Data Demand and Use: An Introduction to Concepts and Tools

MEASURE Evaluation

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Notes

This publication follows an interactive version of the course found in MEASURE Evaluation's online training resource, available at: http://www.cpc.unc.edu/measure/training/online-courses.

Underlined, boldfaced words in this manual denote terms defined in the Glossary of Terms (page 78).

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Data Demand and Use: An Introduction to Concepts and Tools

PURPOSE

Significant human and financial resources have been invested worldwide in the collection of population, facility, and community-based data. However, this information often is not used by key stakeholders to effectively inform policy and programmatic decision making. As a result, many health programs fail to fully link evidence to decisions and suffer from a decreased ability to respond to the priority needs of the populations they serve. Many possible factors undermine evidence-based decision making. Some relate to how information flows to decision makers, and how they make their decisions; others to the context in which information is collected and decisions are made; and yet others to the organizational infrastructure and technical capacity of those that generate and use data.

This course aims to provide the conceptual basis for data-informed decision making within an organization or program, or at the national, state, or district levels of government. Also included in the course are introductions to several tools created by MEASURE Evaluation to facilitate the use of data in decision making.

OBJECTIVES

The specific learning objective of the course is to improve the understanding of:

- the role of data in decision making
- the context of decision making
- the determinants of data use
- the importance of data sharing and feedback

TIME

This course takes approximately three hours to complete. It follows an interactive version found on the MEASURE Evaluation Web site at: https://www.cpc.unc.edu/measure/training/online-courses

AUDIENCE

This course is appropriate for health professionals, policymakers, and other key health decision makers who are in the position to use data to inform the design, implementation, monitoring, and improvement of health programs, and well as health professionals who acquire and analyze health data and prepare them for distribution to audiences of users. These include monitoring and evaluation specialists, data clerks, or researchers. Prior to taking this course, it is advised to complete the M&E Fundamentals Course available on the MEASURE Evaluation Web site at: https://www.cpc.unc.edu/measure/training/online-courses.

Introduction to Data Demand and Use

1

OBJECTIVES AND OVERVIEW

OBJECTIVES

- understand the importance of improving data-informed decision making
- understand the role of monitoring and evaluation (M&E) data in decision making

OVERVIEW

- the role of data in decision making
- challenges to using data in decision making
- the purposes of M&E
- examples of data use

WHY IMPROVE EVIDENCE-BASED DECISION MAKING?

The need for quality health care services is apparent to all of us.

There is evidence to suggest that the global HIV epidemic is stabilizing, although at an unacceptably high rate. There were an estimated 33 million people living with HIV at the close of 2008, the majority of whom either need or will soon need treatment.

Approximately 1.7 million people died from TB in 2009. Moreover, many new cases are resistant to major TB therapeutic drugs.

Each year, malaria causes nearly 1 million deaths, mostly among children under 5 years of age, and an additional 190 million to 325 million clinical cases that need to be addressed by the health system.

In much of sub-Saharan Africa, the transition from high to low total fertility rates (TFR) has stalled. In two-thirds of countries in the region, there was no meaningful change in the TFR during the interval between the two most recent Demographic and Health Surveys.

In many countries, young people—those below the age of 20—account for the largest proportion of the population. In the next few years, we will

see larger numbers of people needing health services as this cohort ages. In the face of this demand, many countries are experiencing inadequate numbers and poor distribution of qualified health workers and an inadequate human resources system to support them.

It is extremely important for governments to make the best use of their limited resources within this context of a high disease burden, a growing population, and insufficient health services . There is an urgent need to develop targeted strategies, policies, and interventions that are based on quality data.

The importance of evidence-based **decision** making is expressed by a national-level policymaker in Nigeria who participated in a data use assessment conducted by MEASURE Evaluation. The assessment involved interviews with a range of professionals at the national, regional, and facility levels.

"… without information, things are done arbitrarily and one becomes unsure of whether a policy or program will fail or succeed. If we allow our policies to be guided by empirical facts and data, there will be a noticeable change in the impact of what we do."

WHY ADDRESS DATA DEMAND AND USE?

In today's environment, many health professionals have become overwhelmed with collecting and using **data** related to services they deliver. In some contexts, data requirements from government and

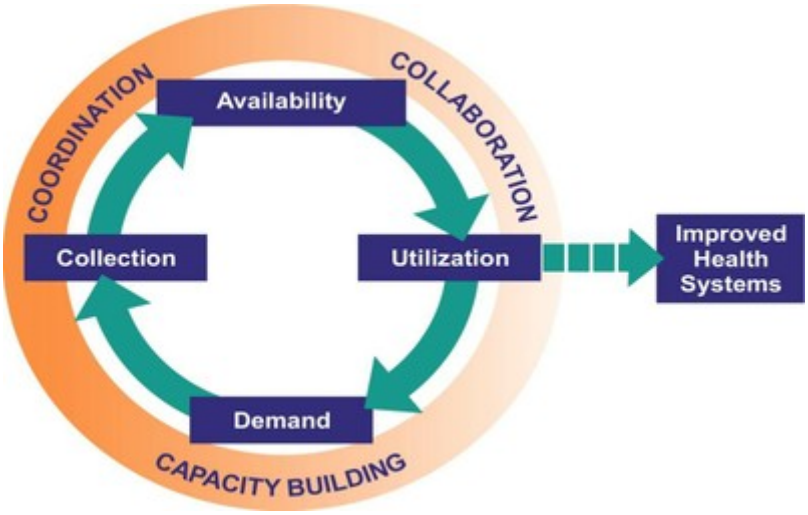
donors have grown exponentially, to the point where some providers and implementing partners have pages and pages of forms to fill in daily.

Rarely are data used to **monitor** programs and make **decisions** beyond individual patient care. This is a huge lost opportunity because data are critical to the program improvement and decision-making process.

Knowledge Recap
Select the best option from the choices listed below.

Question: Why is it important to inform decisions with data?
a) Decisions based on evidence lead to better health outcomes
b) To improve programs
c) To make the best use of limited resources
d) To develop targeted strategies, policies, and interventions
e) All of the above
f) None of the above

Answers are on page 17.



EVIDENCE-BASED DECISION-MAKING PROCESS

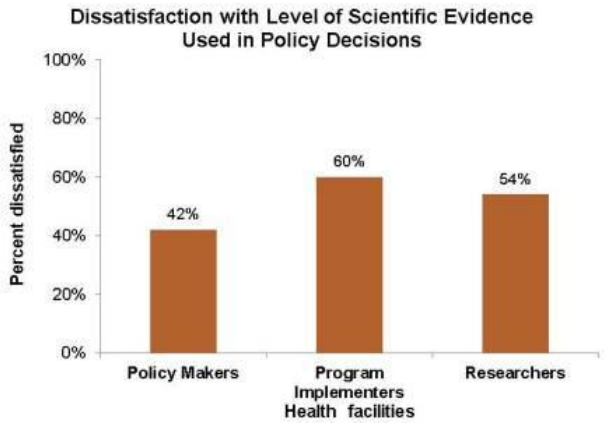
In order to understand the factors that inhibit or encourage **evidence-based decision making**, we need to review the entire process that leads to evidenced-based decisions and eventually to improved health **outcomes**. There are many other contributing factors that affect data use.

The framework presented here illustrates the entire cycle of evidence-based decision making. This approach illustrates the ideal. When there is a demand for data, the necessary resources are invested to collect that data. . Once the data are collected, they will be analyzed and synthesized into a format that makes the data available for decision making. Once available, the data can be used to inform health programs and systems. You will note that in addition to data collection and therefore availability, there are also the considerations of:

- securing the technical and human capacity to manage and analyze the data;
- ensuring that the **information** is available and in a format that is easily understood by the relevant **stakeholders**; and
- fostering the **interpretation** of the information and its ultimate use to improve policies and programs.

The cycle supports the assumption that the more positive experiences a decision maker has in using information to support a decision, the stronger the commitment will be to improving data collection systems and continuing to use the information generated. The framework will be discussed in more detail in Unit 2.

Is this ideal framework of evidence-based decision making what we are experiencing in our own work environments? Most of us would agree that it is not.



DISSATISFACTION WITH LEVEL OF SCIENTIFIC EVIDENCE USED IN POLICY DECISIONS

A 2008 international survey conducted by the Overseas Development Institute found that there is a high level of dissatisfaction among policy makers, program implementers, and researchers with the degree to which policy decisions are informed by research evidence (Jones et al., 2008)*.

Specifically, we see that 42% of policy makers, 60% intermediary organizations, and 54% of researchers stated that they were dissatisfied that their policy-making was being based on evidence. Why is this? Why are our decision makers not using data and evidence to inform their decisions?

*Jones, &., H. Jones and C. Welsh (2008) Political Science? Strengthening Science–Policy Dialogue in Developing Countries. Working Paper 294. London, UK: ODI.

Knowledge Recap
Question: Select the action below that is a step in the data use process but by itself is not data-informed decision making:

a) Using data to allocate scarce resources among several different program areas
b) Using data to determine why the fertility transition has slowed in your country
c) Using data to determine which populations are contributing high rates of HIV in your country
d) Using data to complete a report to a donor
f) None of the above

Answers are on page 17.

CHALLENGES

Even in the face of improvements in **systems** to collect quality information, there is often a disconnect between decision making and available data. Much of the data collected are not used as effectively as they could be.

There are many possible reasons for this disconnect. Some of the most common barriers that thwart a functioning cycle of evidence-based decision making include the following:

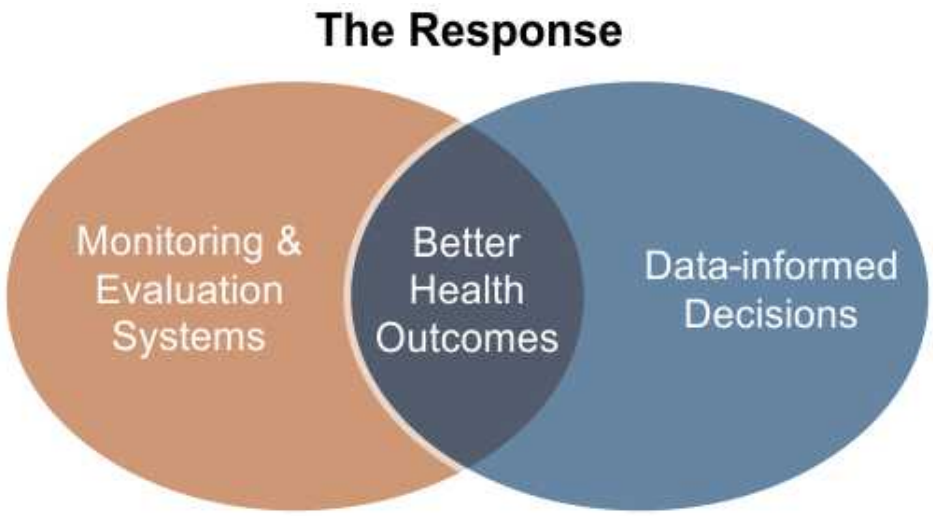
Little or no communication may take place among **data users** (policymakers, service program managers) and **data producers** (researches, M&E experts). As a result, data collection efforts don't address the key **information** needs of the data users.

There is little capacity to collect, analyze, and **interpret** data. Skills are lacking for ensuring that the data being collected are of good quality. The tools and skills needed to analyze and then apply the **analysis** to programmatic needs also are weak in many contexts.

There isn't a **culture of data use**.

The value of data in improving the provision of services is not fully recognized, and it is therefore not prioritized. As a result, data frequently are not used beyond populating a report to a donor or filling out a form.

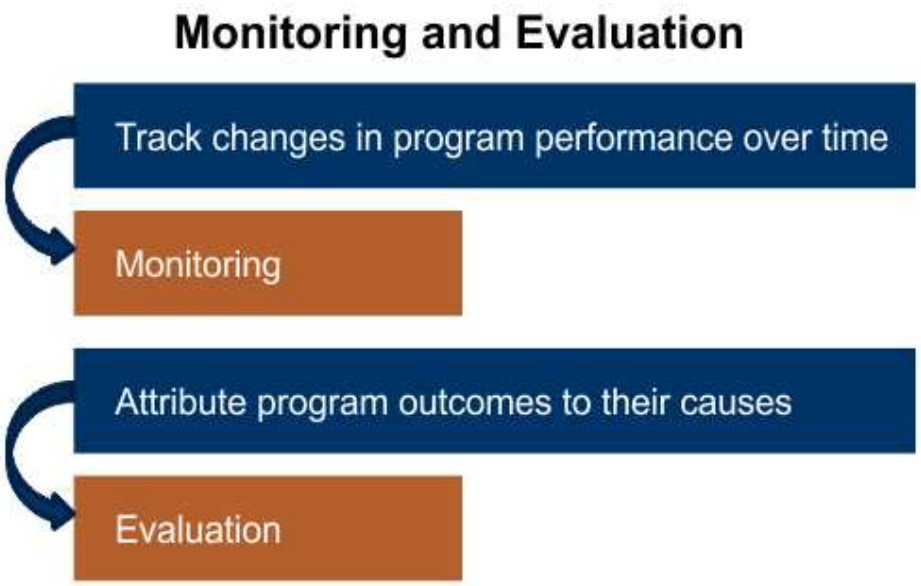
THE RESPONSE



What can we do to address these challenges and improve evidence-based decision making?

We can commit to utilizing data that result from M&E systems in the decision-making process. These data can inform the design of new programs and interventions, planning, and managing programs and facilities that, in the end, contribute to better health outcomes.

MONITORING AND EVALUATION



M&E systems underpin the evidence-based decision-making process. The data allow us to track progress in the delivery of health services and **evaluate** the **outcome** and **impact** of these services on the health status of our communities.

DATA SOURCES

There are many data sources that contribute to the M&E system. Common data sources include:

- **Routine health information systems (RHIS)** –. RHIS capture data on the services you provide in your clinical settings. During this module, most of our discussions will rely on service delivery data as a data source.
- Census – A census is a counting of people in a specific geographic area. You are probably familiar with your national census that enumerates the numbers of people in your country. This is also an important data source in the health field because it allows us to calculate the numbers of people in need of specific services.
- Surveys, evaluations, research studies – These data sources capture information on specific topics and populations. They help us answer specific questions and frequently give us information that can help us to improve our programs.
- Surveillance – This tracks the prevalence of specific diseases in a target population over time. Prevalence refers to the total number of cases of a disease in a given population at a specific

time. These data help us to estimate the burden of specific diseases.

- Management systems–There are other sources of data that we don't often consider, such as management systems data. For example, budget information can help us track our expenditures and illuminate what specific program elements cost. Human resources information can help us to ensure that our health facilities are appropriately staffed.

PURPOSES OF MONITORING AND EVALUATION

What are the purposes of monitoring and evaluation?

