

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

MODULE 5:

Financial Management 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 Revenues and Expenditures

Description

A financial management information system (FMIS) enables governments to formulate budgets and monitor revenues and expenditures by sector (Dener & Young Min, 2013). In the health sector, it routinely provides health authorities with information on financial transactions that help manage efficiency in health service delivery (WHO & Health Metrics Network, 2008). A fully functioning FMIS is inextricably linked to countries' success in achieving the Sustainable Development Goal of universal health coverage (UHC) by 2030: coverage of quality health services and financial protection for all (United Nations [UN] Economic and Social Council, 2016; WHO & World Bank, 2015).

Many developing and transitional countries are putting in place an integrated FMIS so their governments can strengthen financial controls and raise levels of financial governance, transparency, and accountability (USAID, 2008). An integrated FMIS computerizes budgets and standardizes accounting operations so that central governments and different public sectors, including the ministry of health, can contribute to and access financial information using a common platform. Starting with allocations of budget funds, the sectors post financial transactions using the appropriate, tailored account in the standard chart of accounts¹² to the general ledger.¹³ The general ledger is the source for deriving financial indicators and reports. A more complex FMIS may address additional functions such as debt, resource management, human resources, payroll, and auditing processes across central government, and it may include local government and other public sector and quasi-governmental agencies (USAID, 2008).

The World Bank, International Monetary Fund, and USAID have supported many low- and middle-income countries (LMICs) in the development of an integrated FMIS, usually under the Ministry of Finance (USAID, 2008; Diamond & Khemani, 2005; Dener & Young Min, 2013). Establishing an integrated FMIS is a long-term and costly process and few are sustained—not because of a lack of technological solutions, but rather because of factors related to adequate leadership, coordination, and long-term commitment to sustain the system (USAID, 2008).

At a minimum, to inform management decisions in the health sector, the FMIS should produce reports that include the following:

- Income or revenue data with costs allocated by cost centers (such as products or outputs, service units, and sets of services)
- Comparison of expenditures by budget line items (e.g., salaries, materials, health resources) with budgets (MEASURE Evaluation, n.d.)

Universal Health Coverage and Health Financing Reforms

Universal healthcare is organized around providing all members of society a basic package of promotive, preventive, curative, rehabilitative, and palliative services, while ensuring that the use of these services does not result in financial hardship (WHO, 2017). UN member states have agreed to work toward UHC by 2030.

The FMIS should be designed to accommodate health financing reforms that are linked to the UHC goal. The WHO has issued recommendations and resolutions on UHC that urge countries to avoid significant direct payments at the point of service delivery and to develop health financing systems that pool prepaid financial contributions and equitably distribute them across the population (WHO, 2010a; World Health Assembly, 2005; World Health Assembly, 2011).¹⁴ The UN General Assembly further encourages countries to track the flow of health expenditures through the application of standard accounting frameworks in a move toward providing universal coverage (UN

¹² A chart of accounts is a list of all accounts, including health accounts, established for recording financial transactions in the general ledger.

¹³ A general ledger contains all financial transactions categorized by separate accounts.

¹⁴ World Health Assembly resolution 58.33 in 2005, World Health Assembly resolution 64.9 in 2011

General Assembly, 2012).¹⁵ Such reforms should minimize out-of-pocket expenditures that risk preventing groups of people from receiving needed services or putting them in financial hardship (Mathauer & Carrin, 2010).

Health financing mechanisms maintain three core functions: (1) raise healthcare revenues, (2) pool healthcare resources, and (3) purchase healthcare. Countries raise revenues from a variety of sources, including general tax revenues, social health insurance, private health insurance, community-based health insurance, out-of-pocket spending, and external aid (World Bank, 2011). Countries also pool prepaid financial resources, such as taxes, insurance contributions, and external funds, in various ways to spread risk across the population.

For the third core function—purchasing healthcare—governments and ministries of health make choices that are likely to involve one or more of four main payment mechanisms to providers (Table 8).

