Quality Improvement through Data Use

Ministry of Health
National AIDS Council
Central Statistical Office
University of Zambia

Lusaka, Zambia
©2013
# Table of Contents

<table>
<thead>
<tr>
<th>Topic</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Glossary and Abbreviations</td>
<td>iii</td>
</tr>
<tr>
<td>Course Schedule</td>
<td>1</td>
</tr>
<tr>
<td>Session I: Course Overview</td>
<td>2</td>
</tr>
<tr>
<td>Session II: Data Sources and Utilization in Zambia</td>
<td>6</td>
</tr>
<tr>
<td>Session III: Data Quality</td>
<td>12</td>
</tr>
<tr>
<td>Session III Extension: Data Audit Exercise</td>
<td>Exercise Manual</td>
</tr>
<tr>
<td>Session IV: Data Summary and Presentation</td>
<td>19</td>
</tr>
<tr>
<td>Session V: Data Sources, Quality, Summary and Presentation Exercise</td>
<td>Exercise Manual</td>
</tr>
<tr>
<td>Session VI: Introduction to Monitoring and Evaluation</td>
<td>36</td>
</tr>
<tr>
<td>Session VII: HMIS/HIA2 Exercise</td>
<td>Exercise Manual</td>
</tr>
<tr>
<td>Session VIII: Electronic Health Records Exercises</td>
<td>Exercise Manual</td>
</tr>
<tr>
<td>Session IX: QI Introduction/QI Alternative Approach</td>
<td>46</td>
</tr>
<tr>
<td>Session XI: QI Main Approaches</td>
<td>60</td>
</tr>
<tr>
<td>Session XII: QI Simulation</td>
<td>Exercise Manual</td>
</tr>
<tr>
<td>Session XIII: QI Project Discussion</td>
<td>103</td>
</tr>
<tr>
<td>Session XIV: Supportive Supervision Tools and Expectations</td>
<td>110</td>
</tr>
<tr>
<td>Appendix XV: Epi Profile Reorientation</td>
<td>115</td>
</tr>
</tbody>
</table>
GLOSSARY AND ABBREVIATIONS

Abbreviations:
ANC: Antenatal Care
ANCSS: Antenatal Clinic Sentinel Survey
ART: Antiretroviral Therapy
BSS: Behavioral Surveillance Survey
CBO: Community Based Organization
CDC: Center for Disease Control
CFR: Case Fatality Rate
CHAI: Clinton Health Access Initiatives
CPR: Contraceptive Prevalence Rate
CRS: Catholic Relief Services
CSO: Central Statistics Office
DART: Decentralization, Action-Oriented, Responsive, Time Bound
DDU: Data Dissemination and Use
DHIO: District Health Information Officer
DHIS: District Health Information Systems/District Health Information Software
DMO: District Medical Office
DHO: District Health Office
DHS: Demographic Health Survey
DMO: District Medical Office
DPO: Disabled Peoples Organizations
DQA: Data Quality Assurance
DQC: Data Quality Control
EDU: Epidemiology for Data Users
EHR: Electronic Health Record
EWI: Early Warning Indicator
FBO: Faith Based Organizations
GIS: Geographical Information System
GRZ: Government of the Republic of Zambia
HI2A Forms: Health Information Aggregation Forms
HMIS: Health Information Management System
ICT: Information and Communication Technology
IDSR: Integrate Disease Surveillance and Response
IEC: Information and Education Communication Materials
IR: Immediate Results
M&E: Monitoring and Evaluation
MCH: Maternal and Child Health
Measles SIA: Supplementary Measles Immunization Activity
MOH: Ministry of Health
NAC: National HIV/AIDS/STI/TB Council
NACMIS: National AIDS Council Management Information System
NASTAD: National Alliance of State and Territorial AIDS Directors
NGO: Non-Governmental Organization
NIDS: National Indicator Dataset
OPD: Outpatient Department
OVC: Orphans and Vulnerable Children
PEPFAR: President’s Emergency Plan for AIDS Relief
PHC: Primary Health Clinic
PI: Performance Improvement
PIA: Performance Improvement Approach
PLWHA: People Living with HIV/AIDS
PMO: Provincial Medical Office
PMTCT: Preventing Mother to Child Transmission
PPP: Private Public Partnerships
QI: Quality Improvement
QIDU: Quality Improvement through Data Use
RCA: Root Cause Analysis
SBS: Sexual Behavior Survey
SC: Smart Care
SHIO: Senior Health Information Officer
SMAGs: Safe Motherhood Action Groups
SO: Strategic Objective
SOCO: Single Overriding Communication Objective
SOP: Standard Operating Procedures
SWAP: Sector-Wide Approach
SPSS: Statistical Package for Social Sciences
TBA: Traditional Birth Attendant
USG: United States Government
UNZA: University of Zambia
VCT: Voluntary Counseling and Testing
ZDHS: Zambia Demographic Health Survey
ZPCT: Zambia Prevention, Care and Treatment
**Glossary:**

**Accessibility**: Mechanism with which to backtrack and validate data

**Accuracy**: Degree which data describes what is actually occurring

**Activates**: Programs planned and complete

**Bar Chart**: Displays categorical data and helps compare discrete data in distinct categories (four types: simple, grouped, stacked, 100% component)

**Categorical Data**: Data that cannot be broken into distinct categories (ex: gender and marital status)

**Chart**: A tool used to summarize data and present them in figures

**Completeness**: The extent to which each of the reporting entities is completing the expected indicators

**Continuous Data**: Numerical data that is measured in an unbroken numerical scale (ex: age, weight)

**Counts**: Raw number of cases (ex: number of people impacted by a disease or a condition)

**Coverage**: Extent to which a program reaches its intended target population, institution, or geographic area; assess the availability and utilization of services

**Data Cleaning**: Omitting obvious errors in data entry that can then be corrected

**Data Dissemination**: The process of sharing information or systematically distributing information or knowledge to potential users and/or stakeholders

**Data Elements**: Fields in/on each instrument of which specific data are entered (ex. date of birth, test results, etc.)

**Data Flow Analysis**: Process of mapping how information flows throughout the organization and/or system

**Data Profiling**: Detailed analysis of available information (id analytics of range of values, inferred data types, etc.)

**Data Quality**: Features and characteristics that ensure data are accurate and complete and that they convey the intended meaning

**Data Use**: Process of entering data is used, to make decision or to make changes in planning, policy-making, program administration/management and delivery services, or to take other specific actions designed to improve outcomes

**Database**: A collection of data from multiple sources

**Deviation**: The difference between one of a set of values and some fixed value

**DHIS (District Health Information System)**: Aggregation electronic system of health records of patients. Enables districts to assess whether the goals, objectives, indicators, and targets based on strategic and operational plans are being achieved.

**Dichotomous Variable**: A binary variable that is categorical and has two levels/categories

**Distractor Data**: Information that distracts from the main point. This information should be excluded from graphic depictions and results text.

**Epidemiological Curve**: Shows information on a graph that maps the curve of data.

**Epidemiology**: The study of the distribution and the determinants of health-related states or events in specified populations, and the application of the study towards control of health problems.

**Evaluation**: A systematic and objective assessment of a project, program or policy, which aims to measure achievements and impacts.
Framework: A graphic depiction of a project and the steps needed to achieve a desired outcome.
Frequencies: The number of occurrences of a repeating event per unit time.
Frequency Distribution: The arrangement of values for that variable showing how often each value occurred.
Goal: A broad statement about a desired long term outcome of the program.
Herd Immunity: At a certain level of vaccination, you protect others who are not immune.
Incidence: Measures new cases of a disease that develop over a period of time.
Indicator: Clues, signs or markers that measure one aspect of a program and show how close a program is to its desired path and outcomes.
Inputs: Expenditures and resources.
Integrity: The degree to which data is free from conscious or subconscious bias.
Institutional Memory: A collective set of facts and concepts held by a group of people.
Key Finding: Information that answers a particular question. It should be highlighted in graphics and results text.
Legibility: Description of whether the data can be interpreted.
Line Graph: Displays relationships between two variables on two dimensions.
Logic Model (M&E Framework): Provides a linear description of programs, including the needed resources and how they will be used to achieve the programs objectives and goals.
M&E Plan: A plan that links strategic information obtained via data collection with evidence-based decision making to improve health programs, activities, responsibilities, timeframes, and cost for each of the 12 components that M&E system will function. Considered a living document of organization that is continually updated.
M&E System: A larger system that consists of people and processes that work together to achieve the 12 performance goals of an M&E system.
Median: The middle of the distribution of a variable set in ascending or descending order.
Mean: The average of all values of a continuous variable set: best descriptive measure for data.
Mode: The value that occurs most in a variable set.
Monitoring Data: Tracking the implementation of a program; ongoing effort to inform the stakeholders of the quality, quantity, and timeline of progress towards delivering intended results; day-to-day follow-up of activities.
NACMIS (National AIDS Council Management Information System): Database to guide the multispectral national response to HIV/AIDS, STI, and TB.
Nominal Variable: Categorical variable without any intrinsic order.
Objective: Statement of desired, specific and measurable program goals.
Ordinal Variable: Any categorical variable with some intrinsic order of numeric value.
Organizations: An institution that implements projects and programs.
Outlier: An observation that is numerically distant from the rest of the data.
Outcome: Use indicators to measure success of program by evaluating outcomes.
Outputs: What directly comes out of the program or proxy via indicators.
Percentage: A way of expressing a proportion as a fraction of 100.
Pie Chart: A circular chart divided into segments, illustrating proportion.
**Prevalence**: Measures existing cases of a disease at a particular point in time or over a period of time

**Problem Statement**: Identifies the specific problem to be addressed; provides information about the situation that needs changing, who it affects, its causes, its magnitude, and its impact on society

**Process Evaluation**: See: Monitoring

**Program**: A collection of projects funded by a donor or implemented by an organization

**Project**: An action undertaken by individuals or groups of managers, researchers, or community members interested in achieving certain goals

**Proportion**: The ratio of one quantity to another, especially the ratio of a part compared to a whole.

**Range**: The difference between the maximum and the minimum

**Rate**: A ratio in which two measurements are compared to each other. (ex: birth rate compares the number of births to a period of time)

**Ratio**: A relationship between two numbers of the same kind (ex: a comparison of one count to another)

**Recall Bias**: A type of bias that occurs when the way a survey respondent answers a question is affected not just by the correct answer, but also by the respondent's memory

**Reliability**: The consistency of data

**Report**: A written presentation of facts and findings, usually used as a basis for recommendations

**Results Framework (Strategic Framework)**: A diagram that shows the direct causal relationships between incremental results of the key activities all the way up to the overall objective and goal of intervention

**Retention**: Success at delivering the entire package of services to a client

**Source**: Where data is obtained

**Stakeholder**: A person, group, organization, or system that affects or can be affected by an organization's actions

**Standard Deviation**: A measurement of the spread from the central value (the mean)

**Statistical Testing**: The process of concluding from your data whether an observed difference is meaningful or due to chance

**Stratified**: When members of the population are divided into homogeneous subgroups before sampling

**Subject Measurement**: A description of whether the variables are influenced by the format of data collecting

**Survey**: An investigation of the characteristics of a given population that is performed by collecting data from a sample from that population and estimating their characteristics through the systematic use of statistical methodology