M&E is an essential process in providing effective and efficient services and ensuring that programs are relevant and successful. For example, it helps us to make informed decisions about appropriate staffing and the need for other resources.

M&E helps us to monitor our programs and know whether these programs are meeting their stated goals and objectives. M&E helps us to evaluate whether our programs are having their desired impact. If we want to know how a program is performing, we might assess it against **targets** that have been set for specific **indicators** by the program or funding agency or government. For instance, we might assess if a breastfeeding program is reaching its goals in providing counseling to pregnant women during antenatal care (ANC) by the **percentage** of children under six months who are exclusively breastfed.

M&E helps us to generate new knowledge about underserved populations or the need for new services around an emerging health issue. We can also discover factors that influence health outcomes, as well as other important information. The use of monitoring and evaluation data allows providers to make evidence-based decisions to design and manage health programs, which results in better health outcomes.

However, for M&E to have this desired impact, M&E data and information must be shared and used strategically by programs, service delivery organizations, policy makers, and other **stakeholders**.

Knowledge Recap

Question: The purposes of monitoring and evaluation include:

a) Track program progress
b) Guide policy makers
c) Inform decisions
d) Assess program impact
e) All of the above

Answers are on page 17.

M&E IS NOT AN ENEMY

Oftentimes people see M&E as policing or as a process meant to criticize and undermine their work. In other situations, an M&E unit is only established for the purpose of reporting.

Policy makers, program managers, and M&E specialists can be partners in progress—designing new programs, making improvements to plans and programs, policy making and, at the facility level, identifying gaps and opportunities.

Strong decision making and management rely on high-quality M&E or strategic information. Without information, it is difficult to make an effective and successful decision or manage shifts in a program.

Finally, data quality is linked to data use. As increased attention is being paid to data quality, especially at the point of data collection, the health facility level, it's important to know that data quality naturally improves as individuals and organizations understand how useful data and information can be.

We can use M&E information to…

- inform policies and plans
- raise additional resources
- strengthen programs and improve results
- ensure accountability and reporting
- improve quality of services provided
- contribute to global lessons learned

Knowledge Recap

Question: A voluntary counseling and testing (VCT) clinic uses their monthly reports to determine whether they are meeting the goal of enrolling 10 new clients every month. True or False: The monthly reports in this case are being used to inform the clinic if their program is succeeding meeting its objectives.

a) True
b) False

Answers are on page 17.

VOLUNTARY COUNSELING AND TESTING IN COTE D'IVOIRE

Now let's look at some examples of how data were used at different levels of the health system to improve programs. The Cote d'Ivoire Ministry of Health (MoH) and MEASURE Evaluation worked together to improve data collection and analysis, information availability, and information use concerning HIV/AIDS. As a result, from 2006 to 2008, the number of people tested for HIV increased by 77%, and the number of people counseled increased by 72%.

MEASURE Evaluation and the MoH began working together in 2004 to improve the HIV/AIDS RHIS. Evaluators decided to focus on building priority HIV indicators, developing HIV data collection tools, and adding HIV/AIDS information to existing RHIS data reporting forms.

Once developed, these HIV data collection tools and revised RHIS data collection forms improved data collection on HIV services at the facility level. With more effective and reliable systems in place, MEASURE Evaluation and MoH began collecting data on prevention of mother-to-child- transmission (**PMTCT**), voluntary counseling and testing (VCT), and care and treatment.

Results from the data collection effort were compiled in a 2005 national report distributed to the MoH and key partners, including the World Health Organization, the U.S. President's Emergency Plan for AIDS Relief (PEPFAR) and PEPFAR implementing partners, and The Global Fund to Fight AIDS, Tuberculosis Malaria. The report found that Cote d'Ivoire

needed major improvements in service delivery, and that VCT services were often unavailable or inadequately distributed.

In response to the report, the national HIV care and treatment program created and launched strategies to improve VCT coverage. In 2008, the MoH conducted another round of analysis, to see if these strategies had successfully improved VCT coverage. The synthesis of these data found major improvements: all 18 health regions were offering VCT. Moreover, from 2005 to 2008, the total number of people counseled per year increased from 127,044 to 218,684, and the total number of people tested per year increased from 111,147 to 197,428.

USING NNRIMS DATA TO INFORM RESOURCE ALLOCATION

Now let's look at another example. In Nigeria, MEASURE Evaluation has worked with the Nigerian government, international organizations, and other implementing partners in the development of a new routine information system for HIV/AIDS called the Nigerian National Routine Information Management System, or NNRIMS.

States and local governments have been trained in the system, and regularly prepare and review quarterly reports. In Nasarawa state in Doma local government authority (LGA), the LGA chairman noted that only 53 people in Doma LGA tested HIV positive in the first quarter of 2006. The chairman was alarmed and also concerned that testing was not yet widespread in the LGA. As a result, the chairman procured 480 HIV test kits to be distributed to four local health facilities, enabling more people to be tested for HIV in Doma.

KEY MESSAGES

Decisions based on evidence lead to better health outcomes.

We all have a role in M&E – partners in progress.

High-quality information is needed for decision making at policy, planning, and program levels.

The purpose of M&E is not just to produce more information but to inform action.

KNOWLEDGE RECAP: ANSWERS

The correct answers are as follows:

Question: Why is it important to inform decisions with data?
Correct Answer: e) All of the above**.**

Question: Select the action below that is a step in the data use process but by itself is not data-informed decision making:
Correct Answer: d – While using data for reporting is an important step in the data use process, it does not guarantee that the data will be used for decision making. Regular data and report review meetings help to ensure the data is used in decision making.

Question: The purposes of monitoring and evaluation include:
Correct Answer: e) All of the above.

Question: A voluntary counseling and testing (VCT) clinic uses their monthly reports to determine whether they are meeting the goal of enrolling 10 new clients every month. True or False: The monthly reports in this case are being used to inform the clinic if their program is succeeding meeting its objectives.
Correct Answer: a - The purpose of this M&E information (monthly clinic reports) is to determine if a program is on track in carrying out planned activities.

Determinants of Data Use

2

OBJECTIVES AND OVERVIEW

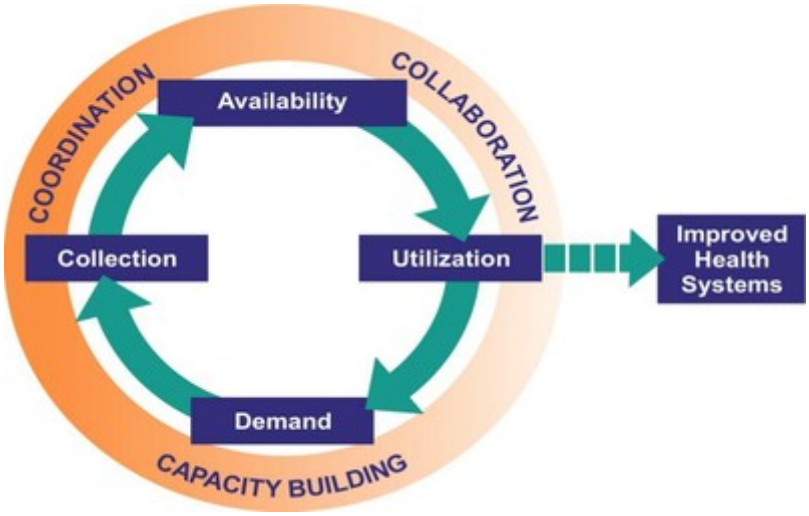
Objectives

- explain the data-use conceptual framework
- highlight the determinants of data use
- list potential barriers to data use

Overview

- the role of data in decision making
- challenges to using data in decision making
- the purposes of M&E
- examples of data use

DATA DEMAND AND USE



In the last unit, we briefly discussed the **data demand and use** conceptual framework. This framework depicts the cycle of data demand, collection, availability, and use inherent to **monitoring** and **evaluation**. The overarching principle of the framework is that **evidence-based decision making** will promote the achievement of improved health **outcomes**. This graphic presents the MEASURE Evaluation data demand and use conceptual framework as a cycle from demand to utilization (which directly affects demand); embedded in the cycle is the decision-making process.

Let's start at the bottom of the circle diagram—Data demand involves **stakeholders** actively and openly requesting quality, health-related **data** and **information**. Data demand could include managerial or policy directives to collect specific data, new or increased resource allocation for data collection and analysis (e.g., budget line items, establishing or strengthening statistical units inside ministries or programs, modifying job descriptions), and requests for special analyses.

The next box at the left side of the diagram—data collection—represents the response to the demand for data. Information is sought to inform the data gap. This could be the initiation of a new research study or the request for a special **analysis** of existing routine health information.

The next box at the top of the diagram shows the availability of the newly collected data. Here data are transformed into a format that can be easily understood by the user and disseminated to the end user. It is important that the decision maker understands the information needed to inform the **decision**.

Last, the box at the right side of the diagram—utilization—represents the use of information in the decision-making process. A decision maker may use data to inform the development of a strategic plan, make program changes, or initiate a new policy.

Knowledge Recap

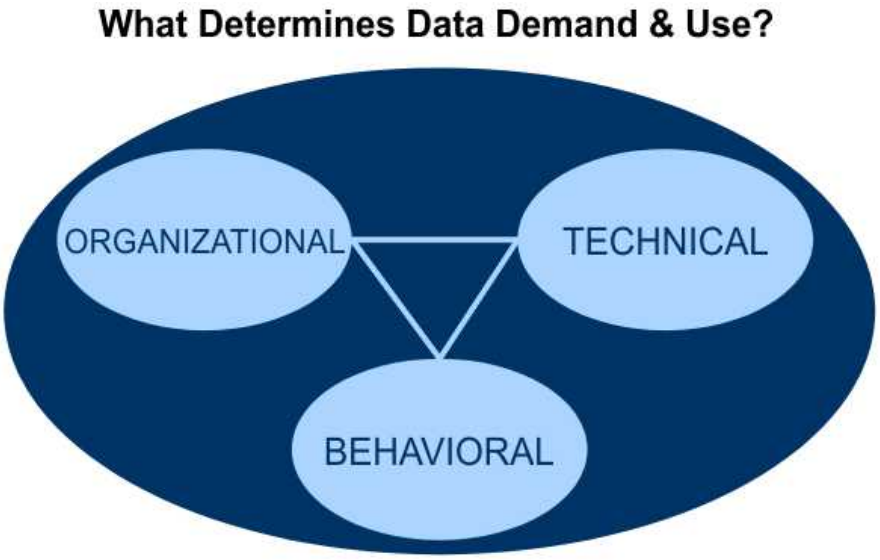
Question 1: A request for a review of past financial data in order to determine the amount of a new program budget request is an example of:

a) Data demand
b) Data collection
c) Data availability
d) Data utilization

Question 2: The findings of a countrywide behavioral health survey were published and a special meeting was held with policy makers to inform them of the findings. In addition, the data set was made available on-line with specific features that allow users to automatically generate graphs and charts for their indicators of interest. These activities represent:

a) Data demand
b) Data collection
c) Data availability
d) Data utilization

WHAT DETERMINES DATA DEMAND AND USE?



* Based on PRISM analytical framework (LaFond, Fields et al. (2005). The PRISM: An analytical framework for understanding performance of health information systems in developing countries. MEASURE Evaluation).

As we are all well aware, the data demand and use cycle does not always function as we have outlined. There are many factors that affect data use. Let's consider why this happens.

Here you see the three main determinants of data use. We define 'determinant' as a determining or **causal element** or factor directly linked to data use. The three determinants highlighted are organizational, technical, and behavioral.

- **Organizational determinants**—these determinants relate to the organizational context that supports data collection, availability, and use, such as the identified procedures and the roles and responsibilities of those that collect, analyze, disseminate, and use data.
- **Technical determinants**—refer to the technical aspects of data collection processes and tools, such as the data collection processes, methods, forms, and M&E staff skills.
- **Behavioral determinants** — refer to the behavior of individuals who produce and use data. This would cover their attitudes, values, and motivation.

All three of these areas affect data use in decision making. Let's take a more in-depth look at each of these determinants.

ORGANIZATIONAL DETERMINANTS

Organizational determinants can include such constraints as:

- inadequate human and financial resources to implement **M&E systems**;
- unclear job roles and responsibilities;
- insufficient management procedures to support M&E and data use;
- inadequacies in the flow of information in an organization; and
- infrastructure limitations, including poor telecommunications or computer infrastructure.

TECHNICAL DETERMINANTS

The determinants of data use frequently contribute to the underutilization of data. For example, let's discuss some examples of what we mean by the categories of determinants of data use.

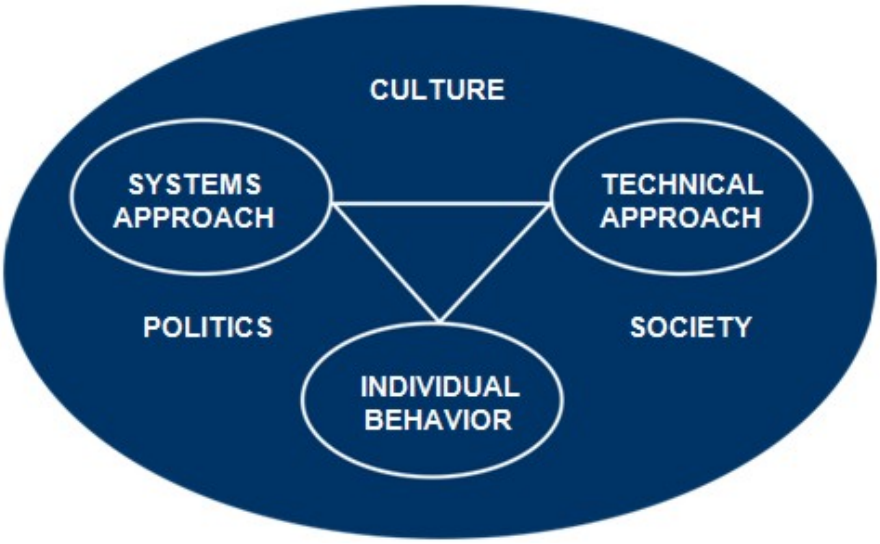
Data often are underutilized because:

- there may be a lack of technical skills, such as data **analysis** or computer literacy;
- there may be a lack of computers;
- the design of the data system may pose constraints to using the data;
- the definition of **indicators** may not be appropriate for use or may be more responsive to reporting needs than the needs of programs; or
- there may be a lack of data quality assurance protocols, which can result in data that stakeholders do not trust.

BEHAVIORAL DETERMINANTS

Data can also be underutilized because of individual behaviors. For instance, the attitude of decision makers will play a big role in determining if data and information are used. If decision makers have no interest in using data, they will make decisions based on other factors. Also, staff motivation to collect quality data, analyze the data, and use them may be low.

WHAT DETERMINES DATA DEMAND AND USE?



