

Health Systems Strengthening

A Compendium of Indicators

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ABBREVIATIONS

AFG	AIDS-free generation
AIS	AIDS indicator survey
ARV	antiretrovirals
DALY	disability-adjusted life year
DHS	Demographic and Health Survey
DOTS	directly observed treatment, short-course
CHW	community health worker
EPCMD	ending preventable child and maternal deaths
GFATM	Global Fund to Fight AIDS, Tuberculosis and Malaria
GHI	Global Health Initiative
HAI	Health Action International
HIS	health information system(s)
HRH	human resources for health
HRIS	human resources information system(s)
HSS	health systems strengthening
M&E	monitoring and evaluation
MICS	Multiple Indicator Cluster Survey
MOE	ministry of education
MOF	ministry of finance
MOH	ministry of health
NHA	national health accounts
NGO	nongovernmental organization
STG	standard treatment guidelines
STI	sexually transmitted infection
UHC	universal health coverage
USAID	United States Agency for International Development
USG	United States Government
TB	tuberculosis
WGI	worldwide governance indicators
WHO	World Health Organization

INTRODUCTION

Health Systems Strengthening: Monitoring, Evaluation, and Learning Guide (Aqil, Silvestre, & Hotchkiss, 2017)—part of a package of health systems strengthening [HSS] resources, along with this compendium and one other document—provides advice and direction on how to set up monitoring, evaluation, and learning (MEL) processes. These processes track progress in HSS, generate evidence of the effectiveness of HSS interventions, and use that evidence for continuous learning and better programming. Indicators are an important part of MEL processes, and this compendium presents the wide array of indicators that can be used to monitor progress and generate evidence for HSS. They support USAID’s goals of ending preventable child and maternal deaths (EPCMD) and an AIDS-free generation (AFG goals). The indicators come from many diverse sources and were collected in conjunction with a literature review of M&E frameworks for HSS: *Health Systems Strengthening: A Literature Review* (Diana, Yeager, & Hotchkiss, 2017): the third document in this package of resources.¹

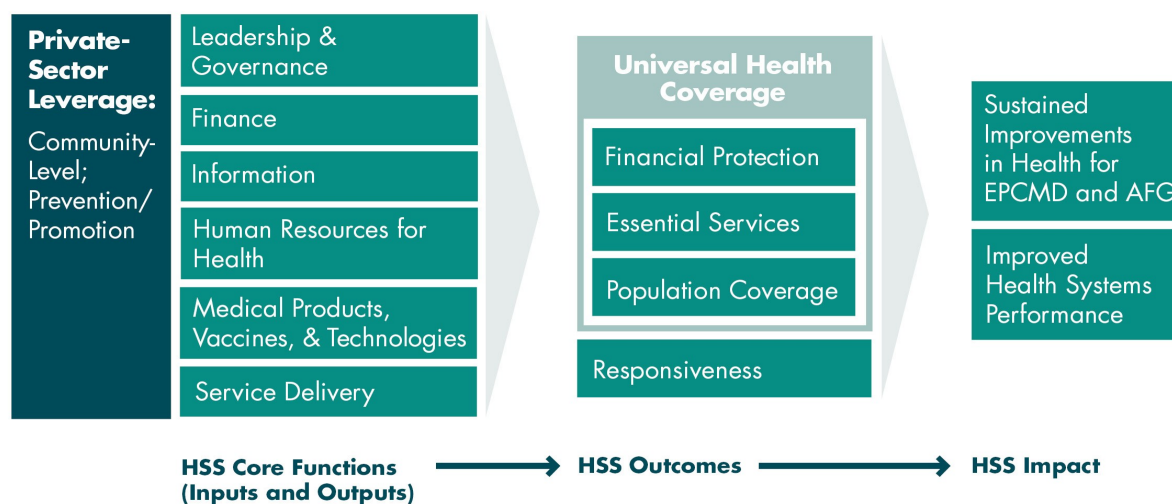
The compendium is organized in three sections. First, it provides introduction to indicators, grouping based on health system functions, selection considerations, and data sources. Second, an overview HSS indicators is provided. Lastly, tables of indicators based on core health system functions are presented.

Core Functions of Health Systems Strengthening

The indicators this document presents are organized according to the six core HSS functions that the United States Agency for International Development (USAID) has identified: finance; health information; human resources for health; leadership and governance; medical products, vaccines, and technologies; and service delivery (Figure 1). These were originally proposed by the World Health Organization (WHO) as an organizing structure for HSS advocacy and to guide investments in HSS by international health partners and country governments to facilitate the scale-up of interventions essential to achieving the health-related Millennium Development Goals. In USAID’s HSS vision, the HSS core functions lead to the HSS outcomes that contribute to universal health coverage (UHC): financial protection, essential services, population coverage, and responsiveness. The expected impacts of these core functions are improved health system performance and sustained improvements in health to achieve EPCMD and AFG goals.

¹ This compendium does not provide indicators for context monitoring, because each context is different and relevant indicators should be decided based on the criteria discussed in the MEL guidance document. Nor does this compendium provide indicators for outcome monitoring based on qualitative techniques, because outcomes cannot be identified in advance but instead should follow a qualitative study design and be based on the stakeholders’ perceptions and objective observations.

Figure 1. USAID's core functions of HSS



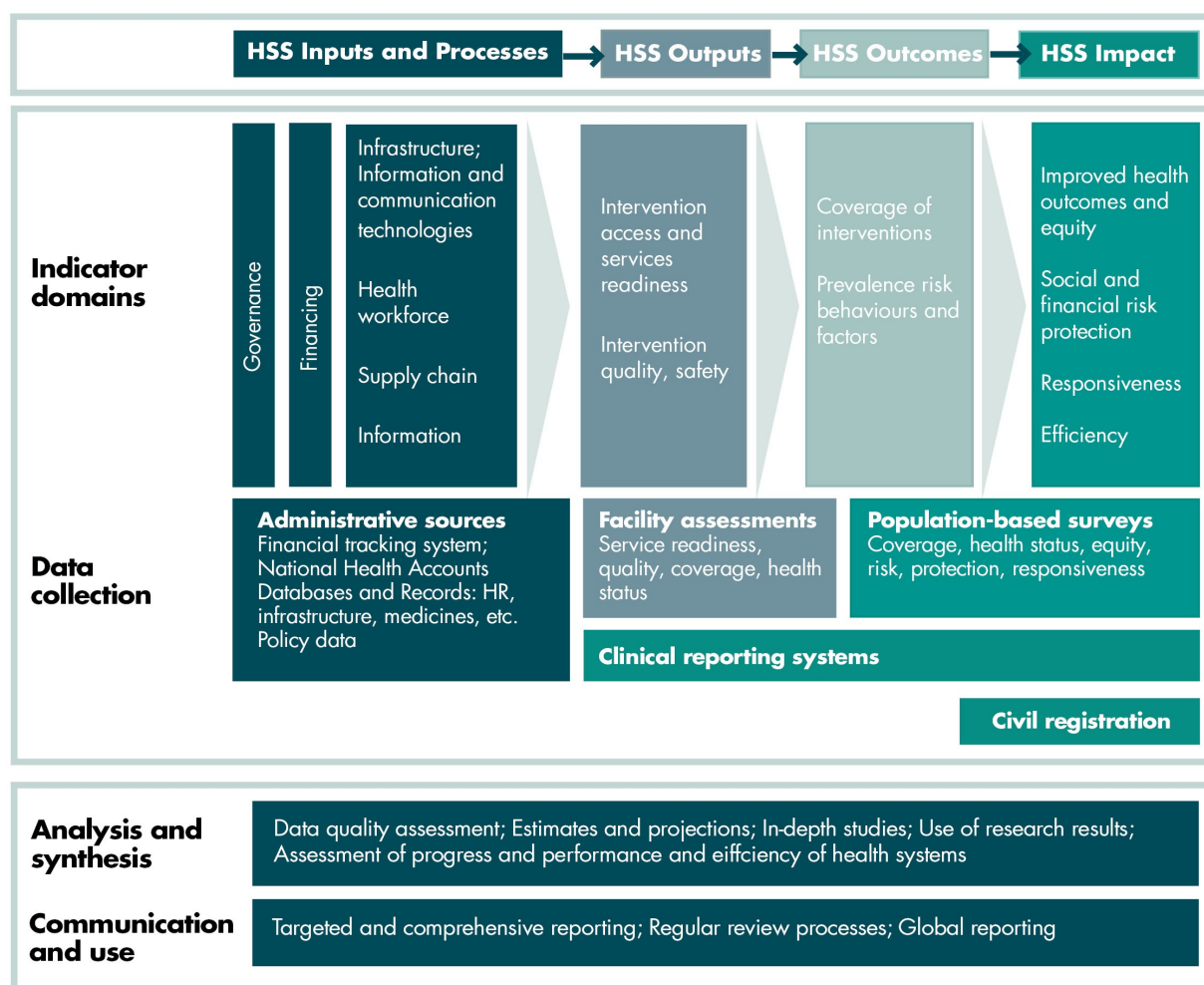
Key: EPCMD (ending preventable child and maternal deaths);
AFG (AIDS-free generation)

Source: USAID. (2015). USAID's vision for health systems strengthening, 2015–2019. Washington, D.C.: USAID. Retrieved from <https://www.usaid.gov/sites/default/files/documents/1864/HSS-Vision.pdf>.

A General Framework for HSS Monitoring and Evaluation

Figure 2 presents a framework for monitoring and evaluating country-level HSS activities. The framework consists of HSS inputs and processes, outputs, outcomes, and impact (World Health Organization, 2011a). The framework operationalizes the HSS core functions, by placing them in the categories of inputs and processes, which then lead to system outputs, which in turn influence outcomes and finally impact. Although these terms have varying meanings depending on the context of their use, the framework identifies measurement domains within each category. For example, outputs consist of measures of access, service readiness, quality, and safety. Outcomes consist of measures of coverage and prevalence. The framework identifies indicators and associated sources of data, including household and facility surveys, routine health information systems, vital statistics, and censuses. This framework can be useful to inform the monitoring and evaluation (M&E) of HSS activities, but it is not designed for specific types of HSS interventions. Rather, it is a useful basis for designing a more specific M&E framework for the HSS activity to be monitored and evaluated. Table 1 defines each level (inputs, processes, outputs, short-term and intermediate outcomes, and impacts) of an M&E framework, as well as examples relevant to HSS activities at each level.

Figure 2. Framework for the M&E of health systems strengthening



Source: Monitoring and evaluation of health systems strengthening. An operational framework. (2009a). Paper prepared by WHO, World Bank, Global Alliance on Vaccines Initiative, and Global Fund to Fight AIDS, Tuberculosis and Malaria. Retrieved from http://www.who.int/healthinfo/HSS_MandE_framework_Nov_2009.pdf.

Table 1: Levels and examples of an HSS-specific M&E framework

	Definition	Examples
Inputs	The resources invested in a program	Financial resources, human resources, technical assistance, equipment and supplies, protocols/guidelines, policies
Processes	The activities carried out to achieve the program's objectives and the direct, immediate products, results, or deliverables achieved at the program level through the execution of intervention processes (e.g., services offered, people trained, or number of people reached)	Workforce recruitment and training; computers distributed to facilities; health insurance schemes developed and rolled out; standard treatment guidelines developed and produced; community meetings with stakeholders hosted; health facilities established; healthcare workers trained; computerized records maintained; medicines delivered and/or in-stock; population covered under insurance scheme(s), protocols/guidelines available at service sites; education and training provided; financing provided for human resources for health; good-quality data made available on the availability of products, storage of inventory, cost-effectiveness, and expenditure
Outputs	The effects of an intervention on the intended outputs at the service delivery level (i.e., service readiness) or at the population level (knowledge and attitudes)	Access, service readiness, care-seeking behavior, treatment success rate, knowledge, and attitudes
Outcomes	The effects of an intervention's outputs at the population level (i.e., changed health service coverage and change in frequency of risk behaviors)	Use of preventive services, use of curative services, prevalence of risk behaviors
Impacts	The long-term, cumulative effects, or end results, of programs or interventions over time in terms of what they ultimately aim to change; in this context, impact usually refers to changes in health status or conditions (i.e., biology and quality of life)	Morbidity, mortality, fertility, socioeconomic well-being, equity, responsiveness, efficiency, and social and financial risk protection

An Introduction to Indicators

Indicators² play a vital role in tracking the progress and assessing the impact of HSS activities. However, the HSS activities supported by governments and their international health partners are diverse in type and complexity. Thus, identifying which indicators to use to monitor and evaluate HSS activities can be challenging, varying with the type of HSS project and intervention and the context in which the activities are implemented.

This section describes the types of indicators that are available for the M&E of HSS: what constitutes a good indicator, the strengths and limitations of the different types of indicators, and examples of the data sources needed for measurement. After this brief overview of indicators, examples of indicators aligned with the M&E of HSS framework are introduced along with the criteria according to which they were selected. To the extent possible, the indicators drawn from published literature up to the year 2015—when this review was completed—have been grouped according to their similarity, to yield a functional, consistent list.

Grouping of HSS Indicators

We use the M&E framework of HSS to group indicators in the following domains: (1) inputs and processes, (2) outputs, (3) outcomes, and (4) impact. “Inputs” and “processes” refer to governance, health financing, infrastructure, health workforce, supply chain, and information. The next level of indicators— outputs of health systems—refers to access to and quality of interventions and health services as well as the readiness of providers to deliver these interventions. The outcome and impact indicators listed in Table 2 are the two highest levels of indicators. “Outcomes” refers to the population coverage of interventions and health services (e.g., percentage of children under five years of age who are vaccinated; percentages of patients with specified health conditions who receive treatment). “Impacts” refers to indicators of the ultimate objectives of health systems: not only improved health outcomes (e.g., in mortality and morbidity, or composite indicators such as disability-adjusted life years [DALYs] saved) and health equity, but also financial risk protection, responsiveness, and efficiency.

Universal health coverage is receiving increased attention from governments and international health partners. Indicators used to assess progress toward UHC measure effective coverage of essential healthcare services and other interventions and financial risk protection. Using the M&E framework, essential coverage indicators are classified as outcome indicators and financial risk protection indicators are classified as impact indicators.

Selection of HSS Indicators

In selecting which indicators to measure, observe, and analyze, several factors should be considered: the objectives of the HSS project or intervention, how the project activities will be phased in, and the information needs of HSS program managers and funders. A framework of how the HSS project or intervention is designed to achieve the intended objectives should always guide the selection of indicators. This framework should be tailored so that it fits the specific project and the setting in which the M&E process will take place. Many factors contribute to the identification of appropriate, sufficient indicators. Ideally, each indicator should be (Gage, Ali, & Suzuki, 2005):

- **Valid:** It should measure the condition or event it is intended to measure.

²Indicators are important, but they are just one aspect of the M&E of HSS. We must emphasize the critical role of developing a conceptual framework or logic model of the HSS activity to guide the selection of indicators. Ideally, the design and implementation of the HSS activities and the M&E approach are developed together, prospectively, so there can be a close match with the objectives of the HSS activities and the M&E of those activities.

- **Reliable:** It should produce the same result when used more than once to measure the same condition or event, all things being equal (e.g., using the same methods, tools, or instruments).
- **Specific:** It should measure only the condition or event it is intended to measure, undistorted by changes in unrelated phenomena.
- **Sensitive:** It should reflect changes in the state of the condition or event under observation.
- **Operational:** It should be measurable or quantifiable with developed or tested definitions and reference standards.
- **Affordable:** The costs of measuring the indicator should be reasonable and affordable.
- **Feasible:** It should be possible to carry out the proposed data collection needed to measure the indicator over time.

If there is interest in comparing the progress of HSS efforts within a country over time, or across countries, or both, then standard indicator definitions should be used. For example, indicators could be based on standard definitions of service provision and coverage that have been developed by the WHO (e.g., integrated management of childhood illnesses and the use of maternal health services) or of catastrophic out-of-pocket health expenditures (e.g., 40 percent of the nondiscretionary household expenditure is a standard threshold that is frequently used).

Data Sources

Many types of data sources can be used to measure HSS indicators. The costs and benefits of data collection options should be considered when indicators are chosen to track changes over time during the HSS process. Data sources can be classified as either routine or nonroutine, with each having different resource, training, and planning requirements. Routine data come from sources providing information at regular intervals of a year or less through mechanisms designed to meet predictable information needs (Hotchkiss, Diana, & Foreit, 2012). Alternatively, nonroutine data are “collected ad hoc for a special purpose to complement and corroborate data gathered through the routine reporting system” (Sauerborn, 2000). Examples of routine data sources are vital (civil) registration records, facility records, clinic service statistics, documentation of sales of products, and demographic surveillance records. Examples of nonroutine data sources are household surveys such as the Demographic and Health Survey (DHS) and Multiple Indicator Cluster Survey (MICS); national censuses; and facility surveys, such as service provision assessments.

Indicators of health systems inputs and process are typically measured using facility records that are part of routine administrative sources of data, including:

- Health management information systems, which can provide data on the number of services of various types provided
- Human resources information systems (HRIS), which can provide data on the numbers and distributions of health workers
- Policy documents (in the case of governance), which can yield information on the design and implementation of health system reforms

In health financing, a combination of routine and nonroutine data sources is typically used to track inputs and processes. For example, national health accounts (NHA)—a type of analysis in wide use that provides a detailed description of the sources, financial agents, and uses of health financing—are based both on administrative records and population-based household surveys.

Indicators of outcomes and impacts are typically based on nationally representative population-based household surveys, such as the DHS and MICS. Although they are expensive, population-based surveys are

necessary to measure coverage of interventions; health outcomes; and financial risk protection, such as the extent to which households pay out of pocket for healthcare: preventive, outpatient, and inpatient services. If designed and implemented correctly, population-based household surveys provide adequate data to measure coverage indicators and outcome or impact indicators (e.g., percentage of population 24–49 years of age with HIV; percentage of those who are sick or injured who receive health services from a trained provider).

In addition to household surveys, censuses and civil registration systems are other types of population-based data sources that are used to measure outcomes and impacts. Although census data are not always suitable for public health purposes, they do provide appropriate population size estimates that can be used as denominators for HSS indicators that are measured as rates (e.g., modern contraceptive prevalence rates, which are based on the number of females 15–49 years of age, and child mortality and morbidity rates, which are based on the number of children under five years of age). A limitation in the use of vital statistics is that civil registration systems in low- and middle-income countries often are incomplete.

Overview of HSS Indicators

Table 2 provides indicators of health systems outcomes and impacts in common use, drawn from our review of the literature on measuring health system performance. Examples of **outcome dimensions** are coverage for Millennium Development Goal intervention areas, such as maternal and child healthcare services and interventions to prevent and treat chronic conditions and injuries. Another example of outcomes is the prevalence of risk factors and behaviors that can lead to poor health outcomes (e.g., access to clean water; smoking).

In addition to indicators measuring coverage of specific interventions or a package of interventions, we also list measures of equity. For example, as part of their proposed framework for measuring progress toward UHC, the World Bank and WHO recommend measuring coverage levels among the poorest 40 percent of the population as well as for the overall population (World Bank and World Health Organization, 2013). Disparities in service coverage among wealth groups (e.g., richest 20 percent versus poorest 20 percent) or groups based on other types of socioeconomic status (e.g., ethnic groups, racial groups, and groups sorted by age and gender) can also be measured.

Table 2. Health systems strengthening outcome and impact indicators by measurement domain

Outcome	
Coverage	
Levels	<ul style="list-style-type: none"> • Physicians, nurses, hospitals per 1,000 population • Basic and comprehensive emergency obstetric care facilities per 500,000 population • Percentage of population within 10 kilometers of a clinic • Referral rates for women with obstetric complications • Tuberculosis (TB) case-detection rates • Antiretroviral (ARV) treatment rates for people with advanced HIV • Prevalence of modern contraceptive methods • Percentage of pregnant women receiving four antenatal care visits • Percentage of women having deliveries assisted by a skilled birth attendant • Full basic immunization rates • Screening for breast and cervical cancer

Equity	<ul style="list-style-type: none"> • Percentage of the poorest 40% of the population or disadvantaged populations with access to a basic benefits package (to be defined) • Percentage of the poorest 40% of the population or disadvantaged populations who use essential health services (e.g., attended delivery, modern contraceptives, specialist visits) • Perception of exclusion and inclusion by health system • Distance from clinic for poorest 40% of the population or disadvantaged populations
Prevalence of risk behaviors and factors	<ul style="list-style-type: none"> • Percentage of people sleeping under a malaria bed net (under 5 years of age) • Percentage of children 5 years of age or younger who have access to safe water • Percentage of people 15 years of age or older who smoke regularly
Impact	
Health	
Level	<ul style="list-style-type: none"> • DALYs saved • Infant mortality • Maternal mortality • Neonatal mortality • Incidence of low birth weight • Prevalence of stunting and wasting • Survival rates for lung cancer • Case fatality rates • Infection and complication rates of surgery
Equity	<ul style="list-style-type: none"> • Mortality rates for poorest 40% of the population or disadvantaged populations (under-five; 15–49; maternal; cancer) • Mortality rates for women, immigrants, members of ethnic groups, people in remote geographic areas
Financial risk protection	<ul style="list-style-type: none"> • Proportion of government health financing that reaches the poorest income quintile • Progressivity of financing methods (taxes; out-of-pocket) • Extent of out-of-pocket payments, indirect payments, and informal fees for essential services • Proportion of population with catastrophic health expenditures • Proportion of households among the poorest 40% of the population incurring catastrophic out-of-pocket health expenditures • Incidence of impoverishment because of health payments • A measure of the level of household impoverishment arising from out-of-pocket expenditures on health, equal to the ratio of the poverty gap in a world without out-of-pocket payments to the actual (larger) poverty gap
Responsiveness	<ul style="list-style-type: none"> • Quality of physician-patient communication • Length of wait for care • Administrative simplicity

	<ul style="list-style-type: none"> • Perception of access to specialists • Adequacy of time spent with physician • Being treated with respect
Efficiency	<ul style="list-style-type: none"> • Avoidable hospitalizations • Readmission rates • Rate of emergency room visits within 30 days of discharge • Rate of avoidable hospitalizations • Mortality rates per dollars (USD) invested in healthcare • Mortality rates for different financing structures • Costs per case treated (per hospital day; per outpatient visit) • Costs per case at different levels of care • Average length of stay • Physician consultations per day • Cost-effectiveness ratios for specific services (compared to alternative services) • Health worker attrition rates • Health worker morale • Waiting times for appointments

Table 2 also provides examples of indicators of **health system impacts**: health outcomes, financial risk protection, and health system responsiveness. Examples of health outcomes are age-specific mortality rates, such as the infant mortality rate or the under-five mortality rate, and anthropometry status (height-for-weight, height-for-age, and weight-for-height). Like the indicators of coverage described above, health equity measures can also be generated by measuring health outcomes among the poorest 40 percent of the population as well as the overall population or by comparing disparities by wealth status groups or other dimensions of socioeconomic status. Composite measures of health outcomes such as DALYs lost can also be considered, but they require extensive epidemiological data that often are not readily available in low- and middle-income countries.

The compendium that follows provides examples of **HSS input, process, and output indicators** at three different contextual levels: national, subnational, and facility. It also presents appropriate HSS indicators from the resources found in the literature review. Indicators are categorized in terms of HSS core functions, components of the core functions, resources where the indicators are located (and corresponding page numbers), data source type, and potential data source examples.

Moreover, the indicator tables consider **data source availability categories**. Potential data source examples are categorized according to those sources' availability: on-the-shelf data, document review or data mining, and data collection (including surveys and interviews).

- **On-the-shelf:** Drawn from existing, widely available data sources, these indicators are often already in disseminated or published reports or reporting systems.
- **Document review or data mining:** Indicators that exist but would require time, money, and human resources to find, organize, clean, and analyze.
- **Data collection:** Indicators that require active data collection, usually involving either household surveys or stakeholder interviews

Because resources in the settings where HSS activities are being implemented are unknown, **indicator data source types** were given preference of selection from “most available and feasible” to “least,” as follows: on the shelf, document review or data mining, and data collection (surveys and interviews). In some cases, two indicators for each component of USAID’s HSS core functions are listed; this occurs when more than 10 indicators were found to fall within a component or to be aspects of a core function. Moreover, in this case, the selected indicators are examples from different types of data sources (e.g., data collection and on-the-shelf) to allow more flexibility in data collection and better availability of data.

Appendix A

Country-level health systems strengthening indicators, by core function

Resource	Page	Indicator	Component of HSS Core Function	Core Function	Data Source Type(s)	Potential Data Source(s)
LaFond, Brown 2003	53	Average time/distance to the nearest reproductive health facility offering a specific service†	Access/Equity	Service Delivery	Document Review/Data Mining	Census Data, MOH Administrative Records (Facility Censuses)
Alva 2009	74	Basic and comprehensive obstetric care facilities per 500,000†	Access/Equity	Service Delivery	Document Review/Data Mining	Census Data, MOH Administrative Records (Facility Censuses)
USAID 2012	196	Consumer profiles†	Access/Equity	Service Delivery	Data Collection (Surveys/Interviews)	Household Surveys
Liu 2004	49	Difference in access indicators between locations (rural vs. urban), income groups (household income quintile), and ethnic groups (as they are relevant)†	Access/Equity	Service Delivery	Data Collection (Surveys/Interviews)	Household Surveys
Liu 2004	49	Difference in quality indicators between locations (rural vs. urban), income groups (household income quintile), and ethnic groups (as they are relevant)†	Access/Equity	Service Delivery	Data Collection (Surveys/Interviews)	Facility Assessments
Liu 2004	47	Distribution of reasons given by those ill but not accessing services (seeking care is unnecessary, financial barriers, distance, lack of supply)†	Access/Equity	Service Delivery	Data Collection (Surveys/Interviews)	Household Surveys
Boerma 2010	17	Health facilities per 10,000 population†	Access/Equity	Service Delivery	On the Shelf Document Review/Data Mining	Census Data MOH Administrative Records (Facility Censuses)
Boerma 2010	17	Hospital beds per 10,000 population†	Access/Equity	Service Delivery	Document Review/Data Mining	Census Data, MOH Administrative Records (Facility Censuses)
LaFond, Brown 2003	53	Index of equality of child survival	Access/Equity	Service Delivery	On the Shelf	WHO Reports
WHO 2010	8	Number and distribution of (primary care) health facilities per 10,000 population†	Access/Equity	Service Delivery	Document Review/Data Mining	Census Data, MOH Administrative Records (Facility Censuses)
WHO 2010	12	Number and distribution of health facilities offering specific services per 10,000 population†	Access/Equity	Service Delivery	Document Review/Data Mining	Census Data, MOH Administrative Records (Facility Censuses)
WHO 2010	9	Number and distribution of inpatient beds per 10,000 population†	Access/Equity	Service Delivery	Document Review/Data Mining	Census Data, MOH Administrative Records (Facility Censuses)
Global Fund 2004	10	Number of activities organized which address basic needs of vulnerable populations†	Access/Equity	Service Delivery	Document Review/Data Mining	MOH, Regional, or Facility Records

* Indicators in this resource span at least 2 WHO building blocks and, therefore, were only listed under the most relevant building block for the purpose of this table.

† Indicators are also applicable at a higher level of the health system.

Liu 2004	49	Number of hospital days per doctor†	Access/Equity	Service Delivery	On the Shelf	HRIS, Facility Records
Global Fund 2004	10	Number or percentage of districts or other administrative unit with designated sentinel/provider operating according to guidelines for the intervention	Access/Equity	Service Delivery	Document Review/Data Mining	MOH Administrative Records (Facility Censuses)
USAID 2012	263	Percentage of households more than 5/10/20 km from health facility/pharmacy to dispense essential medicines†	Access/Equity	Service Delivery	Data Collection (Surveys/Interviews)	Household Surveys
WHO 2010	22	Percentage of persons who state they have a usual source of care†	Access/Equity	Service Delivery	Data Collection (Surveys/Interviews)	Household Surveys
Hutchinson 2004	46	Percentage of population (rural, poor) living within X kilometers of a facility offering specific services (e.g., obstetric care, a package of essential primary health care services, family planning and immunization outreaches, 24-hour emergency transport)†	Access/Equity	Service Delivery	Document Review/Data Mining Data Collection (Surveys/Interviews)	MOH Records Household Surveys
Liu 2004	47	Percentage of population (rural, poor) residing within X kilometers of a health facility†	Access/Equity	Service Delivery	Document Review/Data Mining Data Collection (Surveys/Interviews)	MOH Records Household Surveys
Liu 2004	47	Percentage of population (rural, poor) residing within X kilometers of a health facility providing a package of basic health services†	Access/Equity	Service Delivery	Document Review/Data Mining Data Collection (Surveys/Interviews)	MOH Records Household Surveys
Liu 2004	47	Percentage of population (rural, poor) residing within X kilometers of a health facility staffed by a doctor†	Access/Equity	Service Delivery	Document Review/Data Mining Data Collection (Surveys/Interviews)	MOH Records Household Surveys
Liu 2004	47	Percentage of population (rural, poor) residing within X kilometers of a hospital†	Access/Equity	Service Delivery	Document Review/Data Mining Data Collection (Surveys/Interviews)	MOH Records Household Surveys
Liu 2004	47	Percentage of population (rural, poor) residing within X kilometers of a hospital providing 24-hour emergency (obstetric) care†	Access/Equity	Service Delivery	Document Review/Data Mining Data Collection (Surveys/Interviews)	MOH Records Household Surveys
Liu 2004	47	Percentage of population (rural, poor) residing within X kilometers of a pharmacy†	Access/Equity	Service Delivery	Document Review/Data Mining Data Collection (Surveys/Interviews)	MOH Records Household Surveys
Liu 2004	47	Percentage of population (rural, poor) served by 24-hour ambulance services†	Access/Equity	Service Delivery	Document Review/Data Mining Data Collection (Surveys/Interviews)	MOH Records Household Surveys
Liu 2004	47	Percentage of population (rural, poor) residing more than X kilometers from a health facility who are covered by outreach services†	Access/Equity	Service Delivery	Document Review/Data Mining Data Collection (Surveys/Interviews)	MOH Records Household Surveys

* Indicators in this resource span at least 2 WHO building blocks and, therefore, were only listed under the most relevant building block for the purpose of this table.

† Indicators are also applicable at a higher level of the health system.

Liu 2004	47	Percentage of those ill expressing need for service but not accessing it†	Access/Equity	Service Delivery	Data Collection (Surveys/Interviews)	Household Surveys
Hutchinson 2004	46	Population per doctor, nurse, clinic, hospital, hospital bed (by geographic area)†	Access/Equity	Service Delivery	Document Review/Data Mining	Census Data, MOH Records, HRIS
Hutchinson 2004	45	Use of essential health services by socioeconomic quintile/decile†	Access/Equity	Service Delivery	Data Collection (Surveys/Interviews)	Household Surveys
USAID 2012	193	Antenatal care coverage, at least one visit (%)†	Coverage, Utilization, Demand	Service Delivery	On the Shelf Data Collection (Surveys/Interviews)	DHS/AIS/MICS Household Surveys
USAID 2012	194	Births attended by skilled health staff (% of total)†	Coverage, Utilization, Demand	Service Delivery	On the Shelf Document Review/Data Mining Data Collection (Surveys/Interviews)	DHS/AIS/MICS, Census Projections, Vital Registration Data Facility Records, Household Surveys
Boerma 2010	18	Cervical cancer screening (20–64 years) coverage†	Coverage, Utilization, Demand	Service Delivery	Data Collection (Surveys/Interviews)	Facility Records, Household Surveys
Boerma 2010	17	Children with ARI taken to health facility†	Coverage, Utilization, Demand	Service Delivery	Data Collection (Surveys/Interviews)	Household Survey
USAID 2012	194	Contraceptive prevalence (% of women ages 15–49)†	Coverage, Utilization, Demand	Service Delivery	On the Shelf Data Collection (Surveys/Interviews)	DHS/MICS Household Surveys
Liu 2004	11	Coverage of birth spacing†	Coverage, Utilization, Demand	Service Delivery	Data Collection (Surveys/Interviews)	Household Surveys
Liu 2004	12	Coverage of growth monitoring†	Coverage, Utilization, Demand	Service Delivery	Data Collection (Surveys/Interviews)	Household Surveys
Grun 2006	6	Coverage of the population (%) with healthcare†	Coverage, Utilization, Demand	Service Delivery	Data Collection (Surveys/Interviews)	Household Surveys
Liu 2004	10	Coverage of three prenatal visits†	Coverage, Utilization, Demand	Service Delivery	Data Collection (Surveys/Interviews)	Household Surveys

* Indicators in this resource span at least 2 WHO building blocks and, therefore, were only listed under the most relevant building block for the purpose of this table.

‡ Indicators are also applicable at a higher level of the health system.

Liu 2004	47	Coverage rate of contracted services (immunization, prenatal care, disease screening, HIV tests and counseling, smoking counseling, contraception prevalence, etc.)†	Coverage, Utilization, Demand	Service Delivery	Data Collection (Surveys/Interviews)	Household Surveys
USAID 2012	195	DTP3 immunization coverage (%) among one year-olds†	Coverage, Utilization, Demand	Service Delivery	On the Shelf Data Collection (Surveys/Interviews)	DHS/MICS Household Surveys
LaFond, Brown 2003	53	Family planning continuation rates in catchment population†	Coverage, Utilization, Demand	Service Delivery	Data Collection (Surveys/Interviews)	Facility Records, Household Surveys
Liu 2004	14	Number and types of conditions (case mix) treated†	Coverage, Utilization, Demand	Service Delivery	Document Review/Data Mining	Facility Records
WHO 2010	10	Number of outpatient department visits per 10,000 population per year†	Coverage, Utilization, Demand	Service Delivery	On the Shelf Document Review/Data Mining Data Collection (Surveys/Interviews)	DHS (Out-of-Pocket Health Expenditure Module) Census Data, Facility Records Household Survey
USAID 2012	193	Number of primary care or outpatient visits per person to health facilities per year†	Coverage, Utilization, Demand	Service Delivery	On the Shelf Document Review/Data Mining Data Collection (Surveys/Interviews)	DHS (Out-of-Pocket Health Expenditure Module) Census Data, Facility Records Household Survey
Liu 2004	49	Number of visits per doctor†	Coverage, Utilization, Demand	Service Delivery	On the Shelf	HRIS, Facility Records
Liu 2004	49	Number of visits per health worker†	Coverage, Utilization, Demand	Service Delivery	On the Shelf	HRIS, Facility Records
Global Fund 2004	10	Number or percentage of target population covered by intervention†	Coverage, Utilization, Demand	Service Delivery	Document Review/Data Mining Data Collection (Surveys/Interviews)	Census Data, Facility Records, Household Survey

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Knowles 1997	31	Outpatient visits per hour of nurse labor (or per nurse)†	Coverage, Utilization, Demand	Service Delivery	Document Review/Data Mining	HRIS, Facility Records, Payroll Records
Knowles 1997	31	Outpatient visits per hour of physician labor (or per physician)†	Coverage, Utilization, Demand	Service Delivery	Document Review/Data Mining	HRIS, Facility Records, Payroll Records
Liu 2004	14	Overall utilization of services by age group†	Coverage, Utilization, Demand	Service Delivery	Data Collection (Surveys/Interviews)	Household Surveys
USAID 2012	195	Percentage of children under five with acute respiratory infection taken to a health facility†	Coverage, Utilization, Demand	Service Delivery	Data Collection (Surveys/Interviews)	Household Surveys
USAID 2012	195	Percentage of population on ARVs†	Coverage, Utilization, Demand	Service Delivery	On the Shelf Data Collection (Surveys/Interviews)	DHS/AIS Household Surveys
USAID 2012	195	Percentage of population tested for HIV†	Coverage, Utilization, Demand	Service Delivery	On the Shelf Data Collection (Surveys/Interviews)	DHS/AIS/MICS Household Surveys
USAID 2012	195	Percentage of population treated for STI†	Coverage, Utilization, Demand	Service Delivery	On the Shelf Data Collection (Surveys/Interviews)	DHS/AIS Household Surveys
WHO 2010	22	Percentage of women age 40 years and over who reported a mammogram within the past two years†	Coverage, Utilization, Demand	Service Delivery	Data Collection (Surveys/Interviews)	Household Surveys
Liu 2004	12	Percentage of women attending the weekly health and nutrition education sessions†	Coverage, Utilization, Demand	Service Delivery	Data Collection (Surveys/Interviews)	Household Surveys
Liu 2004	10	Percentage of women using ORT to treat diarrhea in children†	Coverage, Utilization, Demand	Service Delivery	Data Collection (Surveys/Interviews)	Household Surveys
USAID 2012	198	Percentage of women vs Percentage of men who access HIV/AIDS test, STI treatment, etc.†	Coverage, Utilization, Demand	Service Delivery	Document Review/Data Mining Data Collection (Surveys/Interviews)	Facility Records Household Surveys

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WHO 2010	22	Percentage of women who received prenatal care in the first trimester†	Coverage, Utilization, Demand	Service Delivery	Document Review/Data Mining Data Collection (Surveys/Interviews)	Facility Records Household Surveys
USAID 2012	198	Percentage of women who seek care for specific health intervention by source and income group†	Coverage, Utilization, Demand	Service Delivery	Data Collection (Surveys/Interviews)	Household Surveys
LaFond, Brown 2003	52	Proportion of adults whose partner recently died in central hospital†	Coverage, Utilization, Demand	Service Delivery	Data Collection (Surveys/Interviews)	Household Surveys
Hutchinson 2004	47	Proportion of children ages 12–24 months fully immunized†	Coverage, Utilization, Demand	Service Delivery	On the Shelf Data Collection (Surveys/Interviews)	DHS/MICS Household Surveys
Hutchinson 2004	47	Proportion of ill individuals seeking curative care from a modern (public, private, or NGO) health care provider†	Coverage, Utilization, Demand	Service Delivery	Data Collection (Surveys/Interviews)	Household Surveys
USAID 2012	195	Unmet need for family planning†	Coverage, Utilization, Demand	Service Delivery	On the Shelf Data Collection (Surveys/Interviews)	DHS/MICS Household Surveys
Liu 2004	11	Utilization of facility by the poor†	Coverage, Utilization, Demand	Service Delivery	Data Collection (Surveys/Interviews)	Household Surveys
Hutchinson 2004	43	Existence of a national or subnational quality assurance program with procedures, standards, and enforcement mechanisms for ensuring minimal levels of quality and improvement†*	Directives, Oversight, Resources	Service Delivery	Document Review/Data Mining	MOH/Regional Policy Documents or Records
USAID 2012	189	Commercial entities offering health services for their employees and/or communities where they operate†	Organization of Services	Service Delivery	Data Collection (Surveys/Interviews)	Employers Surveys
USAID 2012	189	Number of health facilities by type and ownership†	Organization of Services	Service Delivery	Document Review/Data Mining	MOH Administrative Records (Facility Censuses), Professional Associations Records
Liu 2004	11	Percentage of health centers providing family planning method†	Organization of Services	Service Delivery	Document Review/Data Mining Data Collection (Surveys/Interviews)	MOH Records Facility Assessments
Liu 2004	11	Percentage of health centers providing immunization†	Organization of Services	Service Delivery	Document Review/Data Mining Data Collection (Surveys/Interviews)	MOH Records Facility Assessments
Liu 2004	11	Percentage of health centers providing laboratory (hemoglobin) tests†	Organization of Services	Service Delivery	Document Review/Data Mining Data Collection (Surveys/Interviews)	MOH Records Facility Assessments

