enforced.
<ul style="list-style-type: none"> <li>• Number of outpatient department visits per 10 000 population per year</li> </ul>	Routine health facility reporting system Population-based surveys
<ul style="list-style-type: none"> <li>• General service readiness score for health facilities</li> <li>• Proportion of health facilities offering specific services</li> <li>• Number and distribution of health facilities offering specific services per 10 000 population</li> <li>• Specific-services readiness score for health facilities</li> </ul>	Health facility assessments
<b>2. Health Workforce</b>	
<ul style="list-style-type: none"> <li>• Number of health workers per 10 000 population</li> <li>• Distribution of health workers by occupation/specialization, region, place of work and sex</li> </ul>	Routine administrative records, periodically validated and adjusted against data from national population census or facility-based assessments.
<ul style="list-style-type: none"> <li>• Annual number of graduates of health professions educational institutions per 100 000 population, by level and field of education</li> </ul>	Routine administrative records from individual training institutions. In some cases, data may be validated against registries of professional regulatory bodies where certification or licensure is required for practice.
<b>3. Health Information</b>	
<ul style="list-style-type: none"> <li>• Health information system performance index</li> </ul>	Review of national health information systems

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#### 4. Essential Medicines

- Average availability of 14 selected essential medicines in public and private health facilities
  - Median consumer price ratio of 14 selected essential medicines in public and private health facilities
- National (or sub-national when necessary) surveys of medicine price and availability conducted using a standard methodology developed by WHO and Health Action International.

#### 5. Health Financing

- Total expenditure on health
  - General government expenditure on health as a proportion of general government expenditure (GGHE/GGE)
  - The ratio of household out-of-pocket payments for health to total expenditure on health
- National Health Accounts (NHA)
- Household expenditure and utilization surveys.

#### 6. Leadership and Governance

- Policy Index
- Review of national health policies in respective domains (such as essential medicines and pharmaceutical, TB, malaria, HIV/AIDS, maternal health, child health/immunization).

# Health service delivery

## 1.1 Introduction

Strengthening service delivery is crucial to the achievement of the health-related Millennium Development Goals (MDGs), which include the delivery of interventions to reduce child mortality, maternal mortality and the burden of HIV/AIDS, tuberculosis and malaria. Service provision or delivery is an immediate output of the inputs into the health system, such as the health workforce, procurement and supplies, and financing. Increased inputs should lead to improved service delivery and enhanced access to services. Ensuring availability of health services that meet a minimum quality standard and securing access to them are key functions of a health system.

To monitor progress in strengthening health service delivery, it is necessary to determine the dimensions along which progress would be measured. Box 1.1 sets out eight key characteristics of good service delivery in a health system. These ideal characteristics describe the nature of the health services that would exist in a strong health system based on primary health care, as set out in the 2008 World Health Report (1).

The process of building evidence for the strengthening of health service delivery must therefore proceed alongside efforts to restructure service delivery in accordance with the values reflected in Box 1.1. Health sector leaders and policy-makers who are tasked with assessing their health systems should participate in the process to deliberate on ways to assess these key characteristics in their countries. Researchers should continue to experiment with methods and measures that would allow progress to be assessed over time, along these important dimensions.

For some of the dimensions of service delivery, such as quality of care, widely accepted methods and indicators for assessment are available, although research to refine these continues. For other characteristics in the list, such as person-centredness, research and dialogue on what and how to measure it is in the early stages.

Some concepts that have frequently been used to measure health services remain extremely relevant and are part of the key characteristics. For example, terms such as access, availability, utilization and coverage have often been used interchangeably to reveal whether people are receiving the services they need (2, 3). *Access* is a broad term with varied dimensions: the comprehensive measurement of access requires a systematic assessment of the physical, economic, and socio-psychological aspects of people's ability to make use of health services. *Availability* is an aspect of *comprehensiveness* and refers to the physical presence or delivery of services that meet a minimum standard. *Utilization* is often defined as the quantity of health care services used. *Coverage* of interventions is defined as the proportion of people who receive a specific intervention or service among those who need it.



### Box 1.1: Key characteristics of good service delivery

Good service delivery is a vital element of any health system. Service delivery is a **fundamental input to population health status**, along with other factors, including social determinants of health. The precise organization and content of health services will differ from one country to another, but in any well-functioning health system, the network of service delivery should have the following *key characteristics*.

- 1. Comprehensiveness:** A **comprehensive range** of health services is provided, appropriate to the needs of the target population, including **preventative, curative, palliative and rehabilitative** services and **health promotion** activities.
- 2. Accessibility:** Services are directly and permanently accessible with no undue barriers of cost, language, culture, or geography. Health services are **close to the people, with a routine point of entry to the service network at primary care level** (not at the specialist or hospital level). Services may be provided in the home, the community, the workplace, or health facilities as appropriate.
- 3. Coverage:** Service delivery is designed so that all people in a **defined target population** are covered, i.e. the sick and the healthy, all income groups and all social groups.
- 4. Continuity:** Service delivery is organized to provide an individual with **continuity of care across the network of services, health conditions, levels of care, and over the life-cycle**.
- 5. Quality:** Health services are of high quality, i.e. they are **effective, safe, centred on the patient's needs** and given in a **timely** fashion.
- 6. Person-centredness:** Services are **organized around the person, not the disease** or the financing. Users perceive health services to be responsive and acceptable to them. There is **participation** from the target population in service delivery design and assessment. People are partners in their own health care.
- 7. Coordination:** **Local area health service networks are actively coordinated**, across types of provider, types of care, levels of service delivery, and for both routine and emergency preparedness. The patient's primary care provider facilitates the route through the needed services, and works in collaboration with other levels and types of provider. Coordination also takes place with other sectors (e.g. social services) and partners (e.g. community organizations).
- 8. Accountability and efficiency:** Health services are **well managed** so as to achieve the core elements described above with a **minimum wastage** of resources. Managers are allocated the necessary authority to achieve planned objectives and held **accountable for overall performance and results**. Assessment includes appropriate mechanisms for the participation of the target population and civil society.

This section of the handbook focuses particularly on the physical availability of services, which may serve as a starting point for determining methods to improve service delivery. It presents the measurement strategies and indicators for monitoring as well as the “inputs”, “processes” and “outputs” to the health system as they relate to the service delivery building block (see Figure 2 in the Introduction section).

Service delivery monitoring has immediate relevance for the management of health services, which distinguishes this area from other health systems building blocks. Shortage of medicines, uneven distribution of health services, and the poor availability of equipment or guidelines must all be taken into account as part of basic service management.