**Tables**: A set of quantitative data arranged in rows and columns

**Target**: A specific level of performance for a measure (indicator) at a predetermined point in time

**Timeliness**: The degree to which data is collected in the realm of time

**Validity**: The degree to which data is appropriately and correctly measured to the indicator
### Course Schedule

<table>
<thead>
<tr>
<th>TIME</th>
<th>DAY 1 ACTIVITY</th>
</tr>
</thead>
<tbody>
<tr>
<td>7.30</td>
<td>Registration</td>
</tr>
<tr>
<td>8.00</td>
<td>Opening remarks</td>
</tr>
<tr>
<td>8.30</td>
<td>Introduction to QIDU</td>
</tr>
<tr>
<td>9.00</td>
<td>Pre-Test</td>
</tr>
<tr>
<td>9.25</td>
<td>Data Sources and Utilization</td>
</tr>
<tr>
<td>10.00</td>
<td>Data Quality</td>
</tr>
<tr>
<td>11.00</td>
<td>Tea Break</td>
</tr>
<tr>
<td>11.15</td>
<td>Data Quality Audit Exercise</td>
</tr>
<tr>
<td>12.15</td>
<td>Lunch Break</td>
</tr>
<tr>
<td>13.15</td>
<td>Data Summary and Presentation</td>
</tr>
<tr>
<td>14.45</td>
<td>Data Summary and Presentation Exercise</td>
</tr>
<tr>
<td>16.45</td>
<td>Post-Test</td>
</tr>
<tr>
<td>17.10</td>
<td>Tea Break</td>
</tr>
<tr>
<td>17.25</td>
<td>Day 1 Debrief</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>TIME</th>
<th>DAY 2 ACTIVITY</th>
</tr>
</thead>
<tbody>
<tr>
<td>7.45</td>
<td>Review of Day 1 Exercises/Day 1 Remediation WPO</td>
</tr>
<tr>
<td>8.15</td>
<td>Pre-Test</td>
</tr>
<tr>
<td>8.30</td>
<td>Intro QI/QI Alternative approach</td>
</tr>
<tr>
<td>9.45</td>
<td>Tea Break</td>
</tr>
<tr>
<td>10.00</td>
<td>QI Main Approach MOH</td>
</tr>
<tr>
<td>12.15</td>
<td>Lunch Break</td>
</tr>
<tr>
<td>14.00</td>
<td>QI Main Approach</td>
</tr>
<tr>
<td>16.00</td>
<td>Tea Break</td>
</tr>
<tr>
<td>16.15</td>
<td>QI Main Approach</td>
</tr>
<tr>
<td>17.00</td>
<td>Post-Test</td>
</tr>
<tr>
<td>17.15</td>
<td>Day 3 Debrief</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>TIME</th>
<th>DAY 3 ACTIVITY</th>
</tr>
</thead>
<tbody>
<tr>
<td>7.45</td>
<td>Review of Day 2 Exercises/Day 2 Remediation WPHO</td>
</tr>
<tr>
<td>8.15</td>
<td>Pre-Test</td>
</tr>
<tr>
<td>8.30</td>
<td>Intro QI/QI Alternative approach</td>
</tr>
<tr>
<td>9.45</td>
<td>Tea Break</td>
</tr>
<tr>
<td>10.00</td>
<td>QI Main Approach MOH</td>
</tr>
<tr>
<td>12.15</td>
<td>Lunch Break</td>
</tr>
<tr>
<td>14.00</td>
<td>QI Main Approach</td>
</tr>
<tr>
<td>16.00</td>
<td>Tea Break</td>
</tr>
<tr>
<td>16.15</td>
<td>QI Main Approach</td>
</tr>
<tr>
<td>17.00</td>
<td>Post-Test</td>
</tr>
<tr>
<td>17.15</td>
<td>Day 3 Debrief</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>TIME</th>
<th>DAY 4 ACTIVITY</th>
</tr>
</thead>
<tbody>
<tr>
<td>7.45</td>
<td>Review of Day 3/Day 3 Remediation</td>
</tr>
<tr>
<td>8.30</td>
<td>QI Simulation MOH</td>
</tr>
<tr>
<td>10.30</td>
<td>Tea Break</td>
</tr>
<tr>
<td>10.45</td>
<td>QI Simulation</td>
</tr>
<tr>
<td>13.00</td>
<td>Lunch Break</td>
</tr>
<tr>
<td>14.00</td>
<td>QI Simulation</td>
</tr>
<tr>
<td>16.00</td>
<td>Tea Break</td>
</tr>
<tr>
<td>16.15</td>
<td>QI Simulation Presentations</td>
</tr>
<tr>
<td>17.15</td>
<td>Day 4 Debrief</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>TIME</th>
<th>DAY 5 ACTIVITY</th>
</tr>
</thead>
<tbody>
<tr>
<td>7.45</td>
<td>Review of Day 4/Day 4 Remediation</td>
</tr>
<tr>
<td>8.30</td>
<td>QI Project Discussion and Dissemination</td>
</tr>
<tr>
<td>10.30</td>
<td>Tea Break</td>
</tr>
<tr>
<td>10.45</td>
<td>QI Supportive Supervision Tools/Plan</td>
</tr>
<tr>
<td>12.00</td>
<td>Epi Profile /OI Project Reorientation</td>
</tr>
<tr>
<td>13.30</td>
<td>Lunch Break</td>
</tr>
<tr>
<td>13.00</td>
<td>Training of Trainers (TOT)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>TIME</th>
<th>DAY 6 ACTIVITY</th>
</tr>
</thead>
<tbody>
<tr>
<td>7.45-all day</td>
<td>TOT</td>
</tr>
</tbody>
</table>
SESSION I: COURSE OVERVIEW

Description of the Session:
The purpose of this training is to improve the capacity of health facility staff to collect relevant, quality data, analyze and use them to improve the quality of health care in Zambia. The training also aims to harmonize approaches to data use and Quality improvement in Zambia under the direction of the national government, Ministry of Health (MOH), University of Zambia (UNZA), and National HIV/AIDS/STI/TB Council (NAC), with support from bilateral partners from U.S. Government (USG), EGPAF, ZISSP, NASTAD, Jhpiego and other international organizations.
Orientation to Manual

- Each participant should have BOTH
  - content manual
  - exercise manual
- Please write your name on BOTH manuals
- You are encouraged to take notes/write freely on the manuals

Orientation to Groups

- Some QIDU activities will require groups of 3 (maximum 4)
- You will work with these groups to complete exercises during the training
- Please take 5 minutes to break into groups and arrange seating so that groups are sitting together

Facilitation Hints/Help

- *Questions are great!* Although, sometimes they are not focused on the goals or objectives of the session
- If questions start to stray from the goals or objectives, add them to the “car park”
- The “car park” is a poster paper hanging on the wall which contains topics to discuss during daily debriefs/a later time
House Rules

- Take 5-10 minutes to establish group “house rules”
- Hang these during training for all to see
- Decide on consequences to breaking house rules (ex. having to sing or dance, etc.)

Orientation to record keeping

- Make sure to sign in every day
- Make sure the sponsoring agency has all of your information including:
  - Name (first and surname)
  - Organization you represent
  - Province, district, facility you represent
  - Position title
  - Phone/mobile #
  - Email address
  - A post test score for each day of training

QIDU: Why Are We Here?

We aim to use this training to:
- Improve quality of health data for local, district, province, and national use
- Enhance skills to review routinely collected data to identify successes and gaps in quality of health care delivery
- Build skills to develop interventions that address gaps in quality and to assess whether they impact the quality of health care delivery

→ You are the key to make this happen!
Overall End Goal

Improve key clinic practices so that patients who use the Zambian health system have better clinical outcomes

Course Objectives

By the end of the training, you will be able to:

- Demonstrate proper data collection, use and interpretation
- Implement quality monitoring and evaluation using clinic data
- Summarize and present data using graphs, charts and tables
- Describe and utilize the main health data sources in Zambia
- Use registers and SmartCare to create data summaries

Objectives continued

- Describe approaches to measuring data quality
- Synthesize health data to identify the most important and gaps in health outcomes that could be addressed with a data quality improvement project
- Develop and implement a quality improvement intervention to address at least one gap
- Use data to assess the impact of the intervention on the gap identified
SESSION II: DATA SOURCES AND UTILIZATION IN ZAMBIA

Description of Session:
This session will discuss the importance of data, describe different data types, introduce specific sources of data available in Zambia for programmatic use, and discuss the importance of disseminating collected information.
Session Objectives

Upon completing this session, participants will be able to:

• Describe sources of routine and periodic data in Zambia
• Identify types of data captured in each information system
• Explain importance of analyzing, disseminating and using information produced by information systems
• Describe use of such data to guide decisions at the local level

MOH Data Flow

• The Ministry of Health organizes its data flow via the Health Management Information System (HMIS)
• Data from this system is organized in the District Health Information System (DHIS) database

Facilitator background information

1. Health workers collect data during service provision at the facility. They then aggregate on the HIA report and Self Assessment Tool and send to District Health Information Officer at the DHO.
2. The DHIO validates the data and captures into the DHIS. The DHIO must provide feedback on the data submitted to the health facility by the end of the second month. The feedback must include any suspicious data identified and pre-determined performance league tables across the district.
3. The DHIO then sends the district data to the Provincial Health Office for further processing and assessment by Senior Health Information Officer (SHIO).
4. Information received from the districts is passed to the HMIS national office for consolidation.
5. As shown in the diagram above the national office provides feedback and technical support to the province, district and eventually the facility.
6. The HMIS information is made available to program focal persons and managers at all levels.
7. Parallel vertical systems are discouraged. Additional data can be collected through setting up of sentinel surveillance sites or special surveys
Data Use Considerations

Before using data to make decisions, need to know:

- How are data collected?
  - Instruments/methods are used
  - Populations represented
  - Frequency of collection
- In what formats are data available?
  - Electronic (SmartCare)
  - Paper-based (tally sheets, logbooks, forms, etc.)
- What is the quality of the data?

Routine vs. Non-routine Data Types

- Routine data
  - Collected continuously (daily, patient by patient, monthly, etc.)
  - Come from health information systems, collection is on an ongoing basis
- Non-Routine (periodic) data
  - Collected at certain periods of time, or over a specific period of time
  - Come from special studies or surveys carried out for specific purposes

Strengths & Limitations of Routinely Collected Data

- Strengths
  - Often low cost since data is routinely collected
  - Usually collected at the point of service delivery (i.e., health facility) then obtained at district, provincial and national levels (to offer ‘complete picture’ of the country)
  - Data collection often coincides with program implementation therefore these data can be used to monitor and evaluate program goals
  - Can help identify outbreaks and abnormal trends
- Limitations
  - Time-consuming, can be burdensome for health staff
  - Data quality not always ensured
Strengths and Limitations of Non-Routine Data

• Strengths:
  – Surveys especially useful if other data are not available or inadequate
  – Surveys can be tailored to fit specific measurement objectives
  – Surveys yield cost-efficient data on population and services useful for facilities, providers and clients

• Limitations:
  – Surveys are expensive and time consuming
  – Recall bias
  – Survey sampling design and analysis may be complex

Routine Data - Instruments

• Data collection Instruments:
  – SmartCare (individual smartcard to store information)
  – Registers
  – Daily activity sheets
  – Patient cards
  – Program-specific forms

• Data summary Instruments:
  – Activity/tally sheets
  – Health Information Aggregation (HIA) Forms
  – National AIDS Council Activity Reporting Form (NARF)

• Data elements:
  – Date of birth, test result, pregnancy status e.t.c

MOH’s District Health Information System (DHIS)

• Based on the collection & analysis of routine data at local level
  – Gathers info that shows changes in health conditions, health status & health priorities
  – informs different levels of health care providers of progress made towards achieving set objectives & targets
Methods of Data Collection

• Interviews
• Focus group discussions
• Observations- see, and listen, however this can be subjective
• Review of performance records
• Mystery client (Internal and external)
Example of Non-Routine Data Sources

In addition to routinely collected health data, Zambia has periodic surveys such as:

- Demographic and Health Survey (DHS)
- Antenatal Clinic Sentinel Surveillance (ANCSS)
- Sexual Behaviour Survey (SBS)
- National Census
- MDG’s Survey (planned)

Data Use

- In planning for health delivery and to make actions designed to improve outcomes

  Data must be analyzed, synthesized and presented in a clear and easy to understand format that is appropriate for the audience!

How do facility data influence district, provincial and national levels?

- Monitor and evaluate programs
- Obtain additional funding, if needed
- Change allocation of funding from 1 program to another
- Communicate program successes and challenges to policymakers at district, provincial and national levels
Conclusion

- Data are collected on routine & non-routine basis
- Data must be disseminated and used for it to be effective
- There are many important uses of data:
  - Help to set public health care priorities
  - Inform decisions about allocation of resources
  - Improve the quality of services provided
  - Evaluate health program & service effectiveness/impact
- For data to be useful it must be analyzed and presented in an understandable way

Session Objectives

Upon completing this session, participants will be able to:
- Distinguish between routine and non-routine data collection methods
- Identify major public health data sources available
- Identify what types of data are captured in each information system
- Explain the importance of analyzing, disseminating and using information produced by information systems
- Describe how such data can be used to guide decisions at the local (district and provincial) level

SESSION III: Data Quality

Data Quality

Description of Session:
Explain to the participants that this session will discuss data quality and why having quality data is important. Additionally it will provide participants with ways of identifying gaps in data quality and how to address those.
Learning Objectives

Objectives

At the end of this presentation, participants should be able to:

• Define data quality and describe its importance for data entry, synthesis and reporting
• Determine factors contributing to poor quality data
• Follow criteria for assessing data quality
• Summarize steps of data quality assurance
• Recognize breaches/gaps in data quality

What is Data Quality?

• The state of completeness, validity, consistency, timeliness and accuracy that makes data appropriate for specific use.
• Good quality data is one which meets standards at all levels from collection, aggregation, analysis, presentation, timeliness and usability.
• The degree of excellence of data

Facilitator background information:

✓ Data quality involves things that help one be sure that the data say the right thing, and that the right thing is accurate.
✓ Data that can be described as high quality will hold stronger weight in a decision-making process; data that are of poor quality may be discounted and/or ignored.
✓ Decision and policy makers should always assess the quality of data, and be able to speak to the quality of the data before using it.

