Monitoring the
Quality of Primary Care

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Important Concepts in
Quality Assessment

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Systems View

- Inputs = resources
- Processes = activities
- Outcomes = effects of the activities

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Systems View of a Diarrhea Control Program

INPUTS	PROCESSES	OUTCOMES
• Trained Health Workers • Oral Rehydration Salts	• Education sessions for the mothers	• Children treated with Oral Rehydration Therapy

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Interrelationship of Subsystems

Training system

Inputs	Process	Outcomes
Health workers Trainers Training materials	Training session of the HWs	**Competent health workers**

Diarrhea control system

Inputs	Process	Outcomes
Competent health workers Oral rehydration salts (ORT)	Education session of the mothers	Children treated with ORT

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Advantages of Using Systems View

- Identify process elements often overlooked
- Make explicit links between resources, activities and effects
- Provide framework for structured analysis of quality issues
- Explore causes of poor performance

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More Clinical Practice Guides

- TTT standards
- Reproductive Health Protocols
- Integrated Management of Childhood Illness
- Tuberculosis case management
- Syndromic approach to STD case management

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Measuring Compliance With Standards Is Assessing Quality

- Standards can be developed for each quality of care dimension
- Standards can be developed for each component of the system

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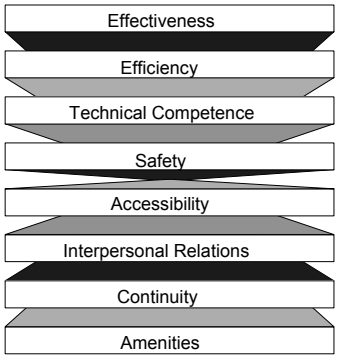
Dimensions of Quality



How Data Can Help Improve Quality

- Identify quality issues
- Quantify the quality gap
- Identify root causes of poor quality
- Select the quality improvement strategy
- Monitor change

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Striking a Balance Between Measurement and Improvement

- Measurement without improvement
- Improvement without measurement
- Too many data
- No data

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Introduction to Monitoring

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Monitoring System

The regular collection and analysis of a core set of indicators

Example: Health information system

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Effective Monitoring Systems

- People who collect data must use them to make decisions about health problems
- Data is collected repeatedly to monitor trends over time

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Objective of Quality Monitoring

…To identify and express in a measurable way the gap between the current level of quality and the expected one…

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Quality Monitoring Systems

- Collect data on performance against standards
- Include information on the processes

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Incremental Approach to a Monitoring System

- Begin with a limited scope to fit existing resources
- Expand the monitoring system in space, time, scope, and methods
- Maintain the monitoring system

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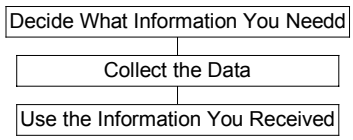
THE ROAD TO QUALITY MONITORING



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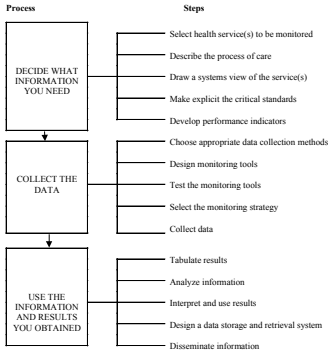
Quality Monitoring Process



DECIDE WHAT INFORMATION YOU NEED

- Select the Health Services to Monitor
- Describe the Process of Care
- Draw a Systems View
- Make Explicit Critical Standards
- Develop Performance Indicators

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Health Services to Monitor

- Prioritize according to criteria
  - High volume: most common
  - High risk: most serious
  - Problem-prone: most difficult to handle
- Other criteria
- Other situations

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Example: Prioritization Matrix

	Prenatal visits	A.R.I.	Adult Tuberculosis
High Volume	2	**3**	1
High Risk	1	**2**	3
Problem-prone	1	**3**	2
SCORE	4	**8**	6

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ARI case management in children under five is the priority service to monitor

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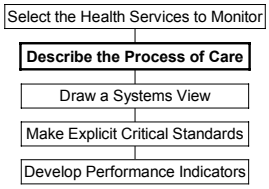
DECIDE WHAT INFORMATION YOU NEED



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Process of Care - Defined

- Listing of activities/tasks to be carried out during the health care interaction
- Only the critical tasks key to a correct diagnosis and treatment to ensure desired outcome

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How to Select Critical Activities

- Official policy
- Provider's judgement
- Expert opinion

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Basic Flow Chart Symbols

- Step or activity
- Start/End points in the process
- Direction
- Connector to next page
- Cloudy Step

