

# Tools for Data Demand and Use in the Health Sector

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Performance of Routine Information Systems  
Management (PRISM) Tools

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The ministry of health was concerned that district and facility staff rarely used routine data to identify performance gaps, make plans, and monitor progress. Information was available; why was it being used only to populate reports and not to drive decisions and program improvements? PRISM Tools provided a structured way for the ministry to assess the quality of data and use of information in its routine health information system. The findings were revealing. Data errors were very high, due in part to overly complex data collection forms, inaccurate transfer of data from patient records, and calculation errors. The PRISM assessment led to the design of easy-to-use forms, a refresher training course in data collection and processing for health workers, and a series of meetings and publications to share performance results and successes.

## 1 PURPOSE

Routine health information systems generate potentially useful data, but it is often of low quality and not trusted for decision making.

The ultimate objective of a routine health information system (RHIS) is to produce information for taking action in the health sector. “Are we doing things right?” “Are we doing the right things?” If things are being done correctly, the data should demonstrate that all activities were carried out as planned. Positive results should follow. The RHIS is an important mechanism to identify gaps in the management of the health system—and to resolve them to maintain and improve performance. With timely, complete and accurate information, managers can identify strengths and weaknesses of health system functions and services, and take appropriate action to maximize success. For issues outside of their control, they can advocate for possible solutions and policy changes.

However, the systems designed to track health data often fall short:

- Data quality may be low, so nobody has faith in it.
- Data quality may be sufficient, but there are no processes or channels in place for using the data, other than completing reports to send to district and national authorities.

- Managers and staff might not appreciate the importance of their roles in the information process, and they have little incentive to give data processes the care and attention necessary.

“The data collection forms are too complicated.” ... “I did not like mathematics, and now I have to deal with data.” ... “What is the use of collecting data when nobody uses it?” ... “Upper management is not committed to RHIS activities.” Attitudes such as these—whether they reflect reality or misperception—can undermine the effectiveness of any RHIS program.

If a routine health information system is to produce all the value it should, it must produce high-quality data—actionable insights framed on accurate facts. This information must be actively used to guide day-to-day operations, track performance, learn from past results, and improve accountability.

However, this has not been the scenario in most developing countries. RHIS systems often do not provide the information needed to improve health system performance. Why? Traditional assessments only answer part of the question, because they look narrowly at technical issues, such as data collection methods or Information Technology. Interventions then have limited impact, because the success of an RHIS framework depends on far more than technical capabilities:

- Is the organization committed to a culture of using information?
- Do the people responsible for data collection have the necessary skills?
- Do they understand and care about the importance of their work?
- Do managers support them with training, supervision and needed resources?

Issues such as these have a profound influence on RHIS success.

MEASURE Evaluation, together with John Snow, Inc., developed a conceptual framework that acknowledges the broader context in which RHIS operates. Known as Performance of Routine Information System Management (PRISM),<sup>1</sup> this conceptual framework broadens the analysis of routine health information systems to include three key factors for success:

- Behavioral determinants—The knowledge, skills, attitudes, values, and motivation of the people who collect and use data.
- Technical determinants—Data collection processes, systems, forms, and methods.
- Organizational/environmental determinants—Information culture, structure, resources, roles, and responsibilities of the health system and key contributors at each level.

The PRISM conceptual framework and PRISM Tools identify strengths and weaknesses in these areas, as well as correlations among areas. This assessment aids in designing and prioritizing interventions to improve RHIS performance—which in turn improves the performance of the health system.

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<sup>1</sup> Aqil A, Lippeveld T, Hozumi D. (2009) PRISM Framework: A Paradigm Shift for Designing, Strengthening and Evaluating Routine Health Information Systems. *Health Policy and Planning*, 2009, 24(3):217-228; doi:10.1093/heapol/czp010, Oxford University Press.

## 2 DESCRIPTION

Support RHIS improvements by objectively measuring performance and identifying the factors that hinder performance.

The PRISM conceptual framework sets forth the premise that the success of RHIS depends on success in three interrelated areas: technical, organizational and behavioral conditions. Unlike traditional assessments, which focus primarily on technical issues, the PRISM Tools look at the determinants of RHIS performance in all three areas.

The PRISM Tools include the following four tools:

- 1. RHIS Performance Diagnostic Tool**—The primary component in the toolset, this determines the overall level of RHIS performance, looking separately at quality of data and use of information, to identify weak areas. This diagnostic tool identifies strengths and weaknesses; the other three tools identify the underlying technical, organizational, and behavioral reasons for those strengths and weaknesses.
- 2. RHIS Overview and Facility/Office Checklist**—This examines technical determinants such as the structure and design of existing information systems in the health sector, information flows, and interaction between different information systems. This tool is used to understand the availability and status of RHIS resources and procedures used at health offices and facilities.
- 3. Organizational and Behavioral Questionnaire**—This looks at behavioral and organizational factors that affect RHIS performance. Do staff members have the necessary knowledge, skills, problem-solving ability, confidence, and motivation? Does the organization promote a culture that values information quality and use? Comparing these factors with RHIS performance identifies gaps and opportunities for improvements.
- 4. RHIS Management Assessment Tool**—This is designed to rapidly take stock of the management and supportive practices of RHIS, and to aid in developing recommendations for RHIS management.

The PRISM User Guide provides step by step instructions to understand the rationale of the questions and how to use them in the field. It provides information about the uses of each tool, strengths and weaknesses, and when to use it alone or in combination with other tools. The guide instructs sampling methodology options to use in the field. The PRISM Data Entry and Analysis Tool (PRISM-DEAT) helps in entering and analysis of the PRISM data. The instructions are part of the PRISM user guide

### **Assess the performance of a routine health information system**

PRISM Tools provide the methods to objectively measure data quality and the degree to which information is used for evidence-based decision making. For example, all health facilities in a district were submitting monthly RHIS reports to the district health office, but only 50 percent of the data in the reports were accurate when compared to patient records. Information was not used for decision making; the district office did not systematically review RHIS information.

### Provide evidence on the factors that affect RHIS performance

PRISM Tools identify specific technical, behavioral, and organizational factors that affect RHIS performance. For example, in the case above, RHIS performance was hindered by complicated data collection registers and forms, lack of motivation of staff to collect data, and their lack of understanding of the utility of that data. Senior managers were not interested in using the information that was collected. A key advantage of PRISM Tools is the focus on behavioral and organizational determinants, and how these issues relate to technical determinants. The PRISM approach clarifies whether technical, behavioral, and organizational determinants have influenced performance directly or are mediated through behavioral factors. For example, the most sophisticated computer network available could still produce fallible data if management has not established a culture that fosters staff knowledge, best practices, and motivation. The PRISM assessment, therefore, provides a holistic picture of the existing information system—an informed, real-world perspective from which to design the most effective improvements.

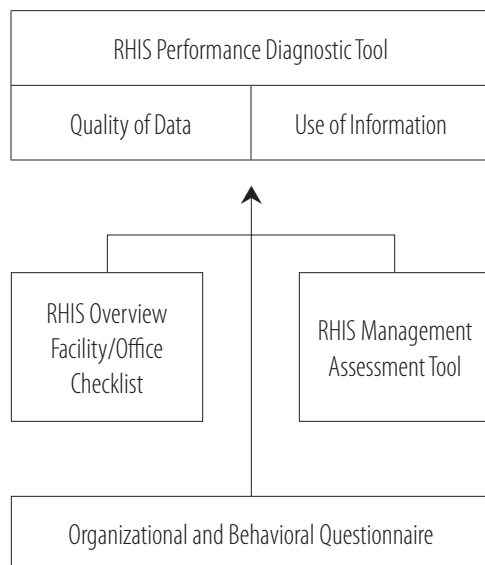
### Aids in the design of interventions to improve RHIS performance

A PRISM assessment identifies which technical, behavioral, and organizational determinant(s) should be modified to improve RHIS performance. For example, one PRISM assessment led to proposals for the following interventions:

- Simplification of data collection forms.
- Refresher training in data collection and processing for health workers.
- Regular publication of a newsletter to show success stories of where information was used to improve health facility performance.
- Regular monthly staff meetings to monitor health facilities' performance against objectives using RHIS data.