Table 8. Provider payment mechanisms

Mechanism	Description	Payment unit
Global or line-item budgets	Prospective, fixed payments based on historical patterns and number and type of employees	All services combined, to all patients or consumers, for a defined period
Capitation	Retrospective payments adjusted for location and patients' income levels	All services combined, per "average" patient or consumer, over time
Case reimbursement	Retrospective or prospective payments based on predefined diagnostic-related groups	Per patient or consumer, per admission
Fee-for-service	Retrospective payment for each health service provided	Each health service or resource consumed

Source: Adapted from Waters & Hussey, 2004, pp. 3–4

Regardless of the mix of mechanisms that countries use to pay for healthcare, purchasers require information from providers to accurately predict expected costs by cost centers and service units. In LMICs, the principal constraint on estimating costs is that adequate data are not available on administrative inputs, types and volume of services, and patient conditions (Ferranti, 1985). Limited by information gaps, LMICs commonly use line-item and global budgets to reimburse hospitals and district health offices (Waters & Hussey, 2004). This payment system is the simplest for governments to administer because payments are based on historical levels of financing rather than on costs related to specific healthcare consumption.

For LMICs to move to more efficient reimbursement systems, such as capitation or case reimbursement, they need to implement standard coding and classifications and address problems related to data availability and information technology (Mathauer & Wittenbecher, 2013). Resolving these challenges will help purchasers to set fair prices for reimbursing providers for health services (Waters & Hussey, 2004).

The healthcare purchaser can take two main approaches for establishing prices. One is a top-down approach in which total expenditures are disaggregated by patient visits or patient hospital days per cost center (e.g., inpatient wards, outpatient services, laboratory services, ancillary services). The other approach is a bottom-up approach in which utilization costs of each intervention, commodity, or administrative input consumed by the patient are aggregated. Either approach requires allocating costs to cost centers in the FMIS.

A bottom-up approach using patient-level data could be used to establish the average cost of a casemix group. Thereafter, a top-down approach could be used to prospectively or retrospectively reimburse providers according to a casemix system, such as through diagnostic-related groups. Each casemix group includes activities that cut across the organizational structure of a healthcare provider, such as those related to patient evaluation, admission, and treatment; the preparation, use, and maintenance of medical equipment and facilities; medical procedures and supplies; and hospitalization. Several LMICs have developed simple casemix payment systems for different procedures that could be expanded into diagnostic-related group-based payment systems (Waters & Hussey, 2004; Mathauer & Wittenbecher, 2013).

¹⁵ UN General Assembly resolution 67/81 in 2012

Types of Indicators

The FMIS provides public financing information needed to derive several of the internationally agreed-on health expenditure indicators defined in the internationally recognized framework, the System of Health Accounts (SHA) (OECD, Eurostat, & WHO, 2011) (Table 9). Some countries prefer to produce these indicators directly from the System of National Accounts (SNA), but they are not strictly comparable with the SHA indicators, owing to differences in the scope of healthcare goods and services included, the transactions selected, and estimation methods used (WHO, 2010b; OECD, Eurostat, & WHO, 2011; European Commission, International Monetary Fund, OECD, UN, & World Bank, 2008). Detailed descriptions of most of the SHA indicators can be found in the WHO *Indicator Code Book National Health Accounts* (WHO, 2015).

Table 9. Internationally agreed-on health expenditure indicators using FMIS data

WHO indicators*
Total health spending per capita
Total health spending as a percentage of gross domestic product
General government health spending as a percentage of total government spending
General government health spending as a percentage of gross domestic product
External resources for health as a percentage of total expenditure on health
Per capita government expenditure on health
Social security expenditure on health as a percentage of general government expenditure on health

* WHO, 2015; WHO, 2014; WHO 2010a; WHO 2010b

Alternative Data Sources

Other sources of data can be found in Health Accounts and SNA results and ad hoc studies in government health financing.

Standards

It is difficult to identify standards for FMIS because each system evolves in different ways, over long periods of time. This section describes several standards we have identified that are relevant for countries developing an FMIS with a health account.

Accounting Standards

Chart of Accounts (COA)—The COA is the foundation for any accounting system, including the FMIS. It is a list of all accounts tracked by the system, including the health account. Each account in the chart is assigned a unique identifier, or an account number, involving a series of information tags that denote certain things about the data being entered into the system. For example, these tags may denote the cost center, the department or unit responsible for the transaction, the program or purpose for which the transaction is being made, or the nature of the transaction. The account number attaches to the data and serves accounting, management, and all other reporting purposes. It also forms part of the data validation process, providing information on details such as whether a vendor exists, whether there is an authorized budget, and whether funds have been committed. Without an appropriately designed COA, created with consensus of key stakeholders, information cannot be stored or accessed properly (USAID, 2008).

