# Module 6

# Using Data to Assure the Quality of Medical Services

**Essential Ideas to Convey**

- ❑ "Data for decision making refers to the process of *obtaining, analyzing, interpreting, making decisions, and taking action* on data to strengthen program performance."

  Timmons, R. and Egboh, M. (ed.) [no date given]. Using service data: tools for taking action. *The Manager*. Retrieved from http://erc.msh.org/staticpages_printerfriendly/2.2.4_info_English_.htm, March 9, 2004.

- ❑ Two types of data are available to help program managers and supervisors make decisions. They are population-based data and program-based data.

- ❑ **Sources of population-based data include the following:**

  - Vital registries
  - Surveys, such as the Demographic and Health Surveys and the Reproductive Health Surveys conducted by the U.S. Centers for Disease Control and Prevention
  - Official documents—for example, government policies, norms, and guidelines
  - Special studies (see, for example, Bertrand, J. T., and Escudero, G. 2002. *Compendium of indicators for evaluating reproductive health programs. Vol. 1: Indicators for specific programmatic areas*. MEASURE *Evaluation* Manual Series, No. 6, Chapel Hill, NC.)

- ❑ **Sources of program-based data with a subset of service-based data can include the following:**

  - Service statistics
  - Facility-based surveys/medical monitoring results
  - Local surveys
  - Program documents (see Bertrand & Escudero, 2002, above)

- ❑ **As well as**

  - Financial and commodity reports
  - Self-assessment and supervisory assessment exercises (for example, COPE® exercises, medical monitoring reports, performance needs assessments, etc.)

# Session 6

## The Role of Supervisors in Involving Staff in the Use of Data for Decision Making

### Objectives

By the end of this session, the participants will be able to:

- Identify sources of data
- List some key global reproductive health indicators
- Demonstrate skills needed to analyze and use data for making programming decisions
- Explain the role of supervisors in involving staff in the process of collecting and using data

### Materials

- *Facilitative Supervision for Quality Improvement* Participant Handbook
- *Facilitative Supervision Handbook*
- *World Population Data Sheet* (the latest year)
- Participant Handout 6.1: Exercise: Data for Decision Making
- Flipcharts 6A, 6B, and 6C

### Advance Preparation

1. Make enough copies of several pages from the *World Population Data Sheet* (the latest year; the 2007 data sheet is included with these training materials) for distribution to all participants. (Choose pages showing reproductive health indicators related to the country where the training is taking place.)
2. If necessary, make enough copies of pp. 4.23–4.35 from the *Facilitative Supervision Handbook* for distribution to all participants.
3. Adapt the case study to the local situation.
4. Prepare flipcharts 6A, 6B, and 6C (below);

> ***Flipchart 6A***
>
> **Data for decision making** refers to the process of *obtaining, analyzing, interpreting, making decisions,* and *taking action* on data to strengthen program performance.

*Flipchart 6B*

**Sources of population-based data**

- Vital registries
- Demographic and Health Surveys, and Reproductive Health Surveys conducted by the U.S. Centers for Disease Control and Prevention
- Official documents—for example, government policies, norms, and guidelines
- Special studies

*Flipchart 6C*

**Sources of program-based data**

- Service statistics
- Facility-based surveys/medical monitoring results
- Local surveys
- Program documents

**Other sources**

- Financial and commodity reports
- Self-assessment and supervisory assessment exercises (such as COPE® exercises, medical monitoring results, performance needs assessments, etc.)

## Session Time

1 hour, 15 minutes

| Training Activities | Time |
|---|---|
| **A.** Overview of sources of data | 25 min. |
| **B.** Case study on data for decision making | 50 min. |

# Session 6 Detailed Steps

## Activity A: Overview of Sources of Data: Discussion/Presentation *(25 minutes)*

> **➳ Training Tip**
>
> Prior to the training, communicate with the organizers to adapt the case study to existing local situations and data collection systems.

1. Present the learning objectives for the session.
2. Tell the participants that during the session, they will learn what sources of data are available and how supervisors and staff can use those sources of data for decision making.

3. Ask the participants to explain how they understand the expression "using data for decision making." After their responses, reveal Flipchart 6A and ask for a volunteer to read it. Emphasize all of the steps in the process. Tell the participants that it is not enough to collect data; the data must be analyzed and interpreted, and then decisions must be made.
4. Explain to the participants that different types of decisions are made at different levels; thus, different types of data are needed at different levels.
5. Ask the participants to share their experiences with collecting or using data in their everyday work. What sources do they use? What is the process of obtaining the data and of sharing them with staff, analyzing them, interpreting them, and using them? Allow **10 minutes** for sharing these experiences.
6. Tell the participants that there are two types of data sources—population-based and program-based. Point out that service-based data are a subset of program-based data. Ask the participants to list what sources of population-based data they use.