**Table 1.2 Summary of proposed core indicators to monitor service delivery**

Core Indicators	Data collection method
<b>General service availability</b>	
1a Number and distribution of health facilities per 10 000 population	National database of health facilities (often requiring facility censuses)
1b Number and distribution of inpatient beds per 10 000 population	
1c Number of outpatient department visits per 10 000 population per year	Routine health facility reporting system Population-based surveys
<b>General service readiness</b>	
2a General service readiness score for health facilities	Health facility assessments
<b>Service-specific availability</b>	
3a Proportion of health facilities offering specific services	Health facility assessments
3b Number and distribution of health facilities offering specific services per 10 000 population	
<b>Service-specific readiness</b>	
4a Specific-services readiness score for health facilities	Health facility assessments

### 1.4.1 General service availability

General service availability refers to the physical presence of delivery of services that meet a minimum standard. Availability comprises health infrastructure (facilities and beds per 10 000 population), the health workforce per 10 000 population and aspects of service utilization (inpatient/outpatient visits per 10000 population).

#### **Recommended indicator 1a: Number and distribution of health facilities per 10 000 population**

##### Definition

The number of health facilities available relative to the total population for the same geographical area.

- *Numerator*: the number of health facilities, i.e. all public and private health facilities, defined as a static facility (a designated building) in which general health services are offered. It does not include mobile service delivery points and non-formal services, such as traditional healers.
- *Denominator*: the total population for the same geographical area.

##### Data collection methodology

District and national databases provide the number of public facilities, often by type (such as hospital, health centre, health post, dispensary). Special efforts, notably facility censuses, are often required to obtain the number of private facilities, especially if no registration system is enforced. A facility sample survey will not provide the data needed to compute service availability.

##### Comparability issues

The size of health facilities may vary considerably and affect comparisons. When smaller geographical units, such as districts are analysed, the population does not necessarily use the facilities in the designated area. Comparisons of densities between districts have to be made cautiously.



Services	Tracer items
<b>14. Minor surgery services</b>	
Staff and training	<ul style="list-style-type: none"> <li>• Needle holder</li> <li>• Scalpel handle with blade</li> <li>• Retractor</li> <li>• Surgical scissors</li> <li>• Nasogastric tubes 10-16 FG</li> <li>• Tourniquet</li> </ul>
Medicines and commodities	<ul style="list-style-type: none"> <li>• Skin disinfectant</li> <li>• Sutures (both absorbable and non-absorbable)</li> <li>• Ketamine</li> </ul>

**Table 1.A.3 Sample indicators for consideration in assessing health-care quality**

Dimension of care	Indicators	Data source
Effectiveness	Case-fatality rates for specific diseases	Record review
	Hospital admission rate for asthma	Record review
	Percentage of sick child visits during which health worker counseled mother on nutrition	Observation, exit interviews
	Percentage of women aged 40 years and over who reported a mammogram within the past two years	Survey
	Percentage of women who received prenatal care in the first trimester	Record review or survey
Safety	Percentage of providers who know hand hygiene guidelines	Interviews with health workers
	Birth trauma rate in neonate per 1000 live births	Record review
	Percentage of adults whose provider asks about other prescribed medication	Observation, exit interviews
Patient-centredness	Percentage of adults with recent health visit who stated their provider always listened to what they had to say	Exit interviews, household survey
	Percentage of adults with recent health visit who stated their provider explained things clearly	Exit interviews, household survey
	Percentage of adults with recent health visit who stated their provider showed respect to them	Exit interviews, household survey
Timeliness	Percentage of persons who state they have a usual source of care	Survey
	Percentage of emergency department visits where patients left without being seen	Record review
	For heart attack patients, median time to thrombolytic therapy or percutaneous transluminal coronary angioplasty (PTCA)	Laboratory records

# Health workforce

## 2.1 Introduction

The ability of a country to meet its health goals depends largely on the knowledge, skills, motivation and deployment of the people responsible for organizing and delivering health services. Numerous studies show evidence of a direct and positive link between the numbers of health workers and population health outcomes (1, 2). Many countries, however, lack the human resources needed to deliver essential health interventions for a number of reasons, including limited production capacity, migration of health workers within and across countries, poor mix of skills and demographic imbalances. The formulation of national policies and plans in pursuit of human resources for health development objectives requires sound information and evidence. Against this backdrop of an increasing demand for information, building knowledge and databases on the health workforce requires coordination across sectors. WHO is working with countries and partners to strengthen the global evidence base on the health workforce — including gaining consensus on a core set of indicators and a minimum data set for monitoring the stock, distribution and production of health workers.

The health workforce can be defined as “all people engaged in actions whose primary intent is to enhance health” (3). These human resources include clinical staff, such as physicians, nurses, pharmacists and dentists, as well as management and support staff, i.e. those who do not deliver services directly but are essential to the performance of health systems, such as managers, ambulance drivers and accountants (Box 2.1). Presently, comprehensive and robust methodologies are not available for assessing the adequacy of the health workforce to respond to the health-care needs of a given population. However, a shortage of health workers can be perceived from the inadequate numbers and skills mix of people being trained or maldistribution of their deployment, as well as losses caused by death, retirement, career change or out-migration. It has been estimated that countries with fewer than 23 physicians, nurses and midwives per 10 000 population generally fail to achieve adequate coverage rates for selected primary health-care interventions, as prioritized by the MDGs (3).

### Box 2.1 Boundaries of the health workforce

Various permutations and combinations of what constitutes the health workforce may exist according to the country's situation and the means of monitoring. Human resources for health include individuals working in the private and public sectors, those working full-time or part-time, those working at one job or holding jobs at two or more locations, and those who are paid or provide services on a voluntary basis. They include workers in different domains of health systems, such as curative, preventive and rehabilitative care services as well as health education, promotion and research. They may also include people with the education and training to deliver health services but who are not engaged in the national health labour market (e.g. if they are unemployed or have migrated or withdrawn from the labour force for personal reasons).

The need for comprehensive, reliable and timely information on human resources for health, including numbers, demographics, skills, services being provided and factors influencing recruitment and retention, has been widely identified at the international, regional and national levels among both resource-poor and wealthier countries. This need has become even more urgent in view of the international effort to scale-up education and training of health workers in 57 countries, mostly in sub-Saharan Africa, which have been identified as having a critical shortage of highly skilled health professionals (3).

A health information system with a strong human resources component can help build the evidence base to plan for the availability of required health workers of desired quality in the right place, at the right time. Planning requires knowledge of the numbers and characteristics of health workers who are active in the health sector, of those being trained and added to the human resources pool, and of those leaving the active workforce and their reasons for leaving (4, 5). A comprehensive Human Resources Information System (HRIS) can also guide decision-making to ensure the cultural appropriateness of the health system, such as the appropriate sex and ethnic mix of health workers, especially to encourage utilization of services among underserved or marginalized communities. For example, in some contexts, access to female providers is an important determinant of women's health service utilization patterns (6). A strategy for ensuring the male–female balance of the health workforce should include promoting the collection and use of sex-disaggregated data in all human resource assessments.