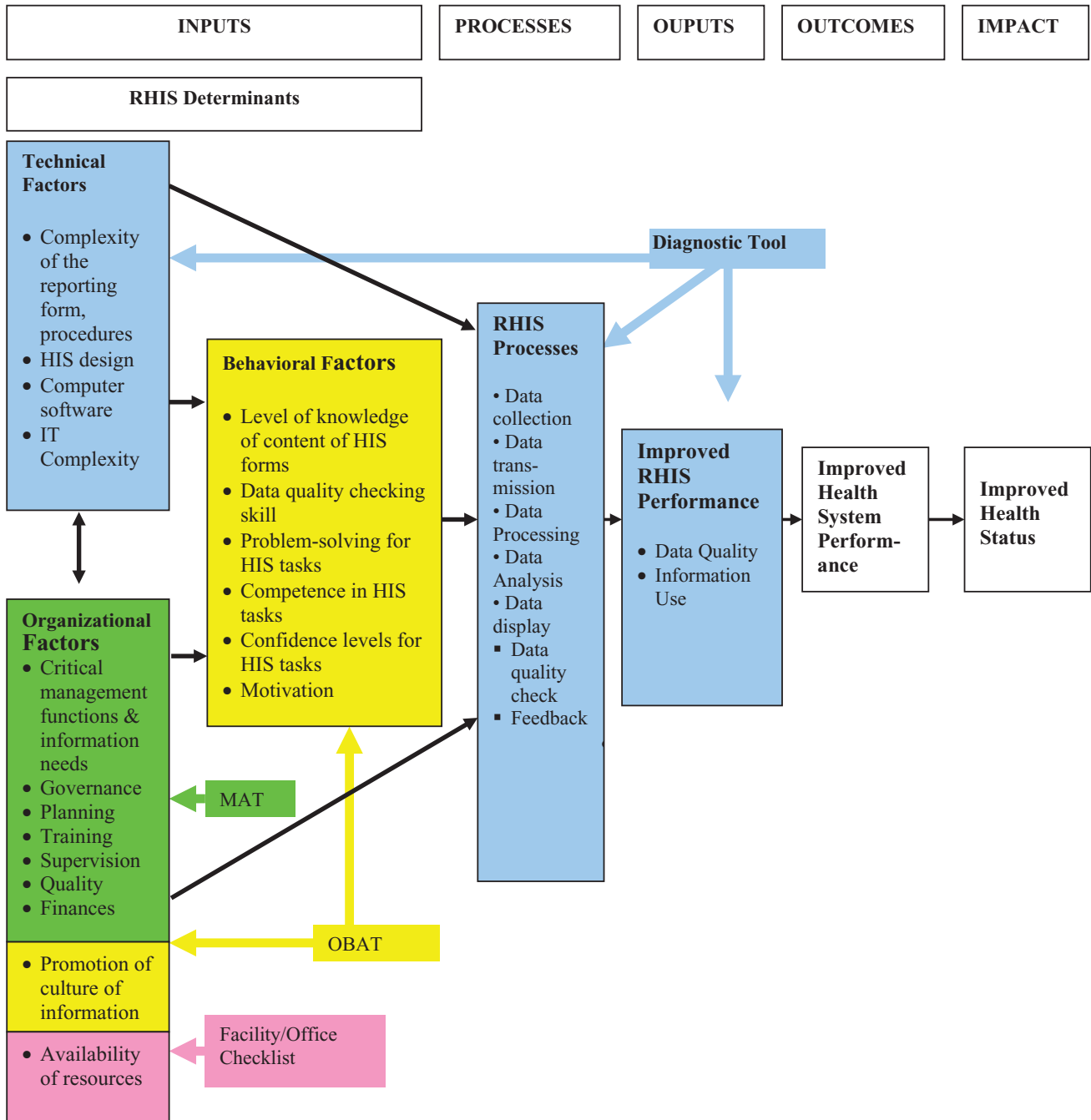
### Support ongoing efforts to monitor and evaluate data quality and use

Figure 1: PRISM Tools.



PRISM Tools can be used in a supervisory capacity to continuously monitor data quality and use and to evaluate RHIS performance over time and gauge the efficacy of designed interventions to improve the information system. PRISM Tools can be adapted and applied at international, national or sub-national levels. The tools can be adapted to reflect variances in RHIS design, decision-making processes and stakeholders. The tools described in this document have been designed for a routine facility-based health information system. However, the tools can be adapted for other data sources, such as vital events registration systems, or non-routine health information systems, such as surveys. Figure 1 shows how these tools relate to one another. Collectively, these tools provide a comprehensive picture of RHIS performance and its contributing factors—technical, organizational, and behavioral.

Figure 2



### **3** TEMPLATES

To assess and improve the performance of a routine health information system.

Blank versions of the PRISM Tools template in Microsoft Word format—as well as the PRISM User guide, PRISM Data Entry and Analysis Tool, and RHIS course—are also available for download from the MEASURE Evaluation Web site (<http://measureevaluation.org/tools/data-demand-use>).

**RHIS Performance Diagnostic Tool**  
**Quality of Data Assessment: District Office Form**

|                       |                                       |
|-----------------------|---------------------------------------|
| Name of the District: | Date of Assessment:                   |
| Name of the Assessor: | Name and Title of Person Interviewed: |

**Data Transmission**

|  |  |                    |                   |  |
|--|--|--------------------|-------------------|--|
| DQ 1   | Does the district office keep copies of RHIS monthly reports sent by health facilities?  | 1.Yes              | 0.No              |  |
| DQ 2   | What is the number of facilities in the district that are supposed to be reporting to (enrolled in) RHIS?  |                    |                   |  |
| DQ 3   | What is the number of facilities in the district that are actually reporting to (enrolled in) RHIS?  |                    |                   |  |
| DQ 4   | Count the number of monthly reports submitted by the facilities for any two months (of the surveyor's choosing)..                                    | a.month            | b.month           |  |
| DQ 5   | What is the deadline for the submission of the RHIS monthly report by facility?  |                    |                   | If no deadline is set, write no and go to Q8 |
| DQ 6   | Does the district office record receipt dates of the RHIS monthly report?  | 1.Yes              | 0.No              | If receipt dates are not recorded, go to Q8  |
| If DQ6 yes, check the dates of receipts for the two months (DQ7 the total number of reports received before and after the deadline should be the same as in Q4). |  |                    |                   |  |
| DQ 7   |  | a. Month (specify) |                   | b. Month (specify)                           |
|  | Item   | 1. Before deadline | 2. After deadline | 3. Before deadline                           |
|  | Number of facilities   |                    |                   |  |
| DQ 8   | Does the district have a record of people who receive monthly report data by a certain deadline after receiving monthly reports from the facilities? | 1.Yes              | 0.No              |  |
| DQ 9   | Does the district have a record of submitting data on time to regional and/or national levels?   | 1.Yes              | 0.No              |  |

**Data Accuracy**

|       |  |                    |                |                    |
|-------|--|--------------------|----------------|--------------------|
|       | Manually count the number of following data items from the RHIS monthly reports for the selected two months. Compare the figures with the reports from the computer or paper database. |                    |                |                    |
| DQ 10 | Item   | a. Month (specify) |                | b. Month (specify) |
|       |  | Manual count       | Paper/computer | Manual count       |
| DQ A  |  |                    |                |                    |
| DQ B  |  |                    |                |                    |
| DQ C  |  |                    |                |                    |

**Data Processing/Analysis**

|        |   |       |                           |                              |  |
|--------|---|-------|---------------------------|------------------------------|--|
| DQ 11  | Does a database exist to enter and process data?      | 0. No | 1. Yes, by paper database | 2. Yes, by computer database |  |
| DQ 12  | Does the database produce the following?              |       |                           |                              |  |
| DQ 12a | Calculate indicators for each facility catchment area | 1.Yes | 0.No                      |                              |  |
| DQ 12b | Data summary report for the district                  | 1.Yes | 0.No                      |                              |  |
| DQ 12c | Comparisons among facilities                          | 1.Yes | 0.No                      |                              |  |
| DQ 12d | Comparisons with district/national targets            | 1.Yes | 0.No                      |                              |  |
| DQ 12e | Comparisons among types of services coverage          | 1.Yes | 0.No                      |                              |  |
| DQ 12f | Comparisons of data over time (monitoring over time)  | 1.Yes | 0.No                      |                              |  |



|       |  |                 |                  |      |
|-------|--|-----------------|------------------|------|
| DQ13  | Do you think that the RHIS procedure manual is user-friendly?  | 1.Yes           | 0.No             |      |
| DQ 14 | Do you think that the monthly report form is complex and difficult to follow?  | 0.Yes           | 1.No             |      |
| DQ 15 | Do you find the data software to be user-friendly?   | 1.Yes           | 0.No             |      |
| DQ 16 | Do you find that information technology is easy to manage?   | 1.Yes           | 0.No             |      |
| DQ 17 | Do you think that information system design provides a comprehensive picture of health system performance?   | 1.Yes           | 0.No             |      |
| DQ 18 | Do you think RHIS has information that is also included in other information system?   | 1.Yes           | 0.No             |      |
| DQ 19 | Does the RHIS software integrate data from different information systems?  | 1.Yes           | 0.No             |      |
| DQ 20 | Does the information technology (Land Area Network –LAN or wireless network ) exist to provides access to information to all district managers and senior management | 1.Yes partially | 2.Yes completely | 0.No |
| DQ 21 |  |                 |                  |      |
| DQ 22 |  |                 |                  |      |
| DQ 23 |  |                 |                  |      |
| DQ 24 |  |                 |                  |      |
| DQ 25 |  |                 |                  |      |

