Health Information System Strengthening:
Standards and Best Practices for Data Sources

MODULE 3:

Human Resources for Health Information System

This module is one of 12 HIS data source modules in *Health Information System Strengthening: Standards and Best Practices for Data Sources.* The full series of modules (available at https://www.measureevaluation.org/resources/publications/tr-17-225) is intended to provide health authorities and other health information stakeholders with a reference guide that, along with other sources, can help align the HIS data sources with international standards and best practices.

Type of Data Generated: Health Occupations and Distribution of Workforce

Description

A health workforce must be adequate in numbers, skills, and distribution to deliver high-quality healthcare to a population. For this reason, the health workforce is identified as one of the six health system building blocks WHO, 2010a). A human resources information system (HRIS) provides data to track the status of the workforce in terms of the number, occupation, and geographical distribution of health workers.

The international community recognizes the global shortages of health personnel and that low- and middle-income countries have difficulties retaining health workers in the face of better employment conditions in high-income countries. The World Health Assembly adopted the WHO Global Code of Practice on the International Recruitment of Health Personnel in 2010, and many WHO member states are committed to implementing it (WHO, 2010b). The Code encourages member states to establish or strengthen routine HRIS, including information on health personnel migration.

In 2016, the WHO Secretariat presented the Global Strategy on Human Resources for Health: Workforce 2030 to the World Health Assembly for deliberation by member states (WHO, 2016). This strategy calls for the adoption of a national health workforce account (NHWA) and lays out ten modules and their corresponding indicators to guide efforts in standardizing the collection and processing of health workforce data.

Many ministries of health and other organizations, such as professional councils and educational bodies, already maintain an HRIS to record the status of health workers and graduates (WHO, World Bank, & USAID, 2009). A well-functioning HRIS constitutes a registry of health workers that tracks the "lifespan" of health professionals from the time they are licensed and employed until they leave the health workforce (Fort, Pacue-Margolis, Ng, Kauffman, & IntraHealth International, 2015). An electronic HRIS, such as the Human Resource Information Solutions (iHRIS) application, provides an efficient way to manage information on the workforce (iHRIS, n.d.).[10] Standardized health workforce data should ultimately be compiled from the HRIS maintained by various organizations into a common health workforce registry from which core indicators can be directly calculated at national and subnational levels.

Types of Indicators

Basic information from a well-functioning HRIS is sufficient to compute the recommended health workforce indicators that should be regularly tracked at the national level. Table 6 shows core indicators for monitoring the health workforce.

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[10]   The open-source iHRIS consists of several customizable applications that are freely available. They can be used online or offline for routine management of health worker data by large-scale provider networks such as ministries of health and professional councils. The software is being used in more than 20 countries across multiple business domains (Leitner, et al., 2013).

Table 6. Health workforce indicators

Global reference list of core health indicators*	Sustainable development goal target and indicator†
Number of health workers per 10,000 population—by physicians, nursing and midwifery personnel, dentistry personnel, pharmaceutical personnel, and psychiatrists	Substantially increase health financing and the recruitment, development, training, and retention of the health workforce in developing countries, especially in least-developed countries and small island developing states (Target 3.c)
Distribution of health workers—by occupation/specialization, region, place of work, country of origin, age, and sex	Health worker density and distribution (Indicator 3.c.1)
Annual number of graduates of health professions educational institutions per 100,000 population—by level and field of education	
Optional indicator: Rate of retention of health service providers at primary healthcare facilities in the past 12 months	
Optional indicator: Proportion of nationally trained health workers (e.g., with distribution of foreign-trained workers by country of origin)	
Ratio of entries into the health workforce to exits from the health workforce—by way of retirement, migration, or death	

* WHO, World Bank & USAID, 2009; WHO, 2010a; WHO, 2015a; WHO, 2015b

† United Nations Economic and Social Council, 2016

Countries can evaluate the functioning of their HRIS using the Human Resources for Health) Action Framework. The United State Agency for International Development and WHO supported the Global Health Workforce Alliance in developing this framework to better describe and measure dimensions of human resources for health, including leadership and the enabling environment (Fort, et al., 2015).

