Improving RHIS Performance For Better Health System Management

Routine Health Information System Course

Participants Guide

March 2010

MEASURE Evaluation
www.cpc.unc.edu/measure

MEASURE Evaluation PRH is funded by the U.S. Agency for International Development (USAID) through Cooperative Agreement GHO-A-00-09-00003-00 and is implemented by the Carolina Population Center at the University of North Carolina at Chapel Hill, in partnership with Futures Group International, Management Sciences for Health, and Tulane University. The authors' views expressed in this publication do not necessarily reflect the views of USAID or the United States government.

March 2011, Revised

MS-11-44

Acknowledgments

Improving RHIS for health system management has evolved over time. We have learned from the experiences of training in South Africa and Mexico as well as from countries like China, Haiti, Cote d'Ivoire, and Paraguay that are applying the PRISM framework and its tool for improving their information system. Based on this experience, the PRISM tools have been modified and the course has been revised accordingly.

The revised course also includes more information on developing solutions and building skills such as prioritization of problems using empowerment criteria, advocacy, self-assessment, and feedback. We have added a new section on the Global Fund M&E system to address the emerging information needs of HIV/AIDS, tuberculosis, and malaria in information systems. Another section deals with ethical considerations in health information systems.

CESAG is organizing the third RHIS course for francophone countries. We would like to thank CESAG for translating and adapting the course into French. Without the expert technical contribution of Alimou Mamadou Barry, David Kofi, and Jerome Bassene, this work would not have been possible.

Special thanks to the following lecturers for conducting the training:

Mr. Jerome Bessene, Secretary General, CESAG
Dr. Diakhate Moussa, Chief, HMIS. Ministry of Health and Prevention
Dr. Amani Koffi, Director ISMS, CESAG
Dr. David Koffi, Professor, ISMS, CESAG
Dr. Mamadou Moustapha Thiam, Assistant Professor, CESAG
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Special thanks to Andrea T. Dickson, Senior Communications Advisor, John Snow, Inc., and World Education for editing the manuscript.

We hope that the revised course will further strengthen the skills for improving RHIS in different parts of the world. As we promote continuous improvement, we also plan to improve the course by sharing experiences of skills learned and addressing needs as they arise.

Anwer Aqil **Theo Lippeveld**

Acknowledgment of the first and second course

The second RHIS course was organized by National Institute of Public Health, Cuernavaca, Mexico in collaboration with the Ministry of Health Mexico and MEASURE Evaluation. The course now includes a revised management assessment tool and more material on solutions such as prioritization and advocacy.

The course organizers would like to acknowledge the team of experts who adapted and translated this curriculum for the Latin American context: Juan Eugenio Hernandez Avila, Instituto Nacional de Salud Publica en Mexico; Dr. Rafael Lozano Ascencio, Secretaria de Salud; and Lina Sofia Palacio Mejia, Instituto Nacional de Salud Pública. A special thanks goes to Dr. Mauricio Hernandez-Avila, Instituto Nacional de Salud Publica (INSP) who provided the leadership for this course.

The original course was piloted in August 2005 as a collaboration among the School of Health Systems and Public Health, University of Pretoria, the MEASURE Evaluation Project, and Health Information Systems Programme (HISP). The pilot course was organized by Continuing Education at University of Pretoria (Pty) Ltd.

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This curriculum was developed in part with support from the MEASURE Evaluation Project, a global project supported by the United States Agency for International Development (USAID) (cooperative agreement number GPO-A-00-03-00003-00) implemented by the Carolina Population Center at the University of North Carolina at Chapel Hill in partnership with Tulane University, ORC Macro International, John Snow Inc., and The Future Group.

MEASURE EVALUATION is funded by The U.S. Agency For International Development (USAID) through Cooperative Agreement GHA-A-00-08-00003-00 and is implemented by The Carolina Population Center At The University Of North Carolina At Chapel Hill, in partnership with Futures Group International, John Snow, Inc., Macro International Inc., Management Sciences For Health, and Tulane University. The views expressed in this manual do not necessarily reflect the views of USAID or the United States government.

MEASURE Evaluation strengthens the capacity of host-country programs to collect and use population and health data. We are a key component of the United States Agency for International Development's (USAID) Monitoring and Evaluation to Assess and Use Results (MEASURE) framework and we promote a continuous cycle of data demand, collection, analysis and utilization to improve population health conditions.

MEASURE Evaluation fosters demand for effective program monitoring and evaluation. We seek to empower our partners as they improve family planning, maternal and child health, nutrition and prevent HIV/AIDS, STDs and other infectious diseases worldwide.

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Table of contents

Course Schedule

Week 1

Day 1—Monday	Day 2– Tuesday	Day 3—Wednesday	Day 4—Thursday	Day 5—Friday	Day 6—Saturday
1. Official opening & introduction 2. Orientation to course 3. Pre-test 4. Health systems & RHIS	8. Managing RHIS performance process	10. Overview of PRISM Tools 11. Diagnostic tool 12. RHIS Overview Tool 13. RHIS Management Assessment Tool	15. Synthesis of PRISM tools 16. RHIS in the host country	FIELD VISIT	19. Field visit: debriefing 20. Data entry 22a. Poster
LUNCH					
5. HMN Network 6. RHIS basics 7. Global Fund MESST HIV/AIDS, TB, Malaria	9. Introduction to the PRISM framework	14. Organizational and behavioral assessment	17/18. Prep for field work	FIELD VISIT, CONTINUED	

Week 2

Day 6—Monday	Day 7– Tuesday	Day 8—Wednesday	Day 9—Thursday	Day 10—Friday
21. Analysis: diagnostic tool 22. Analysis: management assessment	25. Problem tree analysis and criteria for prioritization	30. Advocacy for RHIS issues 31. Self-assessment	35. Implementing RHIS improvement	Home action plan, cont. 37. Post-test and course evaluation 38. Closing ceremony
LUNCH				
23. Analysis: RHIS overview/ checklist 24: Analysis: OBAT	26. Prioritization of causes 27. Prepare management objectives 28. Solution development 29. Effective solutions	32. Feedback report 33. Other periodic reports 34. Ethical considerations in RHIS	36. Home action plan	

Materials List

For All Sessions

- Computer, projector and screen
- Flipchart easels, paper and several markers
- Tape
- Participant Manual (1 per participant)
- PRISM Tools (1 set per participant)
-

1. Opening/Introductions

- Podium for official opening if desired
- 1 blank piece of paper per participant and trainer
- Extra colored markers on each table
- Slides
-

2. Orientation to RHIS Course

- Slides
-

3. Pre-test

- Handout 1: Pre-Test
-

4. Health systems and HIS

- Slides
-

5. HMN Framework

- WHO\HMN framework v2.0
-

6. RHIS basics

- Slides
- Readings (handouts):
- RHINO brochure
- Theo Lippeveld. "Routine Health Information Systems: The Glue of a Unified Health System." Presentation at the Potomac Workshop, March 2001.
- Lippeveld T, Sauerborn R, Bodart C. Design and Implementation of Health Information Systems. WHO, Geneva 2000.

7. Global Fund MESST

- Slides
- Excel Files
- Reading M&E Tool Guide

8. Managing the performance improvement process

- Slides
- Reading handout:Gladwin, J., R.A. Dixon and T.D. Wilson. "Rejection of an innovation: Health information management training materials in east Africa." Health Policy and Planning: 17 (4): 354-361. Oxford University Press, 2002.

9. Introduction to the PRISM framework

- Blank pages of A4 paper cut in half (about 100 pieces)
- Slides
- Reading handout:
- Aqil, A., Lippeveld, T., Hozumi, D. (2009) "PRISM Framework: A Paradigm Shift for Designing, Strengthening and Evaluating Routine Health Information Systems" paper accepted for publication by Journal of Health Policy and Planning, Oxford University
- Exercise handouts

10. Overview of PRISM Tools

- PRISM Tools
- Slides

11. Diagnostic Tool

- PRISM Tools
- Soft copy of Diagnostic Tool loaded onto computer with projector
- Sample facility data

12. RHIS Overview Tool

- PRISM Tools
- Slides

13. RHIS Management Assessment Tool

- PRISM Tools
- 1 blank copy of the RHIS Management Assessment Tool for each participant
- Slides

14. Organizational and Behavioral Assessment tool

- PRISM Tools
- Soft copy of Organizational & Behavioral Assessment Tool loaded onto computer with projector
- Sample data
- Slides

15. Synthesis of PRISM Tools

- Flipchart with table summarizing tools

16. RHIS in the host country

- RHIS Overview Tool, filled out for the host country (handout for all)

17. Field visit preparation

- Blank PRISM Tool forms for each participant and/or each team

18. Field visit: Guidelines for trainers

- For each field group: List of field group participants assigned to their group; cell phone contact list for all group facilitators; contact information and directions/map for the field sites; extra blank copies of PRISM Tools

19. Field visit: Debriefing

- None

20. Data entry

- 1 computer per field work group (participants may be able to use their own laptops)
- CDs with PRISM Tools (at least 1per group)
- At least 1 blank CD or flash drive for transferring files

21. Analysis: Diagnostic Tool

- Computer with data from field loaded Print-outs of field data from Diagnostic Tool or all participants
- Slides

22. Analysis: RHIS Management Assessment Tool

- MAT filled out in the field
- Flipchart with table for summarizing scores

23. Analysis: RHIS Overview & Facility Checklist

- RHIS Overview (distributed earlier)
- Facility/office checklists filled out in field

24. Analysis: Organizational and Behavioral Assessment Tool

- Handouts with charts showing results of OBAT (1 per participant)
- Slides

25. Problem tree analysis

- 50+/- pieces of blank paper (A4 cut in half)
- Flipcharts with labels
- Tape
- Slides

26. Prioritize Causes/determinants

- Problem tree from previous exercise (flipcharts and papers on wall)

27. Prepare Management Objectives

- Slide
- Handout

28. Solution development

- Slides

29. Effective solutions

- Slides

30. Advocacy for improving RHIS or HS

- Katherine Kaufer Christoffel, "Public Health Advocacy: Process and Product," American Journal of Public Health, 2000;90:722-726
- Slides
- Handout

31. Self-regulation

- Slides
- Handout

32. Feedback report

- Slides
- Handout

33. Periodic reports

- Slides
- Handout

34. Ethical considerations in HIS

- Slides

35 Implementing RHIS Improvement

- Slides
- Handout

36. Country Action Plans

- Handout 2: Home Action Plan
- Slides

37. Post-test and final evaluation

- Handout 3: Post-test
- Handout 4: Final Evaluation

38. Closing ceremony

- Certificates

Introduction to the Trainer/Participants Guide

This training course on Improving RHIS performance and use of information for health system management is an international course on the comprehensive assessment of information use with an emphasis on problem-solving. The course meets an urgent need, which has been identified in the field, for capacity-building in routine health information systems (RHIS) to help professionals use RHIS more effectively.

What is the purpose of this training?

The objective of this course is to provide a rapid transfer of knowledge and skills in RHIS performance strengthening at both the national and sub-national levels.

Objectives of the course:

By the end of the course, participants will be able to:

- Understand the roles of RHIS in health service management.
- Understand three categories of determinants that influence RHIS
- Acquire skills to carry out the process of improving RHIS performance, including assessment, analysis, and problem-solving.

Who is the target audience for this training?

This course was designed for:

- Government and NGO professionals who are responsible for management of health services and health programs at national as well as sub-national levels.
- Government and NGO professionals who are responsible for management of RHIS.
- Government and NGO professionals who are responsible for the monitoring and evaluation of health programs.
- Staff of technical assistance projects that aim to improve health system management.

What content does the course cover?

This course is based on the PRISM conceptual framework for assessing and strengthening RHIS performance. The PRISM, or three-point framework, is predicated on the assumption that improving the performance of RHIS requires interventions that also address the organizational/environmental and behavioral determinants as well as the technical determinants. It broadens the analysis of RHIS to include the behavior of the collectors and users of data and the context in which these professionals work.

The course introduces a set of PRISM tools for improving performance of RHIS. The tools provide knowledge and skills for assessment, analysis, and solutions.

Field work is an important component of the course. Participants will be introduced to examples of how RHIS is used for district health system management. They will also have an opportunity to use the PRISM tools in the field.

How is the training organized?

The curriculum is designed as a full-time, two week training. It includes a day-long field visit to collect data at health facilities and administrative offices. However, the section on Global Funds MESST is optional and could be deleted if the time is limited.

How do I use this Trainer's Guide?

This Trainer's Guide is intended to be easy to use, with quick references to all the key information you will need during a session. At the beginning of each session, the guide provides the length of the session, materials required (in addition to basic equipment such as flipchart stands and projectors), advance preparation needed, if any, and the learning objectives for the session. Handouts are numbered and referenced in bold when they are to be used during a session.

Participants receive a Participant Manual containing most task sheets and reference materials used in the sessions, as well as the text of the lecture material shown on the slides. This eliminates the need for frequently distributing handouts and disrupting the sessions.

RHIS Poster Session

One evening event is planned for participants to showcase RHIS successes and challenges in their own regions or organizations. Interested participants are encouraged to bring data collection forms, training manuals, or any other materials related to their RHIS activity about which they are most enthusiastic, and set up an informal display showcasing their approach. Other participants can then circulate and talk with each other to exchange ideas.

Tips for Trainers

A. Introductory activities

Time is scheduled on Day One for participants to introduce themselves and talk a little about their experiences and backgrounds. An introductory activity is a good opportunity to set a participatory tone for the training; it signals to participants that their experiences are valued, and that communication in the classroom will not just be one-way from trainer to participants.

One activity is suggested in the Trainer's Manual, but here are some alternate exercises. Choose one that is appropriate for the group.

"FIND YOUR MATCH":

- Cut postcards into odd-shaped halves ahead of time. Make sure that there are enough halves for each person in the room to have one (all participants, trainers, and observers). Put all the postcard halves into a basket and mix them up.
- When ready to begin this activity, pass the basket with the postcards around the room. Each participant should take a half postcard out of the basket.

FIND YOUR MATCH. Instruct Participants to:

- **Look** for the person whose postcard matches theirs.
- **Interview** their "match" for no more than 5 minutes to find out the following information about each other: Refer to the flipchart with these instructions:
  - **Name**
  - **Agency/organization**
  - **Position/title**
  - **Interests, hobbies, some other little-known fact about themselves**
  - **Expectations for the course**
- Briefly **introduce** each other to the rest of the group.

- As the participants introduce each other to the whole group, write their stated expectations for the course on a flipchart. When all the introductions are complete, review these expectations and help the group to compare their stated expectations to the goals of the course.
- Also indicate that the trainers will try to draw on the breadth of experiences in the room as much as possible. They should also feel free to talk with one another and to use one another as resources.

"YOUR PLACE IN THE WORLD:"

- On the wall in front of the room, post a large wall map of the region in which the training is being held. Provide markers, stick pins, or colored dot stickers, enough for everyone in the room.

> **YOUR PLACE IN THE WORLD. Instruct Participants to:**
>
> - **Pair up** with someone they do not know. They should **interview** their partner for no more than five minutes to find out the same information as listed on page xiii.
> - When the interviews are complete, the pairs will come to the front room and **place a stick pin or a colored dot on the map** showing the place where they are currently working. (If time allows, the trainer can ask them to briefly describe the situation where they are working. Or, if there are enough different colored stick pins or colored dots, participants can also show where they were born).
> - **Introduce** their partner to the group.

- As the participants introduce each other to the whole group, write their stated expectations for the course on a flipchart. When all the introductions are complete, review these expectations and help the group compare their stated expectations to the goals of the course.
- Also indicate that the trainers will try to draw on the breadth of experiences in the room as much as possible. They should also feel free to talk with one another and to use one another as resources.

B. Managing Group Work

Many of the activities in this course ask the trainer to put participants into small groups. Here are some tips for managing group work.

FORMING GROUPS: Several activities require that participants work with others from their own country. In other cases, you will want to mix up the groups so that members from different countries can share experiences. You can simply ask the class to count off, or to form their own groups with strangers, but there are other creative ways to form mixed groups:

- Ask participants to find others born in the same month (or set of months).
- Make a "puzzle" out of colored paper or postcards cut into pieces; members draw a puzzle piece at random and search for the rest of their puzzle.
- For some activities such as field visits, trainers may choose to create the groups in advance to ensure a mix of different countries, genders, and experiences.

REPORTING BACK It is important to acknowledge the work participants do in groups and give them feedback. However, it can be time consuming and repetitive if five groups report back all of their responses to every question. Here are some suggestions for different ways to report back:

- Ask each group to report their answers to only one of the questions. Then invite others to add new ideas that were not stated yet and discuss.
- Ask each group to pick only two or three of their responses to report back, with each group having to add something that has not been said before.
- Ask groups to pair off and report back to each other. Then they can report just the answers they had in common to the full class, or ask questions that came out of their discussion.
- Ask groups to write down their responses in large letters on flipchart paper and post it on the wall. Give participants time to circulate around the room and read all the responses displayed. Then discuss in plenary.

C. Daily Evaluation

Evaluation is an important step in the learning process, and should be used constantly throughout the training. By informally asking questions and observing performance during activities, you can continuously check participants' learning, emotional state, and energy levels. You should use this information to focus your teaching on the topics that demand more attention.

A short period has been scheduled at the end of each day for a brief evaluation activity. Using a variety of techniques – writing, reflection, physical movement, games, and group discussion – will help keep participants interested and avoid boredom with filling out a traditional questionnaire at the end of every day. Some activities you could use include the following:

REVIEW THE DAY'S OBJECTIVES Ask participants to take a blank piece of paper and to **write their answers** to the following:

- On a scale of 1 – 5, (with 5 being "maximum possible,") to what extent were each of the day's learning objectives met?
- What suggestions do you have for the next day of this training?

WRITTEN EVALUATIONS To evaluate how effective the day was for participants, ask them to take a few minutes to **write their thoughts** about these questions.

♦ Write on a flipchart:

- What was most useful for you today?
- What was most difficult? What suggestions do you have for overcoming this difficulty?
- What suggestions do you have for tomorrow?

ROLE-PLAY

Ask participants to **role-play** an illustration of a valuable lesson that they learned today, or ask them to **draw a picture** of something valuable that they learned during the day, and then to explain it to the group afterward.

TEMPERATURE CHECK

Find out how participants are feeling. Ask participants to write **down one or two words that best describe how they are feeling** at that moment and then share it with the rest of the group if they want.

PHYSICAL CONTINUUM

Ask participants to think about a statement such as: "Today, we achieved our learning objectives." Ask participants to **stand** at one end of the room if they strongly agree with the statement, at the other end of the room if they strongly disagree, or to choose a place somewhere in between that represents their feelings. Ask a few participants to discuss why they placed themselves where they did. Note: This is a good technique to use to explore controversial subjects, when it is important for everyone to see what others think about a topic. It can be used to clarify values or to help people reflect and share their learning. However, it is best used with a group who are comfortable sharing opinions publicly.

PAPER FIGHT:

(Note: This activity requires physical activity and may not be appropriate for all groups.) Ask each person to take a piece of paper and to **write a question** on it **that will help evaluate** how well the day's objectives have been met. (For example, a participant might write, "What is good RHIS performance?") When each person has written a question, ask them to **make a ball out of the paper**. Then ask them to **stand up**, facing one another in two teams.

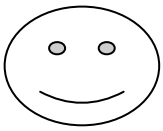
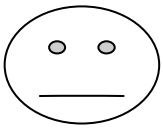
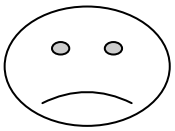
Explain that they will "fight" one another with the paper balls, each team throwing the balls at the other team until the trainer says "Stop." The goal is to get as many paper balls on the other team's side as possible. When everyone is ready, say, "On your mark, get set, GO!" and watch the paper fight for a few minutes. After about a minute, call "Time!"

Ask the two teams to **collect the paper balls** remaining on their side. Then instruct the teams to open up their papers and read the questions silently. Teams take turns **asking each other the questions** found on the papers. If desired, you may name one of the teams the "winner" for getting the most correct answers to the questions.

MOOD METER

The mood meter provides a subjective assessment of participant perception of training effectiveness. It provides a useful guide to the trainer on how participants experience training. It reflects participant perception of facilitation style and training methodology. The mood meter is used during training, on a daily basis. Participants are asked to tick in the selected column that best reflects their perception upon completion of the days' training. Upon completion of the training module or course, the mood meter is analyzed.

Draw the mood meter on flipchart paper and post on a wall near the exit. Provide several pens or markers. Keep each day's mood meter for reporting on the course.

	DAY 1	DAY 2	DAY 3
 IT'S GREAT!			
 IT'S OKAY			
 IT'S NOT SO GOOD			

Alternative: Instead of the table above, make a graph with the days of the training along the bottom x-axis and numbers 1 to 100 along the left-hand y-axis. Invite participants to put a sticker or mark to show their mood each day. In this way you have a graph of the class mood that can be examined at the end of the course.

Four Questions

Give each participant four cards or pieces of paper. Ask them to **write the answers to the following questions**, one on each card.

- What did you like today?
- What did you dislike today?
- For tomorrow, what would you like more of?
- What would you like less of?

Then all participants post their responses on four different walls of the training room. Invite everyone to circulate and view the responses. Make a summary of them the next morning.

The Steering Committee

The Steering Committee is another way to build evaluation into the training. At the end of each day, two or three participants ("volunteer teams") meet with the trainers and course organizers for about 30 minutes to give feedback on the day. They talk about what went well, what could be improved, and any other suggestions. They discuss both what went on in the classroom, and other issues such as logistics. This meeting gives the course organizers a chance to learn about and respond to ideas that can improve the course. It also gives participants a direct voice in course management.

Volunteer Teams

Involving training participants in the management of the course can help build a sense of ownership and keep the trainers in touch with what participants are thinking. On the first day of the training, ask participants to sign up as volunteers to help with the daily management of the course. Two or three participants can sign up for each day of the course. Some tasks the volunteer teams can help with include the following:

- Lead ice breakers or energizing activities after lunch.
- Help manage the schedules and act as timekeepers.
- Collect feedback from other participants about the course.
- Attend Steering Committee at the end of the day.
- Get people started at the beginning of the next day by recapping the past day's activities and summarizing the results of the previous night's Steering Committee discussion.
- In general, give participants a voice in the course.

Vocabulary glossary

Accuracy	In terms of data quality: The match of data transmitted from one level to another in the RHIS, e.g. from client records at facility to the monthly RHIS summary report to the district.
Activity	Defined action that is required as part of implementation of a plan. (Also "task.")
Advocacy	Promoting a strategy or change to an organization's leaders or policy-makers, typically relating to a decision that is outside one's own scope of control. May involve other actors (within and/or outside the organization) to bring influence to bear on decision-makers.
Behavioral determinants	In the PRISM framework, defined as those factors affecting RHIS performance that are related to individual behavior, such as motivation, attitude, empowerment, and confidence.
Competence	Ability to perform a task to specifications
Completeness	In terms of data quality: Degree to which RHIS data (1) covers all geographical areas, services and facilities, and (2) is filled out in full on data collection forms.
Confidence	How comfortable a person feels performing a certain task with competence.
Culture of information	Organization has the capacity and control to promote values and beliefs among organizational members for the collection, analysis, and use of information to accomplish organizational goals and mission.
Data	Unprocessed numbers
Data demand	In terms of the data demand and information use model, demand exists when the decision-maker understands what kind of information is needed for a particular decision, and he/she proactively seeks out that information.
Data demand and information use (DDIU) model	Model for understanding RHIS performance that examines the feedback cycle leading from demand for information, to data collection and availability, to use of information, to feedback, which in turn increases demand for information
Data quality	Degree to which RHIS data is consistent, timely, complete, and relevant
Decision support system (DSS)	Type of computerized information system designed to support decision-making, with analytical reporting and trend analysis. Characterized by user-friendly graphical interface with connection to a data warehouse

Evaluation	Assessment of whether or not program objectives have been achieved
Evidence-based decision-making	A management approach based on using reliable quantitative information to guide decisions about targeting resources efficiently.
Goal	Specific outcome that must be accomplished in order to achieve some larger, overall result (e.g. to accomplish the mission).
Health information system	System that provides specific information support to the decision-making process at each level of an organization (Hurtubise).
Health system	System of all actors, institutions, and resources that undertakes "health actions" – i.e. actions whose primary purpose is to promote, restore, or maintain health (WHO).
Indicator	Defined, measurable data indicating progress toward objectives.
Information	Data that have been processed and interpreted so that they have meaning and can be used for decision-making.
Information generating process	Process by which RHIS data is transformed into information that is used for decision-making. Includes the steps of: defining info needs/indicators, data collection, data transmission, data processing, and data analysis; and management issues affecting this process: resources and organizational rules.
Lot quality assurance sampling (LQAS)	Sampling technique
Monitoring	Continuous, systematic process of checking that implementation is proceeding according to plan.
Objective	Specific outcome that must be accomplished in order to achieve a goal. It may be a milestone along the way when implementing a strategy.

Organizational determinants	In the PRISM framework, defined as those factors affecting RHIS performance which are related to environmental or systemic issues, or the context in which the RHIS functions. These could include resources, the health system structure, roles and responsibilities of personnel, organizational culture, and budget control.
PRISM framework	Model for understanding the factors that drive RHIS performance, using a three-part framework of technical, organizational, and behavioral determinants. Intended to help RHIS professionals with needs assessment, strategy planning, and improvement processes.
Proxy indicator	Indicator used to study a situation, phenomenon, or condition for which no direct information is available.
Resource	Input needed to perform a task, such as funds, personnel, infrastructure, or materials.
RHIS performance	Effectiveness of a routine health information system, defined in terms of data quality and use of information.
Root problem	In terms of problem tree analysis, defined as the deepest underlying cause of a given performance problem; no further causes can be identified contributing to it.
Routine health information system (RHIS)	On-going (period of less than one year) data collection on health status and behaviors, health interventions, and health resources.
Self-efficacy	People's judgments of their capabilities to organize and execute courses of action required to attain designated types of performances (Bandura).
Stakeholder	Individual or organization that will be affected in some significant way by the outcome of a process and can affect the outcome of that process.
Strategy	Method, set of activities, and/or process required in order to achieve a goal.

Target	Specific, measurable figure to be achieved on a given indicator, as part of a goal or objective (e.g. 90% on-time reporting rate).
Task	Defined action that is required as part of implementation of a plan. (Also "activity.)
Technical determinants	In the PRISM framework, defined as those factors affecting RHIS performance which are related to system components such as indicators, personnel training, technology, forms, data submission, and reporting.
Timeliness	In terms of data quality: Degree to which RHIS data is up-to-date and available when needed, and submitted on time according to established deadlines.
Use of information	Use of information occurs when the decision-maker is explicitly aware of a decision and its alternatives; and considers relevant information in the process of making the decision.

Acronyms

ANC	Antenatal care
ARI	Acute respiratory infection
DCI	Data collection instruments
DDIU	Data Demand and Information Use
DHIS	District health information system
DSS	Decision support system
EPI	Extended program of immunization
HIS	Health information system
HIV/AIDS	Human immunodeficiency virus / Acquired immunodeficiency syndrome
HMIS	Health management information system
IT	Information technology
LQAS	Lot quality assurance sampling
MESSST	M&E Systems Strengthening Tool designed for Global Fund
MOH	Ministry of Health
OPD	Outpatient department
PAHO	Pan-American Health Organization
PRISM	Performance of Routine Information System Management
RHINO	Routine Health Information Network
RHIS	Routine health information system
SAVVY	Sentinel Vital Events Registration with Verbal Autopsies
VCT	Voluntary counseling and testing
WHO	World Health Organization

I. Introduction to
RHIS Improvement Concepts

1. Opening & Introductions

Time: 2 hours

Materials:

- Podium for official opening if desired;
- 1 blank piece of paper per participant and trainer
- Colored markers on each table
- Slide or flipchart with instructions for introduction activity
- Flipchart with group/seating assignments.

Preparation:

- Orient the invited dignitaries to the purpose of the course.
- Assign participants to groups, assign groups to tables in the training room, and write these seating/group assignments up on a flipchart. When participants enter the room, ask them to find their table and sit with their group from the beginning.

Session objectives:

By the end of this session, participants will have:

- Taken part in the official opening ceremony for the course.
- Introduced themselves to one another.

Plan of activities:

1. Official opening ceremony (1 hour)

Introduce the invited dignitaries to the participants and ask them to say a few opening words.

2. Break (5 min):

Once they have all finished, thank them and invite them to take a short break with the participants. (Note: This short break should not be the "official" morning break, but rather a way to allow the dignitaries to leave without disrupting the remainder of the morning's sessions).

3. Conduct introduction exercise (1 hour)

Begin to set a less formal tone for the course by conducting introductions. Open this activity by stating that one of the most important components of the RHIS course is the networks and friendships that people form with one another over the two weeks' time. Encourage the participants to use this opportunity to begin to know one another, and to continue to make connections throughout.

INTRODUCTION EXERCISE.

- Ask each participant, trainer, and observer in the room to **think of a symbol that represents them in some way**, and **draw** it on a sheet of paper. The symbol could be something from nature, a plant or animal, a household object, etc. (For example, a cheerful person might choose the sun; someone who loves technology could draw a computer.)

Note: Be aware that in some cultures, it is offensive to describe people as animals.

- Go around the room and ask each person to **introduce** him/herself using their symbol. They should **share** the following (posted on a flipchart or slide):
  - Name
  - Symbol and why they chose it
  - Country where they work
  - Their organization and position
  - Their experience with RHIS (briefly)
  - Expectations for the course
- Write down the expectations on a flipchart as they are stated
- When everyone is finished, summarize the range of experience represented in the room, and the most commonly mentioned expectations. Explain that in the next session, we will talk about which expectations will be met.

2. Orientation to RHIS Course

Time: 30 minutes

Materials:

- Slides

Learning objectives:

By the end of this session, participants will have:

- Received an orientation to the RHIS course, including background, goals, schedule, field visit, logistics, Steering Committee & Volunteer Team, and training methods used in the course.
- Set norms for course behavior.

Plan of activities:

1. Review the goals of the course

GOALS OF THE COURSE. By the end of the course, participants will be able to:

- Understand roles of RHIS in health service management.
- Understand three areas determining RHIS performance.
- Acquire skills to carry out the process of improving RHIS performance, including assessment, analysis, and problem-solving.

2. Review the background of the course

3. Introduce the Poster Session

4. Level Expectations:

5. Review the schedule for the course

6. Briefly explain the roles of trainers and observers

7. Logistics

8. Methods

9. Group Norms and Logistics

.

3. Pre-test

Time: 30 minutes

Materials:

- Handout 1: Pre-Test

Learning objectives:

By the end of this session, participants will have:

- Taken a pre-test to assess what they currently know about improving RHIS performance.

Plan of activities:

1. Conduct pre-test (30 minutes)

♦ Distribute **Handout 1**. Tell participants that they will take this pre-test today. At the end of the course, they will take it again.

PURPOSE OF THE PRE-TEST. Understand roles of RHIS in health service management.

♦ To assess and reflect on their own progress.

♦ To help course organizers evaluate the effectiveness of the course.

♦ Each person should write his or her name at the top of the page so that it can be matched with their post-test. Give them 20 minutes to complete the pre-test.

♦ Collect the pre-tests.

Note to Trainer: Using the pre-tests

- Review them to see the level of experience participants have with using data in decision-making.
- Share them with all trainers.
- Make a slide or flipchart summarizing the most common responses, to share with participants later in the week.
- Make reference to the pre-tests in other sessions, e.g. when introducing RHIS performance, mention how this term was defined in the pre-test.

HANDOUT 1
Pre-Test

Name: _____

You will have 20 minutes to complete the questions below.

1. How would you define "effective performance of routine health information systems (RHIS)"?

2. List three key factors that determine the effectiveness of RHIS performance.

3. Please read the scenario and answer the question below:

You are a director of the Department of Health Services in the Ministry of Health. Your department is responsible for the overall management of health services provided by government health facilities. Your department has a section of health information and statistics. About nine years ago, the Ministry of Health instituted a routine health information system (RHIS) to support the management of health services.

One day, you are summoned to the office of the Minister of Health. The Minister and the Director General just came back from a conference on health services organized in Italy. The Minister gives you a short lecture on the importance of good information and tells you that the RHIS is not performing well enough. The Minister gives you ten months to improve the RHIS.

A) On the back of this page, list the steps you will take to improve the RHIS of your Ministry. Please try to be as specific as possible.

B) List the specific factors related to RHIS performance that you would consider in this process.

4. Health systems and HIS

Time: 1 hour 30 minutes

Materials:

- Slides

Learning objectives:

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

- Define "health system" and its components.
- Describe the management functions of a health system.
- List the information needs of a health system.
- Define health information system (HIS) and routine health information system (RHIS), and explain how these relate to the health system.
- Explain the roles of RHIS.