Data quality can be defined in many ways, but getting back to our approach to epidemiology – answering the questions of who, what, where, when, why – we might want to be able to speak with some confidence about the answers, and to do so, we might want to consider these ideas related to data quality:
Do we trust the data?

- Are the data reliable?
  - For example, do we know that the people entering or submitting the data know what they are doing?
  - i.e., have the CATF members been well trained in the data collection form? Can they correctly identify the definitions of the indicators? Do they input the correct data into the indicator measure?

- Are the data valid?
  - For example, do we know that the people reporting the data have double checked what they are actually submitting for errors?
  - i.e., does a site supervisor review the data entry and aggregation of health center indicators before the quarterly report is submitted to the MoH?

Do the data represent all or some of what we are talking about?

- Are all input sources represented?
  - For example, if you are expected to report on inputs from five sites, are all sites represented in the aggregate data?
  - i.e., if there are five districts in a province, has the PACA received all of the DACA’s reports to compile their own? And, does the PACA know if the DACA has received and compiled data from all of the expected CATFs or NGOs?

- Are all expected fields completed?
  - For example, if there are 10 indicators, and five reporting entities, have all five entities completed all of the 10 indicators?
  - i.e., if there are five VCT services within a hospital, when the aggregate report is completed, have each of those five services reported on all of the expected indicators?

Are the data current?

- Are the data that you are using from the last quarter, or from a year ago?
- For example, are you reporting on a current trend, or historic trends?
- Do you know that the reporting entity is reporting on the correct and anticipated time period? For example, if you ask for Q3 (quarter three) data, are you getting data from October through December (Q3 calendar year) or from July through September (PEPFAR Q3), or from another period

Effects of Poor Quality Data

- Incorrect data analysed
- Unreliable public health results
- Bad Data Quality
- Late or poor reporting to stakeholders may lead to loss of funding or support
- Missed opportunities to identify gaps or strengths in program activities
- Waste of additional program resources in order to correct data errors, misallocation of resources
What’s wrong with this picture?

Use of improvised data collection tools

Sources of Data Quality Issues

**Lack of proper data management**
- Lack of/unclear standard operating procedures for data cleaning
- Lack of/unclear communication about reporting periods

**Lack of proper data collection/entry**
- Lack of/unclear system for collection and reporting
- Staff are not trained on system
- Lack of supporting documents at all levels (untraceable)
- Insufficient financial, technical and human resources
- Human entry errors
- No motivation or incentive to enter

**Lack of proper data storage and retention**
- Poor data recording and filing/storage system
- Poor security of records
- Poor access to records
- No plan on how long data will be kept, how it will be disposed
Quality Assurance: Data Management

✓ Use standard data collection and reporting tools
✓ Communicate among staff on who is entering and reporting data
✓ Develop clear SOPs for Data Quality Assurance procedure (DQC & DQA)
✓ Establish timelines for data quality checks (Data Auditing) and submission
✓ Register patients in SmartCare frequently

Quality Assurance: Data Collection

• Orient staff in data collection
  • Ensure all relevant staff are well trained (data collectors, information officers, program managers)
  • Hold period meetings for relevant staff and community health workers refreshing them on the proper procedures.
• Use standard tools
  – Encourage routine recording and reporting, using standard forms and procedures (avoid use of assumptions)
  – Emphasize on completeness

Quality Assurance: Data Storage and Retention

• Determine where and how data will be stored
• Store data according to data types
• Ensure data is complete Determine how will the data be kept secure and who has access
• File electronically when possible
• Determine how long data will be kept
• Determine how data will be disposed of
Can you identify some data errors in terms of the 3Cs?

**3C’s: The criteria for assessing good data quality**

**Correct**
- accurate
- validated

**Complete**
- completely filled forms and registers
- submission of all reports
- submission by all (most) reporting facilities

**Consistent**
- data within normal ranges
- population shifts
- definition changes

---

Can you identify some data errors in terms of the 3Cs?
When cleaning your data...

1. Look for problems concerning the 3C’s: consistency, correctness, completeness
2. Highlight, mark or make note of these problems
3. Verify data problems with other registers, patient cards, phone calls, other means to reconcile missing or incorrect data
4. Make sure you perform data cleaning/auditing on a regular basis
5. If you have tried EVERY outlet to correct or complete data – drop the entry from your ANALYSIS and make a note on your report to the district

How is data quality linked to quality improvement?

Data Sharing → Performance Feedback

MOH → PHO → DHO → RHC

Data Audit Exercise

- Complete the “Data Audit Exercise” in your exercise manual
- Use the PowerPoint slides to assist in completing the exercise
Objective check

At the end of this presentation, can you:
• Define data quality and describe its importance for data entry, synthesis and reporting
• Determine factors contributing to poor quality data
• Follow criteria for assessing data quality
• Recognize breaches/gaps in data quality

SESSION IV: DATA SUMMARY AND PRESENTATION

Data Summary and Analysis

Learning objectives

At the end of this lecture, you should be able to:
• Determine which measures to use for summarizing specific data types
• Calculate means, medians and ranges
• Choose the most appropriate table or chart type for the message being conveyed
• Create charts to present data

Description of Session:
This session will discuss different ways of summarizing and presenting data. It will discuss how common statistical measures are calculated and how to determine appropriate use.
**Scenario**

You think there is a problem with high HIV prevalence in 20-30 year olds. You think there should be a prevention intervention for this group.

Your in-charge has funding to support one intervention. Your colleagues also have ideas for this money. But you think the HIV problem is the most important.

**How do you convince her to support your intervention**

SHOW HER THE DATA!

**HIV data in a table**

<table>
<thead>
<tr>
<th>HIV</th>
<th>Chilenje</th>
<th>LUSAKA</th>
<th>Date</th>
<th>Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>HIV</td>
<td>Chilenje</td>
<td>LUSAKA</td>
<td>1-Sep-12F</td>
<td>negative</td>
</tr>
<tr>
<td>HIV</td>
<td>Chilenje</td>
<td>LUSAKA</td>
<td>1-Sep-12F</td>
<td>positive</td>
</tr>
<tr>
<td>HIV</td>
<td>Chilenje</td>
<td>LUSAKA</td>
<td>1-Sep-12F</td>
<td>negative</td>
</tr>
<tr>
<td>HIV</td>
<td>Chilenje</td>
<td>LUSAKA</td>
<td>1-Sep-12F</td>
<td>positive</td>
</tr>
<tr>
<td>HIV</td>
<td>Chilenje</td>
<td>LUSAKA</td>
<td>1-Sep-12F</td>
<td>negative</td>
</tr>
<tr>
<td>HIV</td>
<td>Chilenje</td>
<td>LUSAKA</td>
<td>1-Sep-12F</td>
<td>positive</td>
</tr>
<tr>
<td>HIV</td>
<td>Chilenje</td>
<td>LUSAKA</td>
<td>1-Sep-12F</td>
<td>negative</td>
</tr>
<tr>
<td>HIV</td>
<td>Chilenje</td>
<td>LUSAKA</td>
<td>1-Sep-12F</td>
<td>positive</td>
</tr>
<tr>
<td>HIV</td>
<td>Chilenje</td>
<td>LUSAKA</td>
<td>3-Sep-12M</td>
<td>positive</td>
</tr>
<tr>
<td>HIV</td>
<td>Chilenje</td>
<td>LUSAKA</td>
<td>4-Sep-12M</td>
<td>negative</td>
</tr>
<tr>
<td>HIV</td>
<td>Chilenje</td>
<td>LUSAKA</td>
<td>4-Sep-12M</td>
<td>positive</td>
</tr>
</tbody>
</table>

Do you show your in charge data presented like this? Why or why not?
How to make it easier to interpret
Frequency of HIV+ results Cases by Age group, Chilenge clinic September 2012

It looks like the <20s and >40s have the most positives, while the 30s-40s have the lowest.

What context is needed to really understand what is going on in VCT in your clinic?

Providing context in a table

Percent HIV+ by Age group, Chilenge clinic September 2012

Does this chart help CLEARLY communicate to your in charge evidence for intervention aimed at 20-30 yr olds?

Easier to read as a graph?
Percent HIV+ by Age group, Chilenge clinic September 2012
Data analysis can be broken down into steps:
1. Data cleaning: This step ensures that the final dataset used for analysis has been examined and data that does not appear to fit with the collection tools, or that does not make sense is examined and followed up on.
2. Data Analysis: This is the step during which it is important to ensure that the measures that you are looking at make sense given the type of data, and that the questions posed of the data are answered.

Data Cleaning:
The first step in data analysis is to clean the data. Data cleaning involves looking for obvious errors in data entry that can be followed up on and fixed. You can do this by running frequencies for each variable. Some things to look for are:
1. Is the value entered within the range of acceptable values for the variable?
2. Does the value make sense in relation to the expected values for the variable?
3. If there are logical steps to the collection tool, does the data entered match those, that is, if a variable should only have a value if the previous one was completed is that the case?
4. Take a sample of missing data and check it against the data collection tool. Is the data truly missing or was it not entered?

Summarizing data
- Recall your questions
- Focus only on those analyses that will answer and give context to questions
- Identify
  - Type of data you are summarizing (e.g., continuous or categorical)
  - Summary methods (e.g., frequency, mean, mode)
  - Contextual data needed to fully describe results (e.g., number tested, number on ART)
There are two common types of variables:
- **Continuous**: These are numerical data that is measured on an unbroken scale.
  - **Think of examples:**
  - Age: ...18, 19, 20, 21, 22, 23 ...
  - Weight: ...150, 151, 152, 153 ...
  - Temperature: ... 37, 37.2, 37.9, 38...
- **Categorical**: These are data that can be broken into distinct categories.
  - **Think of examples:**
  - Age Categories: 18-24, 25-44, 45-64, 65+
  - Sex: Male, Female
  - HIV status: positive, negative

### Types of data

**Continuous**: numerical data measured on an unbroken scale
- Age: ...18, 19, 20, 21, 22, 23 ...
- Weight: ...150, 151, 152, 153 ...
- Temperature: ... 37, 37.2, 37.9, 38...

**Categorical**: data that are divided into distinct groups
- Age Categories: 18-24, 25-44, 45-64, 65+
- Sex: Male, Female
- HIV status: positive, negative

### Summarizing Continuous data

- Mean
- Median
- Mode
- Range

### Measure of Central Tendency/Spread

- **Mean/Average**: Simply the sum of measurements divided by the total number of measurements.
- **Median**: Is a middle value of the distribution when the measurements are arranged in order.
Definitions of Concepts

- **Mode:** The mode of a central measure is that measurement that occurs most often (with highest frequency).
- **Range:** The simplest measure of dispersion—difference between the largest and smallest value in the observation.

Mean

\[
\text{Mean} = \frac{\text{sum of values}}{\text{# of observations}}
\]

Ex: age (yrs) of kids in 4th class (8, 11, 10, 8, 9)

Mean: \[
\frac{8+9+10+11}{5} = \frac{46}{5} = 9.2 \text{ yrs}
\]

What is the meaning of Mean?

- Mean of 9.2 years explains the ages of children attending the clinic for medical care were near 9 years old.
- When outlier is absent the mean is useful in describing the middle value of the distribution or a population.
Should continuous data with an outlier/s be summarized using means?
Median with Outlier in Data

Median = Middle value

Ex: age (yrs) of kids in 4th class (8, 56, 10, 8, 9, 9)

Median: -Order data: 8, 8, 9, 9, 10, 56
-Pick the middle value

Median: 9 years

Should be used in place of means where there's outlier data!

What is the meaning of Median?

- Since the median is a middle value it cuts the distribution into 2 halves
- Such that 50% of observation are at or below median and other 50% are at or above it.
- So 50% of the children in 4th class were at or above 9 years of age and 50% were at or below 9 years of age

Mode

Observation that occurs most frequently

9 12 15 15 15 16 16 20 26

<table>
<thead>
<tr>
<th>Observation</th>
<th>Number of occurrences</th>
</tr>
</thead>
<tbody>
<tr>
<td>9</td>
<td>1</td>
</tr>
<tr>
<td>12</td>
<td>1</td>
</tr>
<tr>
<td>15</td>
<td>3</td>
</tr>
<tr>
<td>16</td>
<td>2</td>
</tr>
<tr>
<td>20</td>
<td>1</td>
</tr>
<tr>
<td>26</td>
<td>1</td>
</tr>
</tbody>
</table>
What is the meaning of Mode?

- The majority or most of the clients visiting the health facility were age 15 years old.
- This data will be helpful in making a decision on the services to be provided by the facility.
- The services should address the characteristics of majority patients that visit the health facility. Money/energy can be concentrated on this population.