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LaFond, Brown 2003	53	Percentage of health facilities providing STI services with adequate drug supply†	Organization of Services	Service Delivery	Document Review/Data Mining Data Collection (Surveys/Interviews)	MOH Records Facility Assessments
Knowles 1997	33	Percentage of outpatient visits obtained from the private sector†	Organization of Services	Service Delivery	On the Shelf Document Review/Data Mining	DHS (Out-of-Pocket Health Expenditure Module) MOH/Facility Records
Knowles 1997	33	Private hospital beds as a percent of total†	Organization of Services	Service Delivery	Document Review/Data Mining	MOH Administrative Records (Facility Censuses), Professional Associations Records
Alva 2009	75	Private sector service delivery†	Organization of Services	Service Delivery	Document Review/Data Mining Data Collection (Surveys/Interviews)	Administrative Records Facility Assessments
WHO 2010	12	Proportion of health facilities offering specific services†	Organization of Services	Service Delivery	Data Collection (Surveys/Interviews)	Facility Assessments
Liu 2004	45	Quantities of services and their mix†	Organization of Services	Service Delivery	Document Review/Data Mining Data Collection (Surveys/Interviews)	Administrative Records Facility Assessments
LaFond, Brown 2003	52	Sufficient number of sites functioning as clinical training sites to meet clinic practice needs†*	Organization of Services	Service Delivery	Document Review/Data Mining	MOH/MOE Records
LaFond, Brown 2003	53	System responsiveness to clients†*	Responsiveness	Service Delivery	?	?
PEPFAR 2011	17	Percentage of national/local partners/supported sites with adequate equipment/materials†	Service Readiness	Service Delivery	Data Collection (Surveys/Interviews)	Facility Assessments
USAID 2012	199	Percentage of primary care facilities that are adequately equipped†	Service Readiness	Service Delivery	Data Collection (Surveys/Interviews)	Facility Assessments
Global Fund 2004	10	Percentage of selected providers equipped for the intervention (laboratories, nursing, psychosocial support, others)†	Service Readiness	Service Delivery	Data Collection (Surveys/Interviews)	Facility Assessments, Facility Staff Interviews
Knowles 1997	26	Proportion of clinics in which services are fully integrated, per national standards†	Service Readiness	Service Delivery	Data Collection (Surveys/Interviews)	Facility Staff Interviews, Client Exit Interviews

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Alva 2009	73	Proportion of health facilities that meet basic service capacity standards – a composite index of five components with 20 items in total (service capacity)†	Service Readiness	Service Delivery	Data Collection (Surveys/Interviews)	Facility Assessments
Alva 2009	75	Availability of updated clinical standards for MOH priority areas, high burden diseases areas, and/or areas responsible for high morbidity and mortality*	Service Quality	Service Delivery	On the Shelf	MOH Policy Documents
WHO 2010	22	Birth trauma rate in neonate per 1,000 live births†	Service Quality	Service Delivery	Document Review/Data Mining	MOH, Regional, or Facility Records
USAID 2012	199	Clinical standards adapted into a practical form that can be used at local level†*	Service Quality	Service Delivery	Document Review/Data Mining Data Collection (Surveys/Interviews)	MOH/Regional Policy Documents Facility Site Visits, Stakeholder Interviews
Global Fund 2004	14	Number of blood units transfused during the last 12 months that have been adequately screened for HIV according to national or WHO guidelines†	Service Quality	Service Delivery	Document Review/Data Mining	MOH, Regional, or Facility Records
Liu 2004	48	Percentage of 6–59 month olds receiving vitamin A capsule in past 6 months†	Service Quality	Service Delivery	Data Collection (Surveys/Interviews)	Household Surveys
WHO 2010	22	Percentage of adults with recent health visit who stated their provider always listened to what they had to say†	Service Quality	Service Delivery	Data Collection (Surveys/Interviews)	Client Exit Interviews, Household Surveys
WHO 2010	22	Percentage of adults with recent health visit who stated their provider explained things clearly†	Service Quality	Service Delivery	Data Collection (Surveys/Interviews)	Client Exit Interviews, Household Surveys
WHO 2010	22	Percentage of adults with recent health visits who stated their provider showed respect to them†	Service Quality	Service Delivery	Data Collection (Surveys/Interviews)	Client Exit Interviews, Household Surveys
Liu 2004	12	Percentage of children weighted monthly in the cohort of beneficiaries†	Service Quality	Service Delivery	Data Collection (Surveys/Interviews)	Household Surveys
Liu 2004	11	Percentage of children who received vitamin A capsule†	Service Quality	Service Delivery	On the Shelf Data Collection (Surveys/Interviews)	DHS/MICS Household Surveys
Liu 2004	47	Percentage of children with diarrhea who used ORT (ORS, RHF, or increased liquids)†	Service Quality	Service Delivery	Data Collection (Surveys/Interviews)	Household Surveys

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LaFond, Brown 2003	53	Percentage of facilities where percentage of clients receive the service that meets the expected standards†	Service Quality	Service Delivery	Data Collection (Surveys/Interviews)	Client Exit Interviews
LaFond, Brown 2003	53	Percentage of pregnant women counseled and tested for HIV†	Service Quality	Service Delivery	On the Shelf Data Collection (Surveys/Interviews)	DHS/AIS/MICS Household Surveys
Liu 2004	49	Proportion of referrals made and consummated in accordance with national guidelines and standards†	Service Quality	Service Delivery	Document Review/Data Mining	Facility Records, HIS
Alva 2009	76	Quality Assurance system that monitors the service quality of health care facilities†	Service Quality	Service Delivery	Document Review/Data Mining Data Collection (Surveys/Interviews)	MOH, Regional, or Facility Policy Documents Stakeholder Interviews
Liu 2004	13	Treatment success rate (%)†	Service Quality	Service Delivery	Document Review/Data Mining	MOH/Facility Records

Resource	Page	Indicator	Component of HSS Core Function	Core Function	Data Source Type(s)	Potential Data Source(s)
LaFond, Brown 2003	52	Adequacy of training materials/supplies has been assessed in one or more institutions†	Education & Training	Health Workforce	Document Review/Data Mining	Training Institutions Records
LaFond, Brown 2003	52	Adequate training supplies available in sufficient quantities to support ongoing RH/FP training in one or more institutions†	Education & Training	Health Workforce	Document Review/Data Mining	Training Institutions Records
LaFond, Brown 2003	72	Existence of a standard official training curriculum guiding training institutions*	Education & Training	Health Workforce	On the Shelf	MOH/MOE Records or Policy Documents
WHO 2009b	44	Existence of an accreditation agency of health education and training institutions*	Education & Training	Health Workforce	Document Review/Data Mining Data Collection (Surveys/Interviews)	MOH/MOE Records or Reports MOH/MOE Interviews
USAID 2012	265	Existence of treatment guidelines used for pre- and in-service training of health personnel in both public and private sector*	Education & Training	Health Workforce	On the Shelf	MOH/MOE Records or Policy Documents
LaFond, Brown 2003	71	Existence of updated official FP/RH service and training guidelines*	Education & Training	Health Workforce	On the Shelf	MOH/MOE Records or Policy Documents

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USAID 2012	228	Frequency, quality, and alignment of in-service training to health priorities and workforce needs†	Education & Training	Health Workforce	Document Review/Data Mining	MOH Records, Donor Records, Professional Societies' Records
WHO 2009b	94	Median number of years of education and training among health workers†	Education & Training	Health Workforce	Document Review/Data Mining Data Collection (Surveys/Interviews)	MOH/MOE/Facility, Records, Training Institutions Records, Health Worker Surveys
WHO 2009b	44	Number and percentage of accepted applicants who register for training, per cadre†	Education & Training	Health Workforce	Document Review/Data Mining Data Collection (Surveys/Interviews)	Training Institutions Records, MOE Records Training Institutions Surveys
WHO 2009b	44	Number and percentage of applicants accepted for training programmes, per cadre†	Education & Training	Health Workforce	Document Review/Data Mining Data Collection (Surveys/Interviews)	Training Institutions Records, MOE Records Training Institutions Surveys
WHO 2009b	44	Number and percentage of health training institutions meeting accreditation and reaccreditation standards†	Education & Training	Health Workforce	Document Review/Data Mining Data Collection (Surveys/Interviews)	MOH/MOE Records or Reports MOH/MOE Interviews
WHO 2009b	121	Number and percentage of student doctors, nurses, or midwives who passed the professional licensing exam and registered with the national job-specific council†	Education & Training	Health Workforce	Document Review/Data Mining	Training Institutions Records, Professional Regulatory Bodies Records
WHO 2009b	44	Number of applicants per training place, per cadre†	Education & Training	Health Workforce	Document Review/Data Mining Data Collection (Surveys/Interviews)	Training Institutions Records, MOE Records Training Institutions Surveys

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WHO 2009b	45	Number of education and training places per cadre†	Education & Training	Health Workforce	Document Review/Data Mining Data Collection (Surveys/Interviews)	Training Institutions Records, MOH/MOE Records Training Institutions Interviews
WHO 2010	33	Number of entrants into community health training programmes (with nationally approved curriculum) in the past 12 months, e.g. by sex†	Education & Training	Health Workforce	Document Review/Data Mining Data Collection (Surveys/Interviews)	Training Institution Records Training Institution Interviews
WHO 2009b	45	Number of library books and journals per student, per cadre†	Education & Training	Health Workforce	Document Review/Data Mining	Training Institutions Records
Alva 2009	78	Number of medical schools /nursing schools†	Education & Training	Health Workforce	On the Shelf	MOE Records
Global Fund 2004	10	Number of people trained according to national standards for an intervention†	Education & Training	Health Workforce	Document Review/Data Mining	MOH/MOE Records, Training Institutions Records
Global Fund 2004	11	Number of persons trained†	Education & Training	Health Workforce	On the Shelf	MOH/MOE Records, Training Institutions Records
USAID 2012	227	Number of pre-service and in-service training institutions†	Education & Training	Health Workforce	On the Shelf	MOH/MOE Records
WHO 2009b	45	Number of students per personal computer, per cadre†	Education & Training	Health Workforce	Document Review/Data Mining	Training Institutions Records
WHO 2009b	45	Number of students per qualified instructor, per cadre†	Education & Training	Health Workforce	Document Review/Data Mining Data Collection (Surveys/Interviews)	Training Institutions Records, MOH/MOE Records Training Institutions Interviews
PEPFAR 2011	17	Number of trained managerial skills (HR, financial/ grants, leadership, other)†	Education & Training	Health Workforce	Document Review/Data Mining	Training Curriculum
PEPFAR 2011	17	Number of workers trained (technical skills)†	Education & Training	Health Workforce	On the Shelf	Training Records
PEPFAR 2011	17	Percent of targeted cadre of staff in technical area with required skills†	Education & Training	Health Workforce	Data Collection (Surveys/Interviews)	Staff Interviews/Surveys
PEPFAR 2011	17	Percent of trainees demonstrating competence in work setting post-training†	Education & Training	Health Workforce	Data Collection (Surveys/Interviews)	Site Visits (Observation)
PEPFAR 2011	17	Percent of trainees retained in job at 12 months†	Education & Training	Health Workforce	On the Shelf	HRIS

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PEPFAR 2011	17	Percent of trainees that apply skills to current work†	Education & Training	Health Workforce	Data Collection (Surveys/Interviews)	Site Visits (Observation)
WHO 2009b	94	Percentage of health workers who received in-service training in the past 12 months†	Education & Training	Health Workforce	Document Review/Data Mining Data Collection (Surveys/Interviews)	Training Institutions Records, Stakeholder Interviews, Health Worker Surveys
Hutchinson 2004	38	Percentage of staff receiving training in key skills areas and having up-to-date skills†	Education & Training	Health Workforce	Document Review/Data Mining Data Collection (Surveys/Interviews)	Training Institutions Records, Facility Records Training Institution Staff Interviews
Hutchinson 2004	38	Proportion of civil service receiving management training†	Education & Training	Health Workforce	Document Review/Data Mining	Training Institutions Records, MOH/MOE Records
Alva 2009	78	Proportion of health workers receiving training during previous year†	Education & Training	Health Workforce	Document Review/Data Mining	Training Institution Records
WHO 2009b	29	Proportion of nationally trained health workers†	Education & Training	Health Workforce	Document Review/Data Mining	Training Institutions Records, MOH/MOE Records
WHO 2009b	29	Average occupational earnings and income among health workers†	Financing HRH	Health Workforce	Document Review/Data Mining Data Collection (Surveys/Interviews)	Facility Records Health Worker Surveys
Hutchinson 2004	38	Average salary by grade, level, and region†	Financing HRH	Health Workforce	On the Shelf Document Review/Data Mining	HRIS MOH/Facility Records
WHO 2010	33	Costed, prioritized human resources management/development plan exists†*	Financing HRH	Health Workforce	Document Review/Data Mining Data Collection (Surveys/Interviews)	MOH Policy Documents MOH Interviews
USAID 2012	224	Data indicating public salaries are competitive in the local and regional labor market†	Financing HRH	Health Workforce	Data Collection (Surveys/Interviews)	National/Regional Wage Studies
WHO 2009b	32	Distribution of health workers' salaries by source†*	Financing HRH	Health Workforce	Document Review/Data Mining Data Collection (Surveys/Interviews)	Facility Records Staff Interviews
USAID 2012	224	Evidence indicating that National Health Accounts regularly collect and report data about HRH expenditures*	Financing HRH	Health Workforce	On the Shelf Document Review/Data Mining	NHA MOH/MOF Budgets

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USAID 2012	220	Existence of a comprehensive HRH plan with a budget*	Financing HRH	Health Workforce	On the Shelf	MOH Policy Documents
WHO 2009b	64	Expenditure on HRH as a proportion of total expenditure on health*	Financing HRH	Health Workforce	On the Shelf Document Review/Data Mining	NHA MOH/MOF
WHO 2009b	45	Government expenditure on health vocational training, per cadre*	Financing HRH	Health Workforce	On the Shelf Document Review/Data Mining	NHA MOH/MOF
WHO 2009b	64	Government expenditure on HRH as a proportion of general government expenditure on health*	Financing HRH	Health Workforce	On the Shelf Document Review/Data Mining	NHA MOH/MOF
WHO 2009b	64	Government expenditure on HRH as a proportion of recurrent general government expenditure on health*	Financing HRH	Health Workforce	On the Shelf Document Review/Data Mining	NHA MOH/MOF
WHO 2009b	64	HRH expenditure, total and per capita (in national currency units, in US dollars and in international dollars)*	Financing HRH	Health Workforce	On the Shelf Document Review/Data Mining	NHA, Census Data MOH/MOF,
PEPFAR 2011	17	Percent of PEPFAR-supported government staff transferred to government salaries†	Financing HRH	Health Workforce	Document Review/Data Mining	Staff Records
WHO 2009b	45	Private expenditure on health vocational training, per cadre†*	Financing HRH	Health Workforce	Document Review/Data Mining Data Collection (Surveys/Interviews)	MOH/MOF Records, Training Institutions Records Household Surveys
Knowles 1997	34	Ratio of average salary of government health worker (e.g., doctor, nurse, technician) with a given level of experience, to the income of a comparable private sector health worker	Financing HRH	Health Workforce	Document Review/Data Mining	MOH/MOF Records, Private Employers Records
Alva 2009	79	Ratio of GFATM to MOH funds covering per diems and salaries*	Financing HRH	Health Workforce	Document Review/Data Mining	MOH/GFATM Budgets
WHO 2009b	45	Total cost per graduate for health vocational training, per cadre†	Financing HRH	Health Workforce	Document Review/Data Mining	MOH/MOF Records, Training Institutions Records
WHO 2010	31	Annual number of graduates of health professions educational institutions per 100,000 population – by cadre, level, or field of education†	HRH Availability	Health Workforce	Document Review/Data Mining	HRIS, Census Data, Training Institution Records, MOH/ Professional Regulatory Bodies Records

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WHO 2009b	54	Annual numbers of overseas-trained nurses obtaining national licensure to practice in the country	HRH Availability	Health Workforce	Document Review/Data Mining	MOH/Professional Regulatory Bodies Records
WHO 2009b	45	Attrition (dropout) rate per student cohort, per cadre†	HRH Availability	Health Workforce	Document Review/Data Mining	MOH/MOE Records, Training Institutions Records
WHO 2009b	45	Attrition (turnover) rate among instructors, per cadre†	HRH Availability	Health Workforce	Document Review/Data Mining	MOH/MOE Records, Training Institutions Records
WHO 2009b	98	Attrition rates for health workers in private or public sector facilities†	HRH Availability	Health Workforce	Document Review/Data Mining	HRIS, MOH/Facility Records
WHO 2009b	29	Days of absenteeism among health workers†	HRH Availability	Health Workforce	On the Shelf	HRIS, Facility Records
WHO 2009b	80	Distribution of facility-based staff by geographical location, age group, or sex†	HRH Availability	Health Workforce	On the Shelf Document Review/Data Mining	HRIS MOH/Facility Records
WHO 2009b	80	Distribution of facility-based staff by occupation, specialization or other skill-related characteristic†	HRH Availability	Health Workforce	Document Review/Data Mining	HRIS, MOH/Facility Records
WHO 2010	30	Distribution of health workers by occupation/ specialization, region, place of work, age group, or sex†	HRH Availability	Health Workforce	On the Shelf Document Review/Data Mining	HRIS MOH/Facility Records
WHO 2009b	28	Distribution of health workers by sector of activity†	HRH Availability	Health Workforce	Document Review/Data Mining	HRIS, MOH/Facility Records
Hutchinson 2004	41	Doctors/nurses per hospital bed†	HRH Availability	Health Workforce	On the Shelf	HRIS, MOH/Facility Records
WHO 2009b	55	Estimated lifetime emigration rate of physicians born in non-OECD countries and working in OECD countries at the time of census	HRH Availability	Health Workforce	Document Review/Data Mining	Census Data, Entry Visas, Work Permits, Professional Regulatory Bodies Records
WHO 2009b	80	Facility-based health workforce attrition rate (by reason for leaving workplace)†	HRH Availability	Health Workforce	Document Review/Data Mining Data Collection (Surveys/Interviews)	MOH/Facility Records, Payroll Records Health Worker Surveys
Knowles 1997	41	Foreign doctors as a percent of all doctors	HRH Availability	Health Workforce	Document Review/Data Mining	MOH/Professional Regulatory Bodies Records, HRIS
Boerma 2010	17	Health workers per 10,000 population†	HRH Availability	Health Workforce	Document Review/Data Mining Data Collection (Surveys/Interviews)	Census Data, Facility Records Facility Assessment

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WHO 2009b	80	Level and field of education among facility-based staff†	HRH Availability	Health Workforce	Document Review/Data Mining	HRIS, MOH/Facility Records
WHO 2009b	89	Mean number of health workers by type of facility, according to cadre†	HRH Availability	Health Workforce	On the Shelf Document Review/Data Mining	HRIS MOH/Facility Records
WHO 2009b	95	Median number of years of service in current position among facility-based health workers†	HRH Availability	Health Workforce	Document Review/Data Mining Data Collection (Surveys/Interviews)	HRIS, MOH/Facility Records Health Worker Surveys
WHO 2009b	45	Number and percentage of new internationally trained health workers granted professional certification/licensure, per cadre†	HRH Availability	Health Workforce	Document Review/Data Mining	Professional Regulatory Bodies Records
WHO 2009b	45	Number and percentage of new nationally trained health workers granted professional certification/licensure, per cadre†	HRH Availability	Health Workforce	Document Review/Data Mining	Professional Regulatory Bodies Records
WHO 2009b	44	Number and percentage of students graduating from secondary schools with science concentrations (or other entry requirements for health vocational training)†	HRH Availability	Health Workforce	Document Review/Data Mining Data Collection (Surveys/Interviews)	Primary & Secondary School Records (MOE Records) School Interviews
Liu 2004	48	Number of doctors per 1,000 population†	HRH Availability	Health Workforce	On the Shelf	MOH Records, HRIS, Census Data
Knowles 1997	34	Number of doctors per hospital†	HRH Availability	Health Workforce	On the Shelf	MOH Records, HRIS, Census Data
WHO 2009b	45	Number of entry visas issued to non-national health workers, per cadre	HRH Availability	Health Workforce	Document Review/Data Mining	Census Data, Entry Visas, Work Permits, Professional Regulatory Bodies Records
WHO 2009b	54	Number of foreign-born nurses and doctors	HRH Availability	Health Workforce	Document Review/Data Mining	Entry Visas, Work Permits, Professional Regulatory Bodies Records

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WHO 2010	33	Number of health workers newly recruited at primary healthcare facilities in the past 12 months, e.g. expressed as percentage of planned recruitment target†	HRH Availability	Health Workforce	Document Review/Data Mining Data Collection (Surveys/Interviews)	Facility Records Facility Interviews
WHO 2010	34	Number of health workers trained abroad newly entering the country in the past 12 months, e.g. relative to the number of nationally trained graduates	HRH Availability	Health Workforce	Document Review/Data Mining	Census Data, Entry Visas, Work Permits, Professional Regulatory Bodies Records
Alva 2009	77	Number of health workers/health professionals per 10,000 population/per capita/per 1,000 population†	HRH Availability	Health Workforce	On the Shelf Document Review/Data Mining	HRIS, Census Data MOH/Facility Records
WHO 2009b	122	Number of medical specialists deployed to underserved areas†	HRH Availability	Health Workforce	Document Review/Data Mining	HRIS, MOH Records
WHO 2009b	80	Number of new medical/health graduates entering the facility-based health workforce	HRH Availability	Health Workforce	Document Review/Data Mining	HRIS, MOH/Facility Records, Training Institutions Records
WHO 2009b	45	Number of newly graduated health workers who are employed in the health labour market within 3 months of graduation (or other nationally defined time period), per cadre	HRH Availability	Health Workforce	Document Review/Data Mining Data Collection (Surveys/Interviews)	MOH/MOE Records, Training Institutions Records, Professional Regulatory Bodies Records National Labor Force Studies
WHO 2009b	45	Number of newly graduated or licensed health workers who are diverted from the national health labour market (e.g. unemployed, migrate, choose not to work, or work in a nonhealth job), per cadre	HRH Availability	Health Workforce	Document Review/Data Mining Data Collection (Surveys/Interviews)	MOH/MOE Records, Training Institutions Records, Professional Regulatory Bodies Records National Labor Force Studies
WHO 2009b	122	Number of newly graduated physicians entering the service for internship on time	HRH Availability	Health Workforce	Document Review/Data Mining	MOH/MOE Records, Training Institutions Records, Professional Regulatory Bodies Records
WHO 2009b	45	Number of non-national health workers applying for entry visas, per cadre	HRH Availability	Health Workforce	Document Review/Data Mining	Entry Visas, Work Permits, Professional Regulatory Bodies Records

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† Indicators are also applicable at a higher level of the health system.

Liu 2004	48	Number of nurses per 1,000 population†	HRH Availability	Health Workforce	On the Shelf	MOH Records, HRIS, Census Data
Knowles 1997	34	Number of nurses per doctor†	HRH Availability	Health Workforce	On the Shelf	MOH Records, HRIS, Census Data
Knowles 1997	34	Number of nurses per hospital bed†	HRH Availability	Health Workforce	On the Shelf	MOH Records, HRIS, Census Data
WHO 2009b	45	Number of places in laboratories or clinical internships, per cadre†	HRH Availability	Health Workforce	Document Review/Data Mining Data Collection (Surveys/Interviews)	MOH/MOE Records Training Institutions Surveys
Liu 2004	46	Number of providers who can compete for the contract	HRH Availability	Health Workforce	?	?
Liu 2004	46	Number of providers withdrawing from the market	HRH Availability	Health Workforce	Document Review/Data Mining	MOH/Regulatory Bodies/ Professional Association Records
WHO 2009b	80	Number of staff per health facility (by type of facility or services offered)†	HRH Availability	Health Workforce	On the Shelf	HRIS, MOH/Facility Records
WHO 2009b	45	Number of students graduating each year, per cadre†	HRH Availability	Health Workforce	Document Review/Data Mining	Training Institutions Records, MOE Records
WHO 2009b	44	Number of students graduating from primary school, e.g. expressed as % of all children of primary school age†	HRH Availability	Health Workforce	Document Review/Data Mining Data Collection (Surveys/Interviews)	Primary & Secondary School Records (MOE Records) School Interviews
WHO 2009b	44	Number of students graduating from secondary school, e.g. expressed as % of all children of secondary schooling age†	HRH Availability	Health Workforce	Document Review/Data Mining Data Collection (Surveys/Interviews)	Primary & Secondary School Records (MOE Records) School Interviews
WHO 2010	33	Number of students in medical, nursing, and midwifery (pre-service) education programs per qualified instructor†	HRH Availability	Health Workforce	Document Review/Data Mining Data Collection (Surveys/Interviews)	Training Institution Records Training Institution Interviews
Alva 2009	78	Number of unfilled positions (rural vs. urban)†	HRH Availability	Health Workforce	Document Review/Data Mining Data Collection (Surveys/Interviews)	HRIS, MOH/Facility Records Facility Surveys

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Global Fund 2004	10	Number or percentage of districts or other administrative unit with the required number of providers of the intervention	HRH Availability	Health Workforce	Document Review/Data Mining	HRIS, MOH/Regional Records, Training Institutions Records
Liu 2004	46	Percent of eligible providers bidding for next round of contract	HRH Availability	Health Workforce	?	?
WHO 2009b	91	Percentage of health workers requested by facility managers to meet staffing requirements who are currently in post†	HRH Availability	Health Workforce	Data Collection (Surveys/Interviews)	Facility Site Visits
Liu 2004	46	Population per doctor†	HRH Availability	Health Workforce	On the Shelf	MOH Records, HRIS, Census Data
Liu 2004	46	Population per nurse†	HRH Availability	Health Workforce	On the Shelf	MOH Records, HRIS, Census Data
WHO 2009b	55	Premature death rate per 1,000 health workers†	HRH Availability	Health Workforce	Document Review/Data Mining	Census Data, Facility Records
					Data Collection (Surveys/Interviews)	Facility Assessment
Hutchinson 2004	38	Proportion of clinic/hospital staff posts that are filled†	HRH Availability	Health Workforce	On the Shelf	HRIS, MOH/Facility Records
Alva 2009	79	Proportion of health workers at tertiary, secondary, and primary levels†	HRH Availability	Health Workforce	On the Shelf	MOH Records, HRIS
WHO 2009b	28	Proportion of HRH currently active in the labour force	HRH Availability	Health Workforce	Document Review/Data Mining	HRIS, National Labor Force Studies
					Data Collection (Surveys/Interviews)	Health Worker Survey
WHO 2009b	28	Proportion of HRH currently employed (or unemployed)†	HRH Availability	Health Workforce	Document Review/Data Mining	National Labor Force Studies
					Data Collection (Surveys/Interviews)	Health Worker Survey
WHO 2009b	28	Proportion of HRH currently employed at more than one location	HRH Availability	Health Workforce	Document Review/Data Mining	HRIS, National Labor Force Studies
					Data Collection (Surveys/Interviews)	Health Worker Survey
WHO 2009b	56	Proportion of workers reporting a health occupation but not working in the health services industry at the time of interview†	HRH Availability	Health Workforce	Document Review/Data Mining	Health Worker Survey
					Data Collection (Surveys/Interviews)	National Labor Force Studies
Alva 2009	93	Public/private mix (e.g., absolute number of private and public health care providers)†	HRH Availability	Health Workforce	Document Review/Data Mining	HRIS, MOH/Facility Records

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Liu 2004	45	Quantity of staff and staff mix†	HRH Availability	Health Workforce	On the Shelf	HRIS, MOH/Facility Records
USAID 2012	218	Ratio of different health personnel per 1,000†	HRH Availability	Health Workforce	On the Shelf	WHO Data
Alva 2009	77	Ratio of doctors (physicians), nurses, midwives, pharmacists, and laboratory technicians, per 1,000 population†	HRH Availability	Health Workforce	On the Shelf	MOH Records, HRIS, Census Data
WHO 2009b	29	Ratio of entry to the health workforce	HRH Availability	Health Workforce	Document Review/Data Mining	Training Institution Records, MOH/MOE Records
WHO 2009b	29	Ratio of exits from the health workforce	HRH Availability	Health Workforce	Document Review/Data Mining	Training Institution Records, MOH/MOE Records
WHO 2009b	80	Ratio of facility-based health workers entering the workforce to those exiting the workforce	HRH Availability	Health Workforce	Document Review/Data Mining	Training Institution Records, MOH/MOE Records
USAID 2012	188	Ratio of health care professionals to the population†	HRH Availability	Health Workforce	On the Shelf	MOH Records, HRIS, Census Data
USAID 2012	218	Ratio of health care worker by geographic distribution†	HRH Availability	Health Workforce	On the Shelf	MOH Records, HRIS
WHO 2009b	89	Ratio of health workers per inpatient bed†	HRH Availability	Health Workforce	On the Shelf Data Collection (Surveys/Interviews)	Facility Records Facility Assessments
WHO 2009b	80	Ratio of new medical/health graduates entering the facility-based workforce to the total facility-based health workforce	HRH Availability	Health Workforce	Document Review/Data Mining	HRIS, MOH/Facility Records, Training Institutions Records
USAID 2012	228	Ratio of rural vs urban admissions and graduates†	HRH Availability	Health Workforce	Document Review/Data Mining	Training Institutions Records
WHO 2009b	56	Retirement rate among physicians by age group†	HRH Availability	Health Workforce	Document Review/Data Mining	Professional Regulatory Bodies Records
WHO 2009b	80	Total number of facility-based health workers†	HRH Availability	Health Workforce	On the Shelf	HRIS, MOH/Facility Records
WHO 2009b	28	Total number of health human resources (relative to the population)†	HRH Availability	Health Workforce	On the Shelf	MOH Records, HRIS, Census Data
USAID 2012	218	Total number of health personnel by cadre and sector†	HRH Availability	Health Workforce	On the Shelf Document Review/Data Mining	HRIS MOH Records, Professional Council Licensure Registries, Professional Association Member Registries, Telephone Books

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USAID 2012	218	Trends for the past five years‡	HRH Availability	Health Workforce	Document Review/Data Mining	HRIS, MOH Records
USAID 2012	221	Availability of and use of HRH information systems‡*	HRH Management Systems	Health Workforce	On the Shelf Data Collection (Surveys/Interviews)	HRIS MOH Interviews
USAID 2012	221	Availability of mechanisms used to monitor and improve health worker performance, productivity, and expectations‡*	HRH Management Systems	Health Workforce	Document Review/Data Mining	Monitoring Reports
USAID 2012	220	Availability of strategic and operational HRM functions and structures at the national and local level‡	HRH Management Systems	Health Workforce	Document Review/Data Mining Data Collection (Surveys/Interviews)	Facility Policy Documents Facility Interviews
WHO 2009b	123	Completeness of information sources compiled in the HRIS*	HRH Management Systems	Health Workforce	Document Review/Data Mining	HRIS, MOH/Facility Records
WHO 2009b	35	Consistency of the HRH information and monitoring system*	HRH Management Systems	Health Workforce	Document Review/Data Mining	HRIS Reports
WHO 2009b	123	Coverage of implementation of the HRIS among registered servers in the public health services network*	HRH Management Systems	Health Workforce	Document Review/Data Mining	HRIS, MOH/Facility Records
WHO 2009b	35	Disaggregation of data in the HRH information and monitoring system*	HRH Management Systems	Health Workforce	Document Review/Data Mining	HRIS Reports
WHO 2009b	35	Existence of a functional national coordinating mechanism for the HRH information and monitoring system*	HRH Management Systems	Health Workforce	Document Review/Data Mining Data Collection (Surveys/Interviews)	HRIS Reports, MOH Reports MOH Interviews
WHO 2009b	35	HRH information system in place and used for HRH decision making at all levels*	HRH Management Systems	Health Workforce	Document Review/Data Mining Data Collection (Surveys/Interviews)	HRIS Reports MOH Interviews
WHO 2010	33	Number of national data points on the stock and distribution of health workers produced within the last three years*	HRH Management Systems	Health Workforce	Document Review/Data Mining	HRIS, Census Data, MOH Records
WHO 2009b	153	Percentage of health workers recorded on the MOH payroll but not registered at the facility level‡	HRH Management Systems	Health Workforce	Document Review/Data Mining	HRIS, MOH/Facility Records
Alva 2009	78	Presence of human resources data system‡*	HRH Management Systems	Health Workforce	On the Shelf	HRIS
WHO 2010	33	Private provider registration system is up to date and accurate	HRH Management Systems	Health Workforce	Document Review/Data Mining Data Collection (Surveys/Interviews)	MOH Records MOH, Regulatory Bodies, or Professional Association Interviews

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WHO 2009b	123	Productivity of implementation of the HRIS*	HRH Management Systems	Health Workforce	Document Review/Data Mining Data Collection (Surveys/Interviews)	HRIS Reports MOH Interviews
WHO 2009b	123	Regularity of implementation of the HRIS*	HRH Management Systems	Health Workforce	Document Review/Data Mining Data Collection (Surveys/Interviews)	HRIS Reports MOH Interviews
WHO 2009b	123	Regularity of utilization of the HRIS*	HRH Management Systems	Health Workforce	Document Review/Data Mining Data Collection (Surveys/Interviews)	HRIS Reports MOH Interviews
WHO 2009b	35	Timeliness of the HRH information and monitoring system*	HRH Management Systems	Health Workforce	Document Review/Data Mining	HRIS Reports
WHO 2009b	124	Utilization of the information in the HRIS in the processes of HRH planning and management*	HRH Management Systems	Health Workforce	Document Review/Data Mining Data Collection (Surveys/Interviews)	HRIS Reports MOH Interviews
WHO 2009b	35	Validation of the HRH information and monitoring system*	HRH Management Systems	Health Workforce	Document Review/Data Mining	HRIS Reports
USAID 2012	221	Enabling environment exists for health workers to achieve goals and targets†	Leadership of HRH System	Health Workforce	Document Review/Data Mining Data Collection (Surveys/Interviews)	MOH, Regional, or Facility Policy Documents Stakeholder Interviews
USAID 2012	231	Evidence of awareness among high-level government officials of HRH issues†	Leadership of HRH System	Health Workforce	Document Review/Data Mining	Speeches, Articles, Proclamations, and Press Releases from High-Level Officials (Ministers, Parliament, Cabinet- level members, Leaders from Private Sector)
WHO 2009b	35	Existence of an advisory body to monitor implementation of the HRH information and monitoring system in accordance with the national strategy*	Leadership of HRH System	Health Workforce	Document Review/Data Mining	MOH Records or Policy Documents
USAID 2012	200	Existence of clinical supervision by district-level supervisor†	Leadership of HRH System	Health Workforce	Document Review/Data Mining	MOH, Regional, or Facility Policy Documents

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WHO 2009b	45	Existence of job boards to facilitate recruitment of newly trained health workers†*	Leadership of HRH System	Health Workforce	Document Review/Data Mining	MOH, MOE, Ministry of Labor, Ministry of Foreign Affairs, or Professional Regulatory Bodies Records
Liu 2004	45	Existence of monitoring mechanisms for staff performance†	Leadership of HRH System	Health Workforce	Document Review/Data Mining	MOH/Facility Records or Policy Documents
LaFond, Brown 2003	71	Favorable public statements on FP/RH training (for the improvement of services) at least twice a year by senior officials†*	Leadership of HRH System	Health Workforce	Document Review/Data Mining	Stakeholder (i.e. Civil Society, Media, MOH, Private Institutions such as Hospitals, Insurance Companies, or Pharmacies) Public Speeches, Recorded Interviews
					Data Collection (Surveys/Interviews)	Stakeholder Interviews
USAID 2012	230	Formal agreements in place between government and other entities involve in HRH†*	Leadership of HRH System	Health Workforce	Document Review/Data Mining	MOH Records (MOUs, legal/policy frameworks, signed charters)
USAID 2012	231	Government capacity to govern HRH across the sectors†*	Leadership of HRH System	Health Workforce	Data Collection (Surveys/Interviews)	MOH Assessment
Hutchinson 2004	38	Level of government determining salaries, hiring and firing of civil servants†*	Leadership of HRH System	Health Workforce	Document Review/Data Mining	Government Policy Documents/Laws
Liu 2004	46	Level of staffing autonomy of public providers†*	Leadership of HRH System	Health Workforce	Data Collection (Surveys/Interviews)	Provider Interviews
WHO 2009b	122	Number of internship supervisory visits at three identified hospitals using the quality assurance approved checklist	Leadership of HRH System	Health Workforce	Document Review/Data Mining	MOH/Facility Records Manager Interviews
WHO 2010	34	Percentage of health service providers at primary healthcare facilities who received personal supervision in the past 6/12 months†	Leadership of HRH System	Health Workforce	Document Review/Data Mining	Facility Records
					Data Collection (Surveys/Interviews)	Provider Surveys

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Alva 2009	78	Percentage of health workers in rural areas receiving supervisory visits in last (X) months‡	Leadership of HRH System	Health Workforce	Document Review/Data Mining Data Collection (Surveys/Interviews)	Facility Records Provider Surveys
USAID 2012	227	Production of new health care workers is responsive to the needs of the health care system†*	Leadership of HRH System	Health Workforce	Document Review/Data Mining Data Collection (Surveys/Interviews)	MOH/MOE Records or Policy Documents MOH/MOE Interviews
LaFond, Brown 2003	52	Professional networking (frequency and quality)†	Leadership of HRH System	Health Workforce	Data Collection (Surveys/Interviews)	Stakeholder Interviews
Liu 2004	48	Proportion of health workers receiving appropriately timed and effectively conducted supervision, per national policy†	Leadership of HRH System	Health Workforce	Document Review/Data Mining	Supervisory Reports, Facility Records
Hutchinson 2004	38	Salaries paid on time†*	Leadership of HRH System	Health Workforce	Document Review/Data Mining	MOH/MOF/Facility Records, Payroll Records
USAID 2012	230	Active stakeholder participation in HRH policy and processes†*	Policy & Planning of HRH	Health Workforce	On the Shelf Document Review/Data Mining	WHO HRH Observatory Study MOH Records
Knowles 1997	34	Adequate performance incentives exist for government health personnel (yes/no)†	Policy & Planning of HRH	Health Workforce	Document Review/Data Mining	MOH Policy Documents or Employee Guidelines
USAID 2012	223	Employment policies documented and used†*	Policy & Planning of HRH	Health Workforce	Document Review/Data Mining Data Collection (Surveys/Interviews)	MOH, Regional, or Facility Policy Documents Facility Site Visits
USAID 2012	224	Evidence indicating budgets and projections done for HRH requirements†*	Policy & Planning of HRH	Health Workforce	Document Review/Data Mining	MOH, Regional, or Facility Policy Documents
Alva 2009	78	Existence of a functioning HR planning system†*	Policy & Planning of HRH	Health Workforce	On the Shelf	HRIS
WHO 2009b	35	Existence of an operational national strategy with explicit objectives, indicators and targets to address HRH planning and management*	Policy & Planning of HRH	Health Workforce	On the Shelf	MOH Records or Policy Documents
USAID 2012	223	Existence of and use up-to-date HRH policies†*	Policy & Planning of HRH	Health Workforce	Document Review/Data Mining Data Collection (Surveys/Interviews)	MOH/Regional Policy Documents Facility Site Visits
USAID 2012	223	Existence of clear and up-to-date scopes of practice†*	Policy & Planning of HRH	Health Workforce	On the Shelf	MOH Policy Documents
Liu 2004	48	Existence of national standards for professional qualifications of health manpower, including enforcement mechanisms*	Policy & Planning of HRH	Health Workforce	On the Shelf	MOH Policy Documents

