

Working Paper

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**Situation  
Analysis of  
Infectious  
Disease  
Surveillance in  
Two Districts in  
Tanzania, 2002**

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*August 2003*

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Partners for Health Reform*plus*



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# Situation Analysis of Infectious Disease Surveillance in Two Districts in Tanzania, 2002

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- ▲ *Delivery of quality services by health workers.*
- ▲ *Availability and appropriate use of health commodities.*

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# Abstract

In developing countries, successful implementation of an Infectious Disease Surveillance (IDS) system should result in staff at multiple levels, starting with the health facility, being capable and motivated to collect and use surveillance information for public health decisions and actions in both outbreak and routine situations. In order to inform the selection and design of strategies to strengthen IDS in Tanzania, a situation analysis in two districts was conducted that focused on examining systems and behavioral considerations as well as technical aspects of the disease surveillance system. The situation analysis was conducted by members of the IDS project team of the National Institute for Medical Research, with input from the Partners for Health Reform<sup>plus</sup> project, the CHANGE Project, and Centers for Disease Control and Prevention. Approximately two weeks of fieldwork were required for data collection per district. The situation analysis was conducted in Babati district in April 2002 and in Dodoma Rural district in August 2002.

The methodology included a quantitative survey at the district level; in-depth interviews with the district health management teams, district officials, and health workers; and focus group discussions with community leaders and members. The results identified a number of barriers and enabling factors important to effective and sustainable implementation, including normative, motivational, organizational, and participatory issues in addition to knowledge and skills. As a result of these findings, a series of interventions was developed to address 1) the Integrated Disease Surveillance and Response (IDSR) system design issues, 2) the reduction of contextual and organizational barriers, 3) technical competence related to IDSR at district and facility levels, 4) health personnel motivation and perceived value for IDSR activities, and 5) engagement of appropriate stakeholders for support and involvement in IDSR.

As the effects of such factors and their related interventions on IDS are measured in the future, the development and use of simplified tools for assessing and addressing the key technical, systems, and behavioral factors will be valuable for IDS strengthening in other developing countries.

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# Acronyms

|                           |  |
|---------------------------|--|
| <b>AFP</b>                | Acute Flaccid Paralysis  |
| <b>CCHP</b>               | Comprehensive Council Health Plan  |
| <b>CDC</b>                | Centers for Disease Control and Prevention   |
| <b>CHMT</b>               | Council (District) Health Management Team  |
| <b>DMO</b>                | District Medical Officer   |
| <b>IDS</b>                | Infectious Disease Surveillance  |
| <b>IDSR</b>               | Integrated Disease Surveillance and Response   |
| <b>IDWE</b>               | Infectious Disease Week Ending   |
| <b>NIMR</b>               | National Institute for Medical Research  |
| <b>MOH</b>                | Ministry of Health   |
| <b>MTUHA</b>              | <i>Mfumo wa Taarifa na Uendeshaji Habari wa Afya</i> (Tanzania Health Management Information System) |
| <b>PHR<sub>plus</sub></b> | Partners for Health Reform <sub>plus</sub>   |
| <b>SCD</b>                | Standard Case Definitions  |
| <b>WHO/AFRO</b>           | World Health Organization/Regional Office for Africa   |
| <b>USAID</b>              | United States Agency for International Development   |



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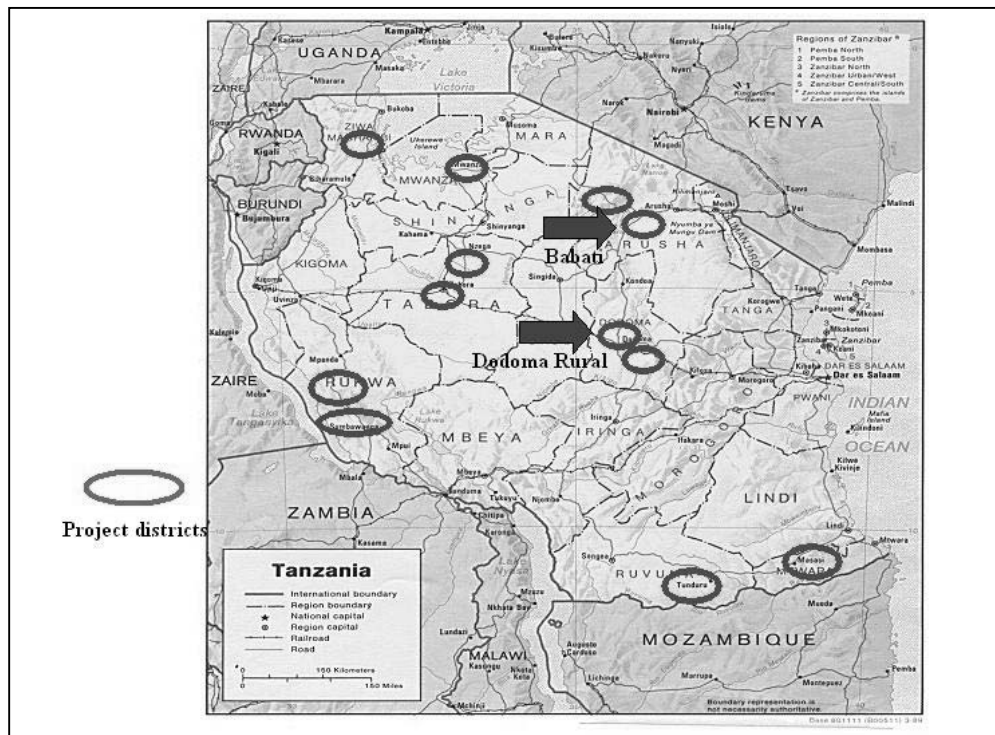