In addition to organizational, technical, and behavioral determinants, we also need to remember that the political, cultural, and social contexts are additional factors that affect the demand for and use of information, because decision making, sharing of information, data collection, and reporting all occur within these contexts. In addition, sometimes decisions may be made because the decision maker feels in his or her 'gut' that it is the right thing to do.

It is important to assess all of these areas when developing a strategy to improve data use. Ideally, a full assessment of a **routine health information system** would be conducted to identify strengths and weaknesses in these areas, such as the Performance of Routine Information System (**PRISM**) assessment process developed by MEASURE Evaluation. However, a more concise, rapid assessment can also be helpful.

For more information about PRISM, please see: https://www.cpc.unc.edu/measure/tools/monitoring-evaluation-systems/prism.

Knowledge Recap

Question: A lack of support for M&E within an organization is a/an _____ barrier to data and information use.

a) Individual or behavioral
b) Technical
c) Organizational
d) None of the above

Answers are on page 26.

ASSESSMENT OF DATA USE CONSTRAINTS

Let's review a rapid assessment tool that can be used to identify barriers to data use.

The Assessment of Data Use Constraints process is a tool developed by MEASURE Evaluation for the rapid assessment of constraints to data use. It is based on the PRISM framework and assists users in improving understanding of the demand for data and the constraints on data use. Specifically, it identifies existing:

- barriers and constraints on data use
- best practices in data use, so these practices can be applied elsewhere

The assessment is conducted by interviewing key informants at various levels of the health system. The assessment also can be used to examine processes within a facility or organization and incorporated into health information and organizational capacity-building assessments at the national and subnational levels.

The Assessment of Data Use Constraints interview guide is organized by the three determinants of data use discussed previously.

Technical Constraints

Technical constraints are related to the ability to generate high-quality data and analyses.	
RA8	Have you ever had an experience while making a policy or program related decision when you were concerned about the quality of the information being used?
RA9	Are there multiple sources of information or statistics for issues of importance to you, and have you experienced any problems caused by having different estimates?
RA10	I am interested in knowing about technical capacity for collecting and using information. Does your agency have the technical capacity to produce reliable information without a lot of external technical assistance?
RA11	Does your agency have the technical capacity to ensure access to and availability of reliable data?
RA12	Has there been an occasion when data quality or local technical capacity made it difficult for you to use information in making a decision?
RA13	How would you have gone about preventing this situation?

Above, you see an example from the Assessment of Data Use Constraints tool. As you can see, these questions are intended to identify technical constraints. There are additional sections of the tool with questions about individual/behavioral and organizational constraints. There are two versions of the assessment tool that accommodate the different needs of users when assessing barriers to data use. The first interviewing guide, *Version 1: National and Subnational,* aims to provide a broad view of constraints at the national and subnational levels by collecting information from decision-makers on their current use of data and on their perceptions of the constraints to data use for evidence-based decision making. The second interviewing guide is intended to be used among staff working at the health facility level. *Version 2: Facility* aims to provide an understanding of constraints to both generating and using data at lower levels of the health system, such as health facilities, therefore separate interviewing guides for **data users** (program managers, clinical staff) and **data producers** (data clerks and managers, M&E staff) have been developed. *Version 2; Facility* also provides more focus on individual and organizational constraints than *Version 1: National and Subnational*. In addition to the interviewing guides, an action plan matrix is provided to help participants with the process of identifying interventions to address the barriers and constraints that are identified in the assessment.

The Assessment of Data Use Constraints tools can be used formally where a sample of key informants is identified to respond to the questions or it can be used informally to guide a discussion around barriers to data use. In either context, the assessment users always should discuss how they intend to OVERCOME the barriers identified. Data use will not improve in your settings unless a plan is outlined to address each barrier identified. For more information about this tool, please visit: http://www.cpc.unc.edu/measure/tools/data-demand-use/data-demand-and-use-strategies-and-tools.html.

By assessing and addressing the barriers to evidence-based decision making, you will build a solid foundation for decision making. As mentioned earlier, there are multiple factors that can inhibit evidence-based decision making. By removing these barriers, you can facilitate the efficient functioning of the decision making context.

KEY MESSAGES

Determinants of data use are technical, behavioral, and organizational

Decision making occurs within political, cultural, and social contexts

The Assessment of Data Use Constraints tool can help to clarify the barriers in your organization

KNOWLEDGE RECAP ANSWERS

The correct answers are as follows:

Question: A request for a review of past financial data in order to determine the amount of a new program budget request is an example of:
Correct Answer: a) Data demand

Question: The findings of a countrywide behavioral health survey were published and a special meeting was held with policy makers to inform them of the findings. In addition, the data set was made available on-line with specific features that allow users to automatically generate graphs and charts for their indicators of interest. These activities represent:
Correct Answer: c) Data availability.

Question: A lack of support for M&E within an organization is a/an _____ barrier to data and information use.
Correct Answer: c - System/organizational determinants represent the broader context that supports data collection, availability and use. This can include organizational factors such as the clarity of roles of those who not only produce but use information, support from organizational leadership for the need, use and funding of information systems, human and financial resources, and the flow of information throughout the organization.

Key Elements of Decision Making

3

OBJECTIVES AND OVERVIEW

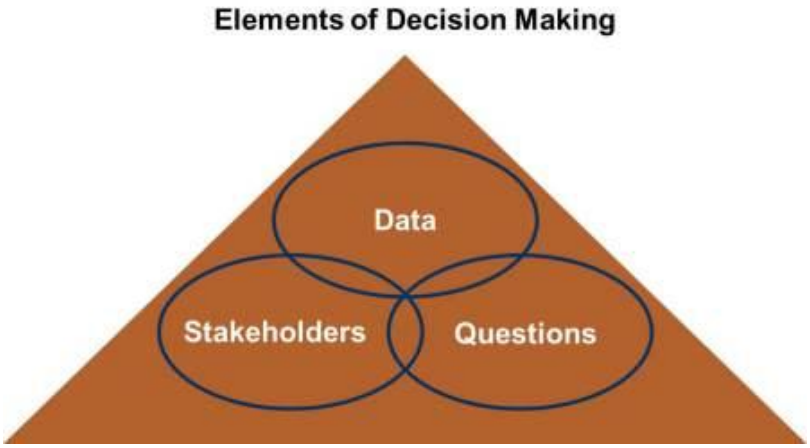
Objectives

- explain the key elements of decision making
- define the concept of stakeholders
- explain the importance of involving stakeholders throughout the data use in decision-making cycle
- introduce the Stakeholder Engagement Tool

Overview

- the role of data in decision making
- challenges to using data in decision making
- the purposes of M&E
- examples of data use
- key elements of decision making (stakeholders, questions, data)

KEY ELEMENTS OF DECISION MAKING

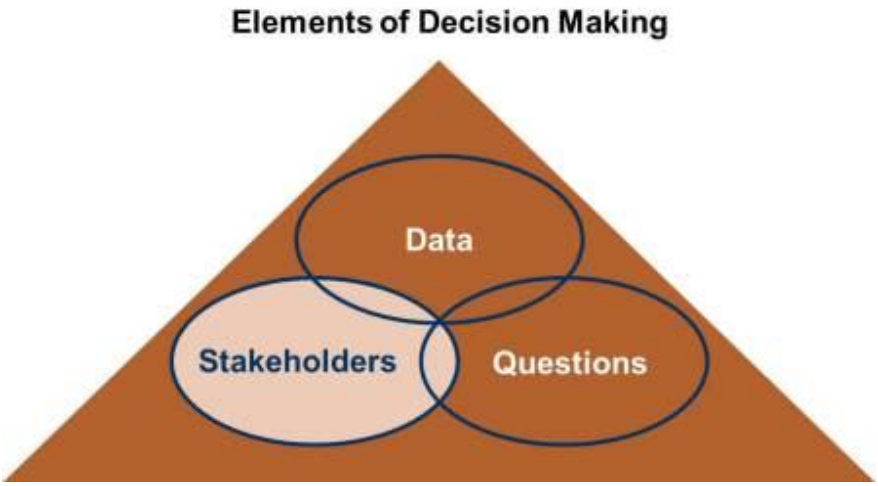


Above, you see a graphic depicting the key elements of decision making. To make a **decision**, three elements are critical:

- data
- questions
- the involvement of stakeholders

The point of this graphic is to show that ALL THREE elements are equally important. Without all of these components, you will fail to make an evidence-based decision.

ELEMENTS OF DECISION MAKING: WHAT IS A STAKEHOLDER?



Let's first discuss stakeholders' roles in the context of decision making.

A stakeholder is anyone who has a "stake" or interest in the decisions being made. We often think of government agencies, policy makers, funding agencies, and even implementers or providers as stakeholders. However, we often do not think of the beneficiaries of health programs as stakeholders, and yet they are. The people that our programs and services strive to serve make decisions about seeking services and continuing to seek care. It is vital to consider a broad variety of stakeholders when designing and implementing any program or service.

As we begin to talk about stakeholders in the data use process, it is important to think about **data users** and **data producers**. Data users are typically considered to be the consumers of health information: They manage programs, make policies and decide how resources are allocated. Data producers are the M&E professionals or the researchers. We typically think only of data users as our stakeholders but, as you can see from the list below, stakeholders include more than program managers, policy makers and data producers. Examples include:

- government agencies
- beneficiaries
- policy makers
- funding agencies
- providers/implementers
- civil society
- researchers
- M&E specialists

- nongovernmental organizations
- professional associations
- religious leaders
- journalists/media
- private sector/business

Knowledge Recap

Question: Why is it important to engage stakeholders in the decision-making processes?

a) Different stakeholders have varied perspectives
b) To build consensus
c) Different stakeholders have different information needs
d) All of the above

Answers are on page 41.

DATA PRODUCERS VS. DATA USERS

First, let's consider some fundamental differences between data producers (e.g., researchers, M&E specialists) and data users (e.g., decision makers).

- Generally speaking, data producers are educated to be objective, analytical, and detail oriented.
- Decision makers need to be responsive, action oriented, decisive.

These frequently opposing approaches contribute to the breakdown in the decision-making cycle. For example, data producers may think that decision makers:

- value "political" considerations over evidence; or
- are unprepared to measure or evaluate the consequences of their decisions.

Decision makers or data users perceive that health researchers and M&E specialists:

- lack responsiveness to health priorities;

- favor numbers and jargon over transparent communication; or
- prefer written reports to face-to-face conversation.

These differences, perceived or real, often inhibit meaningful interaction between the two groups. When data users and data producers don't work together, information doesn't reach decision makers when they need it; and information needs are not communicated to data producers as they design their data collection efforts.

IMPORTANCE OF KNOWING YOUR STAKEHOLDERS

It is important to recognize that different stakeholders will affect the evidence-based decision-making process in different ways. Different stakeholders:

- view activities from different perspectives
- have different degrees of understanding
- need / want different information
- need information at different levels of complexity
- have different intensities of interest
- have different roles in the decision-making process

RESULTS OF INVOLVING STAKEHOLDERS IN DATA USE PROCESS

By ensuring a varied group of stakeholders in the data use process, you can tailor data collection and use efforts to the specific needs of the stakeholders, thus increasing the relevance of the data-use activity to local needs. Ownership of data is built so that when evidence-based decisions are made, the necessary buy-in exists to move the decision forward. Stakeholder involvement strengthens the information cycle and highlights the value of data to program improvement.

When stakeholders understand the data they are using, it increases the relevance and ownership of the data, as well as the appropriate dissemination, which in turn increases the use of data.

STAKEHOLDER ENGAGEMENT TOOL

Now that we have discussed the importance of involving stakeholders, let's discuss how to ensure appropriate stakeholder involvement in the data-use activity.

MEASURE Evaluation has developed the *Stakeholder Engagement Tool*, which is similar in nature to tools developed by other organizations – the

Stakeholder Analysis and Engagement tool. The *Stakeholder Engagement Tool* consists of a **Stakeholder Analysis Matrix** and **a Stakeholder Engagement Plan**, which can be used to systematically and formally assess all of our stakeholders. The matrix and plan help clarify who has an interest in the activity; what that interest is; who can help the activity, and how; who can hurt it; and how this information can be leveraged to ensure success. The matrix helps identify and prioritize necessary stakeholders, while the engagement plan helps create a plan to involve the identified stakeholders.

STAKEHOLDER ANALYSIS MATRIX

Stakeholder Analysis Matrix

Name of stakeholder organization, group or individual National, regional or local	Stakeholder description Primary purpose, affiliation, funding sources	Potential role in the issue or activity Vested interest in the activity	Level of knowledge of the issue Specific areas of expertise	Level of commitment Support or oppose the activity, to what extent, and why?	Available resources Staff, money, technology, information, influence
Government sector					
Political sector					
Commercial sector					
Non-governmental sector					
Other civil society target audiences					
Government sector					
International donors					

Let's first look at the matrix. This tool helps to identify individuals and groups that are stakeholders in an M&E or data-use activity, either as contributors, influencers, or beneficiaries.

The tool provides a structured way to define the roles that stakeholders play in the activity and assess the resources they could bring to bear.

It also provides a framework for assessing the interests, knowledge, positions, alliances, resources, power, and importance of various stakeholders. Who will resist the initiative? Who will support it? What are their reasons?

The tool helps to assess which stakeholders to include in the process by determining the relative priority of stakeholders. Which stakeholders have the highest priority? Who can do the most in support of the activity?

HOW TO INVOLVE STAKEHOLDERS

Stakeholder Engagement

Stakeholder organization, group or individual	**Potential role** in the activity	**Engagement strategy** How will you engage this stakeholder in the activity?	**Follow-up strategy** Plans for feedback or continued involvement
Government sector			
Political sector			
Commercial sector			
Non-governmental sector			
Other civil society target audiences			
International donors			

Now that we've talked about who your stakeholders are, it is important to think about how to engage them in your activity. Remember to plan to engage stakeholders throughout the activity, not just at the beginning or end. On the program side at either the national or subnational levels, one can engage users and producers in many ways. Examples include opportunities at quarterly meetings, either for **interpretation** of program or **RHIS** data.

In M&E system improvement, the involvement is usually at the national level but still involves both users and producers. Often opportunities center around national **indicators** or data systems.