Plan of activities:

1. Lecture: Definition and context of health systems (15 min)

- WHO definition
- The Health Metrics Network

2. Case study (30 min)

3. Report back (15 minutes)

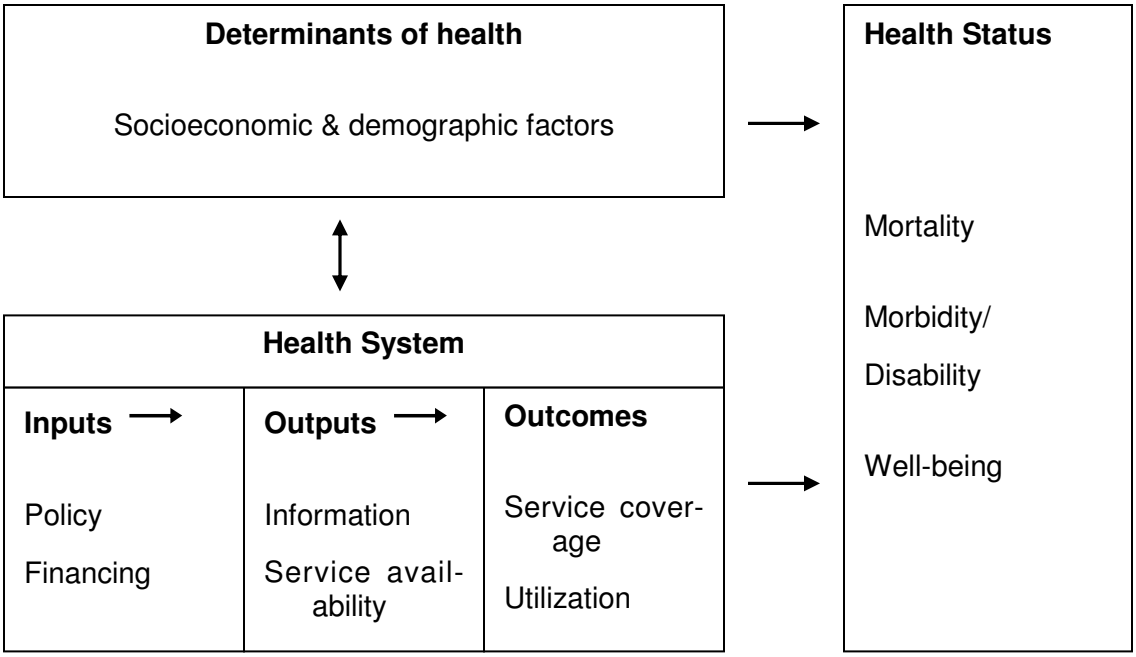
World Health Report 2000: Health Systems: Improving Health Systems Performance; World Health Or-

Health Metrics Network, WHO. *A Framework and Standards for Country Health Information System Development.* Version 1.65, January 2006 draft. Pages 19-20.

4. Lecture: Health information needs and HIS (30 minutes)

HIS produces information for decision-making for all "health-intended" interventions at each level of the health system.

Domains of the Health System



Determinants of health: Socio-economic, environmental, behavioral, and genetic determinants or risk factors. These determinants describe the contextual environments within which the health system operates.

Health system: *Inputs* to the health system and related processes such as policy, organization, human resources, financial resources, health infrastructure, equipment, and supplies; *outputs* including health service availability and quality, information availability and quality; and immediate health system *outcomes* including coverage of population with key health services.

Health status: Mortality, morbidity, disability, and well-being. The health status variables depend on the coverage and efficacy of the interventions and the determinants of health which may have an influence on health outcomes independent of the health services coverage.

Each of these domains has corresponding information needs. We will now begin to look at those needs using a case study.

2 Health Metrics Network, WHO. *A Framework and Standards for Country Health Information System Development.* Version 1.65, January 2006 draft. Pages 19-20.

CASE STUDY.

Country Z recently underwent a decentralization process, so that many health delivery functions have been moved from the national to the district level. The routine health information system (RHIS) of the Ministry of Health in Country Z was established in the early 1990s with the assistance of an international development agency. The RHIS collects information on basic primary health care services, and about 80% of public health sector facilities report regularly. The RHIS unit of the Department of Health Planning is responsible for the management of RHIS. In addition to the RHIS, the programs for EPI, safe motherhood, and voluntary counseling and testing (VCT) also have their own information systems to monitor services.

The Ministry of Health in Country Z is now implementing a management improvement initiative in the public health sector. As part of this process, the Ministry is developing a National Health Policy. One of the new policies is to strengthen evidence-based health system management by strengthening the RHIS.

To help the MOH get started on this improvement process, answer the following questions.

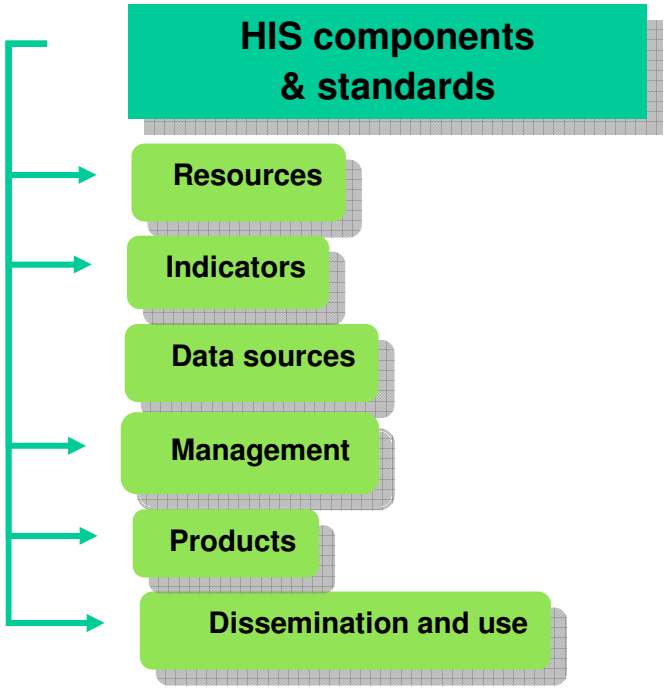
- **Based on your experience, what do you think are the typical management functions of the health system in Country Z at the district level? List at least five functions.**

- **To perform each of the management functions you listed, what information do managers need?**

You will have 30 minutes to complete this task.

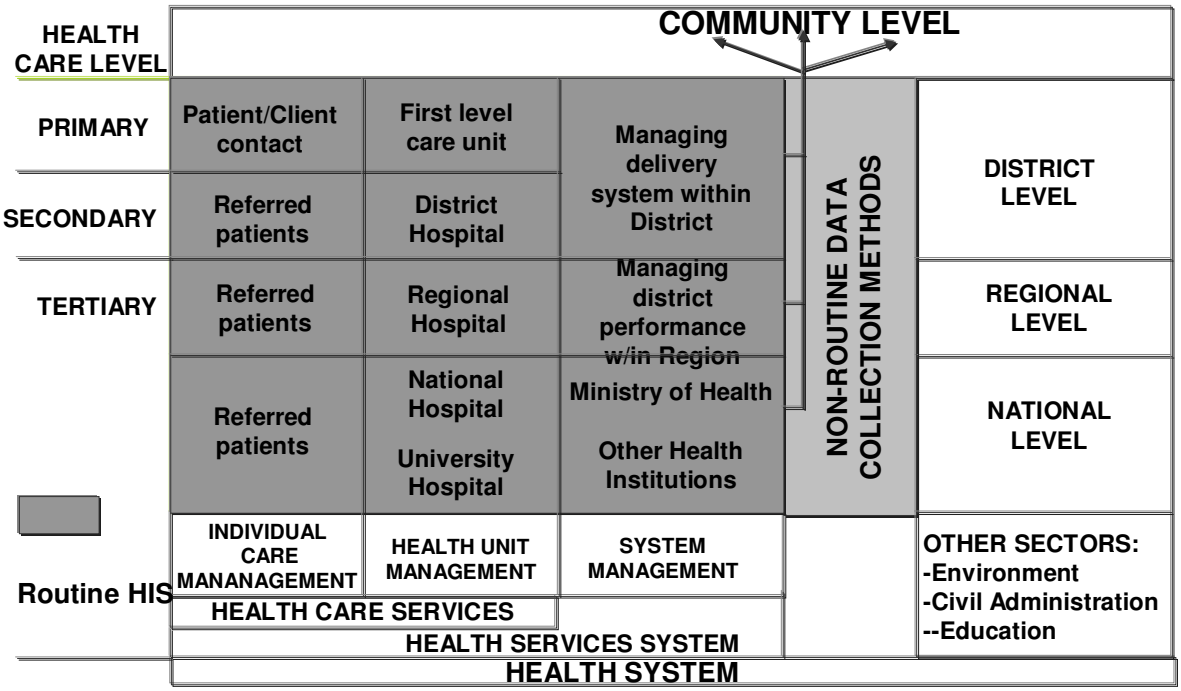
4. Lecture: Health information needs and HIS (30 minutes)

Function: To manage a network of first level care facilities			
Information needed about:			
Health status	*Health services*	*Health resources*	*Finances*
Incidence of main diseases of concern Main causes of death Common health behaviors Number of births	Coverage for essential services such as EPI, ANC Quality of services	Human resources available Physical resources Infrastructure	Budget available Allocation process



3 Design and Implementation of Health Information Systems. Edited by Lippeveld, Sauerborn & Bodart; WHO: Geneva, 2000. Page 18.

Relationship between HIS and the Health System



RHIS?

RHIS is defined as on-going (period of less than one year) data collection on health status and behaviors, health interventions, and health resources. It is a specific kind of HIS.

5. HMN Framework

Time: 1 hour

Materials:

- Slides

Learning objectives:

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

- Define the Health Metrics Network (HMN) framework, principles, and tools.
- Define a "National Health Information System"
- Explain the role of the HMN in strengthening Country HIS

Handouts:

- HMN Framework and Standards for Country Health Information Systems Second Edition. WHO 2008
- Assessing the National Health Information System: an Assessment Tool. Version 4.00. WHO 2008

Plan of activities:

1. Lecture (45 min):

- Power point presentation

2. Discussion (15 min)

6. RHIS basics

Time: 1 hour

Materials:

- Slides

Readings:

- RHINO brochure
- Theo Lippeveld. "Routine Health Information Systems: The Glue of a Unified Health System." Presentation at the Potomac Workshop, March 2001.
- Lippeveld T, Sauerborn R, Bodart C. *Design and Implementation of Health Information Systems.* WHO, Geneva 2000.

Learning objectives:

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

- Explain the structure and components of RHIS: what information should be collected, in what form it should be presented (indicators), how information should be communicated within the system.
- Describe the components of the information generating process and what should happen within each component.
- List basic principles of RHIS design.

Plan of activities:

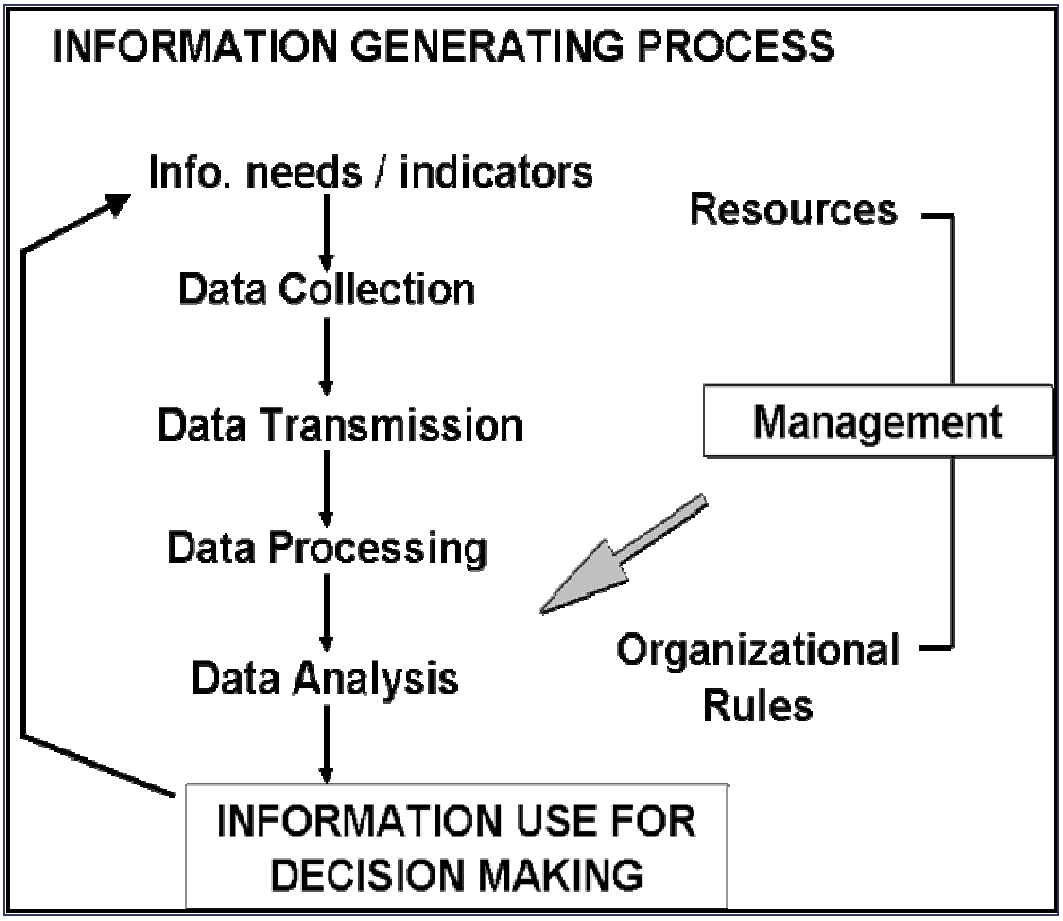
1. Discussion (15 min)

2. Lecture (45 min)

SLIDE: DEFINITION OF A HEALTH INFORMATION SYSTEM (HIS).

Let us come back to the definition of a Health Information System

"… a system that provides specific information support to the decision-making process at each level of an organization." (Hurtubise, 1984)


INFORMATION GENERATING PROCESS
Info. needs / indicators
Data Collection
Data Transmission
Data Processing
Data Analysis
INFORMATION USE FOR DECISION MAKING
Resources
Management
Organizational Rules

7. Global Fund M&E System: Linking RHIS, the M&E System Strengthening Tool, and Indicator Selection

Time: 120 minutes

Materials:

- Slides
- Class activity

Learning objectives:

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

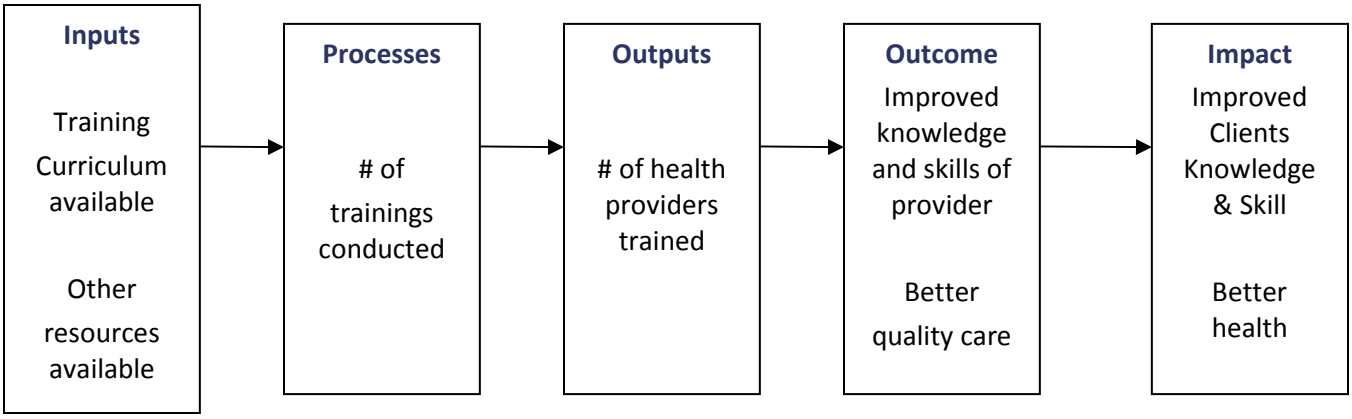
- Define monitoring and evaluation and describe RHIS' role in it
- Describe the content and benefits of the M&E system strengthening tool
- List criteria for indicator selection

Plan of activities:

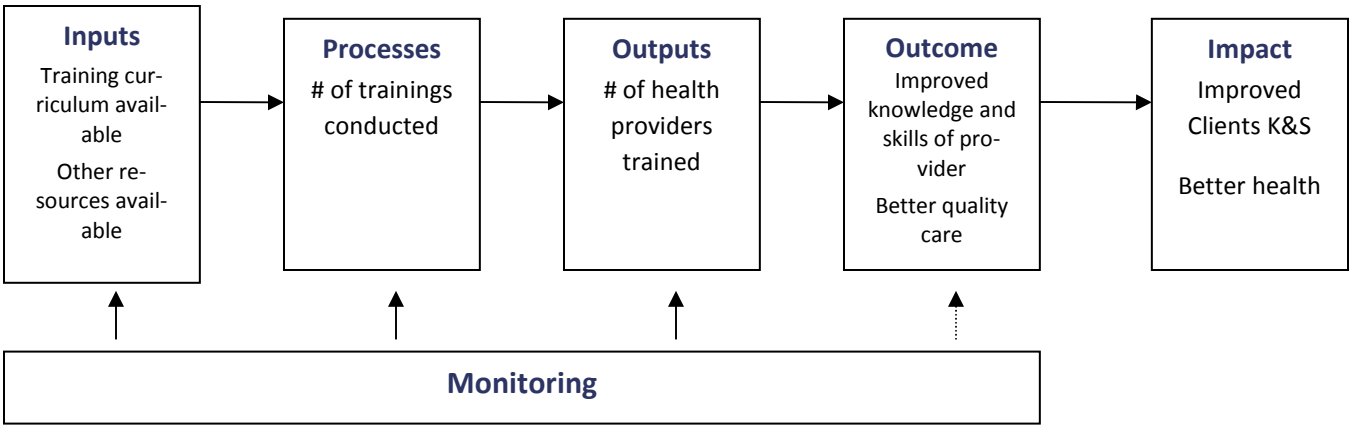
A. Linking RHIS with M&E

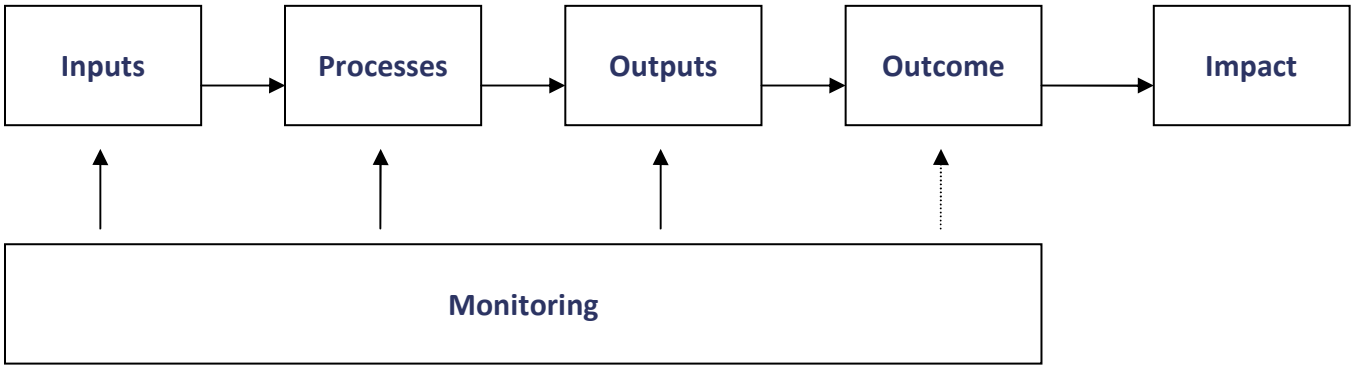
B. Global Fund M&E System: HIV/AIDS, tuberculosis, and malaria

C. Selection of indicators



Monitoring could then be depicted as the following:





Although, when we assess inputs, processes, and outputs, it is usually called a process evaluation

Monitoring	Evaluation
Monitoring is a continuous activity	A one time activity
Monitoring is more concerned with availability of inputs, functioning of processes, and out-puts	More concerned with outcome and impact
Monitoring is used to make corrections while implementing planned activities	Process evaluations or mid-term evaluations assess availability of inputs, existence of proc-esses, and outputs in order to make correc-tions
	♦ Outcome or impact evaluations study the intended effect of an intervention or pro-gram ♦ Explore causal links

B. Global Fund and M&E

Figure 1: The tree checklists

Show the Excel spreadsheet displaying how these areas are captured. Spend 3-5 minutes explaining each fil

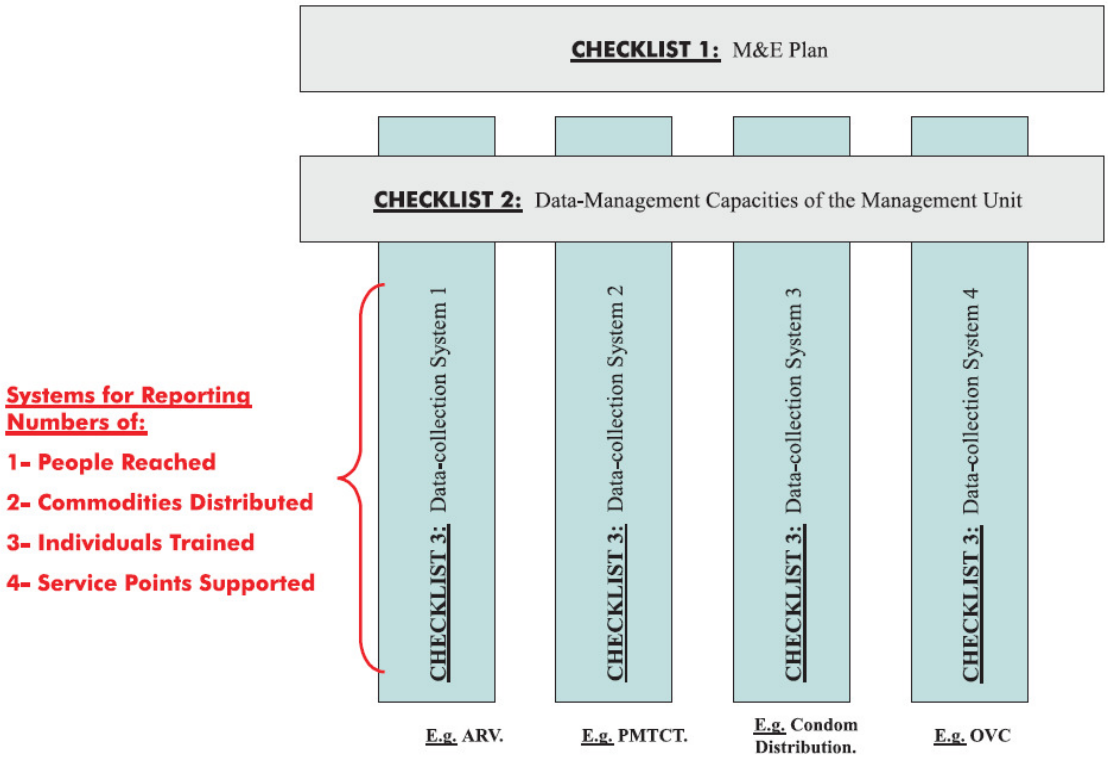


Figure 2. Scenarios for the implementation of the M&E Systems Strengthening Tool

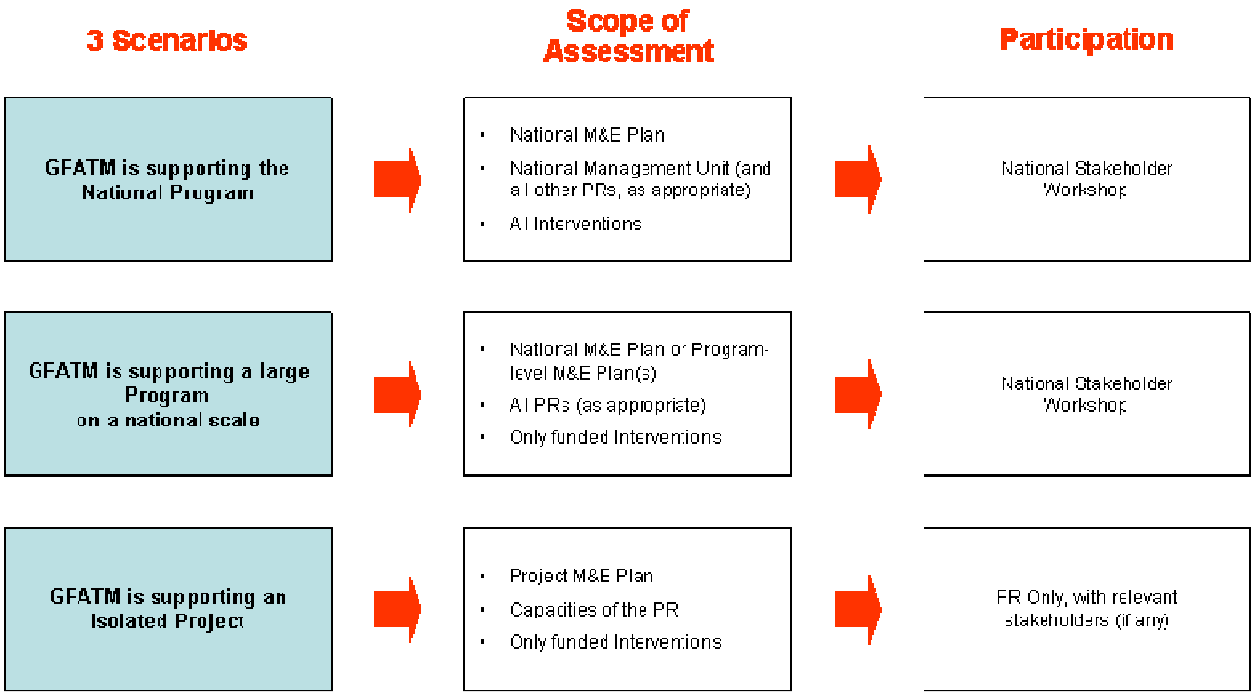


Table 7.1 Characteristics of an Indicator to be selected	
Indicators should measure the condition or event they are intended to measure.	Valid
Indicators should produce the same results when used more than once to measure the same condition or event, all things being equal (e.g., using the same methods, tools, or instruments).	Reliable
Indicators should measure only the condition or event they are intended to measure.	Specific
Indicators should reflect changes in the state of the condition or event under observation.	Sensitive
Indicators should be measured with definitions that are developed and tested at the program level and with reference standards.	Operational
The costs of measuring the indicators should be reasonable.	Affordable
It should be possible to carry out the proposed data collection.	Feasible
Indicators should be comparable (e.g., over time, across geographical lines).	Comparable

Table 7.2 The SMART way to select indicators

The following criteria and questions may be helpful in selecting indicators. As a memory aid, the acronym "SMART" summarizes key criteria, asking "Is the indicator specific, measurable, attainable, relevant, and trackable?"

Specific:

- Is it clear exactly what is being measured? Has the appropriate level of disaggregation been specified?
- Does the indicator capture the essence of the desired result?
- Does it capture differences across areas and categories of people?
- Is the indicator specific enough to measure progress towards the result? For example, using the indicator "increase by 20 per cent in number of criminal complaints filed" may reflect a more effective justice system OR an increase in crime.

Measurable:

- Are changes objectively verifiable?
- Will the indicator show desirable change?
- Is it a reliable and clear measure of results?
- Is it sensitive to changes in policies and programmes?
- Do stakeholders agree on exactly what to measure?

Attainable:

- What changes are anticipated as a result of the assistance?
- Are the result(s) realistic? For this, a credible link between outputs, contributions of partnerships and outcome is indispensable.

Relevant:

- Does the indicator capture the essence of the desired result?
- Is it relevant to the intended outputs and outcome? To judge the relevance of indicators, the HMIS administrator may have to identify the target groups and their needs, expectations and criteria.
- Is the indicator plausibly associated with the sphere of activity?

Trackable:

- Are data actually available at reasonable cost and effort?
- Are data sources known? HMIS administrator should establish realistic principles, mechanisms and responsibilities for data collection.
- Does an indicator monitoring plan exist?

8. Managing the RHIS Performance Improvement Process

Time: 4 hours 15 minutes

Materials:

- Slides

Preparation:

- Ask participants to read the case study scenario in their manuals the night before.

Reading:

- Gladwin, J., R.A. Dixon and T.D. Wilson. "Rejection of an innovation: Health information management training materials in east Africa." *Health Policy and Planning*: 17 (4): 354-361. Oxford University Press, 2002.

Learning objectives:

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

- List and explain the steps in the process of RHIS performance improvement.
- Identify key factors that influence the outcome of the process.
- Explain how to assess organizational readiness for the process.
- Explain how to conduct a stakeholder analysis.
- List criteria for selecting team members for RHIS performance improvement.

Plan of activities:

1. Process of RHIS performance improvement (15 min)

2. Case study (45 min)

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PERFORMANCE IMPROVEMENT PROCESS SESSION: CASE STUDY 1.

The routine health information system (RHIS) of the Ministry of Health in Country Z was established in the early 1990s with the assistance of an international development agency. The RHIS collects information on basic primary health care services, and about 80% of public health sector facilities report regularly. The RHIS section of the Department of Health Planning is responsible for the management of RHIS. In addition to the RHIS, the expanded program of immunization (EPI), safe motherhood, and tuberculosis programs also have their own information systems to monitor services.

The Ministry of Health is now implementing a management reform of the public health sector. Many of the health delivery functions will be decentralized from the Ministry to the district health office. The Ministry is also developing a national health policy. One of the new policies is strengthening of evidence-based health system management, which proposes to strengthen RHIS. The manager of the RHIS section was assigned the task of improving the RHIS.

The RHIS section manager decided to conduct an assessment to find out about the status of the RHIS. The manager was assisted by two statisticians from the RHIS section. A technical advisor from an international development agency also participated in the assessment. They reviewed the data quality at several districts and visited facilities. They found that at many facilities, there were shortages of RHIS supplies, a large number of different data collection forms that had to be filled out at the facility level, and a lack of computers and skills at the district office for RHIS tasks. They were also told that district offices do not rely on RHIS data because they doubt the quality of data.

Based on these results, the RHIS section formulated a proposal for the improvement of RHIS and submitted it to the Director General of Health Services. Their proposal included provision of computers for district offices, training of RHIS data entry personnel in computer skills, an increased budget for printing RHIS supplies, and consolidation of information systems to reduce the workload of health workers.

The proposal was presented to donors, and one donor agency allocated additional funds for RHIS supplies and computers. The RHIS section also revised the list of indicators to be included in the RHIS and updated the data collection forms for the facility level. Now the RHIS indicator list includes indicators for TB and the safe motherhood program. The RHIS section recommended that these special program information systems should be integrated into RHIS, and programs should abandon parallel information systems. The Director General agreed with the proposal and issued an executive order for the integration of information systems.

One year later, the RHIS manager visited several districts to monitor progress. The manager found that computers were now allocated to the district office, and most districts had enough supplies of new forms. But the manager also found that the parallel TB and safe motherhood program information systems were still present. District health service officers informed the RHIS manager that they trusted the data from these special programs more than the RHIS. Some of the district officers were not fully aware that the new RHIS data collection forms had been integrated to include the TB and safe motherhood data. Consequently, the use of RHIS information was found to be limited in these districts. One district was organizing monthly meetings to review RHIS information. The district health service manager from this district informed the RHIS manager that, thanks to the availability

PERFORMANCE IMPROVEMENT PROCESS SESSION: CASE STUDY 1.

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PERFORMANCE IMPROVEMENT PROCESS SESSION: CASE STUDY 2.

Dr. Micheal Mukooyo is the District Health Director of district Y, which is located in country A in West Africa. Six months back, the Ministry of Health had trained all the facility directors (30) on new registers and revised monthly reports, which included new HIV/AIDS service coverage information. It provided registers to collect the information and revised the monthly reporting forms by adding new data elements for HIV/AIDS services. These data elements included the number of persons that received VCT by sex, the number of pregnant women receiving VCT and getting an HIV test, the number of clients receiving ART by sex, and the number of children born and tested for HIV

Dr. Mukooyo realized that after the training, the facilities started submitting their monthly reports late and with a lot of missing information. He thought that it takes a while for training to sink in and change behaviors, thus waited things to improve. After three months, he asked his district supervisors to assist facility directors in filling out their monthly reports completely, correctly and submitting them on time.

The Ministry of Health HMIS Coordinator and the consultant from the donor agency visited the various district facilities after six months. During the field visits, they found that in one third of the facilities, visit registers and monthly reports were not stored properly and it was difficult to check the completeness and data accuracy. Of the facilities that kept registers and monthly reports, the completeness level was 50% and the data accuracy was 60%. The timeliness was 70%. There were limited discussions about the data and its implications for action at the facility level. The review of district office documentation also showed limited use of information. Dr. Mukooyo felt frustrated with the findings saying, “We implemented the training as planned and followed it up with supervisory visits. I am not sure where we went wrong.”

Task for Group Work: Discuss the following questions

- Do you think the RHIS improvement process in district Y was successful? Why or why not?
- What actions did district Y take to improve RHIS performance?

You will have 45 minutes to work.

PERFORMANCE IMPROVEMENT PROCESS SESSION: CASE STUDY 3.

Dr. Leontine Forrest was transferred to facility X as its director six months back. She found out that the facility's records are not well maintained and it is difficult to assess data quality of the monthly report. She discussed these issues in a staff meeting and asked employees to keep their registers updated. She was told that there are no registers for maternal and child care. She asked MCH staff to use the existing stationery to make registers using a given format until she requests and receives new registers from the district office.