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Resource	Page	Indicator	Component of HSS Core Function	Core Function	Data Source Type(s)	Potential Data Source(s)
WHO 2010	52	Annual data on availability of tracer medicines and commodities in public and private health facilities†	Data Availability	Information	Document Review/Data Mining Data Collection (Surveys/Interviews)	Essential Medicines Reviews Facility Assessments
WHO 2010	52	At least one national health accounts (NHA) exercise completed in the past five years	Data Availability	Information	On the Shelf	NHA
USAID 2012	285	Availability of financial and/or physical resources to support HIS-related items within MOH/central budget	Data Availability	Information	Document Review/Data Mining	MOH Policy Documents or Budgets
WHO 2010	53	Burden of disease study conducted within the past five years, with a strong national contribution†	Data Availability	Information	Document Review/Data Mining	Published Literature
WHO 2010	52	Census completed within the past 10 years	Data Availability	Information	On the Shelf	Bureau of the Census, National Statistics Office, MOH
WHO 2010	51	Country has a 10-year costed survey plan that covers all priority health topics and takes into account other relevant data sources	Data Availability	Information	On the Shelf	Bureau of the Census, National Statistics Office, MOH
Alva 2009	79	Existence of demographic or household surveys – an indicator proposed, in addition to five indicators measuring health surveys	Data Availability	Information	On the Shelf Data Collection (Surveys/Interviews)	DHS, HIS Household Surveys
WHO 2010	51	One or more data point on smoking and adult nutritional status in the past five years	Data Availability	Information	On the Shelf Document Review/Data Mining	DHS/MICS MOH Records or Reports
WHO 2010	51	Percentage of births registered†	Data Availability	Information	On the Shelf	HIS, Vital Registration Data, DHS/MICS
WHO 2010	51	Percentage of deaths registered†	Data Availability	Information	On the Shelf	HIS, Vital Registration Data
WHO 2010	52	Population projections for districts and smaller administrative areas available for the next 10 years, in print and electronically, and well documented	Data Availability	Information	On the Shelf Document Review/Data Mining	Bureau of the Census, National Statistics Office Reports MOH Records

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WHO 2010	51	Two or more data points available for child mortality in the past 5 years	Data Availability	Information	On the Shelf Document Review/Data Mining	DHS/MICS MOH Records or Reports
WHO 2010	51	Two or more data points for coverage of key health interventions in the past 5 years	Data Availability	Information	On the Shelf Document Review/Data Mining	DHS/MICS MOH Records or Reports
WHO 2010	51	Two or more population-based data points for maternal mortality in the past 10 years, including one in the past five years	Data Availability	Information	On the Shelf Document Review/Data Mining	DHS/MICS MOH Records or Reports
LaFond, Brown 2003	46	Knowledge about the foundations of an information management system†*	Data Management	Information	Document Review/Data Mining Data Collection (Surveys/Interviews)	Facility HR Plans Facility Staff Interviews
USAID 2012	290	Availability and accessibility of data sources‡	Data Quality	Information	On the Shelf	Institutional Records (Censuses, Civil Registrations, Population Surveys, Service Records, Resource Records), MOH Records, Health Dept. Records
USAID 2012	285	Availability at each level of a sufficient number of qualified personnel and infrastructure to compile and analyze information‡	Data Quality	Information	Document Review/Data Mining	MOH, Regional, or Facility Records
USAID 2012	292	Availability of appropriate and accurate denominators for analysis‡	Data Quality	Information	On the Shelf	Census Data, WHO EPI Documents, Vital Registration Data
USAID 2012	292	Availability of timely data analysis, as defined by stakeholders and users‡	Data Quality	Information	Data Collection (Surveys/Interviews)	Stakeholder or Data User Interviews
LaFond, Brown 2003	46	Contribution to improvement of the management information system‡	Data Quality	Information	Data Collection (Surveys/Interviews)	Stakeholder Interviews
WHO 2010	52	Data quality assessments carried out and published within the past three years, using internationally agreed quality criteria, such as Data Quality Assessment Framework (DQAF)	Data Quality	Information	Document Review/Data Mining	HIS Reports
WHO 2010	53	Designated and functioning institutional mechanism charged with analysis of health statistics, synthesis of data from different sources and validation of data from population-based and facility-based sources	Data Quality	Information	Document Review/Data Mining	MOH Records or Reports

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USAID 2012	285	Evidence of ongoing training activities related to HIS data collection and analysis†	Data Quality	Information	Document Review/Data Mining	MOH Records, Donor Records, Facility Records
Liu 2004	45	Existence of information system allowing for monitoring program performance†*	Data Quality	Information	Document Review/Data Mining	MOH/Facility Records or Policy Documents
WHO 2010	53	Health systems performance assessment carried out within the past five years, with a strong national contribution	Data Quality	Information	On the Shelf	National Health Sector Reports
LaFond, Brown 2003	46	Interest in improving the management information system†	Data Quality	Information	Data Collection (Surveys/Interviews)	Stakeholder Interviews
WHO 2010	52	National database with health workers by district and main cadres updated within the past two years	Data Quality	Information	On the Shelf Document Review/Data Mining	HIS MOH Records
WHO 2010	52	National database with public and private sector health facilities and geocoding, available and updated within the past three years	Data Quality	Information	Data Collection (Surveys/Interviews)	Facility Assessments
WHO 2010	53	National microdata archive for health surveys and census that is established and operational	Data Quality	Information	Document Review/Data Mining	MOH Records or Reports
Management Sciences for Health 2006	51	Percentage of health centers that perform surveillance and outbreak control tasks as measured by a checklist†	Data Quality	Information	Document Review/Data Mining	Facility Records
USAID 2012	290	Percentage of private health facility data included in reported data	Data Quality	Information	On the Shelf Document Review/Data Mining	HIS MOH Records
USAID 2012	286	Presence of international donors providing specific assistance to support strengthening the entire HIS or its individual and/or vertical components in more than one region	Data Quality	Information	Document Review/Data Mining	MOH/Donor Records
USAID 2012	291	Presence of procedures to verify the quality of reported data (accuracy, completeness, timeliness)	Data Quality	Information	Document Review/Data Mining Data Collection (Surveys/Interviews)	MOH Records/Policy Documents MOH Interviews
Liu 2004	49	Proportion of residents with complete medical records†	Data Quality	Information	On the Shelf Document Review/Data Mining	HIS MOH/Facility Records,

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Alva 2009	80	Quality of health status Indicators as a proxy for the quality of the HIS (Mortality Maternal mortality ratio, U5MR)	Data Quality	Information		?
WHO 2010	52	Reporting of notifiable diseases makes use of modern communication technology, and reporting of statistics from districts to national levels is web- based	Data Quality	Information	On the Shelf	HIS
Liu 2004	10	Sentinel surveillance sites established†	Data Quality	Information	Document Review/Data Mining	MOH Records, HIS Reports
Alva 2009	80	Sentinel surveillance sites performing according to national standards (number and percentage)†	Data Quality	Information	Document Review/Data Mining	MOH Records, HIS Reports
USAID 2012	293	Timeliness of reporting specified indicators†	Data Quality	Information	On the Shelf Document Review/Data Mining	HIS MOH Records
USAID 2012	290	Timeliness of updates to the national database of facilities	Data Quality	Information	On the Shelf Document Review/Data Mining	HIS MOH Records
Alva 2009	80	World Bank Statistical Capacity Indicator	Data Quality	Information	On the Shelf	World Bank BBSC Reports
LaFond, Brown 2003	46	Acceptance of survey methods as an effective tool by senior research officers and their incorporation into the work program of the agencies†	Information Policy & Standards	Information	Data Collection (Surveys/Interviews)	Stakeholder Interviews
USAID 2012	291	Availability of clear standards and guidelines for: 1) data collection, 2) reporting procedures methods, and 3) data analysis to be performed†*	Information Policy & Standards	Information	On the Shelf	MOH, Regional, or Facility Policy Documents
USAID 2012	290	Availability of minimum core indicators at national and subnational level†	Information Policy & Standards	Information	Document Review/Data Mining	MOH/Regional Policy Documents
USAID 2012	287	Existence of policies, laws, and regulations mandating public and private health facilities/ providers to report indicators determined by the national HIS*	Information Policy & Standards	Information	Document Review/Data Mining	MOH Policy Documents
USAID 2012	286	Functioning interagency body with the mandate and capacity to guide the implementation of the national strategy*	Information Policy & Standards	Information	Document Review/Data Mining Data Collection (Surveys/Interviews)	MOH Records MOH Interviews
USAID 2012	286	National HIS strategic plan consistent with resources available, developed in broad consultation with key stakeholders, and widely accepted*	Information Policy & Standards	Information	Document Review/Data Mining	MOH Policy Documents
USAID 2012	292	Availability of a national summary report	Reporting	Information	Document Review/Data Mining	MOH Records
USAID 2012	294	Completeness of reporting (%)	Reporting	Information	Document Review/Data Mining	HIS (Disease surveillance reports)

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WHO 2010	52	Country web site for health statistics, with latest report and data available to the general public	Reporting	Information	Document Review/Data Mining	HIS Reports
Alva 2009	80	Health facilities or districts reporting all indicators according to national guidelines†	Reporting	Information	Document Review/Data Mining	HIS
WHO 2010	51	ICD-10 used in district hospitals and causes of death reported to a national level	Reporting	Information	Document Review/Data Mining	HIS Records or Reports
USAID 2012	291	Number of reports a typical health facility submits monthly, quarterly, or annually†	Reporting	Information	Document Review/Data Mining Data Collection (Surveys/Interviews)	MOH Records Facility Interviews
Alva 2009	81	Percentage of disease surveillance reports received at the national level from districts compared to the number of reports expected	Reporting	Information	Document Review/Data Mining	HIS Reports
USAID 2012	290	Percentage of districts represented in reported information	Reporting	Information	Document Review/Data Mining	HIS, MOH Records
WHO 2010	52	Percentage of districts that submit timely, complete, accurate reports to national level	Reporting	Information	Document Review/Data Mining	HIS, MOH Records
USAID 2012	190	Referral system†	Reporting	Information	Document Review/Data Mining	MOH, Regional, or Facility Records or Policy Documents
Knowles 1997	36	Referral system functions effectively (yes/no)†*	Reporting	Information	Document Review/Data Mining Data Collection (Surveys/Interviews)	HIS, MOH Records Referral System Assessment
USAID 2012	287	Presence of mechanisms to review the utility of current HIS indicators for planning, management, and evaluation process, and existence of process by which to adapt and modify accordingly	Use of Data	Information	Document Review/Data Mining Data Collection (Surveys/Interviews)	MOH Records MOH Interviews
Knowles 1997	25	Routine application of data-based problem-solving methodologies†	Use of Data	Information	Document Review/Data Mining Data Collection (Surveys/Interviews)	MOH, Regional, or Facility Policy Documents Stakeholder Interviews
USAID 2012	294	Use of data for planning, budgeting, or fundraising activities in the past year†	Use of Data	Information	Document Review/Data Mining Data Collection (Surveys/Interviews)	MOH/Regional Policy Documents MOH Interviews

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Resource	Page	Indicator	Component of HSS Core Function	Core Function	Data Source Type(s)	Potential Data Source(s)
Alva 2009	83	Appropriate prescription practices and rational drug use†	Appropriate Use	Medical Products & Technology	Document Review/Data Mining Data Collection (Surveys/Interviews)	Facility Records, Standard Treatment Guidelines Site Visits (Observation)
Alva 2009	84	Drug use in communities (e.g., most commonly used drugs, ideas about drug efficacy, drug sources, and treatments)†	Appropriate Use	Medical Products & Technology	Data Collection (Surveys/Interviews)	Household Surveys
USAID 2012	264	SOPs (standard operating procedures) for dispensing and counseling available†	Appropriate Use	Medical Products & Technology	Document Review/Data Mining	MOH, Regional, or Facility Records or Policy Documents
WHO 2010	63	Average availability of 14 selected essential medicines in public and private health facilities†	Availability of Products	Medical Products & Technology	Data Collection (Surveys/Interviews)	National Surveys (WHO-/HAI-Developed)
WHO 2011b	32	Average duration of stockouts at all treatment sites during a defined period (early warning indicator for HIV drug resistance)†	Availability of Products	Medical Products & Technology	Document Review/Data Mining	Facility Inventory Control Reports/Requisition Forms
WHO 2011b	30	Average percentage of items available at all treatment sites†	Availability of Products	Medical Products & Technology	Document Review/Data Mining	Facility Inventory Control Reports/Requisition Forms
Global Fund 2004	10	Number or percentage of districts or other administrative unit with at least one drug distribution center	Availability of Products	Medical Products & Technology	Document Review/Data Mining	MOH/Regional Records

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Resource	Page	Indicator	Component of HSS Core Function	Core Function	Data Source Type(s)	Potential Data Source(s)
Alva 2009	83	Appropriate prescription practices and rational drug use†	Appropriate Use	Medical Products & Technology	Document Review/Data Mining Data Collection (Surveys/Interviews)	Facility Records, Standard Treatment Guidelines Site Visits (Observation)
Alva 2009	84	Drug use in communities (e.g., most commonly used drugs, ideas about drug efficacy, drug sources, and treatments)†	Appropriate Use	Medical Products & Technology	Data Collection (Surveys/Interviews)	Household Surveys
USAID 2012	264	SOPs (standard operating procedures) for dispensing and counseling available†	Appropriate Use	Medical Products & Technology	Document Review/Data Mining	MOH, Regional, or Facility Records or Policy Documents
WHO 2010	63	Average availability of 14 selected essential medicines in public and private health facilities†	Availability of Products	Medical Products & Technology	Data Collection (Surveys/Interviews)	National Surveys (WHO-/HAI-Developed)
WHO 2011b	32	Average duration of stockouts at all treatment sites during a defined period (early warning indicator for HIV drug resistance)†	Availability of Products	Medical Products & Technology	Document Review/Data Mining	Facility Inventory Control Reports/Requisition Forms
WHO 2011b	30	Average percentage of items available at all treatment sites†	Availability of Products	Medical Products & Technology	Document Review/Data Mining	Facility Inventory Control Reports/Requisition Forms
Global Fund 2004	10	Number or percentage of districts or other administrative unit with at least one drug distribution center	Availability of Products	Medical Products & Technology	Document Review/Data Mining	MOH/Regional Records
USAID 2012	263	Percentage of a set of unexpired tracer items is available†	Availability of Products	Medical Products & Technology	Document Review/Data Mining	Facility Records
Management Sciences for Health 2006	69	Percentage of clinics and health centers that experience decreasing stockouts of essential drugs or other supplies†	Availability of Products	Medical Products & Technology	Document Review/Data Mining	Facility Drug Procurement and Usage Reports
Liu 2004	10	Percentage of clinics with at least four modern methods of family planning†	Availability of Products	Medical Products & Technology	Document Review/Data Mining	Facility Inventory Control Reports/Requisition Forms

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Hutchinson 2004	39	Percentage of facilities having essential drugs in-stock and nonexpired (e.g., antibiotics, anthelmintics, contraceptive methods)†	Availability of Products	Medical Products & Technology	Document Review/Data Mining	Facility Inventory Control Reports/Requisition Forms
Hutchinson 2004	39	Percentage of facilities having key supplies (e.g. gloves, syringes, bandages)†	Availability of Products	Medical Products & Technology	Document Review/Data Mining	Facility Inventory Control Reports/Requisition Forms
LaFond, Brown 2003	53	Percentage of facilities that experience a stockout at any point during a given time period†	Availability of Products	Medical Products & Technology	Document Review/Data Mining	Facility Inventory Control Reports/Requisition Forms
Management Sciences for Health 2006	62	Percentage of facilities that experience stockouts of essential drugs and FP commodities†	Availability of Products	Medical Products & Technology	Data Collection (Surveys/Interviews)	Facility Audit
Alva 2009	82	Percentage of facilities that have all tracer medicines and commodities in stock on the day of visit, and in the last three months – a composite index based on 61 essential medicines, commodities, and vaccines (availability of essential medicines)†	Availability of Products	Medical Products & Technology	Data Collection (Surveys/Interviews)	Facility Site Visits
Alva 2009	84	Percentage of facilities with expired items†	Availability of Products	Medical Products & Technology	Data Collection (Surveys/Interviews)	Facility Site Visits
LaFond, Brown 2003	52	Percentage of facilities with stockout of essential commodities in the last 6 months†	Availability of Products	Medical Products & Technology	Document Review/Data Mining	Facility Inventory Control Reports/Requisition Forms
Liu 2004	48	Percentage of primary health facilities with complete stock of required essential drugs at the time of observation or in a specified period of time†	Availability of Products	Medical Products & Technology	Data Collection (Surveys/Interviews)	Facility Site Visits
Liu 2004	48	Percentage of primary health facilities with vaccine stockouts in a specified period of time†	Availability of Products	Medical Products & Technology	Data Collection (Surveys/Interviews)	Facility Site Visits
WHO 2011b	31	Percentage of treatment sites that had a stockout of a particular product during a defined period†	Availability of Products	Medical Products & Technology	Document Review/Data Mining	Facility Inventory Control Reports/Requisition Forms
WHO 2011b	28	Percentage of treatment sites that had a stockout of one or more required medicines during a defined period (universal access indicator and early- warning indicator for HIV drug resistance)†	Availability of Products	Medical Products & Technology	Document Review/Data Mining	Facility Inventory Control Reports/Requisition Forms
Knowles 1997	26	Proportion of health facilities that did not experience drug stockouts during the preceding three months†	Availability of Products	Medical Products & Technology	Document Review/Data Mining	Facility Inventory Control Reports/Requisition Forms
Alva 2009	82	Proportion of population with access to affordable essential drugs on a sustainable basis†	Availability of Products	Medical Products & Technology	Data Collection (Surveys/Interviews)	Household Surveys, Facility Assessments
Hutchinson 2004	39	Percentage of facilities having male/female waiting rooms, sheltered waiting rooms†	Equipment/ Infrastructure	Medical Products & Technology	Data Collection (Surveys/Interviews)	Facility Assessment

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Hutchinson 2004	39	Percentage of facilities with key equipment in working order (e.g., obstetric equipment, X-ray machines, equipment for sterilization)†	Equipment/ Infrastructure	Medical Products & Technology	Data Collection (Surveys/Interviews)	Facility Assessment
Hutchinson 2004	39	Percentage of facilities with safe water, electricity†	Equipment/ Infrastructure	Medical Products & Technology	Data Collection (Surveys/Interviews)	Facility Assessment
Hutchinson 2004	39	Percentage of facilities/subdistricts/districts with transport for outreaches, emergencies†	Equipment/ Infrastructure	Medical Products & Technology	Data Collection (Surveys/Interviews)	Facility Assessment
Liu 2004	48	Percentage of primary health facilities equipped with telephones†	Equipment/ Infrastructure	Medical Products & Technology	Data Collection (Surveys/Interviews)	Facility Assessment
Liu 2004	48	Percentage of primary health facilities with hygienic toilets†	Equipment/ Infrastructure	Medical Products & Technology	Data Collection (Surveys/Interviews)	Facility Assessment
Liu 2004	10	Reference laboratories established†	Equipment/ Infrastructure	Medical Products & Technology	On the Shelf	MOH/Facility Records
USAID 2012	266	Existence of a system to recover the cost of pharmaceuticals dispensed in MOH facilities†	Financing Pharmaceutical s	Medical Products & Technology	Document Review/Data Mining	MOH/Facility Policy Documents
Knowles 1997	33	Expenditure on drugs and supplies as a percent of total recurrent health expenditure*	Financing Pharmaceutical s	Medical Products & Technology	On the Shelf Document Review/Data Mining	NHA MOH Budgets or Expenditure Reports
Knowles 1997	34	Generic drug expenditure as a percent of total drug expenditure*	Financing Pharmaceutical s	Medical Products & Technology	On the Shelf Document Review/Data Mining	NHA MOH Budgets or Expenditure Reports
USAID 2012	253	Government expenditure on pharmaceuticals (per capita at average exchange rate in US\$)*	Financing Pharmaceutical s	Medical Products & Technology	Document Review/Data Mining	MOH Records
WHO 2010	64	Median consumer price ratio of 14 selected essential medicines in public and private health facilities†	Financing Pharmaceutical s	Medical Products & Technology	Data Collection (Surveys/Interviews)	National Surveys (WHO-/HAI-Developed)
Alva 2009	84	Median consumer price ratio of 30 selected essential medicines in public and private health facilities†	Financing Pharmaceutical s	Medical Products & Technology	Data Collection (Surveys/Interviews)	Facility Assessments

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WHO 2010	66	Percentage mark-up between manufacturers' and consumer prices†	Financing Pharmaceutical s	Medical Products & Technology	Data Collection (Surveys/Interviews)	National Surveys (WHO-/ HAI-Developed)
Knowles 1997	35	Percentage of total government drug expenditures allocated to primary care facilities*	Financing Pharmaceutical s	Medical Products & Technology	On the Shelf Document Review/Data Mining	NHA MOH Budgets or Expenditure Reports
USAID 2012	253	Private expenditure on pharmaceuticals (per capita at average exchange rate in US\$)*	Financing Pharmaceutical s	Medical Products & Technology	Document Review/Data Mining Data Collection (Surveys/Interviews)	MOH/Regional Records MOH Interviews
Alva 2009	84	Private expenditure on pharmaceuticals (per capita average exchange rate)*	Financing Pharmaceutical s	Medical Products & Technology	Document Review/Data Mining Data Collection (Surveys/Interviews)	MOH/Regional Records MOH Interviews
USAID 2012	266	Proportion of annual national expenditure on medicines financed by government, budget, donors, charities, and private patients (last through out-of-pocket payments)*	Financing Pharmaceutical s	Medical Products & Technology	Document Review/Data Mining	MOH/Donor Records, HIS
WHO 2010	66	Public and private per capita expenditure on medicines*	Financing Pharmaceutical s	Medical Products & Technology	On the Shelf	NHA
WHO 2011b	17	Ratio between median price of products procured and the international median reference value†	Financing Pharmaceutical s	Medical Products & Technology	On the Shelf Document Review/Data Mining	WHO Global Reporting Mechanism Facility Purchase Orders, WHO STG
USAID 2012	252	Total expenditure on pharmaceuticals (% total expenditure on health)*	Financing Pharmaceutical s	Medical Products & Technology	Document Review/Data Mining	MOH Records
USAID 2012	252	Total expenditure on pharmaceuticals (per capita at average exchange rate in US\$)*	Financing Pharmaceutical s	Medical Products & Technology	Document Review/Data Mining	MOH Records
WHO 2010	64	Access to essential medicines/technologies as part of the fulfillment of the right to health, recognized in the constitution or national legislation	Pharmaceutic al Policy	Medical Products & Technology	Document Review/Data Mining	MOH Policy Documents, Government Laws
USAID 2012	257	Evidence of an active national committee responsible for managing the process of maintaining a NEML	Pharmaceutic al Policy	Medical Products & Technology	Document Review/Data Mining Data Collection (Surveys/Interviews)	MOH/Donor Records MOH Interviews
WHO 2010	65	Existence and year of last update of a published national medicines policy*	Pharmaceutic al Policy	Medical Products & Technology	Data Collection (Surveys/Interviews)	MOH Interviews

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USAID 2012	254	Existence of a comprehensive pharmaceutical law*	Pharmaceutic al Policy	Medical Products & Technology	Document Review/Data Mining	MOH Policy Documents, Government Laws
USAID 2012	254	Existence of a NDRA responsible for the promulgation and enforcement of regulations*	Pharmaceutic al Policy	Medical Products & Technology	Document Review/Data Mining Data Collection (Surveys/Interviews)	MOH Policy Documents WHO Review of Drug Regulatory Systems
USAID 2012	255	Existence of a pharmaco-vigilance system*	Pharmaceutic al Policy	Medical Products & Technology	Document Review/Data Mining	MOH Policy Documents
USAID 2012	255	Existence of a postmarketing surveillance system*	Pharmaceutic al Policy	Medical Products & Technology	Document Review/Data Mining	MOH Policy Documents
USAID 2012	254	Existence of a system for pharmaceutical registration*	Pharmaceutic al Policy	Medical Products & Technology	Document Review/Data Mining	MOH Policy Documents
USAID 2012	256	Existence of an National Essential Medicines List*	Pharmaceutic al Policy	Medical Products & Technology	On the Shelf	MOH Policy Documents
USAID 2012	253	Existence of an NMP or other government document that sets objectives and strategies for the pharm sector based on priority health problems*	Pharmaceutic al Policy	Medical Products & Technology	Document Review/Data Mining	MOH Policy Documents
USAID 2012	263	Existence of licensing provisions or incentives for private wholesalers and retailers*	Pharmaceutic al Policy	Medical Products & Technology	Document Review/Data Mining	MOH Policy Documents
Knowles 1997	34	Government health system uses basic drug list for procurement (yes/no)	Pharmaceutic al Policy	Medical Products & Technology	Document Review/Data Mining	MOH Policy Documents
USAID 2012	255	Mechanisms exist for licensing, inspection, and control*	Pharmaceutic al Policy	Medical Products & Technology	Document Review/Data Mining	Government Laws
USAID 2012	257	Total number of pharmaceuticals on the NEML (dosage forms and strengths)	Pharmaceutic al Policy	Medical Products & Technology	Document Review/Data Mining	MOH Policy Documents
WHO 2010	65	Year of last update of a published national list of essential medicines	Pharmaceutic al Policy	Medical Products & Technology	Data Collection (Surveys/Interviews)	MOH Interviews
USAID 2012	260	Existence of a procurement pre- or post- qualification process for suppliers and products*	Procurement	Medical Products & Technology	Document Review/Data Mining	MOH Policy Documents
USAID 2012	259	Percentage of procurements or purchases according to plan†	Procurement	Medical Products & Technology	Document Review/Data Mining	MOH/Regional Records

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USAID 2012	260	Pharmaceuticals procured based on reliable estimates†	Procurement	Medical Products & Technology	Document Review/Data Mining Data Collection (Surveys/Interviews)	MOH/Regional Records MOH Interviews
USAID 2012	260	Private sector procurement processes	Procurement	Medical Products & Technology	Document Review/Data Mining	Private Pharmaceutical Importers & Distributors' Policy Documents
WHO 2011b	14	Proportion of quantities of products actually received (procured plus donated) during a defined period out of total quantities planned for the same period‡	Procurement	Medical Products & Technology	Document Review/Data Mining	MOH/Regional Records
USAID 2012	259	Existence of formal SOPs for conducting procurement of pharmaceuticals‡*	Selection of Pharmaceuticals	Medical Products & Technology	Document Review/Data Mining	Government Laws
WHO 2010	88	Existence of policies on medicines procurement that specify the most cost-effective medicines in the right quantities; open, competitive bidding of supplies for quality products*	Selection of Pharmaceuticals	Medical Products & Technology	On the Shelf	MOH Policy Documents, Government Laws
WHO 2010	65	Legal provisions to allow/encourage generic substitution in the private sector	Selection of Pharmaceuticals	Medical Products & Technology	Data Collection (Surveys/Interviews)	MOH Interviews
USAID 2012	260	Percentage (by value) of MOH pharmaceuticals is procured through competitive bids‡	Selection of Pharmaceuticals	Medical Products & Technology	Document Review/Data Mining	MOH/Regional Records or Policy Documents
USAID 2012	259	Use of generic or international nonproprietary names (INNs) for MOH procurement	Selection of Pharmaceuticals	Medical Products & Technology	Document Review/Data Mining	MOH Policy Documents or Records
Hutchinson 2004	39	Percentage of facilities experiencing blackouts of electricity in last 30 days/average number of blackouts‡	Storage of Inventory	Medical Products & Technology	Data Collection (Surveys/Interviews)	Facility Staff Interviews
Hutchinson 2004	39	Percentage of facilities in good/excellent condition‡	Storage of Inventory	Medical Products & Technology	Data Collection (Surveys/Interviews)	Facility Assessments
Management Sciences for Health 2006	67	Percentage of facilities that maintain acceptable storage conditions‡	Storage of Inventory	Medical Products & Technology	Data Collection (Surveys/Interviews)	Facility Surveys/Site Visits (Observation or Checklist)
Hutchinson 2004	39	Percentage of facilities with acceptable storage facilities meeting minimal standards of protection from theft, ventilation, temperature, and humidity‡	Storage of Inventory	Medical Products & Technology	Data Collection (Surveys/Interviews)	Facility Assessments

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WHO 2011b	23	Percentage of treatment sites that submitted complete inventory control reports on time, according to an established schedule, during a defined period†	Storage of Inventory	Medical Products & Technology	Document Review/Data Mining	Facility Inventory Control Reports, MOH/Regional Facilities List
USAID 2012	261	Value of inventory loss over 12 months†	Storage of Inventory	Medical Products & Technology	Document Review/Data Mining	MOH, Regional, or Facility Records
Global Fund 2004	10	Distribution node selected†	Supply Chain	Medical Products & Technology	Document Review/Data Mining	MOH, Regional, or Facility Records
USAID 2012	262	Existence of refrigeration units with functional temperature controls at each level of distribution system†	Supply Chain	Medical Products & Technology	Document Review/Data Mining	MOH, Regional, or Facility Records
WHO 2011b	26	Percentage of treatment sites that placed orders during a defined period while the stock in hand on one or more items was below the minimum stock level†	Supply Chain	Medical Products & Technology	Document Review/Data Mining	Facility Order Forms and Receipts
WHO 2011b	21	Percentage of treatment sites that received all orders in full and on time during a defined period†	Supply Chain	Medical Products & Technology	Document Review/Data Mining	Facility Order Forms and Receipts
WHO 2011b	20	Percentage of the product batches tested in the past year that met national and international quality control standards	Quality of Products	Medical Products & Technology	Document Review/Data Mining	Quality Control Test Reports

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Resource	Page	Indicator	Component of HSS Core Function	Core Function	Data Source Type(s)	Potential Data Source(s)
USAID 2012	158	Central and local government budget allocations for health in decentralized systems†	Budgeting	Financing	Document Review/Data Mining	MOH/MOF/Regional Budgets or Records
LaFond, Brown 2003	52	Cost-sharing revenue as a proportion of the annual MOH nonwage recurrent budget	Budgeting	Financing	Document Review/Data Mining	MOH/MOF Budgets or Reports
USAID 2012	225	Evidence indicating MOH makes good use of finances already available	Budgeting	Financing	Document Review/Data Mining	MOH/MOF Budgets or Records
Hutchinson 2004	37	Existence of bottom-up or top-down budget planning†	Budgeting	Financing	Document Review/Data Mining Data Collection (Surveys/Interviews)	MOH/MOF/Facility Budgets, Policy Documents, or Records Stakeholder Interviews
Alva 2009	93	Government budget process (e.g., explicit procedures for resource allocation with transparency and rationales)†	Budgeting	Financing	Document Review/Data Mining Data Collection (Surveys/Interviews)	Government Laws, MOH Policy Documents Stakeholder Interviews
USAID 2012	158	MOH budget allocation structure	Budgeting	Financing	Document Review/Data Mining	MOH Policy Documents
Hutchinson 2004	37	Per capita allocations to private (curative) care	Budgeting	Financing	Document Review/Data Mining	MOH Budgets, Census Data
Hutchinson 2004	37	Per capita allocations to public (primary health care)	Budgeting	Financing	Document Review/Data Mining	MOH Budgets, Census Data
Liu 2004	46	Percentage change (increase or decrease) in government budget to publicly-owned primary health care facilities†	Budgeting	Financing	Document Review/Data Mining	MOH/Regional Budgets
LaFond, Brown 2003	52	Percentage of districts with decentralized budgeting	Budgeting	Financing	Document Review/Data Mining	MOH/Regional Budgets
Liu 2004	46	Percentage of government budget (direct government financing) out of total public provider revenue†	Budgeting	Financing	Document Review/Data Mining	MOH/Regional Budgets
USAID 2012	159	Percentage of government health budget spent on outpatient/inpatient care	Budgeting	Financing	Document Review/Data Mining	MOH Budgets or Records
Knowles 1997	35	Percentage of government recurrent health budget spent on public health services	Budgeting	Financing	Document Review/Data Mining	MOH Budgets or Reports
LaFond, Brown 2003	52	Percentage of national budget allocated to health	Budgeting	Financing	Document Review/Data Mining	MOF Budgets

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Management Sciences for Health 2006	58	Percentage of regions/provinces/districts/municipalities using planning and budgeting procedures to strengthen service delivery performance†	Budgeting	Financing	Document Review/Data Mining	Regional Records
USAID 2012	157	Process of MOH budget formulation	Budgeting	Financing	Document Review/Data Mining	MOH Policy Documents
USAID 2012	159	Recurrent government health budget allocation (Percentage of the government health budget spent on: 1) salaries of health workers 2) medicines and supplies 3) facility and equipment maintenance costs 4) other recurrent costs [e.g., administrative costs at central and district levels, in-service training])	Budgeting	Financing	On the Shelf Document Review/Data Mining	NHA MOH Budget
Hutchinson 2004	41	Average cost per bed-day (inpatient visit) by level (referral hospital, district hospital, health center)†	Cost-Effectiveness	Financing	Document Review/Data Mining	HRIS, Facility Records
Liu 2004	50	Changes in costs holding health outcomes constant†	Cost-Effectiveness	Financing	Document Review/Data Mining	MOH, Regional, or Facility Budget/ Expenditure Reports, MOH/Facility Records
Liu 2004	46	Charge/cost ratio of publicly provided service by service type†	Cost-Effectiveness	Financing	Document Review/Data Mining	Facility Records
Liu 2004	49	Cost of contracted services per beneficiary†	Cost-Effectiveness	Financing	Document Review/Data Mining	Facility Records
LaFond, Brown 2003	53	Cost of one month's supply of contraceptives as a percent of monthly wages†	Cost-Effectiveness	Financing	Document Review/Data Mining Data Collection (Surveys/Interviews)	Facility Records Household Surveys
Liu 2004	12	Cost per admission†	Cost-Effectiveness	Financing	Document Review/Data Mining	Facility Records
Liu 2004	50	Cost per ARI treatment episode†	Cost-Effectiveness	Financing	Document Review/Data Mining	Facility Records
Liu 2004	14	Cost per case†	Cost-Effectiveness	Financing	Document Review/Data Mining	Facility Records
Liu 2004	50	Cost per completed DOTS treatment†	Cost-Effectiveness	Financing	Document Review/Data Mining	Facility Records
Liu 2004	50	Cost per DALY saved	Cost-Effectiveness	Financing	Document Review/Data Mining	Facility Records
Liu 2004	50	Cost per diarrhea treatment episode†	Cost-Effectiveness	Financing	Document Review/Data Mining	Facility Records
Liu 2004	50	Cost per fully immunized child†	Cost-Effectiveness	Financing	Document Review/Data Mining	Facility Records
Liu 2004	50	Cost per hospital day†	Cost-Effectiveness	Financing	Document Review/Data Mining	Facility Records
Liu 2004	50	Cost per hospital discharge†	Cost-Effectiveness	Financing	Document Review/Data Mining	Facility Records

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Liu 2004	50	Cost per outpatient visit †	Cost-Effectiveness	Financing	Document Review/Data Mining	Facility Records
Liu 2004	49	Cost per pap smear test†	Cost-Effectiveness	Financing	Document Review/Data Mining	Facility Records
Liu 2004	13	Cost/successfully treated patient†	Cost-Effectiveness	Financing	Document Review/Data Mining	Facility Records
Liu 2004	13	Private provider cost/patient treated†	Cost-Effectiveness	Financing	Document Review/Data Mining	MOH/Facility Expenditure Reports, MOH/Facility Records
Liu 2004	13	Public sector cost/patient treated†	Cost-Effectiveness	Financing	Document Review/Data Mining	MOH/Facility Expenditure Reports, MOH/Facility Records
Knowles 1997	31	Ratio of outpatient visits to personnel costs (i.e., unit personnel costs)†	Cost-Effectiveness	Financing	Document Review/Data Mining	Facility Records or Budgets, HRIS
WHO 2010	80	Availability of data on government expenditure on priority problems, by level of government†	Expenditure	Financing	Document Review/Data Mining	MOH/MOF Budgets or Records
WHO 2010	80	Data on total health expenditures routinely collected and reported	Expenditure	Financing	On the Shelf	NHA
Liu 2004	46	Financial health of both public and private providers (total revenue/total cost) †	Expenditure	Financing	Document Review/Data Mining	MOH/MOF/Regional Budgets or Records
USAID 2012	153	General government expenditure on health as percentage of total government expenditure (GGHE/GGE)	Expenditure	Financing	Document Review/Data Mining	MOH/MOF/Regional Budgets or Records
USAID 2012	153	General government expenditure on health as percentage of total health expenditure (GGHE/THE)	Expenditure	Financing	Document Review/Data Mining	MOH/MOF/Regional Budgets or Records
Alva 2009	84	Government expenditure on medicines as a percent of the health budget†	Expenditure	Financing	Document Review/Data Mining	MOH/MOF/Regional Budgets or Records
Alva 2009	88	Government expenditure on wages and salaries as percentage of GGHE†	Expenditure	Financing	Document Review/Data Mining	MOH/MOF/Regional Budgets or Records
Knowles 1997	40	Government health expenditure as percent of GDP	Expenditure	Financing	Document Review/Data Mining	MOH/MOF Budgets or Records
Knowles 1997	40	Government health expenditure as percent of total government budget	Expenditure	Financing	Document Review/Data Mining	MOH/MOF Budgets or Records
USAID 2012	153	Per capita THE at international dollar rate	Expenditure	Financing	Document Review/Data Mining Data Collection (Surveys/Interviews)	MOH/Facility Records, Census Data Household Surveys
Liu 2004	46	Percentage change (increase or decrease) in total revenue of publicly-owned primary care facilities†	Expenditure	Financing	Document Review/Data Mining	MOH/Facility Revenue Reports

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WHO 2009b	73	Percentage distribution of expenditure by main providers	Expenditure	Financing	On the Shelf Document Review/Data Mining	NHA MOH/MOF Budgets
WHO 2009b	73	Percentage distribution of expenditure by type of healthcare agent	Expenditure	Financing	On the Shelf Document Review/Data Mining	NHA MOH/MOF Budgets
Boerma 2010	17	Percentage general government expenditure on health	Expenditure	Financing	On the Shelf Document Review/Data Mining	NHA MOH/MOF Budgets
Knowles 1997	40	Percentage of government health expenditure directed to MCH services	Expenditure	Financing	Document Review/Data Mining	MOH/MOF Budgets or Records
Knowles 1997	40	Percentage of government health expenditure directed to preventive care	Expenditure	Financing	Document Review/Data Mining	MOH/MOF Budgets or Records
Knowles 1997	40	Percentage of government health expenditure directed to primary care	Expenditure	Financing	Document Review/Data Mining	MOH/MOF Budgets or Records
Alva 2009	86	Percentage of government health spending that reaches the poorest income quintile†	Expenditure	Financing	Document Review/Data Mining	MOH/MOF/Regional Budgets or Records
Liu 2004	46	Percentage share of private medical market (quantities of institutions, staff, and services)†	Expenditure	Financing	Document Review/Data Mining	MOH Records
Knowles 1997	35	Primary health care expenditure as a percent of recurrent costs	Expenditure	Financing	Document Review/Data Mining	MOH/MOF Budgets or Records
LaFond, Brown 2003	53	Public expenditure on health as a percent of total public expenditure	Expenditure	Financing	On the Shelf Document Review/Data Mining	NHA MOH/MOF Budgets
LaFond, Brown 2003	52	Ratio of health care spending on primary health care vs. tertiary care	Expenditure	Financing	On the Shelf Document Review/Data Mining	NHA MOH/MOF Budgets
Knowles 1997	20	Ratio of share of government health subsidies received to share of total income received by income group	Expenditure	Financing	Document Review/Data Mining	MOH/MOF Budgets or Records, Facility Records
Knowles 1997	20	Ratio of the GINI coefficient for public health care subsidies to that for total income (or total expenditures)	Expenditure	Financing	Document Review/Data Mining	MOH/MOF Budgets or Records, Facility Records
Liu 2004	50	Share of expenditure between preventive and curative services†	Expenditure	Financing	Document Review/Data Mining	MOH/MOF Budgets or Records
WHO 2010	75	Total expenditure on health	Expenditure	Financing	On the Shelf Document Review/Data Mining	NHA MOH/MOF Budgets or Records