7. Reveal Flipchart 6B and ask for a volunteer to read the list on the flipchart. Ask whether they are familiar with those sources and whether they use any of them.
8. Distribute the pages from the *World Population Data Sheet*. Ask the participants to compare the data for their country with data from neighboring countries. Ask what the data tell them about the situation and the status of reproductive health services in those countries and in their own country. Ask the participants what gaps (unmet needs) in reproductive health service provision they could identify by analyzing the data presented in the table.
9. Ask the participants what program-based data sources they know and use.

10. Reveal Flipchart 6C and ask the participants whether they use any of those sources and whether they share the information from those sources with their staff. Ask them to give examples of data that they are sharing with the site staff.
11. To summarize the discussion, invite the participants to open their Participant Handbooks to page 29 and read the material on "Data for Decision Making." Comment on this materials.

12. Ask the participants what indicators they usually use. Refer them to pages 35–42 in the Participant Handbook, which describes indicators that are commonly used in reproductive health. Guide the participants through this resource.
13. Ask what indicators have not been useful. Why? Help them to understand that collecting too much information will not help to solve problems.
14. Ask the participants whether they use any of those indicators in their work.
15. Reinforce the message that decisions are made at different levels. The types of problems defined through population-based data may require changes in policies or in priority-setting. On the other hand, indicators based on programmatic or service-based data can be used to define the level of effort, services, or quality needed within a program or facility to address a problem

### Activity B: Case Study on Data for Decision Making: Small-Group Work/Discussion *(50 minutes)*

1. Tell the participants that a case study will be used to help them analyze and discuss the possible role and actions of off-site and on-site supervisors in the use of data for decision making.
2. Divide the participants into two groups. Within each group, half of the group will represent on-site supervisors and the other half will represent off-site supervisors.
3. Distribute copies of Participant Handout 6.1 and provide instructions on how the groups should proceed. Allow the groups **35 minutes** to do their work. Tell the participants that they will use the same action plan format as was presented during the previous session.
4. Explain that the participants in each group will interact as on-site and off-site supervisors would interact during a supervisory visit, and that they need to discuss together which problems or solutions will be recorded on the site action plan and which will be recorded into the off-site supervisor's plan.
5. After 35 minutes, invite the groups to report their results. Each group can spend 5 minutes presenting their results, with the rest of the group participating in a discussion.

#### ➳ Training Tip

When discussing the results, be sure to make the following points:

- ❑ Supervisors involve staff in all steps in collecting, analyzing, and using data for decision making.
- ❑ Supervisors make programming and management decisions based on data.
- ❑ The fundamentals of care connect the action plans that the participants develop to informed and voluntary decision making, safety of clinical techniques and procedure, and assurance of a mechanism for ongoing quality improvement.
- ❑ The off-site supervisor plays an important role as a liaison within the larger system to advocate for the needs of reproductive health and family planning services.

6. Refer the participants to the Facilitative Supervision Handbook (pp. 4.23–4.35) for additional reading.
7. Summarize the discussion by making the connection to medical monitoring and discussing the use of data collected through medical monitoring activities for management and decision making. Remind the participants of the diagram that represents the process of quality improvement and point out how the steps on the diagram are related to the process they have just discussed.

## Participant Handout 6.1: Exercise: Data for Decision Making

### Case Study A

The Buffalo Health Center is not meeting its projected goals for provision of long-acting and permanent methods. Two years previously, the clinic was serving more clients, but so far this year, the numbers of clients using the intrauterine device (IUD), no-scalpel vasectomy (NSV), or tubal ligation (TL) are down significantly. Meanwhile, nearby health subdistricts are doing better than previously. Dr. Okot reviews the data and makes a visit to better understand why.

| Subdistrict | Hippo | | | Buffalo | | | Rhino | | | Tiger | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Method | IUD | NSV | TL | IUD | NSV | TL | IUD | NSV | TL | IUD | NSV | TL |
| Projected (desired service level) | 400 | 150 | 150 | 400 | 150 | 150 | 400 | 150 | 150 | 400 | 150 | 150 |
| 2003 | 267 | 101 | 92 | 395 | 146 | 154 | 252 | 94 | 90 | 232 | 106 | 110 |
| 2004 | 302 | 125 | 121 | 301 | 106 | 114 | 314 | 124 | 136 | 292 | 117 | 126 |
| 2005 | 352 | 142 | 144 | 251 | 92 | 98 | 398 | 154 | 166 | 346 | 147 | 146 |
| First half of 2006 | 201 | 80 | 85 | 80 | 36 | 30 | 210 | 86 | 90 | 202 | 187 | 91 |