As a result, Dr. Forrest started checking her facility's data quality before submitting the monthly data. She asked staff to study the monthly records and report back on what the data showed. She helped staff understand that the collected information reflects their own performance and that they should be able to improve performance slowly. After the first month, she developed targets based on the collected information. She said that in six months, the facility as a whole should be able to improve data quality and use of information by 30%. Dr. Forrest then divided the targets up by month. She said that because the staff did not expect to meet their targets, she would allow 5% lower and upper limits in achieving targets. Based on the monthly targets, she created a chart that included the upper and lower boundaries. She told staff that their performance should not go below the lowest limit of the target. She also told staff that she would negotiate the facility targets with the district. In the existing situation, it is better to lower the set targets. She also told them that the targets would be shared with community leaders and that their help will be sought to achieve the targets. Some staff were intrigued by Dr. Forrest's initiatives, while others thought staff enthusiasm would wane as Forrest settled down in the position.

After six months, Dr. Forrest received a letter from the district congratulating her for achieving her planned targets and acknowledging her leadership for being a success story in improving the RHIS and facility performance.

Task for Group Work: Discuss the following questions

- Do you think the RHIS improvement process in facility X was successful? Why or why not?
- What actions did this facility take to improve RHIS performance?

You will have 45 minutes to work.

SLIDE: CASE STUDY QUESTION 3.

- If you were the manager of the RHIS section in country Z, district Y, or facility X, how would you have planned the improvement process differently?
- Identify three things you would have done differently.
- Which steps in the performance improvement process do they relate to?

You have 25 minutes.

3. Report back (30 min)

Question 1:

- **Group 1-2**: Do you think the RHIS improvement process in Country Z was successful? Why or why not?
- **Group 3-4**: Do you think the RHIS improvement process in District Y was successful? Why or why not?
- **Group 5-6**: Do you think the RHIS improvement process in Facility X was successful? Why or why not?

Ask how many groups thought it was successful, and then ask each of those groups to list one reason for each case study.

Then ask for reasons why it was unsuccessful. Summarize by explaining that this improvement effort was a mixed success for country Z and district Y, while facility X was a success story.

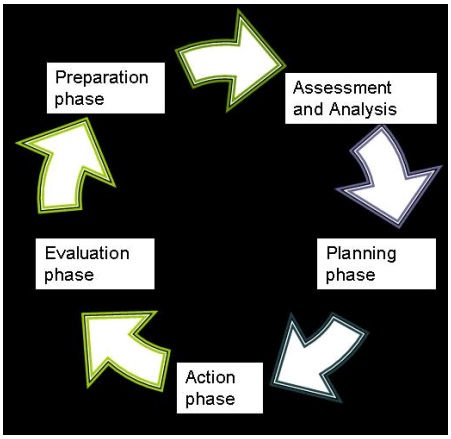
Question 2:

- **Group 1-2**: What actions did country Z take to improve RHIS performance?
- **Group 3-4**: What actions did district Y take to improve RHIS performance?
- **Group 5-6:** What actions did facility X take to improve RHIS performance?

Ask one group to give their response, and then ask other groups to add only things that were different in their own answers. Repeat for all three case studies.

4. Presentation on performance improvement process steps (10 min)

Summary of Process:



5. Group work: What would you do? (25 min)

Show the next question on a slide. Tell participants to return to their same groups and answer this question:

♦ Remind them of the steps:

- Preparation
- Assessment and analysis
- Planning
- Action
- Monitoring & evaluation

6. Report back and discussion (45 min)

7. Are we ready for making change happen? (40 min)

8. Involving the right people (10 min)

9. Presentation of stakeholder analysis (20 min)

1. "**Stakeholder's interest"** that could be rated on the following scale:

2: Strongly in favor
1: In favor
0: No interest
-1: Opposed
-2: Strongly opposed

We use a negative rating to show the level of opposition; neutral has a zero rating as it does not show any interest.

2. **"Assessment of influence,"** which could be rated on the following scale:

1: Little influence

2: Medium influence

3: Strong influence

Stakeholders Analysis Table				
A. Stakeholders	**B. Stakeholder's interest in the process (*Put the rating*)**	**C. Assessment of influence (*Put the rating*)**	**D. Total Support Score (shows level of positive or negative support) *(score=B x C)***	**E. Strategies for level of involvement**

Stakeholder Analysis Checklist:

- ☐ Have all primary and secondary stakeholders been identified?
- ☐ Have all potential stakeholders and opponents of the organization been identified?
- ☐ Have all the other stakeholders that are likely to emerge as a result of the process been identified?
- ☐ Have stakeholders' interests been identified?
- ☐ Have stakeholders' interrelationships been identified?
- ☐ Have the goals of the RHIS performance improvement process been reconciled with stakeholders' needs, interests, and priorities?
- ☐ Have stakeholders' willingness/commitment for participation in the process been investigated?

10. Team configuration (15 min)

TEAMS: 2 MAJOR ROLES

- Strategic:

  a) Steering committee – provides guidance and oversight.

- Operational:

  b) Technical working group - involved with data collection, analysis, and reporting.

RHIS Improvement Team			
Name	**Organization**	**Special skills**	**Roles/responsibilities**

9. Introduction to the PRISM framework

Time: 6 hours

Materials:

- Blank pieces of A4 paper
- Flip charts
- Starter instructions
- Group work instructions
- Energizer
- Role-play
- Slides.

Reading:

- Anwer Aqil, Dariku Hozumi, Theo Lippeveld, Anne Lafond "PRISM Framework: Theory and Practice", Presented at 3rd RHINO Workshop, Information for Action: Facility and Community Focus; Chiang Rai, Thailand, 26 February - 3 March 2006.

Learning Objectives:

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

- Explain the rationale for developing the PRISM framework
- Define characteristics of RHIS performance
- Describe processes leading to RHIS performance
- Identify the technical, organizational, and behavioral determinants of RHIS performance
- Explain the underlying principles of the PRISM framework
- Illustrate how the PRISM framework strengthens linkages between RHIS performance and health system performance
- Apply the PRISM framework for improving RHIS performance and, consequently, health system performance in a given country

Plan of activities:

1. Starter – Reaction towards Learning the Unknown (10 minutes)

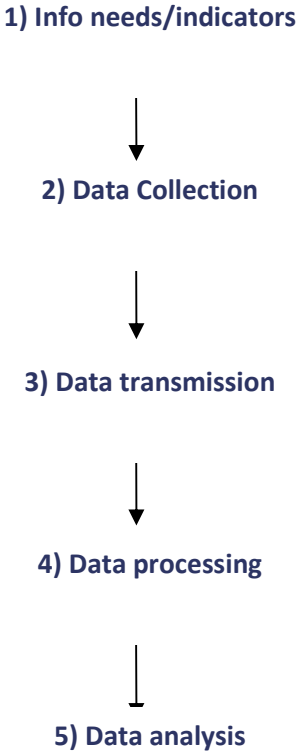
2. Defining RHIS Performance (5 min)

3. Discussion: RHIS Processes Contributing to RHIS Performance (30 minutes)

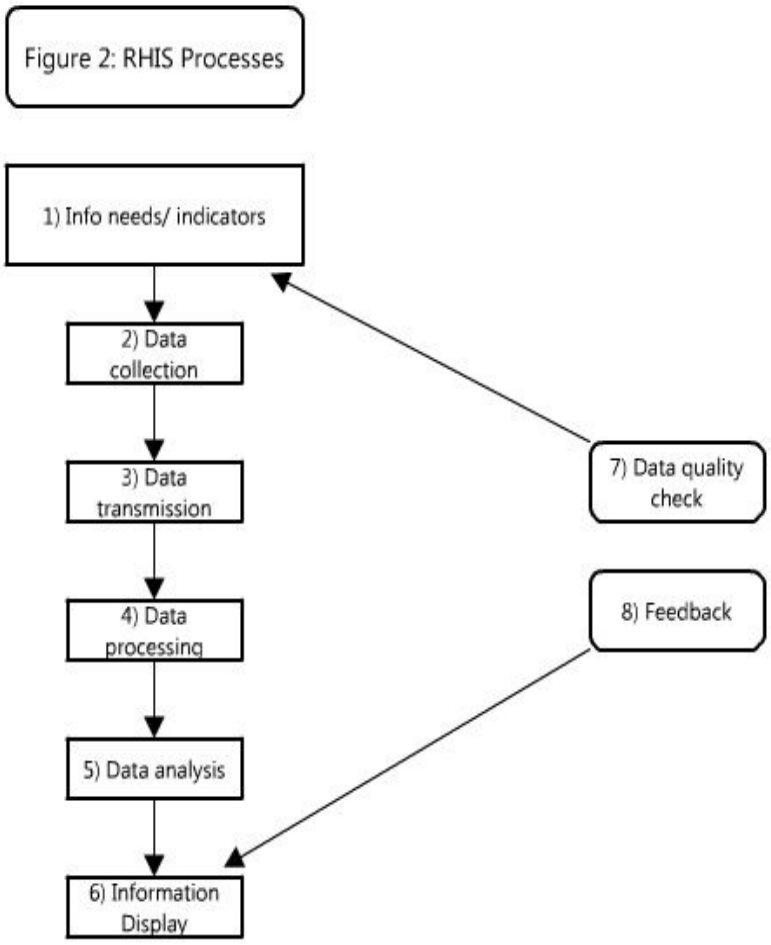
♦ Ask: **What processes are missing from this diagram?**

Hint: A process that shows that data has been converted into information.

Fig 1: RHIS Processes



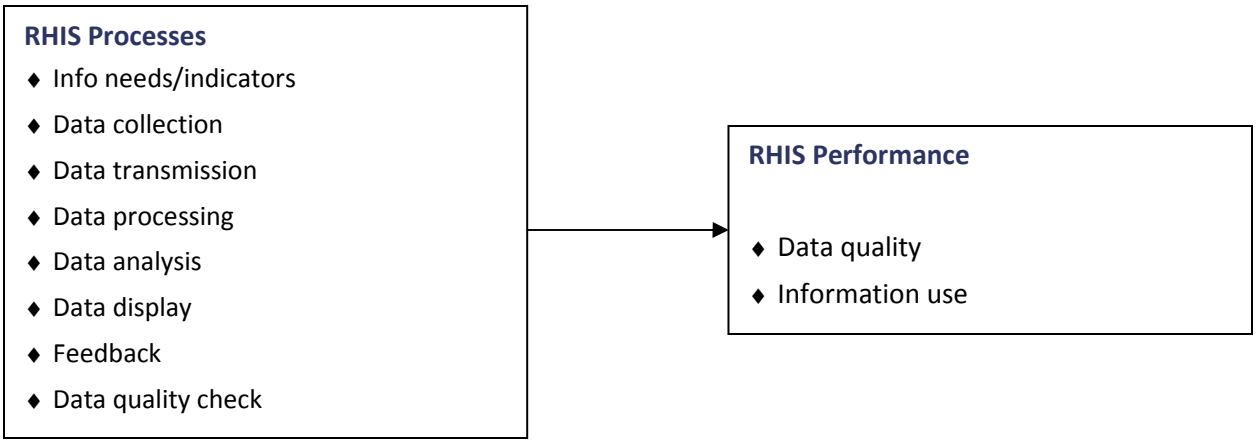
Based on these facts, the PRISM framework considers it as an important RHIS process. Let us add this process to Figure 2.



RHIS PERFORMANCE CHARACTERISTICS

- Data quality
- Continuous use of information

Figure 3



4. Group Exercise: Identifying and Writing RHIS Processes Problem Statement (20 min)

RHIS PROCESS PROBLEM STATEMENT: GROUP WORK TASKS.

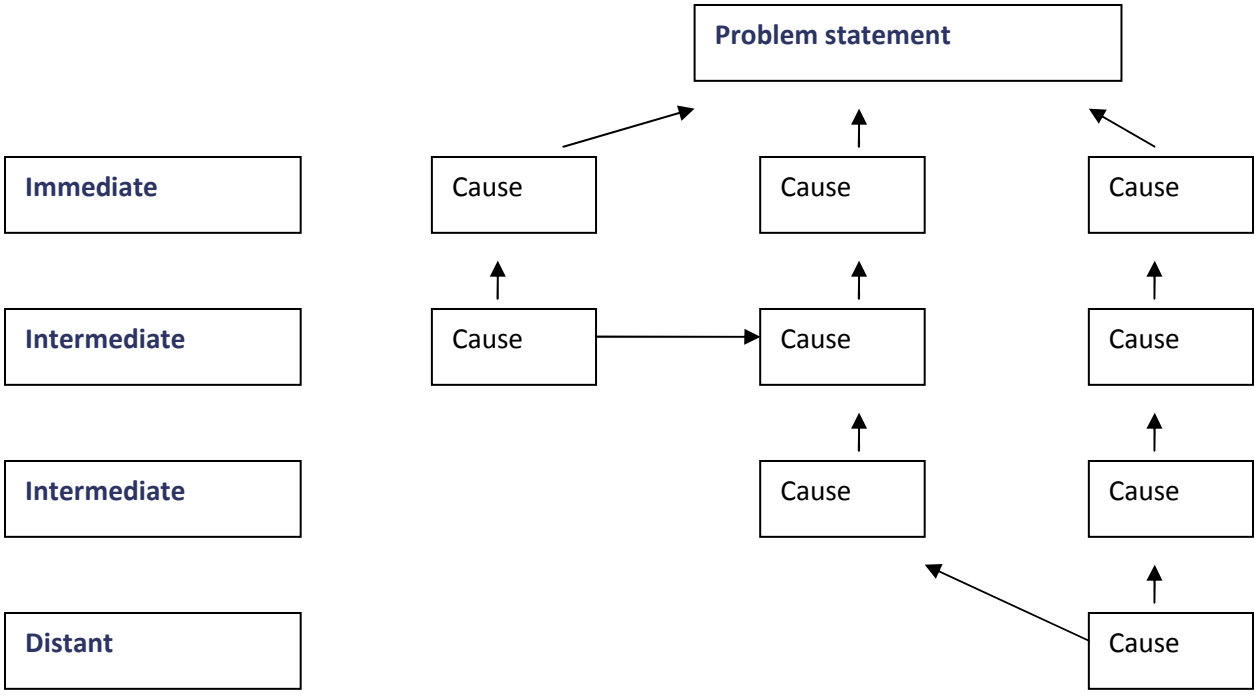
- Select a facilitator for the group, who should change with each activity to give everyone a chance to facilitate group work.
- Review the RHIS processes.
- List problem statements related to RHIS processes that you have observed in your work. At this stage, we want to know what problems exist and avoid discussing the causes of them.
- Write down each problem statement on a separate sheet of A4 paper (in BIG letters).
- Post your group's papers on the wall, each one under the appropriate RHIS process.

You have 15 minutes for this exercise.

5. Plenary Discussion (20 minutes)

6. Summarize the Group Findings (10 min)

7. Identifying Causes/Determinants of Inadequacies/Problems in RHIS Processes (10 min)



8. Group work: List Causes/Determinants (15 min)

Ask participants to return to their groups. Assign one of the RHIS processes to each group (e.g. data collection, info needs/indicators). Their task is as follows (show on a slide):

GROUP WORK—CAUSE/DETERMINANTS ANALYSIS.

- Select a facilitator for the group, who should change with each activity to give everyone a chance to facilitate group work.
- Choose two of the problem statements listed under your selected RHIS process.
- For each problem, list the underlying causes/determinants contributing to the problem.
- To list causes, first take one problem statement.
- Ask group members to write down one cause on a separate sheet of A4 paper (in BIG letters) related to the problem statement. Each member could write more than one cause but on a separate sheet of paper
- Post the group's papers stating the causes on the wall under the selected problem statement. If two or more members have written the same causes, then only post one to represent that cause.
- Post the group's papers stating the causes on the wall under the selected problem statement. If two or more members have written the same causes, then only post one to represent that cause.

You have 20 minutes for this exercise or 10 minutes for identifying causes for each problem statement.

Example: Problem: Data not being transmitted on schedule

Causes/determinants: Lack of materials/forms; staff not trained to fill out the forms; no incentives to submit on time; others (specify).

9. Sharing Group Work through Walk Around (10 minutes)

Examples from Pretoria 2005 course:

(a) Problem: Data collected is incomplete.

Causes/factors:

- Lack of data collection tools.
- Staff unskilled or untrained.
- Lack of motivation to collect data properly.
- Lack of accountability for incomplete data collection.

(b) Problem: Information not used for decision-making.

Causes/factors

- Lack of awareness among staff.
- Lack of skill for using information.
- Poor quality data.
- Lack of motivation for using information.
- Data not presented and analyzed in a way that makes it accessible for decision-making.

10. Organize Causes into Immediate, Intermediate, and Distant Causes (15 minutes)

11. Group work: Organize Causes into Immediate, Intermediate, and Distant Causes (15 minutes)

Now we would like you to do the same for your problem statement and present to the group. You have 15 minutes to organize your causes into **immediate**, **intermediate**, and **distant causes**.

GROUP WORK—ORGANIZE CAUSES INTO INTERMEDIATE, INTERMEDIATE, AND DISTANT CAUSES.

- Select a facilitator for the group, who should change with each activity to give everyone a chance to facilitate group work.
- Now you have two problem statements and a list of the underlying causes.
  - First, work with one problem statement and its causes. Post those causes under the problem statement that you think is directly causing the problem or immediate causes.
  - Second, post those causes under the immediate causes that you think are causing the immediate causes.
  - Repeat the process until all causes are organized under each other.
- Now put an arrow to show the direction of causes from immediate to problem statement, from intermediate to immediate cause, and so on.
- Lastly, put an arrow to show any relationship between causes.
- You have **15 minutes** for this exercise or **7-8 minutes** for organizing causes for each problem statement.
- You are supposed to make a presentation describing the following points:
  - Problem statement
  - Underlying causes as immediate, intermediate, and distant
  - Linkage among causes
  - Causes/factors that were common between two problem statements

12. Report back (30 minutes) and Q&A (30 minutes)

13. Categorizing the Causes/Determinants (40 minutes)

13a. Discussion: Define and Explain Categories

Technical causes/determinants

- Based on these characteristics, we defined the category of ***technical determinants*** as,

> ***"All those factors that are related to specialized techniques and technology to develop, manage, and improve RHIS processes and performance."***

Organizational Determinants

- Keeping all these characteristics in mind, the category of ***organizational determinants*** is defined as,

> ***"All those factors that are related to organizational structure, resources, procedures, support services, and culture to develop, manage, and improve RHIS processes and performance."***

Wait, we will have more discussion after we discuss the other categories.

Behavioral Determinants

Keeping all these characteristics in mind, the category of ***behavioral determinants*** is defined as,

> ***"All those factors that are related to knowledge, skills, abilities, attitudes, and motivation to develop, manage, and improve RHIS processes and performance."***

14. Group work: Categorizing the Causes/Determinants (10 min)

Ask participants to return to their groups for 10 minutes. Show their task on a slide:

GROUP WORK—CATEGORIZING THE CAUSES/DETERMINANTS.

- Look at the factors you listed in the previous group work.
- Label each of them as organizational, technical, or behavioral. You are provided with different color dots for labeling.
  - Use blue for behavioral factors
  - Use yellow for technical factors
  - Use red for organizational factors

You have 10 minutes.

15. Report back (30 min)

16. Discussion: The PRISM framework (30 min)

16a: Insight Energizer (5 minutes)

GROUP WORK—HANDOUT/SLIDE.

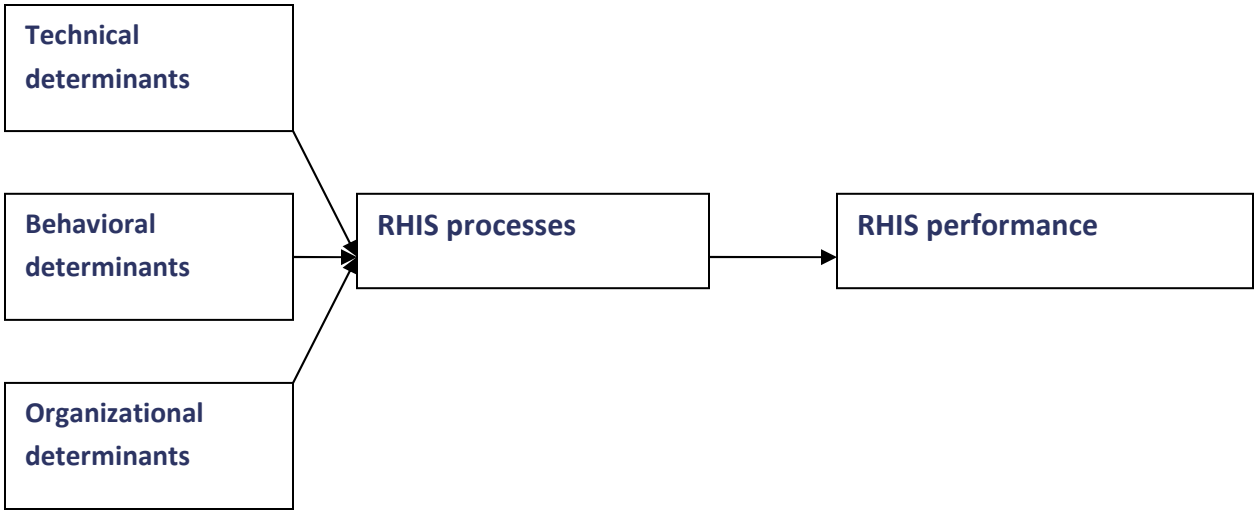
- We are promoting teamwork. Thus, we ask you to visit other groups and study the cause analysis and labeling.
- Observe something unique.
- Come back to your group and discuss that "uniqueness" in your group.
- Write the answer on a piece of paper and pass it to the facilitator.
- The facilitator will share the correct answer using slides for all to see and judge whether they won the prize.

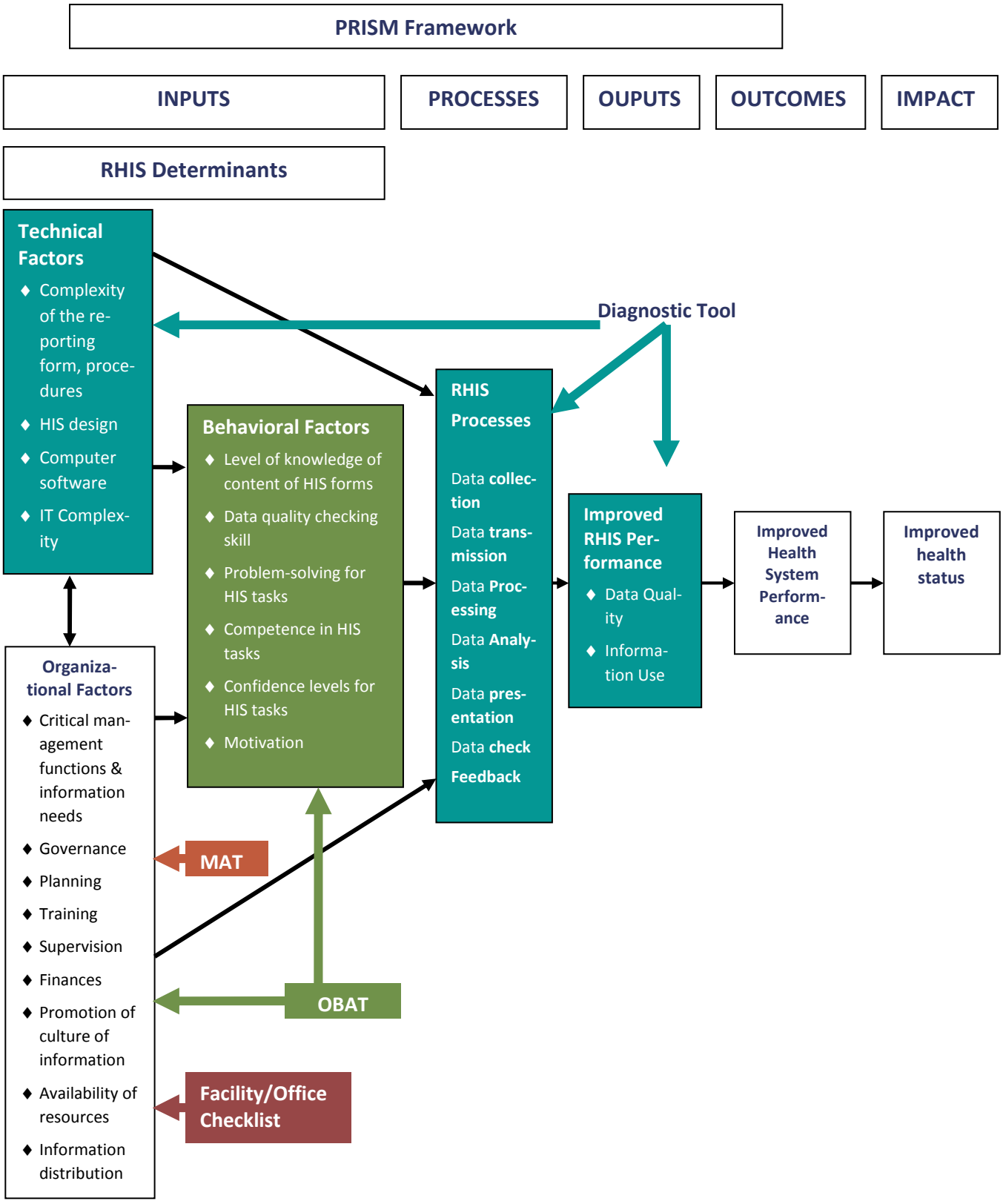
You have **five minutes** to complete this exercise.

Hint: Uniqueness is reflected through colors.

Figure 4

Revised Figure 4




PRISM Framework
INPUTS
PROCESSES
OUPUTS
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RHIS Determinants
Technical Factors
♦ Complexity of the reporting form, procedures
♦ HIS design
♦ Computer software
♦ IT Complexity
Diagnostic Tool
RHIS Processes
Data collection
Data transmission
Data Processing
Data Analysis
Data presentation
Data check
Feedback
Behavioral Factors
♦ Level of knowledge of content of HIS forms
♦ Data quality checking skill
♦ Problem-solving for HIS tasks
♦ Competence in HIS tasks
♦ Confidence levels for HIS tasks
♦ Motivation
Improved RHIS Performance
♦ Data Quality
♦ Information Use
Improved Health System Performance
Improved health status
Organizational Factors
♦ Critical management functions & information needs
♦ Governance
♦ Planning
♦ Training
♦ Supervision
♦ Finances
♦ Promotion of culture of information
♦ Availability of resources
♦ Information distribution
MAT
OBAT
Facility/Office Checklist

17: Discussion: Visiting Underlying Principles of the PRISM Framework (40 minutes)

Starter/energizer (10 minutes)

1. Ask for nine volunteers to come to the front of the room and form a circle. (Stand three feet away from the people on either side of you and causally arrange for the same distance to be kept among others.)

2. Appoint a timekeeper who will note how long it takes for a tossed ball to be returned to the original thrower (you, the facilitator in this case).

3. Ask for the remaining participants to serve as observers, who will make notes about the process of improving a process.

4. Explain to the volunteers that their task is to improve the process of getting the ball from the original thrower all the way around the circle and back to the original thrower. The only requirement is that the ball must be handled by each person in the same order reflected in original tossing.

5. Alert the timekeeper to begin and throw the ball to someone in the circle. He/she throws it to someone else. The process continues until the last person tosses the ball back to you.

6. At that point, ask the timekeeper how much time has elapsed.

7. Now ask the participants in the circle if they could go through the process again and shave off a few seconds of their time.

8. After several time-shaving tries, someone usually realizes that if they move in closer to one another, they can save considerable time.

9. Occasionally, someone will realize that that they do not need to toss the ball at all. They can simply move as close to one another as possible and then merely place their hands upon the ball in the correct sequence and still fulfill the requirement of the process.

10. Ask observers to share the notes they took as the volunteers were working to improve the process.

Adpated from Caroselli, M. (1998) "Great Session Openers, Closers and Energizer," the McGraw-Hill Companies.

PRISM is based on six principles:

1) Systems perspective
2) Outcome-oriented
3) Problem-solving
4) Self-regulation
5) Continuous improvement
6) Culture of information

18. Culture of Information – an Illusion or Reality? (45 minutes)

Preparation:

One day earlier, ask for two volunteers for the role-play. Give them the script. Assist them to practice before they go in front of the participants. The practice will help in making the role-play closer to reality. Encourage volunteers if they would like to add or change a few things based on their own experiences.

- Inform participants that we are going to present two scenarios from the visit of a researcher to a district office and a health facility.
- Ask participants to observe and note attitudes, beliefs, and actions for later discussion.

18a: Role-play (10 minutes)

Scenario I:

A health provider is sitting and writing something on the pad. Put a nametag of the facility in front of the desk.

[A visitor knocks at the imaginary door, comes in and introduces himself.]

V: I am Mr. A. You probably have been informed of my arrival.

HP: I am sorry. I was not informed. What can I do for you?

V: I am conducting a RHIS assessment for the Ministry of Health. I would like to ask a few questions. It will not take long.

HP: You have come from the MOH; I am delighted to meet you. Welcome.

V: Can you share some of your RHIS experiences?

HP: It is very good. We submit the monthly report during the first week of the month.

V: Anything else?

HP: I do not get time to fill out the monthly report so my dispenser prepares it for me. I am a service provider not a reporter. We do not get our salary until we submit the monthly report. Thus, there is an incentive to submit the report.

V: Is there a mechanism to check data quality before submitting the report?

HP: No, there is no such mechanism. We just transfer data from registers to the monthly report form and submit. Nobody checks the data quality.

V: What do you do with the monthly report?

HP: Nothing, our responsibility is to submit the monthly report.

V: *[Makes a gesture, as if he is reviewing the room for something and makes a note.]* Does anyone come from the district office to discuss the monthly report or check data accuracy?

HP: Yes, managers come but they do not discuss the monthly report. They only ask about who is present or which drugs are available.

V: Did you get training in RHIS tasks in the last six months?

HP: No, there is no training. If you organize one, that would be nice.

V: Can I see where you keep your monthly report and procedure manual?

HP: I do not know. My dispenser is on sick leave today. He kept them with his things. I do not have the keys to his cupboard. Sorry about that.

V: Do you receive any feedback report from district?

HP: No, I do not.

V: Would you like to add something more about your experience with RHIS?

HP: Please do not quote me. You know how things work. They want reports; we submit them. Nobody cares about data. You know how the decisions are made. Everyone makes everyone happy. I cannot make any decisions about how my staff works. They will go complaining to their patrons and I will be in trouble. I think RHIS is a burden. What is the use of collecting this data? Please do not quote me. I do not want to be in trouble.

V: I am sorry to tell you about the confidentiality of this interview. Whatever you tell me will remain confined to me and all my findings will be presented in such a way that no names will be mentioned. Thank you very much for your time. I appreciate your assistance.

Scene II: *V is looking toward the participants while someone sits facing towards the wall; the participants cannot see his face. V reports to his colleague.*

V: I was with the district officer. He was very knowledgeable about RHIS. However, the district officer thinks that people are lazy and do not do their work. Like the facility I visited earlier, I did not observe any display of information. The district neither holds meetings to discuss monthly reports nor sends feedback reports. They do have computer software to analyze the data and prepare reports. The person who was trained has been transferred.

[V continues his talk but changes his tone] You know, wherever I go, I am getting similar responses.

[V Faces audience and asks] Do you get similar responses?

Both volunteers bow to the audience and go back to their seats.

II. PRISM Tools

10. Overview of PRISM Tools

Time: 45 minutes

Materials:

- PRISM tools
- Slides.

Learning objectives:

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

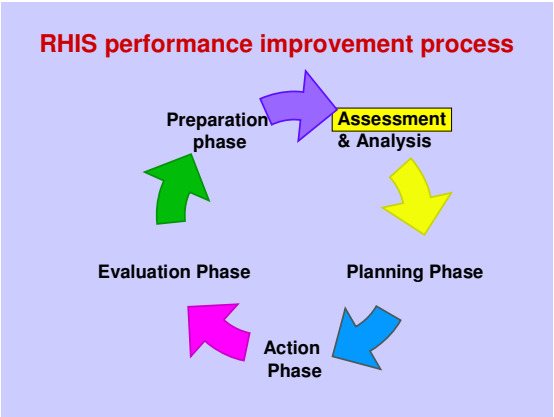
- Describe how the set of PRISM tools is organized, and find items in it.
- Explain the purpose of each tool.
- Define "data demand" and "data use," according to the data demand and information use model.