## RHIS Performance Diagnostic Tool Use of Information District Assessment Form

|                               |   |  |  |                   |
|-------------------------------|---|--|--|-------------------|
|                               |   | Name of Assessor:  |  |                   |
| District:                     |   | Name of Respondent and Title:                                |  |                   |
| <b>RHIS Report Production</b> |   |  |  |                   |
| DU1                           | Does this district office compile RHIS Data submitted by facilities?  | 1.Yes  | 0.No   |                   |
| DU2                           | Does the district issue any report containing RHIS information?   | 1.Yes  | 0.No   | If no , go to DU4 |
| DU3                           | If yes, please list reports that contain data/information generated through the RHIS. Please indicate the frequency of these reports and the number of times the reports actually were issued during the last 12 months. Please confirm the issuance of the report by counting them and putting the number in column 3. |  |  |                   |
|                               | 1. Title of the report  | 2.No. of times this report is supposed to be issued per year | 3. No. of times that report are actually issued for the last 12 months |                   |
| DU3a                          |   |  |  |                   |
| DU3b                          |   |  |  |                   |
| DU3c                          |   |  |  |                   |
| DU3d                          |   |  |  |                   |
| DU3e                          |   |  |  |                   |
| DU4                           | Did the district office send a feedback report using RHIS information to facilities during the last three months?   | 1.Yes  | 0.No   |                   |
| <b>Display of Information</b> |   |  |  |                   |
| DU5                           | Does the district office display the following data? Please indicate the types of data displayed and whether the data are updated for the last reporting period.  |  |  | If no go to DU6   |
|                               | 1.Indicator   | 2.Type of display (Please tick)                              | 3. Updated   |                   |
| DU5a                          | Related to mother health  | Table  | 1.Yes<br>0.No  |                   |
|                               |   | Graph/Chart  |  |                   |
|                               |   | Map  |  |                   |
| DU5b                          | Related to child health   | Table  | 1.Yes<br>0.No  |                   |
|                               |   | Graph/Chart  |  |                   |
|                               |   | Map  |  |                   |
| DU5c                          | Facility Utilization  | Table  | 1.Yes<br>0.No  |                   |
|                               |   | Graph/Chart  |  |                   |
|                               |   | Map  |  |                   |
| DU5d                          | Disease surveillance  | Table  | 1.Yes<br>0.No  |                   |
|                               |   | Graph/Chart  |  |                   |
|                               |   | Map  |  |                   |
| DU6                           | Does the office have a map of the catchment area?   | 1.Yes  | 0.No   |                   |
| DU7                           | Does the office display a summary of demographic information such as population by target group(s)?   | 1.Yes  | 0.No   |                   |

|       |   |                 |       |                   |
|-------|---|-----------------|-------|-------------------|
| DU8   | Is feedback quarterly, yearly or any other report on RHIS data available, which provides guidelines/recommendations for actions?  | 1.Yes           | 0.No  | If no, go to DU10 |
| DU9   | If yes to DU8, what kinds of decisions are made in reports of RHIS data/information for actions? Please check types of decision based on types of analysis present in reports.<br>Types of decisions based on types of analysis     |                 |       |                   |
| DU9a  | Appreciation and acknowledgement based on number/percentage of facilities showing performance within control limits over time (month to month comparisons)  | 1.Yes           | 0.No  |                   |
| DU9b  | Mobilization/shifting of resources based on comparison by facilities  | 1.Yes           | 0.No  |                   |
| DU9c  | Advocacy for more resources by comparing performance by areas (sub-districts, cities, villages), human resources and logistics  | 1.Yes           | 0.No  |                   |
| DU9d  | Development and revision of policies by comparing types of services   | 1.Yes           | 0.No  |                   |
|       | <b>Discussion and decisions about use of information</b>  | 1.Yes           | 0.No  |                   |
| DU10  | Does the district office have routine meetings for reviewing managerial or administrative matters?  | 1.Yes           | 0.No  |                   |
| DU11  | How frequently is the meeting supposed to take place? Circle appropriate answer<br><br>4. weekly    3. After every two weeks    2. monthly    1. quarterly<br>0. no schedule  |                 |       |                   |
| DU12  | How many times did the meeting take place during the last three months? Circle appropriate answer<br><br>12. 12 times    11. Between 7 and 11    6. 6 times    5. either 4 or 5<br>3. 3 times    2. 2 times    1. 1 time    0. none |                 |       |                   |
| DU13  | Is an official record of management meetings maintained?  | 1.Yes           | 0.No  | If no, go to DU15 |
| DU14  | If yes, please check the meeting records for the last three months to see if the following topics were discussed:   |                 |       |                   |
| DU14a | Management of RHIS, such as data quality, reporting, or timeliness of reporting   | 1.Yes, observed | 0. No |                   |
| DU14b | Discussion about RHIS findings such as patient utilization, disease data, or service coverage, or medicine stock out  | 1.Yes, observed | 0. No |                   |
| DU14c | Have they made any decisions based on the above discussions?  | 1.Yes, observed | 0. No |                   |
| DU14d | Has any follow-up action taken place on the decisions made during the previous meetings?  | 1.Yes, observed | 0. No |                   |
| DU14e | Are there any RHIS related issues/problems referred to regional/national level for actions?   | 1.Yes, observed | 0. No |                   |
|       | <b>Promotion and Use of RHIS information at district/higher level</b>   |                 |       |                   |
| DU15  | Did district annual action plan showed decisions based on HIS information?  | 1.Yes           | 0.No  |                   |
| DU16  | Did records of district office of last three months show that district/senior management issued directives on use of information  | 1.Yes           | 0.No  |                   |
| DU17  | Did district/national RHIS office publish newsletter/report in last three months showing examples of use of information   | 1.Yes           | 0.No  |                   |

|   |  |       |      |  |
|---|--|-------|------|--|
| DU18  | Does documentation exist showing the use information for various types of advocacy?  | 1.Yes | 0.No |  |
| DU19  | Does the district staff meeting records show attendance of persons in charge of the facilities for discussion on RHIS performance? | 1.Yes | 0.No |  |
| DU20: Please describe examples of how the district office uses RHIS information for health system management<br>0. No examples 1. Yes (details follows) |  |       |      |  |

|      |  |  |
|------|--|--|
| DU21 |  |  |
| DU22 |  |  |
| DU23 |  |  |
| DU24 |  |  |
| DU25 |  |  |

**RHIS Performance Diagnostic Tool**  
**Quality of Data Assessment: Health Facility Form**

|   |   |                       |               |                                       |               |                 |
|---|---|-----------------------|---------------|---------------------------------------|---------------|-----------------|
| Date of Assessment:                               |   | Name of the Assessor: |               | Name and Title of person Interviewed: |               |                 |
| District  |   | Facility              |               | Type                                  |               |                 |
| <b>Data Recording</b>                             |   |                       |               |                                       |               |                 |
| FQ1   | Does this facility keep copies of the RHIS monthly reports which are sent to the district office?   |                       |               | 1.Yes                                 | 0.No          | If no, go to Q5 |
| FQ2   | Count the number of RHIS monthly reports that have been kept at the facility for the last twelve months   |                       |               |                                       |               |                 |
| FQ3   | Does this facility keep an outpatient register?   |                       |               | 1.Yes                                 | 0.No          | If no, go to Q5 |
| <b>Data Accuracy Check</b>                        |   |                       |               |                                       |               |                 |
| FQ4   | Find the following information in the outpatient register for the selected two months. Compare the figures with the computer-generated reports.   |                       |               |                                       |               |                 |
|   | Item  | a. Month (specify)    |               | b. Month (specify)                    |               |                 |
|   |   | # from register       | # from report | # from register                       | # from report |                 |
| 4A  |   |                       |               |                                       |               |                 |
| 4B  |   |                       |               |                                       |               |                 |
| 4C  |   |                       |               |                                       |               |                 |
| 4D  |   |                       |               |                                       |               |                 |
| FQ5   | Did you receive a directive in the last three months from the senior management or the district office to:  |                       |               |                                       |               |                 |
|   | 5A Check the accuracy of data at least once in three months?  |                       |               | 1.Yes, Observed                       | 0.No          |                 |
|   | 5B Fill the monthly report form completely  |                       |               | 1.Yes, Observed                       | 0.No          |                 |
|   | 5C Submit the report by the specified deadline  |                       |               | 1.Yes, Observed                       | 0.No          |                 |
| FQ6   | During the last three months, did you receive a directive from the senior management or the district office that there will be consequences for not adhering to the following directives: |                       |               |                                       |               |                 |
|   | 6A if you do not check the accuracy of data   |                       |               | 1.Yes, Observed                       | 0.No          |                 |
|   | 6B If you do not fill in the monthly reporting form completely  |                       |               | 1.Yes, Observed                       | 0.No          |                 |
|   | 6C If you do not submit the monthly report by the specified deadline  |                       |               | 1.Yes, Observed                       | 0.No          |                 |
| <b>Data Completeness</b>                          |   |                       |               |                                       |               |                 |
| FQ7   | How many data items does the facility need to report on in the RHIS monthly report? This number does not include data items for services not provided by this health facility.            |                       |               |                                       |               |                 |
| FQ8   | Count the number of data items that are supposed to be filled in by this facility but left blank without indicating "0" in the selected month's report.                                   |                       |               |                                       |               |                 |
| <b>Data Transmission/Data Processing/Analysis</b> |   |                       |               |                                       |               |                 |
| FQ9   | Do data processing procedures or a tally sheet exist?   |                       |               | 1. Yes, Observed                      | 0. No         |                 |
| FQ10  | Does the facility produce the following?  |                       |               |                                       |               |                 |
| FQ A  | Calculate indicators facility catchment area  |                       |               | 1. Yes, Observed                      | 0. No         |                 |
| FQ B  | Comparisons with district or national targets   |                       |               | 1. Yes, Observed                      | 0. No         |                 |
| FQ C  | Comparisons among types of services coverage  |                       |               | 1. Yes, Observed                      | 0. No         |                 |
| FQ D  | Comparisons of data over time (monitoring over time)  |                       |               | 1. Yes, Observed                      | 0. No         |                 |
| FQ11  | Does a procedure manual for data collection (with definitions) exist?   |                       |               | 1. Yes, Observed                      | 0. No         |                 |
| FQ12  |   |                       |               |                                       |               |                 |
| FQ13  |   |                       |               |                                       |               |                 |
| FQ14  |   |                       |               |                                       |               |                 |
| FQ15  |   |                       |               |                                       |               |                 |
| FQ16  |   |                       |               |                                       |               |                 |