A timely, reliable and relevant HRIS is essential to support the formulation, monitoring and evaluation of health workforce plans, strategies and policies at the sub-national, national and international levels. Unfortunately, for most countries, there remains a significant lag between the demand for data and the availability and usefulness of the information required to support decision-making.

## 2.2 Sources of information on the health workforce

Effective monitoring and evaluation of human resources for health in countries requires the development of an agreed core set of indicators and their means of measurement to inform decision-making among national authorities and other stakeholders. Diverse sources that can potentially produce relevant information exist even in low-income countries, such as population-based sources, health facility assessments and routine administrative records (4, 5, 7–11). Each of these sources has its strengths and limitations for health workforce analysis (Table 2.1). In many countries, comprehensive data on human resources are not available in any one repository. This means that any attempt to determine the size and core characteristics of the health workforce requires some level of analysis and synthesis of available information from multiple sources. The use of information from a variety of sources should, in principle, increase the options for measuring and validating core health workforce statistics.

### Population censuses and surveys

Many meaningful results pertinent to workforce analysis can be produced through tabulation of population-based data. All countries collect at least some data on their population, mainly in terms of periodical demographic censuses and household sample surveys that produce statistical information about the people, their homes, their socioeconomic conditions and other characteristics. Most censuses and labour force surveys ask for the occupation and place of work of the respondent (and other adult household members) along with other demographic characteristics, including age, sex and education levels.



**Table 2.1 Potential sources of data for monitoring the health workforce**

Source	Strengths	Limitations
<b>Population census</b>	<ul style="list-style-type: none"> <li>Provides nationally representative data on stock of human resources in all health occupations (including public and private sectors, management and support staff, and health occupations in non-health sectors)</li> <li>Data can be disaggregated for specific subgroups (e.g. by age and sex) and at lowest geographical level</li> <li>Rigorous collection and processing procedures help to ensure data quality</li> </ul>	<ul style="list-style-type: none"> <li>Periodicity: usually only once every 10 years</li> <li>Database management can be cumbersome</li> <li>Dissemination of findings often insufficiently precise, but micro-data that would allow for in-depth analysis are often not released</li> <li>Cross-sectional: does not allow tracking of workforce entry and exit</li> <li>Usually no information on labour productivity or earnings</li> </ul>
<b>Labour force survey</b>	<ul style="list-style-type: none"> <li>Provides nationally representative data on all occupations</li> <li>Provides detailed information on labour force activity (including place of work, unemployment and underemployment, earnings)</li> <li>Rigorous collection and processing procedures help ensure data quality</li> <li>Requires fewer resources than census</li> </ul>	<ul style="list-style-type: none"> <li>Variable periodicity across countries: from monthly to once every five years or more</li> <li>Sample size often too small to permit disaggregation and precise analysis</li> <li>Cross-sectional: does not allow tracking of workforce entry and exit</li> </ul>
<b>Health facility assessment</b>	<ul style="list-style-type: none"> <li>Provides data on health facility staff including management and support workers</li> <li>Data can be disaggregated by type of facility, staff demographics (age, sex) and geographical area</li> <li>Can be used to track wages and compensation, in-service training, provider productivity, presence/absenteeism of health workers on the day of visit, supervision, available skills for specific interventions and unfilled posts</li> <li>Usually requires fewer resources than household-based assessments</li> <li>Can be complemented with routine reporting (e.g. monthly) of staff returns from each facility (such statistics are frequently cited in official publications)</li> </ul>	<ul style="list-style-type: none"> <li>Usually conducted infrequently and ad hoc</li> <li>Private facilities and practices are often omitted from sampling</li> <li>Community-based workers may be omitted</li> <li>May double-count staff working at more than one facility</li> <li>Cross-sectional: does not allow tracking of workforce entry and exit</li> <li>No information on unemployment or on health occupations in non-health services (e.g. health research, teaching)</li> <li>Variable quality of data across countries and over time</li> </ul>
<b>Civil service payroll registries</b>	<ul style="list-style-type: none"> <li>Provides data on stock of public sector employees (in terms of physical persons and full-time equivalents)</li> <li>Data are usually accurately and routinely updated (given strong government financial incentive for quality information, which can also be validated through periodic personnel audits)</li> <li>Data can be sometimes be disaggregated by age, sex, place of work and pay grade</li> </ul>	<ul style="list-style-type: none"> <li>Excludes those who work exclusively in the private sector (unless they receive government compensation)</li> <li>Depending on the nature of the registry, may double-count staff with dual employment and/or exclude locally hired staff not on the central payroll</li> <li>Many countries have persistent problems eliminating "ghost workers"<sup>a</sup> and payments to staff who are no longer active</li> </ul>
<b>Registries of professional regulatory bodies</b>	<ul style="list-style-type: none"> <li>Provides head counts of all registered health professionals</li> <li>Data are routinely updated for entries to the national health labour market</li> <li>Data can typically be disaggregated by age, sex and sometimes place of work</li> <li>Depending on the characteristics of the registry, may be possible to track career progression and exit of health workers</li> </ul>	<ul style="list-style-type: none"> <li>Variable coverage and quality of data across countries and over time, depending on the characteristics and capacities of the regulatory authorities</li> <li>Usually limited to highly skilled health professionals</li> </ul>

<sup>a</sup> Personnel formally on payroll but providing no service (in some cases as a strategy among health personnel to overcome unsatisfactory remuneration or working conditions).

Source: adapted from (4, 5).