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Additional Symbols for Second-Level Flow Charts

- Yes / No — Decision or branch point
- Wait / Bottleneck

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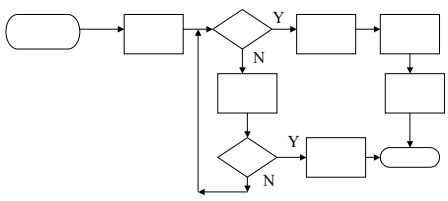
Process Flowchart



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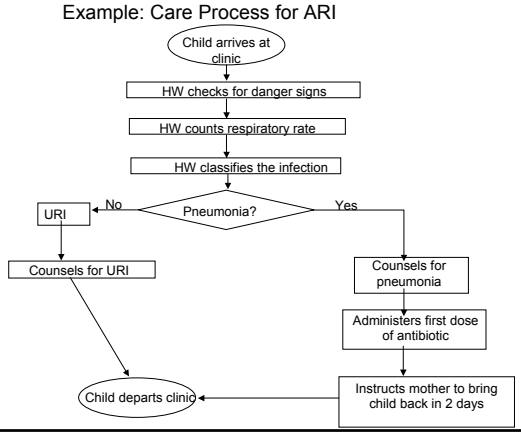
Example: Care Process for ARI



DECIDE WHAT INFORMATION YOU NEED

- Select the Health Services to Monitor
- Describe the Process of Care
- **Draw a Systems View**
- Make Explicit Critical Standards
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Example: Systems View of ARI Case Management

Inputs	Processes	Outcomes
▪Child ▪Competent Provider ▪Child caretaker ▪Timing Device ▪Antibiotics ▪Child record ▪Clinical guidelines ▪Job-aids	▪Ask about danger signs ▪Count respiration rate ▪Classify (pneumonia/URI) ▪Treating ▪Counseling on treatment ▪Counseling on return ▪Recording ▪Referral	▪Pneumonia is recognized ▪Appropriate treatment is given ▪Child referred as appropriate ▪Caretaker understands home action and return if necessary ▪Decrease in case fatality rate ▪Child mortality rate decreases

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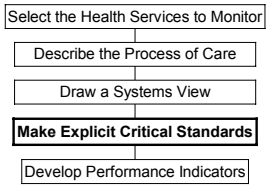

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What is a Standard?

- A statement of expected quality
- Who should be doing what, in which way, at which level of the health system, and at what time

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Quality Standards

- Standards make explicit the definition of quality desired for a specific service, system => *Set a goal*
- Standards provide a basis of measurement against which performance can be compared and assessed => *Measure achievement of that goal*

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Implicit vs. Explicit Standard

Implicit
- Not formally written down
- Something that workers *"just know"*

Explicit
- Formally written down

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Types of Standards

- System - taxonomy of standards
- Clinical vs. management standards

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Clinical Standards

Input Standards	Process Standards	Outcome Standards
• Job descriptions • Specifications	• Clinical practice guidelines • Protocols	• Patient health outcomes

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Managerial Standards

Input Standards	Process Standards	Outcome Standards
• Administrative policies • Rules and regulations • Qualifications	• Standard operating procedures	• Expected results*

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Examples of Standards

Input Standard

Each clinic must have at least one health provider trained in tuberculosis case management

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Examples of Standards (cont'd.)

Process Standard

All patients hospitalized for cerebral malaria must have their temperature checked every four hours

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Examples of Standards (cont'd.)

Outcome Standard

The total fertility rate must be < 5

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Characteristics of a Good Standard

- Valid
- Reliable
- Clear
- Realistic

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Characteristics of a Good Standard

- Valid
  - Based on scientific evidence or other acceptable experience
- Reliable
  - Leads to the same result each time it is applied

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Characteristics of a Good Standard (cont'd.)

- Clear
  - Understood in the same way by everyone; not subject to misinterpretation
- Realistic
  - Can be achieved with existing resources

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Sources of Standards

- Ministry of Health
- World Health Organization
- Professional organizations
- Teaching institutions
- Research findings

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Three Problems of Standards

- Not written down formally
- Not communicated
- Do not meet criteria of a good standard

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If Standard Is Not Explicitly Stated

- Find out if it exists implicitly
- If so, make the standards as explicit as possible

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If Standard Exists and Is Not Communicated

- Use the standard if it is satisfactory
- Create a process that will communicate the standard
- Note how this may affect results of monitoring

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If Standard Exists but Fails to Meet Essential Criteria of Good Standard

