

DATA ANALYSIS AND USE

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The Capacity Development Resource Guides highlight the key technical areas of expertise needed to effectively influence health policy design, implementation, and monitoring and evaluation. Each guide identifies the specific skills, knowledge, and capacities that individuals and organizations should possess in the area. The standardized indicators listed for each competency and capability map to the accompanying Capacity Indicators Catalog, which helps to generate a tailored tool for assessing and scoring an organization's capacity level. Each guide also includes a list of useful resources for designing and delivering capacity development assistance.

ANALYZING AND USING DATA TO INFORM POLICIES AND PROGRAMS

DEFINITION

Data analysis and use can help policy and governance stakeholders make strategic, informed decisions related to the identification and prioritization of health issues and to policy and program development, implementation, and monitoring and evaluation (M&E). The broad topic of data analysis and use includes a series of linked but discrete actions, including the assessment of data needs, collection and analysis of data, synthesis and interpretation of data, and translation and targeted communication of data to decisionmakers.

While some individuals and organizations maintain involvement throughout each step—from data collection to data use—more often, these functions and competencies are separated within an organization and performed by professionals with different skill sets. Data producers design and implement research and information systems and, often in partnership with communication experts, will also synthesize and communicate the data collected through these efforts. Data users employ data to answer a specific question or inform a decision in the policy or program process.

RELEVANCE TO POLICY

Data are essential to supporting effective policy and program development, implementation, and M&E. Data are analyzed throughout these processes to help stakeholders understand health issues, advocate for change, design appropriate

strategies, prioritize interventions, and develop and amend action plans. It is important that data be continuously fed back into the policy development process to ensure that decisions are being made based on the most current evidence.

Successful use of data in health policy is achieved when evidence-based information is considered and applied to the process of policy and program design, advocacy, policy dialogue, planning, resource allocation, and program review or improvement. Communication and dissemination (printing and distributing reports) of information is often necessary to facilitate data use, but it is not sufficient to ensure the information will actually be used to inform decisions or actions.

■ KEY CAPABILITIES

Individuals, institutions, and the health system must have the capacity and supporting structures to regularly gather, analyze, interpret, share, store, and use data. At the individual level, while the level of skill required depends on the person's role, all policy stakeholders benefit from the ability to analyze and interpret data and translate and distill complex data into useful evidence to support the efforts of policymakers, program managers, and advocates. Such competencies help (1) advocates understand the underlying data and promote action, (2) policymakers to lead the discourse on health issues and guide implementation, (3) planners and managers to make and implement program and service delivery decisions, and (4) stakeholders such as journalists and citizen watchdog organizations to monitor accountability. Institutions must have mechanisms to regularly produce high-quality data (e.g., on health trends, service delivery, expenditures, impact) and policies and procedures that support the synthesis and use of data and ensure the flow of information throughout the health system (Foreit et al., 2006). High-functioning systems will facilitate data access, synthesis, sharing, and use across stakeholders and engender coordination and collaboration between all actors contributing data to the system.

■ PERFORMANCE IDEAL

High capacity for data analysis and use includes being able to

- Regularly demand data as a part of the decision-making process
- Synthesize, communicate, interpret, and facilitate the use of data to support program review and planning, policy dialogue, advocacy and policy development, resource allocation, and program management, implementation, and improvement
- Collaborate and coordinate across sectors and among individuals and organizations to ensure that data are of high quality and trusted by potential data users

At the highest performance level, data analysis and use efforts respond directly to the information needs of data users and consumers and directly address stated policy and program questions.

INDIVIDUAL COMPETENCIES

KNOWLEDGE OF

Information needed by policymakers, and appropriate materials and channels to deliver the information	DAU1
How programs are implemented and the link between policy development, policy implementation, and programs	DAU5
Stages in the policy and advocacy processes at which data are most useful, and approaches to integrate and facilitate data use	DAU6
Different reliable data sources, the quality of those data, and their potential application to decisions at different levels of the health system	DAU7
Technology, tools, and models for data analysis, and the types of information that can be generated with each	DAU8
And, if applying a model	
Demography and the proximate determinants of changes in health status for the specific public health-related issue being addressed (e.g., determinants of fertility, risk of HIV transmission, malaria, or diarrheal disease)	DAU16
Data required for the model, limitations of the data, and how to obtain the data	DAU17

SKILLS TO BE ABLE TO

Interpret data at a level relevant to his/her role	DAU10
Identify potential target audiences or users of data (national level policymakers, advocates, technical specialists, citizen groups, etc.)	DAU12
Identify and prioritize upcoming decisions and questions from policymakers, program managers, and planners about policies and programs that can be informed by data	DAU13
Compile and analyze data from different sources to apply to specific questions and decisions in the policy process	DAU9
Analyze data using a variety of tools and methodologies, such as modeling, geographic information systems, cost-effectiveness analyses, and triangulation of data (at the end of this section, see a more detailed description of specific competencies required to apply models, and also see related capacity resource guides, such as <i>Policy Analysis, Health Finance</i> , etc.)	DAU11
Synthesize data into understandable and actionable narrative and graphical forms for different target audiences	DAU2
Advocate to ensure that evidence-based information is considered in the decision-making process	DAU3