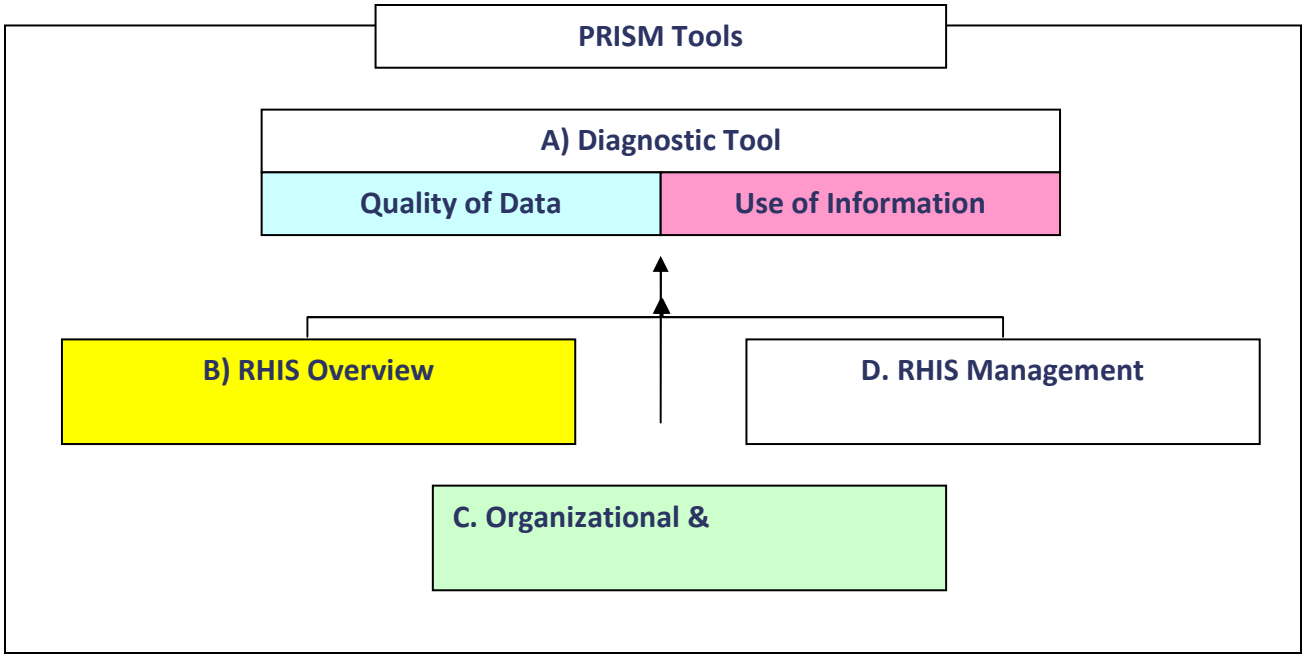
Reading:

- Data Demand and Information Use in the Health Sector. MEASURE Evaluation. April 2006.
-

Plan of activities:

1. Overview of assessment (5 minutes)





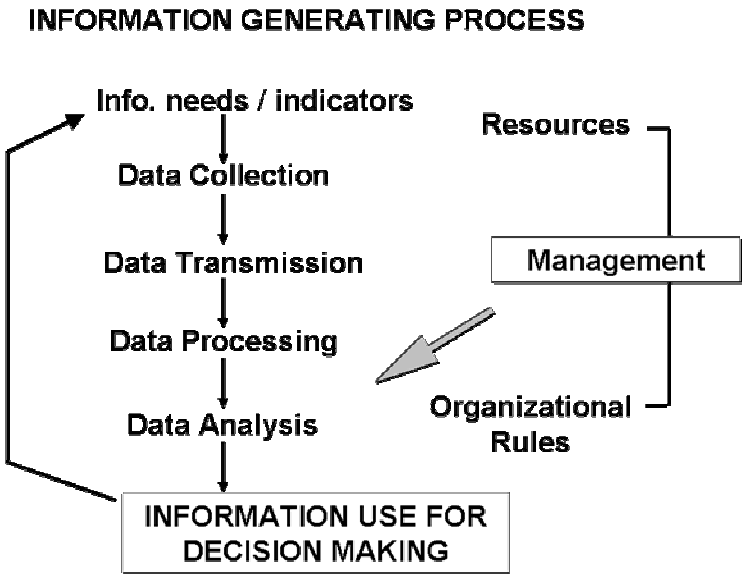
SLIDE: PUPROSE OF THE DIAGNOSTIC TOOL.

- Will determine the current level of RHIS performance.
- Can also be used for regular review of the performance of RHIS.

SLIDE: INTRODUCTION OF TOOL B.

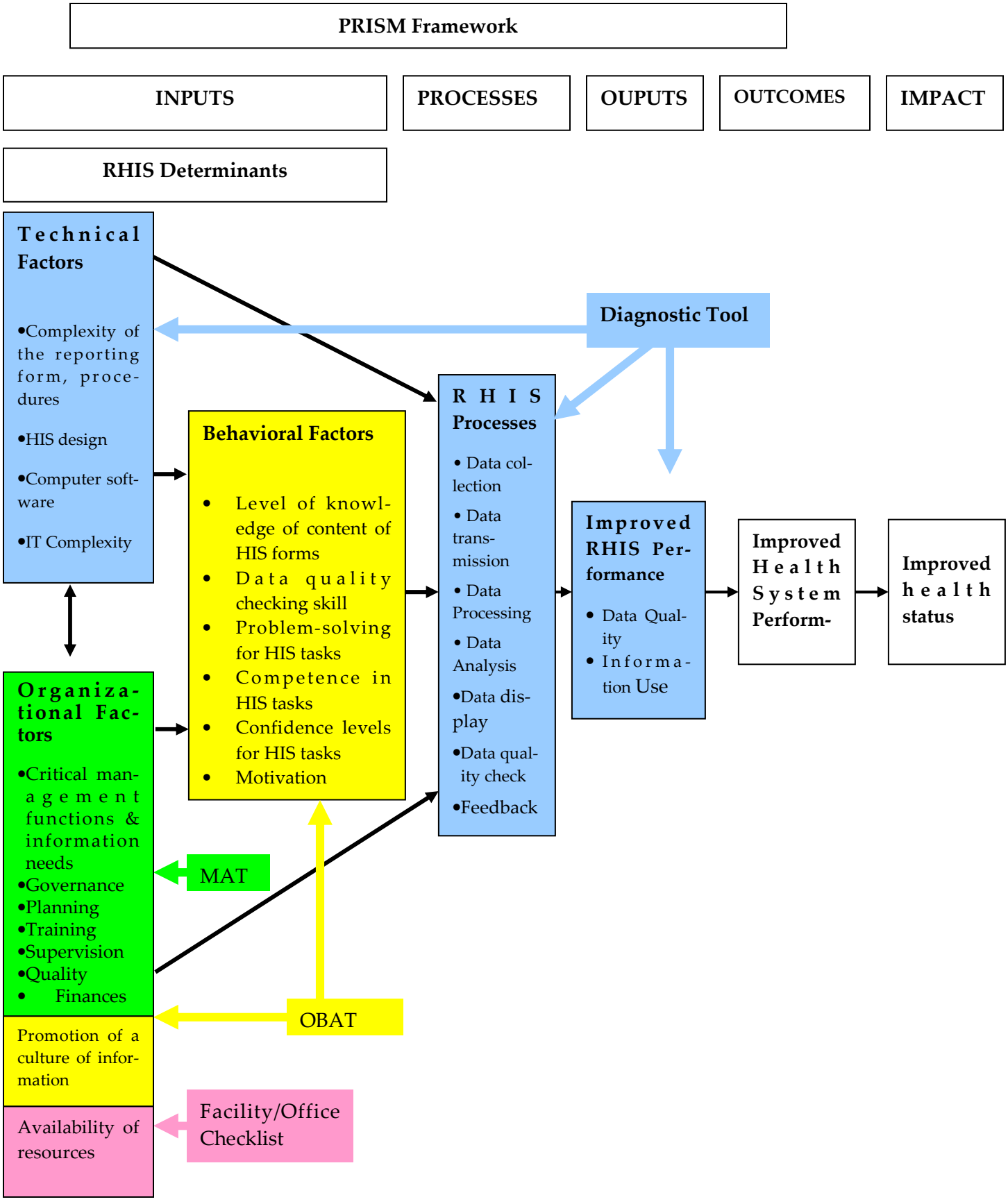
- The **RHIS Overview Tool** helps to understand the structure of existing information systems, information flows, and interaction between information systems.
- The **Facility/Office Checklist** is used to understand available resources and conditions of the information system at RHIS offices and facilities.

2. Discussion on PRISM framework and RHIS assessment (15 min)



Linking PRISM tools with the PRISM framework

- Show the **PRISM slide** and explain which factors each tool measures.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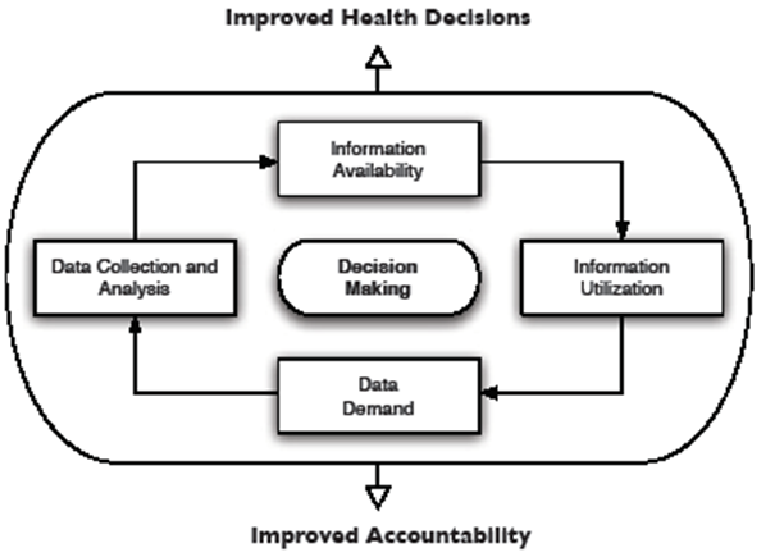
• Data Quality
• Information Use
Improved Health System Perform-
Improved health status
Organizational Factors
•Critical management functions & information needs
•Governance
•Planning
•Training
•Supervision
•Quality
• Finances
MAT
OBAT
Promotion of a culture of information
Availability of resources
Facility/Office Checklist

3. Treasure hunt (15 min)

Clue	*Answer key for trainer*
Where can you find questions related to RHIS management functions?	*See MAT*
Where can you find a tool for measuring data quality?	*See Diagnostic Tool*
Where can you find the "information system mapping" exercise?	*See RHIS Overview Tool*
Where you will find the question related to culture of information? Where can you find behavioral factors?	*See OBAT*

4. Data demand and information use (10 min)



Source: Data Demand and Information Use (DDIU) in the Health Sector. MEASURE Evaluation. April 2006

SLIDE: *USE OF INFORMATION* IN THE DDIU MODEL.

- The decision-maker is explicitly aware of the decision he/she is about to make and at least two of the alternatives, and;
- Relevant information is explicitly considered in the process of making the decision, even if it is outweighed by other contextual factors.

11. Diagnostic Tool

Time: 2 hours

Materials:

- PRISM Tools
- Soft copy of Diagnostic Tool loaded onto computer with projector
- Sample facility data.

Learning objectives:

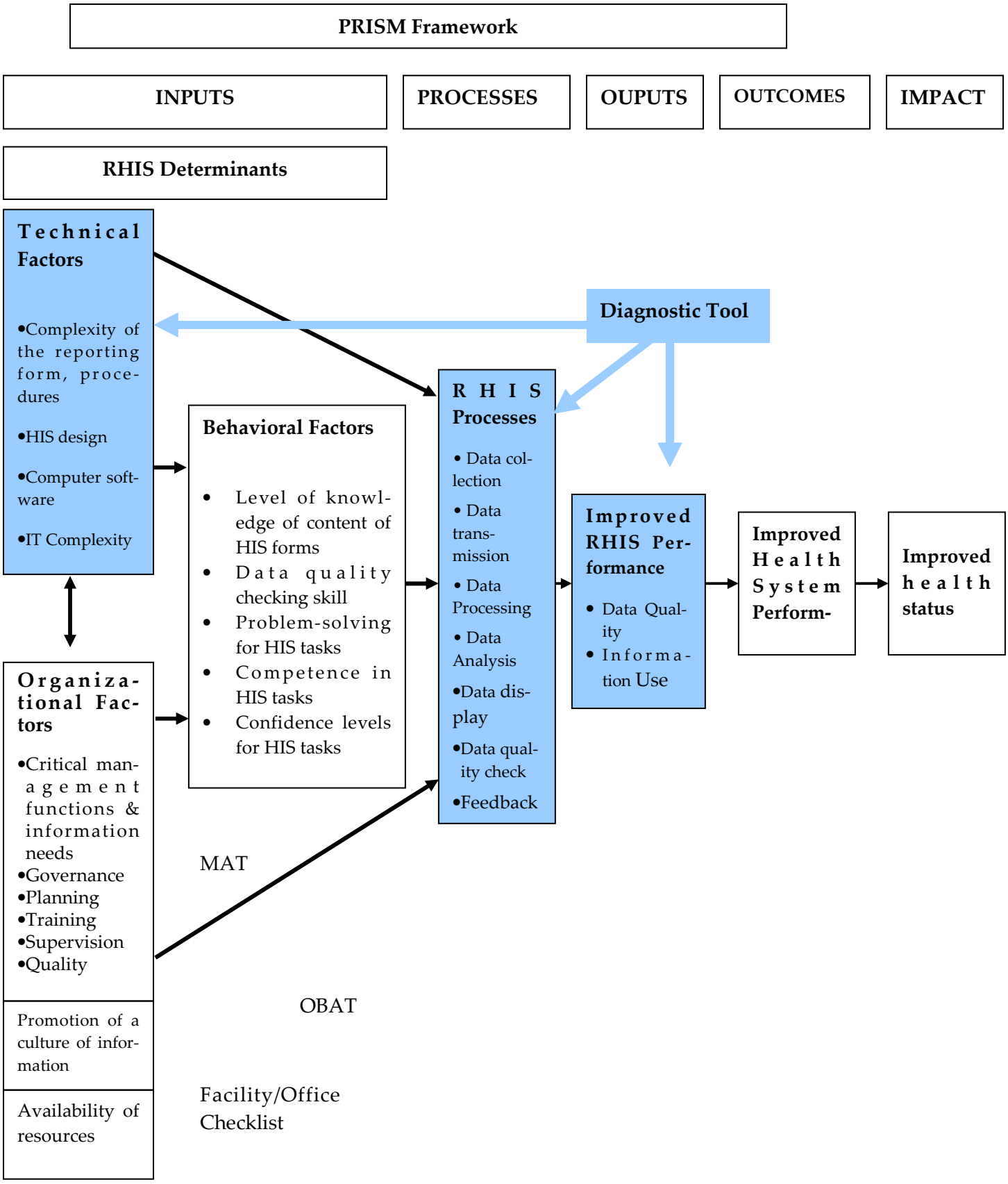
- By the end of the session, participants will be able to:
- Explain the purpose of the Diagnostic Tool
- List different aspects of RHIS, which this tool is designed to measure.
- Define "quality of data" as it is used in the Diagnostic Tool.
- Define "use of information" as it is used in the Diagnostic Tool.
- Explain how and when to use the tool.
- Explain in general how to enter data into the Diagnostic Tool spreadsheet.
- Explain how the results of the Diagnostic Tool are displayed, and how to interpret them.
-

Plan of activities:

1. Introduction to the Diagnostic Tool (15 min)

Any system is designed to produce certain outputs or products. It needs inputs and processes to do that. Thus, we begin with the Diagnostic Tool that gives you a measurement of RHIS performance in the two major categories of data quality and use of information. The other information collected by the tool includes: RHIS processes, technical determinants, and supervision quality.

♦ **Show** the following PRISM framework slide. We will discuss these four aspects of the PRISM framework.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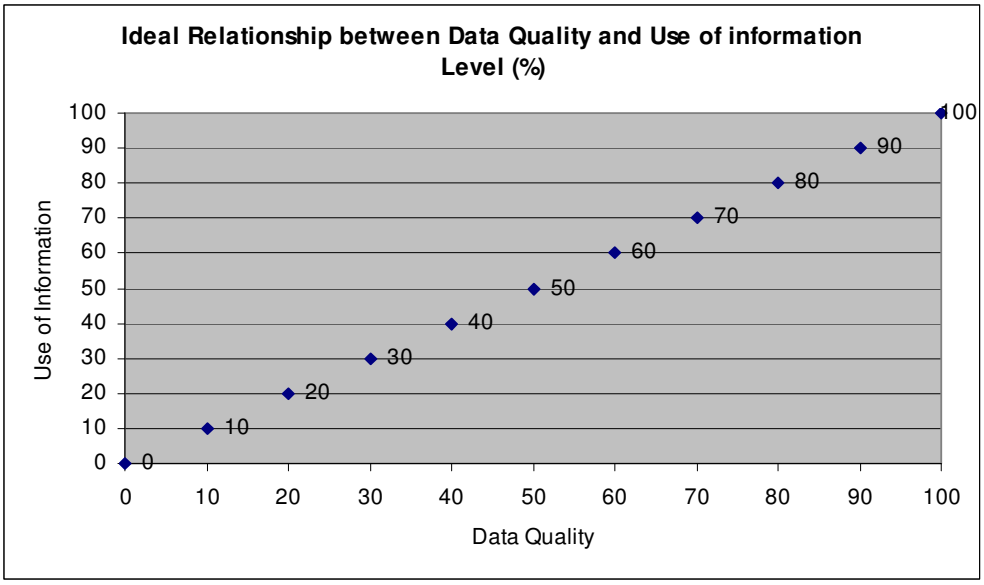


2. Measuring "data quality" with the Diagnostic Tool (10 min)

SLIDE: IN THE DIAGNOSTIC TOOL, *QUALITY OF DATA* IS MEASURED WITH THESE INDICATORS

- Relevance
- Accuracy
- Timeliness
- Completeness

SLIDE: *TIMELINESS* COULD BE INTERPRETED AS

- Most updated.
- Well-timed.
- Available when needed.
- Meeting data submission deadlines

SLIDE: *COMPLETENESS* INDICATES TWO (2) THINGS

- **RHIS coverage**:
  - A) **Geographical** coverage (Are all districts/areas enrolled in RHIS?)
  - B) **Service** coverage (Are all major services included in the RHIS?)
  - C) **Facility** coverage (Are all types of facilities/all facilities in areas enrolled in RHIS?)
- Completion in **data collection**
  - All columns in data collection tools are filled
  - All data elements in the monthly report are filled

3. Group work on data quality (5 min)

- Ask: **Work with your neighbors. Take five minutes to highlight the questions that are related to accuracy, timeliness, and completeness (***there are a total of five indicators***).**

4. Report back (5 min)

Table 11.1 Diagnostic Tool—Summary of Data Quality Indicators					
Dimensions/indicators	**Variable Name**	**Calculation**	**Mean**	**Median**	**Min-Max**
Data Quality					
% of completeness by data elements by facility level	FQ7,FQ8	(1-[FQ8]/[FQ7])*100	50	50	0-100
% of facility coverage (completeness) by district **% of district having records of submitting data to higher level**	DQ3,4a,b DQ9	DQ4a/DQ3*100; DQ4b/DQ3*100 Frequency DQ9	50	50	0-100
% of timeliness by district by months	DQ7a,b, DQ4	DQ7a1/DQ4a*100; DQ7b1/DQ4b*100	50	50	0-100
% of data accuracy of specific data element by month **Data accuracy level for A month A** **Data accuracy level for A month B** **Data accuracy level for B month A** **Data accuracy level for B month B** **Data accuracy level for C month A** **Data accuracy level for C month B** **Data accuracy level for D month A** **Data accuracy level for D month B** **% of data accuracy of specific data element by month at district**	FQ4a,b,c,d DQd10a,b,c	Facility FQ4Aa2]/[FQ4Aa1]*100 FQ4Ab2]/[FQ4Ab1]*100 FQ4Ba2]/[FQ4Ba1]*100 FQ4Bb2]/[FQ4Bb1]*100 FQ4Ca2]/[FQ4Ca1]*100 FQ4Cb2]/[FQ4Cb1]*100 FQ4Da2]/[FQ4Da1]*100 FQ4Db2]/[FQ4Db1]*100 District DQ10Aa2]/[DQ10Aa1]*100 DQ10Ab2]/[DQ10Ab1*100 DQ10Ba2]/[DQ10Ba1]*100 DQ10Bb2]/[DQ10Bb1]*100 DQ10Ca2]/[DQ10Ca1]*100 DQ10Cb2]/[DQ10Cb1]*100	50	50	0-100
% of overall data accuracy by district		Aggregate all data elements and create a mean	50	50	0-100

5. Measuring "use of information" with the Diagnostic Tool (10 min)

6. Group work on use of information (5 min)

Work with your neighbots. Take five minutes to highlight the questions that are related to accuracy, timeliness, and completeness (there are total of five indicators**)**

Table 11.2 Diagnostic Tool—Summary of Use of Information Indicators					
Use of information	**Variable Name**	**Calculation**	**Mean**	**Median**	**Min-Max**
% of actual vs planned reports produced by district **% of actual vs planned reports produced by facilities**	DU3a2-e2, DU3a3-e3 FU3a2-d2, FU3a3-d3	[DU3A3]/[DU3A2]*100; [DU3B3]/[DU3B2*100 [DU3C3]/[DU3C2]*100 ; [DU3d3]/[DU3d2]*100 [DU3e3]/[DU3e2]*100 [FU3A3]/[FU3A2]*100; [FU3B3]/[FU3B2]*100 [FU3C3]/[FU3C2]*100; FU3d3]/[FU3d2]*100	50	50	0-100
% facilities/district showing use of information for monitoring	FU5a3-d3	Frequency			
% of facilities/district having reports showing decisions by types of analyses	FU9a-d DU9a-d	(FQ9a+FQ9b+FQ9c+FQ9d) /4*100 ([DU9A]+[DU9B]+[DU9C]+ [DU9D])/4*100; also Frequency	50	50	0-100
% of facilities/districts reporting meetings with discussion on RHIS data	FU14a-b DU14a-b	(FQ14a+FQ14b)/2*100 ([DU14A]+[DU14B])/2*100	50	50	0-100
% of facilities/districts reporting decisions based on RHIS information	FU14c-d DU14c-d	(FQ14c+FQ14d)/2*100 ([DU14C]+[DU14D])/2*100	50	50	0-100
% of facilities reporting referral of problem for actions based on RHIS information	FU14e DU14e	Frequency			
% of activities related to promoting use of RHIS information at facility/district level	FU15,16,17,18 DU15,16,17,18	([FU15]+[FU16]+[FU17]+ [FU18])/4*100 ([DU15]+[DU16]+[DU17]+ [DU18])/4*100 Frequency	50	50	0-100
% of example of information use	FU20	Frequency			

7. Report back (10 min)

8. RHIS Processes

9. Group work on RHIS processes (5 min)

♦ Give five minutes to work in pairs to review the Diagnostic Tool. Show the task on a slide:

SLIDE: DIAGNOSITC TOOL REVIEW.

Look at the Diagnostic Tool (data quality) and **find at least one question** that asks about the **RHIS Processes.**

10. Report back (10 min)

♦ **Ask** for volunteers to name questions they found. **Clarify** if people name the wrong questions and explain why. **Conclude** by showing the following slide indicating the question number.

Table 11.3 Diagnostic Tool—Summary of RHIS Processes Indicators					
RHIS Processes	**Variable Name**	**Calculation**	**Mean**	**Median**	**Min-Max**
% of facilities reporting presence of data collection procedure manual	FQ15	Frequency	50	50	0-100
% of facilities reporting presence of data transmission	FQ5c&6c	(FQ5c+FQ6c)/2*100	50	50	0-100
% of facilities reporting presence of data accuracy checking process	FQ5a&-6a	(FQ5a+FQ6a)/2*100	50	50	0-100
% of facilities reporting presence of data completeness process	FQ5b& 6b	(FQ5b+FQ6b)/2*100	50	50	0-100
% of facilities reporting presence of data processing process **% of districts reporting presence of data processing process**	FQ9 DQ11	Frequency Tabulation of Yes responses			
% of facilities showing display of demographic data, map of area	FU6,7	Frequency			

% of districts displaying of data related to mother health
 	
% of facilities displaying of data related to mother health
	DU5a
	
	FU5a
		if(([DU5A21]+[DU5A22]+[DU5A23])>1,'True','False')
		
		if(([FU5A21]+[FU5A22]+[FU5A23])>1,'True','False')			

% of districts displaying of data related to child health
 	
% of facilities displaying of data related to child health
	DU5b
	
	FU5b
		if(([DU5B21]+[DU5B22]+[DU5B23])>1,'True','False')
		
		if(([FU5B21]+[FU5B22]+[FU5B23])>1,'True','False')			

% of districts displaying of data related to facility utilization
 	
% of facilities displaying of data related to facility utilization
	DU5c
	
	FU5c
		if(([DU5C21]+[DU5C22]+[DU5C23])>1,'True','False')
		
		if(([FU5C21]+[FU5C22]+[FU5C23])>1,'True','False')			

% of districts displaying of data related to disease surveillance
 	
% of facilities displaying of data related to disease surveillance
	DU5d
	
	FU5d
		if(([DU5D21]+[DU5D22]+[DU5D23])>1,'True','False')
		
		if(([FU5D21]+[FU5D22]+[FU5D23])>1,'True','False')			

% of districts reporting presence of feedback process **% of facilities reporting presence of feedback process**	DU4 FU4	Frequency			

11. Technical Determinants

12. Group work on Technical Determinants in a district Diagnostic Tool (5 min)

♦ Give five minutes to work in pairs to **review the Diagnostic Tool**. *Show the task on a slide:*

SLIDE: DIAGNOSITC TOOL REVIEW.

Look at the Diagnostic Tool (data quality) and **find at least one question** that asks about **technical determinants.**

Table 11.4 Diagnostic Tool—Summary of Technical Determinants Indicators

Technical Determinants	Variable Name	Calculation	Mean	Median	Min-Max
% of districts reporting types of analyses	DQ12a,b,c,d,e,f	Frequency			
% of facilities reporting types of analyses	FQ10a,b,c,d				
% of facilities reporting presence of procedure manual	FQ11				
% of district respondents reporting about that RHIS procedure manual and forms, ICT and RHIS design	DQ13,14,15,16, 17,18,19,20	Frequency			

13. Report back (10 min)

14. Supervision quality

15. Group work on supervision quality (5 min)

♦ Give five minutes to work in pairs to review the Diagnostic Tool. Show the task on a slide:

> **SLIDE: DIAGNOSITC TOOL REVIEW.**
> Look at the Diagnostic Tool (data quality) and **find at least one question** that asks about **supervision quality.**

Table 11.5 Diagnostic Tool—Summary of Supervision Indicators

RHIS Supervision Quality	Variable Name	Calculation	Mean	Median	Min-Max
% of facilities reporting frequency of supervisory visits in the last three months	FU21	Frequency			
% of facilities reporting quality of RHIS supervision	FU22-26	Frequency (FU22+FU23+FU24+ FU25+FU26)/5 * 100)	50	50	0-100

16. Report back (10 min)

♦ **Ask** for volunteers to name questions they found. **Clarify** if people name the wrong questions and explain why. **Conclude** by showing the following slide indicating the question number.

17. Implementation of Diagnostic Tool (5 min)

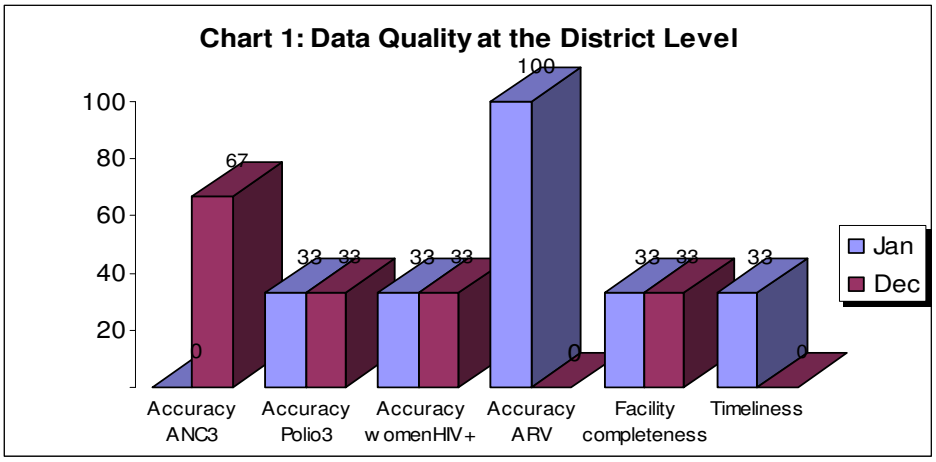
SLIDE: IMPLEMENTING THE DIAGNOSITC TOOL.

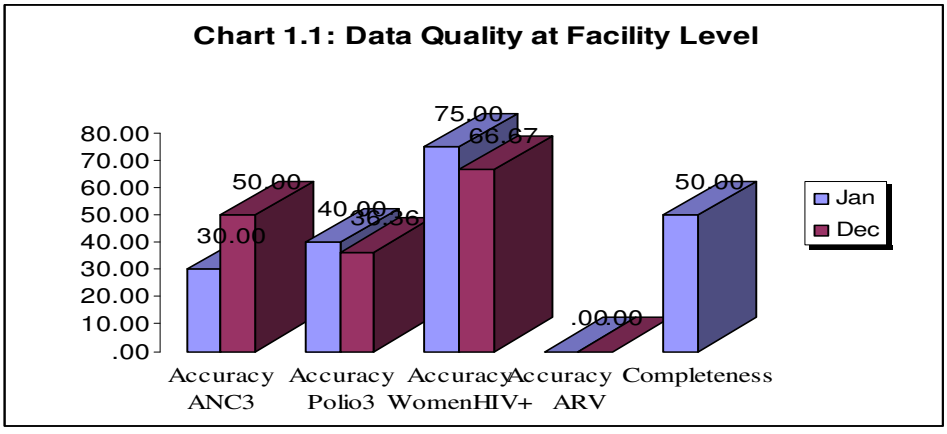
- **Where**:
  - National, regional, and/or district levels.
- **Modification:**
  - Adjust questions to reflect RHIS in your setting.
- **Who should administer it**:
  - RHIS improvement team members.
  - People who know the existing RHIS well.

18. Diagnostic Tool – Calculation of Indicators and Interpretation (30 minutes)

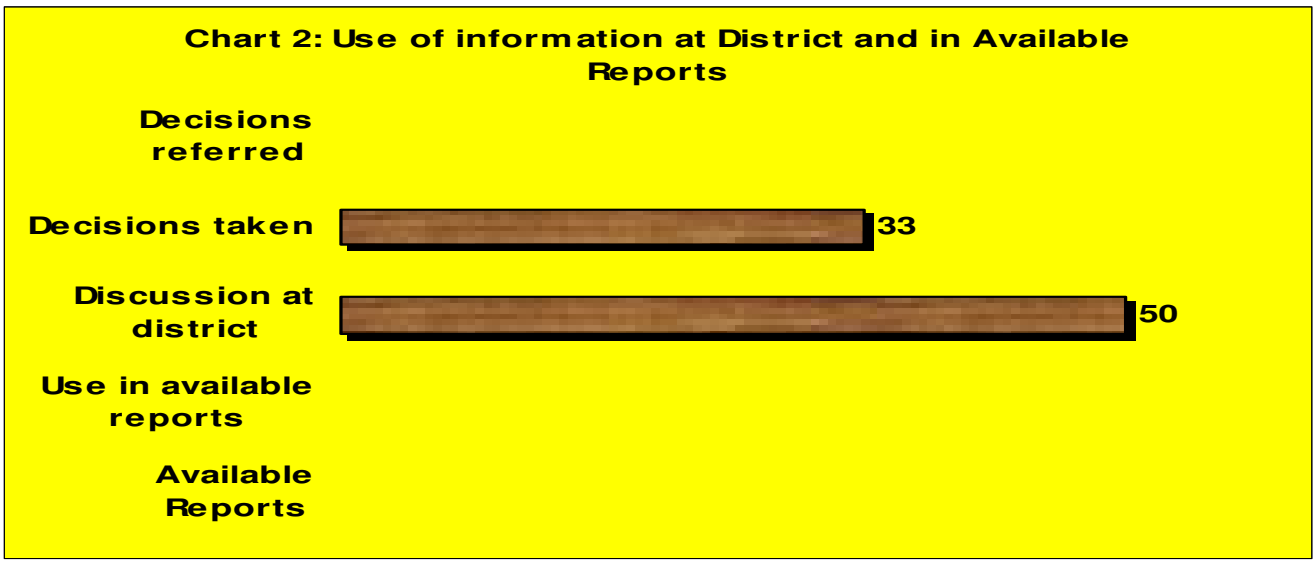
1. Calculation of Indicators

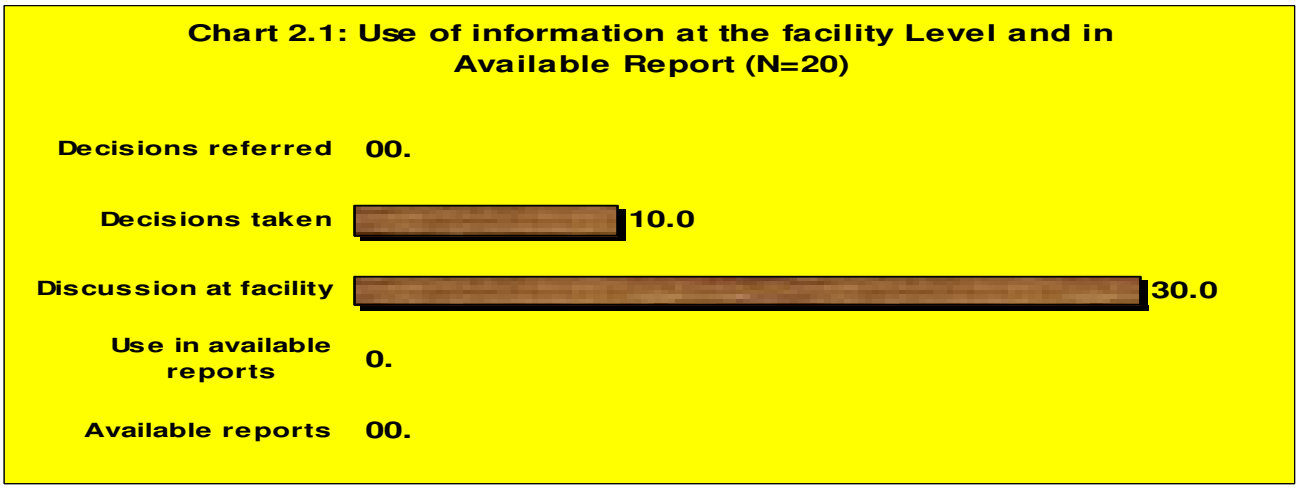
- Show the outcome of the calculation by pointing to **Chart 1** in the district file.



