

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

MODULE 2:

Health Infrastructure 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 Facilities' Infrastructure and Services

Description

The facility register, or master facility list (MFL), is a complete, up-to-date list of health facilities that uniquely identifies each facility so that all stakeholders operate and make decisions based on the same information. When the MFL is programmed into the routine health information system, it facilitates complete and timely reporting from all facilities that are required to submit data. In cases of reporting gaps or delays, it permits the health information officer to easily identify which facilities have failed to report. Without an MFL, or with a poorly maintained MFL, there is almost certainly the risk of generating health resource indicators that are biased because of incomplete data.

The Ministry of Health is typically the owner and steward of the MFL. A fully functional MFL contains validated, up-to-date information on every facility and is easily available to users in a format that they can manipulate to meet their needs. The MFL database contains a minimal set of data elements that identifies each facility uniquely (signature domain) and may include basic information on service capacity, fixed assets, and amenities (service domain) (WHO, 2013).

Data from an MFL can be used to reveal inequalities in the types of health services available to the population. The data also provide insights into the density of services, which are relevant for informing decisions on allocation of capital health investments. Depending on other data elements programmed in the MFL, it can provide information on various amenities such as the number of hospital beds or an inventory of basic equipment. The inclusion of Global Positioning System coordinates for each facility permits service availability mapping as well as linking with other data sets for more meaningful analyses.

Another important function of the MFL is to facilitate linkages between routine health information system data sources (U.S. Agency for International Development [USAID], 2017). For example, linking the MFL to the logistical management information system helps healthcare suppliers efficiently manage stocks of drugs and commodities; linking it to the human resources for health information system helps the health and education sectors plan for the number and distribution of medical professionals; and linking it to facility data on patient diagnoses permits the correlation of resource consumption with major health conditions. Finally, the MFL provides the list from which to draw a representative sample of facilities for a health facility assessment or census.

To ensure the effective use of the MFL by a variety of stakeholders, and for various purposes, it must be easily accessible to a variety of users and in a readily usable format. A hardcopy or PDF, for example, is not an ideal format for users who need to query or manipulate information in the MFL. The information contained in the MFL must also be updated on a predictable basis and include each newly designated facility and flag or exclude each facility that closes or becomes obsolete. Each update should be clearly dated.

Types of Indicators

Basic signature domain and selected service domain data elements in the MFL are sufficient to compute indicators related to the type of health facility and the availability of health services to the population (density per capita). The Ministry of Health (MOH) may also decide to maintain additional information in the MFL, such as data related to physical infrastructure, amenities, and equipment. As shown in Table 5, WHO and USAID have defined several global indicators related to health access (WHO, 2015a; WHO, 2015b; USAID & WHO, 2012).

Table 5. Health service availability indicators

Global reference list of core health indicators*	Service readiness indicators†
Total number of health facilities per 10,000 population	Number and density per 10,000 population of hospitals, health facilities, and pharmacies, by type of management
Percentage of population living within 5 km of a health facility	Number and density per 10,000 population of hospital beds, by function of healthcare (e.g., curative, psychiatric, long-term, and maternity)
Hospital bed density (per 10,000 population)	Percentage of facilities with basic amenities (e.g., electricity, improved water source, adequate sanitation, communication equipment, Internet, or emergency transportation)
Density of computed tomography units per million population, radiotherapy units per million population, and mammography units per million women ages 50–69 years	

* WHO, 2015a; WHO, 2015b

† USAID & WHO, 2012

Alternative Data Sources

Health facility assessments can provide periodic information on health service availability, including the indicators listed in Table 2. They can also provide more detailed information on health service readiness (USAID & WHO, 2012). Health facility assessments are discussed further in Module 6: Health Facility Assessments.

Standards

The United States Agency for International Development and WHO have published guidelines and a resource package to help countries establish an MFL (USAID, 2017; WHO, 2013). These guidelines outline how to develop the ideal institutional arrangements; which standard data elements to include in the signature domain and the service domain; how to populate and update the MFL; and how to manage, maintain, and disseminate the MFL.

Kenya, Nigeria, and Zambia, among other countries, have developed an MFL, and documentation about the development process is published online (Republic of Kenya Ministry of Health, 2016; Makinde, et al., 2014; Republic of Zambia Ministry of Health, 2013).

Best Practices

- Elements of effective **MFL governance** are established that include appropriate leadership, stakeholder engagement, a favorable policy environment, and institutionalization to ensure sustainability.
- The MFL is a **comprehensive list** of facilities and contains a **unique identifier** for each one.
- For each facility, the **minimal data set of elements** include information on the location, facility type, ownership, and functional status.
- Procedures are in place for regularly **updating the MFL**, including updating information on data elements and updating the list to include new facilities and omit old ones.
- The MFL is made **accessible to users** in a user-friendly format, across Ministry of Health units, ministries, institutions, and partners, with different levels of access defined according to the user context.

References: Module 2

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MEASURE Evaluation
University of North Carolina at Chapel Hill
123 West Franklin Street, Suite 330
Chapel Hill, NC 27516 USA
Phone: +1 919-445-9350
measure@unc.edu
www.measureevaluation.org

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