## RHIS Performance Diagnostic Tool Use of Information: Facility Assessment Form

|                               |   |   |  |                  |
|-------------------------------|---|---|--|------------------|
| Date:                         | Name of Assessor:   |   |  |                  |
| Facility Name:                | Name of Respondent and Title:   |   |  |                  |
| Facility Type:                | District:   |   |  |                  |
| <b>RHIS Report Production</b> |   |   |  |                  |
| FU1                           | Does this facility compile RHIS Data?   | 1.Yes   | 0.No   |                  |
| FU2                           | Does the facility compile any report containing RHIS information?   | 1.Yes   | 0.No   | If no, go to UI4 |
| FU3                           | If yes, please list reports that contain data/information generated through the RHIS. Please indicate the frequency of these reports and the number of times the reports actually were issued during the last 12 months. Please confirm the issuance of the report by counting them and putting the number in column 3. |   |  |                  |
|                               | 1. Title of the report  | 2. No. of times this report is supposed to be issued per year | 3. No. of times this report actually has been issued during the last 12 months |                  |
| FU3a                          |   |   |  |                  |
| FU3b                          |   |   |  |                  |
| FU3c                          |   |   |  |                  |
| FU3d                          |   |   |  |                  |
| FU4                           | During the last three month, did the facility receive any feedback report from district office on their performance?  | 1.Yes   | 0.No   |                  |
| <b>Display of Information</b> |   |   |  |                  |
| FU5                           | Does the facility display the following data? Please indicate types of data displayed and whether the data have been updated for the last reporting period.   |   |  | If no go to UI6  |
|                               | 1. Indicator  | 2. Type of display (Please tick)                              | 3. Updated   |                  |
| FU5a                          | Related to maternal health  | Table   | 1.Yes  | 0.No             |
|                               |   | Graph/Chart   |  |                  |
|                               |   | Map/other   |  |                  |
| FU5b                          | Related to child health   | Table   | 1.Yes  | 0.No             |
|                               |   | Graph/Chart   |  |                  |
|                               |   | Map/other   |  |                  |
| FU5c                          | Facility utilization  | Table   | 1.Yes  | 0.No             |
|                               |   | Graph/Chart   |  |                  |
|                               |   | Map/other   |  |                  |
| FU5d                          | Disease surveillance  | Table   | 1.Yes  | 0.No             |
|                               |   | Graph/Chart   |  |                  |
|                               |   | Map/other   |  |                  |
| FU6                           | Does the facility have a map of the catchment area?   | 1.Yes   | 0.No   |                  |
| FU7                           | Does the office display a summary of demographic information such as population by target group(s)?   | 1.Yes   | 0.No   |                  |
| FU8                           | Is feedback, quarterly, yearly or any other report on RHIS data available, which provides guidelines/ recommendations for actions?  | 1.Yes   | 0.No   | If no go to UI10 |

|       |  |                 |      |                    |
|-------|--|-----------------|------|--------------------|
| FU9   | If you answered yes to question DU8, what kinds of action-oriented decisions have been made in the reports (based on RHIS data)? Please check the boxes accordingly  |                 |      |                    |
|       | <b>Types of decisions based on types of analyses</b>   |                 |      |                    |
| FU9a  | Review strategy by examining service performance target and actual performance from month to month   | 1.Yes           | 0.No |                    |
| FU9b  | Review facility personnel responsibilities by comparing service targets and actual performance from month to month   | 1.Yes           | 0.No |                    |
| FU9c  | Mobilization/shifting of resources based on comparison by services   | 1.Yes           | 0.No |                    |
| FU9d  | Advocacy for more resources by showing gaps in ability to meet targets   | 1.Yes           | 0.No |                    |
|       | <b>Discussion and Decision based on RHIS information</b>   |                 |      |                    |
| FU10  | Does the facility have routine meetings for reviewing managerial or administrative matters?  | 1.Yes           | 0.No | If no, go to UI15  |
| FU11  | How frequently is the meeting supposed to take place?<br><br>4. weekly    3. After every two weeks    2. monthly    1. quarterly<br>0. no schedule   |                 |      |                    |
| FU12  | How many times did the meeting actually take place during the last three months?<br><br>12. 12 times    11. Between 7 and 11    6. 6 times    5. either 4 or 5    3. 3 times<br>2. 2 times    1. 1 time    0. none |                 |      |                    |
| FU13  | Is an official record of management meetings maintained?   | 1.Yes           | 0.No | If no, go to FUI15 |
| FU14  | If yes, please check the meeting records for the <b>last three months</b> to see if the following topics were discussed:   |                 |      |                    |
| FU14a | Management of RHIS, such as data quality, reporting, or timeliness of reporting  | 1.Yes, observed | 0.No |                    |
| FU14b | Discussion on RHIS findings such as patient utilization, disease data, or service coverage, medicine stock out   | 1.Yes, observed | 0.No |                    |
| FU14c | Have they made any decisions based on the above discussions?   | 1.Yes, observed | 0.No |                    |
| FU14d | Has any follow-up action taken place regarding the decisions made during the previous meetings?  | 1.Yes, observed | 0.No |                    |
| FU14e | Are there any RHIS related issues or problems that were referred to the district or regional level for actions?  | 1.Yes, observed | 0.No |                    |
|       | <b>Promotion and Use of RHIS information by the district/higher level</b>  |                 |      |                    |
| FU15  | Observed facility received annual/monthly planned targets based on RHIS information  | 1.Yes           | 0.No |                    |
| FU16  | Do facility records for the last three months show that district/senior management issued directives concerning the use of information   | 1.Yes           | 0.No |                    |
| FU17  | Did the facility receive a district or national RHIS office newsletter or report in last three months giving examples of use of information  | 1.Yes           | 0.No |                    |
| FU18  | Does documentation exist showing the use information for advocacy purposes?  | 1.Yes           | 0.No |                    |
| FU19  | Did the person in charge of the facility participate in meetings at district level to discuss RHIS performance for the last three months?  | 1.Yes           | 0.No |                    |
| FU20: | Please give examples of how the facility uses RHIS information for health system management<br>0. No examples 1. Yes (details follows)   |                 |      |                    |

| <b>Supervision by the District Health Office</b> |   |                              |      |                     |
|--|---|------------------------------|------|---------------------|
| FU21   | How many times did the district supervisor visit your facility during the last three months? (check the answer)                   | 0.<br>1.<br>2<br>3.<br>4. >3 |      | If zero, go to FU26 |
| FU22   | Did you observe a supervisor having a checklist to assess the data quality?   | 1.Yes                        | 0.No |                     |
| FU23   | Did the supervisor check the data quality?  | 1.Yes                        | 0.No |                     |
| FU24   | Did the district supervisor discuss performance of health facilities based on RHIS information when he/she visited your facility? | 1.Yes                        | 0.No |                     |
| FU25   | Did the supervisor help you make a decision based on information from the RHIS?   | 1.Yes                        | 0.No |                     |
| FU26   | Did the supervisor send a report/feedback/note on the last two supervisory visits?  | 1.Yes                        | 0.No |                     |
| FU27   |   |                              |      |                     |
| FU28   |   |                              |      |                     |
| FU29   |   |                              |      |                     |
| FU30   |   |                              |      |                     |
| FU31   |   |                              |      |                     |



## **Routine Health Information System Overview**

### **Overview of Information Systems in Health Sector**

**(Interview HIS Manager at district and sub-national level)**

Level:                     National  
                               Sub-national (district, province, etc.)  
Name (of district, province, etc.) \_\_\_\_\_

Respondent's Name:

Function/Title:

Institution:

Department:

#### ***Mapping existing routine information systems in health sector (OPTIONAL)***

Using the sheet 1: "Information system mapping," list all routine information systems existing in the country/region/district.