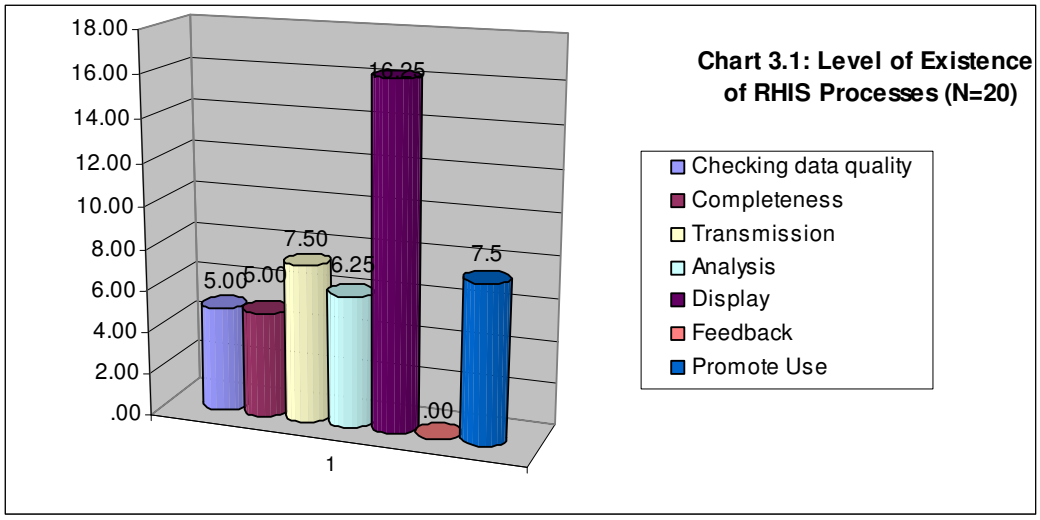


2. Interpretation of Diagnostic Tool Indicators





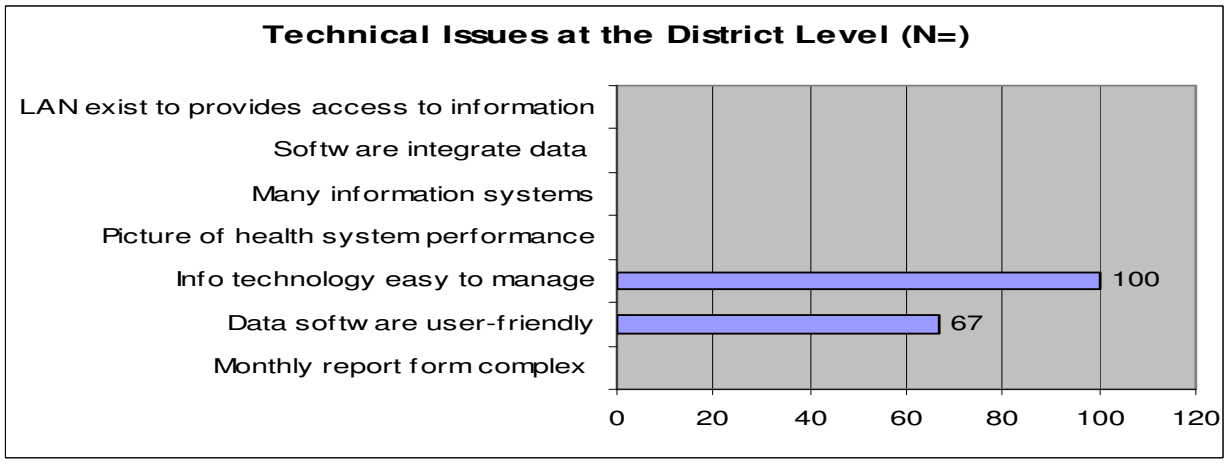
♦ Ask: **What does Chart 3.1 tell us about the functional level of RHIS processes?**



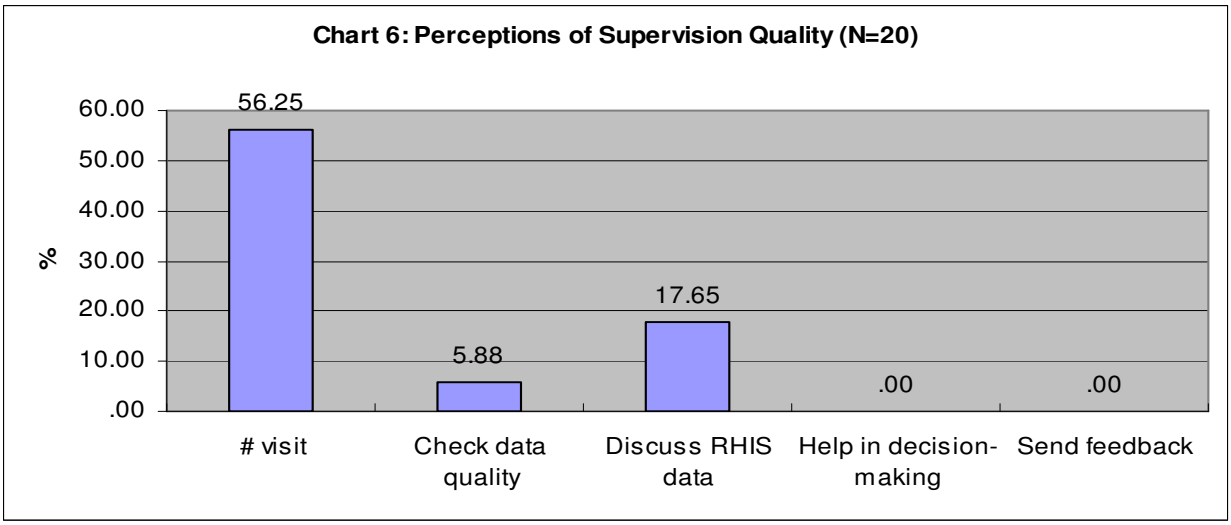
Appreciate following and other correct responses.

Chart 3.1 shows that on average, less than 7% of the facilities showed a presence of RHIS processes, except for the data display which is close to 16%. In addition, feedback is non-existent, which indicates that these processes need to be strengthened.

♦ Ask: **What does the technical determinants chart tell us?**



♦ Ask: **What does Chart 6 tell us about the functional level of RHIS supervision?**



12. RHIS Overview & Facility/Office Checklist Tool

Time: 30 minutes

Materials:

- PRISM Tools
- Slides

Preparation:

- Remind participants the day before the session about the homework.

Learning objectives:

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

- Explain the purpose and structure of the RHIS Overview Tool.
- Explain the purpose of the RHIS facility/office checklist.
- Explain when and how to use the tool.

Homework:

This session requires homework. Participants are required to look over the RHIS overview and facility/office checklist tool, and answer the following questions:

- **What is the purpose of the Overview tool and information flow chart in a country?**
- **What is the purpose of the facility/office checklist?**
- **What other questions do you have about this tool?**
-

Plan of activities:

1. RHIS Overview (30 minutes)

Demonstration of Information System Mapping

SLIDE: RHIS OVERVIEW GIVES AN OPPORTUNITY TO DOCUMENT…

- The structure and design of different information systems.
- The data flow of different information systems, pointing out data handling points (such as health facility, district office)
- Any overlap of information collected by information systems that cause redundancies and overburden.
- Level of fragmentation/integration of the health systems' information.

Example: Pakistan

1: Information System Mapping											
		Types of Information Handled by Each Systems									
Type of information system	Specific name if any	Service Utilization	Occurrence of selected disease(s)	Disease Outbreak (Immediate report)	Financial Information	Drug, contraceptive vaccine, stock	Human resources	Equipment/ building	Vital Events	Others	Others
Routine service based reporting system	HMIS	x	x	x	x	X	x	x			
Epidemiological surveillance for notifiable infectious diseases			x	X							
Special program reporting systems (EPI)	EPI	x	x	x		Vaccine only		Cold chain equipment			
Special program reporting systems (TB)	TB	x	x			TB supplies		supplies & equipment			
Special program reporting systems (Malaria)	Malaria	x	x	x		Malaria medicines		supplies & equipment			
Special program reporting systems (HIV/AIDS)	HIV	x		x							
Special program reporting systems (specify)											
Special program reporting systems (specify)											
Special program reporting systems (specify)											
Special program reporting systems (specify)											
Community Base information system	LHW	x				contraceptive		supplies & equipment	Births & deaths		
Administrative system (Finance)	FISA				x						
Administrative system (human resource)											
Administrative system (Training)											
Administrative system (drugs, contraceptive, vaccine, logistics)											
Administrative system (Infrastructure, equipment, trans-											
Vital Registration	Union council registration								x		
Other system											

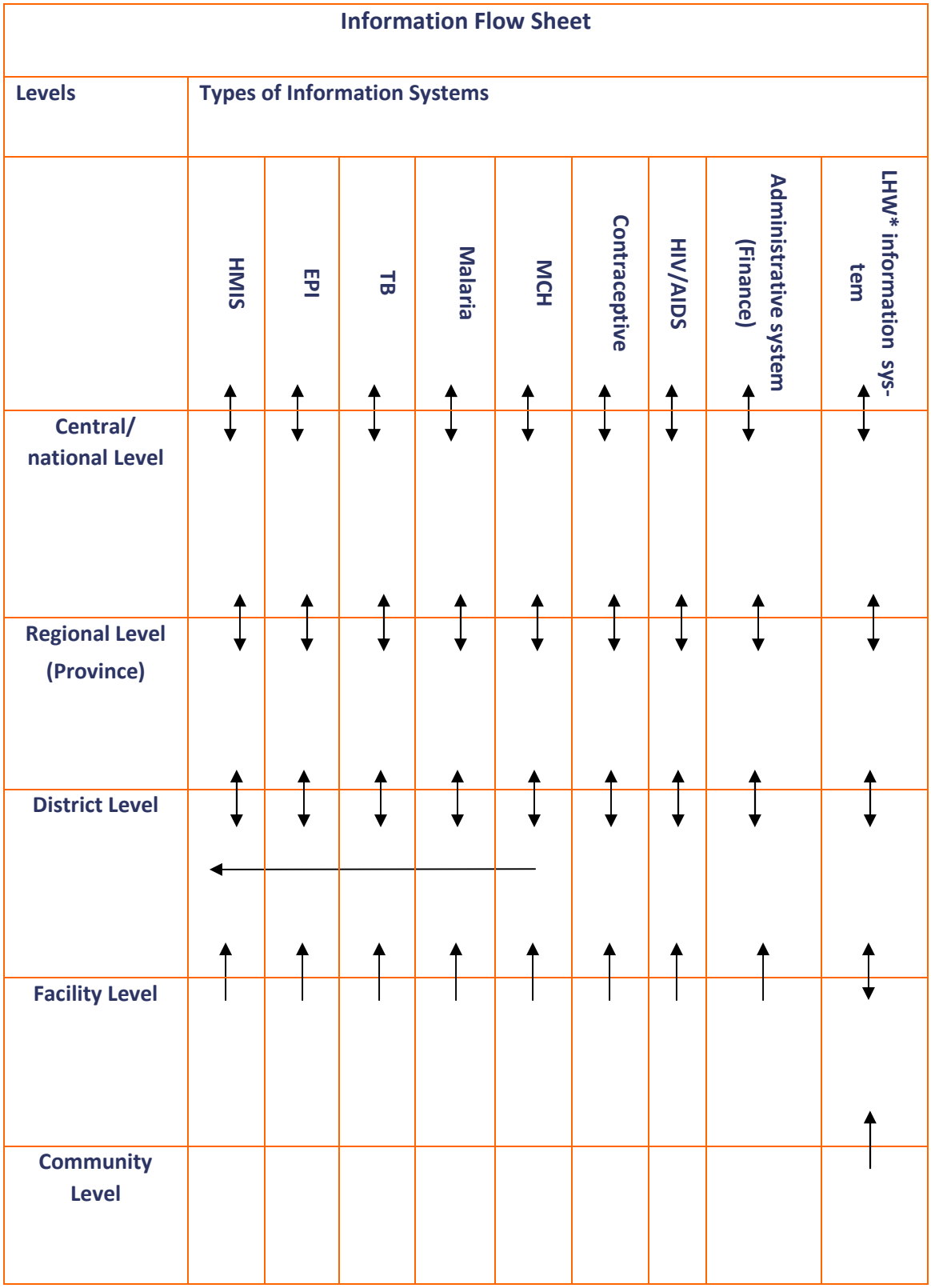
X Indicates presence of information

Example: Pakistan

Demonstration of the review of various data collection and reporting forms

2. Data collection and transmission	
Please list all data collection tools/forms that are used at the community/health facility level. If space is not enough, please add an additional sheet of paper.	
Facility-based data collection tools: *(such as patient registers)*	**Comments on tools.** *Is the form easy to use? Enough space to record data? Takes too much time?*
• **Outpatient register**	Easy to use after revision
• **Inpatient register**	Easy to use after revision
• **Maternal register**	Easy to use after revision
• **Child register**	Easy to use after revision
• **Supplies/Equipment register**	Easy to use after revision
• **O.T. REGISTER**	Easy to use after revision
• **OBSTETRIC REGISTER**	Easy to use after revision
• **RADIOLOGY REGISTER**	Easy to use after revision
• **DAILY BED STATEMENT REGSITER**	Easy to use after revision
• **FACILITY STAFF MEETING REGISTER**	Easy to use after revision
Data transmission/reporting forms	**Comments on forms.** *Is the form easy to use? Enough space to record data? Takes too much time?*
• **Monthly reporting form**	Easy to use after revision
• **Quarterly reporting form**	Easy to use after revision
• **Disease outbreak form**	Easy to use after revision

Demonstration of the information flow chart


Information Flow Sheet
Levels
Types of Information Systems
HMIS
EPI
TB
Malaria
MCH
Contraceptive
HIV/AIDS
Administrative system (Finance)
LHW* information system
Central/ national Level
Regional Level (Province)
District Level
Facility Level
Community Level

2. RHIS Facility Checklist (30 minutes)

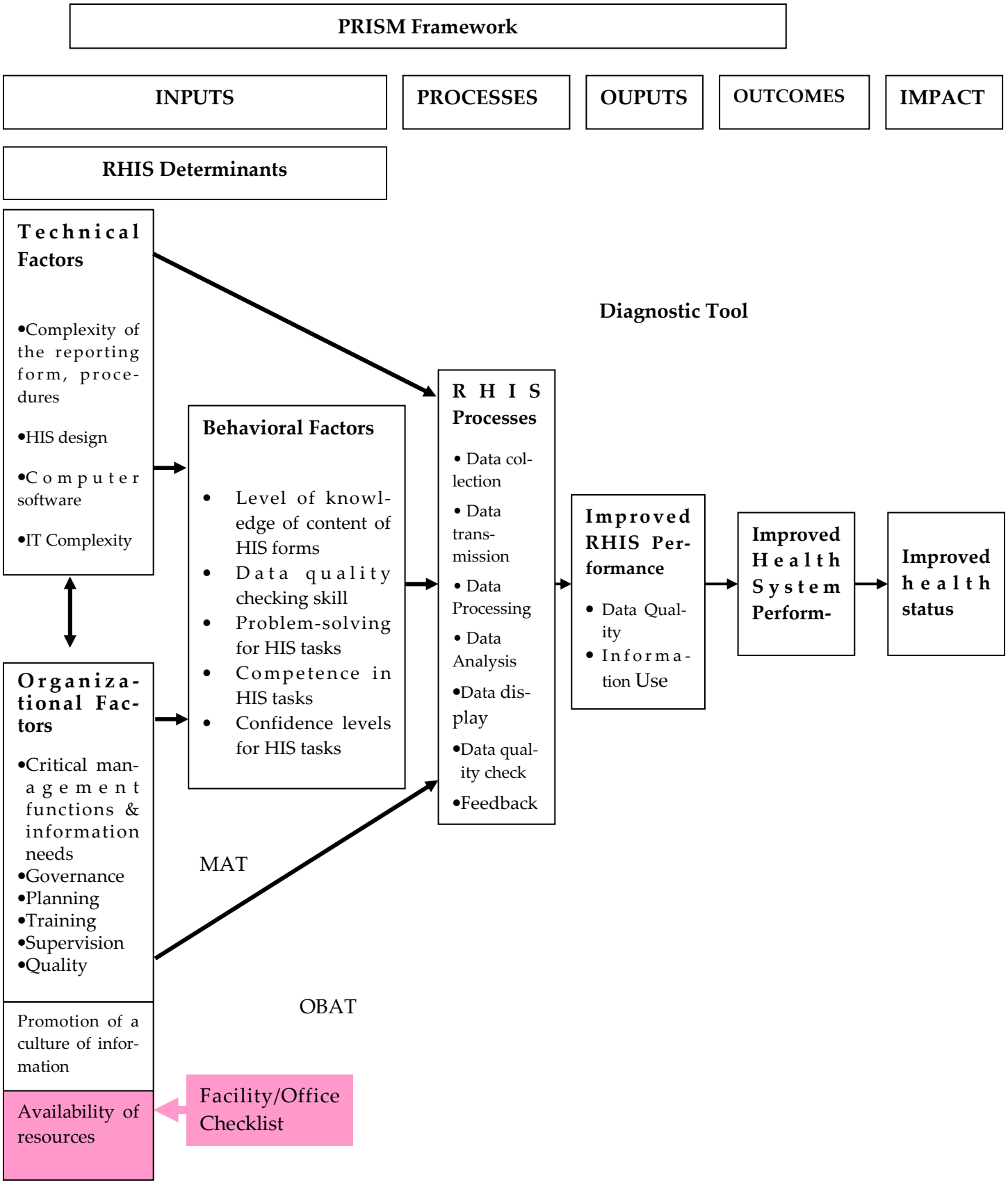
SLIDE: WHEN TO USE THE FACILITY/OFFICE CHECKLIST

- The Facility/Office Checklist should be used for all the facilities surveyed (depending upon the sample size) in a district, usually 10 or 12 facilities per district, to understand the status of RHIS at the data collection level.
- If you are interested in knowing the RHIS status at the regional or national level, pick three districts in the region/country and assess three or four facilities per district.
- The office checklist should be used for each district and region where facilities are investigated.

Table 12.1: Availability of Resources	Category	Number	Percent
A. Computer	.00	14	70
	1.00	5	25
	>=2	1	5
B. Data backup	20.00	4	20
C. Printer	.00	15	75
	1.00	5	25
	>=2	0	0
D. UPS	.00	16	90
	1.00	4	10
	>=2	0	0
E. Generators	.00	11	70
	1.00	3	25
	>=2	0	5
F. Regular Telephone	.00	14	100
	1.00	5	0
	>=2	1	0
G. Mobile Telephone	.00	20	100
	1.00	0	0
	>=2	0	0
H. Radio Phone	.00	13	65
	1.00	7	35
	>=2	0	0
I. Internet	5.00	1	20
J. Calculator	.00	6	30
	1.00	11	55
	>=2	3	15

Table 12.2: Utilities	Percent
A. Electricity	90.00
B. Electricity Interruptions	.00
Once a month	1.00
Several times a week	2.00
Daily	3.00
C. Air-conditioner	16.67
D. Water	90.00

Table 12.3: Availability of forms, registers & supplies		
Categories	Number	Percentage
A.		
B.		
C.		
D.		
E.		
F.		
G.		
H.		
I.		
Types of People Trained		
A.		
B.		
C.		


PRISM Framework
INPUTS
PROCESSES
OUPUTS
OUTCOMES
IMPACT
RHIS Determinants
Technical Factors
•Complexity of the reporting form, procedures
•HIS design
•Computer software
•IT Complexity
Organizational Factors
•Critical management functions & information needs
•Governance
•Planning
•Training
•Supervision
•Quality
Promotion of a culture of information
Availability of resources
Facility/Office Checklist
Diagnostic Tool
Behavioral Factors
• Level of knowledge of content of HIS forms
• Data quality checking skill
• Problem-solving for HIS tasks
• Competence in HIS tasks
• Confidence levels for HIS tasks
MAT
OBAT
RHIS Processes
• Data collection
• Data transmission
• Data Processing
• Data Analysis
•Data display
•Data quality check
•Feedback
Improved RHIS Performance
• Data Quality
• Information Use
Improved Health System Perform-
Improved health status

13. RHIS Management Assessment Tool

Time: **40 minutes**

Materials:

- PRISM Tools
- Blank copies of the RHIS Management Assessment Tool for all participants
- Slides.

Learning objectives:

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

- Explain the purpose and structure of the RHIS Management Assessment Tool.
- Explain what aspects of RHIS performance this tool is designed to measure.
- Explain how and when to use the tool.
- Practice filling out the RHIS Management Assessment Tool.
- Explain how the results of the RHIS Management Assessment Tool are scored, and how to interpret them.

Plan of activities:

1. Introduction to the RHIS Management Assessment Tool (5 min)

"The presence of mechanisms for managing RHIS functions and resources effectively for better RHIS performance."

♦

SLIDE: PUPROSE OF THE *RHIS MANAGEMENT ASSESSMENT TOOL*

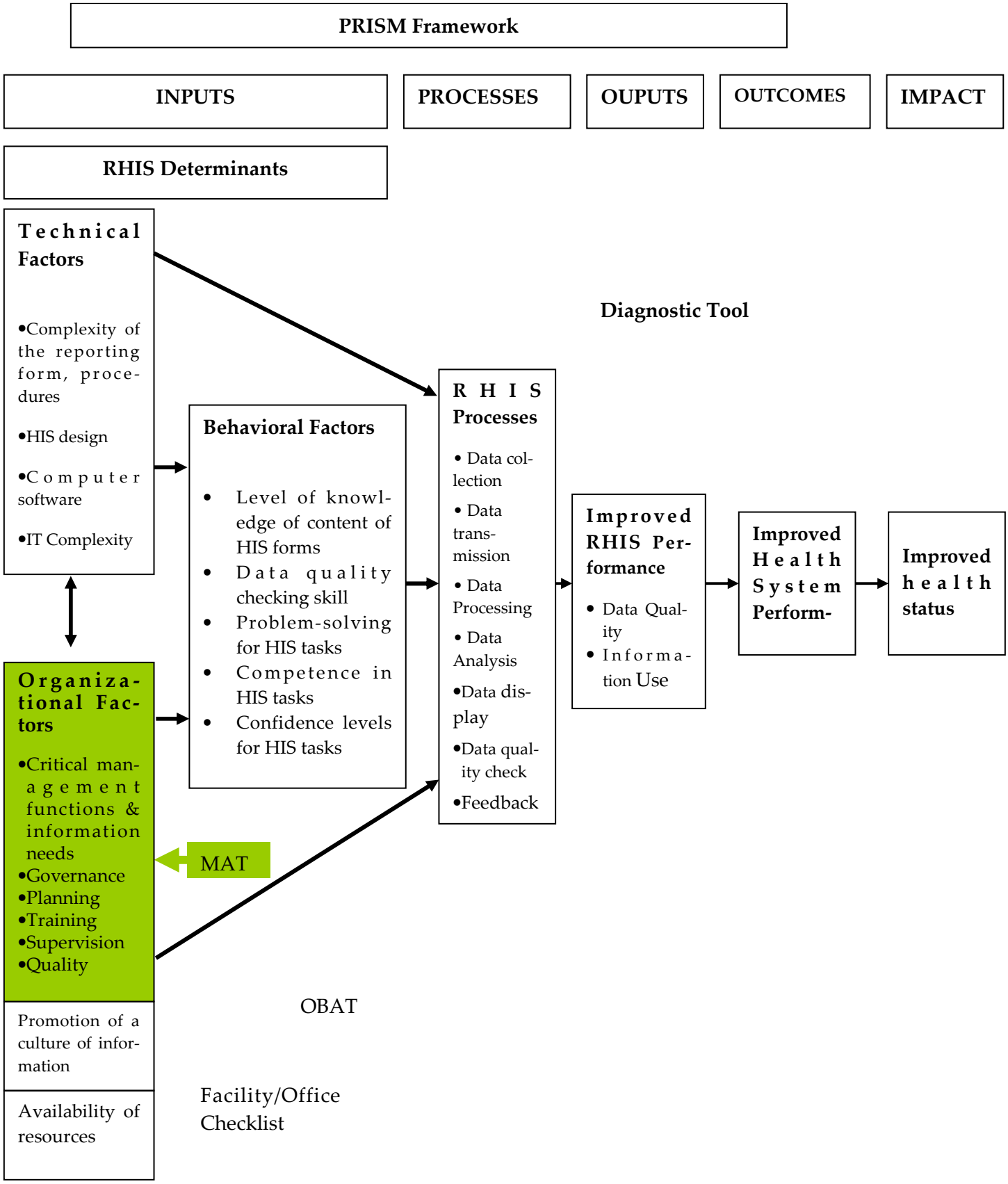
♦ Measures the level of effectiveness of RHIS management functions

♦ Identifies areas that need improvement.

♦ **RHIS management functions measured by this tool include:**

1. Governance
2. Planning
3. Training
4. Supervision
5. Finances
6. Use of performance improvement tools

•


PRISM Framework
INPUTS
PROCESSES
OUPUTS
OUTCOMES
IMPACT
RHIS Determinants
Technical Factors
•Complexity of the reporting form, procedures
•HIS design
•Computer software
•IT Complexity
Behavioral Factors
• Level of knowledge of content of HIS forms
• Data quality checking skill
• Problem-solving for HIS tasks
• Competence in HIS tasks
• Confidence levels for HIS tasks
Organizational Factors
•Critical management functions & information needs
•Governance
•Planning
•Training
•Supervision
•Quality
Promotion of a culture of information
Availability of resources
RHIS Processes
• Data collection
• Data transmission
• Data Processing
• Data Analysis
•Data display
•Data quality check
•Feedback
Improved RHIS Performance
• Data Quality
• Information Use
Improved Health System Perform-
Improved health status
Diagnostic Tool
MAT
OBAT
Facility/Office Checklist

2. Individual work (10 min)

♦ **Distribute** blank copies of the **MAT** to all participants. Show the task on a slide:

SLIDE: MANAGEMENT ASSESSMENT TOOL PRACTICE

- ♦ Think of a district office or a health facility in your home region that you are most familiar with.
- ♦ Fill out the MAT according to your knowledge of this facility or office.
- ♦ You will have 10 minutes to work individually.

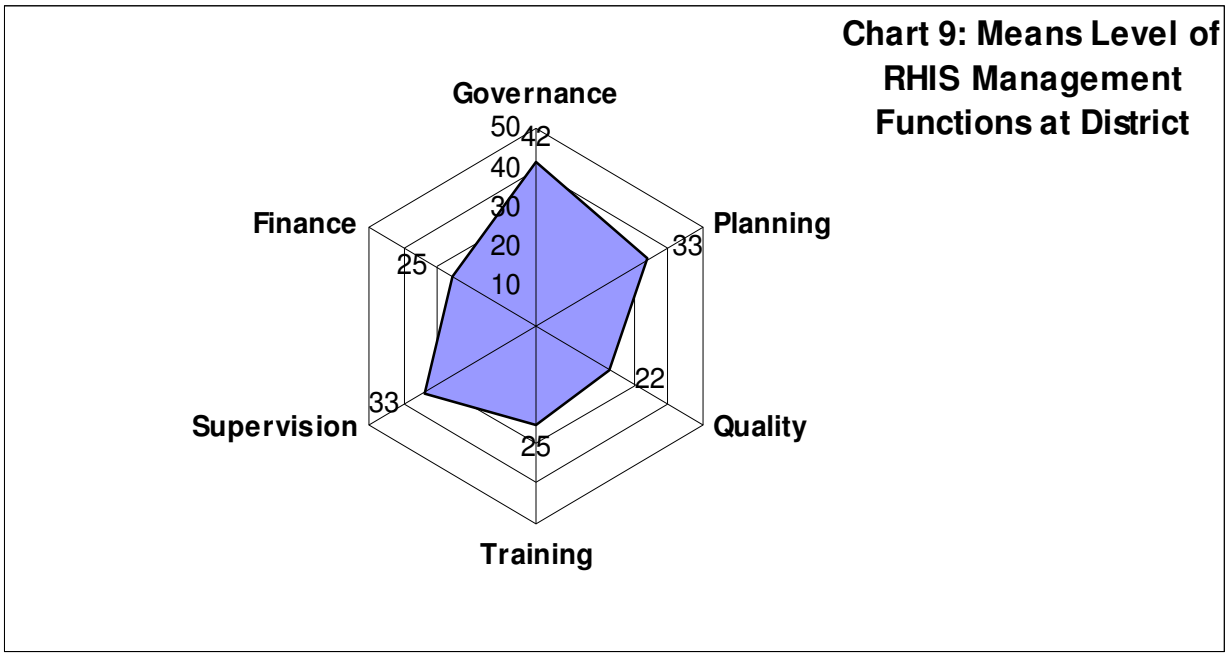
3. Analysis (15 min)

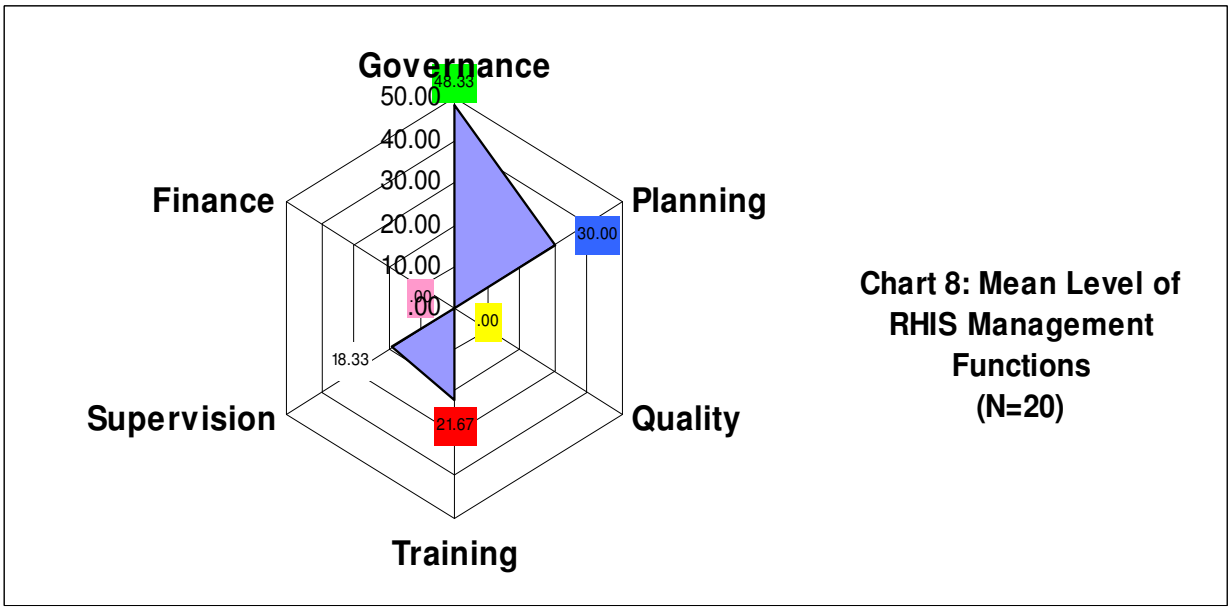
Table 13.1: Management Assessment Tool

Dimensions/	Variables	Indicator Calculation	Mea	Me-	Min-Max
RHIS Govern-ance	MATG1-MATG4	([MATG1]+[MATG2]+[MATG3]+[MATG4])/4*100 – for district ([MATG1]+[MATG3])/2*100 – for facil-	50	50	0-100
Planning	MATP1-MATP3	([MATP1]+[MATP2]+[MATP3])/3*100 ([MATP1]+[MATP3])/2*100– for facility	50	50	0-100
Training	MATT1-MATT3	([MATT1]+[MATT2]+[MATT3])/4*100 ([MATT1]+[MATT3])/3*100– for facility	50	50	0-100
Supervision	MATS1-MATS3	([MATS1]+[MATS2]+[MATS3])/3*100 ([MATS2]+[MATS3])/2*100– for facility	50	50	0-100
Use of quality/ Performance standard	MATQ1-MATQ3	([MATQ1]+[MATQ2]+[MATQ3])/3*100 ([MATQ2]+[MATQ3])/2*100– for facil-	50	50	0-100
Finances	MATF1-MATF4	([MATF1]+[MATF2]+[MATF3]+[MATF4])/4*100	50	50	0-100

Interpretation of the indicator

The percentile score for each individual function indicates the strength of that function. A low score shows that the function is weak; a high score indicates that it is strong.