Range

- The full spread of the data from lowest (minimum) value to highest value (maximum)

Example:
9 12 15 15 16 16 20 26

Range = (9—26)

Check for Understanding

Complete the “Check for Understanding_Data Summary and Presentation” activity in your exercise manual

5 minutes
Quality Improvement Through Data Use (QIDU) Participant Manual

When is it useful to visually display data?

- Communicate with decision makers
- Document disease
- Demonstrate successes
- Show trade-offs between 2 choices
- Make decisions
- Other examples?

What do you want to communicate?
- Disease Trends?
- Difference among catchment populations?

General guidelines

- Decide on the one MESSAGE you want people to remember from your graphic
- Delete every piece of information, animation, color, dimension or shape that could distract from this MESSAGE

Common ways to display data – tables and charts

<table>
<thead>
<tr>
<th>Tables</th>
<th>Bar charts</th>
</tr>
</thead>
<tbody>
<tr>
<td>Program</td>
<td>Distribution</td>
</tr>
<tr>
<td>Master of Medicine</td>
<td>Distribution</td>
</tr>
<tr>
<td>Master of Nursing</td>
<td>Master of Nursing</td>
</tr>
<tr>
<td>BSc Nursing</td>
<td>BSc Nursing</td>
</tr>
<tr>
<td>Environmental Health</td>
<td>Environmental Health</td>
</tr>
<tr>
<td>Midwifery</td>
<td>Midwifery</td>
</tr>
<tr>
<td>Clinical Officer</td>
<td>Clinical Officer</td>
</tr>
<tr>
<td>Master of Public Health</td>
<td>Master of Public Health</td>
</tr>
</tbody>
</table>

Pie Charts

Distribution of Notifiable Diseases in District A, Eastern Province, July 2011

- Malaria: 14%
- Enteric disease: 21%
- Pneumonia: 11%
- Diabetes: 15%
- Other: 15%
Table: An arrangement of data in rows and columns

Table 1.0: % of HIV Cases by Sex, Province Y

<table>
<thead>
<tr>
<th>District</th>
<th>Female</th>
<th>Male</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>90</td>
<td>10</td>
</tr>
<tr>
<td>B</td>
<td>85</td>
<td>15</td>
</tr>
<tr>
<td>C</td>
<td>70</td>
<td>30</td>
</tr>
<tr>
<td>D</td>
<td>90</td>
<td>10</td>
</tr>
<tr>
<td>E</td>
<td>50</td>
<td>50</td>
</tr>
<tr>
<td>F</td>
<td>50</td>
<td>50</td>
</tr>
<tr>
<td>G</td>
<td>60</td>
<td>40</td>
</tr>
<tr>
<td>H</td>
<td>90</td>
<td>10</td>
</tr>
<tr>
<td>I</td>
<td>80</td>
<td>20</td>
</tr>
<tr>
<td>J</td>
<td>60</td>
<td>40</td>
</tr>
</tbody>
</table>

CHARTS

- When done correctly, summarize complex data clearly and effectively
- Display distributions, trends and relationships in the data
- Easily communicate findings for planning groups and decision makers

Key elements of a Chart

- Title
- Vertical Axis (y-axis)
- Horizontal Axis (x-axis)
- Legend
Key points to consider when using charts to display data:

- What information is being conveyed in each?
- What different points do they make?
- Is this the most appropriate chart type to represent these data?

Pie Charts

Circular chart split into segments which show components of a larger group

Suitable for displaying categorical data, or discrete data in distinct categories

When not to use a pie chart

- When you would have more than 8 slices
- When the values of each slice are similar because it is difficult to see differences between slice sizes
- When you have a limited number of cases or total (e.g., only two cases of measles out of 12 people)
- To compare with another pie chart
Bar charts

Number of facility-level workers trained by districts in Zambia, 2012

Display categorical data and compare discrete data in distinct categories

Each bar represents one category
Can be organized horizontally or vertically

Height of the bars are proportional to the number of events (e.g. cases) in the category

Two common types of bar charts:

1) Simple
2) Grouped

Simple bar chart

Number of district-level workers trained in EDU by province in Zambia, 2012
Adding Titles and Axis Labels to Bar charts

Number of clinic outcomes, September 17-23, 2012

Data Source: Clinic records, Chilenge

What Does this Bar Chart Mean?

Number of clinic outcomes, September 17-23, 2012

Data Source: Clinic records, Chilenge

How do we know which sites are performing better than others?

What additional information do we need to provide context to the information we currently have?
**Line charts:**
Display relationships between 2 variables on 2 dimensions, or axes:

- **Y-axis (vertical): dependent variable** - the variable you wish to predict or explain.
- **X-axis (horizontal): independent variable** values are recorded as points on a chart and then connected (as a line) to show trends (usually this is time, e.g., weekly, annually, etc.).
Line charts with multiple series

Number of Clinicians Working in Each Clinic During 1995-1998

- Clinic 1
- Clinic 2
- Clinic 3

Zambia Service Provision Assessment, 2007

*Includes doctors and nurses

Another example of a line chart:
Has the program met its goal?

Percentage of new enrollees tested for HIV at each site, by quarter

- Target
- Site 1
- Site 2
- Site 3

Country Summary: Nigeria, 2006

Limitations of Line charts

- Dependent on accurate data input from tables and figures
- Can be difficult to see actual numbers, and limited to the number of lines in a chart
Key benefits of data presentation using tables and charts

Any chart used to report finding should show:

• Significant features and findings of the investigation (e.g., M&E work) in an easily read way
• Relationships between and within variables
• Data profile and communicate findings to planning groups and decision making

Objective check-in

Can you...

• Determine which measures to use for summarizing specific data types
• Calculate means, medians and ranges
• Choose the most appropriate table or chart type for the message being conveyed
• Create charts to present data
SESSION VI: INTRODUCTION TO MONITORING AND EVALUATION

Introduction to Monitoring and Evaluation

Objectives

By the end of this lecture, participants should be able to...

• Identify the basic purposes of M&E
• Define/differentiate between monitoring and evaluation
• Define Indicators
• Define ‘standards’
• Illustrate the link between standards and indicators

What is Monitoring & Evaluation in the QI Process?
Monitoring AND Evaluation

Monitoring: *What are we doing?*
- Tracking
  - inputs (drugs, condoms, test kits, trainings etc.)
  - outputs (drugs dispensed, number tested, condoms distributed etc.)
to assess whether programs are performing according to plan

Evaluation: *What have we achieved?*
Assessment of impact of the programme
- on behaviour (Reduced unplanned pregnancies)
- on health outcome (Reduced transmission rates from mother to child)

**WHAT IS MONITORING?**
✓ Checking to see if targets are being met

**WHAT IS EVALUATION?**
✓ Assessing the impact of an activity or programme

**Differences between Monitoring and Evaluation**

<table>
<thead>
<tr>
<th>MONITORING</th>
<th>EVALUATION</th>
</tr>
</thead>
<tbody>
<tr>
<td>Is the routine process of data collection and measurement of progress toward program objectives.</td>
<td>Is the use of research methods to systematically investigate a program’s effectiveness.</td>
</tr>
<tr>
<td>Involves routinely looking at the quality of services</td>
<td>Is periodic looking at Effectiveness, relevance, impact, cost-effectiveness</td>
</tr>
<tr>
<td>Is continuous, through review of Records, observations, reports,</td>
<td>Involves measurements over time through surveys, studies</td>
</tr>
<tr>
<td>Involves counting what is being done</td>
<td>Requires a baseline and post intervention data</td>
</tr>
</tbody>
</table>
Inputs:
- Resources, Staff, Funds, Materials, Facilities, Supplies, Training

Outputs:
- condom availability, trained staff, quality of services, knowledge of HIV transmission

Outcomes:
- behavior change, attitude change, change in trends

Impacts:
- HIV/AIDS trends, AIDS-related mortality, social norms, economic impact
### Why M&E at facility

- To what extent are services meeting targets?
- Are we making progress toward achieving our objectives?
- What services are provided, to whom, when, how often, for how long?
- How well are the services provided?
- What is the quality of the services provided? Does it meet the national standard?
- Do we have adequate supplies to provide services? Do we have stock outs?

### How is M&E done at facilities?

- Monitoring in health care is commonly conducted through:
  - Review registers, records and reports
  - Supervisory assessments
  - Self-assessments; peer assessments
  - Client feedback
  - Benchmarking

### The Domains of M&E

<table>
<thead>
<tr>
<th>Domain</th>
<th>Types</th>
<th>Examples</th>
</tr>
</thead>
<tbody>
<tr>
<td>Data Collection</td>
<td>Qualitative, Quantitative</td>
<td></td>
</tr>
<tr>
<td>Data Storage</td>
<td>Databases and reporting systems</td>
<td></td>
</tr>
<tr>
<td>Data Analysis</td>
<td>Basic, Scientific</td>
<td></td>
</tr>
<tr>
<td>Presentation/Feedback</td>
<td>Tailored to audiences</td>
<td></td>
</tr>
</tbody>
</table>
Data Collection: Qualitative vs. Quantitative

• **Qualitative:** can be observed, but not measured (Qualitative -> Quality)
  • Ex: Patients felt waiting times were too long at health facility x.

• **Quantitative:** data which can be measured (Quantitative -> Quantity)
  • Ex: 1000 male condoms were distributed within a 3 month reporting period

What is a Standard?

A standard is a statement that defines the performance expectations, structures, or processes that must be in place in a health facility to enhance the quality of care. *Standards are established at the national level.*

Why Standards?

• Provide a basis of measurement
• State the expected quality of…
  • care
  • service
  • product
What is an Indicator?

Signpost, marker, or clue of change;

- Measurable value that can be used to determine degree of adherence to stated desired performance
- Intended to indicate whether objectives are being achieved

Attributes of an Indicator definition

- Name of indicator
- Description/definition
- Interpretation
- Unit of measurement
- Data source (primary/secondary)
- Frequency of data collection
- Limitations
- Disaggregation
- Method of measurement

Key Elements of a Good Indicator -SMART

- **Specific:** An indicator must be related to the conditions that the program/project wishes to change
- **Measurable:** An indicator must be quantifiable and allow for statistical analysis of the data
- **Appropriate:** An indicator must be necessary and have relevance to the management of information needs of the persons who will use it
- **Realistic:** An indicator must be attainable at a reasonable cost using appropriate collection methods
- **Time-based:** An indicator must have a time period for collection clearly stated in collection plan.
Check for understanding

Is the following indicator missing any SMART elements?

**Indicator:** Proportion of health workers who assess each child with fever according to IMCI guidelines

**Make it better…**

Proportion of health workers who assess each child with fever according to IMCI guidelines

Check for understanding

Given this indicator what is the numerator? Denominator?

**Indicator:** Proportion of laboratory workers that correctly read sputum smear slides for PTB diagnosis

• Numerator:
• Denominator:

Fill in the numerator and denominator

Link Between Standards and Indicators

• Standards set the level of desired quality of service

• Indicators measure the extent to which standards have been met
Connecting Standards and Indicators

**Standard**
There should be at least one trained nurse-midwife in every Health Center.

**Indicator**
Proportion of HCs with at least one trained nurse-midwife.

**Standard**
All clients seen at the FP clinic should receive information on side effects of IUD.

**Indicator**
(percentage) of FP clients who receive information on side effects of IUD at the FP clinic.

---

Check for understanding

Which is the indicator that accurately measures the given standard?

<table>
<thead>
<tr>
<th>Desired Performance Standard</th>
<th>Indicator 1</th>
<th>Indicator 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>100% of children should be assessed for the five general danger signs</td>
<td>Average number of general danger signs assessed for in each child</td>
<td>Percentage of children who have been assessed for the five general danger signs</td>
</tr>
</tbody>
</table>

Guess which indicator more accurately measures the given desired performance standard.

---

Key M&E Questions

- Did the programme achieve its objectives?
- Did the target population benefit from the program?
- At what cost?
- Can improved health outcomes be attributed to programme efforts?
- Which programme activities were more (or less) important/effective?
Summary

- Standards define quality, and indicators make it possible to measure whether the standard has been met, and if a service is a “quality” service or not.
- Correctly defining indicators, ensuring that data to calculate the indicators are readily accessible and assuring indicator specificity are critical for measuring standards and by extension, quality.

Summary

- It is easier to develop an indicator when a standard exists.
- Recall: Indicators are stated in terms of counts, ratios, proportions/percentages (they can also be qualitative).
- Indicators should have a clear definition with stated numerator and dominator that are required to compute them.

MOH Quality Improvement National Indicators

- The Ministry of Health developed 5 core national indicators to track quality improvement throughout the country.
- The standards are to be used as guidance for facilities and hospitals.
5 Core National Standards

- 100% of HIV exposed infants tested after 12 months
- 100% of clients retained on ART in last 12 months
- No maternal deaths
- 100% of malaria cases confirmed by RDT or laboratory method
- No under 5 deaths

5 Core National Indicators

- % of exposed infants tested for HIV at 12 months
- % of all HIV positive clients retained on ART the last 12 months
- # of maternal deaths at the facility recorded in the last 1 month/12 months/qtr.
- Proportion of confirmed malaria cases in the 1 month/12 months/qtr.
- # of under 5 children who died in the last 1 month/12 months/qtr.