- Refer to internationally recognized standard
- Improve existing standard
- Discard any unscientific or harmful standards

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Example: ARI Case Management

Process standard

The health worker counts for at least one minute the respiratory rate of the child by using a watch or a timer when the child is calm

Input standard

There has been no shortage of either Cotrimoxazole or Amoxycillin in the past three months

Outcome standard

The severe pneumonia cases are appropriately referred to a hospital

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DECIDE WHAT INFORMATION YOU NEED

- Select the Health Services to Monitor
- Describe the Process of Care
- Draw a Systems View
- Make Explicit Critical Standards
- **Develop Performance Indicators**

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Indicator

- A measurable variable used to determine the degree of adherence to a standard
- Translates a qualitative statement to a quantitative one to express the quality gap

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Input Indicator

Standard	*Indicator*
There must be one trained family planning nurse per PHC center	Proportion of PHC centers that have a trained family planning nurse

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Process Indicator

Standard	*Indicator*
Each patient with cerebral malaria must have his or her temperature measured 4 times per 24 hours	Number of times the temperature has been measured for a patient with cerebral malaria during a 24-hour period

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Outcome Indicator

Standard	*Indicator*
The average number of pregnancies per woman of reproductive age must be < 5	Average number of pregnancies per woman of reproductive age

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Development of Indicators

- Easier to develop when a standard exists
- Various types: counts, averages, ratios
- State numerator and denominator

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Ratios

Indicator	Numerator	Denominator
Proportion of PHC centers that have a trained FP nurse	Number of PHC centers with at least one trained FP nurse	Total number of PHC centers monitored

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Development of Indicators (cont'd.)

- Identify information to collect (number of FP nurses in each PHC center)
- Identify sources of information
- Make sure the indicator is clear and measures exactly what you want

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Which Indicator Is Right?

Standard	Indicator 1	Indicator 2
Each clinic must have at least one HW properly trained in TB case management	Proportion of HWs who have had appropriate training in TB case management	Proportion of clinics that have at least one HW trained in TB case management

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Example: Performance Indicators for ARI Case Management

Indicator	Numerator	Denominator
Administration of a dose of Antibiotics	Number of children with pneumonia whose caretaker administered a dose of antibiotic at the health facility	Total number of children with pneumonia
Availability of antibiotics	Number of days of drug stockout in the past three months	

COLLECT THE DATA

- Choose Data Collection Methods
- Design Monitoring Tools
- Test the Monitoring Tools
- State the Monitoring Strategy
- Collect Data

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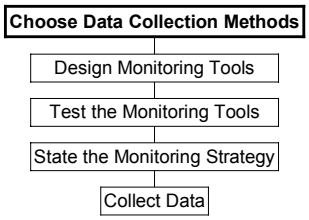
COLLECT THE DATA



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Data Collection Methods

- Direct observation
- Exit interview of patient
- Interview of health providers
- Record review
- Inspection of the facility
- Mystery patient

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Direct Observation

An observer records the tasks performed by health provider during a real patient/provider encounter

Considered the reference method, but influences performance

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Patient Exit Interview

Individual exit interview at the clinic asks what happened during the clinic and how satisfied patient is

Does not disturb patient/provider interaction but limited by patient's understanding, memory, and courtesy bias

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Provider Interview

An interviewer asks the health provider open-ended or yes/no questions about the management of health services and patient care

Good to test competence (knowledge) and organization of services, but does not assess performance

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Record Review

Review of a sample of medical records

Usually information limited to symptoms, diagnosis, and treatment

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Inspection of the facility

Checks for items (drugs, equipment, etc.)

Usually limited to inputs standards

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Mystery Patient

A trained person mimics a symptom or comes with a specific demand and observes what the provider does

- **Unbiased**
- **Limited to what can be observed**
- **Ethical issues**

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No single method presents all advantages

Combine several methods for higher cost-effectiveness

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Example: Data Collection Methods in ARI Case Management

- Direct observation: *Explained the treatment*
- Exit interview with caretaker: *Administered first dose of antibiotic*
- Inspection of the pharmacy: *Stock of antibiotic*
- Review of records: *Severe pneumonia referred*

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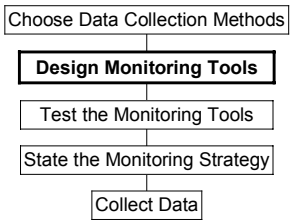
COLLECT THE DATA



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Designing Data Collection Forms