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USAID 2012	152	Total expenditure on health (THE) as percentage of GDP	Expenditure	Financing	On the Shelf Document Review/Data Mining	NHA MOH/MOF Budgets or Records
Hutchinson 2004	34	Total health expenditure (and share of total) by central government	Expenditure	Financing	On the Shelf Document Review/Data Mining	NHA MOH/MOF Budgets or Records
Hutchinson 2004	34	Total health expenditure (and share of total) by private/NGO providers/donors	Expenditure	Financing	On the Shelf Document Review/Data Mining	NHA MOH/MOF Budgets or Records
Boerma 2010	17	Total health expenditure per capita	Expenditure	Financing	On the Shelf Document Review/Data Mining	NHA MOH/MOF Budgets
USAID 2012	156	Trends in MOH planned and realized expenditures	Expenditure	Financing	Document Review/Data Mining	MOH Budgets
WHO 2010	80	Information on government expenditures on wages and salaries readily available†	Financial Policies & Resources	Financing	Document Review/Data Mining	MOH/MOF/Regional Budgets or Records
Liu 2004	47	Annual out-of-pocket medical expense as percentage of annual income†	Financial Risk Protection	Financing	Data Collection (Surveys/Interviews)	Household Surveys
Knowles 1997	17	Average total private cost of an average hospital stay as a percent of annual per capita household income for consumers in the lowest per capita income quintile†	Financial Risk Protection	Financing	Document Review/Data Mining Data Collection (Surveys/Interviews)	Facility Records Household Surveys
Knowles 1997	17	Average total private cost of medicines for a typical outpatient illness episode as a percent of monthly per capita household income for consumers in the lowest per capita quintile†	Financial Risk Protection	Financing	Document Review/Data Mining Data Collection (Surveys/Interviews)	Facility Records Household Surveys
Knowles 1997	16	Average total private cost of professionally treated outpatient illness episode as a percent of monthly per capita household income for consumers in the lowest per capita income quintile†	Financial Risk Protection	Financing	Document Review/Data Mining Data Collection (Surveys/Interviews)	Facility Records Household Surveys
Hutchinson 2004	44	Mean monthly household health expenditure (on medical care, preventive care) by socioeconomic quintile/decile†	Financial Risk Protection	Financing	Data Collection (Surveys/Interviews)	Household Surveys

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USAID 2012	191	Out-of-pocket expenditure as percentage of THE	Financial Risk Protection	Financing	Document Review/Data Mining Data Collection (Surveys/Interviews)	MOH/Facility Records Household Surveys
USAID 2012	267	Out-of-pocket expenditure for health on medicines	Financial Risk Protection	Financing	Document Review/Data Mining Data Collection (Surveys/Interviews)	MOH/Facility Records Household Surveys
USAID 2012	191	Out-of-pocket spending as a percentage of private health spending	Financial Risk Protection	Financing	Document Review/Data Mining Data Collection (Surveys/Interviews)	MOH/Facility Records Household Surveys
WHO 2010	80	Patient/household out-of-pocket expenditures of accessing or obtaining services collected intermittently†	Financial Risk Protection	Financing	On the Shelf Data Collection (Surveys/Interviews)	DHS (Out-of-Pocket Health Expenditure Module) Household Surveys
Liu 2004	11	Percentage of out-of-pocket payment by the poor‡	Financial Risk Protection	Financing	Document Review/Data Mining Data Collection (Surveys/Interviews)	Facility Records Household Surveys
Alva 2009	87	Percentage of population with catastrophic health expenditure, by expenditure quintile	Financial Risk Protection	Financing	On the Shelf Data Collection (Surveys/Interviews)	NHA Household Survey
WHO 2010	76	Ratio of household out-of-pocket payments for health to total expenditure on health†	Financial Risk Protection	Financing	On the Shelf Data Collection (Surveys/Interviews)	DHS (Out-of-Pocket Health Expenditure Module) Household Surveys
Hutchinson 2004	45	Share of monthly household health expenditures in total household expenditures†	Financial Risk Protection	Financing	Data Collection (Surveys/Interviews)	Household Surveys
Hutchinson 2004	34	Total health expenditure (and share of total) by households and individuals†	Financial Risk Protection	Financing	On the Shelf Data Collection (Surveys/Interviews)	NHA Household Surveys
Knowles 1997	41	Donor expenditures on technical assistance as a percent of all donor health expenditures	Funding Sources	Financing	Document Review/Data Mining	MOH/MOF/Regional Budgets or Records
USAID 2012	154	External resources for health as a percentage of total health spending	Funding Sources	Financing	Document Review/Data Mining	MOH/MOF Budgets or Records
Knowles 1997	41	Number of months of foreign technical assistance funded by donors†	Funding Sources	Financing	Document Review/Data Mining	Partnership Contracts
Knowles 1997	40	Percentage of government health spending financed by donors	Funding Sources	Financing	Document Review/Data Mining	MOH/MOF Budgets or Records

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Knowles 1997	40	Percentage of government health system financed by tax revenue	Funding Sources	Financing	Document Review/Data Mining	MOH/MOF Budgets or Records
Knowles 1997	40	Percentage of government recurrent health spending financed by donors	Funding Sources	Financing	Document Review/Data Mining	MOH/MOF Budgets or Records
LaFond, Brown 2003	52	Percentage of health budget funded by external sources	Funding Sources	Financing	On the Shelf Document Review/Data Mining	NHA MOH/MOF Budgets or Records
Knowles 1997	40	Percentage of total health system financed by tax revenue	Funding Sources	Financing	Document Review/Data Mining	MOH/MOF Budgets or Records
LaFond, Brown 2003	46	Ability of the system to transfer funds between authority levels (for example, within 45 days of the end of the quarter) and/or produce audited statements within six months of the end of the fiscal year*	Governance of Financing	Financing	Document Review/Data Mining Data Collection (Surveys/Interviews)	MOH/Facility Records Facility Audits
Hutchinson 2004	36	Existence of financial management systems, systems of accountancy, and regular auditing†*	Governance of Financing	Financing	Document Review/Data Mining	MOH/Facility Records or Policy Documents
Knowles 1997	36	Fee levels promote efficiency (yes/no)*	Governance of Financing	Financing	Document Review/Data Mining	MOH/Facility Records
Liu 2004	46	Level of financial autonomy of public providers†*	Governance of Financing	Financing	Document Review/Data Mining	MOH Policy Documents
WHO 2010	80	Number and percentage of facilities meeting established national financial management criteria†*	Governance of Financing	Financing	Document Review/Data Mining Data Collection (Surveys/Interviews)	Facility Assessments Facility Audits
USAID 2012	164	Funding mechanisms and sustainability of health insurance	Health Insurance	Financing	Document Review/Data Mining	MOH/MOF/Donor Budgets or Records
USAID 2012	165	Institutional capacity for health insurance organizations†*	Health Insurance	Financing	Document Review/Data Mining Data Collection (Surveys/Interviews)	Health Insurance Organization Records, MOH/Donor Records Insurance/MOH/ Donor Interviews

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WHO 2010	80	Number (%) of people/households covered by health insurance, by population group, and specifically for poor/vulnerable groups†	Health Insurance	Financing	On the Shelf Document Review/Data Mining Data Collection (Surveys/Interviews)	DHS (Out-of-Pocket Health Expenditure Module) Health Insurance Enrollment Records Household Surveys
Knowles 1997	37	Percentage of insured enrolled in plans which use copayments and deductibles, managed care plans, or plans subject to global budgeting	Health Insurance	Financing	Document Review/Data Mining Data Collection (Surveys/Interviews)	Insurance Enrollment Plans Records Household Surveys
WHO 2010	66	Percentage of population covered by health insurance†	Health Insurance	Financing	On the Shelf Data Collection (Surveys/Interviews)	DHS (Out-of-Pocket Health Expenditure Module) Household Surveys
Hutchinson 2004	45	Proportion of poorest quintile/quartile/decile covered by insurance/risk sharing programs/ community based health insurance†	Health Insurance	Financing	On the Shelf Data Collection (Surveys/Interviews)	DHS (Out-of-Pocket Health Expenditure Module) Household Surveys
USAID 2012	164	Services covered by health insurance	Health Insurance	Financing	On the Shelf	Health Insurance Policies
Alva 2009	88	Effectiveness of payment systems for primary and secondary health care providers†	Payment Mechanisms	Financing	Data Collection (Surveys/Interviews)	Health Insurance Assessments, Stakeholder Interviews
Knowles 1997	36	Fees are charged in all facilities (yes/no)†	Payment Mechanisms	Financing	Document Review/Data Mining	MOH/Facility Records
USAID 2012	168	Informal user fees in the public sector†*	Payment Mechanisms	Financing	Data Collection (Surveys/Interviews)	Household Surveys
Liu 2004	47	Percentage of inpatients that pay at the point of service†	Payment Mechanisms	Financing	On the Shelf Document Review/Data Mining	DHS (Out-of-Pocket Health Expenditure Module) Facility Records
USAID 2012	167	Policies for user fee payments in the public sector†	Payment Mechanisms	Financing	Document Review/Data Mining	MOH/Regional Policy Documents
Hutchinson 2004	45	Proportion of the poor exempted from paying fees for care, drugs, etc.†	Payment Mechanisms	Financing	Document Review/Data Mining	MOH/Regional Policy Documents
USAID 2012	165	Provider payment mechanisms under health insurance	Payment Mechanisms	Financing	Document Review/Data Mining	MOH Policy Documents
USAID 2012	192	User fee exemptions and waivers†	Payment Mechanisms	Financing	Document Review/Data Mining	MOH, Regional, or Facility Policy Documents

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† Indicators are also applicable at a higher level of the health system.

Resource	Page	Indicator	Component of HSS Core Function	Core Function	Data Source Type(s)	Potential Data Source(s)
USAID 2012	122	Control of corruption	Control of Corruption & Level of Trust	Governance & Leadership	On the Shelf Document Review/Data Mining	Worldwide Governance Indicators (WGI) Reports MOH/Regional Policy Documents, Government Laws
Liu 2004	46	Level of corruption (e.g., corruption perceptions index)	Control of Corruption & Level of Trust	Governance & Leadership	On the Shelf	Transparency International Corruption Perceptions Index (CPI) Report
Alva 2009	93	Percentage of publicly funded supplies and services leaked (e.g., sale of publicly funded drugs in private markets, fraudulent insurance billing practices)†	Control of Corruption & Level of Trust	Governance & Leadership	?	?
Alva 2009	93	Proportion of informal payments within the public health care system†*	Control of Corruption & Level of Trust	Governance & Leadership	Document Review/Data Mining	Facility Records
Knowles 1997	25	Effective methods for communicating standards to the field level‡	Directives, Oversight, Resources	Governance & Leadership	Document Review/Data Mining Data Collection (Surveys/Interviews)	Facility Records Facility Staff Interviews
WHO 2010	89	Existence of a comprehensive reproductive health policy consistent with the ICPD action plan	Directives, Oversight, Resources	Governance & Leadership	On the Shelf	MOH Policy Documents
WHO 2010	88	Existence of a national malaria strategy or policy that includes drug efficacy monitoring, vector control, and insecticide resistance monitoring	Directives, Oversight, Resources	Governance & Leadership	On the Shelf	MOH Policy Documents
WHO 2010	88	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	Directives, Oversight, Resources	Governance & Leadership	On the Shelf	MOH Policy Documents

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WHO 2010	89	Existence of an updated comprehensive, multiyear plan for childhood immunization	Directives, Oversight, Resources	Governance & Leadership	On the Shelf	MOH Policy Documents
WHO 2010	87	Existence of an up-to-date national health strategy linked to national needs and priorities	Directives, Oversight, Resources	Governance & Leadership	On the Shelf	MOH Policy Documents
Alva 2009	90	Existence of comprehensive reproductive health policy	Directives, Oversight, Resources	Governance & Leadership	On the Shelf	MOH Policy Documents
WHO 2010	89	Existence of key health sector documents that are disseminated regularly (such as budget documents, annual performance reviews, and health indicators)†	Directives, Oversight, Resources	Governance & Leadership	Document Review/Data Mining	MOH/Regional Records, Reports, or Budgets
Knowles 1997	25	Existence of national facility standards, including enforcement mechanisms	Directives, Oversight, Resources	Governance & Leadership	On the Shelf	MOH Policy Documents or Records
USAID 2012	199	Existence of national policies for promoting quality of care	Directives, Oversight, Resources	Governance & Leadership	On the Shelf	Government Laws/Policy Documents
USAID 2012	265	Existence of national therapeutic guides with standardized treatments for common health problems*	Directives, Oversight, Resources	Governance & Leadership	On the Shelf	MOH Policy Documents
LaFond, Brown 2003	52	Existence of sectorwide strategy	Directives, Oversight, Resources	Governance & Leadership	On the Shelf	MOH Policy Documents or Strategic Plans
USAID 2012	132	Government provides overall direction to the health system through clear legislation, policies, and regulations	Directives, Oversight, Resources	Governance & Leadership	Document Review/Data Mining	MOH Policy Documents, Government Laws
PEPFAR 2011	17	New/updated national guidelines approved	Directives, Oversight, Resources	Governance & Leadership	Document Review/Data Mining	MOH Policy Documents
PEPFAR 2011	17	New/updated strategic plans approved†	Directives, Oversight, Resources	Governance & Leadership	Document Review/Data Mining	MOH, Regional, or Facility Policy Documents
LaFond, Brown 2003	52	Number of health action plans	Directives, Oversight, Resources	Governance & Leadership	On the Shelf	MOH Policy Documents or Strategic Plans
Hutchinson 2004	43	Percentage of facilities with written guidelines for standard treatments, pricing policies and exemption mechanisms, facility management, etc.†	Directives, Oversight, Resources	Governance & Leadership	Document Review/Data Mining	Facility Records/Policy Documents

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PEPFAR 2011	17	Percentage of target organizations implementing national guidelines in technical area†	Directives, Oversight, Resources	Governance & Leadership	Document Review/Data Mining	MOH, Regional, or Facility Policy Documents
Knowles 1997	25	Presence of a national quality assurance program, including trained staff and established procedures for quality design, monitoring, and improvement	Directives, Oversight, Resources	Governance & Leadership	Document Review/Data Mining Data Collection (Surveys/Interviews)	MOH Policy Documents MOH Interviews
Knowles 1997	25	Presence of clear national standards for high priority health services	Directives, Oversight, Resources	Governance & Leadership	On the Shelf	MOH Policy Documents (i.e. STG availability)
Liu 2004	48	Proportion of facilities in which current diagnostic and treatment guidelines are available in writing†	Directives, Oversight, Resources	Governance & Leadership	Document Review/Data Mining	Facility Records (i.e. STG availability)
LaFond, Brown 2003	52	Widely distributed sectorwide strategy	Directives, Oversight, Resources	Governance & Leadership	Document Review/Data Mining Data Collection (Surveys/Interviews)	MOH Policy Documents or Strategic Plans Stakeholder Interviews
PEPFAR 2011	17	Agreed-upon M&E plan for activities†	Effectiveness	Governance & Leadership	On the Shelf	MOH, Regional, or Facility Policy Documents or Reports
PEPFAR 2011	17	Evidence of impact of new/updated management systems on performance†	Effectiveness	Governance & Leadership	Document Review/Data Mining Data Collection (Surveys/Interviews)	MOH/Facility Records MOH/Facility Staff Interviews
PEPFAR 2011	17	Evidence of impact of role of organized networks supported†	Effectiveness	Governance & Leadership	?	?
Liu 2004	45	Existence and comprehensiveness of indicators for monitoring program performance†	Effectiveness	Governance & Leadership	Document Review/Data Mining	M&E Plan, MOH/Facility Records
Liu 2004	45	Existence of performance targets against which M&E is performed†	Effectiveness	Governance & Leadership	On the Shelf	M&E Plan, MOH/Facility Records
Liu 2004	45	Frequency of M&E observation†	Effectiveness	Governance & Leadership	Document Review/Data Mining	M&E Plan, MOH/Facility Records

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USAID 2012	122	Government effectiveness†	Effectiveness	Governance & Leadership	On the Shelf Data Collection (Surveys/Interviews)	Worldwide Governance Indicators (WGI) Reports Stakeholder Interviews
Liu 2004	45	Internal vs. external evaluation†	Effectiveness	Governance & Leadership	Document Review/Data Mining	M&E Plan, MOH/Facility Records
Liu 2004	46	Linkages between the results of performance monitoring and reimbursement†	Effectiveness	Governance & Leadership	Document Review/Data Mining	M&E Plan, MOH/Facility Records
PEPFAR 2011	17	Number of organizational systems/tools/processes improved: technical, managerial, M&E†	Effectiveness	Governance & Leadership	Document Review/Data Mining	Facility Records
PEPFAR 2011	17	Percentage of national/local partners/supported sites achieving operational targets†	Effectiveness	Governance & Leadership	Document Review/Data Mining	MOH, Regional, or Facility Reports
PEPFAR 2011	17	Percentage of national/local partners/supported sites achieving technical program standards†	Effectiveness	Governance & Leadership	Document Review/Data Mining	MOH, Regional, or Facility Reports
USAID 2012	132	Procedures exist for reporting, investigating, and adjudicating misallocation or misuse of resources†	Effectiveness	Governance & Leadership	Document Review/Data Mining	MOH/Regional Policy Documents, Government Laws
Knowles 1997	25	Routine application of methods for comparing performance with standards†	Effectiveness	Governance & Leadership	Data Collection (Surveys/Interviews)	MOH, Regional, or Facility Staff Interviews
Alva 2009	91	Disparity in coverage between lowest/ highest income groups (for DPT3 or other indicators)†	Equity	Governance & Leadership	Document Review/Data Mining	MOH Records or Reports
Alva 2009	94	Share of expenditure to poorest 25% of districts*	Equity	Governance & Leadership	Document Review/Data Mining	MOH Records or Reports
USAID 2012	128	Information about the quality and cost of health services is publicly available to help clients select their health providers or health facilities†	Information, Reporting, and Lobbying	Governance & Leadership	Data Collection (Surveys/Interviews)	Client Exit Interviews, Household Surveys
USAID 2012	128	Information on allocation and use of resources and results is available for review by the public and concerned stakeholders†	Information, Reporting, and Lobbying	Governance & Leadership	Data Collection (Surveys/Interviews)	Stakeholder Interviews
USAID 2012	130	Service providers use evidence to influence and lobby government officials for policy, program, and/or procedural changes†	Information, Reporting, and Lobbying	Governance & Leadership	Data Collection (Surveys/Interviews)	Provider and Provider Organization Interviews
PEPFAR 2011	17	Assessed improvement in national/local partners technical and management capacity in targeted areas†	Leadership & Management	Governance & Leadership	Data Collection (Surveys/Interviews)	Facility Staff Interviews

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PEPFAR 2011	17	Evidence of partnership quality†	Leadership & Management	Governance & Leadership	?	?
Alva 2009	75	Existence of corporate social responsibility (CSR) programs that offer health services among the country's largest employers	Leadership & Management	Governance & Leadership	?	?
USAID 2012	124	Groups represented during these health policy agenda discussions†	Leadership & Management	Governance & Leadership	Data Collection (Surveys/Interviews)	Stakeholder Interviews
PEPFAR 2011	17	Joint accountabilities defined†	Leadership & Management	Governance & Leadership	Document Review/Data Mining	Partnership Contract, Stakeholder Policy Documents
PEPFAR 2011	17	Joint resources applied to capacity development effort (financial, in-kind)†	Leadership & Management	Governance & Leadership	Document Review/Data Mining	Stakeholder Budgets
PEPFAR 2011	17	National/local partner assumes increasing leadership and implementation responsibilities over time†	Leadership & Management	Governance & Leadership	Document Review/Data Mining	Partnership Contract, Stakeholder Policy Documents
PEPFAR 2011	17	Number of national/local organizations provided with minimum package of technical and management capacity development assistance†	Leadership & Management	Governance & Leadership	Document Review/Data Mining	MOH, Facility, Donor Records
PEPFAR 2011	17	Periodic internal assessment of quality of partnership (mutual respect, learning, accountability)†	Leadership & Management	Governance & Leadership	Document Review/Data Mining	MOH, Regional, or Facility Reports
LaFond, Brown 2003	52	Collaborative "arrangements" exist between social sectors – e.g., meetings between health & agriculture or health & education	Organization of Services	Governance & Leadership	On the Shelf	Partnership Contract, Stakeholder Policy Documents
USAID 2012	161	Contracting mechanisms between the MOH and public and private service providers	Organization of Services	Governance & Leadership	On the Shelf	MOH Policy Documents
LaFond, Brown 2003	73	Evidence of public-private collaboration†	Organization of Services	Governance & Leadership	Document Review/Data Mining	Partnership Contract, Stakeholder Policy Documents
USAID 2012	128	Health services are organized and financed in ways that offer incentives to public, NGO, and private providers to improve performance in the delivery of health services	Organization of Services	Governance & Leadership	Document Review/Data Mining	Government Laws/Policy Documents

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PEPFAR 2011	17	Leadership role of national/local partners defined†	Organization of Services	Governance & Leadership	Document Review/Data Mining	Partnership Contract, Stakeholder Policy Documents
Alva 2009	91	International Country Risk Guide (Political Risk Services Group)	Organization/ Political Stability	Governance & Leadership	On the Shelf	PRS Group Reports
Liu 2004	45	Level of conflict†	Organization/ Political Stability	Governance & Leadership	Data Collection (Surveys/Interviews)	Conflict Assessment (e.g. Speed Leas' Level of Conflict)
USAID 2012	122	Political stability	Organization/ Political Stability	Governance & Leadership	On the Shelf	Worldwide Governance Indicators (WGI) Reports
LaFond, Brown 2003	60	Frequency of contact with higher and lower level organizations within public sector†	Overall Governance	Governance & Leadership	Data Collection (Surveys/Interviews)	Stakeholder Interviews
Alva 2009	94	Government coordination or harmonization of donor inputs†	Overall Governance	Governance & Leadership	Document Review/Data Mining Data Collection (Surveys/Interviews)	MOH/Regional Records or Reports Stakeholder Interviews
LaFond, Brown 2003	52	Number of collaborative projects initiated in sectors outside health	Overall Governance	Governance & Leadership	Document Review/Data Mining	Partnership Contract, Stakeholder Policy Documents
LaFond, Brown 2003	52	Number of health committees who meet regularly and take action†	Overall Governance	Governance & Leadership	Document Review/Data Mining	Partnership Contract, Stakeholder Policy Documents
Alva 2009	93	Proportion of government funds which reach district- level facilities*	Overall Governance	Governance & Leadership	Document Review/Data Mining	MOH/MOF Budgets or Records
USAID 2012	122	Rule of law	Overall Governance	Governance & Leadership	On the Shelf Data Collection (Surveys/Interviews)	Worldwide Governance Indicators (WGI) Reports Provider, Facility, Regulatory Authority, and MOH Interviews
Liu 2004	46	Sophistication of banking systems†	Overall Governance	Governance & Leadership	Document Review/Data Mining Data Collection (Surveys/Interviews)	MOF/Regional Financial Policy Documents MOF Bank Assessments

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Liu 2004	46	Sophistication of legal systems†	Overall Governance	Governance & Leadership	Document Review/Data Mining	Government Policy Documents/Laws
WHO 2010	89	Completion of the UNGASS National Composite Policy Index questionnaire for HIV/AIDS	Regulatory Quality	Governance & Leadership	On the Shelf	UNGASS National Composite Policy Index Questionnaires and Reports
Alva 2009	89	Country Policy and Institutional Assessment (CPIA) Index – measured by The World Bank and based on a set of criteria that are captured in 16 subcomponents	Regulatory Quality	Governance & Leadership	On the Shelf	World Bank Reports
USAID 2012	132	Health sector regulations are known and enforced in both public and private training institutions and health facilities†	Regulatory Quality	Governance & Leadership	Data Collection (Surveys/Interviews)	Provider, Facility, Regulatory Authority, and MOH Interviews
WHO 2010	52	International Health Regulations implemented according to international standards	Regulatory Quality	Governance & Leadership	Document Review/Data Mining	MOH Reports
Alva 2009	94	Legislative and Policy Reforms are enacted, with increased focus on community-based primary health care†	Regulatory Quality	Governance & Leadership	Document Review/Data Mining	Government Laws/Policy Documents
					Data Collection (Surveys/Interviews)	Stakeholder Interviews
Boerma 2010	17	National health strategy having the main attributes (IHP+)	Regulatory Quality	Governance & Leadership	Document Review/Data Mining	MOH Policy Documents
PEPFAR 2011	17	New/updated national management systems implemented	Regulatory Quality	Governance & Leadership	Document Review/Data Mining	MOH Policy Documents
PEPFAR 2011	17	New/updated policies and/or standards approved†	Regulatory Quality	Governance & Leadership	Document Review/Data Mining	MOH, Regional, or Facility Policy Documents
PEPFAR 2011	17	Percentage of funded national/local funded prime partners submitting program and financial reports on time and complete†	Regulatory Quality	Governance & Leadership	Document Review/Data Mining	MOH, Regional, or Facility Reports
PEPFAR 2011	17	Percentage of funded national/local funded prime partners with unqualified audits†	Regulatory Quality	Governance & Leadership	Document Review/Data Mining	MOH, Regional, or Facility Reports
PEPFAR 2011	17	Percentage of target organizations using new/updated policies and/or standards approved†	Regulatory Quality	Governance & Leadership	Document Review/Data Mining	MOH, Regional, or Facility Policy Documents
Global Fund 2004	10	Policy and guidelines in place at national level	Regulatory Quality	Governance & Leadership	On the Shelf	MOH Policy Documents, Government Laws
WHO 2010	xii	Policy index	Regulatory Quality	Governance & Leadership	Document Review/Data Mining	MOH Policy Documents
USAID 2012	130	Public and private sector providers report information to the government	Regulatory Quality	Governance & Leadership	Document Review/Data Mining	MOH Records or Policy Documents

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Appendix B

Subnational-level health-system strengthening indicators, by core function

Resource	Page	Indicator	Component of HSS Core Function	Core Function	Data Source Type(s)	Potential Data Source(s)
		Regulatory quality a composite indicator measuring the ability of the government to formulate and implement sound policies and regulations that permit and promote private sector development (e.g., business regulations, taxation, trade and competition policy, government market intervention)	Regulatory Quality	Governance & Leadership	On the Shelf Document Review/Data Mining	Worldwide Governance Indicators (WGI) Reports MOH Policy Documents, Government Laws
Knowles 1997	25	Routine review and updating of technical standards†	Regulatory Quality	Governance & Leadership	Data Collection (Surveys/Interviews)	MOH, Regional, or Facility Staff Interviews
WHO 2010	90	Existence of mechanisms such as surveys, for obtaining opportune client input on appropriate, timely, and effective access to health services	Responsiveness	Governance & Leadership	Document Review/Data Mining	MOH Policy Documents
USAID 2012	132	Government officials rely on evidence in policy and planning	Responsiveness	Governance & Leadership	Document Review/Data Mining Data Collection (Surveys/Interviews)	MOH/Government Policy Documents MOH Interviews
USAID 2012	126	Civil society organizations oversee health providers and provider organizations in the way they deliver and finance health services†	Voice & Accountability	Governance & Leadership	Data Collection (Surveys/Interviews)	NGO/Media Interviews
USAID 2012	126	Existence of procedures and institutions that clients, civil society, and other concerned stakeholders can use to fight bias and inequity in accessing health service†	Voice & Accountability	Governance & Leadership	Data Collection (Surveys/Interviews)	NGO/Media Interviews
USAID 2012	124	Mechanisms and strategies used by the government to engage all health stakeholders in policy and planning include workshops to discuss policies and develop strategic plans, and widespread distribution of policies and plans to all major health entities†	Voice & Accountability	Governance & Leadership	Document Review/Data Mining Data Collection (Surveys/Interviews)	Government Policy Documents/Budgets Stakeholder Interviews

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USAID 2012	230	Mechanisms in place to involve community in service planning and provision and to provide feedback†	Voice & Accountability	Governance & Leadership	Document Review/Data Mining Data Collection (Surveys/Interviews)	MOH, Regional, or Facility Policy Documents Stakeholder Interviews
PEPFAR 2011	17	Official organized networks supported†	Voice & Accountability	Governance & Leadership	?	?
LaFond, Brown 2003	53	Percentage of communities with active health center management committee†	Voice & Accountability	Governance & Leadership	Document Review/Data Mining Data Collection (Surveys/Interviews)	Facility Records Stakeholder Interviews
USAID 2012	125	Public and concerned stakeholders have the capacity and opportunity to advocate for health issues important to them and to participate effectively with public officials in the establishment of policies, plans, and budgets for health services†	Voice & Accountability	Governance & Leadership	Data Collection (Surveys/Interviews)	Stakeholder (i.e. Civil Society, Media, MOH, Private Institutions such as Hospitals, Insurance Companies, or Pharmacies) Interviews
USAID 2012	126	Public or concerned stakeholders (e.g., community members) have regular opportunities to meet with health care providers about service efficiency or quality†	Voice & Accountability	Governance & Leadership	Data Collection (Surveys/Interviews)	Citizen Group and Facility Interviews
USAID 2012	124	Type of mechanisms in place to ensure the participation of key stakeholders in the health policy agenda†	Voice & Accountability	Governance & Leadership	Document Review/Data Mining Data Collection (Surveys/Interviews)	MOH, Regional, or Facility Policy Documents Stakeholder Interviews
USAID 2012	122	Voice and accountability	Voice & Accountability	Governance & Leadership	On the Shelf Document Review/Data Mining	Worldwide Governance Indicators (WGI) Reports Government Laws/Policy Documents
USAID 2012	125	Willingness of the public and concerned stakeholders to participate in governance and advocate for health issues†	Voice & Accountability	Governance & Leadership	Data Collection (Surveys/Interviews)	Patient Group, Provider Group, and NGO Interviews

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Resource	Page	Indicator	Component of HSS Core Function	Core Function	Data Source Type(s)	Potential Data Source(s)
Liu 2004	46	Availability of other specified services at the nearest health center (e.g., HIV test, specified lab test, immunization, growth monitoring, prenatal care, family planning services and products)	Access/Equity	Service Delivery	Data Collection (Surveys/Interviews)	Facility Assessments
LaFond, Brown 2003	53	Average time/distance to the nearest reproductive health facility offering a specific service‡	Access/Equity	Service Delivery	Document Review/Data Mining	Census Data, MOH Administrative Records (Facility Censuses)
Alva 2009	74	Basic and comprehensive obstetric care facilities per 500,000‡	Access/Equity	Service Delivery	Document Review/Data Mining	Census Data, MOH Administrative Records (Facility Censuses)
USAID 2012	196	Consumer profiles†‡	Access/Equity	Service Delivery	Data Collection (Surveys/Interviews)	Household Surveys
Liu 2004	49	Difference in access indicators between locations (rural vs. urban), income groups (household income quintile), and ethnic groups (as they are relevant)‡	Access/Equity	Service Delivery	Data Collection (Surveys/Interviews)	Household Surveys
Liu 2004	49	Difference in quality indicators between locations (rural vs. urban), income groups (household income quintile), and ethnic groups (as they are relevant)‡	Access/Equity	Service Delivery	Data Collection (Surveys/Interviews)	Facility Assessments
Liu 2004	47	Distribution of reasons given by those ill but not accessing services (seeking care is unnecessary, financial barriers, distance, lack of supply)‡	Access/Equity	Service Delivery	Data Collection (Surveys/Interviews)	Household Surveys

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Boerma 2010	17	Health facilities per 10,000 population‡	Access/Equity	Service Delivery	Document Review/Data Mining	Census Data, MOH Administrative Records (Facility Censuses)
Boerma 2010	17	Hospital beds per 10,000 population‡	Access/Equity	Service Delivery	Document Review/Data Mining	Census Data, MOH Administrative Records (Facility Censuses)
WHO 2010	8	Number and distribution of (primary care) health facilities per 10,000 population‡	Access/Equity	Service Delivery	Document Review/Data Mining	Census Data, MOH Administrative Records (Facility Censuses)
WHO 2010	12	Number and distribution of health facilities offering specific services per 10,000 population‡	Access/Equity	Service Delivery	Document Review/Data Mining	Census Data, MOH Administrative Records (Facility Censuses)
WHO 2010	9	Number and distribution of inpatient beds per 10,000 population‡	Access/Equity	Service Delivery	Document Review/Data Mining	Census Data, MOH Administrative Records (Facility Censuses)
Global Fund 2004	10	Number of activities organized which address basic needs of vulnerable populations‡‡	Access/Equity	Service Delivery	Document Review/Data Mining	MOH, Regional, or Facility Records
Liu 2004	49	Number of hospital days per doctor‡‡	Access/Equity	Service Delivery	On the Shelf	Facility Records, HRIS
USAID 2012	263	Percentage of households more than 5/10/20 km from health facility/pharmacy to dispense essential medicines‡	Access/Equity	Service Delivery	Data Collection (Surveys/Interviews)	Household Surveys
WHO 2010	22	Percentage of persons who state they have a usual source of care‡	Access/Equity	Service Delivery	Data Collection (Surveys/Interviews)	Household Surveys
Hutchinson 2004	46	Percentage of population (rural, poor) living within X kilometers of a facility offering specific services (e.g., obstetric care, a package of essential primary health care services, family planning and immunization outreaches, 24-hour emergency transport)‡	Access/Equity	Service Delivery	Document Review/Data Mining Data Collection (Surveys/Interviews)	Census Data, MOH Administrative Records (Facility Censuses) Household Surveys
Liu 2004	47	Percentage of population (rural, poor) residing within X kilometers of a health facility‡	Access/Equity	Service Delivery	Document Review/Data Mining Data Collection (Surveys/Interviews)	Census Data, MOH Administrative Records (Facility Censuses) Household Surveys

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Liu 2004	47	Percentage of population (rural, poor) residing within X kilometers of a health facility providing a package of basic health services‡	Access/Equity	Service Delivery	Document Review/Data Mining Data Collection (Surveys/Interviews)	Census Data, MOH Administrative Records (Facility Censuses) Household Surveys
Liu 2004	47	Percentage of population (rural, poor) residing within X kilometers of a health facility staffed by a doctor‡	Access/Equity	Service Delivery	Document Review/Data Mining Data Collection (Surveys/Interviews)	Census Data, MOH Administrative Records (Facility Censuses) Household Surveys
Liu 2004	47	Percentage of population (rural, poor) residing within X kilometers of a hospital‡	Access/Equity	Service Delivery	Document Review/Data Mining Data Collection (Surveys/Interviews)	Census Data, MOH Administrative Records (Facility Censuses) Household Surveys
Liu 2004	47	Percentage of population (rural, poor) residing within X kilometers of a hospital providing 24-hour emergency (obstetric) care‡	Access/Equity	Service Delivery	Document Review/Data Mining Data Collection (Surveys/Interviews)	Census Data, MOH Administrative Records (Facility Censuses) Household Surveys
Liu 2004	47	Percentage of population (rural, poor) residing within X kilometers of a pharmacy‡	Access/Equity	Service Delivery	Document Review/Data Mining Data Collection (Surveys/Interviews)	Census Data, MOH Administrative Records (Facility Censuses) Household Surveys
Liu 2004	47	Percentage of population (rural, poor) served by 24-hour ambulance services‡	Access/Equity	Service Delivery	Document Review/Data Mining Data Collection (Surveys/Interviews)	Census Data, MOH Administrative Records (Facility Censuses) Household Surveys
Liu 2004	47	Percentage of population (rural, poor) residing more than X kilometers from a health facility who are covered by outreach services‡	Access/Equity	Service Delivery	Document Review/Data Mining Data Collection (Surveys/Interviews)	Census Data, MOH Administrative Records (Facility Censuses) Household Surveys

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Liu 2004	47	Percentage of those ill expressing need for service but not accessing it‡	Access/Equity	Service Delivery	Data Collection (Surveys/Interviews)	Household Surveys
Hutchinson 2004	46	Population per doctor, nurse, clinic, hospital, hospital bed (by geographic area)‡	Access/Equity	Service Delivery	Document Review/Data Mining	Census Data, HRIS MOH Records
Hutchinson 2004	45	Use of essential health services by socioeconomic quintile/decile‡	Access/Equity	Service Delivery	Data Collection (Surveys/Interviews)	Household Surveys
USAID 2012	193	Antenatal care coverage, at least one visit (%)‡	Coverage, Utilization, Demand	Service Delivery	On the Shelf Data Collection (Surveys/Interviews)	DHS/AIS/MICS Household Surveys
USAID 2012	194	Births attended by skilled health staff (% of total)‡	Coverage, Utilization, Demand	Service Delivery	On the Shelf Data Collection (Surveys/Interviews)	DHS/AIS/MICS, Census Projections, Vital Registration Data Facility Records, Household Surveys
Boerma 2010	18	Cervical cancer screening (20–64 years) coverage‡	Coverage, Utilization, Demand	Service Delivery	Data Collection (Surveys/Interviews)	Facility Records, Household Surveys
Boerma 2010	17	Children with ARI taken to health facility‡	Coverage, Utilization, Demand	Service Delivery	Data Collection (Surveys/Interviews)	Household Survey
USAID 2012	194	Contraceptive prevalence (% of women ages 15–49)‡	Coverage, Utilization, Demand	Service Delivery	On the Shelf Data Collection (Surveys/Interviews)	DHS/MICS Household Surveys
Liu 2004	11	Coverage of birth spacing‡	Coverage, Utilization, Demand	Service Delivery	Data Collection (Surveys/Interviews)	Household Surveys
Liu 2004	12	Coverage of growth monitoring‡	Coverage, Utilization, Demand	Service Delivery	Data Collection (Surveys/Interviews)	Household Surveys
Grun 2006	6	Coverage of the population (%) with healthcare‡	Coverage, Utilization, Demand	Service Delivery	Data Collection (Surveys/Interviews)	Household Surveys
Liu 2004	10	Coverage of three prenatal visits‡	Coverage, Utilization, Demand	Service Delivery	Data Collection (Surveys/Interviews)	Household Surveys
Liu 2004	47	Coverage rate of contracted services (immunization, prenatal care, disease screening, HIV tests and counseling, smoking counseling, contraception prevalence, etc.)‡	Coverage, Utilization, Demand	Service Delivery	Data Collection (Surveys/Interviews)	Household Surveys

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USAID 2012	195	DTP3 immunization coverage (%) among one year-olds†	Coverage, Utilization, Demand	Service Delivery	On the Shelf Data Collection (Surveys/Interviews)	DHS/MICS Household Surveys
LaFond, Brown 2003	53	Family planning continuation rates in catchment population†	Coverage, Utilization, Demand	Service Delivery	Data Collection (Surveys/Interviews)	Facility Records, Household Surveys
Liu 2004	14	Number and types of conditions (case mix) treated††	Coverage, Utilization, Demand	Service Delivery	Document Review/Data Mining	Facility Records
WHO 2010	10	Number of outpatient department visits per 10,000 population per year†	Coverage, Utilization, Demand	Service Delivery	On the Shelf Data Collection (Surveys/Interviews)	DHS (Out-of-Pocket Health Expenditure Module), Census Data Facility Records, Household Survey
USAID 2012	193	Number of primary care or outpatient visits per person to health facilities per year†	Coverage, Utilization, Demand	Service Delivery	On the Shelf Data Collection (Surveys/Interviews)	DHS (Out-of-Pocket Health Expenditure Module), Census Data Facility Records, Household Survey
Liu 2004	49	Number of visits per doctor††	Coverage, Utilization, Demand	Service Delivery	On the Shelf	Facility Records, HRIS
Liu 2004	49	Number of visits per health worker††	Coverage, Utilization, Demand	Service Delivery	On the Shelf	Facility Records, HRIS
Global Fund 2004	10	Number or percentage of target population covered by intervention†	Coverage, Utilization, Demand	Service Delivery	Document Review/Data Mining Data Collection (Surveys/Interviews)	Census Data, Facility Records Household Survey
Knowles 1997	31	Outpatient visits per hour of nurse labor (or per nurse)††	Coverage, Utilization, Demand	Service Delivery	Document Review/Data Mining	Facility Records, HRIS, Payroll Records
Knowles 1997	31	Outpatient visits per hour of physician labor (or per physician)††	Coverage, Utilization, Demand	Service Delivery	Document Review/Data Mining	Facility Records, HRIS, Payroll Records
Liu 2004	14	Overall utilization of services by age group†	Coverage, Utilization, Demand	Service Delivery	Data Collection (Surveys/Interviews)	Household Surveys