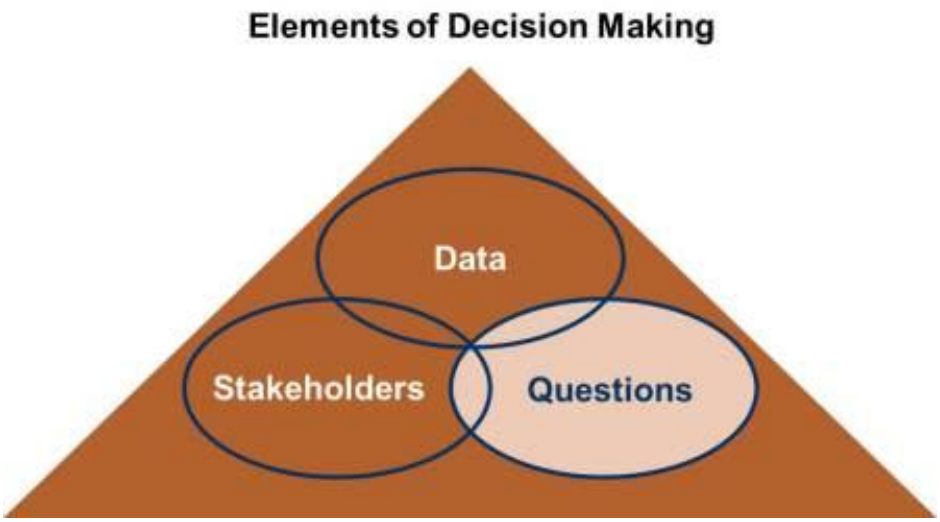
Here we've listed a few ideas, but can you think of others?

Once you analyze each of the stakeholders, it is helpful to create a stakeholder engagement plan to ensure that stakeholders are involved throughout the activity.

The first column lists the stakeholder, while the second lists the potential role of that stakeholder. The third column shows how you plan to involve the stakeholder, and the final column lists who is responsible for ensuring

involvement. For more information about the Stakeholder Engagement Tool please visit: http://www.cpc.unc.edu/measure/tools/data-demand-use/data-demand-and-use-strategies-and-tools.html.

ELEMENTS OF DECISION MAKING: DECISION/ QUESTION AREAS



Now let's return to the elements of decision making and discuss questions. Decisions in the health sector can be grouped into four general types, and each area has programmatic questions which should be answered prior to decision making. The decisions pertain to:

- program design and evaluation
- program management and improvement
- strategic planning
- advocacy and policy development

PROGRAM DESIGN AND EVALUATION

Decisions related to program design and **evaluation** could include:

- selecting key messages for prevention campaigns
- identifying and choosing new strategies to increase the **impact** of specific services
- determining if new program approaches are needed to ensure that health impact objectives are met

Corresponding questions might include the following:

- Which three preventable health issues are most common in district X?
- What does recent research say about the latest and most effective health services for the health areas addressed in clinic A?
- Are the current health programs in a community meeting the communities' health needs?

PROGRAM MANAGEMENT AND IMPROVEMENT

Examples of decisions that are relevant to program management could include:

- deciding if a program is meeting its objectives – for example, training the stated number of providers; or
- deciding what to do to increase the coverage of program services.

Corresponding questions might include the following:

- Has the program met its stated targets?
- Are the services available meeting the needs of the community, and are the programs equipped to do so in a timely manner?

STRATEGIC PLANNING

Examples of decision making in strategic planning could include:

- identifying geographic areas of highest need
- determining human resource allocation
- determining which population groups to target to get the greatest declines in a disease prevalence

Corresponding questions might include the following:

- Which district in the province has the highest incidence of HIV?
- In district x, what is the nurse to patient ratio?
- Which three sub-populations were responsible for the greatest number of new HIV cases last year?

ADVOCACY AND POLICY DEVELOPMENT

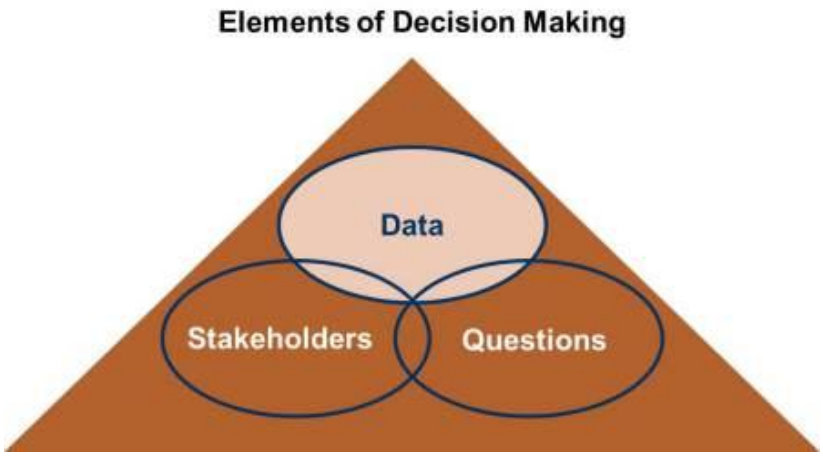
Decisions around advocacy and policy formulation could include:

- identifying focus areas or populations for new policies; or
- determining if a specific population is underserved.

Corresponding questions might include the following:

- Are there laws in place which make service provision more difficult?
- Do all sub-populations have equal access to services?

ELEMENTS OF DECISION MAKING: DATA



Now let's discuss the last element in the context of decision making – Data. As you know, there are many sources of data and information that we can use in decision making, from the national level to the facility level, and even as consumers or beneficiaries of health services. We have listed some of the more common sources. They include:

- census
- vital events data
- surveillance data
- household surveys
- RHIS
- financial and management information
- modeling, estimates, and projections
- health research

All relevant data sources should be considered when making evidence-based decisions. It is important to promote the existence of available data sources to potential users and outline the types of information contained in each source.

Knowledge Recap

Question: In the context of decision making, which of the following elements is critical for data informed decision making to occur?

a) Data
b) Questions
c) Stakeholders
d) Political affiliation
e) b & d
f) a, b & c

Answers are on page 41.

STRENGTHENING THE DECISION-MAKING PROCESS

In summary, we can strengthen the decision-making process by:

- involving new data use counterparts and stakeholders (we need to involve potential users of the data from the outset to ensure that the information we are producing can be used);
- understanding the service delivery realities on the ground so as to understand the decisions being made routinely and how they can be influenced by evidence-based information (by understanding the intended audiences and what information is important to them and their programs the information that is collected will be more useful); and
- highlighting the value of information to program improvement so that data users see the value of data and demand it, which will also help to improve the quality of data.

KEY MESSAGES

The Stakeholder Engagement Tool can help to clarify the barriers in your organization.

Every decision is made in the context of available data and stakeholders.

Critically assessing and involving stakeholders will facilitate evidence-based decision making.

CASE STUDY: TEST YOUR KNOWLEDGE

In early 2009, the National AIDS Control Commission of Rwanda (CNLS) and partners conducted several analytic reviews and exercises to form the evidence base for the development of Rwanda's National Strategic Plan 2009–2012. In support of this, a modes of transmission (MOT) HIV incidence modeling exercise was conducted in an effort to estimate the distribution of new HIV infections in Rwanda across different HIV risk groups. According to the model, three groups emerged as the primary contributors to HIV incidence: HIV sero-discordant couples, female sex workers, and men who have sex with men (MSM). Detailed demographic, epidemiologic, and behavioral data were required for each potential risk group in the country to inform the model. As local data were not available for all risk groups, the exercise used regional data from sub-Saharan Africa for some risk groups. As such, when the results were presented at the national level, many were skeptical of their relevance, and some decision makers questioned the existence of MSM in Rwanda.

As there were no data about the existence, practices, or HIV risks among MSM in Rwanda to support the model results, it was clear that, if the strategic plan was to be based on evidence, concrete data were needed. In response, the CNLS commissioned a study to describe the MSM population in Kigali, the capital of Rwanda, to explore the nature of sexual/risk activity in the MSM population, establish men's opinions regarding potential HIV prevention activities, and explore the feasibility of a more comprehensive bio-behavioral surveillance study of MSM nationally. The study was designed to inform both programs and policy.

Because of the stakeholder involvement in the research process, the study results were immediately trusted and understood by the key data users. Data from the study were used in several key ways. After a high-level dissemination meeting in December 2009, MSM were identified as a priority group in the national HIV plan. This placement in the strategic plan at the national level not only validated the existence of MSM, it also recognized them as a priority group in need of HIV-related services. As a result, a costed plan was developed and used to secure support from the Global Fund to Fight AIDS, Tuberculosis and Malaria for MSM programming in Rwanda. The U.S. Centers for Disease Control and Prevention (CDC) also used the data to support a budget allocation to two organizations – one to provide health services, preventative care, and support to MSM in Rwanda, and the other to reach MSM through community outreach and behavior change communication. In addition, the U.S. Agency for International Development (USAID) decided to fund a follow-up qualitative study on HIV risk behaviors among this group and explore issues of acceptability of HIV prevention services.

The study also played a key role in an historic policy decision. In 2007, the government began the process of revising the country's penal code, which was originally drafted in the 1960s. The original code, while outlawing same sex marriage, did not specifically mention homosexuality. Proposed revisions to the code would, however, criminalize same sex behavior and those that encourage or incite it, as well as mandate fines or imprisonment for those convicted of practicing homosexuality.

Civil society groups in Rwanda worked to fight the revisions and in 2009 drafted a position paper opposing them. The paper was submitted to the president and parliament. The study conducted by CNLS was the only evidence of MSM existence in Rwanda and was used as the supporting evidence for the position paper. Through this widespread advocacy, the position paper circulated to all levels of government. As of 2011, a bill to de-criminalize homosexuality in Rwanda had passed three levels of government and was awaiting signature into law.

Case Study Questions

Question 1 ■
The commitment to basing the development of the National Strategic Plan on data demonstrated:
a) Data demand
b) Data utilization
c) Data availability
d) Data collection

Question 2 ■
The primary stakeholders in this case study include: CNLS, CDC, USAID, MSM and policy makers. The involvement of varied and diversified stakeholder groups contributed to:
a) The identification of programmatic questions and the corresponding data sources that would inform the strategic priorities in the national strategic plan
b) The development of a new research center in the National School of Public Health
c) The high ownership and use of MSM the study findings
d) Regional units to oversee the implementation of national policies
e) A and C

Question 3 ■
Please identify the data producer from the below list:
a) CNLS
b) CDC
c) USAID
d) MSM
e) Policy makers
f) All of the above
g) None of the above

Question 4 ■
What types of data were used to make the decisions?
a) Census data
b) Regional data on MSM populations
c) DHS data
d) Rwanda-specific MSM data
e) B & D
f) All of the above

Question 5 ■
Please identify the actions that were taken based on the results of the MSM data collection activity:
a) HIV prevention services targeting MSM were developed
b) A complete body of knowledge was created about MSM in Rwanda
c) A follow-up study was commissioned to determine the high risk HIV groups in Rwanda
d) MSM activity was decriminalized
e) A & D
f) C & D

Question 6 ■
Choose the TWO statements below that are true about the data-informed decision making process that supported the development of the NSP in Rwanda. 1) Data users and data producers worked together to create a data-informed NSP 2) The NSP data use process took place during a single meeting 3) Recommendations in the NSP (specifically prevention programs for MSM) were funded by donors and implemented. 4) The findings of CNLS' study on MSM were questioned because local ownership of the MSM data was not built.
a) Statements 1 & 2 are true
b) Statements 2 & 4 are true
c) Statements 3 & 4 are true
d) Statements 1 & 3 are true

The correct answers are as follows:

Question 1
The commitment to basing the development of the National Strategic Plan on data demonstrated:
The correct answer is "a". The MOH in Rwanda wanted to ensure that their 5 year HIV program was targeted the correct target groups. To do this they needed data on which populations were generating the most new HIV infections.

Question 2
The primary stakeholders in this case study include: CNLS, CDC, USAID, MSM and policy makers. The involvement of varied and diversified stakeholder groups contributed to
The correct answer is "e". The involvement of data users and data producers from different organizations allowed the priority data needs to be identified. By targeting what information decision makers needed to inform their programs the newly collected data was highly relevant to the upcoming decision making process. The relevance of the data and trust in the data collection process ultimate strengthened the ownership of the findings and contributed to the extensive use of the MSM study results.

Question 3
Please identify the data producer from the below list:
The correct answer is a) CNLS.

Question 4
What types of data were used to make the decisions?
Correct answer: e) B & D

Question 5
Please identify the actions that were taken based on the results of the MSM data collection activity:
The correct answer is "e". HIV prevention services targeting MSM were developed & MSM activity was Decriminalization.

Question 6
Choose the TWO statements below that are true about the data-informed decision making process that supported the development of the NSP in Rwanda. 1) Data users and data producers worked together to create a data-informed NSP 2) The NSP data use process took place during a single meeting 3) Recommendations in the NSP (specifically prevention programs for MSM) were funded by donors and implemented. 4) The findings of CNLS' study on MSM were questioned because local ownership of the MSM data was not built.
The correct answer is "d". Inclusion of data in the NSP was a long and multi-phased process. Data were gathered for the analytic reviews including the MOT. Once these analyses were conducted meetings were held to discuss and debate the findings. Meetings to agree on and plan the MSM study were also required as well as were data dissemination and interpretation meetings. Once all the data were available, many discussions ensued to plan activities based on the data and to prepare a costed plan for HIV programming. As outlined in the MEASURE Evaluation data demand and use conceptual framework, data use is part of a cycle. The cycle is affected by the demand, collection and availability of data. In this example, not only did data use result from a process, it was accepted because throughout the process local ownership of the data was encouraged.

KNOWLEDGE RECAP ANSWERS

The correct answers are as follows:

Question: Why is it important to engage stakeholders in the decision-making processes?

Correct Answer: d - By understanding the decisions your stakeholders are making and their information needs you can tailor data collection. Through this, information is more relevant to various stakeholders. Different stakeholders may have different priorities and information needs, and by making information more relevant to their needs it is more likely that they will use it to inform their decisions.

Question: In the context of decision making, which of the following elements is critical for data informed decision making to occur?

Correct Answer: f - Data, questions & stakeholders are the three critical elements for data informed decision making.

4

Information Flow and Feedback

OBJECTIVES AND OVERVIEW

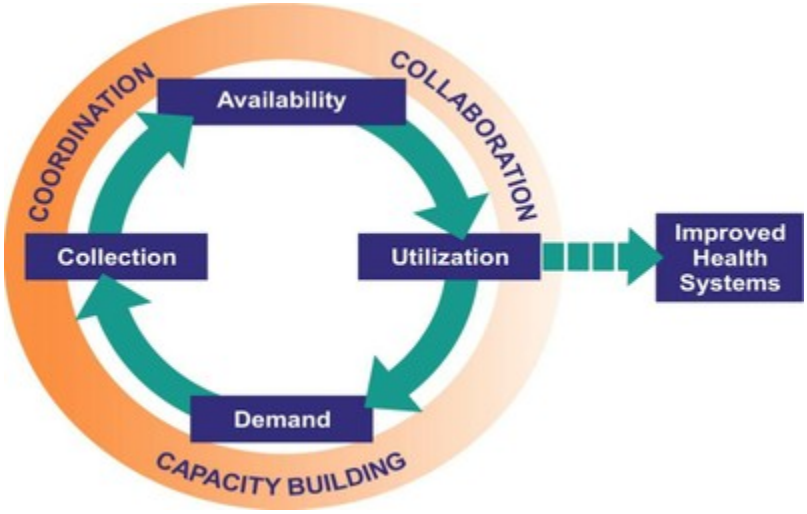
Objectives

- identify opportunities for improving data production and use
- understand the importance of feedback in program improvement and management
- identify opportunities for improving feedback mechanisms
- identify points where analysis and data could support programmatic decision making
- list potential barriers to providing feedback
- consider how to improve feedback mechanisms in participants' own work

Overview

- information flow
- information use map
- guide to expanding use of information
- define feedback
- examples of feedback
- possible ways of providing feedback

OBJECTIVES AND OVERVIEW



Earlier, we discussed the **data demand and use** conceptual framework, which depicts the cycle of data demand, collection, availability, and use inherent to **monitoring** and **evaluation**. The overarching principle of the framework is that **evidence-based decision making** will promote the achievement of improved health **outcomes**. The MEASURE Evaluation data demand and use conceptual framework is a cycle from demand to utilization (which directly affects demand); embedded in the cycle is the decision-making process.