International Financial Reporting Standards (IFRS). IFRS is the global standard accounting framework. It replaced the International Accounting Standards in 2001. Most countries around the world require domestic public companies to use IFRS, and they are also recommended for implementing an integrated FMIS (International Financial Reporting Standards [IFRS] Foundation, 2017; USAID, 2008).

Open Data Standards

A common data structure facilitates information sharing, further use of data, and comparability over time. The FMIS should follow the principle of open data standards, which include the following:

- Public finance information covers all public-sector revenues, expenditures, assets, and liabilities.
- Budget data include primarily general government revenues and expenditures.
- FMIS platforms are subject to regular information technology audits to ensure the reliability and integrity of systems, the security of operations, and the effectiveness of information technology governance and oversight functions.
- Open data are accessible to the public (online) in editable (machine-readable) and reusable format, without any restriction (free and legally open) (Dener & Young Min, 2013).

System of Health Accounts

The SHA draws on FMIS public expenditure data to produce information on three dimensions of healthcare: functions of care, providers of services, and sources of funding (OECD, Eurostat, & WHO, 2011). Countries that are not using the SHA methodology can use the SNA framework or another national health account framework to produce health financing indicators (European Commission, International Monetary Fund, OECD, UN, & World Bank, 2008). Health expenditures accounted for in the SNA framework can be mapped to SHA to obtain comparable levels and structures of healthcare spending.

Best Practices

Drawing from observations from a World Bank study, as well as other resources, the following best practices are identified for developing an FMIS (Dener & Young Min, 2013):

- The FMIS complies with **open data standards** and publishes timely and regular reports on budget implementation.
- Responsible staff are trained in **accounting principles and reporting requirements**, which are clearly stated in a reference document.
- **Expenditures are tracked** by budget line items and are recorded as they occur.
- **Expenditures are also linked** to defined cost centers and units of service.
- Financial reports regularly compare **actual expenditures to the budget**.
- Financial reports are consistently used for **management decisions**, including allocation of resources.

References: Module 5

- Dener, C., & Young Min, S. (2013). *Financial management information systems and open budget data: Do governments report on where the money goes? A World Bank study*. Washington, DC: The International Bank for Reconstruction and Development/The World Bank. Retrieved from http://siteresources.worldbank.org/PUBLICSECTORANDGOVERNANCE/Resources/285741-1303321730709/FMIS-and-OBD_eng.pdf
- Diamond, J., & Khemani, P. (2005). *Introducing financial management information systems in developing countries*. International Monetary Fund Working Paper WP/05/196. Washington, DC: International Monetary Fund. Retrieved from <https://www.imf.org/external/pubs/ft/wp/2005/wp05196.pdf>
- European Commission (EC), International Monetary Fund (IMF), Organization for Economic Co-operation and Development (OECD), United Nations (UN), & World Bank (WB). (2008) *System of National Accounts 2008*. New York, NY: EC, IMF, OECD, UN, & WB. Retrieved from <https://unstats.un.org/unsd/nationalaccount/docs/SNA2008.pdf>
- Ferranti, D. (1985). *Paying for health services in developing countries: An overview*. World Bank Staff Working Papers, Number 721. Washington, DC: The International Bank for Reconstruction and Development/The World Bank. Retrieved from <http://documents.worldbank.org/curated/en/485471468739208102/pdf/multi0page.pdf>
- International Financial Reporting Standards (IFRS) Foundation. (2017). Who uses IFRS standards? Retrieved from <http://www.ifrs.org/use-around-the-world/use-of-ifrs-standards-by-jurisdiction/>
- Mathauer, I., & Carrin, G. (2010). *The role of institutional design and organizational practice for health financing performance and universal coverage*. Discussion paper no. 5. Geneva, Switzerland: World Health Organization. Retrieved from http://www.who.int/health_financing/documents/dp_e_10_05-instit_uc.pdf?ua=1
- Mathauer, I., & Wittenbecher, F. (2013). Hospital payment systems based on diagnosis-related groups: Experiences in low- and middle-income countries. *Bulletin of the World Health Organization*, 91, 746–756A. Retrieved from <http://www.who.int/bulletin/volumes/91/10/12-115931/en/>
- MEASURE Evaluation. (n.d.). The financial management system produces accurate, timely information. Retrieved from http://www.cpc.unc.edu/measure/prh/rh_indicators/crosscutting/mgt/the-financial-management-system-produces-accurate
- Organisation for Economic Co-operation and Development (OECD), Eurostat, & World Health Organization. (2011). *A system of health accounts*. Washington, DC: OECD Publishing. Retrieved from <http://www.who.int/health-accounts/methodology/sha2011.pdf?ua=1>
- Public Expenditure and Financial Accountability (PEFA)*. (2016). The PEFA framework. Retrieved from <https://pefa.org/content/pefa-framework>
- United Nations Economic and Social Council. (2016). *Report of the Inter-Agency and Expert Group on Sustainable Development Goal Indicators (E/CN.3/2016/2/Rev.1), Annex IV*. Statistical Commission Forty-seventh session, March 8–11, 2016. Retrieved from <https://sustainabledevelopment.un.org/content/documents/11803Official-List-of-Proposed-SDG-Indicators.pdf>
- United National General Assembly. (2012). *Resolution adopted by the General Assembly on 12 December 2012: 67/81. Global health and foreign policy*. Retrieved from http://www.un.org/en/ga/search/view_doc.asp?symbol=A/RES/67/81