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USAID 2012	195	Percentage of children under five with acute respiratory infection taken to a health facility‡	Coverage, Utilization, Demand	Service Delivery	Data Collection (Surveys/Interviews)	Household Surveys
Global Fund 2004	14	Percentage of people remaining on treatment at 6, 12 and 24 months‡	Coverage, Utilization, Demand	Service Delivery	Document Review/Data Mining	Regional/Facility Records, HIS
USAID 2012	195	Percentage of population on ARVs‡	Coverage, Utilization, Demand	Service Delivery	On the Shelf Data Collection (Surveys/Interviews)	DHS/AIS Household Surveys
USAID 2012	195	Percentage of population tested for HIV‡	Coverage, Utilization, Demand	Service Delivery	On the Shelf Data Collection (Surveys/Interviews)	DHS/AIS/MICS Household Surveys
USAID 2012	195	Percentage of population treated for STI‡	Coverage, Utilization, Demand	Service Delivery	On the Shelf Data Collection (Surveys/Interviews)	DHS/AIS Household Surveys
LaFond, Brown 2003	53	Percentage of pregnant women counseled and tested for HIV‡	Coverage, Utilization, Demand	Service Delivery	On the Shelf Data Collection (Surveys/Interviews)	DHS/AIS/MICS Household Surveys
WHO 2010	22	Percentage of women age 40 years and over who reported a mammogram within the past two years‡	Coverage, Utilization, Demand	Service Delivery	Data Collection (Surveys/Interviews)	Household Surveys
Liu 2004	12	Percentage of women attending the weekly health and nutrition education sessions‡	Coverage, Utilization, Demand	Service Delivery	Data Collection (Surveys/Interviews)	Household Surveys
Liu 2004	10	Percentage of women using ORT to treat diarrhea in children‡	Coverage, Utilization, Demand	Service Delivery	Data Collection (Surveys/Interviews)	Household Surveys
USAID 2012	198	Percentage of women vs Percentage of men who access HIV/AIDS test, STI treatment, etc.‡	Coverage, Utilization, Demand	Service Delivery	Document Review/Data Mining Data Collection (Surveys/Interviews)	Facility Records Household Surveys
WHO 2010	22	Percentage of women who received prenatal care in the first trimester‡	Coverage, Utilization, Demand	Service Delivery	Document Review/Data Mining Data Collection (Surveys/Interviews)	Facility Records Household Surveys
USAID 2012	198	Percentage of women who seek care for specific health intervention by source and income group‡	Coverage, Utilization, Demand	Service Delivery	Data Collection (Surveys/Interviews)	Household Surveys

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LaFond, Brown 2003	52	Proportion of adults whose partner recently died in central hospital‡	Coverage, Utilization, Demand	Service Delivery	Data Collection (Surveys/Interviews)	Household Surveys
Hutchinson 2004	47	Proportion of children ages 12–24 months fully immunized‡	Coverage, Utilization, Demand	Service Delivery	On the Shelf Data Collection (Surveys/Interviews)	DHS/MICS Household Surveys
Hutchinson 2004	47	Proportion of ill individuals seeking curative care from a modern (public, private, or NGO) health care provider‡	Coverage, Utilization, Demand	Service Delivery	Data Collection (Surveys/Interviews)	Household Surveys
Liu 2004	49	Proportion of patients with specified conditions who follow through to completion of recommended treatments (e.g., TB, DOTS)†	Coverage, Utilization, Demand	Service Delivery	Document Review/Data Mining	Facility/Regional Records, HIS
USAID 2012	195	Unmet need for family planning‡	Coverage, Utilization, Demand	Service Delivery	On the Shelf Data Collection (Surveys/Interviews)	DHS/MICS Household Surveys
Liu 2004	11	Utilization of facility by the poor†‡	Coverage, Utilization, Demand	Service Delivery	Data Collection (Surveys/Interviews)	Household Surveys
Hutchinson 2004	43	Existence of a national or subnational quality assurance program with procedures, standards, and enforcement mechanisms for ensuring minimal levels of quality and improvement†*	Directives, Oversight, Resources	Service Delivery	Document Review/Data Mining	MOH/Regional Policy Documents or Records
USAID 2012	189	Commercial entities offering health services for their employees and/or communities where they operate‡	Organization of Services	Service Delivery	Data Collection (Surveys/Interviews)	Employers Surveys
Liu 2004	10	Number of counseling centers implemented	Organization of Services	Service Delivery	Document Review/Data Mining	Facility Records
USAID 2012	189	Number of health facilities by type and ownership‡	Organization of Services	Service Delivery	Document Review/Data Mining	MOH Administrative Records (Facility Censuses), Professional Associations Records
Liu 2004	11	Percentage of health centers providing family planning method‡	Organization of Services	Service Delivery	Document Review/Data Mining Data Collection (Surveys/Interviews)	MOH Records Facility Assessments
Liu 2004	11	Percentage of health centers providing immunization‡	Organization of Services	Service Delivery	Document Review/Data Mining Data Collection (Surveys/Interviews)	MOH Records Facility Assessments

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Liu 2004	11	Percentage of health centers providing laboratory (hemoglobin) tests‡	Organization of Services	Service Delivery	Document Review/Data Mining Data Collection (Surveys/Interviews)	MOH Records Facility Assessments
LaFond, Brown 2003	53	Percentage of health facilities providing STI services with adequate drug supply‡	Organization of Services	Service Delivery	Document Review/Data Mining Data Collection (Surveys/Interviews)	MOH Records Facility Assessments
Knowles 1997	33	Percentage of outpatient visits obtained from the private sector‡	Organization of Services	Service Delivery	On the Shelf Document Review/Data Mining	DHS (Out-of-Pocket Health Expenditure Module) MOH/Facility Records
Knowles 1997	33	Private hospital beds as a percent of total‡	Organization of Services	Service Delivery	Document Review/Data Mining	MOH Administrative Records (Facility Censuses), Professional Associations Records
Alva 2009	75	Private sector service delivery‡	Organization of Services	Service Delivery	Document Review/Data Mining, Data Collection (Surveys/Interviews)	Administrative Records Facility Assessments
WHO 2010	12	Proportion of health facilities offering specific services‡	Organization of Services	Service Delivery	Data Collection (Surveys/Interviews)	Facility Assessments
Liu 2004	45	Quantities of services and their mix‡‡	Organization of Services	Service Delivery	Document Review/Data Mining Data Collection (Surveys/Interviews)	Facility Records Facility Assessments
LaFond, Brown 2003	52	Sufficient number of sites functioning as clinical training sites to meet clinic practice needs‡	Organization of Services	Service Delivery	Document Review/Data Mining	MOH/MOE Records
LaFond, Brown 2003	53	System responsiveness to clients‡‡*	Responsiveness	Service Delivery	?	?
Liu 2004	11	Percentage of clients saying that waiting times were acceptable‡	Service Readiness	Service Delivery	Data Collection (Surveys/Interviews)	Client Exit Interviews
PEPFAR 2011	17	Percentage of national/local partners/supported sites with adequate equipment/materials‡	Service Readiness	Service Delivery	Data Collection (Surveys/Interviews)	Facility Assessments
USAID 2012	199	Percentage of primary care facilities that are adequately equipped‡	Service Readiness	Service Delivery	Data Collection (Surveys/Interviews)	Facility Assessments
Global Fund 2004	10	Percentage of selected providers equipped for the intervention (laboratories, nursing, psychosocial support, others)‡	Service Readiness	Service Delivery	Data Collection (Surveys/Interviews)	Facility Assessments, Facility Staff Interviews

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Knowles 1997	26	Proportion of clinics in which services are fully integrated, per national standards‡	Service Readiness	Service Delivery	Data Collection (Surveys/Interviews)	Facility Staff Interviews, Client Exit Interviews
Alva 2009	73	Proportion of health facilities that meet basic service capacity standards – a composite index of five components with 20 items in total (service capacity)‡	Service Readiness	Service Delivery	Data Collection (Surveys/Interviews)	Facility Assessments
WHO 2010	22	Birth trauma rate in neonate per 1,000 live births‡	Service Quality	Service Delivery	Document Review/Data Mining	MOH, Regional, or Facility Records
USAID 2012	199	Clinical standards adapted into a practical form that can be used at local level‡*	Service Quality	Service Delivery	Document Review/Data Mining Data Collection (Surveys/Interviews)	Facility Site Visits, MOH/ Regional Policy Documents Stakeholder Interviews
Global Fund 2004	14	Number of blood units transfused during the last 12 months that have been adequately screened for HIV according to national or WHO guidelines‡	Service Quality	Service Delivery	Document Review/Data Mining	MOH, Regional, or Facility Records
Liu 2004	48	Percentage of 6–59 month olds receiving vitamin A capsule in past 6 months‡	Service Quality	Service Delivery	Data Collection (Surveys/Interviews)	Household Surveys
WHO 2010	22	Percentage of adults with recent health visit who stated their provider always listened to what they had to say‡	Service Quality	Service Delivery	Data Collection (Surveys/Interviews)	Client Exit Interviews, Household Surveys
WHO 2010	22	Percentage of adults with recent health visit who stated their provider explained things clearly‡	Service Quality	Service Delivery	Data Collection (Surveys/Interviews)	Client Exit Interviews, Household Surveys
WHO 2010	22	Percentage of adults with recent health visits who stated their provider showed respect to them‡	Service Quality	Service Delivery	Data Collection (Surveys/Interviews)	Client Exit Interviews, Household Surveys
Liu 2004	12	Percentage of children weighted monthly in the cohort of beneficiaries‡	Service Quality	Service Delivery	Data Collection (Surveys/Interviews)	Household Surveys
Liu 2004	11	Percentage of children who received vitamin A capsule‡	Service Quality	Service Delivery	On the Shelf Data Collection (Surveys/Interviews)	DHS/MICS Household Surveys
Liu 2004	47	Percentage of children with diarrhea who used ORT (ORS, RHF, or increased liquids)‡	Service Quality	Service Delivery	Data Collection (Surveys/Interviews)	Household Surveys
LaFond, Brown 2003	53	Percentage of facilities where percentage of clients receive the service that meets the expected standards‡	Service Quality	Service Delivery	Data Collection (Surveys/Interviews)	Client Exit Interviews
Liu 2004	49	Proportion of referrals made and consummated in accordance with national guidelines and standards‡	Service Quality	Service Delivery	Document Review/Data Mining	Facility Records, HIS

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Alva 2009	76	Quality Assurance system that monitors the service quality of health care facilities††	Service Quality	Service Delivery	Document Review/Data Mining Data Collection (Surveys/Interviews)	MOH, Regional, or Facility Policy Documents Stakeholder Interviews
Global Fund 2004	10	Treatment guidelines and utilization manuals developed and available at service sites*	Service Quality	Service Delivery	Document Review/Data Mining	Facility Policy Documents (i.e. STG availability)
Liu 2004	13	Treatment success rate (%)††	Service Quality	Service Delivery	Document Review/Data Mining	MOH/Facility Records

Resource	Page	Indicator	Component of HSS Core Function	Core Function	Data Source Type(s)	Potential Data Source(s)
LaFond, Brown 2003	71	Accessible and available (own, rented) venues (at least one local venue in each training area) of standard quality (continuous power, food, lighting, acoustics, and sufficient capacity), accessible to participants, and available when needed (for training)	Education & Training	Health Workforce	Data Collection (Surveys/Interviews)	Facility Assessments
LaFond, Brown 2003	73	Active training units exist at central and peripheral levels	Education & Training	Health Workforce	Document Review/Data Mining	Training Institutions Records
LaFond, Brown 2003	52	Adequacy of training materials/supplies has been assessed in one or more institutions†	Education & Training	Health Workforce	Document Review/Data Mining	Training Institutions Records
LaFond, Brown 2003	52	Adequate training supplies available in sufficient quantities to support ongoing RH/FP training in one or more institutions†	Education & Training	Health Workforce	Document Review/Data Mining	Training Institutions Records
LaFond, Brown 2003	50	Assessment process leads to training†	Education & Training	Health Workforce	Document Review/Data Mining Data Collection (Surveys/Interviews)	Facility Policy Documents Facility Interviews
LaFond, Brown 2003	50	Basic training of community health workers†	Education & Training	Health Workforce	Document Review/Data Mining	Facility/Training Institutions Records
LaFond, Brown 2003	50	Basic training of health center personnel†	Education & Training	Health Workforce	Document Review/Data Mining	Facility/Training Institutions Records
LaFond, Brown 2003	50	Curriculum exists for training of trainers and community health workers†	Education & Training	Health Workforce	On the Shelf	Facility/Training Institutions Records
USAID 2012	228	Evidence that pre-service education curriculum is regularly updated†	Education & Training	Health Workforce	Document Review/Data Mining	MOH/MOE Policy Documents

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USAID 2012	228	Frequency, quality, and alignment of in-service training to health priorities and workforce needs†‡	Education & Training	Health Workforce	Document Review/Data Mining	MOH Records, Donor Records, Professional Societies' Records
WHO 2009b	94	Median number of years of education and training among health workers†‡	Education & Training	Health Workforce	Document Review/Data Mining Data Collection (Surveys/Interviews)	MOH/MOE Records, Training Institutions Records, Facility Records Health Worker Surveys
WHO 2009b	44	Number and percentage of accepted applicants who register for training, per cadre‡	Education & Training	Health Workforce	Document Review/Data Mining Data Collection (Surveys/Interviews)	Training Institutions Records, MOE Records Training Institutions Surveys
WHO 2009b	44	Number and percentage of applicants accepted for training programs, per cadre‡	Education & Training	Health Workforce	Document Review/Data Mining Data Collection (Surveys/Interviews)	Training Institutions Records, MOE Records Training Institutions Surveys
WHO 2009b	44	Number and percentage of health training institutions meeting accreditation and reaccreditation standards‡	Education & Training	Health Workforce	Document Review/Data Mining Data Collection (Surveys/Interviews)	MOH/MOE Records or Reports MOH/MOE Interviews
WHO 2009b	121	Number and percentage of student doctors, nurses, or midwives who passed the professional licensing exam and registered with the national job-specific council‡	Education & Training	Health Workforce	Document Review/Data Mining	Training Institutions Records, Professional Regulatory Bodies Records
WHO 2009b	44	Number of applicants per training place, per cadre‡	Education & Training	Health Workforce	Document Review/Data Mining Data Collection (Surveys/Interviews)	Training Institutions Records, MOE Records Training Institutions Surveys

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WHO 2009b	45	Number of education and training places per cadre‡	Education & Training	Health Workforce	Document Review/Data Mining Data Collection (Surveys/Interviews)	Training Institutions Records, MOH/MOE Records Training Institutions Interviews
WHO 2010	33	Number of entrants into community health training programs (with nationally approved curriculum) in the past 12 months, e.g. by sex‡	Education & Training	Health Workforce	Document Review/Data Mining Data Collection (Surveys/Interviews)	Training Institution Records Institution Interviews
WHO 2009b	45	Number of library books and journals per student, per cadre‡	Education & Training	Health Workforce	Document Review/Data Mining	Training Institutions Records
Alva 2009	78	Number of medical schools /nursing schools‡	Education & Training	Health Workforce	On the Shelf	MOE Records
Global Fund 2004	10	Number of people trained according to national standards for an intervention‡	Education & Training	Health Workforce	Document Review/Data Mining	MOH/MOE Records, Training Institutions Records
Global Fund 2004	11	Number of persons trained†‡	Education & Training	Health Workforce	On the Shelf	MOH/MOE Records, Training Institutions Records
USAID 2012	227	Number of pre-service and in-service training institutions‡	Education & Training	Health Workforce	On the Shelf	MOH/MOE Records
WHO 2009b	45	Number of students per personal computer, per cadre‡	Education & Training	Health Workforce	Document Review/Data Mining	Training Institutions Records
WHO 2009b	45	Number of students per qualified instructor, per cadre‡	Education & Training	Health Workforce	Document Review/Data Mining Data Collection (Surveys/Interviews)	Training Institutions Records, MOH/MOE Records Training Institutions Interviews
WHO 2009b	29	Proportion of nationally trained health workers‡	Education & Training	Health Workforce	Document Review/Data Mining	Training Institutions Records, MOH/MOE Records

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PEPFAR 2011	17	Number of trained managerial skills (HR, financial/ grants, leadership, other)†‡	Education & Training	health Workforce	Document Review/Data Mining	Training Curriculum
PEPFAR 2011	17	Number of workers trained (technical skills)†‡	Education & Training	health Workforce	On the Shelf	Training Records
LaFond, Brown 2003	52	Percent of district medical officers with public health degree/training‡	Education & Training	Health Workforce	Document Review/Data Mining	Regional Records, HRIS
PEPFAR 2011	17	Percent of targeted cadre of staff in technical area with required skills†‡	Education & Training	Health Workforce	Data Collection (Surveys/Interviews)	Staff Interviews/Surveys
PEPFAR 2011	17	Percent of trainees demonstrating competence in work setting post-training†‡	Education & Training	Health Workforce	Data Collection (Surveys/Interviews)	Site Visits (Observation)
PEPFAR 2011	17	Percent of trainees retained in job at 12 months†‡	Education & Training	Health Workforce	On the Shelf	HRIS
PEPFAR 2011	17	Percent of trainees that apply skills to current work†‡	Education & Training	Health Workforce	Data Collection (Surveys/Interviews)	Site Visits (Observation)
WHO 2009b	94	Percentage of health workers who received in-ser- vice training in the past 12 months†‡	Education & Training	Health Workforce	Document Review/Data Mining	Training Institutions Records
					Data Collection (Surveys/Interviews)	Stakeholder Interviews, Health Worker Surveys
Hutchinson 2004	38	Percentage of staff receiving training in key skills areas and having up-to-date skills†‡	Education & Training	Health Workforce	Document Review/Data Mining	Training Institutions Re- cords, Facility Records
					Data Collection (Surveys/Interviews)	Training Institution Staff Interviews
Hutchinson 2004	38	Proportion of civil service receiving management training‡	Education & Training	Health Workforce	Document Review/Data Mining	Training Institutions Records, MOH/MOE Records
Alva 2009	78	Proportion of health workers receiving training during previous year‡	Education & Training	Health Workforce	Document Review/Data Mining	Training Institution Records
WHO 2009b	29	Average occupational earnings and income among health workers‡	Financing HRH	Health Workforce	Document Review/Data Mining	Facility Records
					Data Collection (Surveys/Interviews)	Health Worker Surveys

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‡ Indicators are also applicable at a higher level of the health system.

Hutchinson 2004	38	Average salary by grade, level, and region‡	Financing HRH	Health Workforce	On the Shelf Document Review/Data Mining	HRIS MOH/Facility Records
WHO 2010	33	Costed, prioritized human resources management/development plan exists‡*	Financing HRH	Health Workforce	Document Review/Data Mining Data Collection (Surveys/Interviews)	MOH Policy Documents MOH Interviews
USAID 2012	224	Data indicating public salaries are competitive in the local and regional labor market‡	Financing HRH	Health Workforce	Data Collection (Surveys/Interviews)	National/Regional Wage Studies
WHO 2009b	32	Distribution of health workers' salaries by source‡†*	Financing HRH	Health Workforce	Document Review/Data Mining Data Collection (Surveys/Interviews)	Facility Records Staff Interviews
PEPFAR 2011	17	Percent of PEPFAR-supported government staff transferred to government salaries‡†	Financing HRH	Health Workforce	Document Review/Data Mining	Staff Records
WHO 2009b	45	Private expenditure on health vocational training, per cadre‡*	Financing HRH	Health Workforce	Document Review/Data Mining Data Collection (Surveys/Interviews)	MOH/MOF Records, Training Institutions Records Household Surveys
Hutchinson 2004	39	Share of local government expenditures on salaries, benefits, training, supervision*	Financing HRH	Health Workforce	On the Shelf Document Review/Data Mining	NHA MOH/MOF/Regional Government Budgets or Expenditure Reports
WHO 2009b	45	Total cost per graduate for health vocational training, per cadre‡*	Financing HRH	Health Workforce	Document Review/Data Mining	MOH/MOF Records, Training Institutions Records

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WHO 2010	31	Annual number of graduates of health professions educational institutions per 100,000 population – by cadre, level, or field of education†	HRH Availability	Health Workforce	Document Review/Data Mining	Census Data, Training Institution Records, HRIS, MOH/Professional Regulatory Bodies Records
WHO 2009b	45	Attrition (dropout) rate per student cohort, per cadre†	HRH Availability	Health Workforce	Document Review/Data Mining	MOH/MOE Records, Training Institutions Records
WHO 2009b	45	Attrition (turnover) rate among instructors, per cadre†	HRH Availability	Health Workforce	Document Review/Data Mining	MOH/MOE Records, Training Institutions Records
WHO 2009b	98	Attrition rates for health workers in private or public sector facilities†	HRH Availability	Health Workforce	Document Review/Data Mining	MOH/Facility Records, HRIS
WHO 2009b	29	Days of absenteeism among health workers†‡	HRH Availability	Health Workforce	On the Shelf	Facility Records, HRIS
WHO 2009b	80	Distribution of facility-based staff by geographical location, age group, or sex†	HRH Availability	Health Workforce	On the Shelf Document Review/Data Mining	HRIS MOH/Facility Records
WHO 2009b	80	Distribution of facility-based staff by occupation, specialization or other skill-related characteristic†	HRH Availability	Health Workforce	Document Review/Data Mining	MOH/Facility Records, HRIS
WHO 2010	30	Distribution of health workers by occupation/specialization, region, place of work, age group, or sex†	HRH Availability	Health Workforce	On the Shelf Document Review/Data Mining	HRIS MOH/Facility Records
WHO 2009b	28	Distribution of health workers by sector of activity†	HRH Availability	Health Workforce	Document Review/Data Mining	MOH/Facility Records, HRIS
Hutchinson 2004	41	Doctors/nurses per hospital bed†‡	HRH Availability	Health Workforce	On the Shelf	MOH/Facility Records, HRIS
WHO 2009b	80	Facility-based health workforce attrition rate (by reason for leaving workplace)†‡	HRH Availability	Health Workforce	Document Review/Data Mining Data Collection (Surveys/Interviews)	MOH/Facility Records, Payroll Records Health Worker Surveys

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Boerma 2010	17	Health workers per 10,000 population‡	HRH Availability	Health Workforce	Document Review/Data Mining Data Collection (Surveys/Interviews)	Facility Records, Census Data Facility Assessment
WHO 2009b	80	Level and field of education among facility- based staff‡	HRH Availability	Health Workforce	Document Review/Data Mining	MOH/Facility Records, HRIS
WHO 2009b	89	Mean number of health workers by type of facility, according to cadre‡	HRH Availability	Health Workforce	On the Shelf Document Review/Data Mining	HRIS MOH/Facility Records
WHO 2009b	95	Median number of years of service in current position among facility-based health workers‡	HRH Availability	Health Workforce	Document Review/Data Mining Data Collection (Surveys/Interviews)	MOH/Facility Records, HRIS Health Worker Surveys
WHO 2009b	45	Number and percentage of new internationally trained health workers granted professional certification/licensure, per cadre‡	HRH Availability	Health Workforce	Document Review/Data Mining	Professional Regulatory Bodies' Records
WHO 2009b	45	Number and percentage of new nationally trained health workers granted professional certification/licensure, per cadre‡	HRH Availability	Health Workforce	Document Review/Data Mining	Professional Regulatory Bodies' Records
WHO 2009b	44	Number and percentage of students graduating from secondary schools with science concentrations (or other entry requirements for health vocational training)‡	HRH Availability	Health Workforce	Document Review/Data Mining Data Collection (Surveys/Interviews)	Primary & Secondary School Records (MOE Records) School Interviews
Liu 2004	48	Number of doctors per 1,000 population‡	HRH Availability	Health Workforce	On the Shelf	MOH Records, HRIS, Census Data
Knowles 1997	34	Number of doctors per hospital‡	HRH Availability	Health Workforce	On the Shelf	MOH Records, HRIS, Census Data

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WHO 2010	33	Number of health workers newly recruited at primary healthcare facilities in the past 12 months, e.g. expressed as percentage of planned recruitment target†‡	HRH Availability	Health Workforce	Document Review/Data Mining Data Collection (Surveys/Interviews)	Facility Records Facility Interviews
Alva 2009	77	Number of health workers/health professionals per 10,000 population/per capita/per 1,000 population‡	HRH Availability	Health Workforce	On the Shelf Document Review/Data Mining	HRIS, Census Data MOH/Facility Records
WHO 2009b	122	Number of medical specialists deployed to underserved areas‡	HRH Availability	Health Workforce	Document Review/Data Mining	MOH Records, HRIS
Liu 2004	48	Number of nurses per 1,000 population‡	HRH Availability	Health Workforce	On the Shelf	MOH Records, HRIS, Census Data
Knowles 1997	34	Number of nurses per doctor‡	HRH Availability	Health Workforce	On the Shelf	MOH Records, HRIS, Census Data
Knowles 1997	34	Number of nurses per hospital bed‡	HRH Availability	Health Workforce	On the Shelf	MOH Records, HRIS, Census Data
WHO 2009b	45	Number of places in laboratories or clinical internships, per cadre‡	HRH Availability	Health Workforce	Document Review/Data Mining Data Collection (Surveys/Interviews)	MOH/MOE Records Training Institutions Surveys
WHO 2009b	80	Number of staff per health facility (by type of facility or services offered)‡	HRH Availability	Health Workforce	On the Shelf	MOH/Facility Records, HRIS
WHO 2009b	45	Number of students graduating each year, per cadre‡	HRH Availability	Health Workforce	Document Review/Data Mining	Training Institutions Records, MOE Records
WHO 2009b	44	Number of students graduating from primary school, e.g. expressed as % of all children of primary school age‡	HRH Availability	Health Workforce	Document Review/Data Mining Data Collection (Surveys/Interviews)	Primary & Secondary School Records (MOE Records) School Interviews
WHO 2009b	44	Number of students graduating from secondary school, e.g. expressed as % of all children of secondary schooling age‡	HRH Availability	Health Workforce	Document Review/Data Mining Data Collection (Surveys/Interviews)	Primary & Secondary School Records (MOE Records) School Interviews
WHO 2010	33	Number of students in medical, nursing, and midwifery (pre-service) education programs per qualified instructor‡	HRH Availability	Health Workforce	Document Review/Data Mining Data Collection (Surveys/Interviews)	Training Institution Records Institution Interviews

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Alva 2009	78	Number of unfilled positions (rural vs. urban)‡	HRH Availability	Health Workforce	Document Review/Data Mining, Data Collection (Surveys/Interviews)	MOH/Facility Records, HRIS Facility Surveys
WHO 2009b	91	Percentage of health workers requested by facility managers to meet staffing requirements who are currently in post‡‡	HRH Availability	Health Workforce	Data Collection (Surveys/Interviews)	Facility Site Visits
Liu 2004	46	Population per doctor‡	HRH Availability	Health Workforce	On the Shelf	MOH Records, HRIS, Census Data
Liu 2004	46	Population per nurse‡	HRH Availability	Health Workforce	On the Shelf	MOH Records, HRIS, Census Data
WHO 2009b	55	Premature death rate per 1,000 health workers‡	HRH Availability	Health Workforce	Document Review/Data Mining Data Collection (Surveys/Interviews)	Facility Records, Census Data Facility Assessment
Hutchinson 2004	38	Proportion of clinic/hospital staff posts that are filled‡‡	HRH Availability	Health Workforce	On the Shelf	MOH/Facility Records, HRIS
Alva 2009	79	Proportion of health workers at tertiary, secondary, and primary levels‡	HRH Availability	Health Workforce	On the Shelf	MOH Records, HRIS
WHO 2009b	28	Proportion of HRH currently active in the labour force‡	HRH Availability	Health Workforce	Document Review/Data Mining Data Collection (Surveys/Interviews)	HRIS, National Labor Force Studies Health Worker Survey
WHO 2009b	28	Proportion of HRH currently employed (or unemployed)‡	HRH Availability	Health Workforce	Document Review/Data Mining Data Collection (Surveys/Interviews)	National Labor Force Studies Health Worker Survey
WHO 2009b	28	Proportion of HRH currently employed at more than one location‡	HRH Availability	Health Workforce	Document Review/Data Mining Data Collection (Surveys/Interviews)	HRIS, National Labor Force Studies Health Worker Survey
WHO 2009b	56	Proportion of workers reporting a health occupation but not working in the health services industry at the time of interview‡	HRH Availability	Health Workforce	Document Review/Data Mining Data Collection (Surveys/Interviews)	National Labor Force Studies Health Worker Survey

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Alva 2009	93	Public/private mix (e.g., absolute number of private and public health care providers)‡	HRH Availability	Health Workforce	Document Review/Data Mining	MOH/Facility Records, HRIS
Liu 2004	45	Quantity of staff and staff mix†‡	HRH Availability	Health Workforce	On the Shelf	MOH/Facility Records, HRIS
USAID 2012	218	Ratio of different health personnel per 1,000‡	HRH Availability	Health Workforce	On the Shelf	WHO Data
Alva 2009	77	Ratio of doctors (physicians), nurses, midwives, pharmacists, and laboratory technicians, per 1,000 population‡	HRH Availability	Health Workforce	On the Shelf	MOH Records, HRIS, Census Data
USAID 2012	188	Ratio of health care professionals to the population‡	HRH Availability	Health Workforce	On the Shelf	MOH Records, HRIS, Census Data
USAID 2012	218	Ratio of health care worker by geographic distribution‡	HRH Availability	Health Workforce	On the Shelf	MOH Records, HRIS
WHO 2009b	89	Ratio of health workers per inpatient bed†‡	HRH Availability	Health Workforce	On the Shelf Data Collection (Surveys/Interviews)	Facility Records Facility Assessments
USAID 2012	228	Ratio of rural vs urban admissions and graduates‡	HRH Availability	Health Workforce	Document Review/Data Mining	Training Institutions Records
WHO 2009b	56	Retirement rate among physicians by age group‡	HRH Availability	Health Workforce	Document Review/Data Mining	Professional Regulatory Bodies' Records
WHO 2009b	80	Total number of facility-based health workers‡	HRH Availability	Health Workforce	On the Shelf	MOH/Facility Records, HRIS
WHO 2009b	28	Total number of health human resources (relative to the population)‡	HRH Availability	Health Workforce	On the Shelf	MOH Records, HRIS, Census Data
USAID 2012	218	Total number of health personnel by cadre and sector‡	HRH Availability	Health Workforce	On the Shelf Document Review/Data Mining	HRIS MOH Records, Professional Council Licensure Registries, Professional Association Member Registries, Telephone Books
USAID 2012	218	Trends for the past five years‡	HRH Availability	Health Workforce	Document Review/Data Mining	MOH Records, HRIS
USAID 2012	221	Availability of and use of HRH information systems†‡*	HRH Management Systems	Health Workforce	On the Shelf Data Collection (Surveys/Interviews)	HRIS MOH Interviews

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USAID 2012	221	Availability of mechanisms used to monitor and improve health worker performance, productivity, and expectations†‡*	HRH Management Systems	Health Workforce	Document Review/Data Mining	Monitoring Reports
USAID 2012	220	Availability of strategic and operational HRM functions and structures at the national and local level†‡	HRH Management Systems	Health Workforce	Document Review/Data Mining Data Collection (Surveys/Interviews)	Facility Policy Documents Facility Interviews
WHO 2009b	153	Percentage of health workers recorded on the MOH payroll but not registered at the facility level†‡	HRH Management Systems	Health Workforce	Document Review/Data Mining	MOH Records, HRIS, Facility Records
Alva 2009	78	Presence of human resources data system†‡*	HRH Management Systems	Health Workforce	On the Shelf	HRIS
WHO 2009b	124	Utilization of the information in the HRIS in the processes of health system management at the local level†*	HRH Management Systems	Health Workforce	Document Review/Data Mining Data Collection (Surveys/Interviews)	HRIS Reports Regional/Facility Interviews
USAID 2012	221	Enabling environment exists for health workers to achieve goals and targets†‡	Leadership of HRH System	Health Workforce	Document Review/Data Mining Data Collection (Surveys/Interviews)	MOH, Regional, or Facility Policy Documents Stakeholder Interviews
USAID 2012	231	Evidence of awareness among high-level government officials of HRH issues‡	Leadership of HRH System	Health Workforce	Document Review/Data Mining	Speeches, Articles, Proclamations, and Press Releases from High-Level Officials (Ministers, Parliament, Cabinet-level members, Leaders from Private Sector)
USAID 2012	200	Existence of clinical supervision by district-level supervisor†‡	Leadership of HRH System	Health Workforce	Document Review/Data Mining	MOH, Regional, or Facility Policy Documents
WHO 2009b	45	Existence of job boards to facilitate recruitment of newly trained health workers†*	Leadership of HRH System	Health Workforce	Document Review/Data Mining	MOH, MOE, Ministry of Labor, Ministry of Foreign Affairs, or Professional Regulatory Bodies Records
Liu 2004	45	Existence of monitoring mechanisms for staff performance†‡	Leadership of HRH System	Health Workforce	Document Review/Data Mining	MOH/Facility Records or Policy Documents

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LaFond, Brown 2003	71	Favorable public statements on FP/RH training (for the improvement of services) at least twice a year by senior officials†*	Leadership of HRH System	Health Workforce	Document Review/Data Mining Data Collection (Surveys/Interviews)	Stakeholder (i.e. Civil Society, Media, MOH, Private Institutions such as Hospitals, Insurance Companies, or Pharmacies) Public Speeches, Recorded Interviews Stakeholder Interviews
USAID 2012	230	Formal agreements in place between government and other entities involve in HRH†*	Leadership of HRH System	Health Workforce	Document Review/Data Mining	MOH Records (MOUs, legal/policy frameworks, signed charters)
USAID 2012	231	Government capacity to govern HRH across the sectors†*	Leadership of HRH System	Health Workforce	Data Collection (Surveys/Interviews)	MOH Assessment
Hutchinson 2004	38	Level of government determining salaries, hiring and firing of civil servants†*	Leadership of HRH System	Health Workforce	Document Review/Data Mining	Government Policy Documents/Laws
Liu 2004	46	Level of staffing autonomy of public providers†*	Leadership of HRH System	Health Workforce	Data Collection (Surveys/Interviews)	Provider Interviews
WHO 2010	34	Percentage of health service providers at primary healthcare facilities who received personal supervision in the past 6/12 months††	Leadership of HRH System	Health Workforce	Document Review/Data Mining Data Collection (Surveys/Interviews)	Facility Records Provider Surveys
Alva 2009	78	Percentage of health workers in rural areas receiving supervisory visits in last (X) months†	Leadership of HRH System	Health Workforce	Document Review/Data Mining Data Collection (Surveys/Interviews)	Facility Records Provider Surveys
USAID 2012	227	Production of new health care workers is responsive to the needs of the health care system†*	Leadership of HRH System	Health Workforce	Document Review/Data Mining Data Collection (Surveys/Interviews)	MOH/MOE Records or Policy Documents MOH/MOE Interviews
LaFond, Brown 2003	52	Professional networking (frequency and quality)††	Leadership of HRH System	Health Workforce	Data Collection (Surveys/Interviews)	Stakeholder Interviews

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Liu 2004	48	Proportion of health workers receiving appropriately timed and effectively conducted supervision, per national policy†‡	Leadership of HRH System	Health Workforce	Document Review/Data Mining	Supervisory Reports, Facility Records
Hutchinson 2004	38	Salaries paid on time†*	Leadership of HRH System	Health Workforce	Document Review/Data Mining	MOH/MOF/Facility Records, Payroll Records
USAID 2012	230	Active stakeholder participation in HRH policy and processes†‡*	Policy & Planning of HRH	Health Workforce	On the Shelf Document Review/Data Mining	WHO HRH Observatory Study MOH Records
Knowles 1997	34	Adequate performance incentives exist for government health personnel (yes/no)‡	Policy & Planning of HRH	Health Workforce	Document Review/Data Mining	MOH Policy Documents or Employee Guidelines
USAID 2012	223	Employment policies documented and used†‡*	Policy & Planning of HRH	Health Workforce	Document Review/Data Mining Data Collection (Surveys/Interviews)	MOH, Regional, or Facility Policy Documents Facility Site Visits
USAID 2012	224	Evidence indicating budgets and projections done for HRH requirements†‡*	Policy & Planning of HRH	Health Workforce	Document Review/Data Mining	MOH, Regional, or Facility Policy Documents
Alva 2009	78	Existence of a functioning HR planning system†‡*	Policy & Planning of HRH	Health Workforce	On the Shelf	HRIS
USAID 2012	223	Existence of and use up-to-date HRH policies†‡*	Policy & Planning of HRH	Health Workforce	Document Review/Data Mining Data Collection (Surveys/Interviews)	MOH/Regional Policy Documents Facility Site Visits
USAID 2012	223	Existence of clear and up-to-date scopes of practice†‡*	Policy & Planning of HRH	Health Workforce	On the Shelf	MOH Policy Documents

Resource	Page	Indicator	Component of HSS Core Function	Core Function	Data Source Type(s)	Potential Data Source(s)
WHO 2010	52	Annual data on availability of tracer medicines and commodities in public and private health facilities†‡	Data Availability	Information	Document Review/Data Mining Data Collection (Surveys/Interviews)	Essential Medicines Reviews Facility Assessments
WHO 2010	53	Burden of disease study conducted within the past five years, with a strong national contribution‡	Data Availability	Information	Document Review/Data Mining	Published Literature
WHO 2010	51	Percentage of births registered‡	Data Availability	Information	On the Shelf	HIS, Vital Registration Data, DHS/MICS
WHO 2010	51	Percentage of deaths registered‡	Data Availability	Information	On the Shelf	HIS, Vital Registration Data

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USAID 2012	290	Availability and accessibility of data sources‡	Data Quality	Information	On the Shelf	Institutional Records (Censuses, Civil Registrations, Population Surveys, Service Records, Resource Records), MOH Records, Health Dept. Records
USAID 2012	285	Availability at each level of a sufficient number of qualified personnel and infrastructure to compile and analyze information†‡	Data Quality	Information	Document Review/Data Mining	MOH, Regional, or Facility Records
USAID 2012	292	Availability of appropriate and accurate denominators for analysis†‡	Data Quality	Information	On the Shelf	Census Data, WHO EPI Documents, Vital Registration Data
Alva 2009	80	Availability of financial or physical resources (or both) to support the HIS within regional and district budgets*	Data Quality	Information	Document Review/Data Mining	Regional Policy Documents or Budgets
USAID 2012	292	Availability of timely data analysis, as defined by stakeholders and users†	Data Quality	Information	Data Collection (Surveys/Interviews)	Stakeholder or Data User Interviews
LaFond, Brown 2003	46	Contribution to improvement of the management information system†‡	Data Quality	Information	Data Collection (Surveys/Interviews)	Stakeholder Interviews
USAID 2012	285	Evidence of ongoing training activities related to HIS data collection and analysis†‡	Data Quality	Information	Document Review/Data Mining	MOH Records, Donor Records, Facility Records
Liu 2004	45	Existence of information system allowing for monitoring program performance†‡*	Data Quality	Information	Document Review/Data Mining	MOH/Facility Records or Policy Documents
LaFond, Brown 2003	46	Interest in improving the management information system†‡	Data Quality	Information	Data Collection (Surveys/Interviews)	Stakeholder Interviews
Management Sciences for Health 2006	51	Percentage of health centers that perform surveillance and outbreak control tasks as measured by a checklist†	Data Quality	Information	Document Review/Data Mining	Facility Records
Liu 2004	49	Proportion of residents with complete medical records†	Data Quality	Information	On the Shelf Document Review/Data Mining	HIS MOH/Facility Records
Liu 2004	10	Sentinel surveillance sites established†	Data Quality	Information	Document Review/Data Mining	MOH Records, HIS Reports
Alva 2009	80	Sentinel surveillance sites performing according to national standards (number and percentage)†	Data Quality	Information	Document Review/Data Mining	MOH Records, HIS Reports
USAID 2012	293	Timeliness of reporting specified indicators†	Data Quality	Information	On the Shelf Document Review/Data Mining	HIS MOH Records
LaFond, Brown 2003	46	Acceptance of survey methods as an effective tool by senior research officers and their incorporation into the work program of the agencies†‡	Information Policy & Standards	Information	Data Collection (Surveys/Interviews)	Stakeholder Interviews