In this unit, we will focus on data availability, indicated at the top of the diagram. Here data are synthesized and transformed into a format that can be understood easily and then are disseminated to users. For data-informed decision making to occur, the decision maker must understand the information that is needed to inform the decision. The tools and strategies highlighted in this section can help to synthesize and transform **data** into **information**, communicate that information to different audiences, and align available information with decisions.

PURPOSE OF UNDERSTANDING DATA FLOW

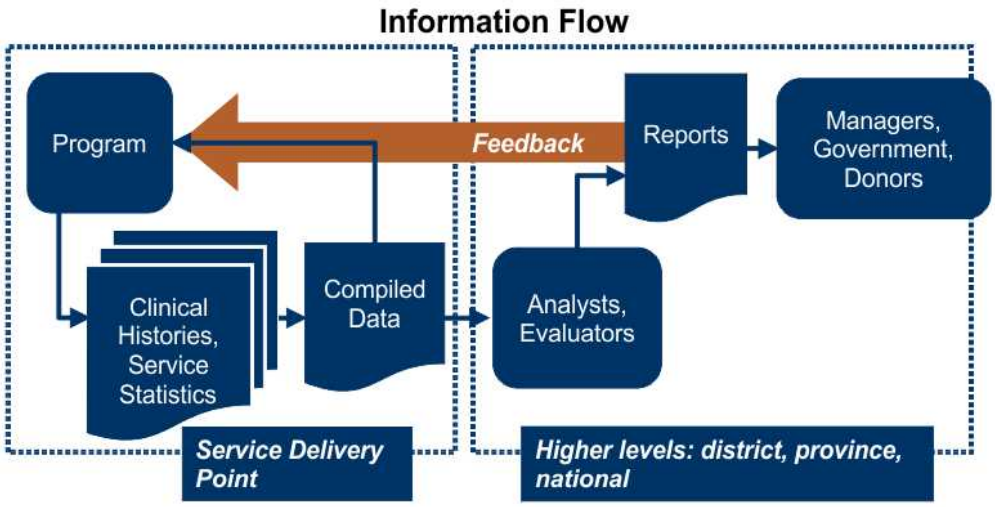
"We are always giving patient forms and data to our M&E unit, who then gives data to donors and the government. I am the head doctor and I never have the chance to look through the data before they go up. We just keep giving data up and up, and we never hear back about it…"
Head of antiretroviral therapy facility, Nigeria

The situation described above is what happens when information is not shared. Unfortunately, this is common to many facilities, programs, and countries.

The simple process of graphically charting information flow, using such formats as an information use map, helps participants better understand their role in the greater health information system — and the importance of collecting data in the first place. When people can see the value of data, they become more committed to consistent, sustainable, high-quality data collection and regular analysis of those data.

Charting the flow of data and information will allow us to identify opportunities for improving data collection and analysis, increase availability, and ensure data use. We can graphically represent the flow of data and information at any level.

INFORMATION FLOW



When discussing the importance of communicating and sharing **information**, it is helpful to look at information flow. Existing M&E **systems** typically focus on data collection and reporting to higher levels while little attention is paid to how the data can be used locally for program improvements. As a result, there are many missed opportunities for **feedback mechanisms** and the identification of specific ways in which the data can be analyzed and used to inform program monitoring and decision making.

REASONS TO ASSESS INFORMATION FLOW

Why do data and information often not flow as they should? Typical scenarios including the following:

Local data are not being used locally. Often, data are tallied and reported up the levels, but rarely are analyzed and used to support mid-course corrections at the level at which they were generated. Service providers and program managers often struggle to meet the needs of their clients as well as the often time intensive reporting duties. In many situations, data could be used to investigate trends over time, compare different areas, set priorities and goals for future years, compare progress against defined goals, and advocate for funding or policies.

Higher-level information does not return back to the local level. Consider the example of a family planning clinic at which data reveal a declining trend in use of oral contraception. The providers knew that women complained about the side effects, but they did not know how much the overall contraception rates were being affected. The district and regional officers knew contraception rates were declining but did not know why. There was a need to bring these information sources and stakeholders together.

Local data are not assessed in broad context. For example, in district X, 10% of the population in the region is expected to receive a service and one district is only reaching 2%. Obviously, there is a large service coverage gap in this district — but decision makers at the facilities and the district office do not necessarily know this because they may not be aware of how their service delivery rates compare to regional objectives.

There is **little incentive to produce high-quality data**. People involved in local-level data collection efforts often do not see the purpose in collecting the data. They have a difficult time appreciating their role in the larger context of the health information chain and, as a result, spend less energy in collecting the data or paying attention to details.

Since there is such a large amount of money and effort being devoted to collecting data and reporting in health information systems, it only makes sense to maximize the impact of those data for real-world benefits. Providers and program managers alike need tools to help pinpoint the blockages in information feedback and to find opportunities for data use. This is where an information use map is so valuable.

Knowledge Recap

Question: Please select all of the possible reasons to assess information flow: 1) Staff turnover rates are high 2) Local data are not being used locally 3) Higher-level information does not return back to the local level 4) Local data are not assessed in broad context 5) Funding has been cut for program activities

a) 1, 2 & 5
b) 2, 3 & 4
c) 4 & 5
d) 2, 3 & 5

Answers are on pages 58-59.

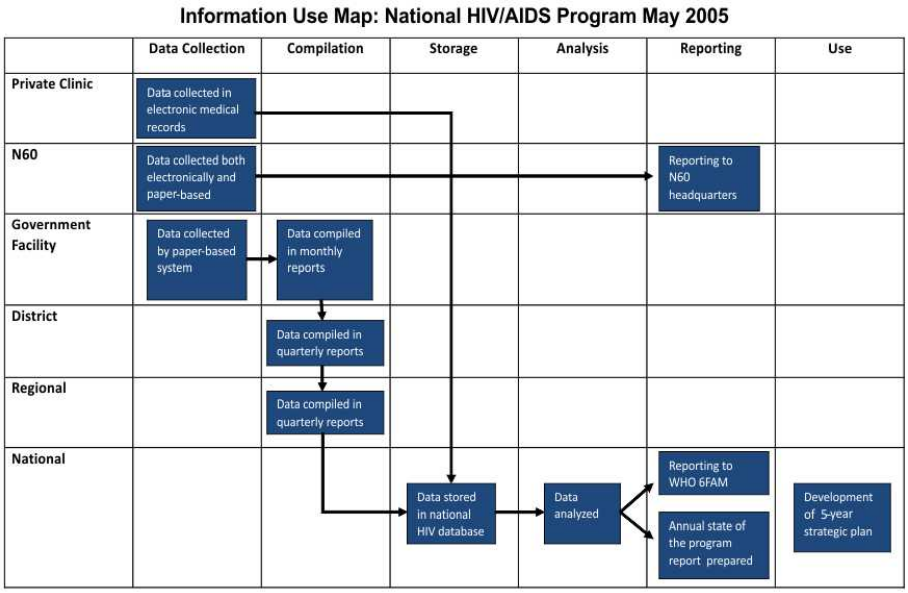
INFORMATION USE MAPPING

An information use map is a flowchart that can diagnose and improve problems with information flow. The framework that allows the user to:

- create a schematic representation of the existing state of a health information system or subsystem;
- identify gaps and deficiencies in that information flow quickly through visual representation;
- identify opportunities for new feedback mechanisms to share high-level analysis and reports with lower levels of the information hierarchy;
- identify points in the process at which additional analysis and use of data could lead to improved programs; and
- prioritize recommendations and formulate an action plan to implement them.

An information use map can be developed and applied at the international, regional, national, or local level. The map can be an ongoing guideline to assess progress toward the "expected" future vision. The map can also become a standard part of an M&E system—revisited and revised at regular intervals, or whenever a new survey or special study is being designed. For more information on information use maps please visit the Data Demand and Use Tool Kit page.

INVESTIGATING INFORMATION FLOW IN DOMINICA



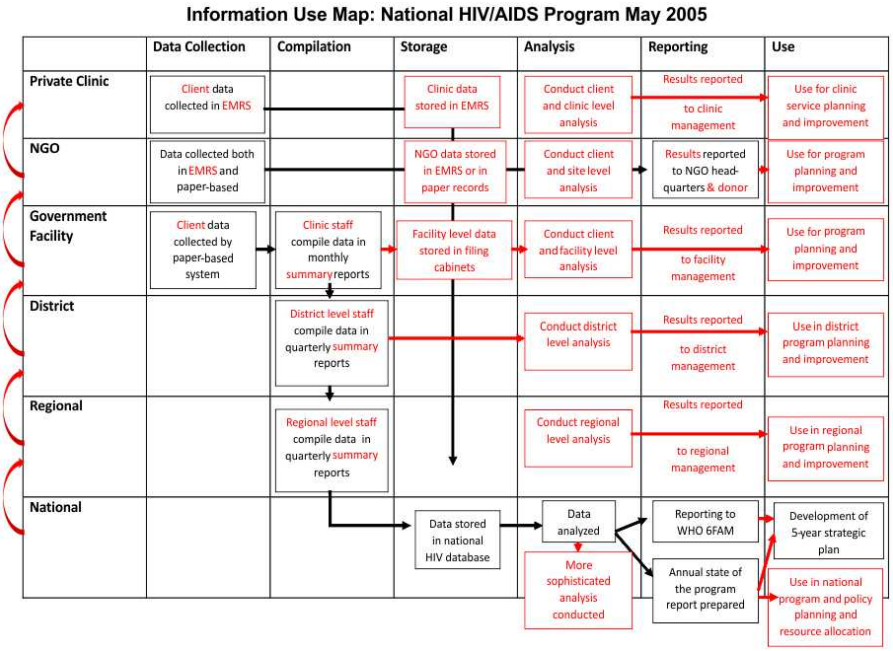
Let's look at an example of how mapping information flow in Dominica improved data flow and, ultimately, better use of data.

In Dominica, local health centers and hospitals sent data on the number of people they tested for HIV/AIDS, while labs sent test results. A statistician **aggregated** the data and sent a quarterly report to the Dominica Ministry of Health, which in turn sent a quarterly report to the Caribbean Epidemiology Center (CAREC) and an annual report to the prime minister.

The trouble was that local facilities never got these reports. Managers in local facilities didn't know how their centers compared to other facilities or to national trends and goals. Were they on track with their programs or not?

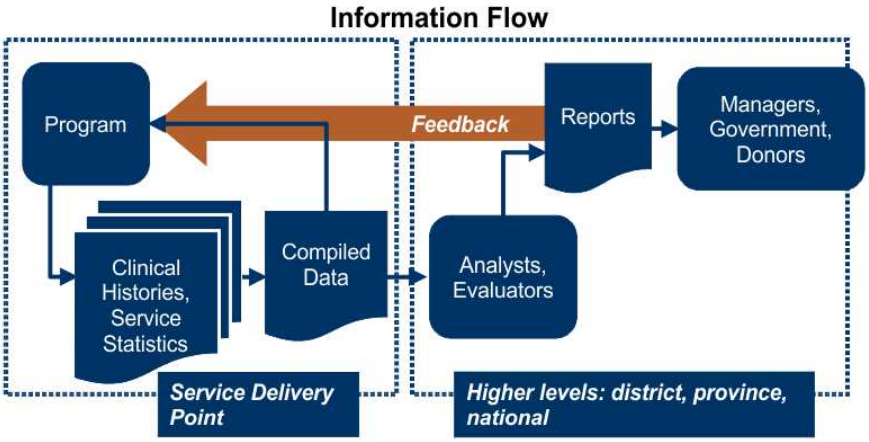
These information gaps quickly became apparent when data collection, analysis, and use processes were visualized in an information use map. Data were being reported but not used. Reports did not get back to the providers of source data. The mapping exercise identified ways to share insights down the line, which would lead to mid-course improvements in pre-test counseling and greater acceptance of HIV/AIDS testing.

INFORMATION FLOW IMPROVED IN DOMINICA



The above Information Flow Map shows the improvements in the information flow system.

IMPORTANCE OF FEEDBACK



The flowchart above shows how data can effectively flow from the service delivery level to the higher levels responsible for the supervision of programs, i.e. up the information hierarchy – to the district and, eventually, national levels. You see in the box on the left that data are collected at the facility level for a specific program area. Then these data pass to higher levels (box on the right) for aggregation and use in reporting and, it is hoped, decision making.

Sharing data through feedback (as represented by the pink arrow) is an essential part of the information flow process. Feedback ensures that

those who collected the data benefit from the collection as much as those requesting the data. Also, information needs to be shared regularly and in a timely manner so that a 'culture of information use' is supported. The sharing – or feedback – of information needs to be done up the information hierarchy (from the facility to the district to the province to the national level) but also within a facility and between district and province. Finally, it needs to be shared down the information hierarchy – from the national level to the province – to the district and facility. Reports produced by the higher levels should be shared to lower levels to ensure that they are familiar with how other service providers are performing. In addition, the higher level can provide guidance and advice to facilities on an individual level based on the data they receive.

Feedback is an essential part of the data producer and data user relationship. Without feedback, neither is able to fulfill their role fully. The sharing of data from the data collectors to the data users and then back again also helps to pave a path between data collectors and users at all levels of the health system.

When data collectors understand and see data's usefulness, they are more likely to appreciate and value the data. This can translate into higher-quality data collection and the collection of appropriate and useful data. Feedback is also an important element of the management and supervision system. Effective communication helps to ensure that information is available and the use of information for planning and programmatic improvement. Last, staff seeing their data and tracking their progress can function as an incentive to continue striving to improve service delivery.