This exercise will help you to understand types of health sector information that are included (or not included) by information systems. It will also help to identify duplication of information systems.

- 1) Write down specific names of the information systems.
- 2) Identify types of information covered by each system and check relevant boxes. You may also write comments in the box. For example, an information system for EPI may handle information on drug supplies but it might be limited to vaccines. You can indicate "vaccine only" in the box. Similarly, MCH specific information systems may collect information on service utilization of MCH services only.
- 3) Please describe how information from different information systems are shared. For example, between TB programs and HIV/AIDS programs.



## 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? |
|---|---|
| •   |   |
| •   |   |
| •   |   |
| •   |   |
| •   |   |
| •   |   |
| Data transmission/reporting forms                                 | Comments on forms. Is the form easy to use? Enough space to record data? Takes too much time? |
| •   |   |
| •   |   |
| •   |   |
| •   |   |
| •   |   |
| •   |   |

## 3. Information flowchart

Using the chart provided on the next page, illustrate the flow of information from community to health facility, health facility to district level, district level to regional level, regional level to the central/national level. For each level, please indicate specific departments/job titles which should receive and process information received from a lower level.

This exercise will help you to clarify information flows in existing information systems and identify potential problems, which affect the performance of the information systems.

- 1) If some levels, e.g. community level and regional level, are not relevant to systems that you are examining, please omit them from the exercise.
- 2) Please be as specific in identifying information sources and data transmission points as possible. For example, if different types of facilities have different reporting units at district level, you will want to indicate these different paths of information.
- 3) Add more than one information system to see interactions between information systems and how complicated or simple information flows are in your health system. You can see how basic routine health information system's information flow interacts with special program information systems such as EPI, HIV/AIDS, and Malaria.
- 4) You can be creative in indicating different information flows in different colors. For example, you can indicate the data aggregation process in red and the information feedback process in blue color. Or General RHIS in green and EPI in pink, etc.





| <b>B. Organization of the health facility</b>  |  |                                    |   |
|--|--|------------------------------------|---|
| B.1. Please describe total number of persons under each category below: (Adapt according to the country situation)   |  |                                    |   |
| B.2. Title/ post   | Number   |                                    | Number  |
| 1. Medical officer   |  | 10. Health educator                |   |
| 2. Comprehensive nurse registered  |  | 11. Health inspector               |   |
| 3. Comprehensive nurse enrolled  |  | 12. Laboratory technician          |   |
| 4. Nursing Assistance  |  | 13. Public health dental assistant |   |
| 5. Clinical officer  |  | 14. Anesthetic officer             |   |
| 6. Laboratory Assistant  |  | 15. Midwife                        |   |
| 7. Health Assistant  |  | 16. Support staff                  |   |
| 8. Dispenser   |  | 17. Other (specify)                |   |
| 9. Health information assistant  |  |                                    |   |
| B.3. Who fills in the HMIS monthly reports? <i>Specify the codes from Q B.2.</i>   |  |                                    |   |
| B.4. List those staff members who received any training in the recording, processing, or reporting of health information during the last two years, the number of trainings received, and the year of the latest training. |  |                                    |   |
| B.4.a. Title or Post<br>(Coding from QB.2)   | B.4.b. How many trainings courses/sessions did this person received in the past three years? | B.4.c. Year of last training?      | B.4.d. Subjects of last training:<br>1. data collection<br>2. data analysis<br>3. data display/report<br>4. 1&2<br>5. 1&3<br>6. 2&3<br>7. 1,2 & 3<br>8. other (specify) |
| 1.   |  |                                    |   |
| 2.   |  |                                    |   |
| 3.   |  |                                    |   |
| 4.   |  |                                    |   |
| 5.   |  |                                    |   |

| <b>BB1. Only for Staff at District or Higher level</b>   |  |
|--|--|
| <b>Staffing</b>  |  |
| BB.1 Total number of persons working in district HMIS office including sub-districts?  |  |
| BB.2 Total number of persons working in district HMIS office excluding sub-districts?  |  |
| BB.3 Total number of district and sub-district staff in district HMIS office trained to collect, verify and analyze information? |  |

## RHIS Management Assessment Tool

(Observation at facility and higher levels)

Questions under grey areas are not for the facility level

|                            |  |                            |                      |                         |
|----------------------------|--|----------------------------|----------------------|-------------------------|
| MAT1. Name of the Facility |  | MAT2. Name of the Assessor |                      |                         |
| MAT3. Name of the District |  | MAT4: Date of Assessment   |                      |                         |
| MATG1                      | Presence of RHIS Mission displayed at prominent position(s)  | 0 No                       | 1 Yes                |                         |
| MATG2                      | Presence of management structure for dealing with RHIS related strategic and policy decisions at district and higher levels              | 0 No                       | 1 Yes                |                         |
| MATG3                      | Presence of an updated (last year) district health management organizational chart, showing functions related to RHIS/health information | 0 No                       | 1 Yes                |                         |
| MATG4                      | Presence of distribution list and documentation of RHIS past monthly/quarterly report distribution at district or higher level           | 0 No                       | 1 Yes                |                         |
| MATP1                      | Presence of RHIS situation analysis report less than 3 year old  | 0 No                       | 1 Yes                |                         |
| MATP2                      | Presence of RHIS 5 year plan at district or higher level   | 0 No                       | 1 Yes                |                         |
| MATP3                      | Presence of RHIS targets at facility and higher level  | 0 No                       | 1 Yes                |                         |
| MATQ1                      | Presence of a copy of RHIS standards at district or higher levels  | 0 No                       | 1 Yes                |                         |
| MATQ2                      | Presence of a copy of RHIS standards at facility   | 0 No                       | 1 Yes                |                         |
| MATQ3                      | Presence of performance improvement tools (flow chart, control chart etc.) at the facility   | 0 No                       | 1 Yes                |                         |
| MATT1                      | Does facility/district have a RHIS training manual?  | 0 No                       | 1 Yes                |                         |
| MATT2                      | Presence of mechanisms for on-job RHIS training (see documentation)  | 0 No                       | 1 Yes                |                         |
| MATT3                      | Presence of schedule for planned training  | 0. No                      | 1. Yes, for one year | 2. Yes, 2 years or more |
| MATS1                      | Presence of RHIS supervisory checklist   | 0 No                       | 1 Yes                |                         |
| MATS2                      | Presence of schedule for RHIS supervisory visit  | 0 No                       | 1 Yes                |                         |
| MATS3                      | Presence of supervisory reports  | 0 No                       | 1 Yes                |                         |
| MATF1                      | Presence of RHIS related expense register  | 0 No                       | 1 Yes                |                         |
| MATF2                      | Presence of mechanisms for generating funds for RHIS   | 0 No                       | 1 Yes                |                         |
| MATF3                      | Presence of RHIS monthly/quarterly financial report  | 0 No                       | 1 Yes                |                         |
| MATF4                      | Presence of long term financial plan for supporting RHIS activities  | 0 No                       | 1 Yes                |                         |

# Organizational and Behavioural Assessment Tool

(To be filled by staff and management at all levels)

## Introduction

This survey is part of the \_\_\_\_\_, to improve Management Information Systems in the health sector. The objective of this survey is to help develop interventions for improving information system and use of information. Please express your opinion honestly. Your responses will remain confidential and will not be shared with anyone, except for presented table forms. We appreciate your assistance and co-operation in completing this study.

Thank you.

---

IDI. Name of facility

ID2. District

DD1. Title of the person filling the questionnaire (circle answer)

*(Make these categories appropriate to the host country)*

1. Provincial DG
2. Provincial HMIS focal person
3. District HO
4. District HMIS focal person
5. Facility in charge
6. Other facility staff (specify) -----

DD2. Age of the person -----

DD3. Sex                                    1. Male                                    2. Female

DD4. Education

1. 10 years    2. Intermediate (11-12)    3. Bachelor (13-14)    4. Master
5. Professional diploma/degree (specify)-----
6. Other (specify) -----.

DD5. Years of employment -----

DD6. Did you receive any training in HMIS related activities in last six months?    0. No    1. Yes



We would like to know your opinion about how strongly you agree with certain activities carried out by \_\_\_\_\_. There are no right or wrong answers, but only expression of your opinion on a scale. The scale is about assessing the intensity of your belief and ranges from strongly disagree (1) to strongly agree (7). You have to determine first whether you agree or disagree with the statement. Second decide about the intensity of agreement or disagreement. If you disagree with statement then use left side of the scale and determine how much disagreement that is – strongly disagree (1), somewhat disagree (2), or disagree (3) and circle the appropriate answer. If you are not sure of the intensity of belief or think that you neither disagree nor agree then circle 4. If you agree with the statement, then use right side of the scale and determine how much agreement that is – agree (5), somewhat agree (6), or strongly agree (7) and circle the appropriate answer. Please note that you might agree or disagree with all the statements and similarly you might not have the same intensity of agreement or disagreement and thus variations are expected in expressing your agreement or disagreement. We encourage you to express those variations in your beliefs.