**Table 2.2 Selected indicators for monitoring country actions for strengthening the health workforce**

Objectives and actions	Possible output indicator	Potential data source	Associated outcome indicator
Effective management and development of human resources in health systems requiring top-level direction — a documented plan is one element of such direction	Costed, prioritized human resources management/development plan exists	Government reports and/or interviews with key informants (e.g. senior management in ministry of health)	<b>Core indicator 1:</b> Number of health workers per 10 000 population
Strengthening of information and evidence base for policy and planning, including regularly compiling and using validated statistics on human resources for health to support decision-making	Number of national data points on the stock and distribution of health workers produced within the last three years	Data dissemination reports (e.g. government, professional regulatory bodies, census/survey reports)	
Increasing the size and capacity of the national health workforce, which may include recruitment and training of community health workers (i.e. community health aides selected, trained and working in the communities from which they come)	Number of entrants into community health training programmes (with nationally approved curriculum) in the past 12 months, e.g. by sex	Routine administrative records of training programmes and/or interviews with key informants (e.g. programme managers)	<b>Core indicator 2:</b> Distribution of health workers (by occupation/ specialization, region, place of work and sex)
Increasing the capacity of health professions educational institutions, including increasing the quantity and quality of instructors and auxiliary staff	Number of students in medical, nursing and midwifery (pre-service) education programmes per qualified instructor	Routine administrative records of education and training institutions and/or interviews with key informants (e.g. faculty directors)	
Strengthening recruitment and deployment systems include incentive schemes to ensure that primary health-care facilities meet their nationally recommended staffing norms	Number of health workers newly recruited at primary health-care facilities in the past 12 months, e.g. expressed as percentage of planned recruitment target	Routine administrative records on facility staffing and/or interviews with key informants (e.g. facility managers)	
Effective interaction with or regulation of the private sector requiring accurate knowledge of the numbers, types and qualifications of private sector providers	Private provider registration system is up to date and accurate	Government reports and/or interviews with key informants (e.g. ministry, professional regulatory bodies, associations of private providers)	

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Objectives and actions	Possible output indicator	Potential data source	Associated outcome indicator
Effective management of performance of health workers. Related activities include training programmes for updating skills for effective human resources management and development	Number of senior staff at primary health-care facilities who received in-service management training (with nationally approved curriculum) in the past 12 months	Routine administrative records of training programmes and/or interviews with key informants (e.g. programme managers)	<b>Optional indicator:</b> Rate of retention of health service providers at primary health-care facilities in the past 12 months
Optimizing health worker motivation and productivity, which may include strengthening of supervision. Potentially one of the most effective instruments to improve the competence of individual workers	Percentage of health service providers at primary health-care facilities who received personal supervision in the past six months	Ideally assessed through a sample survey of health workers; also can be assessed via facility administrative records	
Reducing inefficiencies, which may include identifying and reducing worker absenteeism that is known to be a significant problem in the public health system in many contexts	Number of days of health worker absenteeism relative to the total number of scheduled working days over a given period among staff at primary health-care facilities	Ideally assessed through facility staffing/payroll records; can also be assessed by means of special study cross-examining duty roster lists with actual head-counts on the day of visit	
Managing health workforce market. Among countries that receive large numbers of health workers from abroad, efforts may be undertaken to manage the pressures of the international health workforce market and its impact on migration	Number of health workers trained abroad newly entering into the country in the past 12 months, e.g. relative to the number of nationally trained graduates	Entry visas, work permits and other administrative sources (e.g. professional regulatory bodies); migration estimates over longer periods can also sometimes be derived from population census sources	<b>Optional indicator:</b> Proportion of nationally trained health workers (e.g. with distribution of foreign trained workers by country of origin)



# 3.

## Health information systems

### 3.1 Introduction

Sound and reliable information is the foundation of decision-making across all health system building blocks. It is essential for health system policy development and implementation, governance and regulation, health research, human resources development, health education and training, service delivery and financing.

The health information system provides the underpinnings for decision-making and has four key functions: (i) data generation, (ii) compilation, (iii) analysis and synthesis, and (iv) communication and use. The health information system collects data from health and other relevant sectors, analyses the data and ensures their overall quality, relevance and timeliness, and converts the data into information for health-related decision-making (1).

The health information system is sometimes equated with monitoring and evaluation but this is too reductionist a perspective. In addition to being essential for monitoring and evaluation, the information system also serves broader objectives, such as providing an alert and early warning capability, supporting patient and health facility management, enabling planning, underpinning and stimulating research, permitting health situation and trends analyses, orienting global reporting, and reinforcing communication of health challenges to diverse users. Information is of little value if it is not available in formats that meet the needs of multiple users, i.e. policy-makers, planners, managers, health-care providers, communities and individuals. Dissemination and communication are therefore essential attributes of the health information system.

Health planners and decision-makers need different kinds of information including:

- health determinants (socioeconomic, environmental, behavioural and genetic factors) and the contextual environments within which the health system operates);
  - inputs to the health system and related processes (policy and organization, health infrastructure, facilities and equipment, costs, human and financial resources and health information systems);
  - the performance or outputs of the health system (availability, accessibility, quality and use of health information and services, responsiveness of the system to user needs, and financial risk protection);
  - health outcomes (mortality, morbidity, disease outbreaks, health status, disability and wellbeing); and
  - health inequities (determinants, coverage of use of services, and health outcomes, and including key stratifiers such as sex, socioeconomic status, ethnic group and geographical location).
- A good health information system brings together all relevant partners to ensure that users of health information have access to reliable, authoritative, usable, understandable and comparative data.

### 3.2 Expectations from country health information systems

Health information systems serve multiple users and a wide array of purposes that can be summarized as the generation of information to enable decision-makers at all levels of the health system to identify problems and needs, make evidence-based decisions on health policy and allocate scarce resources optimally (1). Data from different sources are used for several purposes at different levels of the health-care system.

- Individual level data about the patient's profile, health-care needs and treatment serve as the basis for clinical decision-making. Health-care records provide the basis for sound individual clinical care. Problems can arise when health workers are overburdened by excessive data and reporting demands from multiple and poorly coordinated subsystems.
- Health facility level data, both from aggregated facility level records and from administrative sources, such as drug procurement records, enable health-care managers to determine resource needs, guide purchasing decisions for drugs, equipment and supplies, and develop community outreach. Data from health facilities can provide immediate and ongoing information relevant to public health decision-making, but only if certain conditions are met. The data must be of high quality, relate to all facilities (public and private), and be representative of the services available to the population as a whole.
- Population level data are essential for public health decision-making and generate information not only about those who use the services but also, crucially, about those who do not use them. Household surveys have become a primary source of data in developing countries where facility-based statistics are of limited quality. Household surveys are needed everywhere, however, because they are the only good source of information on individual beliefs, behaviours and practices that are critical determinants of health-care use and health status.
- Public health surveillance brings together information from facilities and communities with a main focus on defining problems and providing a timely basis for action. This is especially important when responses need to be urgent, as for epidemic diseases. The need for timeliness of reporting and response and the requirement for effective linkages, to those in authority with the responsibility for disease control, impose additional requirements on health information systems.

Recognition of the importance of health information systems to be capable of generating reliable data is growing. In many countries, health sector reform and decentralization have brought about shifts in functions between the central and peripheral levels and have generated new information needs with changing requirements for data collection, processing, analysis and dissemination. Health sector reforms also magnify the need for standardization and quality of information.