- Variable format:
  - Close-ended
  - Yes/No checklist
  - Open-ended
- Sections:
  - Administrative data
  - Technical data
  - Coding system
  - Comments/Notes

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Example: Direct Observation Questionnaire

Code

1. Clinic name:_____
2. Did the health worker count the respiratory rate? Yes [ ] No [ ] [ ]

Comments: _____

Example: Exit Interview of the Caretaker

Code

1. Clinic name:_____
2. Did you give the first dose of treatment to your child? Yes [ ] No [ ] [ ]

Comments: _____

Example: Checklist for the Pharmacy Inspection

Code

1. Clinic name:_____
2. Number of days of amoxycilline or cotrimoxazole stockouts in the past three months?_____ [ ]

Comments: _____

Example: Checklist for the Record Review

1. Clinic name:_____ Code
2. What is the total number of severe pneumonia cases recorded in the past three months?_____
3. What is the total number of severe pneumonia cases referred to hospital in the past three months?_____
4. Percent of severe cases referred to a hospital (divide item 3 by item 2 and multiply by 100)___%

Comments: _____ [ ]

Monitoring Tools as Job Aids

- Using forms to decrease inter-observer variability
- Forms allow a rotating focus
- Forms supplement existing information

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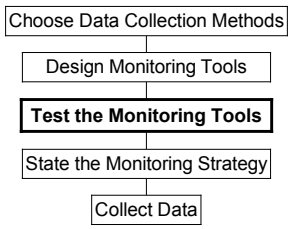

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Review Forms With Users

- Data collectors must understand forms, know what they are looking for
- Test clarity of the questions
- For observation, ask to demonstrate task they would expect providers to perform

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Test the Use of the Forms

- Often called “pre-testing”
- Actual field practice with the instruments
- Report problems, successes
- Modify tools as necessary

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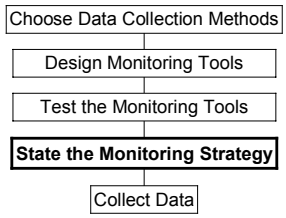
COLLECT THE DATA



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State the Monitoring Strategy

- Whose performance is to be monitored?
- How do you build on existing information and monitoring systems?
- What is the optimal frequency for data collection?
- Who collects the data?
- Resources needed ?
- Validation?
- How many cases to monitor?

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Whose performance is to be monitored?

- Individual providers
- Health center
- Region

Purpose influences unit of analysis

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How do you build on existing systems?

Quality monitoring should be integrated

- Determine if existing system captures quality information
- If not, adapt tools to include data collection on quality

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What is the optimal frequency for data collection?

- Depends on time, resources, provider's needs and complexity of system
- Be flexible

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Who collects the data?

- Outsiders (supervisor, manager, other)
- Colleagues of health provider (peer assessment)
- Self-assessment

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What resources are needed?

- At least 5%
- No absolute answer

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How to validate data?

Two validity issues

- Was the task performed ?
  - Accuracy of data reported
- Was the task performed correctly?
  - Double-checking

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How many cases to monitor?

- No statistical tests
  - one case is enough for feedback
- Looking for a significant difference
  - calculate sample size
- Overall performance
  - one case is enough for feedback

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Example: Monitoring Strategy

- Random sample of 10 nurses drawn from 15 rural health centers and 2 medical assistants of the OPD of the hospital
- Unit of analysis is the individual health care provider
- Monitoring through supervision visits
- All ARI cases to be included

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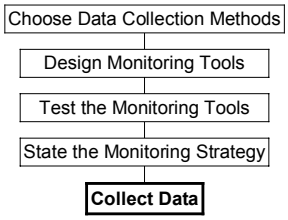

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Collection Day Checklist

- Decide whether to inform in advance of the visit
- Logistic of transportation
- Enough supplies
- Distribute roles and responsibilities
- Agenda of the visit

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Collection Day Checklist (cont'd.)

- Team leader's supporting role
- Respectful attitude
- No judgement in front of patients
- Visit local authorities
- Thank the staff for cooperation

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USE THE INFORMATION YOU OBTAINED

- Tabulate Results
- Analyze Information
- Interpret and Use Results
- Design Data Storage & Retrieval System
- Disseminate Information

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USE THE INFORMATION YOU OBTAINED

- **Tabulate Results**
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Disaggregated/Aggregated

- Disaggregated - a score for each task performed by one or several providers
- Aggregated - a global score for all tasks per one or several providers

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Disaggregated Data

- Health provider checks the child's temperature in 50% of the cases
- 20% of the health providers systematically check the child's temperature