Exit exercise

Standard: All HIV exposed infants should be tested for HIV at 12 months.

Write the indicator for this standard


What is the numerator? Denominator?

Num: [ ]
Denom: [ ]

What data sources would you use to find these numerator and denominator values?
Exit Activity M&E

Complete “Exit Activity Monitoring and Evaluation” activity in your manual

15 minutes

Review of Objectives

Can you…
• Identify the basic purposes of M&E
• Define/differentiate between monitoring and evaluation
• Define quantitative and qualitative data
• Define Indicators
• Define ‘standards’
• Illustrate the link between standards and indicators

SESSION VII: HMIS/HIA2 EXERCISE
SEE EXERCISE MANUAL

SESSION VIII: ELECTRONIC RECORDS SINGLE INDICATOR REPORT ORIENTATION AND PRESENTATION
SEE EXERCISE MANUAL

SESSION IX: INTRO TO QUALITY IMPROVEMENT FOR HEALTH CARE PROVIDERS IN ZAMBIA/QI ALTERNATIVE APPROACH
Introduction to Quality Improvement for Health Care Providers in Zambia

QUALITY DEFINITIONS AND CONCEPTS

Module Objective

Introduce participants to quality definitions and concepts

Definition and Principles of Quality Health Care

- Defining quality of health care is challenging in that quality in itself is multi-dimensional and is seen from different perspectives. These will be discussed as we go through this session.
Some Definitions of Quality

- **Quality of Health Care**: The degree to which health services for individuals and populations increase the likelihood of desired health outcomes and are consistent with current professional knowledge (Institute of Medicine, 2006).

- "Doing the right thing right, right away." (W. Edwards Deming, 1982)

Definitions of Quality

- Quality Health care “consists of proper performance according to standards of interventions that are known to be safe, that are affordable to the society in question and that have the ability to produce an impact on mortality, morbidity, disability and nutrition” (Roemer and Montaya-Aguillar, 1988.)

Some Features in Defining Quality

- **The way things are done**: for example in the case of TB, if a patient has three sputum samples correctly examined and reported by the lab, the right action has been done;

- **Comparing what has been done to what should have been done (expectations or standards)**: for example in TB there is a standard that states what drug regimens different categories of TB patients should be given. Quality is then defined by whether this standard is followed or not.
Features in Defining Quality

- **Taking into account the patient’s perspective**: In some settings, taking the patient’s views is prioritized, e.g., in patient-centered care, when this is done, a quality service would have been delivered.
- **Taking into account the effective use of resources**: Quality services are those that produce the best they can produce within the resources available. If less resources than necessary are being used to provide a given service, then a quality gap exists.

Examples of Dimensions of Quality

- A dimension of quality is an aspect of quality that is in consideration when defining quality.
- The following slides give examples of common dimensions or aspects that are usually considered in defining quality.

Competency and Access

- **Technical Competence**: The degree to which the tasks carried out by health workers and facilities meet expectations of technical quality (i.e., adhere to standards, equipment).
- **Access to services**: The degree to which healthcare services are unrestricted by geographic, economic, social, organizational, or linguistic barriers.
Effectiveness and Efficiency

- **Effectiveness of Services/Standards**: The degree to which desired results (outcomes) of care are achieved
- **Efficiency of Services**: The ratio of the outputs of services to the associated costs of producing those services
- **Interpersonal Relations**: Trust, respect, confidentiality, courtesy, responsiveness, empathy, effective listening, and communication between providers and client

Continuity and Safety

- **Continuity of Services**: Delivery of care by the same healthcare provider throughout the course of care (when appropriate) and appropriate and timely referral and communication between providers
- **Safety**: The degree to which the risks of injury, infection, or other harmful side effect are minimized

Amenities and Choices

- **Amenities**: The physical appearance of the facility, cleanliness, comfort, privacy, and other aspects that are important to clients
- **Choices of Services**: As appropriate and feasible, client choice of provider, insurance plan, or treatment
Perspectives of Quality

- A perspective is a point of view
- Quality is defined from ‘perspectives or “points” of view
- These views can be from:
  - Patients
  - The wider community
  - Partners and other funding agencies
  - Administrators
  - Health care providers

Cost of Quality

- This is also an angle from which quality can be defined
- The “cost of quality” is the cost of NOT creating a quality product or service. Costs are incurred whenever re-work is done (repeat test, re-admissions arising from poor treatment etc.)
- In short, any cost that would not have been expended if quality were perfect contributes to the cost of quality

Summary

- There are several definitions of quality and quality of healthcare
- Quality is multi-dimensional and is defined from different perspectives
- Cost is an important aspect in defining quality
The 5S Approach to Managing the Working Environment

Upon completing this session, participants will be able to:

- Describe the 5S approach as a prerequisite to improve work environment

What is 5S?

- 5S is an approach to organizing and managing the workspace and work flow in order to improve efficiency
- It eliminates waste, improves access and retrieval of requisites (e.g., files) and thus shortens the time required to carry out tasks
- It essentially focuses on improving the working environment and is fundamental to all improvement activities
**Benefits of 5S**

- Reduces workload
- Improves communication
- Improves teamwork
- Increases productivity
- Creates a clean working environment
- Improves safety
- Increases customer satisfaction

**The First S: Sort**

- This first “S” aims at removing all unnecessary items from the workplace
- Classify the things around you into 3 categories:
  - Category 1: Needed
  - Category 2: May be needed
  - Category 3: Not needed

**Diagram**

- Material/s/Items
  - Classification
  - Need it → Not need it → May not need it
The Second “S”: SET

- “SET” follows the initial “SORT” step and involves:
  - Organizing the layout of items
  - Designating locations
  - Putting identifiers such as tapes and labels
  - Arranging everything so that everything is where it is needed (at the point of use)

SET

- Sort wastes
  - No horizontal piling
  - Nothing on floor

SET

- Retrieval within 30 seconds
  - Labeling reserved seats
  - Color identification
The Third S: Shine

• The focus of this “S” is to shine! Clean up the environment to make it attractive and pleasant to work in
• Everyone is responsible for taking care of their space and tools
• Everyone must take care of their workplace and the tools they use to work

The Fourth S: Standardize

• Maintain the gains made by the first three “S” by providing:
  – Work instructions
  – Standard operating procedures where these are required
  – Labels and color coding to identify danger zones, waste types, disposal bins etc.
  – Sign boards for easy understanding
The 5th S: Sustain

- To sustain the achievements there needs to be individual and group accountability embedded in focused institutional support

The 5th S: Sustain

- The following will support this process:
  - Self discipline
  - Training/coaching/on the job training
  - Strict observation of rules
  - Display of poster reminders on 5S
  - Effective communication among the team

Sustain

Improve attitude to learn and practice
Four Key Factors for Successful 5S

1. Continued commitment and support from top management
2. 5S starts with education and training
   There are no observers in 5S, everyone participates
3. Repeat the 5S cycle in order to achieve a higher standard

Points of 5S implementation

- Start from education and training
- Document starting situation of your working environment (Take photos!)
- Do not rush to expand 5S to everywhere. Make a showcase within the facility
- Repeat training, Sort/Set/Shine activities until it is institutionalized and Sustain
- Provide about 10 minutes to practice 5S every day

Tools for 5S activities

<table>
<thead>
<tr>
<th>Alignment</th>
<th>Sign board</th>
</tr>
</thead>
<tbody>
<tr>
<td>Check list</td>
<td>Street sign</td>
</tr>
<tr>
<td>Numbering</td>
<td>Labeling</td>
</tr>
<tr>
<td>Red Tag</td>
<td>Symbols</td>
</tr>
<tr>
<td>Safety signs</td>
<td>Visual control</td>
</tr>
<tr>
<td>Color coding</td>
<td>X-Y Axis</td>
</tr>
<tr>
<td></td>
<td>Zone</td>
</tr>
</tbody>
</table>
Sign board

This is used for identifying the location of places and guiding visitors and workers to the place where they want to visit. Use common languages that are used in the country.

Pharmacy Chumba Cha Miti

Utilization of tools for Set and Standardized

• Tools can be combined

• All tools require an agreed set of rules and everyone must follow the rules

• If a symbol or color is already widely used to convey a particular meaning, it is best to retain that meaning when it is used

Motivating the Staff

• Strong leadership (Quality Improvement Team at management level)

• Ownership of activities by staff (Work Improvement Team at department level)

• Strong support system

• Periodical monitoring and evaluation (using photography, evaluation sheet)

• Awarding good practice (Quality competition)
Summary

• 5S is foundational to any quality improvement effort
• It is based on a simple philosophy of “sort” “set” “shine” “standardize” “sustain”
• 5S improves efficiency and quality by improving the work environment

Summary

• It is used in combination with other quality improvement approaches that look at process, systems and performance improvement

Acknowledgements

• The materials used in this presentation have been adopted/adapted from the JICA 5S guidelines and teaching materials
SESSION XI: QUALITY IMPROVEMENT FOR HEALTH CARE PROVIDERS IN ZAMBIA
PERFORMANCE IMPROVEMENT APPROACH

The Performance Improvement Approach

Learning Objectives
Upon completing this session, participants will be able to:
1. Enumerate performance factors and understand their role in enabling good performance
2. Define performance and link performance to quality
3. Describe the steps of the Performance Improvement Framework

What is Performance?
- **Performance**: in the context of human performance technology, performance is the work/tasks that a person does, how s/he does it and the results thereof
- There are other definitions of performance that go beyond human performance technology that may relate to projects, programs, machines etc. For now we are focusing on human performance
Factors that Influence Performance

- **JOB EXPECTATION** – Guidelines, policies, Procedures, Protocols and how these are communicated to and understood by providers

- **PERFORMANCE FEEDBACK** – How providers find out how they are doing, compared to the standards. And then feedback should be immediate to be relevant and effective

Factors that Influence Performance

- **ENVIRONMENT AND TOOLS** – The physical environment: facilities, supplies materials and tools

- **MOTIVATION AND INCENTIVES** – Systems, strategies and tactics to stimulate and sustain desired performance.
Factors that Influence Performance

- **ORGANIZATIONAL SUPPORT**
  - How the organization’s mission and goals align with desired performance
  - Task competition – well thought out roles and responsibilities.
  - The extent to which supervision happens to assure that all the performance factors are in place (a supportive supervision system)
  - Systems and interventions to address performance.

Factors that Influence Performance

- **SKILLS AND KNOWLEDGE** – Capacity built in individual team members.

Linking Performance to Quality

Remember the systems view:

**INPUTS** → **OUTPUTS**

**PROCESSES** (ACTIONS)

Human beings take the action to convert inputs to outputs – if they do the right thing in the right way at the right time to the right person then quality comes out of the system.
Quality Improvement (QI) Project Methodology

- At the end of this training, you will have the skills and knowledge necessary to complete a QI project at your facility.
- The quality improvement project employs a step-wise methodology of measuring performance gaps, determining requirements for good performance and establishing appropriate interventions to bring about good performance.

Aim and Goal for QI Projects

- **AIM:** to empower health care providers to improve the quality of service delivery
- **GOAL:** to solve performance problems to achieve desired results at...
  - Organizational level
  - Process level
  - Systems level
  - Employee level
The Steps of the Framework

1. Analyse the institutional context
2. Obtain stakeholder agreement
3. Define desired performance
4. Describe actual performance
5. Calculate performance gaps
6. Perform root cause analyses
7. Design an intervention to address root cause/s
8. Implement the intervention
9. Use data to evaluate whether the intervention was successful

*Throughout the steps monitor activities and data quality*

The Performance Improvement Approach

Step 1- Analyse Institutional Context
The Steps of the Framework

1. Analyse the institutional context
2. Obtain stakeholder agreement
3. Define desired performance
4. Describe actual performance
5. Calculate performance gaps
6. Perform root cause analyses
7. Design an intervention to address root cause/s
8. Implement the intervention
9. Use data to evaluate whether the intervention was successful

*Throughout the steps monitor activities and data quality

The Performance Improvement Approach

[Diagram of the performance improvement approach]

Why Institutional Context Analysis?

- To maximize the chance of success in any improvement activity, one must understand the context

- An improvement group must:
  1. Be oriented towards a common vision and mission
  2. Examine the factors in the environment that are likely to have a good or bad effect on efforts to improve the quality of health care services (cultural, client and community, interventions that were/weren’t successful in the past)
Why Context Analysis?

The end point of the exercise should be well-developed vision and mission statements and a list of positive and negative drivers (one tool used here is a SWOT analysis).

Consider these factors at each step of the performance improvement approach and be proactive about the factors that might work against you.