When Dr. Okot visits the center, she discovers that:

- The midwife who normally does IUD insertions was injured in a traffic accident and has not been able to work for the past six months. The other midwife is not confident in her IUD insertion skills and is too busy with oral contraceptive and injectable clients and with outreach posts to take on the additional responsibility.
- Tubal ligation campaigns are much less well-attended than they were previously. One injectable client with four school-age children tells Dr. Okot that she heard about a woman from another community who had a serious complication (she needed a major operation and almost died) following a tubal ligation.
- The Medical Officer at the health subdistrict says that he is often "too busy" to provide tubal ligation or no-scalpel vasectomy when clients come. But now, few clients come anyway.
- The family planning register is incomplete; the *follow-up* column is blank or inaccurately filled out.
- The center staff can provide no information on complications of family planning methods, although the Medical Officer reports that the drop-out rate for all methods is high, due to concerns about side effects and complications.
- The light in the operating theater is broken, and gooseneck lamps are used when a surgery is done. The operating theater is dusty, and its corners are crowded with broken equipment.

- The autoclave is seldom used, due to a lack of fuel, and the boiler is used only when there is electricity. Needed instruments are often kept soaking in Savlon prior to use.
- There is no chlorine in the facility.

### Tasks for the Groups:

**Group 1, off-site supervisors:** As off-site supervisors, discuss what steps Dr. Okot and the facility staff should take, based on her findings? Develop an action plan to address the above problems from Dr. Okot's perspective. List ways in which her action plan should be coordinated with that for the site.

**Group 2, on-site supervisors:** Develop an action plan from the perspective of the on-site management. Identify the most important questions that you need data to answer and how you will obtain the data.

**Both groups:** When developing the action plan, make sure to include actions that would help to ensure the fundamentals of care, especially ensuring informed and voluntary decision making.

## Case Study B (Related to Integrated Family Planning, Reproductive Health, and HIV Services)

The Timba Health Center is a community-oriented HIV support center with a modest client volume. One year ago, an external donor invited the management of Timba to add antiretroviral therapy (ART) services to their existing range of supportive services. Timba began offering ART services, and while their user volume increased, they also noticed a surprising increase in unintended pregnancies. Timba's staff requested and received assistance in integrating family planning services into their ART and HIV support services; they were providing the pill, injectables (DMPA), and hormonal implants along with condoms, which they had always provided for prevention of infection.

However, accommodating family planning services has proven to be a challenge for the health center, since staff had only recently adjusted to providing antiretroviral medications. Some of the challenges were observed when Ms. Gondo, the district supervisor, visited last week. She observed the services provided and reviewed service statistics that the staff collect quarterly.

| **Timba** | **Quarter 1** | | | **Quarter 2** | | | **Quarter 3** | | | **Quarter 4** | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Method** | Pill | DMPA | Implants | Pill | DMPA | Implants | Pill | DMPA | Implants | Pill | DMPA | Implants |
| **Projected demand** | **150** | **400** | **150** | **150** | **400** | **150** | **150** | **400** | **150** | **150** | **400** | **150** |
| 2004 | 100 | 267 | 92 | 146 | 395 | 154 | 94 | 252 | 90 | 106 | 232 | 110 |
| 2005 | 125 | 302 | 121 | 106 | 301 | 114 | 124 | 314 | 136 | 117 | 292 | 126 |
| 2006 | 142 | 352 | 144 | 92 | 251 | 98 | 154 | 398 | 166 | 147 | 346 | 146 |
| 1st quarter, 2007 | 40 | 100 | 44 | 18 | 40 | 15 | 43 | 105 | 45 | 94 | 95 | 46 |

During the supervisory visit, Ms. Gondo discovered that:

- There is a high level of interest among clients in the IUD, since it offers protection for a long time, but no one on staff is skilled in IUD insertion and removal. The one nurse-midwife who had worked at the facility has retired, and the clinical and medical officers say they are too busy with ARV management to take on the additional responsibilities of providing family planning.
- An awareness-creation campaign for voluntary sterilization started in the district where the center is located and has generated inquiries for such methods at the center. However, the center has no space or available staff to train for providing tubal ligation or no-scalpel vasectomy.
- Clients are being turned away and are confused about how they can obtain voluntary sterilization, since the referral point is so far away and the cost for the procedure plus transportation makes these methods impossible to get.
- The family planning register is incomplete: The *follow-up* column is often blank or inaccurately filled out, and the *source of referral to FP* column is also blank.