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Aggregated Data

Calculate an index for overall performance that includes multiple individual tasks

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Scoring the Performance of a Family Planning Nurse

Questions/tasks	Results	Weight	Score
Did the provider:	Number of times answer is "yes" in 20 observations	On a scale of 1 to 5	Results x weight
• greet the client in a respectful manner?	12	1	12
• ask the client about the contraceptive method currently used?	8	2	16
• present the choice of contraceptive methods to the client?	15	2	30
• use visual job aids?	5	1	5
• check the understanding of the client on the HIV/AIDS transmission?	2	3	6
• assist the client in selecting a method?	13	5	65
TOTAL SCORE :	**55**		**134**

A Global Quality Score

- An index summarizes performance and allows easy trend analysis...
- ...But it hides details provided by disaggregated data

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Example: Tabulating Results for ARI Case Management

- The nurses explained the correct treatment for pneumonia to 78% of the caretakers, compared to 45% by the medical assistants
- Nurses referred 74% of the severe pneumonia cases to the hospital, whereas medical assistants did so 98% of the time

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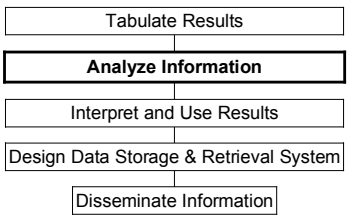
USE THE INFORMATION YOU OBTAINED



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Performance Analysis

- What is the level of performance?
- Who are the best and worst performers?
- Is there a consistent pattern of performance?
- What is the trend in performance over time?

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State the Level of Performance

The performance of health providers in the district is unsatisfactory: only 25% prescribe the correct first line treatment for a malaria episode in adults

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Identify Best and Worst Performers

Various ways

- Pre-identification of thresholds
- Distribution of data, standard deviation
- Divide into three tiers

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Look for Patterns of Performance

Widespread deficiencies may have a common cause

Ex: 98% of hospitals do not perform sputum exam for cough longer than two weeks

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Observe Trend Over Time

- Performance varies naturally
- Definitive judgement requires multiple measurements

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Example: Analyzing ARI Case Management

- Follow-up of the child

  Nurses informed caretakers less often to bring the child back than medical assistants. There was a consistent pattern among nurses, and they could not find an explanation other than "it slipped their mind."

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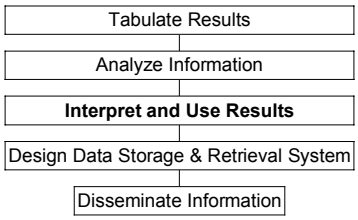
USE THE INFORMATION YOU OBTAINED



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Root Causes of Poor Performance

Multiple causes to quality gaps:

- Lack of knowledge and skills
- Low self-motivation
- Inadequate resources
- Peer pressure
- Etc.

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Improving Performance Gaps

Multiple targeted interventions:

- Feedback on performance
- Competency-based training
- Additional resources
- Job aids
- Incentives, etc.

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Example: Interpret and Use ARI Results

- Explore further the root causes of issues related to the drug supply and referral systems
- Develop job aids for danger signs
- Provide on-the-job training to staff for counting the respiratory rate
- Organize continuing training of the staff in ARI case management at the hospital

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USE THE INFORMATION YOU OBTAINED

Tabulate Results

Analyze Information

Interpret and Use Results

Design Data Storage & Retrieval System

Disseminate Information

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Key Questions

- Computerized database or not
- User-friendly and utilization-oriented forms
- Easy retrieval/accessibility
- Data presentation logic

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Example: Data Storage and Retrieval System

- Storage room for manual filing system
- One folder per health facility
- One sub folder per topic
- One performance summary sheet per health provider

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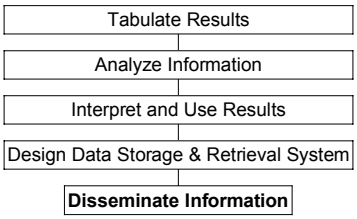
USE THE INFORMATION YOU OBTAINED



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Dissemination Strategies

- Internal Audience
  - -Immediate feedback to staff
  - -Group feedback
- External audience
  - -Workshop/conference
  - -Bulletins

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Example: Disseminate ARI Information

- On-site feedback: supervisors discussed results with health care providers
- Group feedback: present performance results at the district quarterly review meeting
- Newsletter “Quality Focus” distributed to 200 people

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Selected Issues and Choices to Make

- Sampling or not?
- Validity of the measurement?
- Thresholds?
- Issues with standards
- Variation in performance
- Link performance to rewards

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