This information will remain confidential and would not be shared with anyone, except presented as an aggregated data report. Please be frank and choose your answer honestly.

|                          |                 |                          |                                   |                       |              |                       |
|--------------------------|-----------------|--------------------------|-----------------------------------|-----------------------|--------------|-----------------------|
| <b>Strongly disagree</b> | <b>Disagree</b> | <b>Somewhat Disagree</b> | <b>Neither Disagree nor Agree</b> | <b>Somewhat Agree</b> | <b>Agree</b> | <b>Strongly Agree</b> |
| <b>1</b>                 | <b>2</b>        | <b>3</b>                 | <b>4</b>                          | <b>5</b>              | <b>6</b>     | <b>7</b>              |

To what extent, do you agree with the following on a scale of 1-7?

**In health department, decisions are based on**

|   | Strongly Disagree | Somewhat Disagree | Disagree | Neither Disagree nor Agree | Agree | Somewhat Agree | Strongly Agree |
|---|-------------------|-------------------|----------|----------------------------|-------|----------------|----------------|
| D1. Personal liking                                 | 1                 | 2                 | 3        | 4                          | 5     | 6              | 7              |
| D2. Superiors' directives                           | 1                 | 2                 | 3        | 4                          | 5     | 6              | 7              |
| D3. Evidence/facts                                  | 1                 | 2                 | 3        | 4                          | 5     | 6              | 7              |
| D4. Political interference                          | 1                 | 2                 | 3        | 4                          | 5     | 6              | 7              |
| D5. Comparing data with strategic health objectives | 1                 | 2                 | 3        | 4                          | 5     | 6              | 7              |
| D6. Health needs                                    | 1                 | 2                 | 3        | 4                          | 5     | 6              | 7              |
| D7. Considering costs                               | 1                 | 2                 | 3        | 4                          | 5     | 6              | 7              |

| Strongly Disagree | Somewhat Disagree | Disagree | Neither Disagree nor Agree | Agree | Somewhat Agree | Strongly Agree |
|-------------------|-------------------|----------|----------------------------|-------|----------------|----------------|
|-------------------|-------------------|----------|----------------------------|-------|----------------|----------------|

**In health department, superiors**

|  |   |   |   |   |   |   |   |
|--|---|---|---|---|---|---|---|
| S1. Seek feedback from concerned persons   | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| S2. Emphasize data quality in monthly reports  | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| S3. Discuss conflicts openly to resolve them   | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| S4. Seek feedback from concerned community   | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| S5. Use HMIS data for setting targets and monitoring                                 | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| S6. Check data quality at the facility and higher level regularly                    | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| S7. Provide regular feedback to their staff through regular report based on evidence | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| S8. Report on data accuracy regularly  | 1 | 2 | 3 | 4 | 5 | 6 | 7 |

**In health department, staff**

|  |   |   |   |   |   |   |   |
|--|---|---|---|---|---|---|---|
| P1. Are punctual   | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| P2. Document their activities and keep records                         | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| P3. Feel committed in improving health status of the target population | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| P4. Set appropriate and doable target of their performance             | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| P5. Feel guilty for not accomplishing the set target/performance       | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| P6. Are rewarded for good work   | 1 | 2 | 3 | 4 | 5 | 6 | 7 |

| Strongly Disagree | Somewhat Disagree | Disagree | Neither Disagree nor Agree | Agree | Somewhat Agree | Strongly Agree |
|-------------------|-------------------|----------|----------------------------|-------|----------------|----------------|
|-------------------|-------------------|----------|----------------------------|-------|----------------|----------------|

**In health department, staff**

P7. Use HMIS data for day to day management of the facility and district 1 2 3 4 5 6 7

P8. Display data for monitoring their set target 1 2 3 4 5 6 7

P9. Can gather data to find the root cause(s) of the problem 1 2 3 4 5 6 7

P10. Can develop appropriate criteria for selecting interventions for a given problem 1 2 3 4 5 6 7

P11. Can develop appropriate outcomes for a particular intervention 1 2 3 4 5 6 7

P12. Can evaluate whether the targets or outcomes have been achieved 1 2 3 4 5 6 7

P13. Are empowered to make decisions 1 2 3 4 5 6 7

P14. Able to say no to superiors and colleagues for demands/decisions not supported by evidence 1 2 3 4 5 6 7

P15. Are made accountable for poor performance 1 2 3 4 5 6 7

P16. Use HMIS data for community education and mobilization 1 2 3 4 5 6 7

P17. Admit mistakes for taking corrective actions 1 2 3 4 5 6 7

**Personal**

BC1. Collecting information which is not used for decision making discourages me 1 2 3 4 5 6 7

BC2. Collecting information makes me feel bored 1 2 3 4 5 6 7

|  | Strongly Disagree | Somewhat Disagree | Disagree | Neither Disagree nor Agree | Agree | Somewhat Agree | Strongly Agree |
|--|-------------------|-------------------|----------|----------------------------|-------|----------------|----------------|
|--|-------------------|-------------------|----------|----------------------------|-------|----------------|----------------|

BC3. Collecting information is meaningful for me

|  |   |   |   |   |   |   |   |
|--|---|---|---|---|---|---|---|
|  | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
|--|---|---|---|---|---|---|---|

BC4. Collecting information gives me the feeling that data is needed for monitoring facility performance

|  |   |   |   |   |   |   |   |
|--|---|---|---|---|---|---|---|
|  | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
|--|---|---|---|---|---|---|---|

BC5. Collecting information gives me the feeling that it is forced on me

|  |   |   |   |   |   |   |   |
|--|---|---|---|---|---|---|---|
|  | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
|--|---|---|---|---|---|---|---|

BC6. Collecting information is appreciated by co-workers and superiors

|  |   |   |   |   |   |   |   |
|--|---|---|---|---|---|---|---|
|  | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
|--|---|---|---|---|---|---|---|

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

U1A. Diseases

- 1.
- 2.
- 3.

U1B. Immunization

- 1.
- 2.
- 3.

U1C. Why is population data of the target area needed?

- 1.
- 2.
- 3.

U2. Describe at least three ways of checking data quality.

- 1.
- 2.
- 3.

Dr. Akram, EDO Health, read a recent district report which showed that the data quality was 40% and felt very disturbed by it. "I need to take actions," he said aloud. 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 must have included in his action plan for improving data quality.

PSa. Definition of the problem

PSb. Major activities

- 1.
- 2.
- 3.
- 4.
- 5.
- 6.
- 7.
- 8.
- 9.
- 10.

### SELF-EFFICACY

This part of the questionnaire is about your perceived confidence in performing tasks related to health information systems. High confidence indicates that person could perform the task, while low confidence means room for improvement or training. We are interested in knowing how confident you feel in performing HMIS-related tasks. Please be frank and rate your confidence honestly.

Please rate your confidence in percentages that you can accomplish the HMIS activities.

Rate your confidence for each situation with a percentage from the following scale

|   | 0 | 10 | 20 | 30 | 40 | 50 | 60 | 70 | 80 | 90 | 100 |
|---|---|----|----|----|----|----|----|----|----|----|-----|
| SE1. I can check data accuracy  | 0 | 10 | 20 | 30 | 40 | 50 | 60 | 70 | 80 | 90 | 100 |
| SE2. I can calculate percentages/rates correctly                                    | 0 | 10 | 20 | 30 | 40 | 50 | 60 | 70 | 80 | 90 | 100 |
| SE3. I can plot data by months or years   | 0 | 10 | 20 | 30 | 40 | 50 | 60 | 70 | 80 | 90 | 100 |
| SE4. I can compute trend from bar charts  | 0 | 10 | 20 | 30 | 40 | 50 | 60 | 70 | 80 | 90 | 100 |
| SE5. I can explain findings & their implications                                    | 0 | 10 | 20 | 30 | 40 | 50 | 60 | 70 | 80 | 90 | 100 |
| SE6. I can use data for identifying gaps<br>and setting targets                     | 0 | 10 | 20 | 30 | 40 | 50 | 60 | 70 | 80 | 90 | 100 |
| SE7. I can use data for making various types<br>of decisions and providing feedback | 0 | 10 | 20 | 30 | 40 | 50 | 60 | 70 | 80 | 90 | 100 |

We would like you to solve these problems about calculating percentages, rates and plotting and interpreting information.

C1. 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



## 4 GUIDING PRINCIPLES

The PRISM Tools approach—issues and considerations for using this tool.

PRISM Tools are based on a holistic approach to health interventions. This approach acknowledges that:

- RHIS performance depends on a combination of technical, organizational, and behavioral factors.
- Each component and contributor in the system contributes to the whole system—and the whole is more than the sum of its parts.
- The causal influences of determinants in all three areas must first be understood in order to improve health system performance.

Data quality depends on human factors.

- When data collectors understand the importance of their contributions to the RHIS, they will be more committed to producing high-quality data and analysis.
- When decision-makers believe they have high-quality data at hand, they are more likely to use that data for evidence-based decisions.
- When people are empowered to make decisions and act upon them, they become champions for creating accountability and transparency through information sharing.