Knowledge Recap

Question: National models indicate that for diarrheal disease among children to decrease campaigns that promote hand washing with soap are critical. In response to this information, the MOH implemented education campaigns in 3 regions in the country and set a target to decrease diarrheal incidence by 25%. All but one region reduced the incidence of diarrheal disease to the desired level. In the lagging region it was discovered that several districts were only receiving 3 of the recommended 8 education campaigns. Obviously, there was a large campaign coverage gap in these districts—but the district offices were not aware that there was a problem. They had not been told how their diarrheal disease rates compare to national objectives. How can this situation be addressed?

a) Facilities should hire staff to M&E staff to follow policy and research trends
b) National targets should be adjusted
c) National targets should be communicated to all district offices through routine information channels
d) There is nothing to address. This gap in service coverage is to be expected from time to time.
e) Progress toward meeting national targets should be shared within districts and regions.
f) B & E
g) C & E

Answers are on pages 58-59.

EXAMPLES OF FEEDBACK

Other examples of feedback include:

- sharing information within a facility or organization;
- sharing aggregated service provision data from facilities within a district or between provinces;
- meetings between facility and supervising agency to review and discuss data and information; and
- meetings between donors and nongovernmental organizations to review data and information and discuss challenges and opportunities.

Knowledge Recap

Question: An international donor agency developed a national poverty reduction plan that involved hundreds of people in community focus groups. This activity sparked community interest in and excitement about the potential of the project. Unfortunately, there was no feedback to inform the focus group participants about what the project had discovered. This lack of feedback created frustration among the community, which may discourage future participation in research activities. This is an issue of:

a) Sharing health facility data
b) Good communication
c) Good data collection
d) Poor information feedback

Answers are on pages 58-59.

WORKING TOWARD A CULTURE OF INFORMATION USE

Successful feedback contributes to what is known as the information culture. When information becomes available, it is more likely to be used. When information is shared and used, it:

- becomes an integral part of decision-making processes, including planning, problem solving, choosing alternatives, and giving or receiving feedback; and
- empowers people to ask questions, seek improvement, learn, and improve the quality of programs.

Knowledge Recap

Question: Please identify reasons to provide feedback from the national level back down to the provinces, districts and facilities from the options below:
a) Promotes a culture of information use
b) So donors don't stop funding the program
c) So districts and regions understand how their efforts are contributing to national targets
d) Feedback is an essential part of the data user/producer relationship
e) Promotes data quality
f) A, C, D & E
g) A, C & D

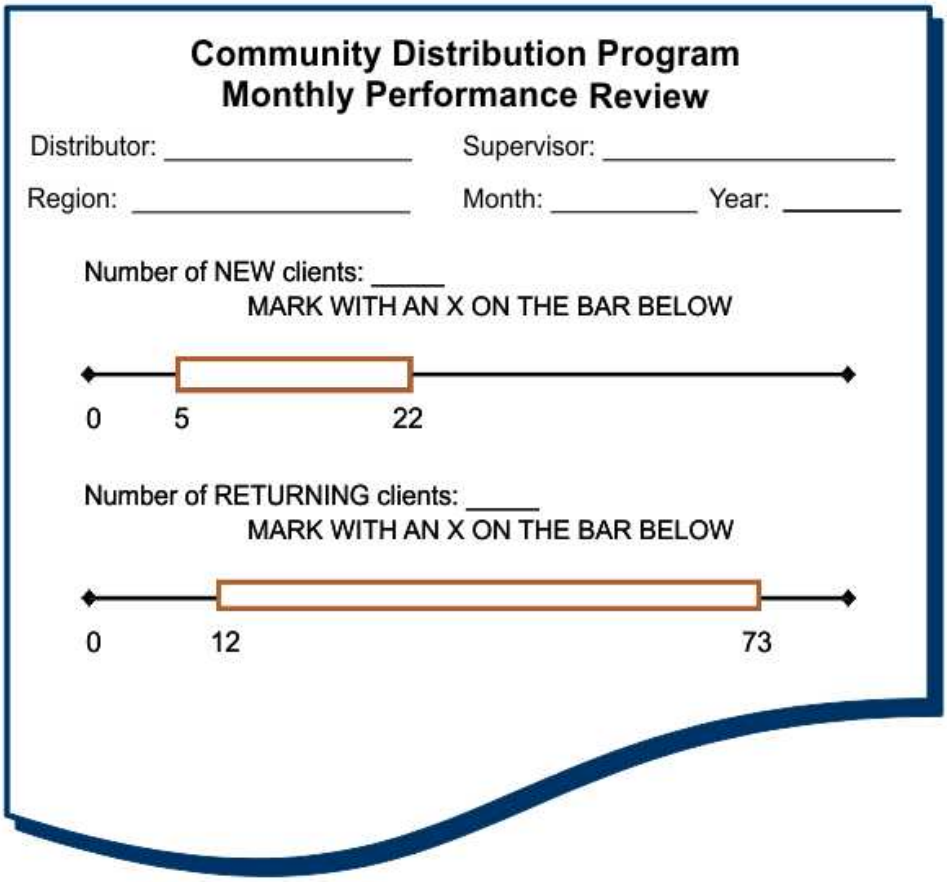
Answers are on pages 58-59.

VARIETY OF FEEDBACK FORMATS

Feedback can be presented in many different ways, such as narratives (summaries, bulleted items, graphs, and charts), in-person discussion (one-on-one, staff meetings, district meetings), speeches to staff, and supervision visits.

Let's take a closer look at narratives. Most countries/programs/facilities have a type of narrative through which to share data.

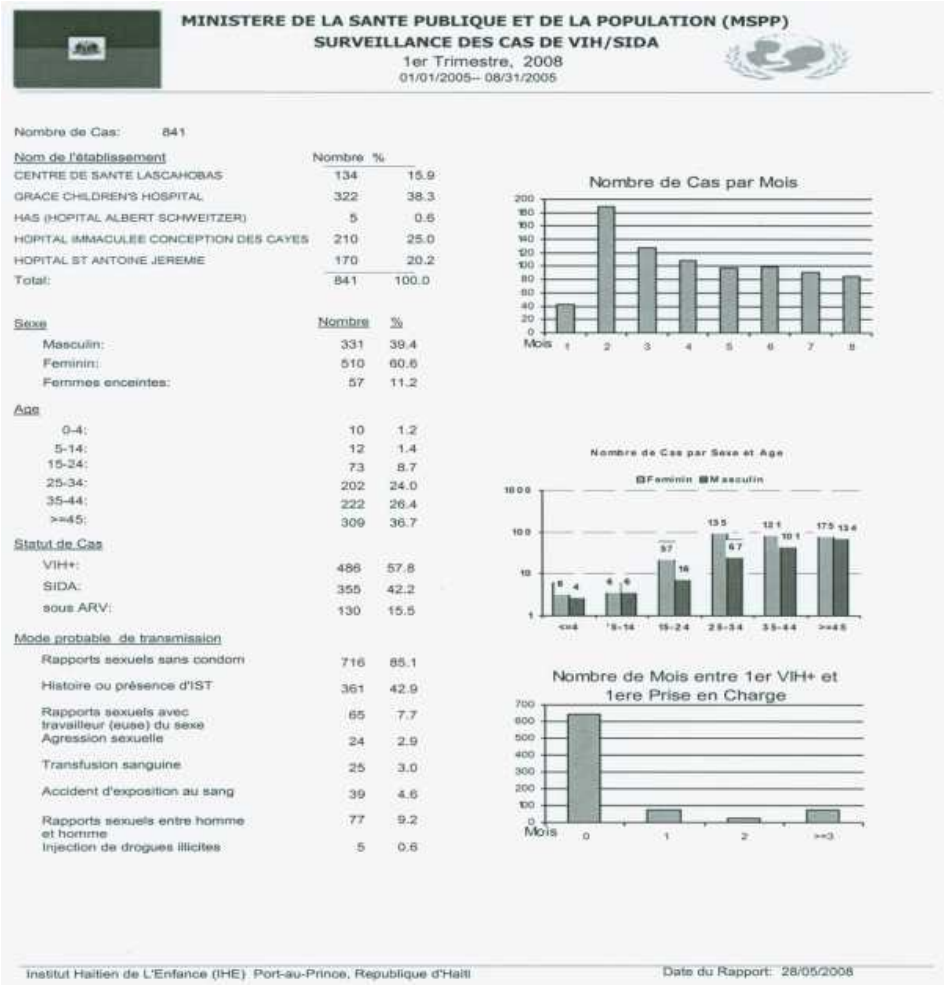
NARRATIVE FEEDBACK



Here you see a simple pencil-and-paper form used by community-based programs and primary health clinics during regular supervision visits. The form does not require a significant level of literacy or math, or an understanding of how to interpret graphs. The form contains a bar representing the average monthly performance of the middle 80% of community distributors during the previous year. A supervisor marks the distributor's current performance with an X, enabling him or her to see how this compares to other distributors in the program and stimulating discussion of how to improve performance. Where this form has been

used, it has been received positively by distributors and supervisors alike and has significantly increased the amount of time spent discussing program issues.

SURVEILLANCE REPORT



MINISTERE DE LA SANTE PUBLIQUE ET DE LA POPULATION (MSPP)
SURVEILLANCE DES CAS DE VIH/SIDA
1er Trimestre, 2008
01/01/2005-- 08/31/2005

Nombre de Cas: 841

Nom de l'établissement	Nombre	%
CENTRE DE SANTE LASCAHOBAS	134	15.9
GRACE CHILDREN'S HOSPITAL	322	38.3
HAS (HOPITAL ALBERT SCHWEITZER)	5	0.6
HOPITAL IMMACULEE CONCEPTION DES CAYES	210	25.0
HOPITAL ST ANTOINE JEREMIE	170	20.2
Total:	841	100.0

Sexe	Nombre	%
Masculin:	331	39.4
Feminin:	510	60.6
Femmes enceintes:	57	11.2
Age		
0-4:	10	1.2
5-14:	12	1.4
15-24:	73	8.7
25-34:	202	24.0
35-44:	222	26.4
>=45:	309	36.7
Statut de Cas		
VIH+:	486	57.8
SIDA:	355	42.2
sous ARV:	130	15.5
Mode probable de transmission		
Rapports sexuels sans condom	716	85.1
Histoire ou présence d'IST	361	42.9
Rapports sexuels avec travailleur (euse) du sexe	65	7.7
Agression sexuelle	24	2.9
Transfusion sanguine	25	3.0
Accident d'exposition au sang	39	4.6
Rapports sexuels entre homme et homme	77	9.2
Injection de drogues illicites	5	0.6

Institut Haitien de L'Enfance (IHE) Port-au-Prince, Republique d'Haiti
Date du Rapport: 28/05/2008

Here you see an HIV quarterly surveillance report from the government of Haiti. It reports on the number of HIV cases by establishment, month, age, and other categories. What is interesting about this report is that it provides figures and graphics, and is nicely organized so that the reader is not overwhelmed with information.

FACILITY REPORT

Quarterly Performance Indicators				
#	Indicator	Numerator	Denominator	Percentage
		ART		
1	% of eligible clients placed on ART	# of new clients on ART 39	Sum of # of new clients on ART and clients on ART waiting list 39	100%
2	% of current ART clients	# of active clients on ART 1620	# of cumulative clients on ART 1765	92%
3	% of ART clients in 6 month cohort undergoing repeat CD4 testing	# of clients for whom repeat CD4 testing was done at 6 months 147	Total # of active ART clients in 6 month cohort 156	94%
		Pediatric ART		
1	% of children current on ART	# of active children on ART 45	# of cumulative children on ART 58	78%
		ART Care Follow-up		
1	% of non active ART patients who have stopped ART.	# of patients who stopped ART. 0	# of non active ART patients. 145	0%
2	% of non active ART patients who transferred out.	# of patients who transferred out. 8	# of non active ART patients. 145	6%
3	% of non active ART patients who died.	# of patients who died. 106	# of non active ART patients. 145	73%
4	% of non active ART patients who have been lost to follow-up.	# of patients who have been lost to follow-up. 23	# of non active ART patients. 145	16%

This example from a facility reports on **antiretroviral therapy (ART)** services delivered for a specific quarter. This simple chart is unique in that it shows how the **indicator** was calculated by giving the **numerator** and **denominator** to show the percentage of the population served. Providers can then use this information by comparing it to their **targets** for each service area.

This summary provides an easy way to discuss facility performance around established performance indicators.

DEVELOPING A FEEDBACK MECHANISM

In the service delivery setting, you may be called upon to work with others in the facility to develop a feedback mechanism. In this case, there are issues to consider that will improve the usefulness of the mechanism. They include the following:

- Consider the data being shared. What is the best way to summarize and present them?

- Consider who – or which stakeholders – will benefit from the information being shared. Is it your fellow providers, facility management, district leadership? The recipients of the information will affect how you package it.
- What is the best format for your information? Will your feedback be written or verbal? Will it be a formal or informal feedback system?
- Consider the forum in which the feedback will be presented. Will it be presented at facility meetings, at district health management team meetings?
- How often will the feedback be provided (e.g., weekly, monthly, quarterly)?
- Consider how the information will move to the next level. For example, program managers always should review data before sending data up to the next level.
- Document the process for implementing and maintaining the feedback mechanism so that it will be standardized and shared with others.

Knowledge Recap

Question: Consider the example of a VCT program, where data reveal an increase in the time between testing and follow-up, and a declining number of clients receiving results. Facility managers knew that there were problems with provider performance around counseling and testing, and that there had been some delays in the lab, but they did not know how much the overall follow-up rates were being affected. The district and regional officers knew follow-up rates were declining, but did not know why. What solution(s) could solve this serious problem? Please select all that apply.

a) Bring stakeholders from clinics and regional offices together to discuss the issues
b) Hold district/regional staff responsible for declining rates
c) Provide feedback to clinics about their VCT rates as compared to other clinics in the district
d) Fire the clinic staff
e) Re-train staff on counseling skills
f) A & C
g) A, C & E

Answers are on pages 58-59.

POTENTIAL BARRIERS TO PROVIDING FEEDBACK

While sharing information and providing feedback is critical to a provider's job, there are barriers that may inhibit the ability to do so. These barriers include:

- Hierarchy – All providers report to a facility manager, a doctor, or a program manager. Providing feedback on clinic performance traditionally is seen as a clinic manager's job. Others may feel that they are stepping out of place if they take on this responsibility. While it is true that traditionally it is a manager's responsibility to provide feedback, other health professionals can facilitate this process. By regularly monitoring, analyzing, interpreting, and presenting data, the manager's access to necessary information is heightened. Through discussion with clinic supervisors, a shared responsibility can be established.
- In some settings, staff are dedicated to data capture and data compilation for reporting purposes. In this case, data users or providers can work with data officers to clarify indicators, answer data queries, suggest specific analyses that the provider needs for monitoring service delivery, interpret findings, and communicate data.
- In some settings, there may be restrictions on sharing confidential information, requiring approval to distribute data outside of the facility. In these cases, a solution can be discussed with clinic management.
- Last, a lack of knowledge of what information stakeholders need can limit feedback efforts. Discussions with colleagues, managers, and the community can facilitate this.