14. Organizational and Behavioral Assessment tool (OBAT)

Time: 3 hours 15 minutes

Materials:

- PRISM Tools
- Soft copy of Organizational & Behavioral Assessment Tool loaded onto computer with projector and sample data and slides.

Preparation:

- Assign homework the night before (see below).

Learning objectives:

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

- Practice filling out the Organizational & Behavioral Assessment Tool.
- Explain the purpose and structure of the OBAT.
- Explain what aspects of RHIS performance this tool is designed to measure.
- List the major organizational and behavioral determinants that are captured in the organizational and behavioral assessment tool and explain the rationale for measuring these determinants in the assessment.
- Explain how the variables are constructed from the questions in the tool.
- Explain how and when to use the tool.
- Explain in general how to code and enter data from the OBAT.
- Explain how the results of the OBAT are displayed, and how to interpret them.

Homework:

At the end of the previous day, refer participants to the task sheet on page 145 for homework in their manuals.

Plan of activities:

1. Introduce the Organizational and Behavioral Assessment Tool (5 min)

Go back to the slide showing the tools and how they relate to the PRISM determinants. Explain that this is the last tool we will discuss. It is intended to measure the organizational and behavioral determinants. The tool is administered to all those who are involved in RHIS tasks at different levels. It gathers information about their perceptions of what factors influence RHIS performance.

HOMEWORK: ORGANIZATIONAL AND BEHAVIORAL ASSESSMENT TOOL.

One of the PRISM tools we will use in this course is an Organizational and Behavioral Assessment Tool. The tool is administered to all those who are involved in RHIS tasks at different levels. It provides information about behavioral and organizational factors that affect HIS performance. It is a self-administered questionnaire.

1) Please review the questionnaire in your PRISM Tool binder.

2) Try filling out the questionnaire yourself. Some of the questions may not be relevant to your own work setting, but try to answer as many as possible. Bring the completed questionnaire with you to class tomorrow.

3) Think about the following questions and be prepared to discuss in class:

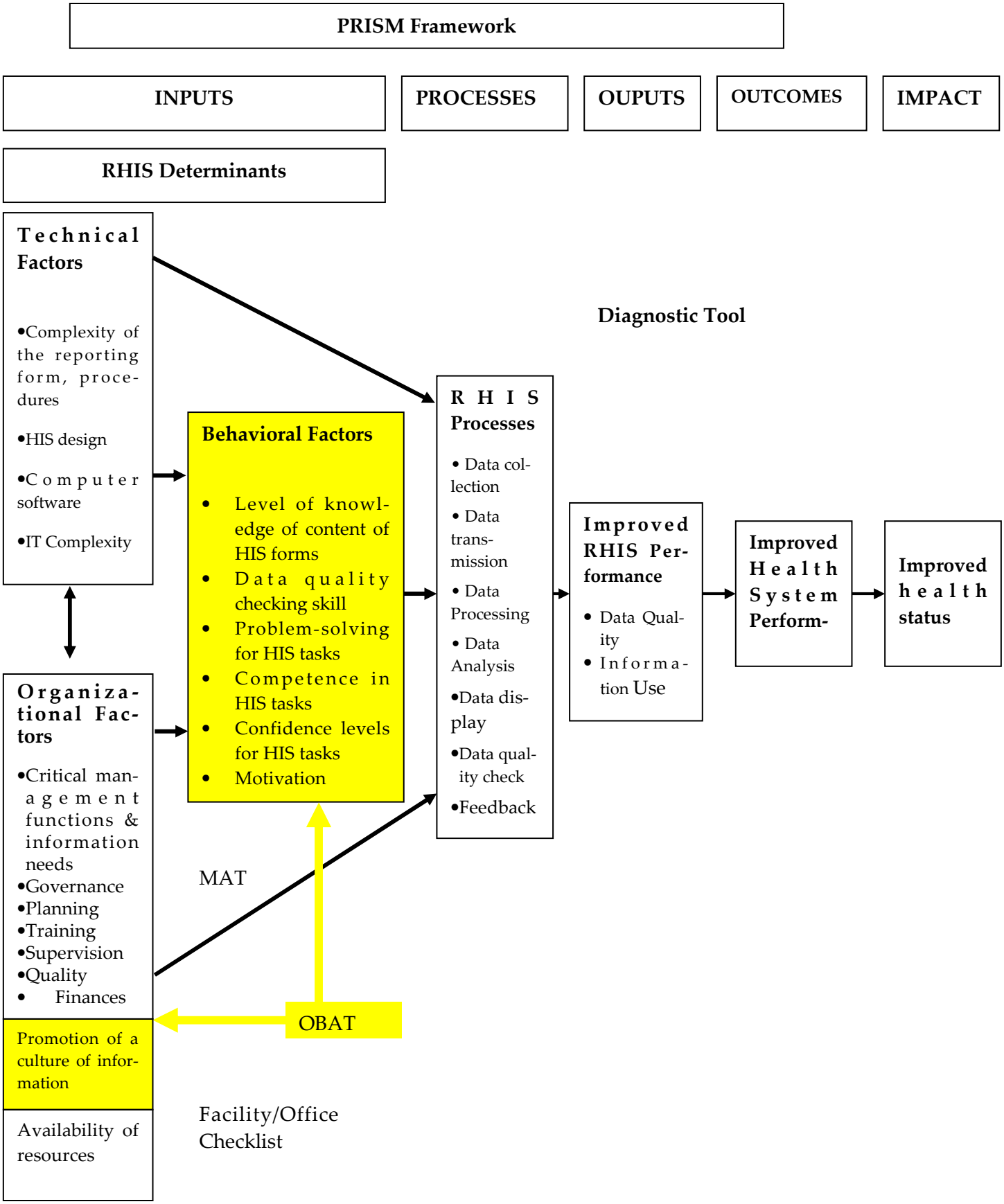
- What was it like to take this questionnaire?
- What did you notice about it?
- What questions do you have about it?
- Are there any questions that do not make sense/ are not clear? What questions do

2. Review the questionnaire (15 min)

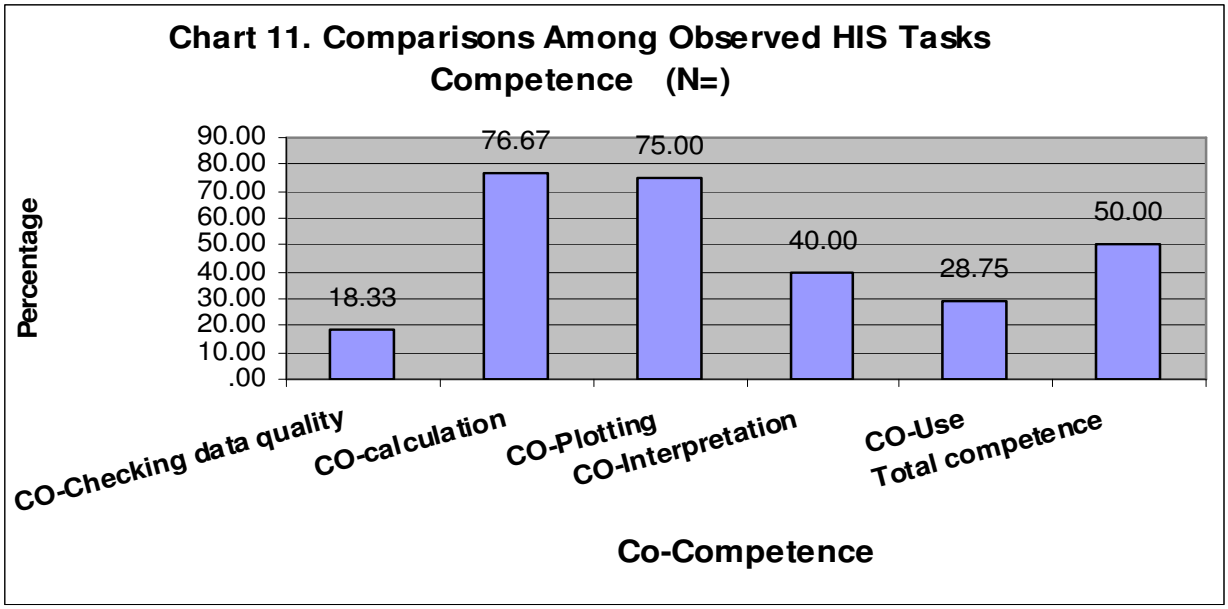
- **What was it like to take this questionnaire?**
- **What did you notice about it?**
- **What questions do you have about it?**
- **Are there any questions that do not make sense/are not clear?**
- **What were some of the topics covered in the questionnaire?**
-

3. Methodology (5 min)

4. Overview of OBAT Concepts (30 min)


PRISM Framework
INPUTS
PROCESSES
OUPUTS
OUTCOMES
IMPACT
RHIS Determinants
Technical Factors
•Complexity of the reporting form, procedures
•HIS design
•Computer software
•IT Complexity
Diagnostic Tool
Behavioral Factors
• Level of knowledge of content of HIS forms
• Data quality checking skill
• Problem-solving for HIS tasks
• Competence in HIS tasks
• Confidence levels for HIS tasks
• Motivation
RHIS Processes
• Data collection
• Data transmission
• Data Processing
• Data Analysis
•Data display
•Data quality check
•Feedback
Improved RHIS Performance
• Data Quality
• Information Use
Improved Health System Perform-
Improved health status
Organizational Factors
•Critical management functions & information needs
•Governance
•Planning
•Training
•Supervision
•Quality
• Finances
MAT
OBAT
Promotion of a culture of information
Availability of resources
Facility/Office Checklist

Show **Chart 11**



♦ Show **Chart 10**,

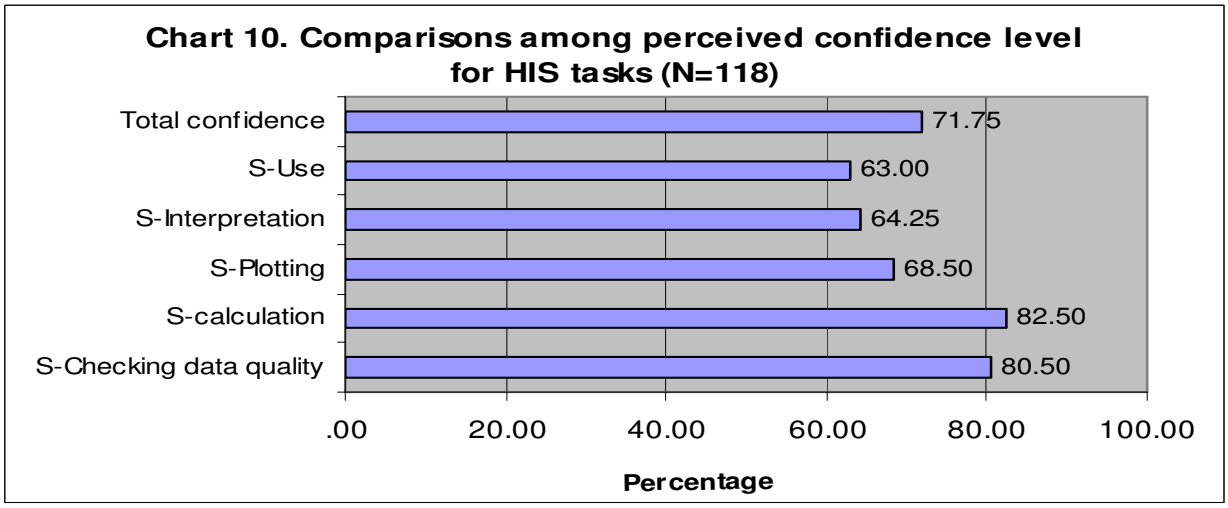


Chart 14

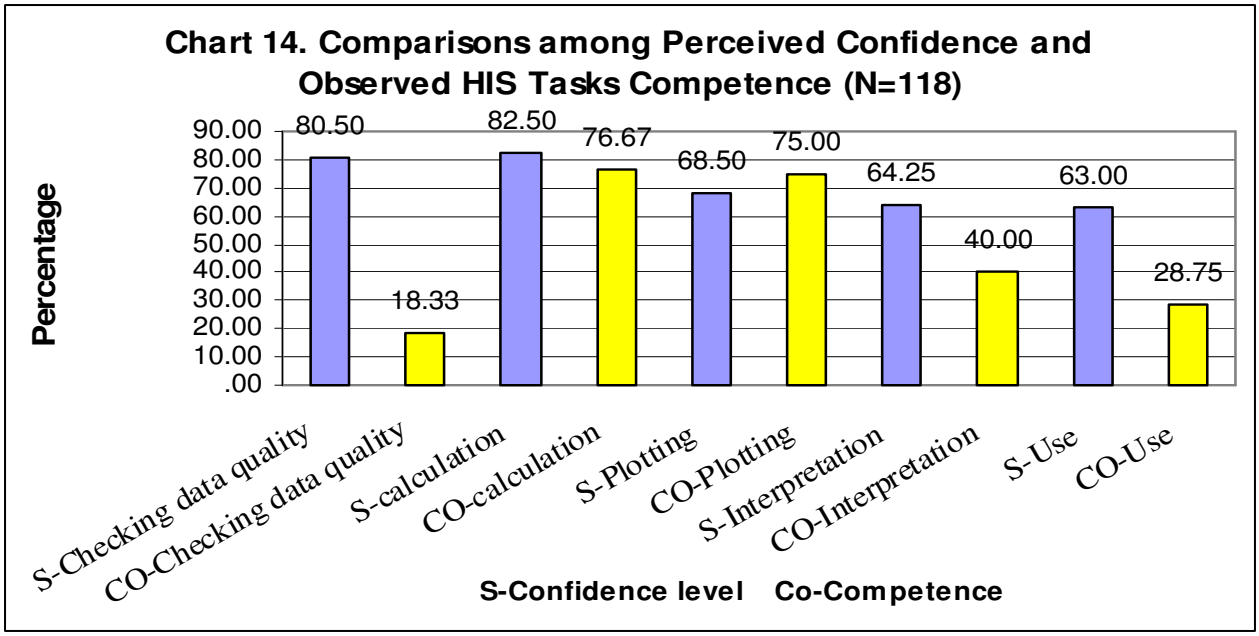
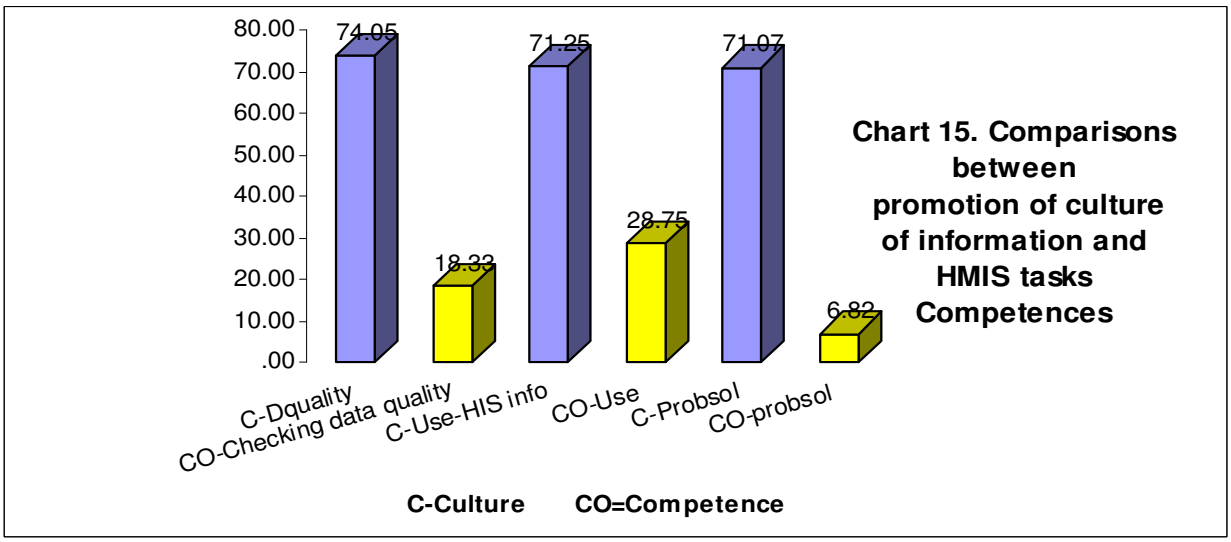


Chart 15



5. Variables: Behavioral Factors (30 min)

♦ .

Table 14.1: Organizational and Behavioral Assessment Tools Indicators and Scoring					
Indicators	**Variables**	**Calculation**	**Mean**	**Median**	**Min-Max**
A. BEHAVIORAL					
1. RHIS tasks competence			50	50	0-100
a. Knowledge of methods of checking data quality	U2	[U2]/3*100	50	50	0-100
b. Calculating indicators	C1,2,3,	([C1]+[C3]+[C4])/3*100	50	50	0-100
c. Plot data	C2a	[C2A]*100	50	50	0-100
d. Interpret data	C2b,C2c	([C2B]+[C2C])/2*100	50	50	0-100
e. Use of information	UD1,2,3,4	([UD1]+[UD2]+[UD3]+[UD4])/4*100	50	50	0-100
2. RHIS task confidence		**Rating scale 0-100**	50	50	0-100
a. Checking data quality	SE1	SE1	50	50	0-100
b. Calculating indicators	SE2	SE2	50	50	0-100
c. Plot data	SE3	SE3	50	50	0-100
d. Interpret data	SE4,SE5	SE4+SE5/2	50	50	0-100
e. Use of information	SE6,SE7	SE6+SE7/2	50	50	0-100
3. RHIS data demand	U1A,U1B,U1C	([U1A]+[U1B]+[U1C])/3/3*100	50	50	0-100
4. Motivation	BC1,BC2,BC5,BC3,BC4,BC6	([bc1r]+[bc2r]+[bc5r]+[BC3]+[BC4]+[BC6])/7/6*100	50	50	0-100
5. Problem-solving skill	Total	([PSA]+[PSB1])/11*100	50	50	0-100
Defining problem	PSA	([PSA]*100			
Solving problem	PSB	([PSB1])/11*100			

Show the 6. Variables: Organizational Factors (30 min)

Rationale for including promotion of culture of information as an organizational variable

When discussing poor RHIS performance, people tend to say that there is no "culture of information," indicating that little attention is given to RHIS.

- "***Culture***" is commonly understood to define what is important for a group, community, or organization; it creates and sustains values that define behavioral norms, expectations, and boundaries. In this way, culture regulates the group's behaviors.
- However, the term "culture of information" is less clearly defined.

We have developed an operational definition for ***culture of information*** for this Organizational and Behavioral Assessment Tool.

- A ***culture of information*** is defined as, *"the capacity and control to promote values and beliefs among members of an organization for collection, analysis, and use of information to accomplish its goals and mission."*

Table 14.2: Organizational and Behavioral Assessment Tools indicators and scoring

Indicators	Variables	Calculation	Mean	Median	Min-Max
B. ORGANIZATIONAL		**RATING SCALE 0-100**	50	50	0-100
1. Culture of information			50	50	0-100
Emphasis on data quality	S2, S6,S8	([S2]+[S6]+[S8])/7/3*100	50	50	0-100
Use of information	S5,P8,P9,P16	([S5]+[P8]+[P9]+[P16])/7/4*100	50	50	0-100
Evidence based decision making	D1,D2,D3,D4,D5,D6,D7	([D1r]+ [D2r]+D3]+[D4r]+ [D5]+ [P6]+[D6]+[D7])/7/7*100	50	50	0-100
Feedback from staff and community	S1,S3,S4,S7	([S1]+[S3]+[S4]+[S7])/7/4*100	50	50	0-100
Sense of responsibility	P1,P3,P4,P5,P17	([P1]+[P3]+[P4]+[P5]+ [P17])/7/5*100	50	50	0-100
Empowerment and Accountability	P2,P13,P14,P15	([P2]+[P13]+[P14]+ [P15])/7/4*100	50	50	0-100
Promote problem-solving	P9,P10,P11,P12	([P9]+[P10]+[P11]+ [P12])/7/4*100			
Department provide reward for good work	P6	[P6]/7*100	50	50	100
Training	DD6	Frequency			
Socio-demographic characteristics of the study participants	DD1,2,3,4,5,	Frequency			

7. Reflection (15 min)

♦ Ask participants to think about the following for five minutes and write down their answers in their notebooks:

- Thinking about the organizational and behavioral factors we have just discussed, which ones do you actually have some control over and could improve upon?
- Which ones are not under your direct control, but could be advocated for?

Invite a few people to share their answers. Tell participants to keep these written reflections so that they can use them for their action plans at the end of the second week.

8. Scoring and analysis of the OBAT (1 hour)

Step 1: Give an identification number to the respondents' questionnaire

Step 2: Code open-ended questions

Step 3: Use the data entry template to enter responses from all questionnaires.

Step 4: Construct variables from multiple questions

Step 5. Analyze and interpret the data

15. SYNTHESIS OF PRISM TOOLS

Time: 30 minutes

Materials:

- Flipchart with table of PRISM Tools.

Preparation:

- Draw flipchart with table of PRISM Tools, as shown below.

Learning Objectives:

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

- List questions that can be answered using the PRISM Tools.
- Identify what information can be gathered from each tool, including areas of overlap.

Plan of activities:

1. Synthesizing the PRISM Tools (15 min)

2. Sources of data from the PRISM Tools (15 min)

♦ Post the following flipchart. Ask participants to help fill it in by asking:

- What information can we find out from the Diagnostic Tool?
- What information can we find out from the RHIS Overview and facility/office check-list?
- What information can we find out from the Management Assessment Tool?
- What information can we find out from the Organizational and Behavioral Assessment Tool?

Tool	Information provided	PRISM Factor (O/B/T)
Diagnostic		
Overview/ Checklist		
MAT		
OBAT		

♦ Go back through the flipchart and have participants characterize each item according to the three PRISM determinants in the third column.

- *For example, logistics is an organizational factor.*

III. Field Visit

16. RHIS in the host country

Time: 30 minutes

Materials:

- RHIS Overview Tool for the host country (handout for all)

Preparation:

- Fill out the RHIS Overview Tool with host country representatives, make copies. Host country representative prepares to give information about the field sites.

Learning Objectives:

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

- Use the completed RHIS Overview Tool to find information about the basic structure and data flows of the host country's RHIS.
- Explain basic contextual facts about the host country's health system and the specific facilities to be visited.
- Explain how the PRISM Tools were modified for the host country.

Plan of activities:

This session helps participants prepare for using the PRISM Tools during field visits.

1. Orientation to the field work (15 min)

2. Orientation to PRISM Tool forms (15 min)

17. Field visit preparation

Time: 45 minutes

Materials:

- Blank PRISM Tool forms for each participant and/or each team
- Flipcharts with team assignments written on them.

Preparation:

- Make field work group assignments.

Learning Objectives:

By the end of this session, participants will have:

- Generated a list of norms for how they will conduct themselves on field trips.
- Outlined the purpose, schedule, and process for carrying out the assessments on site.
- Planned with their team for how to carry out the field work, including roles and tasks.

Plan of activities:

The next step in this training will be to apply the PRISM approach in the field. The purpose of the field visit is:

- To practice using the PRISM Tools in the field, and to gather data for analysis according to the PRISM approach.

1. Logistical planning for field work (15 min)

2. Team planning (30 min)

Steps for Field Work

1. List district(s) and inform them of the day and time of visit

2. Identify names of facilities in the district to be surveyed

3. Have a map of the district(s)

4. Have three groups of 10 participants each.

   a. Each group should have a vehicle
   b. Each group should have a **guide** for the fieldwork
   c. Each group should have a trainer with them

5. The team will use the following PRISM tools:

   α. Diagnostic tool (Data quality and Use of information)
   b. Facility checklist
   c. Organizational and behavioral assessment tool
   d. Make 25 copies of these tools and distribute to each group

6. Each group should be further divided into three teams

   α. Each team should have a list of six facilities and a map to visit those facilities
   b. First, drop off all three teams at the facilities
   c. Divide responsibilities
   d. The team leader should introduce team members and the purpose of the visit. Inform the facility in-charge that they need his/her presence and one more person to help with completing the survey. Ask for the required register(s) and monthly (periodic) report for the data accuracy check using diagnostic tool and assign a team member to check the registers.
      - While other members are doing the data accuracy check, the team leader should give the OBAT to the facility in-charge to fill out
      - Once the data accuracy check is complete, with the help of other facility staff, the facility checklist should be filled by making an observation. For the observation, the facility in-charge's help is needed. Then wait for the facility in-charge to provide the required documentation.
   e. Second, completing the work at a given facility, the team should visit the next set of facilities
   f. One of the teams will visit the district office
   g. The team leader is responsible for collecting all questionnaires at a facility and giving it to the trainer (CESAG/MEASURE team member) for review
   h. Each trainer should make sure that all forms are filled in completely.

18. Field visit: Guidelines for trainers

During the field visits, each field group should be assigned one person from the host country organizing team if possible. This person should speak the local language and be familiar with the area.

Materials (suggested):

It is helpful if the trainer/facilitator assigned to each field group has the following:

- List of field group participants assigned to their group
- Cell phone contact list for all group facilitators
- Contact information and directions/map for the field sites
- Extra blank copies of the PRISM Tools

Role of the trainer/facilitator:

- To provide support, guidance, and information when requested. The team of participants should take the lead in organizing themselves and interacting with the field staff.
- To clarify questions about how to implement the PRISM tools.
- To help keep the group on task if they cannot do so themselves.
- To help ensure that the team keeps track of the completed tools and keeps them in a safe place.

19. Field visit: De-briefing

Time: 1 hour

Materials: None

Learning objective:

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

- Discuss observations and reactions to the on-site assessments and the process that was followed to carry them out.

Plan of activities:

This debriefing session is a chance for participants to share their broad observations and immediate reactions to the field trip before going into the detailed data analysis.

♦ Discuss in plenary questions like the following:

- What did you see? What did you hear?
- What information were you able to gather?
- How did the PRISM tools work?
- What was most useful? What was most problematic?
- What suggestions would you have for the future use of the tools?
- How were these health facilities/offices different from or similar to your home country?

***Note**: When the field trips are over, the course staff should write and send a thank-you letter to both the officials who approved the visits and the people whom they visited.*

IV. Analysis of Field Data

20. Data entry

Time: **2 hour**

Materials:

- One computer per field work group *(participants may be able to use their own laptops)*
- CDs with PRISM tools (*at least one per group)*
- Blank CD or flash drive

Preparation:

- Load PRISM tools onto the computers/laptops in advance if possible. Determine a way to collect the completed data files from each group via internet, flash drives, etc.

Learning objectives:

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

- Correctly and accurately enter data collected using the PRISM tools.

Plan of activities:

1. Give an identification number to the questionnaire using Data Entry and Analysis Tool (DEAT) (20 minutes)

2. Code the OBAT questionnaire (15 minutes)

3. Enter data using DEAT (1 hour)

21. Analysis: Diagnostic Tool

Time: 2 hours 50 minutes

Materials:

- Computer loaded with data from the field
- Print-outs of field data from the Diagnostic Tool (*both Quality and Use sections*) for all participants
- Flipchart with group assignments
- Slides.

Preparation:

- Participants should have entered their field data into the DEAT templates and submitted copies to the trainers in a previous session.
- Trainers check and clean data from the field; print out results of Diagnostic Tool, and photocopy for all participants.
- Assign participants to new groups. (Keep people with their trio from field work, and put two trios together to form a six-person group. Also, split up the district group in order to assign one district person per group if possible). Post assignments on a flipchart.

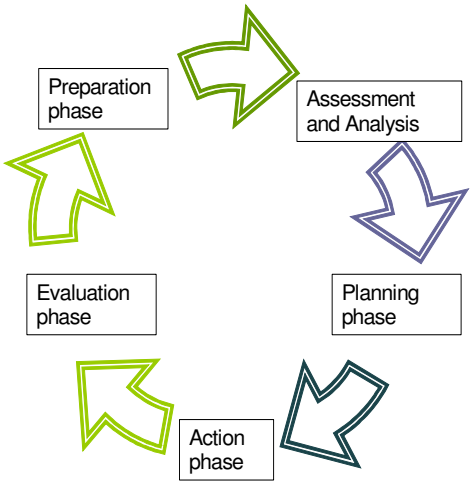
Learning objectives:

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

- Interpret the results of the field work data from the Diagnostic Tool on use of information and quality of data.
- Diagnose the status of RHIS performance in the sites visited in the field.

Plan of activities:

1. Diagnostic data analysis: Performance quality of data and use of information results (5 min)



•**Quality results are reported in terms of**: (*Data quality chart*)

• **Use of information results are reported as**: *(Use of information Chart)*

•**RHIS process results are reported as**: *(RHIS Processes Chart)*

•**Technical determinants results are reported as:** *(Technical Determinant Chart)*

• **Supervision results are reported as:** (*Supervision Chart*)

2. Group work: RHIS Performance (30 min)

- Ask participants to work in new assigned groups (posted on a flipchart). Explain that they will do several tasks before reporting back all of their results. After the first task, they will break and learn more about the field work results.
- Ask them to use the Task Sheet in their manuals. They should complete this task in 30 minutes.

3. Report back: (1 Hour)

Analysis Group Work: Diagnostic Results (BOTH facility and district data)
Part 1: RHIS Performance – Data quality
1) Review together the print-out of data from the field work on quality of data from the Diagnostic Tool. **1.1 Based on these results, what is your assessment of data quality in the health facilities surveyed?** **1.2 Which components of data quality (accuracy, timeliness, and completeness) have the most serious problems?** **Explain your findings on a flipchart. Describe facility and district data separately.**
Part 2: RHIS Performance – Use of information
2. Review together the print-out of data from the field work on use of information from the Diagnostic Tool. **2.1. With the group, discuss and decide which steps in the process of using information are performing well, and which ones have weaknesses. (1. Discussion; 2. Decision; 3. Referral; 4. Use of information in reports)** **2.2. Study the comparison chart of data quality and use of information.** **Explain your findings on a flipchart. Describe facility and district data separately.**
Part 3: RHIS Processes and Other Determinants
3. Review together the print-out of data from the field work on: **3.1 RHIS processes** **3.2 Technical determinants** **3.3 Supervision frequency and quality** **Explain your findings on a flipchart. Describe facility and district data separately.**
Write your responses on a flipchart to be presented later. You have 30 minutes to work.

22. Analysis: RHIS Management Assessment Tool

Time: 1 hour

Materials:

- RHIS Management Assessment Tools filled out in the field
- Flipchart table to summarize scores as shown below.

Preparation:

- Make and post the flipchart shown below for summarizing scores.

Learning objectives:

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

- Explain the strengths and weaknesses of the various management functions.
- Compare it with performance level to see their impact on performance.
- Use findings from the tool to identify directions for RHIS improvement.

Plan of activities:

1. Share the RHIS Management Assessment Tool Results (10 min)

2. Discuss in plenary (20 min)

Through discussion in plenary, identify which RHIS management functions are exhibiting problems, and which ones are performing relatively well:

1. Governance
2. Planning
3. Training
4. Supervision
5. Use of performance improvement tools
6. Finances

3. Compare results to Diagnostic Tool (15 min)

23. Analysis: RHIS Overview and Facility/Office Checklist

Time: 1 hour

Materials:

- Copy of RHIS Overview (previously distributed)
- Facility/office checklists filled out in the field

Learning objectives:

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

- Interpret the results of the RHIS Overview and Facility/Office Checklists.
- Use these findings to identify factors leading to RHIS performance gaps in the field sites.

Plan of activities

1. Review results of RHIS Overview (15 min)

2. Review results of Facility/Office Checklist: Group work (15 min)

SLIDE. REVIEW RESULTS OF FACILITY/OFFICE CHECKLIST:

- With your group, list at least five key findings about the status of RHIS resource availability as identified with this checklist at the sites you visited. You have 15 minutes to work

3. Report back and discuss Facility/Office Checklist results (30 min)

24. Analysis: Organizational & Behavioral Assessment Tool

Time: 3 hours

Materials:

- Handouts with charts showing results of Organizational & Behavioral Assessment Tool (OBAT); slides.

Preparation:

- Participants should have entered and submitted field data from the OBAT in a previous session.
- Merge the files from the different sites, check and clean the data, and print out and photocopy charts of the results.

Learning objectives:

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

- Interpret the results of the Organizational & Behavioral Assessment Tool.
- Use these findings to identify factors leading to RHIS performance gaps in the field sites.