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USAID 2012	291	Availability of clear standards and guidelines for: 1) data collection, 2) reporting procedures methods, and 3) data analysis to be performed†‡*	Information Policy & Standards	Information	On the Shelf	MOH, Regional, or Facility Policy Documents
USAID 2012	290	Availability of minimum core indicators at national and subnational level‡	Information Policy & Standards	Information	Document Review/Data Mining	MOH/Regional Policy Documents
USAID 2012	291	Availability of clear standards and guidelines for: 1) data collection, 2) reporting procedures methods, and 3) data analysis to be performed†‡*	Information Policy & Standards	Information	On the Shelf	MOH, Regional, or Facility Policy Documents
USAID 2012	292	Data derived from different health programs/ subsectors are grouped together for reporting purposes (or even integrated in a single document), and documents widely available†	Reporting	Information	Document Review/Data Mining	HIS
Alva 2009	80	Health facilities or districts reporting all indicators according to national guidelines‡	Reporting	Information	Document Review/Data Mining	HIS
WHO 2010	52	Number of institutional deliveries available, by district, and published within 12 months of the preceding year	Reporting	Information	Document Review/Data Mining	Regional Records or Reports
USAID 2012	291	Number of reports a typical health facility submits monthly, quarterly, or annually‡	Reporting	Information	Document Review/Data Mining Data Collection (Surveys/Interviews)	MOH Records Facility Interviews
USAID 2012	190	Referral system†‡	Reporting	Information	Document Review/Data Mining	MOH, Regional, or Facility Records or Policy Documents
Knowles 1997	36	Referral system functions effectively (yes/no)†‡*	Reporting	Information	Document Review/Data Mining Data Collection (Surveys/Interviews)	HIS, MOH Records Referral System Assessment
USAID 2012	294	Data or results of analyses are fed back to data providers to inform them of program performance†	Use of Data	Information	Document Review/Data Mining Data Collection (Surveys/Interviews)	Regional/Facility Records Staff Interviews
Knowles 1997	25	Routine application of data-based problem-solving methodologies†‡	Use of Data	Information	Document Review/Data Mining Data Collection (Surveys/Interviews)	MOH, Regional, or Facility Policy Documents Stakeholder Interviews
USAID 2012	294	Use of data for planning, budgeting, or fundraising activities in the past year‡	Use of Data	Information	Document Review/Data Mining Data Collection (Surveys/Interviews)	MOH/Regional Policy Documents MOH Interviews

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Resource	Page	Indicator	Component of HSS Core Function	Core Function	Data Source Type(s)	Potential Data Source(s)
Alva 2009	83	Appropriate prescription practices and rational drug use††	Appropriate Use	Medical Products & Technology	Document Review/Data Mining Data Collection (Surveys/Interviews)	Facility Records, Standard Treatment Guidelines Site Visits (Observation)
WHO 2011b	37	Average monthly consumption during a defined period†	Appropriate Use	Medical Products & Technology	Document Review/Data Mining	Facility Daily Use Records, Bin or Stock Cards, Drug Registers
Alva 2009	84	Drug use in communities (e.g., most commonly used drugs, ideas about drug efficacy, drug sources, and treatments)‡	Appropriate Use	Medical Products & Technology	Data Collection (Surveys/Interviews)	Household Surveys
USAID 2012	264	SOPs (standard operating procedures) for dispensing and counseling available††	Appropriate Use	Medical Products & Technology	Document Review/Data Mining	MOH, Regional, or Facility Records or Policy Documents
WHO 2010	63	Average availability of 14 selected essential medicines in public and private health facilities‡	Availability of Products	Medical Products & Technology	Data Collection (Surveys/Interviews)	National Surveys (WHO-/HAI-Developed)
WHO 2011b	32	Average duration of stockouts at all treatment sites during a defined period (early warning indicator for HIV drug resistance)‡	Availability of Products	Medical Products & Technology	Document Review/Data Mining	Facility Inventory Control Reports/Requisition Forms
WHO 2011b	30	Average percentage of items available at all treatment sites‡	Availability of Products	Medical Products & Technology	Document Review/Data Mining	Facility Inventory Control Reports/Requisition Forms
Liu 2004	46	Number of essential drugs available at the nearest health center	Availability of Products	Medical Products & Technology	On the Shelf	Facility Inventory Control Reports/Requisition Forms
USAID 2012	263	Percentage of a set of unexpired tracer items is available‡	Availability of Products	Medical Products & Technology	Document Review/Data Mining	Facility Records

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Management Sciences for Health 2006	69	Percentage of clinics and health centers that experience decreasing stockouts of essential drugs or other supplies‡	Availability of Products	Medical Products & Technology	Document Review/Data Mining	Facility Drug Procurement and Usage Reports
Liu 2004	10	Percentage of clinics with at least four modern methods of family planning‡	Availability of Products	Medical Products & Technology	Document Review/Data Mining	Facility Inventory Control Reports/Requisition Forms
Hutchinson 2004	39	Percentage of facilities having essential drugs in-stock and nonexpired (e.g., antibiotics, anthelmintics, contraceptive methods)‡	Availability of Products	Medical Products & Technology	Document Review/Data Mining	Facility Inventory Control Reports/Requisition Forms
Hutchinson 2004	39	Percentage of facilities having key supplies (e.g. gloves, syringes, bandages)‡	Availability of Products	Medical Products & Technology	Document Review/Data Mining	Facility Inventory Control Reports/Requisition Forms
LaFond, Brown 2003	53	Percentage of facilities that experience a stockout at any point during a given time period‡	Availability of Products	Medical Products & Technology	Document Review/Data Mining	Facility Inventory Control Reports/Requisition Forms
Management Sciences for Health 2006	62	Percentage of facilities that experience stockouts of essential drugs and FP commodities‡	Availability of Products	Medical Products & Technology	Data Collection (Surveys/Interviews)	Facility Audit
Alva 2009	82	Percentage of facilities that have all tracer medicines and commodities in stock on the day of visit, and in the last three months – a composite index based on 61 essential medicines, commodities, and vaccines (availability of essential medicines)‡	Availability of Products	Medical Products & Technology	Data Collection (Surveys/Interviews)	Facility Site Visits
Alva 2009	84	Percentage of facilities with expired items‡	Availability of Products	Medical Products & Technology	Data Collection (Surveys/Interviews)	Facility Site Visits
LaFond, Brown 2003	52	Percentage of facilities with stockout of essential commodities in the last 6 months‡	Availability of Products	Medical Products & Technology	Document Review/Data Mining	Facility Inventory Control Reports/Requisition Forms
Liu 2004	48	Percentage of primary health facilities with complete stock of required essential drugs at the time of observation or in a specified period of time‡	Availability of Products	Medical Products & Technology	Data Collection (Surveys/Interviews)	Facility Site Visits
Liu 2004	48	Percentage of primary health facilities with vaccine stockouts in a specified period of time‡	Availability of Products	Medical Products & Technology	Data Collection (Surveys/Interviews)	Facility Site Visits

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‡ Indicators are also applicable at a higher level of the health system.

WHO 2011b	31	Percentage of treatment sites that had a stockout of a particular product during a defined period‡	Availability of Products	Medical Products & Technology	Document Review/Data Mining	Facility Inventory Control Reports/Requisition Forms
WHO 2011b	28	Percentage of treatment sites that had a stockout of one or more required medicines during a defined period (universal access indicator and early- warning indicator for HIV drug resistance)‡	Availability of Products	Medical Products & Technology	Document Review/Data Mining	Facility Inventory Control Reports/Requisition Forms
Knowles 1997	26	Proportion of health facilities that did not experience drug stockouts during the preceding three months‡	Availability of Products	Medical Products & Technology	Document Review/Data Mining	Facility Inventory Control Reports/Requisition Forms
Alva 2009	82	Proportion of population with access to affordable essential drugs on a sustainable basis‡	Availability of Products	Medical Products & Technology	Data Collection (Surveys/Interviews)	Household Surveys, Facility Assessments
Hutchinson 2004	39	Percentage of facilities having male/female waiting rooms, sheltered waiting rooms‡	Equipment/ Infrastructure	Medical Products & Technology	Data Collection (Surveys/Interviews)	Facility Assessment
Hutchinson 2004	39	Percentage of facilities with key equipment in working order (e.g., obstetric equipment, X-ray machines, equipment for sterilization)‡	Equipment/ Infrastructure	Medical Products & Technology	Data Collection (Surveys/Interviews)	Facility Assessment
Hutchinson 2004	39	Percentage of facilities with safe water, electricity‡	Equipment/ Infrastructure	Medical Products & Technology	Data Collection (Surveys/Interviews)	Facility Assessment
Hutchinson 2004	39	Percentage of facilities/subdistricts/districts with transport for outreaches, emergencies‡	Equipment/ Infrastructure	Medical Products & Technology	Data Collection (Surveys/Interviews)	Facility Assessment
Liu 2004	48	Percentage of primary health facilities equipped with telephones‡	Equipment/ Infrastructure	Medical Products & Technology	Data Collection (Surveys/Interviews)	Facility Assessment
Liu 2004	48	Percentage of primary health facilities with hygienic toilets‡	Equipment/ Infrastructure	Medical Products & Technology	Data Collection (Surveys/Interviews)	Facility Assessment
Liu 2004	10	Reference laboratories established‡‡	Equipment/ Infrastructure	Medical Products & Technology	On the Shelf	MOH/Facility Records

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WHO 2010	64	Median consumer price ratio of 14 selected essential medicines in public and private health facilities‡	Financing Pharmaceutical s	Medical Products & Technology	Data Collection (Surveys/Interviews)	National Surveys (WHO-/HAI-Developed)
Alva 2009	84	Median consumer price ratio of 30 selected essential medicines in public and private health facilities‡	Financing Pharmaceutical s	Medical Products & Technology	Data Collection (Surveys/Interviews)	Facility Assessments
WHO 2010	66	Percentage mark-up between manufacturers' and consumer prices‡	Financing Pharmaceutical s	Medical Products & Technology	Data Collection (Surveys/Interviews)	National Surveys (WHO-/HAI-Developed)
WHO 2011b	17	Ratio between median price of products procured and the international median reference value‡	Financing Pharmaceutical s	Medical Products & Technology	On the Shelf Document Review/Data Mining	WHO Global Reporting Mechanism Facility Purchase Orders, WHO STG
Hutchinson 2004	39	Share of local government expenditures on drugs, supplies, and equipment*	Financing Pharmaceutical s	Medical Products & Technology	On the Shelf Document Review/Data Mining	NHA MOH/MOF Records, Government Expenditure Reports
Hutchinson 2004	40	Share of local government expenditures on infrastructure and capital works*	Financing Pharmaceutical s	Medical Products & Technology	On the Shelf Document Review/Data Mining	NHA MOH/MOF Records, Government Expenditure Reports
Hutchinson 2004	40	Share of local government expenditures on operations and maintenance*	Financing Pharmaceutical s	Medical Products & Technology	On the Shelf Document Review/Data Mining	NHA MOH/MOF Records, Government Expenditure Reports
WHO 2011b	19	Percentage of orders delivered in full and on time (as stated in the procurement agreement) per supplier in a defined period‡	Procurement	Medical Products & Technology	Document Review/Data Mining	Facility Order Forms and Receipts, Port Clearance Forms
USAID 2012	259	Percentage of procurements or purchases according to plan‡	Procurement	Medical Products & Technology	Document Review/Data Mining	MOH/Regional Records

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USAID 2012	260	Pharmaceuticals procured based on reliable estimates‡	Procurement	Medical Products & Technology	Document Review/Data Mining Data Collection (Surveys/Interviews)	MOH/Regional Records MOH Interviews
WHO 2011b	14	Proportion of quantities of products actually received (procured plus donated) during a defined period out of total quantities planned for the same period‡‡	Procurement	Medical Products & Technology	Document Review/Data Mining	MOH/Regional Records
USAID 2012	259	Existence of formal SOPs for conducting procurement of pharmaceuticals‡*	Selection of Pharmaceuticals	Medical Products & Technology	Document Review/Data Mining	Government Laws
USAID 2012	260	Percentage (by value) of MOH pharmaceuticals is procured through competitive bids‡	Selection of Pharmaceuticals	Medical Products & Technology	Document Review/Data Mining	MOH or Regional Records/Policy Documents
Hutchinson 2004	39	Percentage of facilities experiencing blackouts of electricity in last 30 days/average number of blackouts‡	Storage of Inventory	Medical Products & Technology	Data Collection (Surveys/Interviews)	Facility Staff Interviews
Hutchinson 2004	39	Percentage of facilities in good/excellent condition‡	Storage of Inventory	Medical Products & Technology	Data Collection (Surveys/Interviews)	Facility Assessments
Management Sciences for Health 2006	67	Percentage of facilities that maintain acceptable storage conditions‡	Storage of Inventory	Medical Products & Technology	Data Collection (Surveys/Interviews)	Facility Survey/Site Visits (Observation/ Checklist)
Hutchinson 2004	39	Percentage of facilities with acceptable storage facilities meeting minimal standards of protection from theft, ventilation, temperature, and humidity‡	Storage of Inventory	Medical Products & Technology	Data Collection (Surveys/Interviews)	Facility Assessments
WHO 2011b	25	Percentage of quantities of each product lost per total quantities available for use (opening stock plus quantities procured plus total quantities donated) in a defined period‡	Storage of Inventory	Medical Products & Technology	Document Review/Data Mining	Facility Records or Reports
WHO 2011b	23	Percentage of treatment sites that submitted complete inventory control reports on time, according to an established schedule, during a defined period‡	Storage of Inventory	Medical Products & Technology	Document Review/Data Mining	Facility Inventory Control Reports, MOH/Regional Facilities List
USAID 2012	261	Value of inventory loss over 12 months‡‡	Storage of Inventory	Medical Products & Technology	Document Review/Data Mining	MOH, Regional, or Facility Records

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WHO 2011b	20	Average number of days between arrival at port and date of clearance from port†	Supply Chain	Medical Products & Technology	Document Review/Data Mining	Facility Order Forms and Receipts, Port Clearance Forms
Global Fund 2004	10	Distribution node selected†‡	Supply Chain	Medical Products & Technology	Document Review/Data Mining	MOH, Regional, or Facility Records
USAID 2012	262	Existence of refrigeration units with functional temperature controls at each level of distribution system†‡	Supply Chain	Medical Products & Technology	Document Review/Data Mining	MOH, Regional, or Facility Records
LaFond, Brown 2003	52	Number of commodity tracking reports†	Supply Chain	Medical Products & Technology	On the Shelf	MOH, Regional, or Facility Records
USAID 2012	261	Percentage of deliveries or pick-ups according to plan†	Supply Chain	Medical Products & Technology	Document Review/Data Mining	Facility Order Forms and Receipts, Facility Procurement Reports
WHO 2011b	19	Percentage of orders to be cleared from port that were cleared before the deadline†	Supply Chain	Medical Products & Technology	Document Review/Data Mining	Facility Order Forms and Receipts, Port Clearance Forms
WHO 2011b	26	Percentage of treatment sites that placed orders during a defined period while the stock in hand on one or more items was below the minimum stock level†	Supply Chain	Medical Products & Technology	Document Review/Data Mining	Facility Order Forms and Receipts
WHO 2011b	21	Percentage of treatment sites that received all orders in full and on time during a defined period‡	Supply Chain	Medical Products & Technology	Document Review/Data Mining	Facility Order Forms and Receipts

Resource	Page	Indicator	Component of HSS Core Function	Core Function	Data Source Type(s)	Potential Data Source(s)
USAID 2012	158	Central and local government budget allocations for health in decentralized systems‡	Budgeting	Financing	Document Review/Data Mining	MOH/MOF/Regional Budgets or Records
Hutchinson 2004	37	Existence of bottom-up or top-down budget planning†‡	Budgeting	Financing	Document Review/Data Mining Data Collection (Surveys/Interviews)	MOH/MOF/Facility Budgets, Policy Documents, or Records Stakeholder Interviews
Alva 2009	93	Government budget process (e.g., explicit procedures for resource allocation with transparency and rationales)‡	Budgeting	Financing	Document Review/Data Mining Data Collection (Surveys/Interviews)	Government Laws, MOH Policy Documents Stakeholder Interviews
Hutchinson 2004	37	Local government budget share for private (curative) care	Budgeting	Financing	Document Review/Data Mining	MOH/Regional Government Budgets
Hutchinson 2004	37	Local government budget share for public goods (primary health care)	Budgeting	Financing	Document Review/Data Mining	MOH/Regional Government Budgets

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Liu 2004	46	Percentage change (increase or decrease) in government budget to publicly-owned primary health care facilities‡	Budgeting	Financing	Document Review/Data Mining	MOH/Regional Budgets
Liu 2004	46	Percentage of government budget (direct government financing) out of total public provider revenue‡	Budgeting	Financing	Document Review/Data Mining	MOH/Regional Budgets
Management Sciences for Health 2006	58	Percentage of regions/provinces/districts/municipalities using planning and budgeting procedures to strengthen service delivery performance‡	Budgeting	Financing	Document Review/Data Mining	Regional Records
Hutchinson 2004	36	Proportion of local budget in in-kind transfers (drugs, supplies)†	Budgeting	Financing	Document Review/Data Mining	Regional/Facility Budgets or Records
Hutchinson 2004	41	Average cost per bed-day (inpatient visit) by level (referral hospital, district hospital, health center)‡	Cost-Effectiveness	Financing	Document Review/Data Mining	Facility Records, HRIS
Knowles 1997	17	Average cost per day of hospitalization at nearest government hospital	Cost-Effectiveness	Financing	Document Review/Data Mining	Facility Records
Liu 2004	50	Changes in costs holding health outcomes constant†‡	Cost-Effectiveness	Financing	Document Review/Data Mining	MOH, Regional, or Facility Budget/Expenditure Reports, MOH/Facility Records
Liu 2004	46	Charge/cost ratio of publicly provided service by service type‡	Cost-Effectiveness	Financing	Document Review/Data Mining	Facility Records
Liu 2004	49	Cost of contracted services per beneficiary†‡	Cost-Effectiveness	Financing	Document Review/Data Mining	Facility Records
LaFond, Brown 2003	53	Cost of one month's supply of contraceptives as a percent of monthly wages†‡	Cost-Effectiveness	Financing	Document Review/Data Mining Data Collection (Surveys/Interviews)	Facility Records Household Surveys
Liu 2004	12	Cost per admission†‡	Cost-Effectiveness	Financing	Document Review/Data Mining	Facility Records
Liu 2004	50	Cost per ARI treatment episode†‡	Cost-Effectiveness	Financing	Document Review/Data Mining	Facility Records
Liu 2004	14	Cost per case†‡	Cost-Effectiveness	Financing	Document Review/Data Mining	Facility Records
Liu 2004	50	Cost per completed DOTS treatment†‡	Cost-Effectiveness	Financing	Document Review/Data Mining	Facility Records
Liu 2004	50	Cost per diarrhea treatment episode†‡	Cost-Effectiveness	Financing	Document Review/Data Mining	Facility Records
Liu 2004	50	Cost per fully immunized child†‡	Cost-Effectiveness	Financing	Document Review/Data Mining	Facility Records
Liu 2004	50	Cost per hospital day†‡	Cost-Effectiveness	Financing	Document Review/Data Mining	Facility Records
Liu 2004	50	Cost per hospital discharge†‡	Cost-Effectiveness	Financing	Document Review/Data Mining	Facility Records

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Liu 2004	50	Cost per outpatient visit †‡	Cost-Effectiveness	Financing	Document Review/Data Mining	Facility Records
Liu 2004	49	Cost per pap smear test†‡	Cost-Effectiveness	Financing	Document Review/Data Mining	Facility Records
Liu 2004	13	Cost/successfully treated patient†‡	Cost-Effectiveness	Financing	Document Review/Data Mining	Facility Records
Liu 2004	13	Private provider cost/patient treated‡	Cost-Effectiveness	Financing	Document Review/Data Mining	MOH/Facility Expenditure Reports, MOH/Facility Records
Liu 2004	13	Public sector cost/patient treated‡	Cost-Effectiveness	Financing	Document Review/Data Mining	MOH/Facility Expenditure Reports, MOH/Facility Records
Knowles 1997	31	Ratio of outpatient visits to personnel costs (i.e., unit personnel costs)† ‡	Cost-Effectiveness	Financing	Document Review/Data Mining	Facility Records or Budgets, HRIS
WHO 2010	80	Availability of data on government expenditure on priority problems, by level of government‡	Expenditure	Financing	Document Review/Data Mining	MOH/MOF Budgets or Records
Liu 2004	46	Financial health of both public and private providers (total revenue/total cost)‡	Expenditure	Financing	Document Review/Data Mining	MOH/MOF/Regional Budgets or Records
Alva 2009	84	Government expenditure on medicines as a percent of the health budget‡	Expenditure	Financing	Document Review/Data Mining	MOH/MOF/Regional Budgets or Records
Alva 2009	88	Government expenditure on wages and salaries as percentage of GGHE‡	Expenditure	Financing	Document Review/Data Mining	MOH/MOF/Regional Budgets or Records
Hutchinson 2004	44	Mean public sector per capita expenditure by region, district, local government	Expenditure	Financing	Document Review/Data Mining	Regional Budgets or Expenditure Reports
Liu 2004	46	Percentage change (increase or decrease) in total revenue of publicly-owned primary care facilities‡	Expenditure	Financing	Document Review/Data Mining	MOH/Facility Revenue Reports
Hutchinson 2004	37	Percentage of drugs, salaries, operations and maintenance, capital expenditure in total local government health expenditures, by level of care	Expenditure	Financing	Document Review/Data Mining	Regional Budgets or Expenditure Reports
Alva 2009	86	Percentage of government health spending that reaches the poorest income quintile‡	Expenditure	Financing	Document Review/Data Mining	MOH/MOF/Regional Budgets or Records
Liu 2004	46	Percentage share of private medical market (quantities of institutions, staff, and services)‡	Expenditure	Financing	Document Review/Data Mining	MOH Records
Liu 2004	50	Share of expenditure between preventive and curative services‡	Expenditure	Financing	Document Review/Data Mining	MOH/MOF Budgets or Records
Hutchinson 2004	34	Total health expenditure (and share of total) by local government (municipal, state, provincial, regional)	Expenditure	Financing	On the Shelf Document Review/Data Mining	NHA Regional Budgets or Expenditure Reports
WHO 2010	80	Information on government expenditures on wages and salaries readily available‡	Financial Policies & Resources	Financing	Document Review/Data Mining	MOH/MOF/Regional Budgets or Records

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Liu 2004	47	Annual out-of-pocket medical expense as percentage of annual income‡	Financial Risk Protection	Financing	Data Collection (Surveys/Interviews)	Household Surveys
Knowles 1997	17	Average total private cost of an average hospital stay as a percent of annual per capita household income for consumers in the lowest per capita income quintile‡	Financial Risk Protection	Financing	Document Review/Data Mining Data Collection (Surveys/Interviews)	Facility Records Household Surveys
Knowles 1997	17	Average total private cost of medicines for a typical outpatient illness episode as a percent of monthly per capita household income for consumers in the lowest per capita quintile‡	Financial Risk Protection	Financing	Document Review/Data Mining Data Collection (Surveys/Interviews)	Facility Records Household Surveys
Knowles 1997	16	Average total private cost of professionally treated outpatient illness episode as a percent of monthly per capita household income for consumers in the lowest per capita income quintile‡	Financial Risk Protection	Financing	Document Review/Data Mining Data Collection (Surveys/Interviews)	Facility Records Household Surveys
Hutchinson 2004	44	Mean monthly household health expenditure (on medical care, preventive care) by socioeconomic quintile/decile‡	Financial Risk Protection	Financing	Data Collection (Surveys/Interviews)	Household Surveys
WHO 2010	80	Patient/household out-of-pocket expenditures of accessing or obtaining services collected intermittently‡	Financial Risk Protection	Financing	On the Shelf Data Collection (Surveys/Interviews)	DHS (Out-of-Pocket Health Expenditure Module) Household Surveys
Liu 2004	11	Percentage of out-of-pocket payment by the poor‡	Financial Risk Protection	Financing	Document Review/Data Mining Data Collection (Surveys/Interviews)	Facility Records Household Surveys
WHO 2010	76	Ratio of household out-of-pocket payments for health to total expenditure on health‡	Financial Risk Protection	Financing	On the Shelf Data Collection (Surveys/Interviews)	DHS (Out-of-Pocket Health Expenditure Module) Household Surveys
Hutchinson 2004	45	Share of monthly household health expenditures in total household expenditures‡	Financial Risk Protection	Financing	Data Collection (Surveys/Interviews)	Household Surveys
Hutchinson 2004	34	Total health expenditure (and share of total) by households and individuals‡	Financial Risk Protection	Financing	On the Shelf Data Collection (Surveys/Interviews)	NHA Household Surveys
Hutchinson 2004	44	Mean per capita equalization grant by region, district, local government	Funding Sources	Financing	Document Review/Data Mining	MOH/MOF Budgets or Reports
Knowles 1997	41	Number of months of foreign technical assistance funded by donors‡‡	Funding Sources	Financing	Document Review/Data Mining	Partnership Contracts
Hutchinson 2004	36	Percentage of local revenue from categorical grants, matching/equalization grants, block grants, general revenue, and tax revenue‡	Funding Sources	Financing	Document Review/Data Mining	Regional/Facility Budgets or Records
Hutchinson 2004	36	Existence of financial management systems, systems of accountancy, and regular auditing‡‡*	Governance of Financing	Financing	Document Review/Data Mining	MOH/Facility Records or Policy Documents

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Hutchinson 2004	36	Existence of local ability to tax, set fees, and raise own revenue*	Governance of Financing	Financing	Document Review/Data Mining	MOH/Regional Records or Policy Documents
Liu 2004	46	Level of financial autonomy of public providers‡*	Governance of Financing	Financing	Document Review/Data Mining	MOH Policy Documents
USAID 2012	160	Local-level spending authority and institutional capacity*	Governance of Financing	Financing	Document Review/Data Mining	MOH/Regional Policy Documents
WHO 2010	80	Number and percentage of facilities meeting established national financial management criteria‡*	Governance of Financing	Financing	Document Review/Data Mining Data Collection (Surveys/Interviews)	Facility Audits Facility Assessments
USAID 2012	165	Institutional capacity for health insurance organizations‡*	Health Insurance	Financing	Document Review/Data Mining Data Collection (Surveys/Interviews)	Health Insurance Organization Records, MOH/Donor Records Insurance/MOH/ Donor Interviews
WHO 2010	80	Number (%) of people/households covered by health insurance, by population group, and specifically for poor/vulnerable groups‡	Health Insurance	Financing	On the Shelf Document Review/Data Mining Data Collection (Surveys/Interviews)	DHS (Out-of-Pocket Health Expenditure Module) Health Insurance Enrollment Records, Census Data Household Surveys
WHO 2010	66	Percentage of population covered by health insurance‡	Health Insurance	Financing	On the Shelf Data Collection (Surveys/Interviews)	DHS/AIS (Out-of-Pocket Health Expenditure Module) Household Surveys
Hutchinson 2004	45	Proportion of poorest quintile/quartile/decile covered by insurance/risk sharing programs/ community based health insurance‡	Health Insurance	Financing	On the Shelf Data Collection (Surveys/Interviews)	DHS (Out-of-Pocket Health Expenditure Module) Household Surveys
Alva 2009	88	Effectiveness of payment systems for primary and secondary health care providers‡	Payment Mechanisms	Financing	Data Collection (Surveys/Interviews)	Health Insurance Assessments, Stakeholder Interviews
Knowles 1997	36	Fees are charged in all facilities (yes/no)‡	Payment Mechanisms	Financing	Document Review/Data Mining	MOH/Facility Records
USAID 2012	168	Informal user fees in the public sector‡	Payment Mechanisms	Financing	Document Review/Data Mining	Facility Budgets or Records

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Liu 2004	47	Percentage of inpatients that pay at the point of service†‡	Payment Mechanisms	Financing	On the Shelf Document Review/Data Mining	DHS (Out-of-Pocket Health Expenditure Module) Facility Records
USAID 2012	167	Policies for user fee payments in the public sector‡	Payment Mechanisms	Financing	Document Review/Data Mining	MOH/Regional Policy Documents
Hutchinson 2004	45	Proportion of the poor exempted from paying fees for care, drugs, etc.‡	Payment Mechanisms	Financing	Document Review/Data Mining	MOH/Regional Policy Documents
USAID 2012	192	User fee exemptions and waivers†‡	Payment Mechanisms	Financing	Document Review/Data Mining	MOH, Regional, or Facility Policy Documents

Resource	Page	Indicator	Component of HSS Core Function	Core Function	Data Source Type(s)	Potential Data Source(s)
Alva 2009	93	Percentage of publicly funded supplies and services leaked (e.g., sale of publicly funded drugs in private markets, fraudulent insurance billing practices)‡	Control of Corruption & Level of Trust	Governance & Leadership	?	?
Alva 2009	93	Proportion of informal payments within the public health care system‡*	Control of Corruption & Level of Trust	Governance & Leadership	Document Review/Data Mining	Facility Records
Knowles 1997	25	Effective methods for communicating standards to the field level‡	Directives, Oversight, Resources	Governance & Leadership	Document Review/Data Mining Data Collection (Surveys/Interviews)	Facility Records Facility Staff Interviews
WHO 2010	89	Existence of key health sector documents that are disseminated regularly (such as budget documents, annual performance reviews, and health indicators)‡	Directives, Oversight, Resources	Governance & Leadership	Document Review/Data Mining	MOH/Regional Records, Reports, or Budgets
PEPFAR 2011	17	New/updated strategic plans approved†‡	Directives, Oversight, Resources	Governance & Leadership	Document Review/Data Mining	MOH, Regional, or Facility Policy Documents
Hutchinson 2004	43	Percentage of facilities with written guidelines for standard treatments, pricing policies and exemption mechanisms, facility management, etc.‡	Directives, Oversight, Resources	Governance & Leadership	Document Review/Data Mining	Facility Records/Policy Documents
PEPFAR 2011	17	Percentage of target organizations implementing national guidelines in technical area‡	Directives, Oversight, Resources	Governance & Leadership	Document Review/Data Mining	MOH, Regional, or Facility Policy Documents
Liu 2004	48	Proportion of facilities in which current diagnostic and treatment guidelines are available in writing‡	Directives, Oversight, Resources	Governance & Leadership	Document Review/Data Mining	Facility Records (i.e. STG availability)
PEPFAR 2011	17	Agreed-upon M&E plan for activities†‡	Effectiveness	Governance & Leadership	On the Shelf	MOH, Regional, or Facility Policy Documents or Reports

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PEPFAR 2011	17	Evidence of impact of new/updated management systems on performance†‡	Effectiveness	Governance & Leadership	Document Review/Data Mining Data Collection (Surveys/Interviews)	MOH/Facility Records MOH/Facility Staff Interviews
PEPFAR 2011	17	Evidence of impact of role of organized networks supported‡	Effectiveness	Governance & Leadership		?
Liu 2004	45	Existence and comprehensiveness of indicators for monitoring program performance†‡	Effectiveness	Governance & Leadership	Document Review/Data Mining	M&E Plan, MOH/Facility Records
Liu 2004	45	Existence of performance targets against which M&E is performed†‡	Effectiveness	Governance & Leadership	On the Shelf	M&E Plan, MOH/Facility Records
Liu 2004	45	Frequency of M&E observation†‡	Effectiveness	Governance & Leadership	Document Review/Data Mining	M&E Plan, MOH/Facility Records
Liu 2004	45	Internal vs. external evaluation†‡	Effectiveness	Governance & Leadership	Document Review/Data Mining	M&E Plan, MOH/Facility Records
Liu 2004	46	Linkages between the results of performance monitoring and reimbursement†‡	Effectiveness	Governance & Leadership	Document Review/Data Mining	M&E Plan, MOH/Facility Records
PEPFAR 2011	17	Number of organizational systems/tools/processes improved: technical, managerial, M&E†‡	Effectiveness	Governance & Leadership	Document Review/Data Mining	Facility Records
PEPFAR 2011	17	Percentage of national/local partners/supported sites achieving operational targets‡	Effectiveness	Governance & Leadership	Document Review/Data Mining	MOH, Regional, or Facility Reports
PEPFAR 2011	17	Percentage of national/local partners/supported sites achieving technical program standards‡	Effectiveness	Governance & Leadership	Document Review/Data Mining	MOH, Regional, or Facility Reports
USAID 2012	132	Procedures exist for reporting, investigating, and adjudicating misallocation or misuse of resources‡	Effectiveness	Governance & Leadership	Document Review/Data Mining	MOH/Regional Policy Documents, Government Laws
Knowles 1997	25	Routine application of methods for comparing performance with standards†‡	Effectiveness	Governance & Leadership	Data Collection (Surveys/Interviews)	MOH, Regional, or Facility Staff Interviews
Alva 2009	91	Disparity in coverage between lowest/ highest income groups (for DPT3 or other indicators)‡	Equity	Governance & Leadership	Document Review/Data Mining	MOH Records or Reports
USAID 2012	130	Service providers use evidence to influence and lobby government officials for policy, program, and/or procedural changes‡	Information, Reporting, and Lobbying	Governance & Leadership	Data Collection (Surveys/Interviews)	Provider and Provider Organization Interviews

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PEPFAR 2011	17	Assessed improvement in national/local partners technical and management capacity in targeted areas†‡	Leadership & Management	Governance & Leadership	Data Collection (Surveys/Interviews)	Facility Staff Interviews
PEPFAR 2011	17	Evidence of partnership quality†‡	Leadership & Management	Governance & Leadership	?	?
Hutchinson 2004	49	Existence of clearly defined process of selection of community representatives on local health boards/facility management boards†	Leadership & Management	Governance & Leadership	Document Review/Data Mining Data Collection (Surveys/Interviews)	Regional/Facility Policy Documents Stakeholder Interviews
Hutchinson 2004	49	Existence of local health boards made up of community representatives	Leadership & Management	Governance & Leadership	Document Review/Data Mining Data Collection (Surveys/Interviews)	Regional Policy Documents or Records Regional Staff Interviews
USAID 2012	124	Groups represented during these health policy agenda discussions†‡	Leadership & Management	Governance & Leadership	Data Collection (Surveys/Interviews)	Stakeholder Interviews
PEPFAR 2011	17	Joint accountabilities defined†‡	Leadership & Management	Governance & Leadership	Document Review/Data Mining	Partnership Contract, Stakeholder Policy Documents
PEPFAR 2011	17	Joint resources applied to capacity development effort (financial, in-kind)†‡*	Leadership & Management	Governance & Leadership	Document Review/Data Mining	Stakeholder Budgets
PEPFAR 2011	17	National/local partner assumes increasing leadership and implementation responsibilities over time†‡	Leadership & Management	Governance & Leadership	Document Review/Data Mining	Partnership Contract, Stakeholder Policy Documents
PEPFAR 2011	17	Number of national/local organizations provided with minimum package of technical and management capacity development assistance†	Leadership & Management	Governance & Leadership	Document Review/Data Mining	MOH, Facility, Donor Records
PEPFAR 2011	17	Periodic internal assessment of quality of partnership (mutual respect, learning, accountability)†‡	Leadership & Management	Governance & Leadership	Document Review/Data Mining	MOH, Regional, or Facility Reports

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LaFond, Brown 2003	73	Evidence of public-private collaboration†‡	Organization of Services	Governance & Leadership	Document Review/Data Mining	Partnership Contract, Stakeholder Policy Documents
PEPFAR 2011	17	Leadership role of national/local partners defined†‡	Organization of Services	Governance & Leadership	Document Review/Data Mining	Partnership Contract, Stakeholder Policy Documents
Liu 2004	45	Level of conflict†‡	Organization/Political Stability	Governance & Leadership	Data Collection (Surveys/Interviews)	Conflict Assessment (e.g. Speed Leas' Level of Conflict)
PEPFAR 2011	17	Formal joint planning process aligned to country processes†	Overall Governance	Governance & Leadership	Document Review/Data Mining	Regional/Facility Policy Documents, MOH Policy Documents
LaFond, Brown 2003	60	Frequency of contact with higher and lower level organizations within public sector†‡	Overall Governance	Governance & Leadership	Data Collection (Surveys/Interviews)	Stakeholder Interviews
Alva 2009	94	Government coordination or harmonization of donor inputs‡	Overall Governance	Governance & Leadership	Document Review/Data Mining	MOH/Regional Records or Reports
					Data Collection (Surveys/Interviews)	Stakeholder Interviews
LaFond, Brown 2003	52	Number of health committees who meet regularly and take action‡	Overall Governance	Governance & Leadership	Document Review/Data Mining	Partnership Contract, Stakeholder Policy Documents

Appendix C

Facility-level health-system strengthening indicators, by core function

Resource	Page	Indicator	Component of HSS Core Function	Core Function	Data Source Type(s)	Potential Data Source(s)
Liu 2004	46	Sophistication of banking systems	Overall Governance	Governance & Leadership	Document Review/Data Mining	MOF/Regional Financial Policy Documents
					Data Collection (Surveys/Interviews)	MOF Bank Assessments
Liu 2004	46	Sophistication of legal systems‡	Overall Governance	Governance & Leadership	Document Review/Data Mining	Government Policy Documents/Laws
Hutchinson 2004	37	Existence of a clearly defined set of essential health services to be provided by local government	Regulatory Quality	Governance & Leadership	Document Review/Data Mining	MOH/Regional Policy Documents
USAID 2012	132	Health sector regulations are known and enforced in both public and private training institutions and health facilities‡	Regulatory Quality	Governance & Leadership	Data Collection (Surveys/Interviews)	Provider, Facility, Regulatory Authority, and MOH Interviews
Alva 2009	94	Legislative and Policy Reforms are enacted, with increased focus on community-based primary health care‡	Regulatory Quality	Governance & Leadership	Document Review/Data Mining	Government Laws/Policy Documents
					Data Collection (Surveys/Interviews)	Stakeholder Interviews

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‡ Indicators are also applicable at a higher level of the health system.