KEY MESSAGES

- Actual flow of data and information can reveal barriers to improving data quality and use.
- Information use maps can highlight intervention points.
- Sharing information within, between, up, and down the health system/project/organization is essential to effective data use.
- Address barriers to feedback.
- Create a formal feedback mechanism.
- Feedback should be timely, regular, constructive, descriptive, helpful, and collaborative.

KNOWLEDGE RECAP ANSWERS

The correct answers are as follows:

Question: Please select all of the possible reasons to assess information flow: 1) Staff turnover rates are high 2) Local data are not being used locally 3) Higher-level information does not return back to the local level 4) Local data are not assessed in broad context 5) Funding has been cut for program activities.
Correct Answer: b - Local data are not being used locally, higher-level information does not return back to the local level, and local data are not assessed in broad context

Question: National models indicate that for diarrheal disease among children to decrease campaigns that promote hand washing with soap are critical. In response to this information, the MOH implemented education campaigns in 3 regions in the country and set a target to decrease diarrheal incidence by 25%. All but one region reduced the incidence of diarrheal disease to the desired level. In the lagging region it was discovered that several districts were only receiving 3 of the recommended 8 education campaigns. Obviously, there was a large campaign coverage gap in these districts—but the district offices were not aware that there was a problem. They had not been told how their diarrheal disease rates compare to national objectives. How can this situation be addressed?
Correct Answer: g - National targets should be communicated to all district offices through routine information channels & progress toward meeting national targets should be shared within districts and regions. Sharing national targets with provinces and districts is critical for health services at these levels to appropriately plan and resource their programs. Moreover, it is helpful for facilities within a district or a region to share their performance toward targets. This type of feedback fosters understanding of performance relative to neighboring facilitates and encourages discussions about successful programmatic approaches.

Question: An international donor agency developed a national poverty reduction plan that involved hundreds of people in community focus groups. This activity sparked community interest in and excitement about the potential of the project. Unfortunately, there was no feedback to inform the focus group participants about what the project had discovered. This lack of feedback created frustration among the community, which may discourage future participation in research activities. This is an issue of:
Correct Answer: d - Returning information back to those that assisted in the collection of those data is important to build an understanding of how data can improve health services. When this understanding is strong the data collection systems function better and data is of better.

Question: Please identify reasons to provide feedback from the national level back down to the provinces, districts and facilities from the options below:
Correct Answer: f - Feedback from the national level back down to the provinces, districts and facilities promotes a culture of information use, allows districts and regions to understand how their efforts are contributing to national targets, strengthens the data user/producer relationship, and promotes data quality.

Question: Consider the example of a VCT program, where data reveal an increase in the time between testing and follow-up, and a declining number of clients receiving results. Facility managers knew that there were problems with provider performance around counseling and testing, and that there had been some delays in the lab, but they did not know how much the overall follow-up rates were being affected. The district and regional officers knew follow-up rates were declining, but did not know why. What solution(s) could solve this serious problem? Please select all that apply.
Correct Answer: f - Action should only be taken after the two groups discuss the potential reasons for the declining follow-up rates. Prior to that, any action would only be based on gut-level reaction, rather than data interpretation.

5

Framework for Linking Data with Action

OBJECTIVES AND OVERVIEW

Objectives

- identify priority decisions and programmatic questions
- link decisions/questions with potential data sources
- understand how to create a time-bound plan for using data in decision making

Unit Overview

- decisions and questions
- Framework for Linking Data with Action

BUILDING DATA USE INTO YOUR WORK

In the previous units, we discussed many of the concepts and tools that can improve the decision-making context in your setting. We talked about:

- identifying and engaging **stakeholders** to participate in the decision making process;
- identifying and overcoming barriers to data use; and
- mapping and improving **information flow** and **feedback**.

Now let's discuss the practical aspect of using data in your work. How can you manage to build regular data use into your work? How do you ensure that data use becomes part and parcel of your day-to-day duties? The answer is to PLAN for it.

MEASURE Evaluation has developed a simple tool that assists users in identifying decisions and programmatic questions faced in day-to-day work. These may be decisions and questions around:

- program monitoring, planning, and improvement
- advocacy needs
- program management or operations issues
- strategic planning

Called *Framework for Linking Data with Action*, this tool helps you to link the decisions and questions with data and to create a time-bound plan for decision making. It is also critical to involve others in your work because the best decisions are made with stakeholder involvement. You need to understand:

- decisions others make
- information they need
- the best way to present that information

ELEMENTS OF THE FRAMEWORK

The framework assists you in identifying:

- decision makers and stakeholders with potential interest in your data
- decisions/actions that a stakeholder makes (possible uses of data)
- questions to which the stakeholder requires answers
- when the decision will be made
- indicators or data of interest (to respond to stakeholder need)
- sources of data
- how data will be presented (analyses, graphs, formats)

FRAMEWORK FOR LINKING DATA WITH ACTION

Framework for Linking Data with Action

Decision / Action	Program/ Policy Question	Decision Maker (DM), Other Stakehold-ers (OS)	Indicator/ Data	Data Source	Timeline (Analysis) (Decision)	Commu-nication Channel

Here is the template for the Framework for Linking Data with Action. The framework is a management tool — a combination of a template and process — that serves three key purposes:

- The framework creates a time-bound plan for evidence-based decision making by setting dates by which data should be

reviewed in relation to key programmatic questions and upcoming decisions.

- It encourages greater use of existing information by identifying existing data resources and linking that information with the programmatic questions that need answers to support evidence-based decision making.
- It provides you with an evidence-based decision-making 'record' so that you can monitor the use of information in decision making, providing a timeline for conducting analyses and making decisions.

For more information about the tool, please visit: http://www.cpc.unc.edu/measure/tools/data-demand-use/data-demand-and-use-strategies-and-tools.html.

Knowledge Recap

Question: The Framework for Linking Data with Action:

a) Creates a map of information flow within an organization
b) Creates a time-bound plan for data-informed decision making
c) Monitors the use of information in decision-making
d) Encourages greater use of existing information
e) B, C & D
f) All of the above
g) None of the above

Answers are on page 71.

WHAT ARE DECISIONS?

Let's clarify what we mean by 'decisions'. Decisions are choices that lead to action. All decisions are informed by questions. All questions should be based on data.

For example, every day you need to make a decision about what to wear outside of the house. To make this decision, you may ask yourself some of the following questions:

- What is the temperature?
- Is it raining?
- What events do I have planned for the day?

To answer these questions, you may consult the thermometer, the weather report, or your daily calendar.

DECISIONS

These are examples of decisions that may be made at different levels of the health care system:

- allocating resources across states/districts/facilities
- revising programs for orphans and other vulnerable children (OVC) to emphasize child adoption and fostering
- developing and instituting workplace policies on HIV/AIDS
- hiring and allocating staff to facilities

DECISIONS OR QUESTIONS

In some contexts, a decision cannot be identified before a key programmatic or policy question is answered. Or decision makers may have a question about their program for which they need a timely answer. It is the answer to this question that may provide the evidence that some kind of action needs to be taken, either to improve or realign services. In these cases, we focus on identifying 'programmatic questions,' as opposed to decisions.

PROGRAMMATIC QUESTIONS

Examples of programmatic questions include the following:

- What percentage of HIV+ pregnant women in care are delivering in health facilities?
- What percentage of clients starting **ART** are lost to follow-up?
- Are the number of family planning clients decreasing?
- What percentage of pregnant patients who are HIV+ are receiving ART?

Knowledge Recap

Question 1: Program managers within a government-funded ART program asked facility managers and other stakeholders to meet to discuss how they can ensure that patients do not default as the program scales-up services and, how they can improve tracking of defaulting clients over time. Program managers, service providers, support group leaders, and M&E; specialists met to identify questions that when answered would inform the strengthening of their ART programs. Which of the following questions is least relevant to improving ART programs?

a) What percentage of clients is alive and on treatment at three, six, and twelve months after initiating ART?
b) Are we seeing an increase in CD4 counts as clients are on treatment for longer periods of time?
c) Are clients receiving adequate counseling and support to maintain adherence to ART?
d) How many providers received the national guidelines on the new staff vacation policy?

Question 2: Program managers supporting two clinics are interested in applying for additional funding from a donor organization to strengthen the clinics' capacity to meet the needs of youth in their catchment areas. First, the program managers want to understand the extent to which the clinic services were already meeting the needs of youth in their districts. The program managers, clinical advisors, and monitoring and evaluation (M&E) specialists met to identify questions that could help them improve services for youth. Which of the below questions is the least relevant?

a) What percentage of each clinic's clientele is youth aged 15–24 years?
b) What is the clinic's performance against the target for the number of youth aged 15–24 years served by the clinic?
c) How much money is needed to increase programming for pregnant women?
d) Is the number of youth served at the clinic increasing each month?

Answers are on page 71.

LINKING DECISIONS AND QUESTIONS WITH DATA

Once you have identified your programmatic questions or decisions, it is time to identify the data sources and specific **indicators** necessary to calculate an answer to your programmatic and policy questions. For example, if your programmatic question is: Are we meeting the needs of pregnant women in District X for **PMTCT** services? Your data sources may include:

- **RHIS** information on the number of women counseled, tested, informed of their test result, positive and receiving treatment, infants receiving treatment, and follow-up of infected infants;
- census data for district X to calculate the estimated number of pregnant women; and
- survey data on HIV prevalence to calculate the estimated number of HIV+ women.

In some instances, you will realize that a needed data source does not exist. In this case, you have identified a data gap that can be filled with **proxy data** (if appropriate and available) or new research will need to be conducted.

IDENTIFYING STAKEHOLDERS, TIMELINES, AND COMMUNICATION CHANNELS

For the identified analyses to take place and decisions to be made, specific individuals need to be named to oversee the process. The types of stakeholders that you may implicate in a specific decision-making process could include a program manager, a facility head, a provider, the director of an NGO or community organization. This person should have the ultimate authority to make the decision and oversee the implementation of activities.

Linking the decision-making process to a timeline also facilitates the process. It presents a concrete, actionable schedule of activities to address policy and programmatic questions, to resolve a data gap, or to integrate data into decision-making processes. The specific date for conducting the analysis that will inform decisions should be identified, as well as a date by which the decision needs to be made.

Once the timeline is identified, the specific communication channels that will be used to communicate the results of the analysis or resulting

decisions should be specified. The communication channel should be the most appropriate way to convey your messages to the primary decision-maker and other stakeholders. Stakeholder groups vary by their information use, familiarity with M&E terminology, and preferences for receiving information, resulting in the need to tailor findings and recommendations for different audiences. Some communication methods and formats may be effective with multiple stakeholder groups. Making the results of your analyses and recommendations available, accessible, relevant, or useful, to decision makers increases their applicability for improving health systems. Identifying your communication channel to reach different segments of stakeholders is essential to increasing stakeholders' research uptake.

The Framework for Linking Data with Action is not a one-time exercise tied to one specific calendar date or decision point. When the framework is integrated into daily and annual work plans, it serves as a working tool that facilitates evidence-based decision making. For best results, the tool should be regularly referenced, monitored, and updated. When used regularly, the framework also provides a timeline for monitoring progress in the decision-making process, and a systematic way of identifying data use by program managers, donors, and consultants.

KEY MESSAGES

Building data use into your work takes planning and dedicated time.

Data should be linked to specific decisions so as to facilitate use.

Relevant stakeholders should be involved in each step of the process.

The Framework for Linking Data with Action can be used to create an actionable plan for using data in decision making.

CASE STUDY - TEST YOUR KNOWLEDGE

CASE STUDY: AIDSRELIEF RWANDA

The AIDSRelief Project began in Rwanda in January 2004 and by September 2008 was assisting 12 service sites (local partner treatment facilities or LPTF) to provide antiretroviral therapy (ART) and had tested 103,685 individuals for HIV, enrolled more than 7,840 people in care, and started 3,852 clients on ART. Each LPTF provides services at a health facility (either a hospital or health center) and supports community

outreach. AIDSRelief utilizes a system known as IQChart to collect patient data necessary for its ART programs. IQChart is an electronic patient management and monitoring system that allows service sites to collect, store, and analyze patient-level data.

In May 2008, an IQChart report showed that a large number of clients were missing their scheduled appointments for antiretroviral (ARV) drug pick-up. The central office discussed the findings with each site's clinical team. The initial reaction from the clinical teams was that the number of missed appointments was inflated; they did not believe that so many patients had missed their ARV appointments. The clinical teams requested an investigation to determine if this was a data quality issue or if so many patients were in fact missing appointments. AIDSRelief had a multifaceted problem to solve. If the quality of data was poor, the organization needed to reinvest in training service site staff in data collection techniques; if the data quality was sufficient, it needed to address the fact that many people were missing their appointments.

Using patient data already collected and stored, the office generated a list of names and addresses of every patient marked as more than 20 days overdue for an ARV pick-up. The lists were given to clinicians and community coordinators for individual follow-up and verification at both the facility and the patient's home. It was determined that patient records were indeed correct. This resolved the issue of data quality of existing medical records.

As a result, AIDSRelief Rwanda instituted new procedures to strengthen support services to ARV patients. Each community volunteer was assigned eight ART clients that the volunteer was expected to visit weekly. New forms were designed for the volunteers to report on their clients, and monthly meetings were scheduled with the community coordinators to share and discuss the information collected and their experiences in supporting clients.

With improved increased availability of data on ARV client progress, it was possible to provide a higher standard of care. Every site now monitors weekly ARV pick-up, CD4 testing, and care support. With improved data available at the service sites, clinicians now use the reports to identify problematic patients. Community volunteers then

follow up with these patients to ensure that they continue with the drug regimen. As a result of these program improvements, the quality of life of program beneficiaries has improved. The number of patients lost to follow-up has dropped significantly. Anecdotal reports suggest that community volunteers have become more visible in their communities, which has encouraged other people living with HIV to join the program and seek HIV-related services.