Theoretical QI Scenario

- Consider you are in charge at a rural health facility in Eastern Province. Your clinic serves about 40 patients each week. Patients coming to the clinic are often traveling far distances and they have very little money for transport. It is often difficult for them to take time away from housework, working the fields, and caring for their families to visit the clinic. There is an NGO in the area whose focus is PMTCT, and they have some funding for new programs. Your facility employs midwives and CDEs, but at times only 2 people are seeing patients. All midwives are trained in PMTCT, but none of the CDEs are trained. Community leadership in the areas surrounding the clinic is strong with active SMAG’s (Safe Motherhood Action Group), Neighborhood Health Committees, and women’s groups.
Vision and Mission Statements

- **Vision**: outlines what it wants the organization or ideal world to be. It is a long-term view and can be a source for inspiration.
  - Example for previous scenario “A community with zero babies born HIV positive.”

- **Mission**: Defines the purpose of an organization, describing why it exists and what it does to achieve its vision and for whom.
  - Example for previous scenario “providing high quality PMTCT services for pregnant women.”

SWOT Analysis

- SWOT analyses aim to identify the key internal and external factors seen as important to achieving an objective. SWOT analysis groups key pieces of information into two main categories:
  1. Internal factors – the **strengths** and weaknesses internal to the organization
  2. External factors – the **opportunities** and threats presented by the environment external to the organization

- Identification of SWOTs is important because they can inform later steps in planning to achieve the objective.

Summary

- Consider and refer back to your vision and mission at all times throughout the PIA (consider posting it in your facility)

- Consider your SWOT analysis when designing and evaluating QI interventions
Step 2: Obtaining and Maintaining Stakeholder Agreement

The Steps of the Framework

1. Analyse the institutional context
2. Obtain stakeholder agreement
3. Define desired performance
4. Describe actual performance
5. Calculate performance gaps
6. Perform root cause analyses
7. Design an intervention to address root cause/s
8. Implement the intervention
9. Use data to evaluate whether the intervention was successful

*Throughout the steps monitor activities and data quality

The Performance Improvement Approach
Who is a Stakeholder?

- **Definition of a Stakeholder:**
  - Someone who has something to gain/lose by what happens in an activity (health facility) or
  - a person, group or organization with an interest in a project
- In the context of healthcare stakeholders can be:
  - clients (patients or those who contract services from the health facility)
  - employees of the facility

Who is a Stakeholder?

- In the context of healthcare stakeholders can be:
  - providers of equipment and supplies
  - government including ministries other than MOH
  - community members
  - media groups
  - religious groups
  - customary leaders
  - law enforcement agencies
  - business houses
  - anybody who is likely to engage with the facility or be affected by what goes on in the facility

Why Engage Stakeholders?

- Stakeholders can make or break your improvement effort depending on the power they yield in the community
- There are resources (talents, skills, knowledge, finances, technical, strategic linkages etc.) that become available to you because you engage stakeholders
- When stakeholders buy into what you are doing the likelihood of success is very high
Why Engage Stakeholders?

- Consequently the goal of this process is to involve key stakeholders in a transparent/participatory process that results in agreements in performance improvement (PI).

Identifying Stakeholders

- As an improvement group sit together and brainstorm who your potential stakeholders are – the following questions will help:
  - Who are our stakeholders?
  - What is their work?
  - What is their contribution to the program we are trying to improve?
  - What is their likely opinion of performance improvement?
  - Where are they?
  - What is their availability?

Identifying Stakeholders

- Once you’ve brainstormed all possible stakeholders, organize them by considering:
  - Who has high interest in your QI efforts
  - Who has low interest in your QI efforts
  - Who should be very involved in your QI efforts
  - Who will have minimal involvement in your QI efforts
  - Summarize these using a 2x2 table or any tool you are familiar with.
Analyze your stakeholders according to the matrix shown below

<table>
<thead>
<tr>
<th>High involvement</th>
<th>Low involvement</th>
</tr>
</thead>
<tbody>
<tr>
<td>High interest</td>
<td></td>
</tr>
<tr>
<td>Low interest</td>
<td></td>
</tr>
</tbody>
</table>

Obtaining Stakeholder Agreement

- To obtain stakeholder agreement:
  - Brief the stakeholders about the facility, problems it is currently facing and your aspirations
  - Inform them about the need to improve the quality of the services being offered by the health facility
  - Ask them to consider being a part of the quality improvement process
  - Discuss the possible role for each stakeholder

Brainstorm some stakeholders from the example scenario

- Midwives
- CDEs
- SMAGs
- PMTCT NGO
- Neighborhood health committees
- Women’s groups
- In charge
- HIV + pregnant women and their partners
- Others?
Arrange these stakeholders using a 2 x 2 matrix

<table>
<thead>
<tr>
<th></th>
<th>High involvement</th>
<th>Low involvement</th>
</tr>
</thead>
<tbody>
<tr>
<td>High interest</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Low interest</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Arrange the brainstormed list from the slide above and categorize stakeholders as you see fit. **Note:** there is no “right” answer.

**Summary**

- Stakeholder analysis and involvement increases the chance of success because:
  - It brings in additional resources & talents
  - Pre-empts opposition
  - Has the potential to bring in previously unrecognized sources of resources
- Consequently it is very important to understand your stakeholder environment

**Group Work**

Use guide in exercise manual to complete the following:
- Developing vision and mission statements
- Brainstorm stakeholders
- Arrange stakeholders in 2x2 matrix

*30 minutes for activity
5 minutes for 1-2 groups to BRIEFLY share out*
Step 3- Describe Actual Performance

The Steps of the Framework

1. Analyse the institutional context
2. Obtain stakeholder agreement
3. Describe actual performance
4. Define desired performance
5. Calculate performance gaps
6. Perform root cause analyses
7. Design an intervention to address root cause/s
8. Implement the intervention
9. Use data to evaluate whether the intervention was successful

*Throughout the steps monitor activities and data quality*

The Performance Improvement Approach
Measuring Actual Performance

- You need to define performance indicators in order to measure performance.
- Remember back to the monitoring and evaluation presentation where we practiced deriving SMART indicators from standards.
- Indicators should be specific, measurable, achievable, realistic and timely.
- This step also establishes a Baseline for evaluation, hence shows how your facility is performing Before implementing an intervention. It will be the comparative measurement you use to establish whether your QI intervention was successful.

Steps of measuring actual performance

1. Identify appropriate data source/s in order to calculate health indicators (ex. registers, tally sheets, HIA2, SmartCare reports)
2. Clean data source/s
   - Remember the 3Cs: consistency, correctness, and completeness.
   - Fix in cases where you can follow up or verify.
   - Delete from numerator and denominator if not possible to follow up or verify.
3. Verify suspected performance problems with the data.

Example of calculating actual performance

From scenario, suspected PMTCT problem: not all HIV exposed babies being tested for HIV by 12 months.

Step 1 - find appropriate data source:
HIV exposed infant follow-up register

Step 2 - clean data source:
Keep in mind the 3Cs: consistency, correctness, completeness.
- Follow up or verify with other sources/registers.
- If not possible to follow up, delete from numerator and denominator.

Step 3 - verify suspected problems with data:
Calculate proportion of HIV exposed babies tested for HIV at 12 months.
Step 1 – find appropriate data source

- **Problem:** not all HIV exposed babies being tested for HIV by 12 months
- Ask which sources of data can confirm or lend context to this problem?
- HIV exposed infant register

Step 2 – clean the data source

- See HIV exposed infant register – before and after
- Maintain data quality in terms of the 3Cs

Step 3 – verify the suspected problem with data

- We want to calculate the % of HIV exposed infants that were tested for HIV by 12 mos (for monthly birth cohort)
  - **Numerator:** the # of HIV exposed infants tested for HIV by 12 months
  - **Denominator:** the # of HIV exposed infants aged 12 months or older

\[
\frac{\text{Numerator}}{\text{Denominator}} \times 100
\]

**Take 5 minutes** to fill in the numerator and denominator using the HIV exposed infant register
What the numbers tell us

- **Actual performance:** 43% of HIV exposed infants are being tested for HIV by 12 mos
  - What can we use this figure for?
    1. Evidence that an improvement intervention is needed
    2. The BASELINE measure for evaluation
    3. A starting place from which to develop DESIRED performance

Summary

- Regular monitoring of service (routine data collection) is required to calculate actual performance
- Good quality data is necessary for accurate calculations of performance
  - correct, complete and consistent data
- Requires identifying necessary data sources and indicators
- Calculate indicators to verify suspected problems

Step 3- Define desired performance
The Steps of the Framework

1. Analyse the institutional context
2. Obtain stakeholder agreement
3. Describe actual performance
4. Define desired performance
5. Calculate performance gaps
6. Perform root cause analyses
7. Design an intervention to address root cause/s
8. Implement the intervention
9. Use data to evaluate whether the intervention was successful

*Throughout the steps monitor activities and data quality*

The Performance Improvement Approach

What is Desired Performance?

- **Desired Performance** is the expected achievement i.e. “what is expected according to the set standards”

- It is a clear statement of the expected level of performance (the things people do, how they do them and the results of that work)
What is Desired Performance?

- Desired performance is **NOT** synonymous with ideal performance (*undue emphasis on ideal performance might set standards that seem unreachable and therefore discourage other than encourage performance*)

What is Desired Performance?

- Desired performance is a **target** in terms of performance and therefore is linked to quality (remember how achieving standards helps us to define a quality service)
- “Performance” and “targets” are key words in the definition of quality

What Prompts the Defining of a Desired Performance?

1. **Solving an existing problem e.g.**
   - PMTCT patients are not being counseled according to health facility guidelines at 1st ANC visit
   - Mothers are not being tested and counseled at labour and delivery

   These two examples of deficiency will prompt an improvement group to define a desired performance so that the expected level of performance can become clear.
What Prompts the Defining of a Desired Performance?

2. Addressing the needs and expectations of clients e.g.
   - Pregnant mothers have started demanding information on side effects of prescribed HIV drugs
   - Pregnant mothers are demanding shorter facility wait times for antenatal appointments

These new demands by the clients will cause you to define new desired performance statements to meet this new need

What Prompts the Defining of a Desired Performance?

3. Setting up an enabling system for a new performance e.g.
   - Introducing PMTCT/pediatric collaborative activities
   - Introducing integrated services for ANC to include malaria and TB

These new services will require desired performance statements to be written

Process of Defining a Desired Performance

- There are things that you must ensure in this process:
  - Stakeholder involvement
  - Understand the institutional context
  - Address clients’ needs
  - Focus the activity
  - Make an evidence-based definition
  - Define indicators to measure the desired performance
Make an evidence based definition

- A desired performance statement must be backed by data/information to support the validity of the desired performance level, including the target set.

*Note that the desired performance may change over time as new evidence comes in.*

Steps in Developing Desired Performances

- There are two main steps in coming up with desired performances:
  - Attach measures (indicators) to desired performance statements
  - Set targets for desired level of performance

Writing desired performance statements

- A desired performance statement must be clear, results oriented and measurable and must:
  - State the accomplishments and/or behavior of the performer
  - Be observable
  - Be measurable
  - Be realistic
  - Be agreed upon by different observers
  - Clear and not subject to interpretation
  - Be under the control of the performer
Example: From Performance problem to desired performance

- **Performance Problem:** Not all HIV exposed babies are being tested for HIV by 12 months
- **Performance statement:** 43% of HIV exposed babies are tested for HIV by 12 months
- **National Standard/Guideline:** 100% of HIV exposed babies should be tested for HIV by 12 months
- **Desired Performance:** 90% of HIV exposed babies are tested for HIV by 12 months

```
Based on what the facility deems realistic given the known institutional context restrictions and challenges
```

Summary

- Desired performance is a performance target that is developed to
  - Address a performance problem
  - Meet needs of clients
  - Address a new intervention
- Desired performance must be attached to indicators

Step 5 – Performance Gaps
The Steps of the Framework

1. Analyse the institutional context
2. Obtain stakeholder agreement
3. Describe actual performance
4. Define desired performance
5. Calculate performance gaps
6. Perform root cause analyses
7. Design an intervention to address root cause/s
8. Implement the intervention
9. Use data to evaluate whether the intervention was successful

*Throughout the steps monitor activities and data quality*

The Performance Improvement Approach

- Obtain and maintain stakeholder agreement
- Define desired performance
- Describe actual performance
- Find root causes
- Select interventions
- Implement interventions
- Monitor and evaluate performance

The Performance Gap

- The next step is to determine the performance gap, which is the difference between the desired performance and the actual performance

\[ \text{Performance gap} = \text{desired performance} - \text{actual performance} \]
Take 2 minutes to fill in the performance gap

Take 2 minutes to fill in the performance gap

Why is defining the gap important?