PEPFAR 2011	17	New/updated policies and/or standards approved†‡	Regulatory Quality	Governance & Leadership	Document Review/Data Mining	MOH, Regional, or Facility Policy Documents
PEPFAR 2011	17	Percentage of funded national/local funded prime partners submitting program and financial reports on time and complete†	Regulatory Quality	Governance & Leadership	Document Review/Data Mining	MOH, Regional, or Facility Reports
PEPFAR 2011	17	Percentage of funded national/local funded prime partners with unqualified audits†	Regulatory Quality	Governance & Leadership	Document Review/Data Mining	MOH, Regional, or Facility Reports
PEPFAR 2011	17	Percentage of target organizations using new/updated policies and/or standards approved†	Regulatory Quality	Governance & Leadership	Document Review/Data Mining	MOH, Regional, or Facility Policy Documents
Knowles 1997	25	Routine review and updating of technical standards†	Regulatory Quality	Governance & Leadership	Data Collection (Surveys/Interviews)	MOH, Regional, or Facility Staff Interviews
USAID 2012	126	Civil society organizations oversee health providers and provider organizations in the way they deliver and finance health services†	Voice & Accountability	Governance & Leadership	Data Collection (Surveys/Interviews)	NGO/Media Interviews
LaFond, Brown 2003	52	Community experience negotiating with district health office	Voice & Accountability	Governance & Leadership	Data Collection (Surveys/Interviews)	Stakeholder Interviews
LaFond, Brown 2003	52	Community needs presented to district health office on regular basis	Voice & Accountability	Governance & Leadership	Data Collection (Surveys/Interviews)	Stakeholder Interviews
USAID 2012	126	Existence of procedures and institutions that clients, civil society, and other concerned stakeholders can use to fight bias and inequity in accessing health service†	Voice & Accountability	Governance & Leadership	Data Collection (Surveys/Interviews)	NGO/Media Interviews
USAID 2012	230	Mechanisms in place to involve community in service planning and provision and to provide feedback†‡	Voice & Accountability	Governance & Leadership	Document Review/Data Mining	MOH, Regional, or Facility Policy Documents
					Data Collection (Surveys/Interviews)	Stakeholder Interviews
PEPFAR 2011	17	Official organized networks supported†	Voice & Accountability	Governance & Leadership	?	?
LaFond, Brown 2003	53	Percentage of communities with active health center management committee†	Voice & Accountability	Governance & Leadership	Document Review/Data Mining	Facility Records
					Data Collection (Surveys/Interviews)	Stakeholder Interviews
USAID 2012	124	Mechanisms and strategies used by the government to engage all health stakeholders in policy and planning include workshops to discuss policies and develop strategic plans, and widespread distribution of policies and plans to all major health entities†	Voice & Accountability	Governance & Leadership	Document Review/Data Mining	Government Policy Documents/Budgets
					Data Collection (Surveys/Interviews)	Stakeholder Interviews

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USAID 2012	125	Public and concerned stakeholders have the capacity and opportunity to advocate for health issues important to them and to participate effectively with public officials in the establishment of policies, plans, and budgets for health services‡	Voice & Accountability	Governance & Leadership	Data Collection (Surveys/Interviews)	Stakeholder (i.e. Civil Society, Media, MOH, Private Institutions such as Hospitals, Insurance Companies, or Pharmacies) Interviews
USAID 2012	126	Public or concerned stakeholders (e.g., community members) have regular opportunities to meet with health care providers about service efficiency or quality‡	Voice & Accountability	Governance & Leadership	Data Collection (Surveys/Interviews)	Citizen Group and Facility Interviews
Knowles 1997	25	Routine application of methods for incorporating community input into system design and management‡	Voice & Accountability	Governance & Leadership	Document Review/Data Mining Data Collection (Surveys/Interviews)	Facility Records Facility Staff Interviews
USAID 2012	124	Type of mechanisms in place to ensure the participation of key stakeholders in the health policy agenda‡‡	Voice & Accountability	Governance & Leadership	Document Review/Data Mining Data Collection (Surveys/Interviews)	MOH, Regional, or Facility Policy Documents Stakeholder Interviews
USAID 2012	125	Willingness of the public and concerned stakeholders to participate in governance and advocate for health issues‡	Voice & Accountability	Governance & Leadership	Data Collection (Surveys/Interviews)	Patient Group, Provider Group, and NGO Interviews

Resource	Page	Indicator	Component of HSS Core Function	Core Function	Data Source Type(s)	Potential Data Source(s)
Alva 2009	75	Average hours that priority services are offered per week	Access/Equity	Service Delivery	Data Collection (Surveys/Interviews)	Facility Assessments
USAID 2012	196	Consumer profiles‡	Access/Equity	Service Delivery	Data Collection (Surveys/Interviews)	Household Surveys
Global Fund 2004	10	Number of activities organized which address basic needs of vulnerable populations‡	Access/Equity	Service Delivery	Document Review/Data Mining	MOH, Regional, or Facility Records
Liu 2004	49	Number of hospital days per doctor‡	Access/Equity	Service Delivery	On the Shelf	Facility Records, HRIS
Hutchinson 2004	41	Average length of stay	Coverage, Utilization, Demand	Service Delivery	On the Shelf	Facility Records, HIS
Liu 2004	47	Average number of prenatal visits for each full-term pregnancy	Coverage, Utilization, Demand	Service Delivery	Document Review/Data Mining	Facility Records, HIS
Liu 2004	12	Bed occupancy rate	Coverage, Utilization, Demand	Service Delivery	On the Shelf	Facility Records, HIS

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WHO 2010	22	Hospital admission rate for asthma	Coverage, Utilization, Demand	Service Delivery	Document Review/Data Mining	Facility Records
Liu 2004	14	Number and types of conditions (case mix) treated‡	Coverage, Utilization, Demand	Service Delivery	Document Review/Data Mining	Facility Records
Liu 2004	12	Number of admissions‡	Coverage, Utilization, Demand	Service Delivery	On the Shelf	Facility Records, HIS
Liu 2004	13	Number of birth deliveries	Coverage, Utilization, Demand	Service Delivery	On the Shelf	Facility Records, HIS
Liu 2004	14	Number of eligible children (ages 3–14) who received treatment and their share in overall patient load	Coverage, Utilization, Demand	Service Delivery	Document Review/Data Mining	Facility Records
Liu 2004	13	Number of outpatient visits‡	Coverage, Utilization, Demand	Service Delivery	On the Shelf	Facility Records, HIS
Grun 2006	30	Number of prenatal visits per Pound sent on staff training	Coverage, Utilization, Demand	Service Delivery	Document Review/Data Mining	Facility Records, HIS, Facility Budget or Training Records
Liu 2004	49	Number of visits per doctor‡	Coverage, Utilization, Demand	Service Delivery	On the Shelf	Facility Records, HRIS
Liu 2004	49	Number of visits per health worker‡	Coverage, Utilization, Demand	Service Delivery	On the Shelf	Facility Records, HRIS
Knowles 1997	31	Outpatient visits per hour of nurse labor (or per nurse)‡	Coverage, Utilization, Demand	Service Delivery	Document Review/Data Mining	Facility Records, HRIS, Payroll Records
Knowles 1997	31	Outpatient visits per hour of physician labor (or per physician)‡	Coverage, Utilization, Demand	Service Delivery	Document Review/Data Mining	Facility Records, HRIS, Payroll Records
Grun 2006	11	Percentage in catchment area vaccinated	Coverage, Utilization, Demand	Service Delivery	Document Review/Data Mining Data Collection (Surveys/Interviews)	Facility Records, Census Data Household Survey
Grun 2006	12	Percentage of patients vaccinated per number of community activities	Coverage, Utilization, Demand	Service Delivery	Document Review/Data Mining	Facility Records, HIS, Facility Reports
Global Fund 2004	14	Percentage of people remaining on treatment at 6, 12 and 24 months‡	Coverage, Utilization, Demand	Service Delivery	Document Review/Data Mining	Regional/Facility Records, HIS
Liu 2004	49	Proportion of patients with specified conditions who follow through to completion of recommended treatments (e.g., TB, DOTS)‡	Coverage, Utilization, Demand	Service Delivery	Document Review/Data Mining	Facility/Regional Records, HIS

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Liu 2004	11	Utilization of facility by the poor‡	Coverage , Utilization, Demand	Service Delivery	Data Collection (Surveys/Interviews)	Household Surveys
Grun 2006	4	Vaccination coverage per number of computerized records/staff hours of training	Coverage , Utilization, Demand	Service Delivery	Document Review/Data Mining Data Collection (Surveys/Interviews)	Facility Records, HIS, Facility Training Records Household Surveys
Grun 2006	11	Number of community activities	Organization of Services	Service Delivery	Document Review/Data Mining	Facility Records or Reports
Liu 2004	10	Number of condoms distributed	Organization of Services	Service Delivery	Document Review/Data Mining	Facility Records
Liu 2004	10	Number of consultations	Organization of Services	Service Delivery	On the Shelf	Facility Records, HIS
Liu 2004	10	Number of home visits	Organization of Services	Service Delivery	On the Shelf	Facility Records, HIS
Liu 2004	10	Number of information, education, and communication campaigns launched	Organization of Services	Service Delivery	Document Review/Data Mining	Facility Records or Reports
Alva 2009	75	Number of new services offered by type of facility	Organization of Services	Service Delivery	Data Collection (Surveys/Interviews)	Facility Assessments
Liu 2004	11	Nutritional support	Organization of Services	Service Delivery	Document Review/Data Mining Data Collection (Surveys/Interviews)	Facility Records Facility Assessments
Liu 2004	45	Quantities of services and their mix‡	Organization of Services	Service Delivery	Document Review/Data Mining Data Collection (Surveys/Interviews)	Facility Records Facility Assessments
Liu 2004	12	RH consulting for adolescents	Organization of Services	Service Delivery	Document Review/Data Mining Data Collection (Surveys/Interviews)	Facility Records Facility Assessments
Liu 2004	50	Services mix by level of cost-effectiveness	Organization of Services	Service Delivery	Document Review/Data Mining Data Collection (Surveys/Interviews)	Facility Records Facility Assessments
Liu 2004	48	Average patient waiting time	Service Readiness	Service Delivery	On the Shelf Data Collection (Surveys/Interviews)	Facility Records Client Exit Interviews
WHO 2010	22	For heart attack patients, median time to thrombolytic therapy or percutaneous transluminal coronary angioplasty (PICA)	Service Readiness	Service Delivery	Document Review/Data Mining	Facility Records
WHO 2010	11	General service readiness score for health facilities	Service Readiness	Service Delivery	Data Collection (Surveys/Interviews)	Facility Assessments
USAID 2012	191	Hours of operation for public and private health service providers	Service Readiness	Service Delivery	Data Collection (Surveys/Interviews)	Facility Surveys
Liu 2004	11	Percentage of clients saying that waiting times were acceptable‡	Service Readiness	Service Delivery	Data Collection (Surveys/Interviews)	Client Exit Interviews

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WHO 2010	22	Percentage of emergency department visits where patients left without being seen	Service Readiness	Service Delivery	Document Review/Data Mining	Facility Records
WHO 2010	13	Specific-services readiness score for health facilities	Service Readiness	Service Delivery	Data Collection (Surveys/Interviews)	Facility Assessments
Boerma 2010	17	Waiting time to elective surgeries: cataract	Service Readiness	Service Delivery	Document Review/Data Mining	Facility Records
Liu 2004	12	Application of user satisfaction instrument	Service Quality	Service Delivery	Data Collection (Surveys/Interviews)	Supervisory Visits (Observation)
USAID 2012	199	Clinical standards adapted into a practical form that can be used at local level†*	Service Quality	Service Delivery	Document Review/Data Mining Data Collection (Surveys/Interviews)	Facility Site Visits, MOH/ Regional Policy Documents Stakeholder Interviews
USAID 2012	200	Existence of other processes assuring quality of care besides supervision	Service Quality	Service Delivery	Document Review/Data Mining Data Collection (Surveys/Interviews)	Facility Policy Documents Staff Interviews, Facility Site Visits
Global Fund 2004	14	Number of blood units transfused during the last 12 months that have been adequately screened for HIV according to national or WHO guidelines‡	Service Quality	Service Delivery	Document Review/Data Mining	MOH, Regional, or Facility Records
Global Fund 2004	10	Number of target population showing clinical (and measurable) signs of recovery after 6, 12 months	Service Quality	Service Delivery	Data Collection (Surveys/Interviews)	Household Surveys, Facility Records
WHO 2010	22	Percentage of adults whose provider asks about other prescribed medication	Service Quality	Service Delivery	Data Collection (Surveys/Interviews)	Site Visits (Observation), Client Exit Interviews
WHO 2010	22	Percentage of adults with recent health visit who stated their provider always listened to what they had to say‡	Service Quality	Service Delivery	Data Collection (Surveys/Interviews)	Client Exit Interviews, Household Surveys
WHO 2010	22	Percentage of adults with recent health visit who stated their provider explained things clearly‡	Service Quality	Service Delivery	Data Collection (Surveys/Interviews)	Client Exit Interviews, Household Surveys
WHO 2010	22	Percentage of adults with recent health visits who stated their provider showed respect to them‡	Service Quality	Service Delivery	Data Collection (Surveys/Interviews)	Client Exit Interviews, Household Surveys
Grun 2006	6	Percentage of babies delivered well	Service Quality	Service Delivery	Document Review/Data Mining Data Collection (Surveys/Interviews)	Facility Records, Supervisory Reports Facility Site Visits (Observation)
Liu 2004	48	Percentage of children with growth monitored for a specified period of time	Service Quality	Service Delivery	Document Review/Data Mining	Facility Records

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LaFond, Brown 2003	53	Percentage of deliveries in which a partograph is correctly used	Service Quality	Service Delivery	Data Collection (Surveys/Interviews)	Supervisory Visits (Observation)
Liu 2004	13	Percentage of diagnoses asking about history of illness	Service Quality	Service Delivery	Data Collection (Surveys/Interviews)	Supervisory Visits (Observation)
Liu 2004	13	Percentage of diagnoses touching child as part of examination	Service Quality	Service Delivery	Data Collection (Surveys/Interviews)	Supervisory Visits (Observation)
Liu 2004	13	Percentage of diagnoses using watch or timer to measure respiratory rate	Service Quality	Service Delivery	Data Collection (Surveys/Interviews)	Supervisory Visits (Observation)
Liu 2004	45	Percentage of doctors using medical practice guidelines for specified diseases (malaria, acute respiratory diseases, diarrhea, etc.)*	Service Quality	Service Delivery	Data Collection (Surveys/Interviews)	Supervisory Visits (Observation)
Hutchinson 2004	38	Percentage of health workers adequately performing assigned tasks relative to measurable national standards of clinic and diagnostic performance*	Service Quality	Service Delivery	Document Review/Data Mining Data Collection (Surveys/Interviews)	Supervisory Reports Facility Site Visits (Observation)
LaFond, Brown 2003	53	Percentage of mothers examined every 30 minutes during the first two hours after delivery	Service Quality	Service Delivery	Data Collection (Surveys/Interviews)	Site Visits (Observation), Client Exit Interviews
LaFond, Brown 2003	53	Percentage of newborns receiving immediate care according to MOH guidelines	Service Quality	Service Delivery	Data Collection (Surveys/Interviews)	Site Visits (Observation)
Grun 2006	35	Percentage of patients satisfied with service	Service Quality	Service Delivery	Data Collection (Surveys/Interviews)	Client Exit Interviews
Global Fund 2004	10	Percentage of people showing clinical (and measurable) signs of recovery after 6, 12 months	Service Quality	Service Delivery	Data Collection (Surveys/Interviews)	Household Surveys, Facility Records
Liu 2004	11	Percentage of prescriptions provided with a specific diagnosis	Service Quality	Service Delivery	Document Review/Data Mining	Facility Records
WHO 2010	22	Percentage of providers who know hand hygiene guidelines	Service Quality	Service Delivery	Data Collection (Surveys/Interviews)	Provider Interviews
Hutchinson 2004	43	Percentage of service providers following standard treatment guidelines*	Service Quality	Service Delivery	Document Review/Data Mining Data Collection (Surveys/Interviews)	Supervisory Reports Facility Site Visits (Observation)
WHO 2010	22	Percentage of sick child visits during which health worker counseled mother on nutrition	Service Quality	Service Delivery	Data Collection (Surveys/Interviews)	Site Visits (Observation), Client Exit Interviews
LaFond, Brown 2003	53	Percentage of STI patients appropriately diagnosed and treated	Service Quality	Service Delivery	Document Review/Data Mining	Facility Records
Liu 2004	13	Percentage of treatment recommending ORS for diarrhea cases	Service Quality	Service Delivery	Document Review/Data Mining	Facility Records
Liu 2004	49	Perception of quality by respondents for selected services (bad, acceptable, good, excellent)	Service Quality	Service Delivery	Data Collection (Surveys/Interviews)	Client Exit Interviews

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Global Fund 2004	14	Proportion of detected TB cases that are successfully treated	Service Quality	Service Delivery	Document Review/Data Mining	Facility Records
Global Fund 2004	14	Proportion of incident TB cases (estimated) that are detected under DOTS	Service Quality	Service Delivery	Document Review/Data Mining	Facility Records
Liu 2004	49	Proportion of patient contacts in which treatment received is consistent with national diagnostic and treatment protocols, including guidelines for client-provider interaction*	Service Quality	Service Delivery	Data Collection (Surveys/Interviews)	Supervisory Visits (Observation)
Liu 2004	49	Proportion of patients with specific conditions who received relevant health education materials	Service Quality	Service Delivery	Data Collection (Surveys/Interviews)	Client Exit Interviews
Liu 2004	49	Proportion of referrals made and consummated in accordance with national guidelines and standards‡	Service Quality	Service Delivery	Document Review/Data Mining	Facility Records, HIS
Alva 2009	76	Quality Assurance system that monitors the service quality of health care facilities‡	Service Quality	Service Delivery	Document Review/Data Mining Data Collection (Surveys/Interviews)	MOH, Regional, or Facility Policy Documents Stakeholder Interviews
LaFond, Brown 2003	50	Quality of INFORMATION, EDUCATION, AND COMMUNICATION sessions	Service Quality	Service Delivery	Document Review/Data Mining Data Collection (Surveys/Interviews)	Training Institution/Facility Records Stakeholder Interviews
Liu 2004	10	Share of patients getting pre- and post-natal checkups	Service Quality	Service Delivery	Document Review/Data Mining	Facility Records
Boerma 2010	17	Surgical wound infection rate (% of all surgical operations)	Service Quality	Service Delivery	Document Review/Data Mining	Facility Records
Liu 2004	14	Treatment outcomes per case and by age groups	Service Quality	Service Delivery	Document Review/Data Mining	Facility Records
Liu 2004	13	Treatment success rate (%)‡	Service Quality	Service Delivery	Document Review/Data Mining	MOH/Facility Records

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Resource	Page	Indicator	Component of HSS Core Function	Core Function	Data Source Type(s)	Potential Data Source(s)
LaFond, Brown 2003	50	Assessment process leads to training‡	Education & Training	Health Workforce	Document Review/Data Mining Data Collection (Surveys/Interviews)	Facility Policy Documents Facility Interviews
LaFond, Brown 2003	50	Attitudes of CHWs to information, education, and communication	Education & Training	Health Workforce	Data Collection (Surveys/Interviews)	Facility Staff (CHWs) Interviews/Surveys
LaFond, Brown 2003	50	Basic training of community health workers‡	Education & Training	Health Workforce	Document Review/Data Mining	Facility/Training Institutions Records
LaFond, Brown 2003	50	Basic training of health center personnel‡	Education & Training	Health Workforce	Document Review/Data Mining	Facility/Training Institutions Records
LaFond, Brown 2003	74	Contacts with other training institutions and institution' evaluation and research feed into training improvement (e.g., trainee selection, training contents and formats)	Education & Training	Health Workforce	Document Review/Data Mining	Partnership Contracts, Policy Documents, Reports
LaFond, Brown 2003	50	Curriculum exists for training of trainers and community health workers‡	Education & Training	Health Workforce	On the Shelf	Facility/Training Institutions Records
USAID 2012	228	Evidence that pre-service education curriculum is regularly updated‡	Education & Training	Health Workforce	Document Review/Data Mining	MOH/MOE Policy Documents
LaFond, Brown 2003	73	Existence and use of a Training Needs Assessment	Education & Training	Health Workforce	On the Shelf	Facility Training Needs Assessment/Records
LaFond, Brown 2003	72	Financial, printing and planning capabilities exist for replacing and upgrading MES	Education & Training	Health Workforce	Document Review/Data Mining	Training Institutions/ Facility Budgets
Management Sciences for Health 2006	33	Financially feasible staff training plan exists for the current fiscal year	Education & Training	Health Workforce	Document Review/Data Mining Data Collection (Surveys/Interviews)	Facility Budgets Facility Manager Interviews
USAID 2012	228	Frequency, quality, and alignment of in-service training to health priorities and workforce needs‡	Education & Training	Health Workforce	Document Review/Data Mining	MOH Records, Donor Records, Professional Societies' Records
LaFond, Brown 2003	52	Managers trained in and using performance evaluation	Education & Training	Health Workforce	Document Review/Data Mining	Training Institutions/ Facility Records
WHO 2009	94	Median number of years of education and training among health workers‡	Education & Training	Health Workforce	Document Review/Data Mining Data Collection (Surveys/Interviews)	MOH/MOE Records, Training Institutions Records, Facility Records Health Worker Surveys

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LaFond, Brown 2003	72	MES are pertinent, updated, sufficient, and adapted to local culture (including locally produced)	Education & Training	Health Workforce	Document Review/Data Mining Data Collection (Surveys/Interviews)	Training Institutions/ Facility Records Stakeholder Interviews
LaFond, Brown 2003	52	Number of managers trained, by type of training	Education & Training	Health Workforce	Document Review/Data Mining	Training Institutions/ Facility Records
Global Fund 2004	11	Number of persons trained‡	Education & Training	Health Workforce	On the Shelf	MOH/MOE Records, Training Institutions Records
Global Fund 2004	21	Number of project staff trained	Education & Training	Health Workforce	Document Review/Data Mining	Facility/Training Institutions Records
LaFond, Brown 2003	52	Number of providers trained, by type of training & cadre of provider	Education & Training	Health Workforce	Document Review/Data Mining	Facility/Training Institutions Records
WHO 2010	34	Number of senior staff at primary healthcare facilities who received in-service management training (with nationally approved curriculum) in the past 12 months	Education & Training	Health Workforce	Document Review/Data Mining Data Collection (Surveys/Interviews)	Training Institution Records Institution Interviews
Grun 2006	35	Number of staff hours training	Education & Training	Health Workforce	Document Review/Data Mining	Facility Records or Reports, Facility Training Plans
LaFond, Brown 2003	52	Number of staff trained in finance, MIS, strategic planning, financial planning	Education & Training	Health Workforce	Document Review/Data Mining	Facility/Training Institutions Records
PEPFAR 2011	17	Number of trained managerial skills (HR, financial/ grants, leadership, other)‡	Education & Training	health Workforce	Document Review/Data Mining	Training Curriculum
LaFond, Brown 2003	52	Number of trained managers per unit	Education & Training	Health Workforce	Document Review/Data Mining	Facility/Training Institutions Records
LaFond, Brown 2003	52	Number of training sessions to improve human resource management addressing needs expressed by providers	Education & Training	Health Workforce	Document Review/Data Mining	Facility/Training Institutions Records
PEPFAR 2011	17	Number of workers trained (technical skills)‡	Education & Training	health Workforce	On the Shelf	Training Records
LaFond, Brown 2003	52	Percent of courses where training methodology is appropriate for transfer of skills/knowledge	Education & Training	Health Workforce	Document Review/Data Mining	Facility/Training Institutions Records
Management Sciences for Health 2006	32	Percent of supervisors trained in how to use guidelines for supervision and performance review	Education & Training	Health Workforce	Document Review/Data Mining	Training Records

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PEPFAR 2011	17	Percent of targeted cadre of staff in technical area with required skills‡	Education & Training	Health Workforce	Data Collection (Surveys/Interviews)	Staff Interviews/Surveys
LaFond, Brown 2003	52	Percent of trainees (providers) with knowledge in skill area (meet national standard)	Education & Training	Health Workforce	Data Collection (Surveys/Interviews)	Trainee Post-Tests/Surveys
PEPFAR 2011	17	Percent of trainees demonstrating competence in work setting post-training‡	Education & Training	Health Workforce	Data Collection (Surveys/Interviews)	Site Visits (Observation)
PEPFAR 2011	17	Percent of trainees retained in job at 12 months‡	Education & Training	Health Workforce	On the Shelf	HRIS
PEPFAR 2011	17	Percent of trainees that apply skills to current work‡	Education & Training	Health Workforce	Data Collection (Surveys/Interviews)	Site Visits (Observation)
WHO 2009b	94	Percentage of health workers who received in-service training in the past 12 months‡	Education & Training	Health Workforce	Document Review/Data Mining	Training Institutions Records
					Data Collection (Surveys/Interviews)	Stakeholder Interviews, Health Worker Surveys
LaFond, Brown 2003	50	Percentage of personnel or CHWs completing training	Education & Training	Health Workforce	Document Review/Data Mining	Facility/Training Institutions Records
LaFond, Brown 2003	52	Percentage of senior staff with continuing education opportunities	Education & Training	Health Workforce	Document Review/Data Mining	Facility/Training Institutions Records
Hutchinson 2004	38	Percentage of staff receiving training in key skills areas and having up-to-date skills‡	Education & Training	Health Workforce	Document Review/Data Mining	Training Institutions Records, Facility Records
					Data Collection (Surveys/Interviews)	Training Institution Staff Interviews
LaFond, Brown 2003	50	Post-test scores of CHWs following course	Education & Training	Health Workforce	Data Collection (Surveys/Interviews)	Trainee Post-Tests/Surveys
LaFond, Brown 2003	50	Post-test scores of trainers	Education & Training	Health Workforce	Data Collection (Surveys/Interviews)	Trainer Post-Tests/Surveys
Knowles 1997	24	Proportion of health workers possessing basic professional qualifications, including skills for specific primary health care services	Education & Training	Health Workforce	Data Collection (Surveys/Interviews)	Facility Staff Surveys
LaFond, Brown 2003	50	Quality of training materials	Education & Training	Health Workforce	Document Review/Data Mining	Training Institutions Curricula Review
LaFond, Brown 2003	50	Quantity of training materials	Education & Training	Health Workforce	Document Review/Data Mining	Training Institutions Curricula Review
Grun 2006	11	Received staff training (yes or no)	Education & Training	Health Workforce	Data Collection (Surveys/Interviews)	Facility Staff Interviews/Surveys

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LaFond, Brown 2003	74	Replica/other courses carried out independently (with institutional resources)	Education & Training	Health Workforce	Document Review/Data Mining Data Collection (Surveys/Interviews)	Training Institutions Records Training Institutions Assessments
WHO 2009b	80	Staff receiving in-service training during a reference period (by type of training)	Education & Training	Health Workforce	Document Review/Data Mining Data Collection (Surveys/Interviews)	Training Institution Records, Facility Records Health Worker Surveys
Management Sciences for Health 2006	34	Staff training plan is monitored for effectiveness	Education & Training	Health Workforce	Document Review/Data Mining Data Collection (Surveys/Interviews)	Facility HR Plans Facility Staff Interviews
LaFond, Brown 2003	50	Trainees' knowledge improves	Education & Training	Health Workforce	Data Collection (Surveys/Interviews)	Trainee Post-Tests/Surveys
LaFond, Brown 2003	50	Trainees satisfied with training	Education & Training	Health Workforce	Data Collection (Surveys/Interviews)	Trainee Exit Surveys
LaFond, Brown 2003	72	Trainers/preceptors are constantly formed (TOT) and do periodic refresher courses and pass standard tests on FP/RH technical and presentation knowledge and skills	Education & Training	Health Workforce	Document Review/Data Mining	Training Institutions Records
LaFond, Brown 2003	50	Training of Trainers completed	Education & Training	Health Workforce	Document Review/Data Mining	Training Institutions Records
LaFond, Brown 2003	52	Up-to-date curricula	Education & Training	Health Workforce	Document Review/Data Mining	Training Institutions Curricula Review
Grun 2006	4	Average cost of staff IT training provided	Financing HRH	Health Workforce	Document Review/Data Mining	Facility Training Plans/Budgets
LaFond, Brown 2003	71	Budget covers all aspects of training (including materials and equipment, travel and per diem by consultants and staff, venue hire and maintenance, etc.)*	Financing HRH	Health Workforce	Document Review/Data Mining	Training Institutions/Facility Budgets
WHO 2009b	32	Distribution of health workers' salaries by source‡*	Financing HRH	Health Workforce	Document Review/Data Mining Data Collection (Surveys/Interviews)	Facility Records Staff Interviews
PEPFAR 2011	17	Percent of PEPFAR-supported government staff transferred to government salaries‡	Financing HRH	Health Workforce	Document Review/Data Mining	Staff Records
LaFond, Brown 2003	52	Percent of training budget from external assistance*	Financing HRH	Health Workforce	Document Review/Data Mining	Training Institutions/Facility Budgets
Liu 2004	43	Capacity of provider	HRH Availability	Health Workforce	Data Collection (Surveys/Interviews)	Supervisory Visits (Observation)

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‡ Indicators are also applicable at a higher level of the health system.

LaFond, Brown 2003	50	CHWs' past experience with childhood immunization	HRH Availability	Health Workforce	Data Collection (Surveys/Interviews)	Facility Staff (CHWs) Interviews/Surveys
WHO 2009b	29	Days of absenteeism among health workers‡	HRH Availability	Health Workforce	On the Shelf	Facility Records, HRIS
Hutchinson 2004	41	Doctors/nurses per hospital bed‡	HRH Availability	Health Workforce	On the Shelf	MOH/Facility Records, HRIS
Management Sciences for Health 2006	89	Employees express satisfaction with key aspects of their work	HRH Availability	Health Workforce	Data Collection (Surveys/Interviews)	Employee Satisfaction Instrument (Survey)
WHO 2009b	80	Facility-based health workforce attrition rate (by reason for leaving workplace)‡	HRH Availability	Health Workforce	Document Review/Data Mining Data Collection (Surveys/Interviews)	MOH/Facility Records, Payroll Records Health Worker Surveys
WHO 2009b	80	Level and field of education among facility-based staff‡	HRH Availability	Health Workforce	Document Review/Data Mining	MOH/Facility Records, HRIS
WHO 2009b	95	Median number of years of service in current position among facility-based health workers‡	HRH Availability	Health Workforce	Document Review/Data Mining Data Collection (Surveys/Interviews)	MOH/Facility Records, HRIS Health Worker Surveys
WHO 2009b	44	Number and percentage of applicants meeting entry requirements per place, per cadre	HRH Availability	Health Workforce	Document Review/Data Mining Data Collection (Surveys/Interviews)	Training Institution Records, MOH/MOE Records Institution Interviews
WHO 2010	34	Number of days of health worker absenteeism relative to the total number of scheduled working days over a given period among staff at primary healthcare facilities	HRH Availability	Health Workforce	Document Review/Data Mining Data Collection (Surveys/Interviews)	Facility Records Site Visits
WHO 2009b	80	Number of facility-based workers relative to planned staffing norm	HRH Availability	Health Workforce	Document Review/Data Mining	MOH/Facility Records, HRIS
WHO 2009b	80	Number of facility-based workers relative to total (catchment) population	HRH Availability	Health Workforce	On the Shelf Document Review/Data Mining	HRIS, Census Data MOH/Facility Records

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WHO 2010	33	Number of health workers newly recruited at primary healthcare facilities in the past 12 months, e.g. expressed as percentage of planned recruitment target‡	HRH Availability	Health Workforce	Document Review/Data Mining Data Collection (Surveys/Interviews)	Facility Records Facility Interviews
LaFond, Brown 2003	60	Number of management and staff positions filled over time	HRH Availability	Health Workforce	Document Review/Data Mining	Facility Records, HRIS
LaFond, Brown 2003	53	Number/percent of trainees deployed to an appropriate service delivery point and job assignment	HRH Availability	Health Workforce	Document Review/Data Mining	Facility Records, HRIS
Management Sciences for Health 2006	21	Organization has an adequate number of experienced human resource staff	HRH Availability	Health Workforce	On the Shelf Data Collection (Surveys/Interviews)	Organizational Chart Facility Manager Interview
Management Sciences for Health 2006	42	Percent of key positions filled	HRH Availability	Health Workforce	Document Review/Data Mining Data Collection (Surveys/Interviews)	HRIS, Facility Record, Organization Chart, Payroll Record Facility Survey
PEPFAR 2011	17	Percent sanctioned HR positions filled in local/national partners' programs	HRH Availability	Health Workforce	Document Review/Data Mining	Facility Records, HRIS
WHO 2009b	91	Percentage of health workers requested by facility managers to meet staffing requirements who are currently in post‡	HRH Availability	Health Workforce	Data Collection (Surveys/Interviews)	Facility Site Visits
Hutchinson 2004	38	Proportion of clinic/hospital staff posts that are filled‡	HRH Availability	Health Workforce	On the Shelf	MOH/Facility Records, HRIS
WHO 2009b	80	Proportion of staff assigned to the facility (in post) working at the facility on the day of the assessment	HRH Availability	Health Workforce	Data Collection (Surveys/Interviews)	Facility Site Visits
WHO 2009b	80	Proportion of staff working full time versus part time at the facility	HRH Availability	Health Workforce	Document Review/Data Mining	Facility Records, HRIS
LaFond, Brown 2003	60	Provider satisfaction index	HRH Availability	Health Workforce	Data Collection (Surveys/Interviews)	Facility Staff Interviews/Surveys
Liu 2004	45	Quantity of staff and staff mix‡	HRH Availability	Health Workforce	On the Shelf	MOH/Facility Records, HRIS

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WHO 2009b	89	Ratio of health workers per inpatient bed‡	HRH Availability	Health Workforce	On the Shelf Data Collection (Surveys/Interviews)	Facility Records Facility Assessments
WHO 2009b	29	Relative number of specific tasks performed among health workers	HRH Availability	Health Workforce	Data Collection (Surveys/Interviews)	Facility Records, Facility Site Visits (Observation)
Management Sciences for Health 2006	43	Staff turnover rate	HRH Availability	Health Workforce	On the Shelf Data Collection (Surveys/Interviews)	HRIS, Payroll Records Facility "Head Count" Survey (in absence of HRIS)
Liu 2004	43	Type of provider	HRH Availability	Health Workforce	On the Shelf	Facility Records, HRIS
USAID 2012	221	Availability of and use of HRH information systems‡*	HRH Management Systems	Health Workforce	On the Shelf Data Collection (Surveys/Interviews)	HRIS MOH Interviews
USAID 2012	221	Availability of mechanisms used to monitor and improve health worker performance, productivity, and expectations‡*	HRH Management Systems	Health Workforce	Document Review/Data Mining	Monitoring Reports
USAID 2012	220	Availability of strategic and operational HRM functions and structures at the national and local level‡	HRH Management Systems	Health Workforce	Document Review/Data Mining Data Collection (Surveys/Interviews)	Facility Policy Documents Facility Interviews
Management Sciences for Health 2006	27	Employee data system exists and is regularly updated*	HRH Management Systems	Health Workforce	Document Review/Data Mining Data Collection (Surveys/Interviews)	HRIS Facility Staff Interviews
LaFond, Brown 2003	73	Existence of an MIS for trainees and materials matching TNA	HRH Management Systems	Health Workforce	Document Review/Data Mining	Facility Records
LaFond, Brown 2003	52	Number of monthly staff newsletters produced	HRH Management Systems	Health Workforce	Document Review/Data Mining	Facility Records
WHO 2009b	153	Percentage of health workers recorded on the MOH payroll but not registered at the facility level‡	HRH Management Systems	Health Workforce	Document Review/Data Mining	MOH Records, HRIS, Facility Records
Alva 2009	78	Presence of human resources data system‡*	HRH Management Systems	Health Workforce	On the Shelf	HRIS
WHO 2009b	124	Utilization of the information in the HRIS in the processes of health system management at the local level‡*	HRH Management Systems	Health Workforce	Document Review/Data Mining Data Collection (Surveys/Interviews)	HRIS Reports Regional/Facility Interviews

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LaFond, Brown 2003	50	Community relationship with CHWs and acceptability of their role	Leadership of HRH System	Health Workforce	Data Collection (Surveys/Interviews)	Stakeholder Interviews
LaFond, Brown 2003	46	Degree of autonomy to undertake work*	Leadership of HRH System	Health Workforce	Document Review/Data Mining Data Collection (Surveys/Interviews)	Facility Policy Documents Staff Interviews
LaFond, Brown 2003	46	Degree to which tasks demand conceptual and methodological creativity and innovation*	Leadership of HRH System	Health Workforce	Data Collection (Surveys/Interviews)	Facility Staff Interviews
USAID 2012	221	Enabling environment exists for health workers to achieve goals and targets‡	Leadership of HRH System	Health Workforce	Document Review/Data Mining Data Collection (Surveys/Interviews)	MOH, Regional, or Facility Policy Documents Stakeholder Interviews
USAID 2012	200	Existence of clinical supervision by district-level supervisor‡	Leadership of HRH System	Health Workforce	Document Review/Data Mining	MOH, Regional, or Facility Policy Documents
Liu 2004	45	Existence of monitoring mechanisms for staff performance‡	Leadership of HRH System	Health Workforce	Document Review/Data Mining	MOH/Facility Records or Policy Documents
LaFond, Brown 2003	52	Job descriptions updated regularly to reflect real work requirements & responsibilities*	Leadership of HRH System	Health Workforce	Document Review/Data Mining	Facility Employees Manual or Organizational Charts
LaFond, Brown 2003	52	Level of staff motivation*	Leadership of HRH System	Health Workforce	Data Collection (Surveys/Interviews)	Facility Staff Interviews
Management Sciences for Health 2006	36	Lines of supervision are documented in job descriptions*	Leadership of HRH System	Health Workforce	Document Review/Data Mining	Employee Job Descriptions
Management Sciences for Health 2006	30	Percent of employees who have completed their annual performance reviews with their supervisors for the last performance period	Leadership of HRH System	Health Workforce	Document Review/Data Mining Data Collection (Surveys/Interviews)	Employee Personnel Files Facility Staff Interviews
Management Sciences for Health 2006	40	Percent of service delivery points visited by a trained supervisor	Leadership of HRH System	Health Workforce	Document Review/Data Mining	Facility Records (Supervisory Records)

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WHO 2010	34	Percentage of health service providers at primary healthcare facilities who received personal supervision in the past 6/12 months‡	Leadership of HRH System	Health Workforce	Document Review/Data Mining Data Collection (Surveys/Interviews)	Facility Records Provider Surveys
LaFond, Brown 2003	52	Professional networking (frequency and quality)‡	Leadership of HRH System	Health Workforce	Data Collection (Surveys/Interviews)	Stakeholder Interviews
Liu 2004	48	Proportion of health workers receiving appropriately timed and effectively conducted supervision, per national policy‡	Leadership of HRH System	Health Workforce	Document Review/Data Mining	Supervisory Reports, Facility Records
WHO 2009b	80	Proportion of staff receiving (nonmonetary) incentives at their job	Leadership of HRH System	Health Workforce	Data Collection (Surveys/Interviews)	Health Worker Surveys
Hutchinson 2004	38	Salaries paid on time‡*	Leadership of HRH System	Health Workforce	Document Review/Data Mining	MOH/MOF/Facility Records, Payroll Records
LaFond, Brown 2003	52	Supervisors able to guide on-site learning	Leadership of HRH System	Health Workforce	Document Review/Data Mining	Supervisory Reports, Facility Records
LaFond, Brown 2003	52	Supervisors playing mentoring role	Leadership of HRH System	Health Workforce	Document Review/Data Mining	Supervisory Reports, Facility Records
USAID 2012	230	Active stakeholder participation in HRH policy and processes‡*	Policy & Planning of HRH	Health Workforce	On the Shelf Document Review/Data Mining	WHO HRH Observatory Study MOH Records
Management Sciences for Health 2006	28	Employee data system is used for human resource planning*	Policy & Planning of HRH	Health Workforce	Document Review/Data Mining Data Collection (Surveys/Interviews)	Facility HR Plans Facility Staff Interviews
USAID 2012	223	Employment policies documented and used‡*	Policy & Planning of HRH	Health Workforce	Document Review/Data Mining Data Collection (Surveys/Interviews)	MOH, Regional, or Facility Policy Documents Facility Site Visits
USAID 2012	224	Evidence indicating budgets and projections done for HRH requirements‡*	Policy & Planning of HRH	Health Workforce	Document Review/Data Mining	MOH, Regional, or Facility Policy Documents
LaFond, Brown 2003	74	Evidence of community involvement in providers' training and/or performance assessment (e.g., quality of care circles)*	Policy & Planning of HRH	Health Workforce	Document Review/Data Mining Data Collection (Surveys/Interviews)	Facility Policy Documents Stakeholder Interviews