# 1. Introduction

## 1.1 Background of IDSR in Tanzania and IDSR Strengthening Project

Tanzania has been a leader among African countries to adopt the Infectious Disease Surveillance (IDS) system using the Integrated Disease Surveillance and Response (IDSR) strategy, being the first to conduct an assessment and develop a plan of action in 1998. This was followed by the development of a workplan for integrating and strengthening disease surveillance, establishment of an IDSR Task Force (2000), preparation of the *National Guidelines for Integrated Disease Surveillance and Response*,<sup>1</sup> development of laboratory-networking guidelines (2001), and adaptation and approval of the World Health Organization Regional Office for Africa (WHO/AFRO) district analysis book (2002). The U.S. Agency for International Development (USAID) is supporting the Ministry of Health's (MOH) efforts by providing technical support through the Partners for Health Reform<sup>plus</sup> (PHR<sup>plus</sup>) project and its local implementing agency, the National Institute for Medical Research (NIMR), the CHANGE Project for behavior change technical assistance, and the U.S. Centers for Disease Control and Prevention (CDC) for strengthening linkages with the laboratory.

Figure 1: Map of Tanzania



<sup>1</sup> Epidemiology and Disease Control Section, Ministry of Health, Tanzania. 2001. *National Guidelines for Integrated Disease Surveillance and Response*. Dar-es-Salaam. October.

The USAID-supported Infectious Disease Surveillance project was designed to help develop and strengthen a flexible and sustainable disease surveillance and response system focused at the district level. This system will build capacity to provide needed information for the execution of prompt, evidence-based disease control and prevention decisions and actions that reduce disease burden and promote the efficient use of human and material resources. The efforts in the project's 12 districts<sup>2</sup> are designed to facilitate the introduction of the IDSR strategy to strengthen surveillance and response in the other districts in Tanzania and will also provide useful experiences to share with other countries. The lessons learned will focus on mechanisms for improving data quality, decision making, and response, while reinforcing a "culture of information" in which there is a demand for information as the basis of decision making and where stakeholders value information enough to ensure its quality and use.

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## 1.2 Situation Analysis Purpose and Objectives

This situation analysis was one of the first activities undertaken by the project. Whereas the 1998 IDS assessment looked at the various separate information systems in existence from the national to facility levels and aggregated data to provide a nationwide overview, this situation analysis focused on continuing operational issues related to surveillance and response at the district, facility, and community levels. It focused on gathering information about the strengths, weaknesses, opportunities, and threats to IDSR implementation, and on understanding what is needed to strengthen implementation of the national IDSR strategy at those levels. The situation analysis was also intended to help achieve focus for the project. In Tanzania, IDSR entails actions at five different levels (from community to central government) to address 13 priority diseases through seven broad surveillance functions. The situation analysis served to help prioritize and categorize the many issues, based on the perspective of those responsible for carrying out IDSR tasks.

The situation analysis was conducted in two initial project districts, Babati District in Manyara Region, and Dodoma Rural District in Dodoma Region.

The specific objectives of the situation analysis were to:

- ▲ Identify key barriers and constraints to IDS functioning;
- ▲ Identify positive or enabling factors for IDS functioning;
- ▲ Assess current "performance" of the IDS system (including baseline monitoring and evaluation indicators);
- ▲ Identify priority actions for IDS strengthening in initial districts, including those that may have wider implications beyond these districts;
- ▲ Engage Council Health Management Teams (CHMT) and other key persons in IDSR implementation; and,
- ▲ Focus project and CHMT work planning in IDS strengthening.

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<sup>2</sup> These 12 districts represent all six zones, and eight of the 20 regions. The districts are: Babati, Mbulu, Dodoma Rural, Mpwapwa, Masasi, Tunduru, Nkasi, Sumbawanga Rural, Igunga, Tabora Urban, Muleba, and Mwanza Urban.