PRISM Tools identify issues related to these dimensions and help in designing ways to resolve them.

### **Health system managers and other stakeholders must have ownership**

An organization can apply PRISM Tools to discover ways to address its deficiencies, but investments in RHIS reform will require buy-in and commitment from many levels of the organization. So, it is important to include a broad base of RHIS and program staff at all levels of the health system in the assessment phase—and to engage senior managers in designing interventions and incorporating the PRISM process as a regular activity.

When an organization creates a sense of ownership, RHIS initiatives become the responsibility of each of its members. Ownership ultimately leads to the sustained investments required for continuous improvement.

### **PRISM assessments use a collaborative and iterative process**

*Collaborative*—program managers or other staff can adapt and use PRISM Tools to perform their own assessments. However, an external consultant (such as a MEASURE Evaluation representative) can be of great assistance as a facilitator.

*Iterative*—the PRISM process is iterative in two senses:

- The RHIS performance improvement process involves several stages: preparation (with stakeholder analysis), assessment/analysis, planning, action, and evaluation—and each phase involves meetings among implementers and key stakeholders.
- The PRISM process should be repeated every three, six, or 12 months to gauge the results of past interventions and start a new RHIS improvement cycle.

### **Triangulation and multiple data sources increase validity of the findings**

PRISM Tools use various data sources and methods to collect information:

- Self-administered questionnaires
- Observations
- Reviews of documents, office records, and RHIS feedback reports
- Information technology review

For instance, the RHIS Performance Diagnostic Tool and the RHIS Overview and Facility/Office Checklist use observations and interviews, supplemented by document research. The RHIS Management Assessment Tool uses key informant interviews and group discussions. The Organizational and Behavioral Questionnaire collects data via self-administered questionnaires.

The RHIS Performance Diagnostic Tool uses triangulation to visually represent factors that have multiple components. For example, data quality depends on accuracy, timeliness, and completeness. Data handling relies on data recording, processing, and transmission. Scores on these dimensions can be triangulated, which makes it easy to grasp the relationships, where gaps exist, and where interventions could have the most impact.

### **PRISM Tools are flexible and adaptable**

*Flexible*—the PRISM Tools were designed with the assumption that the organization has established a minimum set of RHIS processes, practices, and infrastructure. Since they address elements that would be common to most any RHIS, the tools are broadly applicable to diverse organizations. The tools can be used to assess both categorical and integrated information systems, in public- and private-sector RHIS frameworks.

*Adaptable*—users can modify the tools to match the socio-demographic characteristics of respondents in a given organization. Similarly, the content of a tool can be adapted to meet the specifics of the given situation. The collected data can be analyzed manually or entered in any data analysis program such as Excel, EpiInfo, etc.

PRISM Tools should be seen as working documents, and extended and revised as an RHIS develops or changes.

### **PRISM Tools encourage continuous learning and improvement**

PRISM Tools identify and encourage opportunities to develop the RHIS into a system not just for reporting statistics to higher authorities, but also for monitoring the performance of health systems.

“Are we doing a good job providing health services to our target populations?” “Are we doing better than last year?” “Did our new training programs have a visible impact?” When the RHIS can answer these questions, organizations can learn from their experiences, lobby more effectively for funding and other resources, and continuously improve health systems for the benefit of more people.



## 5 USE

For best results, PRISM Tools should be used regularly—and whenever specific needs emerge.

Since a health information system routinely produces data at regular intervals, PRISM Tools should be used routinely as well—especially the tools designed to assess data quality, use of information, and RHIS management support. These tools can be applied quarterly, every six months, or once a year. PRISM Tools can also be used to obtain a baseline assessment of an existing RHIS framework or for evaluating the RHIS reform process.

## 6 AUDIENCE

People involved in the collection, analysis, and use of data in routine health information systems.

PRISM Tools are used by four principal types of users:

### 1. MEASURE Evaluation representatives

- establish relationships with host-country contributors
- present the PRISM Tools questionnaires
- help adapt PRISM Tools for the host-country setting
- facilitate and mentor host-country staff as they conduct the RHIS assessment using PRISM Tools
- provide technical assistance in obtaining and interpreting information and designing intervention(s)
- use the PRISM Tools to monitor progress in RHIS performance and evaluate the impact of designed interventions

### 2. Host-country decision-makers, such as program managers and other key stakeholders

- participate in the RHIS assessment
- use the PRISM Tools to identify and address RHIS performance gaps
- institutionalize findings of the assessment to maintain and improve RHIS performance and decision making

### 3. A designated RHIS program manager

- selects the stakeholders to adapt and implement the PRISM Tools
- ensures appropriate representation and authority on the team with individuals who can champion decisions in their areas of influence
- monitors the development, use, and updating of the tools

### 4. RHIS specialists or consultants

- contribute their knowledge in adapting the tools
- learn, use, and promote the tools
- document the experience using PRISM to assess the RHIS framework, implement improvements, monitor performance, and evaluate progress—to contribute to the greater knowledge base of best practices

## 7 FIELD APPLICATION

### **Uganda—Evaluation of the PRISM tools using 2004 and 2007 survey data**

Aqil, A., Hotchkiss, D., Lippeveld, T., Mukooyo, E., Asimwe, S. (2008); Do the PRISM Framework Tools Produce Consistent and Valid Results? A Uganda Study; Working Paper Draft; National Information Resource Center, Ministry of Health, Uganda, MEASURE Evaluation, USAID, March 14, 2008

### **Côte d'Ivoire, 2008—Assessment of the health information system in Côte d'Ivoire**

Gnassou L, Aqil A, Moussa T, Kofi D, Paul JKD. 2008. HMIS Evaluation Report. HIS Department, Ministry of Health, Côte d'Ivoire; MEASURE Evaluation, USAID.

### **China, 2008—Assessment of the health information system in Yunnan and Guangxi provinces, China**

Aqil, A. Lippeveld, T. Yokoyama, R. (2007) "HMIS Baseline Assessment in Yunnan Province using PRISM Tools", MEASURE Evaluation, Yunnan CDC, China, USAID; Aqil, A. Lippeveld, T. Yokoyama, R. (2007) "HMIS Baseline Assessment in Guangxi Province using PRISM Tools," MEASURE Evaluation, Guangxi CDC, China, USAID.

### **Pakistan, August 2002 and October–December, 2005**

National HMIS Cell, Ministry of Health, Pakistan. MEASURE Evaluation carried out a health management information system (HMIS) situation analysis. This analysis enabled MEASURE Evaluation to develop a training manual for district managers on use of information. In 2006, 250 district managers in 10 districts received training using this manual.

## 8 EXAMPLE APPLICATION

Adapted from Strategic Information Assessment in Swaziland—MEASURE Evaluation, January 2006 (*note: The Information Use Maps included here are not the actual maps produced in Swaziland*).

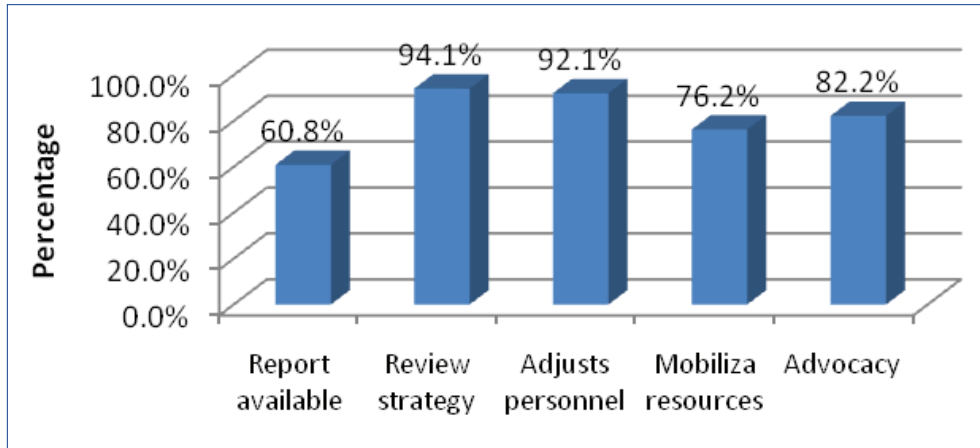
In January 2010, the State of Guanajuato, Mexico conducted the PRISM assessment. The findings from this assessment were used by the Guanajuato State health officials to identify strengths and weaknesses of the HMIS system and develop interventions for strengthening the SINAIS.

The results presented below are selected findings from the RHIS Performance Diagnostic Tool and are specific to the use of information produced from the HMIS. This excerpt is intended to illustrate how the PRISM tools assess the use of information. For the full assessment report see <http://measureevaluation.org/tools/data-demand-use>.

The use of information was assessed using two criteria. First, the availability of any kind of report (feedback, quarterly, health services, etc.) and reviewing them for use of information. Second, by observing records of facility meetings on discussions of HIS findings and decisions made based on those discussions.