- Staff do not use information, education, and communications (IEC) materials during counseling sessions.
- The staff person who registers clients for the clinic reports that clients are grumbling and concerned about the side effects they are experiencing with the pill, injectables, and implants, and that they feel that no one is paying attention to their complaints. Moreover, clients do not receive information about possible side effects and how to manage them.
- The autoclave is seldom used, due to a lack of fuel, and the boiler is used only when there is electricity. Needed instruments are often "flamed" prior to use or are kept soaking in Savlon®; clients have to bring their own syringes for injections. Used needles are tossed into a specially designated open metal bucket.
- There is no chlorine in the facility.
- The inventory books are not up to date; supplies of DMPA are running low; and there are only three implant sets left.

### Tasks for the Groups:

**Group 1, on-site supervisors:** Develop an action plan for addressing the above problems, from the perspective of the on-site manager and staff. Discuss what the manager and staff can do to gain the support of the off-site supervisor. Identify the most important questions that you need data to answer and how you will obtain these data.

**Group 2, off-site supervisors:** Develop an action plan for addressing the above problems, from the off-site supervisor's perspective. Discuss what Ms. Gondo should do to help the site supervisor and staff to solve the problems. Identify the most important questions that you need data to answer and how you will obtain these data.

**Group 3 (optional)*:** List possible indicators to use for monitoring changes in service provision at the Timba Health Center. Identify the most important questions that you need data to answer and how you will obtain these data.

**All groups:** When developing the action plan, make sure to include actions that would help to ensure the fundamentals of care, especially ensuring informed and voluntary decision making.

*If time and numbers of participants allow, the trainer can divide the group into three and give the third group this task.

## Resource 6-1

### Data for Decision Making

The following are some examples of the questions that supervisors need to answer every day:

- Which health needs are priorities in your community?
- Which staff should provide which services?
- Are there sufficient supplies, beds, and hospital beds for your caseloads?
- How many people have been reached by your facility's activities?

To help you in answering these and other questions, you may decide that you need to collect more data. However, data collection alone will not help you resolve these issues. For that, you need to use *data for decision making*. Data for decision making refers to the process of **obtaining, analyzing, interpreting, making decisions,** and **taking action** on data to strengthen program performance (Timmons & Egboh, no date). This is similar to the quality improvement process of gathering and analyzing information; developing and prioritizing an action plan; implementing interventions; and evaluating (EngenderHealth, 1999, p. 28).

When data become meaningful, they can help you and your staff in:

- Setting health priorities
- Formulating health policies
- Obtaining and allocating resources
- Planning, implementing, and monitoring public health interventions

(CDC, 2004)

**Sources of Reproductive Health Data**

One of the first steps you will carry out in data for decision making is to **gather** data. Two types of data that are available to help you and program managers make decisions are ***population-based*** or ***program-based*** (Bertrand & Escudero, 2002, pp. 7–9).

Sources of *population-based* data include the following:

- Vital registries
- Surveys such as the Demographic and Health Surveys and the Reproductive Health Surveys conducted by the U.S. Centers for Disease Control and Prevention
- Official documents (for example, government policies, norms, and guidelines
- Special studies (see Bertrand & Escudero, 2002, pp. 7–9)

Sources of *program-based* with a subset of service-based data include the following:

- Service statistics
- Facility-based surveys
- Local surveys
- Program documents (see Bertrand & Escudero, 2002, pp. 7–9)

As well as:

- Financial and commodity reports (Timmons & Egboh, no date)
- Self-assessment exercises (for example, COPE® exercises and resources like the Quality Measurement Tool or the Cost-Analysis Tool)

***Population-based data***

*Population-based data* provide a general picture of the health conditions of a specific country, region, or group. They create the context in which you can consider your own program.

The World Health Organization has compiled a list of 17 global reproductive health indicators that are tracked (Bertrand & Escudero, 2002, pp. 201–203). Some of the key indicators usually collected by family planning and reproductive health programs include the following:

- Total fertility rate
- Contraceptive prevalence rate
- Unmet need (for spacing and limiting)
- Maternal mortality ratio
- Antenatal care coverage
- HIV prevalence

In summary, **indicators commonly used in reproductive health** include definitions of these population-based indicators. The Population Reference Bureau updates its list of key reproductive health indicators annually.