Performance and results based monitoring, stimulated by unprecedented increases in development assistance and global health initiatives — such as the Global Alliance on Vaccines Initiative (GAVI), Global Fund to Fight AIDS, Tuberculosis and Malaria (GFATM), the United States President's Emergency Plan for AIDS Relief (PEPFAR), and the Roll Back Malaria partnership — have increased pressure on governments and organizations to improve their performance and demonstrate tangible results to their stakeholders. In this environment, a premium has been placed on the existence of adequate health information of good quality. Health information systems are called upon to enable tracking along the continuum of inputs to the health system, processes and outputs, as well as outcomes and impact.

Few developing countries have sufficiently strong and effective health information systems to meet all these diverse information needs. New technologies can contribute to improving data generation, compilation and exchange but will require the existence of clear data quality standards to be of optimal value.

### 3.3 Sources of information on country health information systems

Information about the functioning of the health information system can be obtained from the different sectors and agencies that are responsible for the generation, synthesis, analysis and use of data at the country, regional and global levels. At the country level, the ministries of health record the timeliness and quality of data reported through health services and disease surveillance systems. National Statistics Offices maintain information on



**Table 3.2 Summary of core indicators and scoring for Health Information Systems Performance Index (HISPIX)**

Indicators	Definition	Data collection method	Scoring for HISPIX
<b>Health surveys</b>			
Country has a 10-year costed <i>survey plan</i> that covers all priority health topics and takes into account other relevant data sources.	Survey plan comprises modular contents with periodicity for specific indicators calibrated to achieve maximum sensitivity and efficiency. Includes data collection concerning health-related behaviours and bio-clinical measurements	Bureau of the Census, National Statistics Office and Ministry of Health	Yes: 1 No: 0
Two or more data points available for <i>child mortality</i> in the past five years <sup>a</sup>		Country reports, DHS <sup>b</sup> and MICS <sup>c</sup>	Yes: 1 No: 0
Two or more population-based data points for <i>maternal mortality</i> in the past 10 years, including one in the past five years <sup>a</sup>		Country reports, DHS and MICS	Yes: 1 No: 0
Two or more data points for <i>coverage</i> of key health interventions in the past five years	Comprising coverage of key maternal and child health-care interventions, risk behaviours and care-seeking	Country reports, DHS and MICS	Yes: 1 No: 0
One or more data points on <i>smoking and adult nutritional status</i> in the past five years	Nutritional status clinically measured	Country reports, DHS and MICS	Yes: 1 No: 0
<b>Birth and death registration</b>			
<i>Birth registration</i> of at least 90% of all births (intermediate goal 50%). Indicator: percentage of births registered	<i>Numerator:</i> number of births registered, as reported by civil or sample registration systems, hospitals and community-based reporting systems	Civil registration or sample registration systems	<50% score 0 50–89% score 1 ≥90% score 2
	<i>Denominator:</i> total births for the same time period and geographical region. Where information on total births is not available because of incomplete civil registration, total births can be estimated by extrapolating from the census or on the basis of information about natality rates derived from population surveys		
<i>Death registration</i> of at least 90% of all deaths (intermediate goal 50%). Indicator: percentage of deaths registered	<i>Numerator:</i> number of deaths registered as reported by civil or sample registration systems, hospitals and community-based reporting systems	Civil or sample registration systems	<50% score 0 50–89% score 1 ≥90% score 2
	<i>Denominator:</i> total deaths for the same time period and geographical region. Where information on total deaths is not available because of incomplete civil registration, total deaths can be estimated by extrapolating from the census or on the basis of information about mortality rates derived from population surveys		
ICD-10 <sup>d</sup> used in district hospitals and causes of death reported to national level	<i>Numerator:</i> number of district hospitals using ICD-10 to certify cause of death	Routine Health Management Information System HMIS reports	<50% score 0 50–89% score 1 ≥90% score 2
	<i>Denominator:</i> total district hospitals		

Continues...



Continued

Indicators	Definition	Data collection method	Scoring for HISPIX
<b>Census</b>			
Census completed within the past 10 years		Bureau of the Census, National Statistics Office and Ministry of Health	1
Population projections for districts and smaller administrative areas available for next 10 years, in print and electronically, well documented			1
<b>Health facility reporting</b>			
Number of <i>institutional deliveries</i> available, by district, and published within 12 months of preceding year	Includes deliveries in public, private and nongovernmental organization facilities	Country HMIS reports	1
HIV prevalence for relevant surveillance populations published within 12 months of preceding year		National Aids Committee reports	1
Country web site for health statistics, with latest report and data available to the general public		Country HIS <sup>2</sup> reports	1
Reporting of <i>notifiable diseases</i> makes use of modern communication technology, and reporting of statistics from district to national levels is web-based		Country HMIS reports	1
At least 90% of <i>districts</i> submit timely, complete, accurate reports to national level. Indicator: percentage of districts that submit timely, complete, accurate reports to national level	<i>Numerator:</i> number of health districts with timely and complete reporting of key data series  <i>Denominator:</i> total districts  Countries should define core data series that should be reported to districts by all facilities and compare reports against this list	Country HMIS reports	1
Data quality assessments carried out and published within the past three years, using internationally agreed quality criteria such as the Data Quality Assessment Framework (DQAF)	Assessment should routinely cover all administrative data sources (e.g. civil registration, facility reports)  Assessment should use internationally agreed data quality criteria such as DQAF	Country HMIS reports	1
International Health Regulations (IHR) implemented according to international standards	Compliant with IHR monitoring and evaluation framework	Country health sector reports	1
<b>Health system resource tracking</b>			
At least one <i>national health accounts</i> exercise completed in the past five years		NHA <sup>1</sup> report	1
National database with <i>public and private sector health facilities</i> and geocoding, available and updated within the past three years	Database should separate public, private and non-profit facilities; it should also include key infrastructure, human resources, medicines, equipment and supplies, and service availability	Health facility assessments	1
National database with <i>health workers</i> by district and main cadres updated within the past two years	Database comprises data from multiple sources, including census, labour force surveys, professional registers, training institutions and facility assessments	National health sector review	1
Annual data on availability of <i>tracer medicines and commodities</i> in public and private health facilities	Aligned to national essential medicines list	Essential medicines reviews; health facility assessments	1

Continues...