U.S. Agency for International Development. (USAID). (2008). *Integrated financial management information systems: A practical guide*. Washington, DC: USAID. Retrieved from http://pdf.usaid.gov/pdf_docs/Pnadk595.pdf

Waters, H., & Hussey, P. (2004). *Pricing health services for purchasers: A review of methods and experiences*. Health Nutrition and Population Discussion Paper. Washington, DC: International Bank for Reconstruction and Development/The World Bank. Retrieved from <http://siteresources.worldbank.org/HEALTHNUTRITIONANDPOPULATION/Resources/281627-1095698140167/Chap6PricingHealthServicesFinal.pdf>

World Bank. (2011). Financing. Where does funding for health systems come from? How are the funds pooled? How are they allocated and spent? Retrieved from http://web.worldbank.org/WBSITE/EXTERNAL/TOPICS/EXTHEALTHNUTRITIONANDPOPULATION_EXTHSD/0,,contentMDK:22523961~menuPK:6485082~pagePK:148956~piPK:216618~theSitePK:376793,00.html

World Health Assembly. (2005). *Sustainable health financing, universal coverage and social health insurance (WHA58.33)*. Fifty-Eighth World Health Assembly. Retrieved from <http://apps.who.int/medicinedocs/documents/s21475en/s21475en.pdf>

World Health Assembly. (2011). *Sustainable health financing structures and universal coverage (WHA64.9)*. Sixty-Fourth World Health Assembly. Retrieved from <http://apps.who.int/medicinedocs/documents/s21474en/s21474en.pdf>

World Health Organization (WHO). (2010a). *The world health report: Health systems financing: The path to universal coverage*. Geneva, Switzerland: WHO. Retrieved from http://apps.who.int/iris/bitstream/10665/44371/1/9789241564021_eng.pdf

World Health Organization (WHO). (2010b). *Monitoring the building blocks of health systems: A handbook of indicators and their measurement strategies*. Geneva, Switzerland: WHO. Retrieved from http://www.who.int/healthinfo/systems/WHO_MBHSS_2010_full_web.pdf

World Health Organization. (2014). Global health expenditure database. Retrieved from <http://apps.who.int/nha/database/Select/Indicators/en>

World Health Organization (WHO). (2015). *Indicator code book national health accounts: National health accounts*. Geneva, Switzerland: WHO. Retrieved from <http://apps.who.int/nha/database/DocumentationCentre/GetFile/52869001/en>

World Health Organization (WHO) & Health Metrics Network. (2008). *Framework and standards for country health information systems*. Second edition. Geneva, Switzerland: WHO. Retrieved from http://apps.who.int/iris/bitstream/10665/43872/1/9789241595940_eng.pdf

World Health Organization (WHO) and The World Bank. (2015). *Tracking universal health coverage: First global monitoring report*. Geneva, Switzerland: WHO. Retrieved from http://apps.who.int/iris/bitstream/10665/174536/1/9789241564977_eng.pdf

World Health Organization (WHO). (2017). Health financing for universal coverage. Retrieved from http://www.who.int/health_financing/universal_coverage_definition/en/

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