- Can help you benchmark progress
  - E.g., 47% of HIV exposed babies are NOT being tested for HIV by 12 mos
  - Say we implement an intervention for infant testing and find that in the next reporting period only 15% of HIV exposed babies are NOT being tested for HIV by 12 mos
  - Way of quantifying success, showing evidence of performance improvement
  - Can be used as evidence that new interventions are necessary to close the remaining gap
Why is defining the gap important?

- Can help prioritize performance problems
  - Eg. 47% of HIV exposed infants not being tested for HIV by 12 mos
  - Other problems identified: 5% of HIV positive expectant mothers not receiving appropriate treatment regimens, 6% of mothers not being assessed for ART eligibility by WHO staging or CD4 at 1st ANC
  - Your team might use a variety of factors to assess which of these problems they will tackle first, the size of the gap can be one of these factors

Prioritization/Decision Matrix

- Uses selected criteria for making the decision e.g. impact of problem, magnitude of problem, cost of addressing the problem, frequency of occurrence of the problem, consequences of not addressing the problem etc.

Prioritization/Decision matrix

- Group not sure about where to start
- Helps to decide between several options
- Particularly useful in resource constrained settings
**Prioritization/Decision Matrix**

<table>
<thead>
<tr>
<th>Performance Problems</th>
<th>Magnitude of the gap</th>
<th>Cost of addressing problem</th>
<th>Consequences of not addressing problem</th>
<th>TOTAL</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. HIV-positive women not receiving ideal or correct treatment regimens</td>
<td>5</td>
<td>2</td>
<td>5</td>
<td>10</td>
</tr>
<tr>
<td>2. Mothers not being assessed for ART eligibility by WHO staging or CD4 at 1st ANC</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. Not all HIV-exposed babies being tested by 12 months</td>
<td>5</td>
<td>5</td>
<td>5</td>
<td>13</td>
</tr>
</tbody>
</table>

**Summary**

- To measure performance you must define desired performance and develop performance indicators; you use these same indicators to measure the actual performance.

- Collect data only if you need to; the data collection process should be focused and quality controlled.

**Summary**

- Performance gaps are the difference between what is desired and what is happening.

- Performance indicators must be measured in the same units for desired and actual performances.
Step 6 - Root Cause Analysis

The Steps of the Framework

1. Analyse the institutional context
2. Obtain stakeholder agreement
3. Describe actual performance
4. Define desired performance
5. Calculate performance gaps
6. Perform root cause analyses
7. Design an intervention to address root cause/s
8. Implement the intervention
9. Use data to evaluate whether the intervention was successful

*Throughout the steps monitor activities and data quality*

The Performance Improvement Approach
Introduction

- Performance gaps are caused by a variety of causes.
- Fundamental (root) causes of performance gaps must be identified so that targeted interventions can be designed.
- It uses a systematic approach for finding the root cause(s) of the performance problem.

Introduction

- QI uses analytical techniques to get to the basic causes of performance deficiencies (i.e., those that you can do something about).
- QI implements an intervention that applies only to the root cause.

Introduction

- Root causes are linked to performance factors in order to facilitate easy identification of solutions (performance factors were discussed earlier).
- Identifying root causes is a critical step in the QI process.
Introduction

• Root cause analysis should take place immediately following the review of the performance gaps with the same stakeholder group that defined the desired performance.

• A good root cause analysis increases the likelihood that the interventions will have a greater impact—that the right tools will be used.

What is a Root Cause?

• One that can explain the “effect” either directly or through a series of events and (b) if removed, would eliminate or reduce the performance gap.

• An underlying cause of a performance gap.

What is a Root Cause?

• Root cause analysis must be approached logically and must be conducted in a logical manner.

• Getting the wrong root cause means getting the wrong solution; the root cause guides us in developing interventions to overcome the performance gap.
Common Approach to Root Cause Analysis (RCA)

- The approach to RCA
  - A careful analysis of the context in which the gap is occurring
  - A process analysis using flow charts to further understand at what stage the gap is occurring
  - A cause and effect analysis with input from people who are knowledgeable about the context in which the performance gap is occurring (include those working where the performance gap is occurring and are affected)

Common Approach to Root Cause Analysis (RCA)

- When you have a list of possible causes, verify if these are the true causes by collecting data to test your hypothesis (this is verification of causes)

- For the causes that you have verified, identify the performance factors to which they relate – this will help you to quickly identify possible interventions to solve the performance gap; develop the root cause statements

Understanding and Analyzing Problems

- The following are useful questions to ask about your performance gap as they will help you to get clues as to why the gap exists
  - What is the problem?
  - How do you know it is a problem?
  - How frequently does it occur?
Understanding and Analyzing Problems

- When does the problem occur?
- What happens when the problem occurs?
- How will we know when it is resolved

Understanding the process within which the performance gap occurs

- In performance improvement,
  - Performance gaps relate to the way things are done and
  - There is a high focus on systems and processes that impact on the ability of workers to achieve high performance levels

Flowcharting

- Used to analyze the sequence of activities that occur in a particular process
- Help to break up a routine process, or set of activities, into a series of sub-steps that make up the process
- Helps to define the relationship between the activities and the desired outcomes of those activities
Flowcharting

Flowchart Symbols
- Oval: shows beginning or ending step in a process
- Rectangle: depicts particular step or task
- Arrow: shows direction of process flow
- Diamond: indicates a decision point

Flow Chart

HIV exposed infant is entered into the follow up register

Guardian and baby return for <3 mos virological test

Guardian and baby return for 3-11 mos virological test

Guardian and baby return for >11 mos A8 test

Is test positive or negative
- pos: start on treatment
- neg: have guardian and baby return at 3-11 mos

Is test positive or negative
- pos: start on treatment
- neg: have guardian and baby return at 12 mos

Is test positive or negative
- pos: start on treatment
- neg: baby is cleared for further infant testing
Cause and Effect Analysis

- Once a problem has been more specifically located, a hypothesis about the causes should be developed.
- "Hypothesis" is used because the suspected or proposed root cause (the core of the problem) has to be verified by data.

Cause and Effect Analysis

- Cause and effect analysis helps to generate a list of as many possible causes as possible — helpful because root cause may not be obvious.
- A cause and effect analysis helps to look beyond the symptoms of the problem.

"But Why?" Tree
Fishbone Diagram

Use data to verify root causes

- Causes identified from the cause and effect analysis brainstorming are still hypothesis that needs to be verified
- When collecting data to verify causes use information sources that are different from the ones used to identify the problem
- Collect and interpret data to prove or disprove hypothesis
Use data to verify root causes

- Some key questions:
  - Does the hypothesized cause really exist?
  - Is the cause frequent/widespread enough to explain the extent of the identified problem?
  - Is the cause actually associated with the problem?

Develop root cause statements and align them to performance factors

- Interventions become clear and more focused
- The root causes closest to the performer and his or her work environment are identified
- When the root cause has been determined one should be able to state the performance factor to which the root cause is related
- State the root cause as specifically as possible

Summary

- A ROOT CAUSE IS ONE THAT: (a) Can explain the “effect” either directly or through a series of events and (b) If removed, would eliminate or reduce the problem
- Cause and effect tools (e.g. Fishbone or Why Tree) generate hypothesis on root causes
- These root causes must be narrowed down and validated by data
- Root causes are linked to performance factors
Step 7 - Select and Design Interventions

The Steps of the Framework

1. Analyse the institutional context
2. Obtain stakeholder agreement
3. Describe actual performance
4. Define desired performance
5. Calculate performance gaps
6. Perform root cause analyses
7. Design an intervention to address root cause/s
8. Implement the intervention
9. Use data to evaluate whether the intervention was successful

*Throughout the steps monitor activities and data quality*

The Performance Improvement Approach
Characteristics of a QI intervention

- Results-oriented
- Comprehensive
- Systematic
- Cost-effective

Factors Influencing the Effectiveness of an Intervention

Interventions can be effective if:
- They operate within existing context of politics/policies, economic, culture, mission and vision;
- They address the root cause(s) directly;
- They are integrated within the on-going systems;

Factors Influencing the Effectiveness of an Intervention

Interventions can be effective if:
- The basic inputs are accessible, well distributed and managed.
- The inputs, process and outputs are done as agreed (and each actor plays their roles);
- The outputs are acceptable to service providers and clients, are in the correct amounts and quality (and mix).
Overview of events in selecting interventions

- Identify what we need to improve, and where (where in the process/procedure or in the system)
- Identify the actions that need to be undertaken and by whom
- Undertake capacity analysis to see whether the responsible person/department or organization is able to undertake the action effectively

Overview of events in selecting interventions

- Identify what we need to improve, and where (where in the process/procedure or in the system)
- Identify the actions that need to be undertaken and by whom
- Undertake capacity analysis to see whether the responsible person/department or organization is able to undertake the action effectively

Overview of events in selecting interventions

- Assess/hypothesize the possible outcomes of the intervention
- Implement the intervention (while you monitor to assess effectiveness and "side-effects")
Your QI team decides to target this root cause

**Detailed view of the steps in selecting and designing interventions**

- Step 1: Selection
- Step 2: Development of a design and monitoring plan
- Step 3: Completion of project document and receipt of approval
- Step 4: Produce final version of project document

**Step 2: Develop a design and monitoring plan**

<table>
<thead>
<tr>
<th>Activities</th>
<th>Monitoring</th>
<th>Indicators</th>
<th>Inputs</th>
</tr>
</thead>
<tbody>
<tr>
<td>CDU will make reminder phone calls to guardian 1 week before 3 week testing, 6 month testing and 12 month testing</td>
<td>reminder phone calls will be placed for each test for 12 month period (for down cohort)</td>
<td># of HIV exposed infants tested by 12 mo</td>
<td>talk time, calendar of reminders, time</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Create tools to help monitor the intervention

<table>
<thead>
<tr>
<th>Name</th>
<th>Test Called</th>
<th>Test reminder is Stated</th>
<th>Actual Call</th>
<th>Actual reminder</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Step 3 and 4: finalize and approve project document

- Make sure stakeholders sign off on project plan, timeline, ME plan and are aware of their roles and responsibilities

Summary

- When selecting & designing interventions, the aim should be to propose those that address key (root) causes of performance gaps
- The interventions selected should be the most targeted and cost-effective in closing or reducing the identified performance gaps
- Monitoring and evaluation is planned for at this design stage for the intervention

Step 8 - Implement interventions
1. Analyse the institutional context
2. Obtain stakeholder agreement
3. Describe actual performance
4. Define desired performance
5. Calculate performance gaps
6. Perform root cause analyses
7. Design an intervention to address root cause/s
8. Implement the intervention
9. Use data to evaluate whether the intervention was successful

*Throughout the steps monitor activities and data quality*

---

**The Performance Improvement Approach**

---

**Implementation**

- Rigorous implementation is what makes all the investment in planning worthwhile
- This step MUST be done properly otherwise all is lost in terms of improvement
Requirements for Implementation

- Implementation team
- Implementation plan
- Intervention agreements with cooperating agencies
- Monitoring and production of interim reports on the milestones

Key Implementation Steps

- Build implementation team(s)
- Develop a detailed implementation plan
- Conduct monitoring activities and meetings

6 week, 6 month and 12 month monitoring interim reports

<table>
<thead>
<tr>
<th>Indicator</th>
<th>6 week</th>
<th>6 mos</th>
<th>12 mos</th>
</tr>
</thead>
<tbody>
<tr>
<td>% of HIV exposed infants tested at/by 6 week appt.</td>
<td>70%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>% of HIV exposed infants tested at/by 6 mos.</td>
<td>80%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>% of HIV exposed infants tested by 11 mos.</td>
<td>83%</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>% of guardians contacted for reminders</th>
<th>Appt</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>90%</td>
</tr>
<tr>
<td></td>
<td>90%</td>
</tr>
<tr>
<td></td>
<td>92%</td>
</tr>
</tbody>
</table>
Summary

- Select interventions that directly address the root cause (use appropriate criteria)
- Build design teams
- Develop a design plan if the intervention is complex
- Build implementation teams and develop an implementation plan
- Monitor the implementation process

Step 9 – Evaluate intervention

The Steps of the Framework

1. Analyse the institutional context
2. Obtain stakeholder agreement
3. Describe actual performance
4. Define desired performance
5. Calculate performance gaps
6. Perform root cause analyses
7. Design an intervention to address root cause/s
8. Implement the intervention
9. Use data to evaluate whether the intervention was successful

*Throughout the steps monitor activities and data quality*
Take 5 minutes to fill in the numerator and denominator using the NEW “post QI intervention” HIV exposed infant register.
**Evaluation Report**

- Discuss/present findings
- Explain findings, challenges
- Whether or not your team feels this was a successful intervention, why or why not?
- Next steps, next phase of intervention?