Continued

Indicators	Definition	Data collection method	Scoring for HISPIX
<b>Capacity for analysis, synthesis and validation of health data</b>			
A designated and functioning <i>institutional mechanism</i> charged with analysis of health statistics, synthesis of data from different sources and validation of data from population-based and facility-based sources	Body should be administratively separate from programmes responsible for delivery of interventions. Should adhere to <i>Fundamental principles of official statistics</i>	National health sector reports	1
A <i>national set of indicators</i> with targets and annual reporting to inform annual health sector reviews and other planning cycles	Indicators cover key issues including health determinants, health system inputs, processes and outputs, use of health care services, mortality, morbidity, health system responsiveness, etc.	National health sector reports	1
A national <i>microdata archive</i> for health surveys and census established and operational			1
Survey data used to assess and <i>adjust routine reports</i> from health facility on vaccinations, with the results published within 12 months of the preceding year	Validation by an independent reviewer would be needed to ascertain the extent of analysis and validation	Information available from health statistics reports	1
A <i>burden of disease</i> study conducted within the past five years, with a strong national contribution			1
A <i>health systems performance</i> assessment carried out within the past five years, with a strong national contribution			1
<b>Overall HISPIX</b>			<b>30</b>

\* Only relevant to countries without complete civil registration systems (>90% coverage of births and death).

<sup>b</sup> Demographic and Health Surveys.

<sup>c</sup> Multiple Indicator Cluster Surveys.

<sup>d</sup> *International statistical classification of diseases and related health problems, 10th revision (ICD-10)*. 2nd edition. Geneva, World Health Organization, 2005 (<http://www.who.int/classifications/icd/en/>).

<sup>e</sup> Health Information System.

<sup>f</sup> National Health Accounts.

### 3.7 Summary measure of health information system performance

WHO is proposing a Health Information System Performance Index (HISPIX) — a summary measure based on the above-mentioned standardized indicators for assessing data quality and the overall performance of the health information system. The score is calculated from information available in the public domain using standard indicators to enhance objectivity and comparability over time and across countries.

For the majority of the indicators, a simple binary scoring system (“yes” or “no”) is used, with no weighting. For the few indicators that are measured in terms of percentages, the score is calculated as described in Table 3.2. The advantage of this approach is that it permits countries and development partners to identify key areas for improvement as part of a health information system strengthening plan.

The crucial difference between the HISPIX approach and the HMN self-assessment tool is that the indicators can be assessed on the basis of information that is largely available in the public domain. Information on data sources and data availability can be compiled from WHO databases and those of other international agencies. Information on inputs and resources is available from country health statistics reports and from the self-assessments conducted through HMN. For countries that have not conducted such assessments, it may be

# Access to essential medicines

## 4.1 Introduction

According to the WHO framework for health systems (1), 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. To achieve these objectives, the following are needed:

- national policies, standards, guidelines and regulations that support policy;
- information on prices, the status of international trade agreements and the capacity to set and negotiate prices;
- reliable manufacturing practices when they exist in-country and quality assessment of priority products;
- procurement, supply and storage, and distribution systems that minimize leakage and other waste; and
- support for rational use of medicines, commodities and equipment, through guidelines and strategies to assure adherence, reduce resistance, maximize patient safety and training.

Monitoring access to essential medicines is closely intertwined with at least two other building blocks: service delivery and governance. Health service delivery is discussed in Section 1 of this handbook while issues related to governance are dealt with in Section 6.

This section of the handbook focuses on essential medicines, i.e. those that satisfy the priority health care needs of the population. Essential medicines are intended to be available within the context of functioning health systems at all times, in adequate amounts, in the appropriate dosage, with assured quality, and at a price that individuals and the community can afford (2).

Access to medicines is included in the Millennium Development Goals under MDG 8, and specifically *Target 8.E: In cooperation with pharmaceutical companies, provide access to affordable essential drugs in developing countries*.<sup>1</sup> Access has been defined as “having medicines continuously available and affordable at public or private health facilities or medicine outlets that are within one hour’s walk of the population” (3). Given its complexity, an overall picture of access to medicines can only be generated using a range of indicators that provide data on medicine availability and price, in both public and private sectors, in combination with key policy indicators. Recent United Nations reports, that assessed progress towards MDG target 8.E, found that low availability, high prices and poor affordability of medicines are key impediments to treatment access in low- and middle-income countries (4,5).

1 Official List of Millennium Development Indicators, effective 15 January 2008. <http://mdgs.un.org/unsd/mdg/Host.aspx?Content=Indicators/OfficialList.htm>, accessed 15 April 2010.



## Data collection methodology

National surveys of medicines prices and availability conducted using a standard methodology developed by WHO and HAI. Data on the add-on costs that contribute to the final price of medicines are collected by tracking selected tracer medicines through the supply and distribution chain.

## Periodicity of measurement

It is recommended that a national survey of medicines prices and availability be conducted every three to five years using the WHO/HAI standard methodology.

**Table 4.2 Summary of indicators for a full pharmaceutical profile, including core indicators for access to essential medicines**

Indicators	Data collection method
<b>Structure</b>	
1. Access to essential medicines/technologies as part of the fulfilment of the right to health, recognized in the constitution or national legislation.	Review of national constitution or legislation.
2. Existence and year of last update of a published national medicines policy.	Key-informant surveys using standard tool such as the WHO <i>Questionnaire on structures and processes of country pharmaceutical situations</i> .
3. Existence and year of last update of a published national list of essential medicines	
4. Legal provisions to allow/encourage generic substitution in the private sector	
<b>Process</b>	
5. Public and private per capita expenditure on medicines	National Health Accounts
6. Percentage of population covered by health insurance	Household surveys
7. Average availability of 14 selected essential medicines in public and private health facilities*	National (or sub-national when necessary) surveys of medicine price and availability conducted using a standard methodology developed by WHO and Health Action International.
8. Median consumer price ratio of 14 selected essential medicines in public and private health facilities*	
9. Percentage mark-up between manufacturers' and consumer prices	

\* Core indicators to measure access to essential medicines.

## Selected tools

*Measuring medicine prices, availability, affordability and price components*, 2nd ed. Geneva, World Health Organization and Health Action International, 2008 (<http://apps.who.int/medicinedocs/index/assoc/s14868e/s14868e.pdf>, accessed on 4 April 2010).

This second edition includes updated versions of the survey manual, an automated data workbook, survey instruments and a CD ROM of survey tools and background materials, all of which have been refined based on the lessons learnt in the 50+ surveys conducted to date.

*WHO operational package for monitoring and assessing country pharmaceutical situations. Guide for coordinators and data collectors*. Geneva, World Health Organization, 2007. ([http://www.who.int/medicines/publications/WHO\\_TCM\\_2007.2/en/index.html](http://www.who.int/medicines/publications/WHO_TCM_2007.2/en/index.html), accessed on 4 April 2010).