Data from population-based sources can help you in setting goals for your program (Seltzer & Solter, no date). You will not be able to measure the impact your program has on these population-based indicators. Impact is usually accomplished through the collective efforts of programs and agencies such as yours. Nevertheless, you can use the population-based indicators to identify critical areas of need and then to guide you in identifying the local-level indicators you will choose.

For example, say you reviewed the data and decided that you would follow your Ministry of Health's national goals of reducing fertility (which they have identified through population-based data). You consult population-based data and find that the total fertility rate is high in your country and region. Based on these data, chances are that the fertility rate is also high where you work. You would then choose local-level indicators that look at fertility and contraceptive use.

***Program-based data***

In many cases, you are probably already collecting program-based (service-based) data. Service statistics such as *numbers of clients served* or on *number of contraceptives dispensed* are examples of program-based data. Other examples of indicators derived from program-based data are listed in **Resource 6-2**.

One problem that programs sometimes face is that of collecting too much information (INFO Project, no date). Very often, we collect data because we think they *might be* useful, rather than because they *really are* useful. When too many data are collected, data collection becomes a cumbersome, time-consuming activity (INFO Project, no date). Also, it may cause staff to become less motivated about collecting data and about doing so properly.

There are a number of actions you can take to ensure that program-based data are relevant, which in turn can make it easier and more effective to incorporate them into your programs.

- Review the data that are already being collected. This means reviewing clinic forms, nominal rolls/logbooks/registries, and any summary forms. How are staff using this information? Are people collecting the information in the same way? Are definitions standardized for the different variables or indicators for which you may collect data? Do the indicators make sense? Are they indicators that you *think* you will use or those that you actually *will* use?
- What do staff consider the most important indicators to track? These may be related to performance, to management systems, or to service delivery. You may want to talk with different providers to learn more about these needs. COPE® exercises, client flow analyses, or data provided by some other quality improvement tool may also offer some insight into which data to track.
- What are the Ministry of Health's and/or health region's objectives in health? Indicators linked to these objectives should be included in your data collection systems.

**Analyzing and Interpreting Data**

Once you have obtained data, the next steps are to **analyze** and **interpret** the data. Exercises that you can carry out to analyze data include the following:

- Tabulating the data in ascending or descending order, or by time frames
- Disaggregating the data by region or by sociodemographic characteristics (e.g., by age, marital status, or educational level)
- Creating graphs and charts to help you to see trends visually (Bar charts and line graphs are good for observing changes over time; pie charts are helpful for looking at distributions.)
- Reviewing data for more than one time period to look at changes in an indicator over time (Timmons & Egboh, no date; INFO Project, no date)

As you review the data, bear the following questions in mind to help you in the analysis and interpretation of data:

- If you are looking at a range of issues or public health problems, compare the magnitudes of each of these. What are the most important problems affecting the population?
- What are the populations most heavily affected by the problem in question? Do they live in urban or rural areas? In which regions? Are they married or unmarried? What are the age-groups? Educational levels?
- How do the data change over time? Are there specific patterns tied to when the numbers peak, drop, or level off?

To assess changes over time and the progress of programs, we often measure indicators at different time intervals (e.g. annually, quarterly, or monthly). One calculation we carry out is **percentage change** (i.e., by what percentage did the indicator increase or decrease). Percentage change is calculated as follows:

**Example:**

**[(Measure of indicator at time 2 – Measure of indicator at time 1) / Measure of indicator at time 1] X 100%**

For example, the contraceptive prevalence for country X was 25% in 1985. It rose to 53% in 2000. What was the percentage change?

[(53–25)/25] X 100% = [(28)/25] X 100% = [1.12] X 100% = **112%**

### Using Data to Make Decisions

Once you have analyzed and interpreted the data, the next step is to use the **data for making programming decisions**. In essence, you want to know if:

- Services and programs are operating well (in which case, no change is needed in programming)
- Services and programs are operating well, though room exists for improvement
- Services and programs are not operating well (in which case, plans are needed to address the gaps in service)

(Timmons & Egboh, no date)

You can document the next steps, individuals responsible, and timelines using the action plan format presented in Flipchart 5A, which is similar to that used in COPE® exercises.

## Implementing Changes and Monitoring

Both the action plan and the information collected should be monitored and evaluated. Monitoring and evaluation should be done periodically to assess whether the steps taken to rectify problems have been effective and, if so, how effective they have been (Timmons & Egboh, no date). The **quality of the data** should also be monitored, to ensure that the information being collected is accurate and comparable over time.