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Alva 2009	78	Existence of a functioning HR planning system‡*	Policy & Planning of HRH	Health Workforce	On the Shelf	HRIS
USAID 2012	223	Existence of and use up-to-date HRH policies‡*	Policy & Planning of HRH	Health Workforce	Document Review/Data Mining Data Collection (Surveys/Interviews)	MOH/Regional Policy Documents Facility Site Visits
USAID 2012	223	Existence of clear and up-to-date scopes of practice‡*	Policy & Planning of HRH	Health Workforce	On the Shelf	MOH Policy Documents
LaFond, Brown 2003	73	HR development is part of a performance improvement (PI) strategy*	Policy & Planning of HRH	Health Workforce	Document Review/Data Mining	Facility Strategic Plans or Policy Documents
Management Sciences for Health 2006	23	Human resource activities are carried out according to the current human resource plan	Policy & Planning of HRH	Health Workforce	Document Review/Data Mining Data Collection (Surveys/Interviews)	HR Plans, Facility Records Facility Staff Interviews
LaFond, Brown 2003	71	Official (written) policy supporting institutional training capacity—e.g., training units, cadre of master trainers, venues, etc.—for health providers*	Policy & Planning of HRH	Health Workforce	On the Shelf	Training Institutions Policy Documents
Management Sciences for Health 2006	25	Personnel policy manual exists and is accessible to all staff *	Policy & Planning of HRH	Health Workforce	Document Review/Data Mining Data Collection (Surveys/Interviews)	Facility Policy Documents Facility Staff Interviews
Management Sciences for Health 2006	38	Procedures for the identification, hiring, and supervision of consultants exist*	Policy & Planning of HRH	Health Workforce	On the Shelf	HR Plans, Facility Policy Documents
LaFond, Brown 2003	73	Training plan and activities are part of the organization's strategic plans	Policy & Planning of HRH	Health Workforce	Document Review/Data Mining	Training Institutions Records/Policy Documents, Facility Strategic Plans
LaFond, Brown 2003	72	Training plan exists and is reviewed annually*	Policy & Planning of HRH	Health Workforce	Document Review/Data Mining	Training Institutions Records/Policy Documents
LaFond, Brown 2003	73	Training plans are linked with quality of care and increased service access*	Policy & Planning of HRH	Health Workforce	Document Review/Data Mining	Training Institutions Records/Policy Documents

Resource	Page	Indicator	Component of HSS Core Function	Core Function	Data Source Type(s)	Potential Data Source(s)
Grun 2006	4	Average cost of a PC bought	Communication Technologies	Information	Document Review/Data Mining	Facility Budgets or Invoice Records
Grun 2006	11	Number of computerized records	Communication Technologies	Information	On the Shelf	HIS
Grun 2006	4	Number of computerized records achieved per number of PCS/staff hours of IT training	Communication Technologies	Information	Document Review/Data Mining	Facility Records, HIS, Facility Training Plans

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Grun 2006	12	Number of computerized records per computer in the facility	Communication Technologies	Information	Document Review/Data Mining	Facility Records, HIS
Grun 2006	11	Number of computers	Communication Technologies	Information	Document Review/Data Mining	Facility Records
WHO 2010	52	Annual data on availability of tracer medicines and commodities in public and private health facilities‡	Data Availability	Information	Document Review/Data Mining Data Collection (Surveys/Interviews)	Essential Medicines Reviews Facility Assessments
Liu 2004	10	Number of patients registered	Data Availability	Information	On the Shelf	Facility Records, HIS
Management Sciences for Health 2006	45	Organizational units collect data reflecting health status, services provided, and the use of human, material, and financial resources	Data Availability	Information	Document Review/Data Mining Data Collection (Surveys/Interviews)	HIS Records or Reports, Facility Policy Documents Facility Staff Interviews
LaFond, Brown 2003	46	Knowledge about the foundations of an information management system‡*	Data Management	Information	Document Review/Data Mining Data Collection (Surveys/Interviews)	Facility HR Plans Facility Staff Interviews
USAID 2012	285	Availability at each level of a sufficient number of qualified personnel and infrastructure to compile and analyze information‡	Data Quality	Information	Document Review/Data Mining	MOH, Regional, or Facility Records
USAID 2012	292	Availability of appropriate and accurate denominators for analysis‡	Data Quality	Information	On the Shelf	Census Data, WHO EPI Documents, Vital Registration Data
LaFond, Brown 2003	46	Contribution to improvement of the management information system‡	Data Quality	Information	Data Collection (Surveys/Interviews)	Stakeholder Interviews
USAID 2012	285	Evidence of ongoing training activities related to HIS data collection and analysis‡	Data Quality	Information	Document Review/Data Mining	MOH Records, Donor Records, Facility Records
Liu 2004	45	Existence of information system allowing for monitoring program performance‡*	Data Quality	Information	Document Review/Data Mining	MOH/Facility Records or Policy Documents
LaFond, Brown 2003	46	Interest in improving the management information system‡	Data Quality	Information	Data Collection (Surveys/Interviews)	Stakeholder Interviews
Management Sciences for Health 2006	48	Percentage of data elements reported accurately in MIS reports	Data Quality	Information	On the Shelf	HIS, Facility Records
Management Sciences for Health 2006	50	Surveillance and outbreak control task checklist exists	Data Quality	Information	On the Shelf Data Collection (Surveys/Interviews)	Facility Checklists Facility Staff Interviews
LaFond, Brown 2003	46	Acceptance of survey methods as an effective tool by senior research officers and their incorporation into the work program of the agencies‡	Information Policy & Standards	Information	Data Collection (Surveys/Interviews)	Stakeholder Interviews
USAID 2012	291	Availability of clear standards and guidelines for: 1) data collection, 2) reporting procedures methods, and 3) data analysis to be performed‡*	Information Policy & Standards	Information	On the Shelf	MOH, Regional, or Facility Policy Documents

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USAID 2012	292	Data derived from different health programs/ subsectors are grouped together for reporting purposes (or even integrated in a single document), and documents widely available‡	Reporting	Information	Document Review/Data Mining	HIS
Management Sciences for Health 2006	47	MIS reports are received and filed in the appropriate organizational office	Reporting	Information	Document Review/Data Mining	HIS Records or Reports (transmitted/received at higher level administrative office)
Management Sciences for Health 2006	46	Organizational units submit required routine MIS reports on time	Reporting	Information	Document Review/Data Mining	HIS Records or Reports (stamped and dated when received)
LaFond, Brown 2003	52	Percentage of MIS reports complete and on time	Reporting	Information	Document Review/Data Mining	Facility Records, HIS
USAID 2012	190	Referral system‡	Reporting	Information	Document Review/Data Mining	MOH, Regional, or Facility Records or Policy Documents
Knowles 1997	36	Referral system functions effectively (yes/no)‡*	Reporting	Information	Document Review/Data Mining Data Collection (Surveys/Interviews)	HIS, MOH Records Referral System Assessment
USAID 2012	294	Data or results of analyses are fed back to data providers to inform them of program performance‡	Use of Data	Information	Document Review/Data Mining Data Collection (Surveys/Interviews)	Regional/Facility Records Staff Interviews
Management Sciences for Health 2006	49	Organizational units systematically use information to plan and monitor performance	Use of Data	Information	Document Review/Data Mining Data Collection (Surveys/Interviews)	Facility Records, Plans, or Policy Documents, HIS Records or Reports Facility Staff Interviews
Management Sciences for Health 2006	18	Percentage of organizational planning units using MIS data as a basis for annual input/output projections	Use of Data	Information	Document Review/Data Mining Data Collection (Surveys/Interviews)	Facility Records/Plans Facility Staff Interviews
Knowles 1997	25	Routine application of data-based problem-solving methodologies‡	Use of Data	Information	Document Review/Data Mining Data Collection (Surveys/Interviews)	MOH, Regional, or Facility Policy Documents Stakeholder Interviews
WHO 2010	53	Survey data used to assess and adjust routine reports from health facility on vaccinations, with the results published within 12 months of the preceding year	Use of Data	Information	Document Review/Data Mining Data Collection (Surveys/Interviews)	Facility Reports Facility Staff Interviews

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Resource	Page	Indicator	Component of HSS Core Function	Core Function	Data Source Type(s)	Potential Data Source(s)
Alva 2009	83	Appropriate prescription practices and rational drug use‡	Appropriate Use	Medical Products & Technology	Document Review/Data Mining Data Collection (Surveys/Interviews)	Facility Records, Standard Treatment Guidelines Site Visits (Observation)
WHO 2011b	37	Average monthly consumption during a defined period‡	Appropriate Use	Medical Products & Technology	Document Review/Data Mining	Facility Daily Use Records, Bin or Stock Cards, Drug Registers
USAID 2012	264	Existence of functioning mechanisms to improve the prescribing and dispensing practices	Appropriate Use	Medical Products & Technology	Document Review/Data Mining	Drug and Therapeutic Committees' Review Records
Hutchinson 2004	39	Percentage of key personnel trained in drugs, supplies, and equipment stock management	Appropriate Use	Medical Products & Technology	Document Review/Data Mining Data Collection (Surveys/Interviews)	Training Records Facility Staff Interviews/ Surveys
WHO 2011b	11	Percentage of patients initiating ARV treatment on regimens in line with first-line treatments in national standard treatment guidelines	Appropriate Use	Medical Products & Technology	Document Review/Data Mining	National/WHO STG, Facility Requisition Forms
WHO 2011b	11	Percentage of patients receiving ARVs and tuberculosis treatment in line with national standard treatment guidelines	Appropriate Use	Medical Products & Technology	Document Review/Data Mining	National/WHO STG, Facility Requisition Forms
WHO 2011b	13	Percentage of prescriptions for ARV (and tuberculosis medicines) that were dispensed in full at health facility level in the past 12 months	Appropriate Use	Medical Products & Technology	Data Collection (Surveys/Interviews)	Facility Survey
WHO 2011b	15	Percentage of quantities used out of total quantities available for consumption after deduction of buffer stock (opening balance plus quantities procured plus quantities donated minus buffer stock) during a defined period	Appropriate Use	Medical Products & Technology	Document Review/Data Mining	Facility Daily Use Records, Bin or Stock Cards, Drug Registers
WHO 2011b	13	Proportion of patients who take their treatment without interruption for 6, 12, or more months after they started ARV (or tuberculosis) treatment	Appropriate Use	Medical Products & Technology	Document Review/Data Mining	Facility Dispensing Forms
USAID 2012	264	SOPs (standard operating procedures) for dispensing and counseling available‡	Appropriate Use	Medical Products & Technology	Document Review/Data Mining	MOH, Regional, or Facility Records or Policy Documents

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Management Sciences for Health 2006	65	Average percent time out of stock for a set of indicator drugs	Availability of Products	Medical Products & Technology	On the Shelf	Facility Inventory Control Reports/Requisition Forms
Liu 2004	45	Drug availability and mix (e.g., the share of generic drugs)	Availability of Products	Medical Products & Technology	On the Shelf	Facility Inventory Control Reports/Requisition Forms
WHO 2011b	31	Duration of stockout	Availability of Products	Medical Products & Technology	On the Shelf	Facility Inventory Control Reports/Requisition Forms
Hutchinson 2004	39	Mean number of stockouts per month	Availability of Products	Medical Products & Technology	On the Shelf	Facility Inventory Control Reports/Requisition Forms
Alva 2009	82	Median proportion of tracer drugs that are in stock on the day of visit, and in the last three months (availability of essential medicines)	Availability of Products	Medical Products & Technology	Data Collection (Surveys/Interviews)	Facility Site Visits
Management Sciences for Health 2006	66	Percentage improvement in the availability of drugs, contraceptives, and related medical surgical commodities at the central, provincial, or district health facility level	Availability of Products	Medical Products & Technology	Document Review/Data Mining	Facility Inventory Control Reports
					Data Collection (Surveys/Interviews)	Facility Survey
WHO 2011b	30	Percentage of available items at each treatment site	Availability of Products	Medical Products & Technology	On the Shelf	Facility Inventory Control Reports/Requisition Forms
Global Fund 2004	21	Percentage of project service delivery points with sufficient drug supplies	Availability of Products	Medical Products & Technology	Document Review/Data Mining	Delivery Point Inventory Control Reports
Knowles 1997	26	Proportion of cases in which all recommended drugs are available	Availability of Products	Medical Products & Technology	Document Review/Data Mining	Facility Inventory Control Reports, Facility Records
Liu 2004	45	Quantity of equipment, equipment mix	Availability of Products	Medical Products & Technology	Data Collection (Surveys/Interviews)	Facility Assessment
WHO 2011b	39	Stock in hand (in months) of each item in stock	Availability of Products	Medical Products & Technology	On the Shelf	Facility Inventory Control Reports/Requisition Forms
Boerma 2010	17	Tracer medicines availability	Availability of Products	Medical Products & Technology	Data Collection (Surveys/Interviews)	Facility Assessment
Liu 2004	10	Reference laboratories established‡	Equipment/ Infrastructure	Medical Products & Technology	On the Shelf	MOH/Facility Records
USAID 2012	266	Existence of a system to recover the cost of pharmaceuticals dispensed in MOH facilities‡	Financing Pharmaceuticals	Medical Products & Technology	Document Review/Data Mining	MOH/Facility Policy Documents
Boerma 2010	17	Median price ratio for tracer medicines	Financing Pharmaceuticals	Medical Products & Technology	Data Collection (Surveys/Interviews)	Facility Assessments

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Management Sciences for Health 2006	68	Percentage of average international price paid for last regular procurement of index drugs, commodities, and supplies	Financing Pharmaceuticals	Medical Products & Technology	Document Review/Data Mining Data Collection (Surveys/Interviews)	Facility Procurement Records or Policy Documents Facility Staff Interviews
Global Fund 2004	21	Unit cost(s) of project drug(s) and commodities	Financing Pharmaceuticals	Medical Products & Technology	On the Shelf	Facility Procurement Records or Order Forms and Receipts
WHO 2011b	8	Percentage of medicine items received (procured plus donated) or planned to be received that are in the national standard treatment guidelines	Procurement	Medical Products & Technology	Document Review/Data Mining	Facility Procurement Records or Order Forms and Receipts
WHO 2011b	19	Percentage of orders delivered in full and on time (as stated in the procurement agreement) per supplier in a defined period‡	Procurement	Medical Products & Technology	Document Review/Data Mining	Facility Order Forms and Receipts, Port Clearance Forms
WHO 2011b	14	Proportion of quantities of products actually received (procured plus donated) during a defined period out of total quantities planned for the same period‡	Procurement	Medical Products & Technology	Document Review/Data Mining	MOH/Regional Records
Management Sciences for Health 2006	70	Inventory records are accurate and up-to-date	Storage of Inventory	Medical Products & Technology	Document Review/Data Mining Data Collection (Surveys/Interviews)	Facility Inventory Control Reports Facility Site Visits
WHO 2011b	25	Percentage of products for which the physical counts and inventory records (stock cards or computerized data match)	Storage of Inventory	Medical Products & Technology	Data Collection (Surveys/Interviews)	Supervisory Reports, Facility Survey, Site Visits
WHO 2011b	25	Percentage of quantities of each product lost per total quantities available for use (opening stock plus quantities procured plus total quantities donated) in a defined period‡	Storage of Inventory	Medical Products & Technology	Document Review/Data Mining	Facility Records or Reports
USAID 2012	261	Value of inventory loss over 12 months‡	Storage of Inventory	Medical Products & Technology	Document Review/Data Mining	MOH, Regional, or Facility Records
WHO 2011b	20	Average number of days between arrival at port and date of clearance from port‡	Supply Chain	Medical Products & Technology	Document Review/Data Mining	Facility Order Forms and Receipts, Port Clearance Forms
Global Fund 2004	10	Distribution node selected‡	Supply Chain	Medical Products & Technology	Document Review/Data Mining	MOH, Regional, or Facility Records

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USAID 2012	262	Existence of refrigeration units with functional temperature controls at each level of distribution system‡	Supply Chain	Medical Products & Technology	Document Review/Data Mining	MOH, Regional, or Facility Records
LaFond, Brown 2003	52	Number of commodity tracking reports‡	Supply Chain	Medical Products & Technology	On the Shelf	MOH, Regional, or Facility Records
Global Fund 2004	11	Number of drugs shipped/ordered	Supply Chain	Medical Products & Technology	On the Shelf	Facility Order Forms and Receipts
Global Fund 2004	21	Number of project services deliverers trained in procurement and supply management*	Supply Chain	Medical Products & Technology	Document Review/Data Mining	Facility/Training Institutions Records
USAID 2012	261	Percentage of deliveries or pick-ups according to plan‡	Supply Chain	Medical Products & Technology	Document Review/Data Mining	Facility Order Forms and Receipts, Facility Procurement Reports
Global Fund 2004	10	Percentage of drug distribution nodes reporting on stock status (repletion, shortage, consumption, quality, losses) on a monthly basis	Supply Chain	Medical Products & Technology	Document Review/Data Mining	Facility Records or Reports
Global Fund 2004	10	Percentage of drug distribution nodes/facilities reporting no drug shortage	Supply Chain	Medical Products & Technology	Document Review/Data Mining	Facility Records or Reports, Facility Inventory Control Records
WHO 2011b	19	Percentage of orders to be cleared from port that were cleared before the deadline‡	Supply Chain	Medical Products & Technology	Document Review/Data Mining	Facility Order Forms and Receipts, Port Clearance Forms
Management Sciences for Health 2006	64	Percentage of unexpired index drugs/commodities available at service delivery points	Supply Chain	Medical Products & Technology	Document Review/Data Mining	Facility Survey, Facility Inventory Control Reports

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‡ Indicators are also applicable at a higher level of the health system.

Resource	Page	Indicator	Component of HSS Core Function	Core Function	Data Source Type(s)	Potential Data Source(s)
LaFond, Brown 2003	60	Amount of budgetary resources by source over time	Budgeting	Financing	Document Review/Data Mining	Facility Budgets
Management Sciences for Health 2006	55	Budget is linked to the annual operational plan for the current year	Budgeting	Financing	Document Review/Data Mining	Facility Budgets or Operational Plans
Hutchinson 2004	37	Existence of bottom-up or top-down budget planning‡	Budgeting	Financing	Document Review/Data Mining Data Collection (Surveys/Interviews)	MOH/MOF/Facility Budgets, Policy Documents, or Records Stakeholder Interviews
Management Sciences for Health 2006	59	Organization prepares budgets using Activity Based Costing (ABC)	Budgeting	Financing	Document Review/Data Mining	Facility Monthly Financial Reports
Global Fund 2004	21	Percentage of project budget spent on health infrastructure	Budgeting	Financing	Document Review/Data Mining	Facility Budgets
Hutchinson 2004	36	Proportion of local budget in in-kind transfers (drugs, supplies)‡	Budgeting	Financing	Document Review/Data Mining	Regional/Facility Budgets or Records
Hutchinson 2004	41	Average cost per outpatient visit	Cost-Effectiveness	Financing	Document Review/Data Mining Data Collection (Surveys/Interviews)	Facility Records, HIS Client Exit Interviews
Hutchinson 2004	41	Average costs of providing primary health care services, basic curative care, secondary and tertiary care	Cost-Effectiveness	Financing	Document Review/Data Mining	Facility Records, HRIS
Liu 2004	50	Changes in costs holding health outcomes constant‡	Cost-Effectiveness	Financing	Document Review/Data Mining	MOH, Regional, or Facility Budget/Expenditure Reports, MOH/Facility Records
Liu 2004	50	Cost mix (cost for service provision, transaction costs, loss indirect cost, costs for patients' transportation)	Cost-Effectiveness	Financing	Document Review/Data Mining	Facility Records
Liu 2004	49	Cost of contracted services per beneficiary‡	Cost-Effectiveness	Financing	Document Review/Data Mining	Facility Records

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LaFond, Brown 2003	53	Cost of one month's supply of contraceptives as a percent of monthly wages‡	Cost-Effectiveness	Financing	Document Review/Data Mining Data Collection (Surveys/Interviews)	Facility Records Household Surveys
Liu 2004	12	Cost per admission‡	Cost-Effectiveness	Financing	Document Review/Data Mining	Facility Records
Liu 2004	50	Cost per ARI treatment episode‡	Cost-Effectiveness	Financing	Document Review/Data Mining	Facility Records
Liu 2004	14	Cost per case‡	Cost-Effectiveness	Financing	Document Review/Data Mining	Facility Records
Liu 2004	50	Cost per completed DOTS treatment‡	Cost-Effectiveness	Financing	Document Review/Data Mining	Facility Records
Liu 2004	50	Cost per diarrhea treatment episode‡	Cost-Effectiveness	Financing	Document Review/Data Mining	Facility Records
Liu 2004	50	Cost per fully immunized child‡	Cost-Effectiveness	Financing	Document Review/Data Mining	Facility Records
Liu 2004	50	Cost per hospital day‡	Cost-Effectiveness	Financing	Document Review/Data Mining	Facility Records
Liu 2004	50	Cost per hospital discharge‡	Cost-Effectiveness	Financing	Document Review/Data Mining	Facility Records
Liu 2004	50	Cost per outpatient visit‡	Cost-Effectiveness	Financing	Document Review/Data Mining	Facility Records
Liu 2004	49	Cost per pap smear test‡	Cost-Effectiveness	Financing	Document Review/Data Mining	Facility Records
Liu 2004	13	Cost/successfully treated patient‡	Cost-Effectiveness	Financing	Document Review/Data Mining	Facility Records
Liu 2004	13	Patient cost	Cost-Effectiveness	Financing	Document Review/Data Mining	Facility Records
Liu 2004	47	Percentage of costs for contracted services paid by the users at the point of service	Cost-Effectiveness	Financing	Document Review/Data Mining	Facility Records
Knowles 1997	31	Ratio of outpatient visits to personnel costs (i.e., unit personnel costs) ‡	Cost-Effectiveness	Financing	Document Review/Data Mining	Facility Records or Budgets, HRIS
Liu 2004	45	Expenditure mix by type of physical input (labor, drugs, office consumables, other supplies, new capital investment, and capital maintenance, etc.)	Expenditure	Financing	Document Review/Data Mining	Facility Expenditure Reports
USAID 2012	168	Allocation of user fee revenues	Financial Policies & Resources	Financing	Document Review/Data Mining	Facility Budgets or Records
Management Sciences for Health 2006	93	Business plan exists and accurately projects revenue	Financial Policies & Resources	Financing	Document Review/Data Mining Data Collection (Surveys/Interviews)	Facility Budgets or Records, Facility Proposals, Facility Staff Interviews
Management Sciences for Health 2006	96	Indicators exist and are defined for monitoring the market, competition, and sales value	Financial Policies & Resources	Financing	Document Review/Data Mining Data Collection (Surveys/Interviews)	Facility Records Facility Staff Interviews

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Management Sciences for Health 2006	57	Information gained from the financial management system is used to make management decisions*	Financial Policies & Resources	Financing	Document Review/Data Mining Data Collection (Surveys/Interviews)	Facility Budgets or Operational Plans Facility Staff Interviews
Management Sciences for Health 2006	95	Organization has a manual for institutional marketing	Financial Policies & Resources	Financing	On the Shelf	Facility Manual for Institutional Marketing
Knowles 1997	41	Number of months of foreign technical assistance funded by donors‡	Funding Sources	Financing	Document Review/Data Mining	Partnership Contracts
Management Sciences for Health 2006	100	Organization has submitted at least one proposal for external funding within the last 12 months	Funding Sources	Financing	Document Review/Data Mining	Facility Records
Management Sciences for Health 2006	97	Organization uses diversified funding sources to support its programs	Funding Sources	Financing	Document Review/Data Mining	Facility Income Statements, Revenue Reports, Audit Reports, or Records
Management Sciences for Health 2006	98	Percentage of annual revenues generated from diverse sources	Funding Sources	Financing	Document Review/Data Mining	Facility Income Statements, Revenue Reports, Audit Reports, or Records
LaFond, Brown 2003	52	Percentage of dispensary budget supported with community-based funding	Funding Sources	Financing	Document Review/Data Mining	Facility Budgets
Hutchinson 2004	36	Percentage of local revenue from categorical grants, matching/equalization grants, block grants, general revenue, and tax revenue‡	Funding Sources	Financing	Document Review/Data Mining	Regional/Facility Budgets or Records
Management Sciences for Health 2006	99	Percentage of the annual operating budget that is partly covered by income generated through service delivery	Funding Sources	Financing	Document Review/Data Mining	Facility Financial Statements
LaFond, Brown 2003	46	Proportion of the number of projects that require contributions from two or more departments	Funding Sources	Financing	Document Review/Data Mining	Facility Budget
Alva 2009	88	Sustainability of funds, pace of disbursement, and verticality of program indicators	Funding Sources	Financing	Document Review/Data Mining	Facility Budgets or Records
Management Sciences for Health 2006	54	Accounting system generates regular reports tracking expenditures against the budget and noting variances*	Governance of Financing	Financing	Document Review/Data Mining	Facility Financial Statements/Reports, Facility Staff Interviews
Liu 2004	43	Capacity of purchaser*	Governance of Financing	Financing	Document Review/Data Mining Data Collection (Surveys/Interviews)	MOH Records Facility Assessments

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Hutchinson 2004	37	Existence of expenditure management programs, double-entry bookkeeping	Governance of Financing	Financing	Document Review/Data Mining	Facility Records
Hutchinson 2004	36	Existence of financial management systems, systems of accountancy, and regular auditing‡*	Governance of Financing	Financing	Document Review/Data Mining	MOH/Facility Records or Policy Documents
Management Sciences for Health 2006	56	Financial management system produces accurate, timely information on expenditures	Governance of Financing	Financing	Document Review/Data Mining	Facility Budgets, Financial Reports, Income Statements, or Balance Sheets
Management Sciences for Health 2006	60	Organization prepares monthly financial reports using Activity Based Costing (ABC)	Governance of Financing	Financing	Document Review/Data Mining	Facility Monthly Financial Reports
LaFond, Brown 2003	52	Regular auditing of system wide accounts by independent company*	Governance of Financing	Financing	Document Review/Data Mining	Facility Policy Documents or Records
Liu 2004	43	Type of purchaser	Governance of Financing	Financing	On the Shelf	MOH Records
Liu 2004	47	Percentage of inpatients that pay at the point of service‡	Payment Mechanisms	Financing	On the Shelf Document Review/Data Mining	DHS (Out-of-Pocket Health Expenditure Module) Facility Records
Liu 2004	47	Percentage of medication costs that has to be paid by patients at the point of service	Payment Mechanisms	Financing	Document Review/Data Mining	Facility Records
Liu 2004	47	Percentage of outpatients that have to pay at the point of service	Payment Mechanisms	Financing	Document Review/Data Mining	Facility Records
USAID 2012	192	User fee exemptions and waivers‡	Payment Mechanisms	Financing	Document Review/Data Mining	MOH, Regional, or Facility Policy Documents

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Resource	Page	Indicator	Component of HSS Core Function	Core Function	Data Source Type(s)	Potential Data Source(s)
Liu 2004	45	Delayed payment*	Control of Corruption & Level of Trust	Governance & Leadership	Document Review/Data Mining	Facility Records
Management Sciences for Health 2006	15	Annual operational plan exists for the current year	Directives, Oversight, Resources	Governance & Leadership	Document Review/Data Mining	Facility Operational Plans
PEPFAR 2011	17	New/updated strategic plans approved‡	Directives, Oversight, Resources	Governance & Leadership	Document Review/Data Mining	MOH, Regional, or Facility Policy Documents
Management Sciences for Health 2006	94	Organization has a contingency plan in anticipation of external shocks	Directives, Oversight, Resources	Governance & Leadership	Document Review/Data Mining	Facility Staff Interviews, Facility Contingency/Emergency Plans
Management Sciences for Health 2006	31	Written guidelines for the performance planning and review processes exist	Directives, Oversight, Resources	Governance & Leadership	Document Review/Data Mining	Facility Policy Documents, Facility Employee Manual
PEPFAR 2011	17	Agreed-upon M&E plan for activities‡	Effectiveness	Governance & Leadership	On the Shelf	MOH, Regional, or Facility Policy Documents or Reports
Management Sciences for Health 2006	16	Annual operational plan is used to monitor activities and outputs	Effectiveness	Governance & Leadership	Document Review/Data Mining Data Collection (Surveys/Interviews)	Facility Operational Plans/Reports Facility Staff Interviews
Management Sciences for Health 2006	17	Evaluation plan exists that is aligned with the goals of the annual operational plan	Effectiveness	Governance & Leadership	Document Review/Data Mining Data Collection (Surveys/Interviews)	Facility Operational Plans/Reports Facility Staff Interviews
PEPFAR 2011	17	Evidence of impact of new/updated management systems on performance‡	Effectiveness	Governance & Leadership	Document Review/Data Mining Data Collection (Surveys/Interviews)	MOH/Facility Records MOH/Facility Staff Interviews
Liu 2004	45	Existence and comprehensiveness of indicators for monitoring program performance‡	Effectiveness	Governance & Leadership	Document Review/Data Mining	M&E Plan, MOH/Facility Records
Liu 2004	45	Existence of performance targets against which M&E is performed‡	Effectiveness	Governance & Leadership	On the Shelf	M&E Plan, MOH/Facility Records

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Liu 2004	45	Frequency of M&E observation‡	Effectiveness	Governance & Leadership	Document Review/Data Mining	M&E Plan, MOH/Facility Records
Liu 2004	45	Internal vs. external evaluation‡	Effectiveness	Governance & Leadership	Document Review/Data Mining	M&E Plan, MOH/Facility Records
Liu 2004	46	Linkages between the results of performance monitoring and reimbursement‡	Effectiveness	Governance & Leadership	Document Review/Data Mining	M&E Plan, MOH/Facility Records
PEPFAR 2011	17	Number of organizational systems/tools/processes improved: technical, managerial, M&E‡	Effectiveness	Governance & Leadership	Document Review/Data Mining	Facility Records
Global Fund 2004	21	Number of project service deliverers trained in M&E	Effectiveness	Governance & Leadership	Document Review/Data Mining Data Collection (Surveys/Interviews)	Training Institutions/ Facility Records Facility Staff Surveys
Management Sciences for Health 2006	71	Organization has developed performance monitoring plans with clear targets and process and impact indicators for each of the technical areas	Effectiveness	Governance & Leadership	On the Shelf	Performance Monitoring Plan, M&E Plan
Management Sciences for Health 2006	104	Organization has signed at least one partnership agreement during the past year, in accordance with its organizational objectives	Effectiveness	Governance & Leadership	Document Review/Data Mining Data Collection (Surveys/Interviews)	Facility Records or Contracts Facility Staff Interviews
Management Sciences for Health 2006	72	Organization regularly collects monitoring data from all grantees	Effectiveness	Governance & Leadership	Document Review/Data Mining	M&E Plan, Facility Records
Management Sciences for Health 2006	19	Percentage of annual objectives achieved by the organization	Effectiveness	Governance & Leadership	Document Review/Data Mining Data Collection (Surveys/Interviews)	Facility Strategic Plan or Reports Facility Assessments
Global Fund 2004	21	Percentage of overall project budget spent on M&E*	Effectiveness	Governance & Leadership	Document Review/Data Mining	Facility Budget, M&E Plan
Management Sciences for Health 2006	14	Strategic plan has a performance monitoring plan with clear targets and indicators	Effectiveness	Governance & Leadership	Document Review/Data Mining Data Collection (Surveys/Interviews)	Facility Strategic Plans Facility Staff Interviews

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LaFond, Brown 2003	52	Coordination with other organizations evident through internal reporting mechanisms	Information, Reporting, and Lobbying	Governance & Leadership	Document Review/Data Mining	Facility Reports, Partnership Contracts
USAID 2012	128	Information about the quality and cost of health services is publicly available to help clients select their health providers or health facilities‡	Information, Reporting, and Lobbying	Governance & Leadership	Data Collection (Surveys/Interviews)	Client Exit Interviews, Household Surveys
USAID 2012	128	Information on allocation and use of resources and results is available for review by the public and concerned stakeholders‡	Information, Reporting, and Lobbying	Governance & Leadership	Data Collection (Surveys/Interviews)	Stakeholder Interviews
Management Sciences for Health 2006	73	Organization regularly prepares and disseminates progress reports	Information, Reporting, and Lobbying	Governance & Leadership	Document Review/Data Mining	M&E Plan, Facility Records
PEPFAR 2011	17	Assessed improvement in national/local partners technical and management capacity in targeted areas‡	Leadership & Management	Governance & Leadership	Data Collection (Surveys/Interviews)	Facility Staff Interviews
LaFond, Brown 2003	52	Donor coordination committee meets every 6 months	Leadership & Management	Governance & Leadership	Document Review/Data Mining Data Collection (Surveys/Interviews)	Facility Records Stakeholder Interviews
Hutchinson 2004	49	Existence of clearly defined process of selection of community representatives on local health boards/facility management boards‡*	Leadership & Management	Governance & Leadership	Document Review/Data Mining Data Collection (Surveys/Interviews)	Regional/Facility Policy Documents Stakeholder Interviews
USAID 2012	124	Groups represented during these health policy agenda discussions‡	Leadership & Management	Governance & Leadership	Data Collection (Surveys/Interviews)	Stakeholder Interviews
PEPFAR 2011	17	Joint accountabilities defined‡	Leadership & Management	Governance & Leadership	Document Review/Data Mining	Partnership Contract, Stakeholder Policy Documents
PEPFAR 2011	17	Joint resources applied to capacity development effort (financial, in-kind)‡*	Leadership & Management	Governance & Leadership	Document Review/Data Mining	Stakeholder Budgets
LaFond, Brown 2003	46	Knowledge about designing and managing competitive projects*	Leadership & Management	Governance & Leadership	Data Collection (Surveys/Interviews)	Facility Staff Interviews/ Surveys

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LaFond, Brown 2003	46	Knowledge of the strategic approach	Leadership & Management	Governance & Leadership	Data Collection (Surveys/Interviews)	Facility Staff Interviews/Surveys
LaFond, Brown 2003	52	Level of community cohesiveness	Leadership & Management	Governance & Leadership	Data Collection (Surveys/Interviews)	Household Surveys, Stakeholder Interviews
PEPFAR 2011	17	National/local partner assumes increasing leadership and implementation responsibilities over time‡	Leadership & Management	Governance & Leadership	Document Review/Data Mining	Partnership Contract, Stakeholder Policy Documents
LaFond, Brown 2003	52	Number & quality of jointly administered activities with partner organizations	Leadership & Management	Governance & Leadership	Document Review/Data Mining	Partnership Contract, Stakeholder Policy Documents
LaFond, Brown 2003	60	Number of joint activities with other organizations	Leadership & Management	Governance & Leadership	Document Review/Data Mining	Partnership Contract, Stakeholder Policy Documents
LaFond, Brown 2003	52	Number of multisectoral meetings held	Leadership & Management	Governance & Leadership	Document Review/Data Mining Data Collection (Surveys/Interviews)	Facility Records Stakeholder Interviews
Global Fund 2004	21	Number of networks/partnerships involved in project	Leadership & Management	Governance & Leadership	Document Review/Data Mining	Facility Records, Partnership Contracts, or Reports
PEPFAR 2011	17	Periodic internal assessment of quality of partnership (mutual respect, learning, accountability)‡	Leadership & Management	Governance & Leadership	Document Review/Data Mining	MOH, Regional, or Facility Reports
Alva 2009	94	Provider/institutional report card (e.g. human resources management, supervision)	Leadership & Management	Governance & Leadership	Data Collection (Surveys/Interviews)	Facility Assessments
LaFond, Brown 2003	46	Skills to undertake strategic planning	Leadership & Management	Governance & Leadership	Data Collection (Surveys/Interviews)	Facility Staff Interviews/Surveys
LaFond, Brown 2003	52	Team planning (frequency and quality)	Leadership & Management	Governance & Leadership	Document Review/Data Mining Data Collection (Surveys/Interviews)	Facility Records Staff Interviews
LaFond, Brown 2003	60	Types and frequency of outcomes from links with other organizations analyzed by organization type (public or private)	Leadership & Management	Governance & Leadership	Document Review/Data Mining	Partnership Contract, Stakeholder Policy Documents
LaFond, Brown 2003	73	Evidence of public-private collaboration‡	Organization of Services	Governance & Leadership	Document Review/Data Mining	Partnership Contracts, Stakeholder Policy Documents
PEPFAR 2011	17	Leadership role of national/local partners defined‡	Organization of Services	Governance & Leadership	Document Review/Data Mining	Partnership Contracts, Stakeholder Policy Documents

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Liu 2004	44	Type of contracted services*	Organization of Services	Governance & Leadership	Document Review/Data Mining	Partnership Contracts, Stakeholder Policy Documents
Management Sciences for Health 2006	20	Availability of logical and explicit organizational structure	Organization/Political Stability	Governance & Leadership	Document Review/Data Mining Data Collection (Surveys/Interviews)	Facility Organizational Chart/Documents Facility Staff Interviews
Management Sciences for Health 2006	8	Clear mission statement exists	Organization/Political Stability	Governance & Leadership	On the Shelf	Facility Policy Documents or Records
Management Sciences for Health 2006	10	Clear statement of values exists	Organization/Political Stability	Governance & Leadership	On the Shelf	Facility Policy Documents or Records
Global Fund 2004	10	Coordination mechanism in place for technical and operational issues	Organization/Political Stability	Governance & Leadership	Document Review/Data Mining	Facility Operational Plans or Records
LaFond, Brown 2003	52	Individual work plans are prepared for all staff	Organization/Political Stability	Governance & Leadership	Document Review/Data Mining Data Collection (Surveys/Interviews)	Facility Records Facility Staff Interviews
Liu 2004	45	Level of conflict‡	Organization/Political Stability	Governance & Leadership	Data Collection (Surveys/Interviews)	Conflict Assessment (e.g. Speed Leas' Level of Conflict)
Management Sciences for Health 2006	9	Mission statement is understood and applied by staff, partners, and client organizations	Organization/Political Stability	Governance & Leadership	Document Review/Data Mining	Facility Policy Documents or Records
LaFond, Brown 2003	46	Motivation to implement the strategic approach	Organization/Political Stability	Governance & Leadership	Data Collection (Surveys/Interviews)	Facility Staff Interviews
LaFond, Brown 2003	46	Motivation to undertake strategic planning	Organization/Political Stability	Governance & Leadership	Data Collection (Surveys/Interviews)	Facility Staff Interviews
Management Sciences for Health 2006	103	Organization's strategic plan includes partnership objectives and outlines steps needed for their achievement	Organization/Political Stability	Governance & Leadership	Document Review/Data Mining Data Collection (Surveys/Interviews)	Facility Organizational Documents/Plans Facility Staff Interviews
Management Sciences for Health 2006	24	Organizational chart exists, is current, and has been disseminated to staff	Organization/Political Stability	Governance & Leadership	Document Review/Data Mining Data Collection (Surveys/Interviews)	Facility Organizational Chart Facility Staff Interviews

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LaFond, Brown 2003	52	Organizational culture that values and rewards performance	Organization/ Political Stability	Governance & Leadership	Data Collection (Surveys/Interviews)	Facility Staff Interviews
Management Sciences for Health 2006	11	Statement of values is understood and applied by staff, partners, and client organizations	Organization/ Political Stability	Governance & Leadership	Data Collection (Surveys/Interviews)	Facility Staff Interviews
Management Sciences for Health 2006	12	Well-aligned strategic plan exists and is disseminated	Organization/ Political Stability	Governance & Leadership	Document Review/Data Mining Data Collection (Surveys/Interviews)	Facility Policy Documents, Plans, or Records Facility Staff Interviews
Management Sciences for Health 2006	85	Work groups experience their climate as positive	Organization/ Political Stability	Governance & Leadership	Data Collection (Surveys/Interviews)	Work Group Climate Assessment
Management Sciences for Health 2006	81	Work groups is committed to the organization's mission and to continuous learning, improvement and innovation	Organization/ Political Stability	Governance & Leadership	Data Collection (Surveys/Interviews)	Select Work Group Interviews or Observations, Facility Staff Interviews
Management Sciences for Health 2006	37	Communication mechanisms are used to share information across organizational units and among staff at different levels	Overall Governance	Governance & Leadership	Data Collection (Surveys/Interviews)	Facility Staff Interviews
Management Sciences for Health 2006	13	Current strategic plan was developed with broad staff participation	Overall Governance	Governance & Leadership	Document Review/Data Mining Data Collection (Surveys/Interviews)	Strategic Planning Meeting Minutes Facility Staff Interviews
Management Sciences for Health 2006	83	Deliberate process is used to identify and develop potential leaders from within the organization	Overall Governance	Governance & Leadership	Document Review/Data Mining Data Collection (Surveys/Interviews)	Facility Policy Documents Facility Stakeholder Interviews
PEPFAR 2011	17	Formal joint planning process aligned to country processes‡	Overall Governance	Governance & Leadership	Document Review/Data Mining	MOH, Regional, or Facility Policy Documents
LaFond, Brown 2003	60	Frequency of contact with higher and lower level organizations within public sector‡	Overall Governance	Governance & Leadership	Data Collection (Surveys/Interviews)	Stakeholder Interviews

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