This operational package is a tool for researchers, policy-makers, planners and others who need to use standardized measurement tools to gather data and other information for monitoring and assessing country

# Health systems financing

## 5.1 Introduction

Health financing is fundamental to the ability of health systems to maintain and improve human welfare. At the extreme, without the necessary funds no health workers would be employed, no medicines would be available and no health promotion or prevention would take place. However, financing is much more than a simple generation of funds (see Box 5.1). To understand the nature of indicators that can be used to monitor and evaluate health systems financing requires explicit assessment of what it is expected to achieve.

### Box 5.1 What is health financing?

Health financing refers to the “function of a health system concerned with the mobilization, accumulation and allocation of money to cover the health needs of the people, individually and collectively, in the health system... the purpose of health financing is to make funding available, as well as to set the right financial incentives to providers, to ensure that all individuals have access to effective public health and personal health care” (1).

While the goals of health systems financing can be expressed in various ways, there is a general consensus that it should not only seek to raise sufficient funds for health, but should do so in a way that allows people to use the needed services without the risk of severe financial hardship (often called financial catastrophe or impoverishment).<sup>1</sup> This involves the accomplishment of two related objectives: (i) to raise sufficient funds and (ii) to provide financial risk protection to the population. These objectives can be achieved more easily if the available funds are used efficiently, highlighting the need for a third objective, that of efficiency in resource utilization. As a result, the financing system is often divided conceptually into three inter-related functions — (i) revenue collection, (ii) fund pooling, and (iii) purchasing/provision of services. Before focusing on measurement strategies and indicators for these functions it is important to understand their key components.

In most low-income and many middle-income countries, revenue collection derives from a mix of domestic and external sources. Despite the substantial increases in external assistance for health since 2000, the available resources are still insufficient in most low-income settings to assure universal coverage with even a very basic set of needed interventions. The adjustment of Commission on Macroeconomics and Health estimates of the cost of a core package to current prices reveals a need for around US\$ 40 per person per year. This is an

1 In 2005, WHO Member States endorsed a resolution urging governments to develop health financing systems aimed at attaining and maintaining “universal coverage” — described as raising sufficient funds for health in a way that allows access to needed services without the risk of a financial catastrophe.



underestimate for many reasons,<sup>2</sup> but even then, almost a third of the 193 member countries of WHO did not have access to even this level of funding in 2005, and 33 spend less than US\$ 25 per person per year despite increased external inflows. An ideal indicator for revenue collection would need to capture the amount and adequacy of the funds that are raised.

Financial risk protection is determined by how funds are raised, and whether and how they are pooled to spread the risk across population groups. Direct user-charges, for example, are regressive, i.e. the rich pay the same fees as the poor, which deters some people from seeking or continuing care. The funds also do not provide financial risk protection, in that people pay when they are sick and do not pay when they are healthy. As a result of this lack of solidarity, some people incur financial hardships and may even be pushed below the poverty line. A financing policy must grapple with the question of how to raise funds equitably, which usually implies a degree of progressivity (where the rich contribute a higher proportion of their income than the poor). It also needs to consider how to ensure access to needed services while protecting people against the more severe financial consequences of paying for care. These goals cannot be achieved without some form of prepayment and the subsequent pooling of the collected revenues, i.e. people pay into a pool when they are healthy and can draw on these funds when they are sick. Pooled funds can be derived from tax or health insurance contributions and in most countries they come from a mix of sources. Indicators in this area need to capture the extent to which people are protected from the financial risks associated with ill health. It would also be valuable to measure the extent of progressivity in the way that prepaid funds for health (e.g. taxes and insurance premiums) are raised.

Ensuring efficiency in resource use is a complex issue that should address questions on how to reduce waste and corruption; what interventions should be available for the existing resources; whether services should be provided by the government or purchased from the non-government sector; how providers (e.g. health workers, hospitals, etc.) should be paid to ensure quality and efficiency; and whether specific types of services or incentives should be targeted at the poor. Thus, because of the multiple dimensions, it is not particularly easy to define a single, easily understandable indicator of efficiency for health system financing.

## 5.2 Sources of information on health systems financing

A national government's total budget and the part allocated to health are both usually public information, and can be used to evaluate the government's total commitment to health as well as in proportion to other priorities. A planned budget however, while an important indicator of commitment, can differ significantly from the funds that are eventually released to departments and the subsequent expenditures.

In most countries, information on government health expenditures channelled through the ministry of health is usually available through the ministry of finance or regional authorities in decentralized systems. However, information on government health expenditures that are channelled through non-health ministries, such as military or police health services, are sometimes more difficult to obtain. While budget information is available in "real time", there is often a delay of perhaps about a year in the production of consolidated expenditure accounts. Public expenditure reviews, if available, are often an excellent source of information. These reviews collate information from various sources that help to determine whether government expenditures follow the budget plans and stated strategic objectives. Sometimes these reviews seek to examine the efficiency of resource

2 The original estimates did not include antiretroviral drugs for HIV, interventions for non-communicable diseases or a variety of health system strengthening costs essential to being able to deliver the package. Moreover, it assumes that only the interventions in the core set will be provided.



**Table 5.1 Recommended indicators on health systems financing**

Objectives and actions	Possible output indicators	Data sources	Associated outcome indicators
1. Raising sufficient funds for health. In low-income countries this must come from external and internal sources. Increasingly reliable external funds are needed in most countries, but more can be done to raise funds, or raise them more efficiently, domestically.	1. Data on total health expenditures routinely collected and reported.	1. National Health Accounts (NHA)	<p><b>Core indicator 1a.</b> Total expenditure on health (THE)</p> <p><b>Core indicator 1b.</b> General government health expenditure as a proportion of general government expenditure (GGHE/GGE)</p> <p><b>Optional Indicator 1:</b> THE as % GDP</p>
2. Improving financial risk protection and coverage for vulnerable groups. In most countries this requires moving away from direct out-of-pocket payments and towards a form of prepayment with risk pooling that is tax- or insurance-based.	<p>2a. Patient / household out-of-pocket expenditures of accessing or obtaining services collected intermittently.</p> <p>2b. In countries with widespread health insurance: Number (%) of people/households covered by health insurance, by population group and specifically for poor/vulnerable groups.</p>	<p>2a. Household expenditure and utilization surveys.</p> <p>2b. Health insurance enrolment records.</p>	<p><b>Core indicator 2.</b> The ratio of household out-of-pocket payments for health to total expenditure on health</p> <p><b>Optional indicator 2:</b> % of households impoverished annually by out-of-pocket payments, by expenditure quintile</p>
3. Improving efficiency of resource utilization.	<p>3a. Information on government expenditures on wages and salaries readily available.</p> <p>3b. Availability of data on government expenditure on priority problems, by level of government.</p>	3. Government expenditure accounts.	<b>Optional indicator 3:</b> Government expenditure on wages and salaries as % GGHE
4. Improving financial transparency and management at operational levels.	4. Number and % of facilities meeting established national financial management criteria.	Audit office.	