## Communication in the Data for Decision-Making Process

Often, data are collected as part of a requirement. These data then get sent to higher levels of ministries and departments of health, without being shared with those recording the data (INFO Project, no date). At a minimum, if other staff are needed to effect a change, then they too should be advised of the findings of the analysis and should agree to the action plan (Timmons & Egboh, no date). To improve staff motivation, think about ways to share the information with staff, so that they can see progress over time in these activities. Better yet, you may also want to involve staff in the process of analyzing data, so they have a stake in collecting good-quality data and learn to monitor their own progress.

Remember that the format to be used for communicating findings is as important as the information itself. The information should be easy to understand (INFO Project, no date). Consider using graphs and charts, as opposed to preparing lengthy reports.

One suggestion for ensuring that communication of findings is an integral part of the data for decision-making process is to create a plan for sharing information (INFO Project, no date). Such a plan would visually set out how the information flows and indicate who needs the information, how it will be used, and how detailed the information should be.

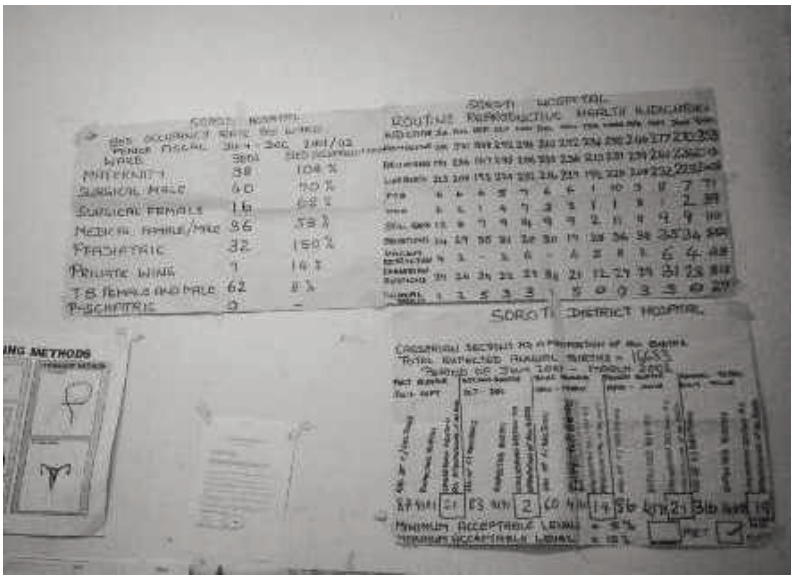


**Figure 1:** Staff at Soroti District Hospital, Uganda, tabulate and post the service statistics for their postabortion care program, so that all may see. The site's gynecology ward used figures on high bed-occupancy rates to advocate for a bigger ward.

## Sources

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## Resource 6-2

### Indicators Commonly Used in Reproductive Health

An **indicator** is a "numerical measure that provides information about a complex situation or event" (Seltzer & Solter, no date). For example, for any given country, the well-being of its children may be summarized through the child mortality rate.

One of the simplest indicators to calculate is usually the count of an affected population or the population in question (Hennekens and Buring, 1987). We calculate this type of indicator every day in the work we carry out in our programs—the number of clients served, the number of hours worked, or the number of contraceptives distributed. We sometimes disaggregate this indicator across the different types of services (for example, by looking at the number of clients served in the family planning clinic or by counting the number of maternity clients attended). We may also disaggregate indicators by specific client characteristics (for example, by age).

Indicators are also often expressed as **rates** or **percentages**, with the **numerator** (i.e., the number on the top) representing an affected population and the **denominator** (i.e., the number on the bottom) representing the specific population from which the affected population was derived. When expressed as a rate, an indicator also is bound by a specific period of time and is usually multiplied by a constant (often 1,000 or 100,000). When expressed as a percentage, the constant is 100.

When choosing indicators to monitor programs, you need not start from scratch and create new indicators. Below is a list of commonly used reproductive health indicators, arranged by topic and scope. The reference list at the end of this document provides information about other excellent sources of information on indicators.