Case Study Questions

Question 1
In this case study, what prompted the investigation into clients who missed ART appointments?
a) A request from the national MOH that all ART data be reviewed
b) Review and discussion of the IQChart report
c) Drug stocks indicated that the ART supplies were too high
d) Clinical teams verbally reported that they were seeing less clients

Question 2
When the clinical teams were informed that the data revealed that clients were missing appointments their initial reaction was that the number of patients was inflated; they did not believe that so many patients had missed their ARV appointments. To determine the reasons behind this finding the team first checked the quality of the data before they made any programmatic decisions. This action represents an understanding of:
a) The 3 determinants of data demand and use: technical, organizational and behavioral
b) Stakeholder analysis
c) The government process for ART procurement
d) None of the above

Question 3
In the case study it states that, "As a result, AIDSRelief/Rwanda instituted new procedures to strengthen support services to ARV patients. Each community volunteer was assigned eight ART clients whom he/she was expected to visit weekly. New forms were designed for the volunteers to report on their clients, and monthly meetings were scheduled with the community coordinators to share and discuss the information collected and their experiences in supporting clients."
a) Stakeholder engagement
b) Stakeholder analysis
c) Evidence-based decision making
d) Improved information flow

Question 4
The new data collection forms that were implemented to document the weekly visits from the program coordinators resulted in increased availability of data on ARV client progress. AIDSRelief also convened regular meetings with coordinators to discuss the findings to make decisions on client care. These activities are an example of:
a) Barriers to data use
b) The cycle of evidence-based decision making
c) National M&E policy
d) Application of the stakeholder engagement tool

Answers are on the next page.

Case Study Answers

Question 1
In this case study, what prompted the investigation into clients who missed ART appointments?
The correct answer is "b". AIDSRelief had a strong M&E system in place as well as a commitment to regular review of monthly trends in the data. It was through the regular review and discussion of data that the drop in client contacts was noted. Using data to monitor program activities is a key step in data use.

Question 2
When the clinical teams were informed that the data revealed that clients were missing appointments their initial reaction was that the number of patients was inflated; they did not believe that so many patients had missed their ARV appointments. To determine the reasons behind this finding the team first checked the quality of the data before they made any programmatic decisions. This action represents an understanding of:
The correct answer is "a". The systems that are in place to ensure the quality of data are a key technical determinant of data use. The clinical team knew that data quality had been an issue in the past and were doing their due diligence to first ensure that the data reflected the true situation in the program before embarking on a costly intervention.

Question 3
In the case study it states that, "As a result, AIDSRelief/Rwanda instituted new procedures to strengthen support services to ARV patients. Each community volunteer was assigned eight ART clients whom he/she was expected to visit weekly. New forms were designed for the volunteers to report on their clients, and monthly meetings were scheduled with the community coordinators to share and discuss the information collected and their experiences in supporting clients." This is an example of:
The correct answer is c) Evidence-based decision making.

Question 4
The new data collection forms that were implemented to document the weekly visits from the program coordinators resulted in increased availability of data on ARV client progress. AIDSRelief also convened regular meetings with coordinators to discuss the findings to make decisions on client care. These activites are an example of:
The correct answer is "b". The cycle of evidence-based decision represents how data collection, availability, use and demand are interlinked. When there is a demand for data the necessary resources are invested to collect that data. Once the data are collected, they will be analyzed and synthesized into a format that makes the data available for decision making. Once they are available, the data can be used to inform health programs. The AIDSRelief story illustrates that positive experiences using information to support a decision results in a stronger commitment to improving data collection systems and continuing to use the information they generate.

KNOWLEDGE RECAP ANSWERS

The correct answers are as follows:

Question: The Framework for Linking Data with Action:
Correct Answer: e - The Framework for Linking Data with Action creates a time-bound plan for data-informed decision making, helps monitor the use of information in decision-making, and encourages greater use of existing information.

Question 1: Program managers within a government-funded ART program asked facility managers and other stakeholders to meet to discuss how they can ensure that patients do not default as the program scales-up services and, how they can improve tracking of defaulting clients over time. Program managers, service providers, support group leaders, and M&E; specialists met to identify questions that when answered would inform the strengthening of their ART programs. Which of the following questions is least relevant to improving ART programs?
Correct Answer: d - The Framework for Linking Data with Action creates a time-bound plan for data-informed decision making, helps monitor the use of information in decision-making, and encourages greater use of existing information

Question 2: Program managers supporting two clinics are interested in applying for additional funding from a donor organization to strengthen the clinics' capacity to meet the needs of youth in their catchment areas. First, the program managers want to understand the extent to which the clinic services were already meeting the needs of youth in their districts. The program managers, clinical advisors, and monitoring and evaluation (M&E;) specialists met to identify questions that could help them improve services for youth. Which of the below questions is the least relevant
Correct Answer: c - While budgeting concerns are important in improving services for pregnant women, the decision maker's first objective is to determine how the two clinics are currently meeting the needs of youth. Once this is determined and the services that need to be added or improved are identified, then decisions can be made about where to invest additional resources. Also, the needs of pregnant women are relevant to women older than 24. If the decision makers want to focus on services for youth, they will need to look specifically at prenatal services for women 15-24.

FINAL EXAM

Congratulations — you have nearly completed this course!
The final exam will test your understanding of the material presented. Answer the following questions to see how much you know about Data Demand and Use. Go to page 76 to see the answers.

1. Data demand and use:
 a) functions as a reinforcing cycle
 b) involves only one person
 c) relies on the collection and availability of data
 d) happens naturally in all decision making processes
 e) a & c
 f) b & c

2. Based on information from a health facility assessment survey, a ministry of health found that the number of emergency obstetric care facilities able to provide emergency obstetric care was lower than the recommended standard. The government used this information to increase the capacity of facilities to provide emergency obstetric services. True or False: In this case, the purpose of information from the health facility assessment survey was used to make an informed decision about expanding the type of services offered at health care facilities.
 a) true
 b) false

3. Please select the components of the data use conceptual framework from the following choices: Collection, Supervision, Demand, Utilization, Funding and Availability.
 a) supervision, demand, funding & availability
 b) supervision, demand, utilization & availability
 c) collection, utilization, funding & availability
 d) collection, demand, utilization & availability

4. A lack of data quality assurance protocols is a/an _____ barrier to data and information use.

a) individual or behavioral
b) technical
c) organizational or systemic
d) none of the above

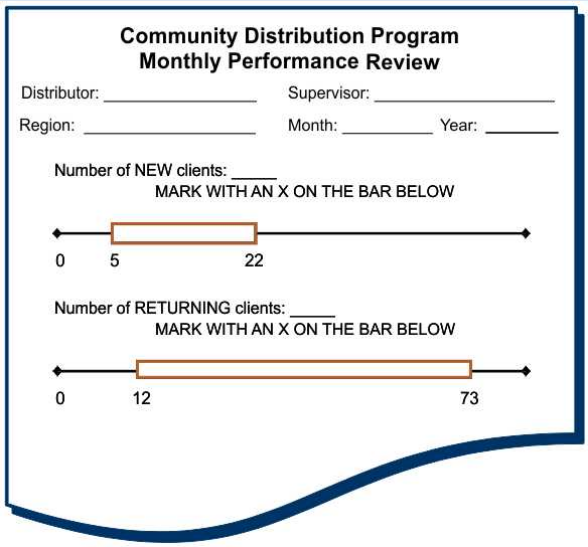
5. A low level of staff motivation is a/an _____ barrier to data and information use.

a) behavioral
b) technical
c) organizational
d) none of the above

6. Data users are individuals or organizations who:

a) make decisions
b) provide services or manage programs
c) develop policies or plans
d) all of the above

Chart for question 7:



7. The above chart is an example of a/an _____ feedback form.

a) narrative

b) in-person discussion

c) supervision visit form

d) facility report

Chart for question 8:

Quarterly Performance Indicators				
#	Indicator	Numerator	Denominator	Percentage
ART				
1	% of eligible clients placed on ART	# of new clients on ART 39	Sum of # of new clients on ART and clients on ART waiting list 39	100%
2	% of current ART clients	# of active clients on ART 1620	# of cumulative clients on ART 1765	92%
3	% of ART clients in 6 month cohort undergoing repeat CD4 testing	# of clients for whom repeat CD4 testing was done at 6 months 147	Total # of active ART clients in 6 month cohort 156	94%
Pediatric ART				
1	% of children current on ART	# of active children on ART 45	# of cumulative children on ART 58	78%
ART Care Follow-up				
1	% of non active ART patients who have stopped ART.	# of patients who stopped ART. 0	# of non active ART patients. 145	0%
2	% of non active ART patients who transferred out.	# of patients who transferred out. 8	# of non active ART patients. 145	6%
3	% of non active ART patients who died.	# of patients who died. 106	# of non active ART patients. 145	73%
4	% of non active ART patients who have been lost to follow-up.	# of patients who have been lost to follow-up. 23	# of non active ART patients. 145	16%

8. The above chart is an example of a/an _____ feedback form.

a) narrative

b) in-person discussion

c) supervision visit checklist

d) facility report

9. Please choose the issue/issues that is/are potential barriers to providing feedback.

a) lack of communication about data needs

b) strict organizational hierarchy

c) narrow roles and responsibilities

d) confidentiality

e) all of the above

10. A government is developing its annual health plan and budget, and has included a broad range of stakeholders in the planning process. There is a need for more information about the health status of key populations and health programs being implemented by the government as well as other donor-funded nongovernmental organizations. These data have been collected by health surveys and surveillance systems but have not been synthesized in one accessible format for use by program planners. This is an issue of:

a) information availability
b) information flow
c) data producer error
d) feedback
e) a, b & d
f) none of the above

11. A choice between two or more alternatives is:

a) information
b) a stakeholder
c) a decision

12. Why is it important to consider how you will communicate data via feedback mechanisms?

a) different stakeholders have different degrees of understanding about the topic being communicated
b) different stakeholders need / want different information
c) different stakeholders need information at different levels of complexity
d) different stakeholders have different intensities of interest in the topic being communicated
e) all of the above

Final Exam Answers

1. **Data demand and use:**

e) a & c

2. Based on information from a health facility assessment survey, a ministry of health found that the number of emergency obstetric care facilities able to provide emergency obstetric care was lower than the recommended standard. The government used this information to increase the capacity of facilities to provide emergency obstetric services. True or False: In this case, the purpose of information from the health facility assessment survey was used to make an informed decision about expanding the type of services offered at health care facilities..

a) True

3. Please select the components of the data use conceptual framework from the following choices: Collection, Supervision, Demand, Utilization, Funding and Availability.

d) collection, demand, utilization & availability

4. A lack of data quality assurance protocols is a/an _____ barrier to data and information use.

b) technical

5. A low level of staff motivation is a/an _____ barrier to data and information use.

a) behavioral

6. Data users are individuals or organizations who:

d) all of the above

7. The above chart is an example of a/an _____ feedback form.

a) narrative

8. The above chart is an example of a/an _____ feedback form.

d) facility report

9. Please choose the issue/issues that is/are potential barriers to providing feedback.

e) all of the above

10. A government is developing its annual health plan and budget, and has included a broad range of stakeholders in the planning process. There is a need for more information about the health status of key populations and health programs being implemented by the government as well as other donor-funded nongovernmental organizations. These data have been collected by health surveys and surveillance systems but have not been synthesized in one accessible format for use by program planners. This is an issue of:

e) information availability, flow, and feedback

11. A choice between two or more alternatives is:

c) a decision

12. Why is it important to consider how you will communicate data via feedback mechanisms?

e) all of the above

GLOSSARY

Aggregation: A collection of data combined for a specific type of analysis.

Analysis: Turning raw data into information to assist in understanding a phenomenon.

ART: Antiretroviral therapy; strategies for medicinal treatment of infections by retrovirus, such as HIV.

Behavioral determinants: Determining factors tied to the behavior of individuals who produce and use data. This would cover their attitudes, values, and motivation.

Causal element: An element or factor directly responsible for or a specific outcome.

Culture of data use: When a system or organization, and the individuals that are part of the system/organization, routinely practice the use of data in decision making

Data: Refers to raw, unprocessed numbers, measurements, or text.

Data demand and use: A systematic approach that applies best practices and appropriate tools with the goal of increasing demand for quality health-related data and ensuring that the resulting information is used in an evidence-based decision-making process.

Data producers: Individuals or organizations who conduct research; collect primary data in the course of providing a specific service or delivering a program intervention; or compile, analyze, interpret, or communicate data and information. A data user and a data producer may be the same individual.

Data users: Individuals or organizations that use data to make decisions, develop policies and plans, formulate advocacy messages, provide services, or manage programs. A data user and a data producer may be the same individual.

Decision: A choice that leads to action (or purposeful inaction), ideally informed by questions and based on data.

Denominator: The part of a fraction that is below the line (the divisor of the numerator).

Determinants: A determining or causal element or factor directly linked to data use.

Evidence-based decision making: In this course, evidence-based decision making refers to using data or information to inform a decision.

Evaluation: An activity (such as a study) that attributes program outcomes to their causes.

Feedback mechanisms: A system in which information about reports and performance is sent back to the original data collectors or producers within a routine health information system in order to give comments, advice, correction, or encouragement to the original collectors or program managers

Impact: A positive or negative, primary or secondary long-term effect produced by a program intervention, directly or indirectly, intended or unintended.

Indicator: A quantitative or qualitative factor or variable that provides a simple and reliable means to measure achievement, to reflect the changes connected to a project intervention, or to help assess the performance of those of interest to the intervention.

Information: Refers to processed data, or combined data presented in a specific context.

Information flow: The path that information travels through an organization, program, government, or system.

Interpretation: The process by which findings of an analysis are understood within the context of a program.

M&E systems: The process by which data are collected, analyzed, and communicated to provide information to policy makers and other stakeholders for use in making decisions, diagnosing problems or concerns, and answering programmatic questions.

Monitor: To track changes in program performance over time to know whether the program is being true to its stated goals and objectives; continued analysis and interpretation of key indicators.

Numerator: The part of a fraction that is above the line and signifies the number to be divided by the denominator.

Organizational determinants: Determining factors tied to the organizational context that support data collection, availability, and use, such as the identified procedures and the roles and responsibilities of those who collect, analyze, disseminate, and use data.

Outcome: The likely or achieved short-term and medium-term effects of a program intervention's outputs.

Percentage: Expresses a fraction of a total on the basis of the total being divided into 100 parts (e.g., 50% represents half of the total).

PMTCT: Prevention of mother-to-child transmission of HIV typically involves pPrograms intended to prevent infection of HIV from an HIV+ mother to her child during pregnancy, labor, delivery, or breastfeeding.

PRISM: Performance of Routine Information System Management, a conceptual framework developed by MEASURE Evaluation to evaluate routine health information systems (RHIS). More information can be found at: http://www.cpc.unc.edu/measure/publications/ms-09-34

Proxy data: Indirect measures of a program target.

Routine health information systems: Systems that track and utilize data that are collected on a continuous basis, such as patient registers.

Stakeholder: Anyone who has a "stake" or interest in your program. This can include government agencies, policy makers, funding agencies, and even implementers or providers. In addition, the beneficiaries of health programs are stakeholders.

Target: A program goal or indicator goal.

Technical determinants: Determining factors tied to the technical aspects of data collection processes and tools, such as the data collection processes, methods, and forms.

Vital events: A record of births and deaths among a population.

MEASURE Evaluation

Carolina Population Center

University of North Carolina at Chapel Hill

206 W. Franklin St.

Chapel Hill, NC 27516 USA

Telefone: 919-966-7482