Plan of activities

1. Present Organizational & Behavioral Assessment Tool (OBAT) Results (20 min)

2. Group work: OBAT (45 min)

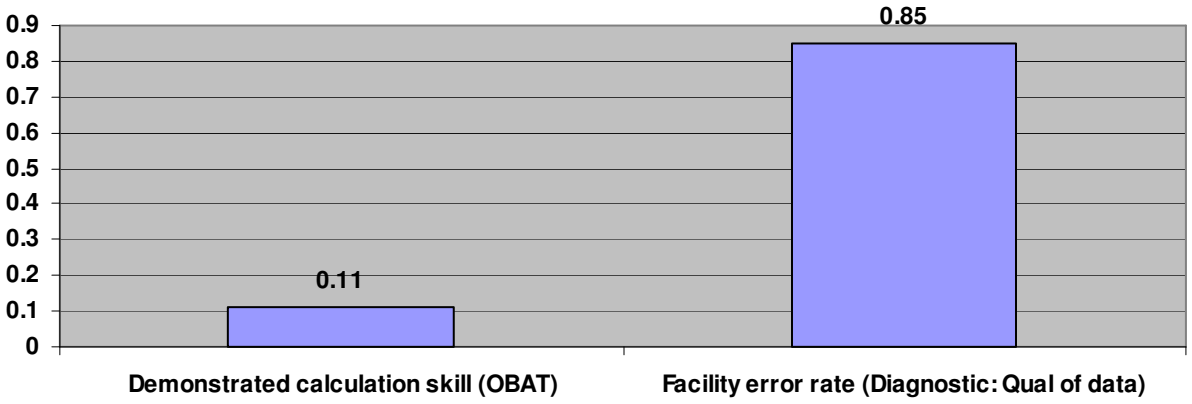
SLIDE. ANALYSIS GROUP WORK: ORGANIZATIONAL & BEHAVIORAL ASSESSMENT TOOL

Review the three charts your group was given. Make sure you all understand what variables are being presented.

For each chart, write one sentence interpreting what the chart means. Write the sentences on a flipchart.

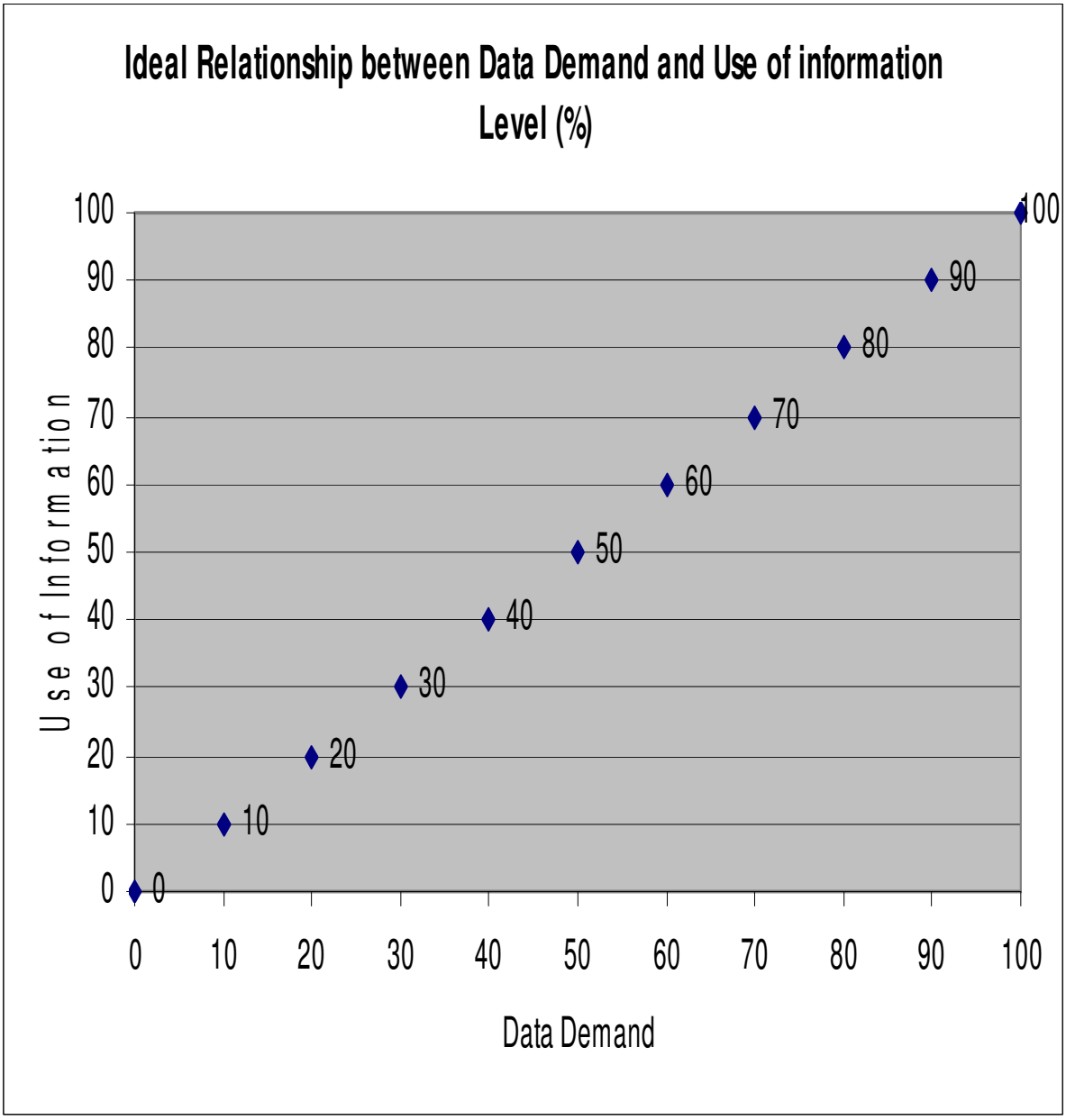
- Compare the OBAT results to the results of the Diagnostic Tool: **Data Quality section**. Draw a chart on a flipchart comparing the findings.
- Compare the OBAT results to the results of the Diagnostic Tool: **Use of Information section**. Draw a second chart on a flipchart comparing the findings.
- Compare the OBAT results to the results of the **Management Assessment Tool**. Draw a third chart comparing the findings.

Be prepared to present your responses to the class. You will have 45 minutes to work



3. Report back (45 min)

4. Discuss pre-set OBAT charts and conclude (70 min)


Ideal Relationship between Data Demand and Use of information
Level (%)
Use of Information
Data Demand
0
10
20
30
40
50
60
70
80
90
100

25. Problem tree analysis

Time: 3 hours

Materials:

- 50 pieces of blank paper (A4 cut in half)
- Tape
- Labeled flipcharts for problem tree analysis (*see below*)
- Slides

Preparation:

- Tape several blank flipcharts to the wall. Label them with the PRISM components as shown below. This session requires two trainers.

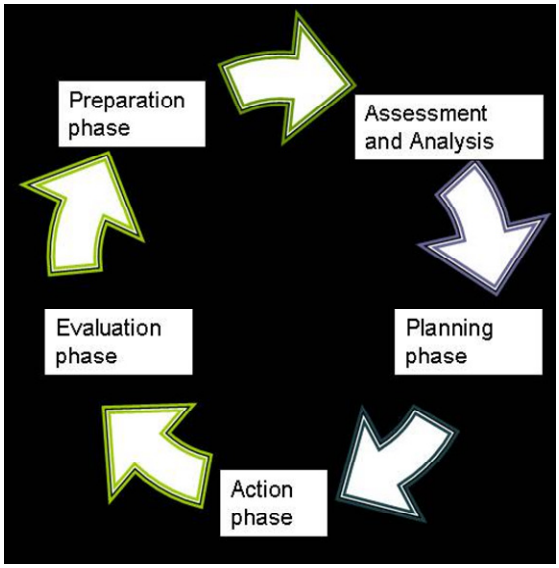
Learning objectives:

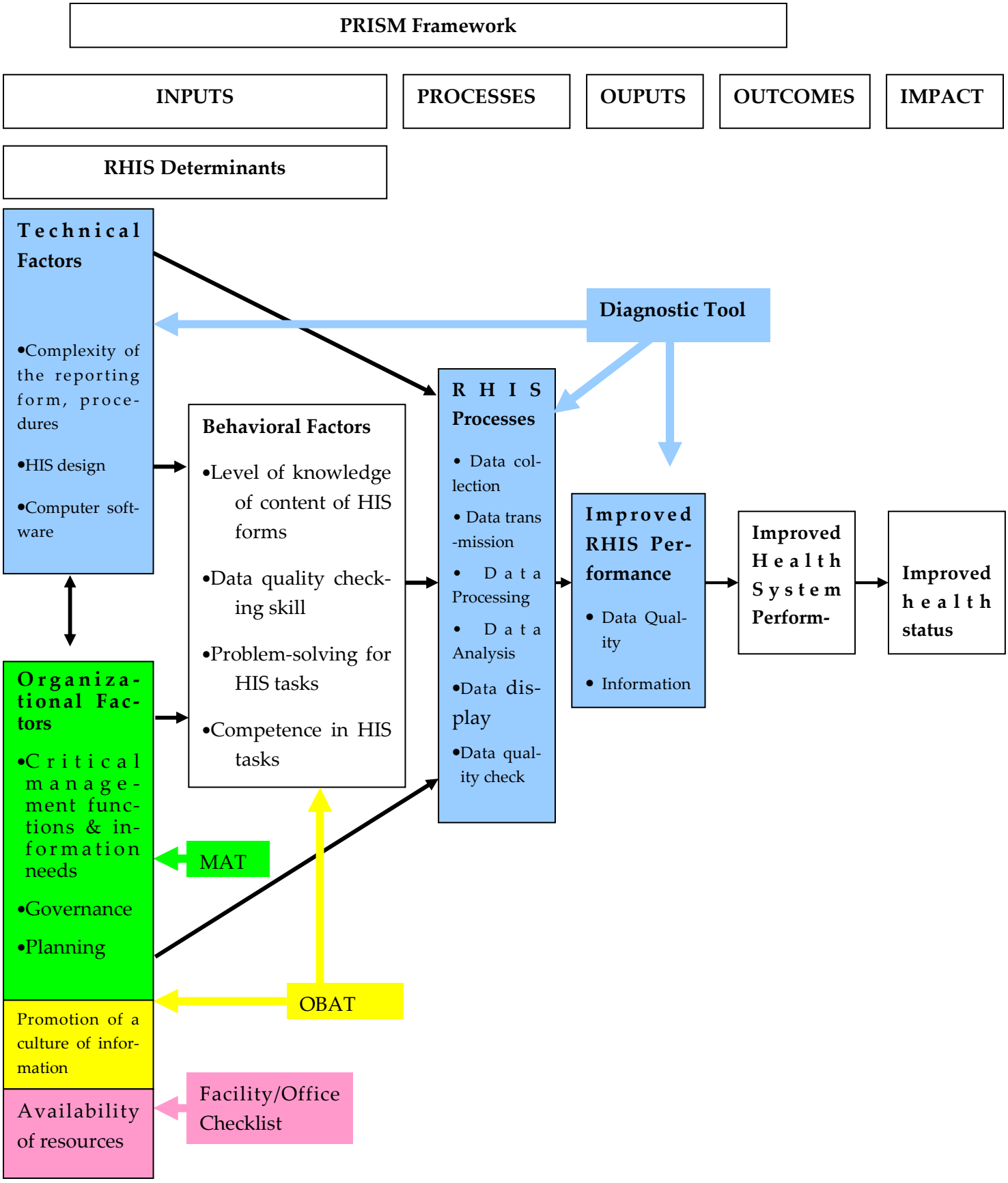
By the end of this session, participants will be able to:

- Identify the highest-priority RHIS issues to address in the field sites, based on findings from the PRISM assessment.
- Explain which problems are underlying or "root" causes, and which are intermediate causes.
- Create a problem tree that visually outlines the structure of basic RHIS performance problems as observed in the field.

Plan of activities:

1. Lecture: Identifying RHIS performance issues (5 min)

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• Data Quality
• Information
Improved Health System Performance
Improved health status
Organizational Factors
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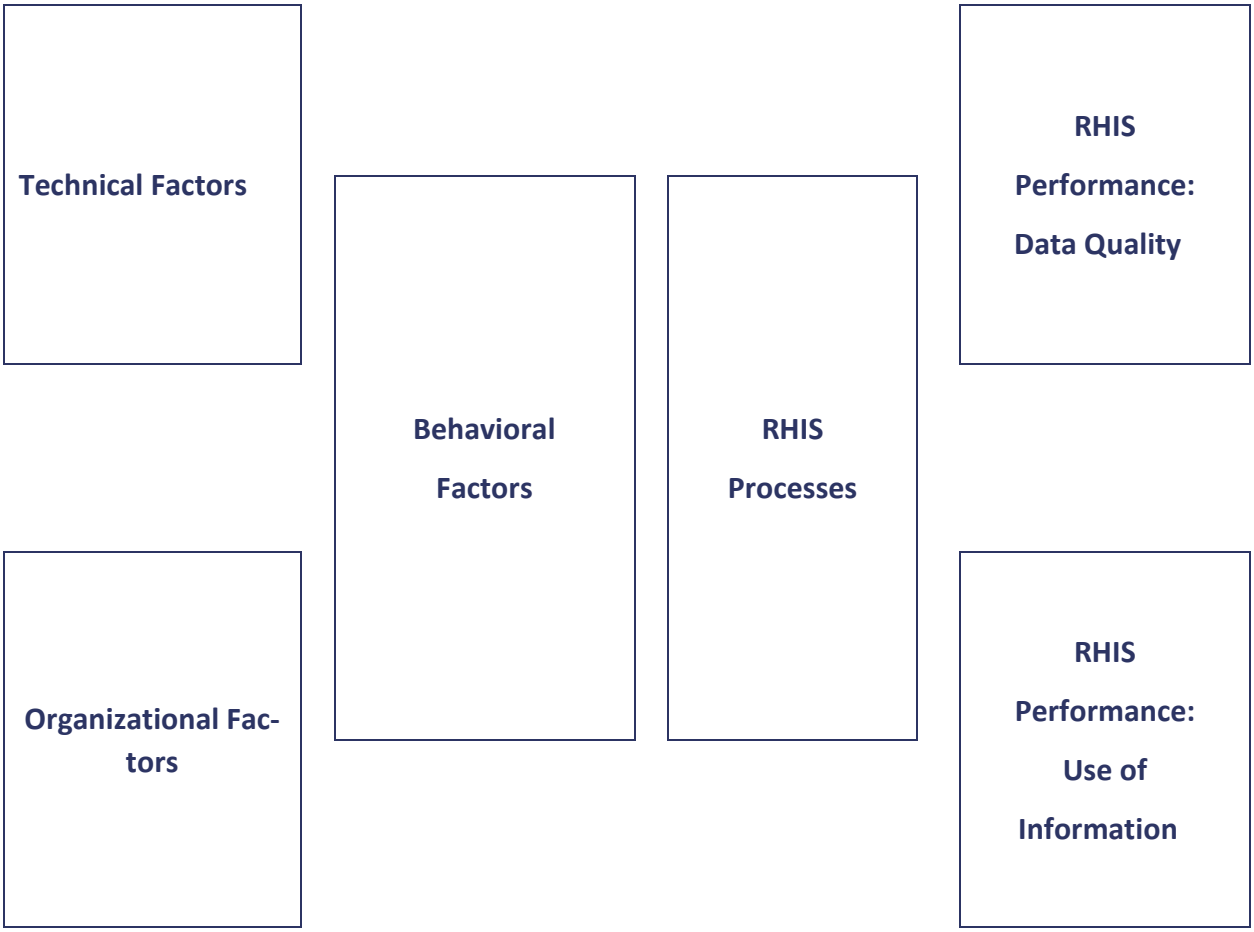
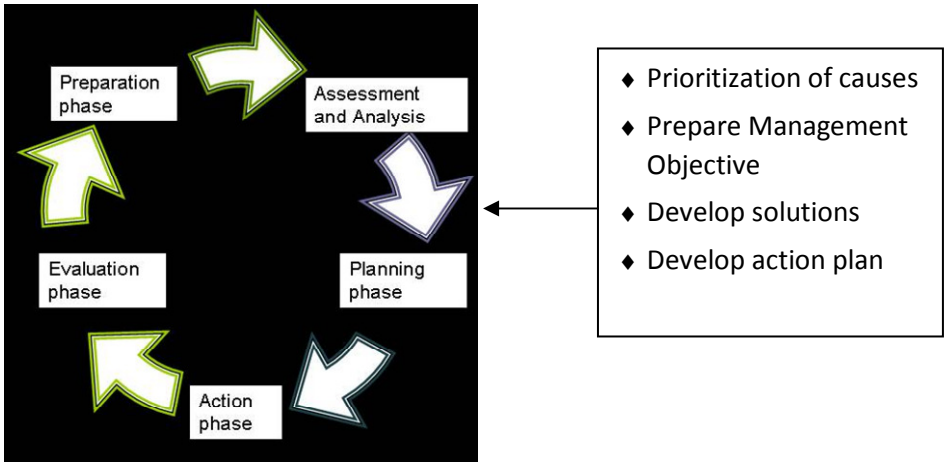
•Governance
•Planning
MAT
OBAT
Promotion of a culture of information
Availability of resources
Facility/Office Checklist

2. Identify RHIS strengths and problems (1 hr 30 min)



3. Cause/effect analysis (45 min)

V. Taking Action



Please note that during the "action" part of the course, we will discuss the following steps:

- Prioritize causes
- Prepare management objectives
- Develop solutions
- Develop an action plan

26. Prioritize Causes/Determinants

Time: **75 Minutes**

Materials:

- Flip chart
- Exercise handout
- Slides

Learning Objectives:

By end of this activity, participants will be able to:

- List criteria for prioritizing determinants
- Describe principle of empowerment for prioritizing causes
- Take responsibility
- Prioritize causes based on empowerment

Plan of Activities:

1. Selection Criteria for Prioritizing Determinants (15 minutes).

SELECTING PRIORITY PROBLEMS EXERCISE

- Let us examine the **PRISM framework diagram** based on our fieldwork and choose the priority determinants.
- We have already selected criteria for both importance and technical feasibility from a list. Now we would like you to select any determinant using these criteria. We would like you to use a **red dot** for **importance** and a **blue dot** for **technical feasibility**. Please get up and paste your choice using the color dots on the flip chart.
- Count the number of **red** votes and declare which determinant was chosen based on importance. Repeat the procedure for **blue**. Declare which determinants have been chosen.

2. Prioritization Based on the Empowerment Criterion (60 minutes)

Prioritization Matrix Based on Personal Influence: Causes of ----------		
List of causes	You Can Influence	You Cannot Influence

Prioritization Matrix Based on Personal Influence: Causes of Data Quality		
List of causes affecting data quality	You Can Influence	You Cannot Influence
Health providers lack motivation to improve data quality		
Health providers (HP) have inadequate knowledge of data quality and how to check it		
Registers are not filled in properly		
Monthly reports are not filled in		
Supervisors do not check data quality		
HPs have no training on checking data quality		
HPs do not know the importance and impact of maintaining data quality		
The writing in the register is incomprehensible and affects data transfer		
The Ministry of Health (MOH) did not develop a tool for checking data quality		
No training manual on data quality		
The MOH did not have the capacity to develop a training manual		
MOH did not have funds to get a consultant for developing a training manual		

EXERCISE: PRIORITIZING CAUSES BASED ON PERSONAL INFLUENCE.

You have developed a cause and effect diagram for your performance gap. Now we would like to determine which causes you can handle on your own and which causes are beyond your control. You might need help from others for those causes which you can not control. This exercise helps you make that decision based on the criterion of personal influence. **You have 15 minutes to complete this exercise. Share your prioritization matrix with other participants.**

- **Step 1**. List all the causes from the cause and effect diagram under the column "List of causes affecting data quality."
- **Step 2.** Read the cause and determine whether you can influence that cause. Put an "X" in the column "You can influence."
- **Step 3.** If you cannot influence the cause, then put an "X" in the column "You cannot influence."
- **Step 4.** Repeat the process for all listed causes.
- **Step 5.** Total how many causes you can influence on your own and how many you cannot.

Prioritization Matrix Based on Personal Influence: Causes of ----------			
#	List of causes affecting _____	You Can Influence	You Cannot Influence
	Total		

27. Prepare Management Objectives

Time: 1 hour

Materials:

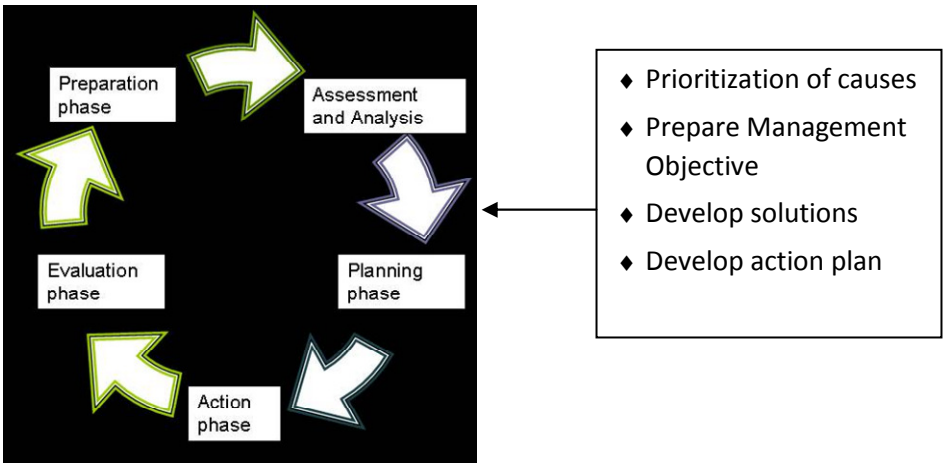
- PRISM framework diagram from previous exercise

Learning objectives:

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

- Write SMART management objectives.

Plan of activities:



1. Discuss

SLIDE: CHARACTERISTICS OF A "SMART" OBJECTIVE.

Remind participants of the characteristics of a "SMART" objective:

- **S**pecific
- **M**easurable
- **A**chievable
- **R**elevant
- **T**imely

2. Write Management Objectives (15 min)

Now your job is to go through the problems identified in the framework diagram in order of priority. Each one of you will write at least one objective based on the problem identified. Show the objective to your facilitator.

A. Examples of Good Problem Statements: RHIS Processes and Performance

28. Solution development

Time: 40 minutes

Materials:

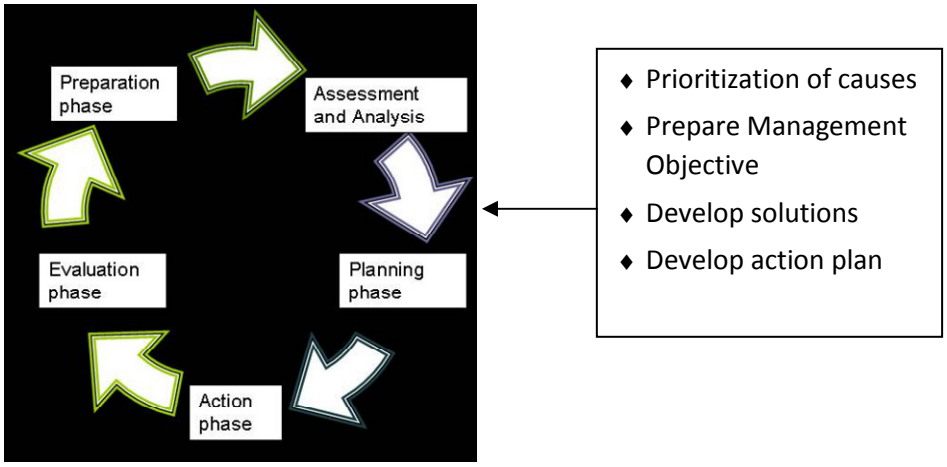
- Slides

Learning objectives:

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

- Explain the importance of a consultative process for acting on RHIS assessment results.
- Describe some activities that help build consensus around priorities for action.

Plan of activities:



1. Discuss consensus-building (20 min)

2. Discuss tools for choosing solutions (20 min)

29. Effective solutions

Time: 1 hour

Materials:

- Slides

Preparation:

- The training team should discuss ideas for this session during the course and decide on its final content depending on what issues, problems, and approaches the participants express interest in. The lecture material and examples provided here is a starting point only.

Learning objectives:

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

- Describe several practical strategies for addressing organizational and behavioral factors to improve RHIS performance.

Plan of activities:

1. Lecture and discussion on proven solutions (30 minutes)

2. Discussion of participants' experiences (30 min)

SLIDE: HOW DOES SELF-ASSESSMENT WORK?

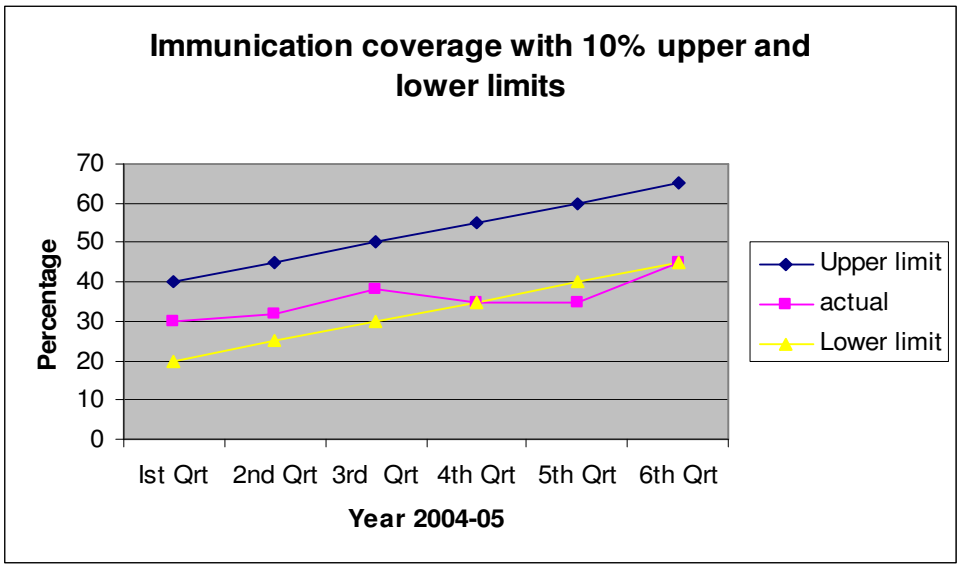
- Facility staff, along with district staff, set their service coverage targets and monitor them on their own periodically.
- Self-assessment assumes knowledge and skills of using self-assessment tools.

SLIDE: B. *PERFORMANCE IMPROVEMENT TOOLS*.

Rationale for instituting performance improvement tools:

- Identify causes of the problem.
- Prioritize causes.
- Develop solutions and prioritize.
- Monitor the planned targets.
- Track and create institutional memory.

PRIORITIZATION MATRIX				
Use a scale of 1-5 for rating each cause using the criterion				
CRITERIA	CAUSE 1	CAUSE 2	CAUSE 3	CAUSE 4
Administrative control				
Technical solution				
Economic feasibility				
Perceived importance				
Political interest				
Total				



30. Advocacy for Improving RHIS or Health System

Time: **90 minutes**

Materials:

- Flip chart
- Overhead projector/computer
- Exercise
- Slides

Readings:

- Katherine Kaufer Christoffel, "Public Health Advocacy: Process and Product," American Journal of Public Health, 2000; 90:722-726

Learning Objectives:

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

- Describe advocacy
- Use RHIS information for identifying problems
- List outcomes to be achieved using advocacy
- Identify advocacy partners
- Design strategy to achieve advocacy outcomes
- Conduct advocacy

Plan of Activities

We could say that advocacy has two characteristics:

a) **Use of information**; and

b) **Creating social pressure**

When these characteristics are related to the health information system, we could define ***HIS advocacy*** as:

- *"Advocacy is the application of HIS information and resources (people, time, efforts, etc.) to influence decision makers to bring about systemic changes for better health information system performance, including health system performance."*

Explain Advocacy Process Steps

- **First,** identify the RHIS information related to the problem and its causes.
- **Second,** determine what outcome(s) we expect after resolving or controlling the underlying cause (s).

- **Third,** who needs to be influenced?
- **Fourth**, plan the strategy (or solution, a broad outline of how to achieve the outcome).
- **Fifth,** specify actions under the strategy and assign responsibility.

Advocacy Chart			
RHIS information for advocacy	**Expected outcomes** (specify what you want)	**Whom to influence** [who (decision maker) will bring the desired outcome]	**Strategy** (How to influence decision maker)

We have filled in the chart to demonstrate how advocacy solutions can be planned. We used the example of data quality. *Show the chart*:

Advocacy Chart			
RHIS information for advocacy	**Expected outcomes** (specify what you want)	**Whom to influence** [who (decision maker) will bring the desired outcome]	**Strategy** (How to influence decision maker)
Data quality is only 40%. No training plan or manuals exist. MOH does not have the capacity or funds to hire a consultant for developing a training plan and manual.	Availability of funds to implement training plan, human resources, training curriculum, and supplies to train staff on data quality.	Donors	Build alliance with Ministry of Health Build alliance with training institute Networking with donors

- You have seen an example of how to develop an advocacy solution using an advocacy chart. Follow the instructions given in the exercise on page 216. You have 20 minutes to complete the exercise. You will share your chart in a plenary session.

- After 20 minutes, ask the groups to present. Give three minutes per presentation. Appreciate good work and provide feedback, if necessary.

- Conclude that you hope participants now believe they can conduct effective advocacy. One needs to be explicit about how other parties can help achieve a specific outcome. Advocacy can pay off with good planning.

EXERCISE: DEVELOP AN ADVOCACY CHART.

You have seen an example of how to develop an advocacy chart. Follow the instructions given below to carry out the exercise. **You have 20 minutes to complete the exercise. You will share your chart in a plenary.**

- **Step 1**. Select a **cause of a problem** from the prioritization matrix that you cannot handle.
- **Step 2.** Describe a **specific outcome** that will be achieved after the cause is removed.
- **Step 3.** Describe **who** will bring about the desired outcome.
- **Step 4.** Describe a **strategy** to influence the decision maker.

Advocacy Chart			
RHIS information for advocacy	**Expected outcomes (specify what you want)**	**Whom to influence [who (decision maker) will bring desired outcome]**	**Strategy (How to influence decision maker)**

31. Self-regulation

Time: **90 minutes**

Materials:

- Flip chart
- Markers
- Handout A
- Story board figure

Learning Objectives:

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

- Articulate their responsibility
- Describe what is self-regulation
- Plan and implement self-regulation related to HMIS performance; data quality and continued use of information

Plan of Activities

1. Explain Self-regulation
2. Conduct Exercise

♦ Distribute **handout A**. Inform that this exercise is about learning the principles and skills of self-regulation. Ask participants to read the case study and later discuss the principles and practices of self-regulation.

HANDOUT A
Explain Self-regulation

Dr. Sarah was recently transferred to the Kumali health center. Looking at the HMIS monthly report, Dr. Sarah noticed that there were only ten pregnant women who came to the health center for delivery last month. Using the population chart, she calculated that (total population 10,000 x 0.04 given in the quarterly report) 400 women should be expected to be pregnant this year. This means that every month she should expect to see (400/12=33.3) 33 pregnant women. However, she received only ten pregnant women for delivery. This indicated a coverage rate of 30%.

Dr. Sarah was not sure about whether her facility coverage was good or bad. She did not receive any guidance from the district office on what should be her coverage rate for pregnant women delivering at the facility. She struggled with whether she should be content with the number of women coming to the health center for deliveries or whether she should make an attempt to improve. She also thought that women whose deliveries are assisted by an untrained attendant have a high risk of developing complications or dying. She felt a great sense of responsibility to motivate pregnant women to come to the clinic for delivery.

She decided that she could not make 100% of pregnant women to come to the clinic, but doubling the number of pregnant women seemed like an achievable goal.

She defined the problem of pregnant women coming for deliveries as a gap of 30% from achieving an ideal coverage rate of 60%. Second, she tried out to find out the reasons (causes) why more women were not coming to the clinic for deliveries. She knew that antenatal/postnatal registers provide information about where the women live. She found that the majority of the women were coming from closer villages but that there was no evidence that distance was the *only* reason women were not coming to the clinic for deliveries. She decided to hold a meeting of staff and community leaders to investigate more reasons.

The staff thought that:

- Women are illiterate.
- Women do not understand the benefits of delivering at the health center.
- Mothers-in-law are opposed to going to health centers for delivery.
- There is a traditional practice of delivering at home.
- Cost of delivery at health center is prohibitive.

Community leaders thought that:

- The staff is too proud and do not behave well.
- Waiting times are too long.
- Staff is absent or there are not enough staff.
- Medicines are not available.