***Fertility and Family Planning Indicators: Population Level***

**Indicator: Total fertility rate (TFR)**

*How calculated:*
Average number of children who would be born to a woman during her childbearing years if current age-specific birth rates remained constant during the woman's lifetime (MSH, no date)

*Purpose:*

- Provides information about the level of fertility in a country
- Can be used to measure changes in fertility over time
- Can be used to assess the stage at which a country is in terms of its transition from high levels of fertility to low fertility (Table 1 shows the ranges of total fertility rates assigned to these transition stages, as described in Bongaarts, 2003)

**Table 1: Ranges of total fertility rate assigned to transition stages**

| TFR | Transition stage | Country examples |
|---|---|---|
| 7.0+ | Pre | Mali, Yemen |
| 6.0 to 6.9 | Early | Malawi, Afghanistan |
| 5.0 to 5.9 | Early-mid | Senegal, Ethiopia |
| 4.0 to 4.9 | Mid | Bolivia, Kenya |
| 3.0 to 3.9 | Mid-late | Ecuador, India, Philippines |
| 2.1 to 2.9 | Late | South Africa, Argentina, Turkey |
| 0.0 to 2.0 | Post | Japan, Sweden, United States |

*Source:* Adapted from Bongaarts, 2003; country examples are based on data from the *2003 World Population Data Sheet*, Population Reference Bureau

## Indicator: Contraceptive prevalence rate (CPR)

*How calculated:*
[Number of women of reproductive age (between the ages of 15–49) reporting that they or their partners are currently using a method of contraception / Number of women of reproductive age)] X 100 (Bertrand & Escudero, 2002)

*Purpose:*

- Can be calculated for different sociodemographic and other characteristics
  - Age, marital status (though usually calculated for married women or women in union), urban vs. rural
  - Users of traditional, modern, individual, or all methods
- Provides information on method mix (MSH, no date)
- Demonstrates effectiveness of information, education, and communication messages (MSH, 2004)
- Indicates interest on the part of women to use contraception (MSH, no date)
- Shows effectiveness and/or status (see Table 2, p. 6-20) of family planning programs

The continuum in Table 2 maps out the different stages of the development of family planning programs. You can use the programming parameters listed in each panel for the particular stage at which you fall.

**Table 2: Stages of development of family planning programs**

| Emergent | Launch | Growth | Consolidation | Mature |
|---|---|---|---|---|
| 0–7% | 8–15% | 16–34% | 35–49% | ≥50% |
| Begin pilot services; build support and credibility for family planning programs. | Expand services beyond pilots; broaden institutional base and client population. | Diversify service channels and providers to expand access and availability; promote mix of clinic-based and community-based services. | Increase segmentation of services and markets. | Increase sector involvement; promote services for hard-to-reach populations. |

*Source:* Destler et al., 1990.

### Indicator: Unmet need (for spacing and limiting)

*How calculated:*
The number or percentage of women currently married or in union who are fecund and who desire to either terminate or postpone childbearing for two years, but who are not using a contraceptive method (Bertrand & Escudero, 2002).

*Purpose:*
- Provides information about the current level of opportunity for family planning programs (Ashford, 2003)
  - If unmet need for spacing is high, consider integrating family planning services into a variety of settings to reach women who want temporary or reversible methods (e.g., postpartum and postabortion care programs).
  - If unmet need for limiting is high, consider advocating for increased attention and resources to remove obstacles to long-term and permanent methods.
- Identifies target groups for activities that raise awareness about family planning accessibility
- Can be calculated for different subgroups
  - Married women, women in union, sexually active women
  - Spacers (potential users of temporary methods) or limiters (potential users of permanent methods)

## Family Planning Indicators: Program Level

### Indicator: Number/percentage of new acceptors

*How calculated:*
(Number of clients choosing a method of family planning for the first time/total number of clients attended) X 100 (MSH, no date)

*Purpose:*

- Provides information on performance of family planning program
  - If the number/percentage of new acceptors is low or declines, one needs to identify why this is happening.
    - Are there problems with outreach?
    - Is scheduling inconvenient?
    - Are prices too high?
    - Are there problems with quality of care?
    - Do people know about the services?
    - Is there competition from others for the same services? (MSH, no date)
  - If the number/percentage of new acceptors is high or increases, one should continue to maintain or find ways to improve quality. The number of continuing users should also be tracked as a way of assessing whether clients are returning for services. (MSH, no date)
- Can be disaggregated into different subgroups, thus allowing one to assess whether or not target groups are being reached (Bertrand & Escudero, 2002)
  - By type of contraceptive method
  - By sociodemographic population (men vs. women, age-groups, educational level)
  - By timing of service (e.g., postpartum, postabortion)

### Indicator: Number/percentage of continuing users

*How calculated:*
(Number of clients choosing a method of family planning for the first time/total number of family planning clients attended) X 100 (MSH, no date).