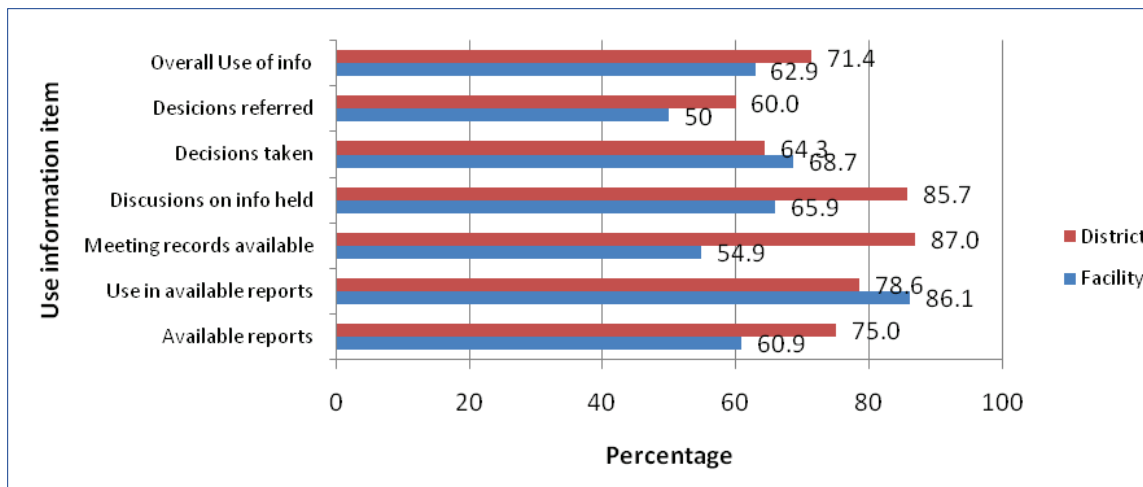
Sixty-one percent (61%) of the facilities (Figure 3) showed documentation on holding meetings. Of those facilities, 41% discussed and made decisions using HIS information, while in 27% of the facilities, decisions were referred to a higher level for action. Sixty-four percent of the facilities had reports (feedback, monthly, quarterly, others). Out of those facilities, reports showed decisions for strategy review (94%), adjust personnel (92%), advocacy (82%), and mobilizing resources (76.2%). The district level showed a better use of data than the facility level when making decisions. However, the referral to the higher level raises questions on their ability or decision power.

**Figure 3:** Use of information for specific decisions in available reports in facilities (n=101).



About 55% of the facilities had meeting records of the meetings held in the last three months (Figure 4). The records from those facilities showed that 66% of the facilities have discussed HIS findings and that 69% made decisions after discussion of the findings. It also showed that 50% of the facilities referred some select problems to higher levels for assistance. This could mean that they are trying to solve most problems at the local level and frequently request assistance for problems for which they have no control.

**Figure 4:** Percentage distribution of use of information in available reports and meetings by facility and district (n=166, n=8).



The use of information at the district level meetings was higher than found at the facility level, indicating that more information use for decision making occurs at the district level. However, referral of decisions at the higher level indicates that the decisions are of a particular nature that they need approval from a higher level or that the district does not have much decision power.

## 9 IMPLEMENTATION CHECKLIST

Five steps for using PRISM Tools to assess an RHIS.

This checklist can be photocopied to use as a reference for the process steps. Following this checklist will help ensure that a systematic approach and best practices have been followed.

### Step 1—Identify the need

This step relies on communication with MEASURE Evaluation representatives in-country.

- 1.1—Identify a potential opportunity. Communicate with MEASURE Evaluation colleagues and host-country counterparts to be alerted to opportunities for implementing the PRISM Tools. Sometimes the opportunity becomes clear when MEASURE Evaluation is asked to provide assistance in assessing or improving an existing health information system.
- 1.2—Determine how PRISM Tools would be used for this need. Will it be used to reform RHIS, or as part of ongoing supervisory mechanisms to fine-tune day-to-day operation of an existing RHIS? This perspective will influence certain aspects of the process, such as which part of (or all of) the PRISM Tools will be used, which stakeholders should be involved, and what types of actions will be recommended.

For cases where all four PRISM Tools will be used, it is best to use them in this order:

1. RHIS Performance Diagnostic Tool
2. RHIS Overview and Facility/Office Checklist
3. Organizational and Behavioral Questionnaire
4. RHIS Management Assessment Tool

### Step 2—Perform pre-assessment planning

- 2.1—Determine the organization's readiness to improve its RHIS. An RHIS improvement plan could entail small interventions in specific areas—or a major overhaul of the system. Even if the intervention is modest (small but important actions should be considered before attempting a large-scale project), the target organization must be ready to engage in the process. That means the organization will have:
  - Leaders who will champion improvements.
  - The necessary resources to move forward.
  - A strategic vision that embraces a culture of information.
  - People who can implement (and institutionalize) RHIS improvements.

- ❑ 2.2—Assemble a core team of stakeholders. A formal or informal stakeholder analysis can help in identifying the relevant stakeholders, and their level of interest and availability. Having identified these individuals, one or more teams need(s) to be organized to carry out the assessments and to design and implement interventions.
- ❑ 2.3—Identify key informants to interview. Even if good knowledge of local RHIS practices is believed to exist, it is recommended that interviews with key stakeholders in RHIS management be conducted. Stakeholder analysis will help in identifying the right people to interview. A sample of people who can offer different perspectives about the RHIS such as managers, decision-makers, and health facility staff should be selected.
- ❑ 2.4—Modify the tool(s) as appropriate for the application. The statements and questions included in the tool should be reviewed and revised to align with the RHIS setting. Some statements and stages described in the tools might not be relevant. For example, the management assessment tool assumes relatively low availability and usage of computers in health system management. If computers are prevalent in the RHIS being assessed, focus might be placed on the status of computer-related training or Internet access.

### **Step 3—Assess and analyze current RHIS performance**

In this step, the PRISM leader or team would:

- ❑ 3.1—Use the PRISM Tools to assess the situation of RHIS performance. Detailed instructions for using each PRISM Tool, scoring and analyzing the results are found in the document, “Overview of the PRISM Tool Package,” available from MEASURE Evaluation.
- ❑ 3.2—Analyze the results and interpret the information. It can be helpful to have the RHIS improvement team complete analysis worksheets as a group, or individually, and present their scores in a group. Either way, any large differences in scoring can be reviewed and resolved.
- ❑ 3.3—Build consensus on the present situation and directions for improvement. Working with key stakeholders, the RHIS improvement process includes development of a set of recommendations to address issues, weaknesses, and problems—or build on identified strengths.
- ❑ 3.4—Document and disseminate findings. Results of the assessment and recommendations should be communicated to various stakeholders as appropriate. For example, some details of findings and recommendations might be communicated in internal meetings, only to those individuals directly involved in RHIS management. Other findings may be displayed for all staff members.

### **Step 4—Define a plan for reaching the desired level of RHIS performance**

Given the analysis created in the previous step—and considering the overall goals of the organization—the PRISM leader/team will:

- Define strategies and activities to achieve the improvements identified in Step 3.
- Establish objectives along the way to achieve these goals.
- Assign responsibilities and timelines for each objective.
- Write and communicate an action plan.

The perspectives of RHIS managers and health service managers should be solicited in the scoring process. Their involvement will increase their sense of ownership in the results, which in turn may lead to stronger commitment to implement the recommended improvements.

### **Step 5—Implement the plan and monitor progress**

The RHIS improvement team will coordinate activities and monitor progress throughout the planning and implementation of improvements—and will evaluate the success of the plan. PRISM Tools can be used for evaluating the interventions.

## **10 CONCLUSION**

More effective health information systems lead to better health status for more of the population.

The ultimate goal of a routine health information system is to produce meaningful insights about the performance of the health system.

- “Has our HIV/AIDS pre-test counseling been effective in increasing the number of people willing to be tested?”
- “How does the incidence of malaria in our district compare with others? With last year?”
- “Have we reached more pregnant women with ante-natal care?”

Routine health information should provide credible answers, which will guide the most effective decisions about resources, processes and programs. However, the RHIS process often falls short. There may be a deficit in data quality, or a lack of channels to share and use good data, or little incentive to even care about data.

This is a scenario in which the PRISM Tools can prove invaluable. These four tools enable an RHIS improvement team to:

- Assess the performance of a routine health information system.
- Identify technical, behavioral and organizational determinants of RHIS performance.
- Design and prioritize interventions to improve RHIS performance.
- Monitor and evaluate data quality and use over time.

The result is a process of periodic or cyclic improvements that produce a sequence of benefits:

- Better systems produce more complete, accurate and timely data.
- Better data are trusted by decision-makers for evidence-based decisions.
- Evidence-based decisions lead to more effective health programs.
- Stronger health programs improve the health status of a population.

Furthermore, the PRISM process encourages stakeholders at all levels to think strategically and holistically about the value of each role/component of the RHIS, and to adopt a sense of ownership in improving those elements within their span of control.

## ACKNOWLEDGMENTS

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