---

**SESSION XII: QI SIMULATION**  
SEE EXERCISE MANUAL FOR SIMULATION

**SESSION XIII: QI PROJECT DISCUSSION**

---

**Developing a Quality Improvement Project**

---

**Objectives**

*At the end of this presentation, participants should be able to:*

- Apply course skills to develop a quality improvement project
- Identify areas of weakness in health service delivery using data
- Design interventions to improve these weaknesses
- Verify progress with data
What is a quality improvement project?

- Any endeavor aimed at improving health service delivery and/or performance
- For the intents and purposes of this training, it follows the 9 steps of the PIA (performance improvement approach)
- Produces a PowerPoint or poster presentation

Why develop quality improvement projects?

To create a consolidated resource to:

- Most importantly is to improve patient care around gaps identified
- Use data to verify programmatic strengths and weaknesses
- Help define service needs and communicate priorities
- Create a baseline for comparisons over time
- Assist in monitoring progress and evaluating programs

District QI Projects

- **Who involved:** District staff QIDU Participants

- **What:** District personnel participating in QIDU training should gather a small team to complete a project focused on **data quality** (one of the following): data completeness, data consistency or data correctness

- **Completion of a QI project will help district QIDU participants understand how to mentor facility staff on completing these projects**

- **When:** Projects are due approx. 3 months after the QIDU training (exact date mentioned later)
Facility QI Projects

- **Who:** Facility staff QIDU participant
- **What:** Facility personnel participating in QIDU training should gather a small facility QI team to complete a project focused on **one of the following the 5 core indicators:**
  1. % of exposed infants tested for HIV at 12 months
  2. % of all HIV positive clients retained on ART 12 months after initiating
  3. # of maternal deaths at the facility recorded in the last 1 month/quarter/12 months
  4. % of confirmed malaria cases in the last 1 month/quarter/12 months
  5. # of under 5 children who died in the last 1 month/quarter/12 months
- **When:** Projects are due approx. 3 months after the QIDU training

Use the PIA to complete QI project

- Follow the steps of the PIA to complete your project
- Use the manual slides, exercises, simulation and other resources (including communicating regularly with trainers) to support your team in completing project
- Use the PowerPoint template that follows as a presentation guideline for the project (this guideline can be modified into a poster if PowerPoint is not available)

(Name of Project)  
(Facility Name)  
(List Key Team Members)
Justification of Project

- Explain rationale for selecting particular QI project.

Background

- Explain institutional context, SWOT analysis optional
- Identify stakeholders and highlight reasons for their inclusion and involvement
- Include data sources or evidence that guided your project

Improvement Project Goal

- What is the team trying to accomplish?
- Include project statement
Performance

- State actual performance
  - Explain the development of chosen indicator in terms of your numerator and denominator
- State desired performance
- Create table/graph/etc. to showcase performance gap

Root Cause Analysis

- Describe your findings when you reviewed the original process and problem. How did you arrive at the major causes and gaps in the process?
- Present fishbone, why tree, and/or flow charts created on site

Intervention Design and Plan

- Justification of interventions selected (prioritization rationale)
- Describe what happened during planning and preparation of selected intervention
  - Include division of roles, schedule/timeline, tools used/created, meetings held, trainings, etc.
Implementation

- Describe intervention(s) you implemented and how it targeted the identified gap
- Discuss challenges to execution of plan

Measurement

- Present using analytical tools to display intervention outcome (i.e., the performance achieved at this point) compared to the actual performance +/- the desired performance
  - (Include indicator created)

Discussion

- Summary of exercise that includes challenges and achievements throughout the process
- Ideas on next steps to be taken
How do I submit a QI Project?

**District Staff**
- Submit completed PPT (or poster) to provincial office approximately 3 months after QIDU training
- Additionally send PPT (or poster) to certification and follow-on subgroups
- Western Province district staff submit completed profile by COB February 17th
- Email to million.phiri@unza.zm and brivinesk@gmail.com

Follow-on subgroup will be in communication in early January to check on progress and help troubleshoot any problems.

---

How do I submit a QI Project?

**Facility staff**
- Submit completed PPT (or poster) to district staff QIDU trainers approximately 3 months after QIDU training
- Districts will submit to the provincial staff
- Follow-on committee will work with district trainers to set the date for facility submission
- Staff will email or physically submit PPTs or posters to district trainers

District staff should complete at least one follow-up visit with facilities to mentor through the PIA process and troubleshoot problems with facility team.

---

Notes on QI Projects

A “QI Project” is not a one-off activity. The idea is to create a culture of QI, where gaps are regularly reviewed and solutions developed to address them.

The performance assessment (PA) tool is another powerful source to identify data gaps in addition to SmartCare and HIAZ.
SESSION XIV: SUPPORTIVE SUPERVISION

Supportive Supervision/Mentoring for Quality Improvement

Objectives

At the end of this presentation, participants should be able to:

- Demonstrate how to use the national QI mentorship tools
- Describe how to report on supervision visits
- Describe expectations for supervisors and visits
Goal for QI Mentoring

Move facility teams from external guidance phase and support to independent, internally driven, sustainable QI programs

QI Mentoring Approach

- Facility staff are trained in QIDU by district trainers/mentors (trained in QIDU)
- District mentors follow-up on training, in person at the facility to assess progress and support QI project troubleshooting
- District mentors regularly follow-up by phone or email containing support areas through timely communication and feedback
- Facilities turn in QI project deliverable (ppt or poster) to district mentor about 3 months after training data
- Outstanding projects are encouraged to present at Quarterly Review Meetings

Best Practices for QI Mentoring

- Have sound technical knowledge
- Provide support in a non-threatening manner
- Build a relationship between the clinic leadership and staff
- Frequently communicate with facility team
- Providing follow-up and respond to specific requests
- Provide encouragement and recognition
# Expectations and Standards for Mentoring

- Mentors should plan at least one on-site mentoring visit for each facility in his/her district after the facility QIDU training.
- The first mentoring visit should occur 6-8 weeks after the QIDU training.
- Coaches should also keep in regular contact via phone/email with facilities to track QI project progress.

## Guide for Writing Meeting Minutes for Site Quality Improvement Teams

<table>
<thead>
<tr>
<th>Date:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Place:</td>
</tr>
</tbody>
</table>

Participants/attendees (names, job function, unit work, role in the team)

Time meeting started:

Agenda of the meeting:

Discussion points:

Summary of each discussion point:

Decisions taken (what needs to be done, when, and by whom?)

Recommendations made:

Date and venue of next meeting:

Draft agenda for next meeting:

Time meeting ended

Name and signature of secretary and the chairperson

**Attachments:**

Other documents discussed or shared during the meeting
## Prioritization Matrix

<table>
<thead>
<tr>
<th>POTENTIAL QI PROJECTS</th>
<th>CRITERIA</th>
<th>REALISTIC SCOPE (TOO BIG OR TOO SMALL?)</th>
<th>LIKELIHOOD OF SUCCESS</th>
<th>POTENTIAL IMPACT (PATIENTS, RESOURCES, INDICATORS, EFFICIENCY ETC)</th>
<th>TOTAL</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Quality Improvement Through Data Use (QIDU) Participant Manual

<table>
<thead>
<tr>
<th>QI Project Template</th>
</tr>
</thead>
<tbody>
<tr>
<td>Facility Name:</td>
</tr>
<tr>
<td>Program/Dept.:</td>
</tr>
<tr>
<td>Date project initiated:</td>
</tr>
<tr>
<td>Frequency of monitoring/reviewing the project:</td>
</tr>
</tbody>
</table>

**QI Project:**
- Performance problem
- Actual Performance
- Desired performance
- Performance Gap
- Performance indicator(s)

**QI Team**
- Team Leader:
- Team Members:

**Current/Existing Process**
- Flowcharts: (attach additional information as needed)

**Root Cause Analysis**
- Fishbone Diagram: (attach additional information as needed)
  - a. Ask Why at least 5 times for each cause until you say “I don’t know”
  - b. Circle the Root Cause

- c. Rank the Causes using the prioritization matrix

**Verify the gap identified using data:**

**What is your Plan?**

Use the QI Project Work-plan to document your plan.

## QUALITY IMPROVEMENT PROJECT WORK-PLAN

**FACILITY**
- NAME:
- DISTRICT:
- PROVINCE:

**QI PROJECT:**
- IMPLEMENTATION:
- DATE OF IMPLEMENTATION:
- TIME FRAME:

<table>
<thead>
<tr>
<th>Monitoring/Review Date</th>
<th>Reason for the Gap</th>
<th>Change/Intervention</th>
<th>Key Action Steps</th>
<th>Performance Indicator(s)</th>
<th>Required Resources</th>
<th>Responsible Person</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

---

115
SESSION XIV: EPI PROFILE REORIENTATION

Reorientation: Creating an Epidemiologic Profile

Objectives

At the end of this presentation, participants should be able to:

- Apply course skills to develop an epidemiologic profile
- Synthesize health data from Zambian data sources to highlight disease trends, services, and needs
What is an Epidemiologic Profile?

- A document that uses epidemiologic principles to clearly characterize the status of a disease in a population and the services available to address it
- Involves extraction and summarization of data from key data sources
  - For a defined geographic region
  - Over a defined period of time
- Provides analysis and interpretation of these data in text and figures
- Produces a written report that concisely describes findings and provides recommendations

Why Develop an Epi Profile?

To create a consolidated resource to:
- Communicate information for program planning and decision-making
- Help define needs and communicate priorities
- Create a baseline for comparisons over time
- Assist in monitoring progress and evaluating programs

Importance of an Epi Profile

- Analyzing data from multiple sources can help identify priority needs and emerging problems
- Supporting program decisions with data can increase likelihood of acceptance
- Sharing data from different sources with involved sites may identify explanations for data inconsistencies and lead to changes in provider behavior

Importance of an Epi Profile, cont’d

- Developing products like epidemiologic profiles that assemble data from different sources in one accessible place can help shape and guide decisions
- Remember -- data are useful to the extent that they are analyzed, shared/communicated, and used -- not just collected!
Developing the Epi Profile – 10 Steps

1. Define the Audience – For whom will this be a resource?
2. Define the Scope – How broad, how detailed will it be?
3. State the Questions – What will the Profile answer?
4. Design the Format – How will the Profile look?
5. Identify Data Sources to Answer Questions – Context, baseline, trends over time

Developing the Epi Profile – 10 Steps

6. Assess the Data – What are the strengths and weaknesses of the data sources selected?
7. Analyze the Data – What do the data show?
8. Synthesize the Data – How do data from different sources relate to each other, and what are implications?
10. Assess Profile’s Usefulness and Refine for Future Use

Practical Scenario: Developing Your Own Epi Profile

You will carry out 10 steps to develop your own Epi Profile – some have been decided for you:

1. Audience =
   - Decision-makers at provincial and national level

2. Scope =
   - For HIV/AIDS program in your region, highlight key indicators used by MOH and NAC for decision-making (refer to ‘Integrated List of Indicators’)
   - Optional: select 2-3 indicators important to your work or region
3. Questions an Epi Profile Answers

- What socio-demographic characteristics describe and differentiate the general and infected populations?
- What is the extent of the disease? What have been the trends over time?
- What is the extent of factors placing people at risk for the disease?
- What is the availability of services to prevent, treat, or care for the disease?

Developing Your Own Epi Profile

4. Format - use template provided, which includes the following sections:
   - Introduction
   - Background
   - Methods
   - Results/findings
   - Recommendations

5. Data sources - HMIS, E-Mapping, SmartCare, Census, and 2007 DHS

Data Sources Contributing to Epi Profile

- HMIS
- E-Mapping
- SmartCare
- DHS & Behavioral Surveys
- Census
Developing Your Own Epi Profile

6. **Assess the data** (consider any limitations)
7. **Analyze the data** (summarize, explore trends, consider how best described, etc.)
8. **Synthesize the data** across sources, interpret, and present findings
9. **Draw conclusions & make recommendations**
   - Acknowledge limitations
10. **Review profile with team and bring to Data Quarterly Review Meeting**

Finding Appropriate Data

Epi Profile Exercise

Develop the following product:

1) **Written Epi Profile Report** (final version due in 3-4 months at Follow-Up Meeting)
   - Every Team member is to be involved in developing the written report, with each responsible for specific parts
   - Template for completing written report included in your manual
Suggested Epi Profile Organization

**Determine how your team will function:**
- Develop an outline for Epi Profile (use template to assist)
- Decide who from your team will write each section
- Plan time (set target times to finish key steps)

Western Province: Deadlines

- Submit completed Epi Profiles by COB February 17, 2014 to million.phiri@unza.zm and brivinesk@gmail.com
- The follow-on subgroup will reach out by email or phone to check up on progress in early January

Objectives

**Participants should be able to:**
- Apply course skills to develop an epidemiologic profile
- Synthesize health data from Zambian data sources to highlight disease trends, services, and needs