Alternative Data Sources

Censuses and labor force or health facility surveys can provide periodic snapshots of the health workforce, including some of the indicators listed in Table 6. Censuses are discussed further in Module 7: Population Censuses, and surveys are discussed further in Module 8: Population-Based Surveys.

Standards

Three main standard methodologies ensure the consistency and comparability of health workforce data.

1. Classification of national occupations to International Standard Classifications of Occupations-08 (ISCO-08)

The International Labour Organization (ILO) maintains standard workforce terminology and classification, which are provided in the ISCO (International Labour Organization, 2008). To ensure that national health workforce data are comparable over time, and across national and subnational areas, countries may classify their health occupations according to the ISCO-08. To simplify the mapping of national health occupations to the ISCO classification, WHO has prepared a map of approximately 40 health occupations using five major groupings: health professionals, health associate professionals, personal care workers in health services, health management and support personnel, and health service providers not elsewhere classified (WHO, n.d.). Each major occupation group is associated with an ISCO code. A database of the active health workforce that adheres to standard occupation groups will also facilitate reporting on international indicators (Settle, Lwetabe, Puckett, & Leitner, 2014).

2. Health workforce registry

As stated earlier, countries are likely to maintain multiple sources of health worker data. To compute health worker indicators, they need to compile the data from various sources into a single, national health workforce registry (HWR) (WHO, 2015c). The Open Health Information Exchange (OpenHIE) provides an electronic solution to develop and maintain an HWR and to easily compile standard information into a common database (OpenHIE, 2014). This electronic solution, the OpenHIE Health Worker Registry, complies with the WHO Minimum Data Set for HWRs as well as Integrating the Health Enterprise, Fast Healthcare Interoperability Resources, and other data exchange standards (OpenHIE, n.d.; WHO, 2015c; Integrating the Health Enterprise, n.d.; Fast Healthcare Interoperability Resources, n.d.). The box above presents the minimal set of data elements that ensure comparable data across HRIS.

> **Data elements in the minimal data set for a health workforce registry**
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> 1. Identification number
> 2. Full name
> 3. Birth history
> 4. Citizenship, country of residence, and language
> 5. Address
> 6. Contact information
> 7. Education, professional license, and certification
> 8. Employment status
> 9. Employment address
> 10. Data submission institution

Source: WHO, 2015c, p. 9

3. Other data related to the health workforce

Other health workforce data are being standardized in the scope of the NHWA, led by WHO in partnership with the OECD, the World Bank, USAID, ILO, and the United Nations Education, Cultural and Scientific Organization, among others (WHO, 2016). The NHWA is inspired by the WHO-OECD-Eurostat System of Health Accounts (OECD, Eurostat, & WHO, 2011) and builds on existing standards and tools, including the WHO Minimum Data Set (WHO, 2015), the WHO Handbook for Monitoring and Evaluation of Human Resources for Health (WHO, World Bank, & USAID, 2009), and the OECD/Eurostat/WHO-Europe Joint Questionnaire (OECD, Eurostat, & WHO, 2017). Standardization underway includes:

- Defining the scope of work relative to qualifications, experience, and education

- Defining current activity (practicing, professionally active, and licensed to practice)

- Conversion of head counts to full-time equivalents

Best Practices

- A sufficiently broad **human resources for health stakeholder group** is established and includes key collaborators who have the authority to manage and establish national systems and standards.

- An **HRIS** is in place to track the numbers, skills, and distribution of health workers.

- Health worker occupations are standardized in the country and mapped to **standard ISCO-08 codes,** facilitating comparisons and aggregation of data across organizations and across countries.

- An updated HWR is aligned with the WHO **minimum data set for health workers.**

- For an electronic iHRIS, the **data elements are standardized,** allowing them to easily be compiled in a common HRIS.

- **Data producers** generate core national and international health workforce indicators at least annually, at national and subnational levels.

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