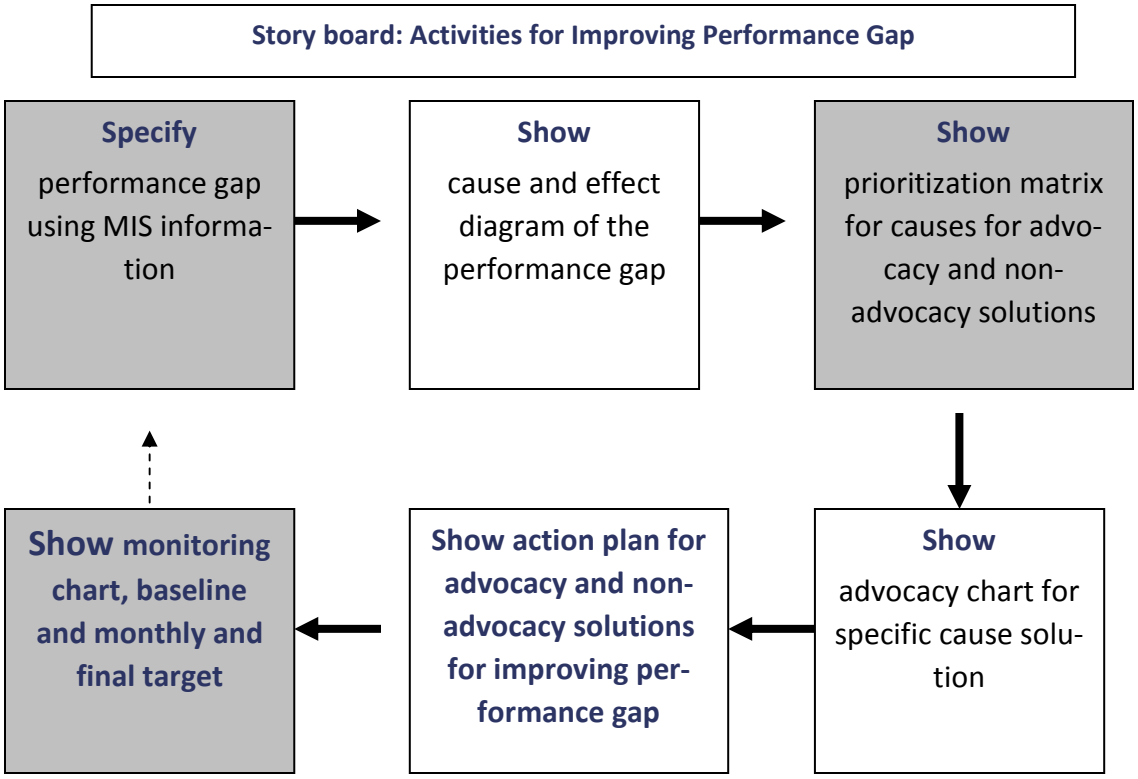
Dr. Sarah decided that she could not change everything. She urged her staff and community leaders to help her prioritize the causes to be addressed. Using criteria that first focus on the reasons within the facility and then on the community, the group decided it was important to work with Dr. Sarah's staff to improve their attitudes toward their clients. Second, the group decided that Dr. Sarah should conduct community awareness meetings with mothers and community leaders. She would collect IEC material from the district to use for community awareness.

Dr. Sarah set a goal of receiving 20 pregnant women for delivery on a monthly basis. She used the monthly monitoring report for gauging whether she achieved her target..

She and her staff developed an action plan and distributed responsibilities to various staff members. After two months, Dr. Sarah noticed that 15 women delivered in her clinic. She was happy that her efforts made a difference, appreciated the staff's efforts, and congratulated community leaders for helping out. She reviewed with the staff and the community what is working and what needs to be changed.

This is the success story of Dr. Sarah. We would like you to become examples for others as well.

Story board



HANDOUT B

Facility Self-regulation – Doing it yourself

Making a story board

Instructions:

1. Choose one of the identified problems and solve it.
2. Make your storyboard using the sequence described.
3. Display it on the wall.
4. Ask one person to explain the story board while people visit the exhibit.

You have 30 minutes to complete the exercise.

Make sure to use knowledge and skills learned in earlier sessions.

Scenario 1: Dr. Mogambe received feedback report from the district office that his immunization coverage for DPT3 was below the district average of 50%. He was asked to take action to improve immunization coverage in his target population. Discuss what steps Dr. Mogambe needs to take to improve immunization coverage in his target population.

Scenario 2: Ms. Flavia received the HMIS monthly report from her staff. She noticed that there were only 20 pregnant women who had come to the health center in the last month for antenatal check-ups. Using the population chart, she calculated that (total population 10,000 x 0.06 given in quarterly report) 600 women should be pregnant in the next year. This means every month she should expect to see (600/12=50) 50 pregnant women. However, she received only 20 pregnant women for delivery. This indicated a coverage rate of 40%. Please discuss what Ms. Flavia should do to improve her coverage rate to 60% in three months.

Scenario 3: Dr. Moreen observed in her monthly report that she saw 100 cases of malaria in the clinic during the last month. She did not think she had seen so many cases of malaria. She thought that it might be a typing mistake. However, she was not sure how many other mistakes were made in the report. She conducted a data audit and found her monthly reporting data accuracy was below 50%, using a LQAS table. Please discuss what steps she took to conduct the data quality check and how she could increase data quality to 60% in one month time.

Activity # 6: Presentation/feedback Time: 15 minutes

Step 9: *After the exhibition, ask participants to gather. Appreciate their work. Ask for one or two comments from the audience by comparing with standard storyboard figure.*

32. Feedback Report

Time: **60 minutes**

Materials required:

- Flip chart
- Overhead projector
- Transparencies

Method:

- Group exercise
- Discussion

Objectives

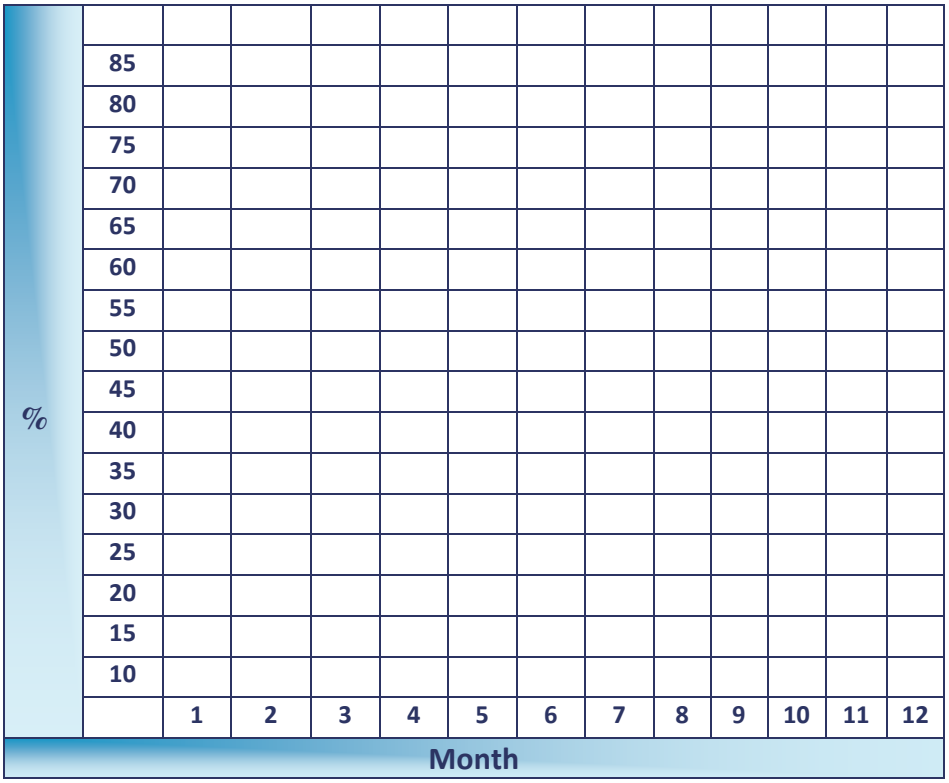
By end of the session, the participants will be able to:

- Develop a feedback report on HMIS data for lower levels staff

Plan of Activities:

1. Discuss **Time: 30 minutes**

- **Status of the services and comparison from previous month(s)**



- **Identify the facilities (prefectures/counties) above and below the planned service target.**

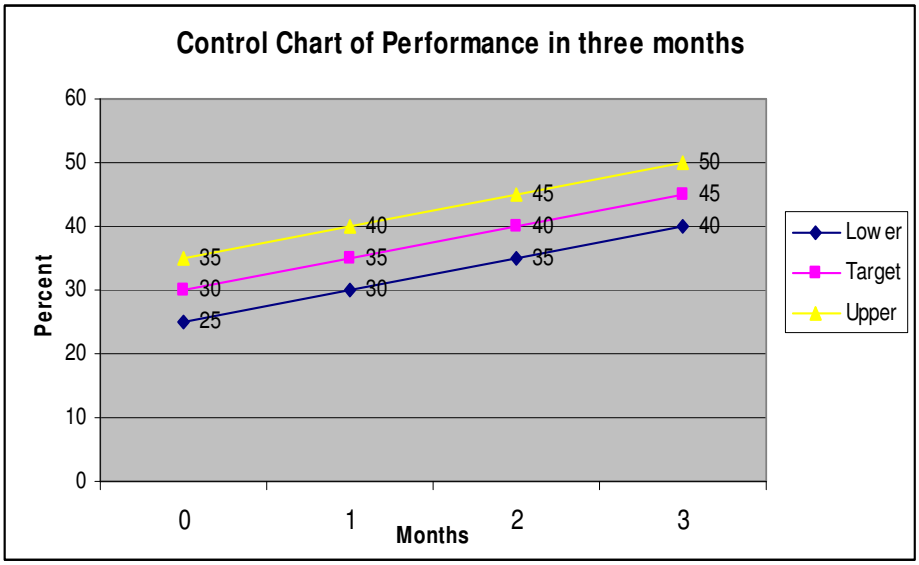


Table: Facilities Above and Below Targets by Types of HIV/AIDS Services				
Targets	**HIV/AIDS Services**			
	VCT	**MMT**	**NEEDLE EXCHANGE**	**ART**
ABOVE TARGETS				
BELOW TARGETS				

- **Major problems identified**
- **Provide action guideline**
- **Follow-up on previous decisions/action guidelines**

Activity # 2: Exercise **Time : 30 minutes**

Handout # Exercise

Scenario:

Dr. Mao had a meeting with the county officers. They found services coverage for VCT, MMT, needle exchange, and ART in January and February 2007 by all 10 facilities as described in Tables 1 to 4. Each table provides the baseline information, target per month, and upper and lower limits of the performance.

Using the information in the tables, please write a feedback report for the month of February 2007 using the feedback format we discussed. Assume some decisions were made in January 2007, which were to be followed up on in February 2007. Each group should take a different table to do the analysis.

1. Status of the services and comparison from the previous month – Use graph
2. Identify facilities above and below the planned service target – Use table
3. Major problems identified
4. Provide actions guideline
5. Follow-up on previous decisions/action guideline

Activity # 3: Presentation/feedback **Time : 30 minutes**

- Provide feedback using the criteria discussed earlier under the feedback report.

Table 1: County A Comparisons of VCT coverage by facilities and time: baseline 30%; increase coverage by 2.5%/month with ±5% variations

Facilities	0	1	2	3	4	5	6	7	8	9	10	11	12
Upper Limit	35	37.5	40	42.5	45	47.5	50	52.5	55	57.5	60	62.5	65
Lower Limit	25	27.5	30	32.5	35	37.5	40	42.5	45	47.2	50	52.5	55
A	30	33	34										
B	25	25	28										
C	28	27	29										
D	31	31	32										
E	25	25	27										
F	28	28	29										
G	35	38	41										
H	34	37	40										
I	27	27	29										
J	28	28	30										
K	27	25	28										
Above upper limit	0	1	1										
Above lower limit	0	5	6										
Average performance	28.9	29.5	31.5										

Table 2: County A Comparisons of MMT coverage by facilities and time: baseline 20%; increase

Facilities	0	1	2	3	4	5	6	7	8	9	10	11	12
Upper Limit	25	27	29	31	33	35	37	39	41	43	45	47	49
Lower Limit	15	17	19	21	23	25	27	29	31	33	35	37	39
A	20	22	24										
B	16	18	20										
C	19	20	21										
D	21	23	23										
E	15	15	17										
F	18	20	22										
G	25	28	30										
H	25	27	30										
I	18	16	18										
J	21	20	22										
K	17	14	16										
Above upper limit	0	1	2										
Above lower limit	0	3	3										
Average performance	19.5	20.3	22.09										

Table 3: County A Comparisons of Needle Exchange coverage by facilities and time: baseline 20%; increase coverage by 1%/month with ±5% variations

Facilities	0	1	2	3	4	5	6	7	8	9	10	11	12
Upper Limit	25	26	27	28	29	30	31	32	33	34	35	36	37
Lower Limit	15	16	17	18	19	20	21	22	23	24	25	26	27
A	18	15	25										
B	17	20	23										
C	20	22	21										
D	21	23	21										
E	22	24	20										
F	23	23	19										
G	25	24	25										
H	17	20	20										
I	18	13	29										
J	20	15	18										
K	21	14	16										
Above upper limit	0	0	0										
Above lower limit	0	4	1										
Average performance	0	19.3	21.5										

Table 4: County A Comparisons of ART coverage by facilities and time: baseline 0%; increase coverage by 2%/month with ±5% variations

Facilities	0	1	2	3	4	5	6	7	8	9	10	11	12
Upper limit	0	7	9	11	13	15	17	19	21	23	25	27	29
Lower limit	0	0	0	1	3	5	7	9	11	13	15	17	19
A	0	0	2										
B	0	2	4										
C	0	0	2										
D	0	0	2										
E	0	0	0										
F	0	0	1										
G	0	0	5										
H	0	2	2										
I	0	0	7										
J	0	0	10										
K	0	0	8										
Above upper limit	0	0	0										
Above lower limit	0	0	1										
Average performance	0	0.36	3.9										

33. Periodic Reports

Time: 30 minutes

Materials:

- Slides

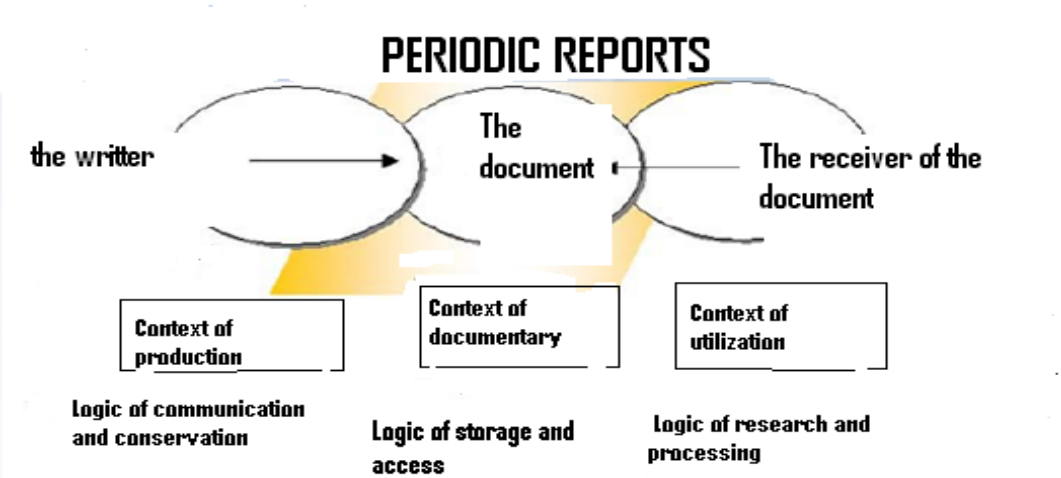
Learning objectives:

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

- Identify periodic reports produced by the RHIS
- Determine the constraints related to their preservation and use
- Discuss what a periodic report is
- Discuss the criteria for creating a periodic report

Plan of Activities:

1. Defining a periodic report



1. PROCESS OF DOCUMENT VALORISATION CHART

source: petit dictionnaire des concepts informations documentaires P Duplessis: Ivana ballarini-Santonocito Jany 2007

2. Identify periodic reports produced by RHIS

1. Specify the target audience – policy maker, managers, facility staff
2. Explain the production issues – funds, limited staff, limited analytical skill
3. List constraint why report is not used

Chart A: Mapping of the Periodic Reports by Content, Target audience, Production Issues and Use constraints					
List of the periodic report	Frequency of publication and gap between last two reports	Content sections	Target audiences	Production Issues	Constraints of use

34. Ethical Considerations in RHIS

Time: 30 minutes

Materials:

- Lecture slides

Reading

- Http://www.doh.wa.gov/Data/Guidelines/HumanSubjectsguide.htm
- Report on the ethical issues in the ENRAH Project, prepared by Dr. Tsveta Schyns, project coordinator chairperson, ethics working group, Vienna, Austria, 2006, Version 3.0
- Coughlin, S. S. (2006), Ethical issues in epidemiological research and public health practice. Emerging themes in epidemiology, http://www.ete-online.com/content/3/1/16

Learning objectives:

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

- Define ethics concepts in public health
- Discuss why ethics is important in the area of RHIS
- List certain requirements tied to ethics in the framework of RHIS
- Formulate a strategy to assure that RHIS meets ethics requirements

Plan of Activities:

1. Ethics and Public Health

2. Ethics within the framework of the RHIS

3. Ethical requirements bound to the activities of the RHIS

4. Strategies to meet ethical considerations in health information systems

35. Implementing RHIS improvement

Time: 1 hour 45 minutes

Materials:

- Slides

Learning objectives:

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

- List key elements of implementing RHIS improvement action plans.
- Articulate the monitoring and evaluation component.
- Reflect on how they can use these approaches when developing home action plans.

Plan of activities:

A. Developing Strategies/Interventions for Action Plans Time: 1 hour

1. Group work on strategies (30 minutes)

Assign each group one of the management objectives. Instruct them to plan a strategy and list actions to achieve the objective. The strategy should directly reflect the structure of the problem as identified in the PRISM framework, addressing the underlying causes.

- **The group should start from the problem to be addressed on the PRISM diagram, then trace back to the causes of this problem. Strategies should respond to the most critical factors and particularly root causes.**

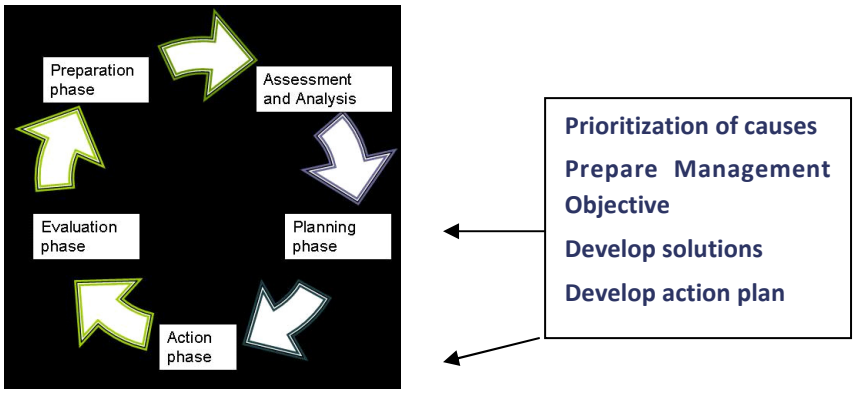
Each subgroup should write up their strategy on a flipchart, with the management objective at the top. Groups should be prepared to present their plan.

♦ **The end product will look like the following:**

- Management objective
- List of the determinants of the management objective
- Which determinant or determinants are addressed
- Strategy or strategies to address the determinant

2. Report back (30 min)

B. Components of an implementation plan (10 min)



ELEMENTS OF THE IMPLEMENTATION PLAN.

- Background.
- Summary of situation analysis/rationale for selecting certain objectives.
- Objectives.
- Strategies/actions.
- Work plan and responsibilities.
- Resource requirement (financial, material, human).
- Monitoring and evaluation of the plan.

C. Monitoring and evaluation of implementation (25 min)

PRISM DIAGNOSTIC TOOL.

- The PRISM Diagnostic Tool can be used repeatedly as a monitoring tool.
- You may want to use the Diagnostic Tool for evaluation, as well.
- If your interventions are more focused on improving the RHIS support and management system, then you may want to periodically use the RHIS Management Assessment Tool and monitor the development of the system.

D. Communicating the plan (10 min)

Note on donor mentality:

This course has been careful not to lead you to grand scale RHIS reform, rather we have been focusing on small but manageable interventions to improve RHIS performance. Ideally these interventions should be given importance by your organizations, so that you can obtain the required resources to implement interventions. (This is why stakeholder involvement and consensus are important.) But that is not always the case and you may need to seek inputs or financial support from donor agencies.

Obviously, donor agencies have their own priorities and their own financial cycles. If you seek their support for improving RHIS, try to find out their priorities in health areas and their financial cycle. Use this knowledge to customize your proposal, so that the rationale attracts donor agencies' attention.

Make sure that you start talking with them about possible interventions at the early stage of planning, so that they are aware of what you are thinking. Donor agencies do not like surprises. Give them time to consult internally, because desk officers of donor organizations are not necessarily specialists in RHIS.

Be aware that donor agencies have information networks among themselves. They also share documents much more frequently than you expect. Bad news (information) travels much faster than your good work among donor agencies. If you keep using the same (but rejected) proposals without changing much of the content, they will know it. Ask if there are other constraints or issues that they think should be considered during implementation.

36. Home Action Plans

Time: 4 hours

Materials:

- Handout 2: home action plan
- Slides

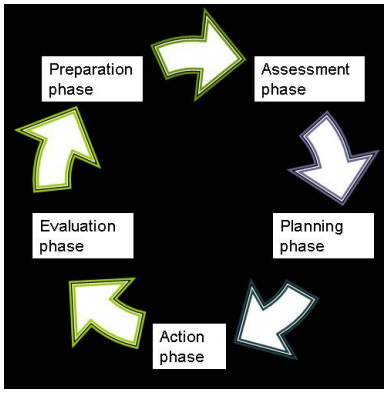
Learning Objectives:

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

- Plan for how to apply what was learned in this course in their own settings; specifically to make a plan to initiate the assessment phase of a performance improvement process for their RHIS when they return to their workplaces.

Plan of activities:

1. Introduction (20 min)



2. Group work on home action plans (1 hr 30 min)

- Distribute and review **Handout 2: Home Action Plan**. Ask if there are any questions and clarify them as necessary.
- Instruct participants to work in their country teams to complete the handout (workplan and stake-holder analysis), and to be prepared to share some of the highlights of their plans with others in the course. They have one hour to work in groups.

3. Report back (2 hrs)

HANDOUT 2
Home Action Plan

In your country team:

1) Assess your organization's readiness to make improvements in its RHIS using the readiness checklist.

2) Conduct a stakeholder analysis using the task sheet below. Think about who needs to be included in the change process, what their interests are, what their roles will be in the change process and how they will be involved.

3) Make a plan for what needs to happen to initiate the assessment phase of your RHIS improvement process. Complete the worksheet on the next page.

Consider the following questions as part of your planning process:

1) What challenges or obstacles do you think you may find?

_____
_____
_____
_____
_____
_____

2) What are some possible strategies for addressing those challenges?

_____
_____
_____
_____
_____
_____

3) How will you know that you have achieved your desired results?

_____
_____
_____
_____
_____
_____

Stakeholder Analysis

♦ Draw this table on a flipchart

♦ List stakeholders for your RHIS improvement process and fill out the table as follows:

1. **"Stakeholder's interest"** that could be rated on the following scale:

   - 2: Strongly in favor
   - 1: In favor
   - 0: No interest
   - -1: Opposed
   - -2: Strongly opposed

2. "**Assessment of influence,"** which could be rated on the following scale:

   - 1: Little influence
   - 2: Medium influence
   - 3: Strong influence

Stakeholders Analysis Table				
A. Stakeholders	**B. Stakeholder's interest in the process (Put the rating)**	**C. Assessment of influence (Put the rating)**	**D. Total Support Score (shows level of positive or negative support) (score=B x C)**	**E. Strategies for Level of Involvement**

Home Action Plan Worksheet

Objective:			
Steps:	**Who will be involved? Role?**	**When?**	**Resources Needed?**

VI. Closing

37. Post-test and final evaluation

Time: 40 minutes

Materials:

- Handout 3: Post-test
- Handout 4: Final Evaluation

Session objectives:

By the end of this session, participants will have:

- Taken the post-test, compared results to pre-test and reflected on their learning.
- Completed the final course evaluation.

Plan of activities:

1. Administer Post-test (20 min)

- Distribute **Handout 3: Post-test**. Explain that participants will now take the same test that they took on the first morning of the course.
- Each person should write his or her name at the top of the page so that it can be matched with their pre-test. Give them 20 minutes to complete the pre-test.

2. Check and discuss answers to post-test (15 min)

3. Administer Final Course Evaluation (5 min)

- Distribute Handout 4: Final Course Evaluation. Give participants five minutes to fill it out, and then collect.

HANDOUT 3
Post-Test

Name: _____

You will have 20 minutes to complete the questions below.

1. How would you define "effective performance of routine health information systems (RHIS)?"

2. List three key factors that determine the effectiveness of RHIS performance.

1. 3. Please read the scenario and answer the question below:

You are a director of health services in the Ministry of Health. Your department is responsible for the overall management of health services provided by public health facilities. Your department has a section of health information and statistics. About nine years ago, the Ministry of Health instituted a routine health information system (RHIS) to support the management of health services.

One day, you are summoned to the office of the Minister of Health. The Minister and the Director General just came back from a conference on health services organized in Italy. The Minister gives you a short lecture on the importance of good information and tells you that the RHIS is not performing well enough. The Minister gives you ten months to improve the RHIS.

a. On the back of this page, list the steps you will take to improve the RHIS of your Ministry. Please try to be as specific as possible.

b. List the specific factors related to RHIS performance that you would consider in this process.

HANDOUT 4

Final Course Evaluation

Circle the number that best represents your opinion about each statement.

Circle a higher number if you agree with the statement, or a lower number if you disagree with the statement.

	Disagree ---->-----><----><----><-- Agree				
I now have the skills to carry out a RHIS performance improvement process, including assessment, analysis and problem-solving. *Comments:*	1	2	3	4	5
I will be able to use knowledge and skills from this course in my work. *Comments:*	1	2	3	4	5
I was able to network with colleagues and make useful connections. *Comments:*	1	2	3	4	5
The logistics (lodging, meals, transportation) were satisfactory. *Comments:*	1	2	3	4	5
The trainers were knowledgeable and used effective training methods.					
Name:	1	2	3	4	5
Name:	1	2	3	4	5
Name:	1	2	3	4	5
Name:	1	2	3	4	5
What changes would you suggest for the next course? THANK YOU!					

38. Closing ceremony

Time: 30 minutes

Materials:

- Certificates

Session objectives:

By the end of this session, participants will have:

- Received course completion certificates.

To close the course:

- Distribute course completion certificates.
- Invited guests may say some words in closing.
- Share any logistical information necessary about departing from the hotel or other issues.
- Thank the participants.

Appendix 1: Answer Code Sheet - OBAT

Knowledge of rationale for RHIS data collection

Three questions (UIa, U1b, and U1c) were asked, as shown below along with their answers. There are three or more correct answers for each question. Thus, those giving all three correct answers to U1a and U1b get a raw score of three while not providing an answer at all gets a score of zero. Thus, the range of scores varies between zero and three. However, in the case of U1c, there is only one correct answer. To create an index score for how well the rationale for RHIS data collection is understtod, all the raw scores from all three questions are aggregated and converted into a percentile score. Do this by dividing the total raw score by seven and multiplying by 100.

Knowledge of rationale for data collection

U1. Describe at least three reasons for collecting data on a monthly basis for the following:

A. Diseases

Possible reasons could be:
knowledge of changes in magnitude of the selected diseases,
taking action for providing medicine and other supplies, and
planning preventive activities, etc.

Scoring: Each correct answer gets a raw score of one. Wrong answers (or no answers) get a score of zero. The overall raw score is obtained by adding all the scores. The range would vary between 0 and 3.

B. Immunization

Possible reasons could be:
knowledge of various types of vaccine coverage,
assessing gaps in immunization coverage,
developing targets for immunization, and
maintaining related supplies, etc.

Scoring: Each correct answer gets a raw score of one. Wrong answers (or no answers) get a score of zero. The overall raw score is obtained by adding all the scores. The range would vary between 0 and 3.

C. Why is population data of the target area needed?

The answer is:
To use as a denominator for calculating the various indicators

Scoring: The correct answer gets a raw score of one; an incorrect answer gets a zero.

Knowledge of Methods of Checking Data Quality

U2. Describe at least three ways of **checking data quality.** Some answers are:

Observation of the service provider for correct diagnosis and documentation

Comparison of monthly report with registers

Comparison of generated data with other sources of data

Data entry problems such as mistaken entries

Internal consistency, e.g. comparison of number of patients and medicine use

Historical comparison

> **Scoring:** Each correct answer gets a raw score of 1. Incorrect answers receive a score of zero. The overall raw score is obtained by adding up the scores. The range will vary between 0 and 6.

To create an index score for knowing methods for checking data quality, all the raw scores from the correct answers are aggregated. A percentile score is created by dividing the aggregate by the total raw score of 6 and multiplying by 100.

Problem Solving Skill

To assess problem solving skills, a story with an opening and ending is used and respondents are supposed to fill in the middle part. The answer is broken down into defining the problem quantitatively and describing the activities for solving it. The scoring scheme is described below:

Problem solving

Dr. Akram, EDO Health, read a recent district report and found that data quality was only 40% and felt very disturbed by it. "I need to take action," he thought. He paced back and forth thinking about his next steps to improve data quality. After some time, he calmed down and wrote his action plan. Please describe how Dr. Akram defined the problem and what major activities Dr. Akram would have included in his action plan for improving data quality.

PSa. Definition of the problem

> **Scoring:** The participant is supposed to assume a target of data quality to find the gap between the target and the actual level of data quality, because no data is provided on the target in the scenario. Second, the problem needs to be defined as a gap in performance. Thus, if these two criteria are met, the definition of the problem would be considered correct and would get a score of one. If incorrect, the score is zero. For example:
>
> Data quality was found to be 40% and has a gap of 20% to reach a target of 60% in six months.

PSb. Major Activities

Scoring: Each described activity gets a raw score of one. The overall percentile score is obtained by adding up the scores, dividing by the total items (10) and multiplied by 100. The range will vary between 0 and 100. A lower score shows less ability to solve problem, while a higher score shows the opposite.

The action plan should indicate specific steps to solve the problem as well as define monitoring and evaluating mechanisms. The activities should include:

1. Analyze causes for gaps in data quality
2. Collect data to provide evidence for those causes
3. Prepare selection criteria for causes
4. Select one or two cause(s) affecting most of the problem
5. Develop solutions to eliminate the cause(s)
6. Develop criteria for selecting the solution
7. Implement selected solution
8. Monitoring mechanism described
9. Evaluation plan included
10. Involve staff in problem solving process

HMIS Task Competence

Determining competence in HMIS tasks is comprised of assessing ability to calculate, plot data, explain data, and use data.

Calculation of percentage/rate

Scoring: To obtain an overall score for competence in calculation, add up the answers for the following three questions. The raw score will range between zero and three. The percentile score is created by dividing the total raw score by the total number of items, three, and multiplying by 100.

1. The estimated number of pregnant mothers is 340. Antenatal clinics have registered 170 pregnant mothers. Calculate the percentage of pregnant mothers in the district attending antenatal clinics.

Scoring: The correct answer, 50% of pregnant women attend antenatal clinics, receives a score of one. An incorrect answer receives zero.

2. A survey in a district found that 500 children under five years of age were malnourished. The total population of children under five years if age is 5000. What is the malnutrition rate?

Scoring: The correct answer, 10% malnutrition rate, gets a score of one. An incorrect answer receives a score of zero.

3. If the malnutrition rate in children under two years of age was 20% , and the total number of children under two years of age is 10,000, what is the number of children who are malnourished?

Scoring: The correct answer, 2000 malnourished children,receives a score of one. An incorrect answer receives a score of zero.

Plotting of data

The full immunization coverage for children, 12-23 months, was found to be 60%, 50%, 30%, 40%, 40% for years 1997, 1998, 1999, 2000 and 2001 respectively. Develop a bar chart for coverage percentages by year.

Scoring: The bar chart should like this and would get a score of one if presented correctly.

100						
90						
80						
70						
60						
50						
40						
30						
20						
10						
0	**97**	**98**	**99**	**00**	**01**	

Explanation of data

Scoring: The raw scores of 2b and 2c are added, divided by the total items (7) and multiplied by 100 to get a percentile score.

2b. Explain the findings of the bar chart.

Scoring: Each correct response (see below) gets a score of one. Incorrect responses receive a score of zero. Thus, the total score will be between zero and six.

1. The immunization rate was highest in 1997.
2. The immunization rate was lowest in 1999.
3. Immunization rates were same for 2000 and 2001
4. It seems that there was a shortage of vaccine in 1999.
5. The immunization rate for 1997 and 1999 might be calculated incorrectly, because the rates for the other three years are much closer, with a margin of error of 10%. The error rate in a 30 cluster sampling is not statistically significant.
6. Given that there was no problem with data collection, the data showed that immunization rates were falling and then plateaued in the last two years.

2c. Did you find a trend in the data? If yes or no, explain the reason for your answer.

Scoring: The correct answer is: Yes, the data showed a trend, given it is correct, as immunization coverage rates were decreasing till 1999, and then plateaued in the last two years after increasing from 30%. The correct answer gets a score of one; incorrect gets zero.

Use of data

Scoring: Each correct use at different levels (see below) gets a score of one; incorrect gets zero. Thus, the total score for use of data will range between zero and four. This is converted into a percentile score by dividing it by the total number of items and multiplying by 100.

2d. Provide at least one use for these findings at:

2D1. Facility level – possible answers could be:

- assessing service coverage
- conducting disease surveillance

2D2. District level – possible answers could be:

- identifying low and high performance facilities
- advocacy

2D3. Policy Level – possible answers could be:

- New policy or revision of policy
- Advocacy for more resources

2D4. Community level –

- mobilizing the community to seek immunizations
- better information, education, and communication (IEC)