SKILLS TO BE ABLE TO (CONTINUED)

Facilitate the use of information at different points in the policy process	DAU4
Engage stakeholders in the interpretation of analyses to extract the meaning of these data for programs and policies	DAU14
Facilitate discussion of the results of data analyses and application of data to the decision-making process	DAU15
And, if applying a model	
Compile data from various sources to use as inputs into the model	DAU18
Manipulate Excel spreadsheets and other quantitative software to revise model inputs and generate model outputs	DAU19
Interpret model outputs to extract meaning and key findings for different target audiences in a specific context	DAU20
Develop compelling messages and visual presentations for different audiences using the key findings generated through application of the model	DAU21

ORGANIZATIONAL CAPABILITIES**TECHNICAL ABILITY TO**

Ensure strong data quality systems are in place and functioning	DAU32
Routinely identify stakeholders and target audiences for evidence-based information and analyze their position for potential support for or opposition to the specific policy or program issue the organization is addressing	DAU25
Ensure that the appropriate data users and producers are regularly participating in the collection, analysis, and use of data through working groups, advisory meetings, data and program review, and research/program teams	DAU34
Advocate for dedicated funds for data demand and use activities	DAU23
Ensure systematic communication of data analysis findings through a variety of communication channels (e.g., media) (also see the <i>Policy Dialogue</i> resource guide)	DAU27
Facilitate the use of information at different points in the policy process	DAU24
Promote demand for data among stakeholders by brokering access to data and information for stakeholders that do not have access	DAU39

RELATIONAL ABILITY TO

Promote demand for data among stakeholders by demonstrating the utility and effectiveness of using data/evidence to inform advocacy work and decision making in the policy process	DAU22
Maintain constructive links with various stakeholders (communities, decisionmakers, civil society organizations) from different sectors (health, labor, economic, youth and sport, human rights, gender, women, military, education)	DAU40
Promote demand for data by building the capacity of others to access and analyze data	DAU41
Help organizations identify their data needs	DAU38
Increase demand for data among stakeholders by providing easily understandable, available, accessible, and useful data	DAU26

ORGANIZATIONAL OPERATIONS AND MANAGEMENT TO SUPPORT

Designation of human resources specifically for data collection and analysis (e.g., establishing data or strengthening statistical units inside ministries or programs and including relevant responsibilities in job descriptions)	DAU28
Dedicated resources (staff, time, money) to support data analysis and use	DAU29
Systems to collect, analyze, and synthesize data	DAU30
Institutionalized and high-functioning data analysis and use procedures, policies, and mechanisms	DAU31, DAU32
<ul style="list-style-type: none"> ■ Organizational procedures for producing, managing, and sharing and reviewing data, including a robust feedback mechanism 	DAU33
<ul style="list-style-type: none"> ■ Engagement of data users and producers in research, advocacy, planning, data analysis and use, policy monitoring, and data and program reviews 	DAU34
<ul style="list-style-type: none"> ■ Supportive supervision tools and approaches for strengthening the use of data within an organization and its projects 	DAU35
<ul style="list-style-type: none"> ■ Capacity-building/training opportunities that involve both data users and data producers in data analysis and use 	DAU36
Routine use of reliable data and information in advocacy activities, policy development, resource allocation decision making, and program management and improvement	DAU37

In the ideal, the following would exist:

- A robust and inter-operable information system that allows for streamlined collection, analysis, and communication of data, including routinely collected service statistics and surveillance data and non-routine sources of information, such as special studies and operations research
- A systematic strategic planning process that includes the development of a research agenda to define and respond to questions of interest to data users
- Opportunities and mechanisms for convening data users and producers regularly to discuss policies and programs, review relevant data, and generate demand for data to inform specific decisions
- Data and information regularly shared in appropriate formats with appropriate audiences
- National systems, guidelines, and protocols for registering new research, communicating findings, and storing, accessing, and sharing data
- Conduct training on data analysis and use and feeding data into the policy process for government institutions, civil society, marginalized groups, etc.
- Conduct training on modeling approaches
- Conduct training on communicating and advocating with data
- Facilitate workshops on the development and implementation of policy monitoring plans
- Provide experiential learning opportunities to analyze and use different sources of data to
 - Identify questions of interest and upcoming decisions in the policy and program environment
 - Identify information needs
 - Develop data analysis protocols and methodologies
 - Strengthen the organization's data demand and use infrastructure through institutionalized guidance, change management, and individual skills

**■ ILLUSTRATIVE
CAPACITY-
STRENGTHENING
ACTIVITIES**

RESOURCES

Foreit, K., S. Moreland, and A. LaFond. 2006. "Data Demand and Information Use in the Health Sector: Conceptual Framework." Chapel Hill, NC: MEASURE Evaluation. Available at: <http://www.cpc.unc.edu/measure/publications/ms-06-16a>.

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K4Health. 2013. "USAID Global Health E-Learning Center." Washington, DC: United States Agency for International Development (USAID). Relevant e-courses include Data Quality, Data Use for Program Managers, and Demographic and Health Surveys: Data Use. Available at: <http://www.globalhealthlearning.org/courses>.

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