*Purpose:*

- Provides information on performance of family planning program
  - If number/percentage of continuing users is low or declines, one needs to identify why this is happening.
    - Has anything (e.g., prices, scheduling, staffing, contraceptive supplies) changed in the way services are being offered?
    - Are clients facing barriers in continuing to use their contraceptives?
    - Are clients dissatisfied with services?
    - Is there competition from others for the same services?
  - If number/percentage of continuing users is high or increases, one should continue to maintain or find ways to improve quality (MSH, no date).
- Can be disaggregated into different subgroups, thus allowing one to assess whether or not target groups are being reached
  - By type of contraceptive method
  - By sociodemographic population (men vs. women, age-groups, educational level)
  - By timing of service (e.g., postpartum, postabortion)

## Safe Motherhood Indicators: Population Level

### Indicator: Maternal mortality ratio (MMR)

*How calculated:*
(Number of women dying as a result of pregnancy-related complications during a reference period / total number of live births within the reference period) x 100,000 (Bertrand & Escudero, 2002)

*Purpose:*
- Serves as an overall marker of a population's health, the socioeconomic status of women, and the state of a country's health system (Bertrand & Escudero, 2002)
- In particular, indicates the accessibility and quality of antenatal, delivery, and postpartum and postabortion care (MSH, no date)

### Indicator: Cesarean sections as a percentage of all live births

*How calculated:*
(Number of cesarean sections performed / number of live births) X 100 (Bertrand & Escudero, 2002)

*Purpose:*
Provides insight as to access, use, and quality of health services. International organizations such as the United Nations Children's Fund (UNICEF), World Health Organization (WHO), and United Nations Population Fund (UNFPA) have set the **recommended rate as 5% to 15%**. Rates below 5% suggest that cesarean sections are unavailable or inaccessible. Rates above 15% suggest that the procedure is being overused, thereby posing risks to women and draining resources (Bertrand & Escudero, 2002)

### Indicator: Percentage of women attended at least once during pregnancy by trained personnel

*How calculated:*
(Number of women having made at least one antenatal visit with trained personnel – number attended by trained traditional birth attendants / estimated total number of pregnant women) X 100 (Bertrand & Escudero, 2002)

*Purpose:*
- Serves as a proxy for data on maternal mortality and morbidity (Bertrand & Escudero, 2002)
- Bears a strong association with rates of perinatal survival (Bertrand & Escudero, 2002)

### Indicator: Percentage of births attended by skilled health personnel

*How calculated:*
(Number of births attended by skilled health personnel during the reference period / total number of live births occurring within the reference period) / X 100 (Bertrand & Escudero, 2002)

*Purpose:*
- Provides information on women's use of delivery services
- Serves as a proxy for data on maternal mortality and morbidity
  - Association exists between presence of skilled health personnel at delivery and maternal outcomes
  - "Skilled health personnel" include midwives, doctors, and nurses with midwifery and life-saving skills. Traditional birth attendants, whether trained or untrained, are excluded. (Bertrand & Escudero, 2002)

## Safe Motherhood Indicators: Program Level

### Indicator: Case fatality rate (CFR)—all complications

*How calculated:*
[(Number of deaths from specified obstetric complications in a facility / number of women with specified obstetric complications attended in a facility) x 100 (Maine, McCarthy and Ward, 1992; UNICEF, WHO, and UNFPA, as cited in Bertrand & Escudero, 2002).

*Purpose:*
- Allows tracking of facility's effectiveness in treating pregnancy-related complications—in particular, the quality and promptness of treatment (Bertrand & Escudero, 2002)

### Indicator: Time to definitive treatment

*How calculated:*
Based on data collected from facility registers and case records (Maine et al., 1997). To construct this indicator, one needs the date and time of admission and the date and time of treatment/delivery. To ensure comparability, there must be standard definitions of what is meant by "admission time" and "definitive treatment" for different types of obstetric complications (Bertrand & Escudero, 2002).

*Purpose:*
- Provides information on the quality of maternity care services (Bertrand & Escudero, 2002)

## HIV/STI: Population Level

### Indicator: HIV/AIDS prevalence rate

*How calculated:*
(Number of adults aged 15–49 who are infected with HIV at a given point of time / total number of people aged 15–49) X 100 (WHO, no date).

*Purpose:*
- Informs program managers as to the importance of information, education, and communication on prevention and condom use (MSH, no date)
- May provide insight as to what program managers should expect in terms of forecasting numbers of patients and allocating resources to meet the needs of these potential clients (MSH, no date)

### Sources

The information on how the indicator was calculated, as well as the different purposes, was compiled from the following sources:

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