# Leadership and governance

## 6.1 Introduction

Governance in health is being increasingly regarded as a salient theme on the development agenda. Leadership and governance in building a health system involve ensuring that strategic policy frameworks exist and are combined with effective oversight, coalition-building, regulation, attention to system design and accountability. The need for greater accountability arises both from increased funding and a growing demand to demonstrate results. Accountability is therefore an intrinsic aspect of governance that concerns the management of relationships between various stakeholders in health, including individuals, households, communities, firms, governments, nongovernmental organizations, private firms and other entities that have the responsibility to finance, monitor, deliver and use health services (1). Accountability involves, in particular:

- delegation or an understanding (either implicit or explicit) of how services are supplied;
- financing to ensure that adequate resources are available to deliver essential services;
- performance around the actual supply of services;
- receipt of relevant information to evaluate or monitor performance;
- enforcement, such as imposition of sanctions or the provision of rewards for performance.

Governance in health is a cross-cutting theme, intimately connected with issues surrounding accountability. In the context of health systems strengthening, it is an integral part of the health system components discussed in earlier sections of this handbook. Despite consensus on the importance of leadership and governance in improving health outcomes, they remain inadequately monitored and evaluated.

## 6.2 Indicators for measuring health system governance

Two types of indicators have been proposed for measuring governance: rules-based and outcome-based (2).

*Rules-based indicators* measure whether countries have appropriate policies, strategies and codified approaches for health system governance. In the health systems context, these indicators include the existence, for example, of a national essential medicines list or a national policy on malaria control. They are part of a larger class of indicators called governance determinants (3). In addition to the existence of rules (called “formal procedures”), the determinants of health-care-provision governance include four other broad categories: ownership arrangements, decentralization, stakeholder participation, and contextual factors. In this framework, determinants of governance are contrasted with governance performance.

*Outcome-based indicators* measure whether rules and procedures are being effectively implemented or enforced, based on the experience of relevant stakeholders. For health systems, examples may include the availability of essential medicines in health facilities or the absenteeism of health workers. Since the outcome-based indicators relate directly to the functioning of other health system “building blocks”, only the rules-based indicators for measuring health system governance are discussed in this section.

When selecting indicators for measuring governance in health, a high value should be placed on their usefulness and relevance. Nevertheless, even the most suitable governance indicators may be unable to adequately predict whether developments in a country or sector can be attributed to a change in governance. Thus, in general, governance indicators should not be used in isolation when designing policy responses to health system performance issues (4).

### 6.3 Sources of information on health system governance

Measurement of rules-based health system governance indicators will, in most cases, rely on both expert analysis of available sources such as administrative records (including legal/regulatory documents) coupled with expert reviews of national health policies. Administrative records are the important main data sources for rules-based indicators of governance and include legal and regulatory documents, national health strategies, budget documents, and regulations and guidelines that relate to the management, organization and financing of the health sector. Administrative records can be obtained from government publications, legal and administrative document departments and official web sites.

The outcome-based governance indicators, which are discussed in other sections of this handbook, are generated using various data sources, including facility surveys, public expenditure reviews or client assessments.

### 6.4 Core indicators

A composite governance policy index, comprising 10 rules-based indicators that cover health policies for different disease interventions<sup>1</sup> and health system aspects, is presented. The index provides a summary measure of governance quality from a rules-based perspective. The indicators assess whether countries have policies, regulations and strategies in place to promote good leadership and governance in the health sector, but do not aim to assess enforcement.

Each indicator is given a score of 0 if an adequate policy does not exist or cannot be assessed; and 1 if an adequate policy is available. The maximum score for the policy index is therefore 10.

Each indicator is described below and summarized in Table 6.1.

#### ***Recommended core indicator 1a: Existence of an up-to-date national health strategy linked to national needs and priorities***

Formulating national policies and strategies is a basic function of governments, and the task of formulating and implementing a health policy falls within the remit of the health ministry. An explicit health strategy defines the vision for the future, and outlines how objectives will be achieved. National health policies should outline priorities and the expected roles of different actors, inform and build consensus, and estimate the resources required to achieve goals and priorities. A recommended core indicator, therefore, is the existence of effective national health strategies and policies that reflect national needs and priorities, as opposed to factional political or financial interests, to foster broad-based political support and ownership of policies.

1 Focusing particularly on diseases that are common in low-income and middle-income countries.





**Recommended core indicator 1j: Existence of mechanisms, such as surveys, for obtaining opportune client input on appropriate, timely and effective access to health services**

Surveys of patient satisfaction and utilization of health services are useful tools for obtaining information on the quality and responsiveness of health services. Such surveys may measure inputs (including whether facilities are properly equipped with essential medicines), processes (including whether waiting times are reasonable and treatment protocols are followed) and outcomes (including whether medical interventions reduce morbidity and mortality). Hence, an indicator that measures whether consumer satisfaction is taken into account in the assessment of health services reflects the responsiveness of health systems.

**Table 6.1 Summary of proposed indicators for health systems governance**

Indicators	Data collection method	Scoring
Policy Index		Sum of the scores of 10 Indicators. Max. score: 10
1a. Existence of an up-to-date national health strategy linked to national needs and priorities	Review of national health policies in respective domains (such as essential medicines and pharmaceutical, TB, malaria, HIV/AIDS, maternal health, child health/immunization).	If adequate policy does not exist or cannot be assessed: 0 If adequate policy is available: 1
1b. Existence and year of last update of a published national medicines policy		
1c. Existence of policies on medicines procurement that specify the most cost-effective medicines in the right quantities; open, competitive bidding of suppliers of quality products		
1d. Tuberculosis—existence of a national strategic plan for tuberculosis that reflects the six principal components of the Stop-TB strategy as outlined in the Global Plan to Stop TB 2006–2015		
1e. Malaria—existence of a national malaria strategy or policy that includes drug efficacy monitoring, vector control and insecticide resistance monitoring		
1f. HIV/AIDS—completion of the UNGASS National Composite Policy Index questionnaire for HIV/AIDS		
1g. Maternal health—existence of a comprehensive reproductive health policy consistent with the ICPD action plan		
1h. Child health—existence of an updated comprehensive, multiyear plan for childhood immunization		
1i. Existence of key health sector documents that are disseminated regularly (such as budget documents, annual performance reviews and health indicators)		
1j. Existence of mechanisms, such as surveys, for obtaining opportune client input on appropriate, timely and effective access to health services		