## 2. Situation Analysis Methodology

The situation analysis team collected qualitative and quantitative data, using three main mechanisms:

- ▲ **A participatory mapping exercise** to identify key activities and interrelationships at community, facility, and district levels was carried out with CHMT members in order to identify key functions and tasks and understand gaps in performance. The mapping process started by outlining performance expectations at district and facility levels, based on the key IDS functions; these became the working guide against which to assess current performance and identify key areas for improvement. While the Tanzania IDSR guidelines provide essential information on disease surveillance, they do not specify the tasks required by each cadre of health personnel; hence there was a need for the mapping exercise to attain a common understanding of IDS job responsibilities.
- ▲ **Qualitative data** on what those responsible for IDSR tasks do, why, and their perceptions of surveillance were obtained through individual interviews with health staff (at regional, district, and facility levels) and selected non-health district council members, and focus group discussions with community members and leaders. Eight of the 36 health facilities in Babati and 13 of the 72 health facilities in Dodoma Rural were visited. The purposive sample was selected to represent different types of facility (hospital, health center, and dispensary), as well as other criteria: environmental/geographic variations, experience (or not) with outbreaks, distance to reach the district, and at least one non-governmental facility per district.
- ▲ **Quantitative data** on performance and organizational context were obtained mainly through document reviews in the CHMT office. This data includes surveillance performance (e.g., completeness and timeliness of reporting to district and regional levels), service statistics (e.g., immunization coverage), and management information (e.g., staffing, telecommunications capacity, and frequency of supervision visits). Where appropriate, these data were broken down by facility. In Dodoma Rural, an observational checklist was developed to collect additional quantitative information at the facility level about what kinds and quality of data are recorded and where. The quantitative data provided baseline measurements for these two districts.



## 3. Situation Analysis Findings

### 3.1 Desired Performance for IDSR at District and Facility Levels

To determine what was working and not working in the two districts, it was necessary to know expectations for IDSR performance. The mapping exercise resulted in an explicit listing of desired tasks for district and facility staff and identified capacity, behavioral, and organizational factors that hampered their execution. The exercise helped CHMT and other personnel develop a common understanding of the IDSR process and expectations, and started the process of having the CHMT critically examine what would help and hinder IDSR operationalization. This process was particularly valuable in that it also created a sense of ownership and engagement on the part of the CHMT. The IDSR key steps/functions and desired performance are detailed in Tables 1 and 2. With input from CHMTs and facility staff, each of the steps was further deconstructed into specific tasks.

It should be recognized that the development of performance expectations is an iterative process and that the expectations may be refined with an increased understanding of how the IDSR system currently functions and how it should ideally function, given the local context.

**Table 1: Expectations for IDSR Performance at District Level**

| Steps  | Desired Performance  |
|--|--|
| <b>A. Decision to investigate/respond</b>  | <ul style="list-style-type: none"> <li>▲ Rapid decision to investigate is made based on incoming information</li> <li>▲ Rapid decision to communicate to appropriate person or higher level is made</li> </ul> |
| <b>B. Communicate to appropriate person or higher level</b>                          | <ul style="list-style-type: none"> <li>▲ Information is rapidly communicated to appropriate person or higher level</li> </ul>  |
| <b>C. Compile weekly summary report and send to region</b>                           | <ul style="list-style-type: none"> <li>▲ Completed weekly report is communicated to region on time</li> </ul>  |
| <b>D. Investigate (outbreak investigation)</b>                                       | <ul style="list-style-type: none"> <li>▲ District performs outbreak investigation according to disease-specific outbreak investigation protocol</li> </ul>   |
| <b>E. Investigate (case confirmation)</b>  | <ul style="list-style-type: none"> <li>▲ District sends specimens to appropriate laboratory</li> <li>▲ Cases of suspected outbreak are confirmed</li> </ul>  |
| <b>F. Outbreak response</b>  | <ul style="list-style-type: none"> <li>▲ Appropriate treatment and preventive measures to control suspected or confirmed outbreak are taken</li> </ul>   |
| <b>G. Send feedback to site of outbreak/communicate outbreak to border districts</b> | <ul style="list-style-type: none"> <li>▲ Feedback on outbreak is communicated to site of outbreak and districts at risk</li> </ul>   |

| Steps   | Desired Performance   |
|---|---|
| <b>H. Compile monthly summary report and send to region</b> | <ul style="list-style-type: none"> <li>▲ Summary data are updated based on information from laboratory data and treatment camps</li> <li>▲ Completed monthly report is communicated to region</li> </ul>  |
| <b>I. Analyze data</b>                                      | <ul style="list-style-type: none"> <li>▲ Data are analyzed according to analysis protocols and needs</li> </ul>   |
| <b>J. Take evidence-based action</b>                        | <ul style="list-style-type: none"> <li>▲ Address routine IDSR decision making (adjusting resources, strategies, programs)</li> <li>▲ Plan</li> <li>▲ Monitor operations</li> <li>▲ Address quality of incoming data</li> <li>▲ Identify additional inquiries (requiring further study)</li> <li>▲ Carry out advocacy</li> </ul> |
| <b>K. Give feedback to stakeholders</b>                     | <ul style="list-style-type: none"> <li>▲ Feedback of disseminated analyzed data and actions provided to stakeholders, including facilities and communities</li> </ul>   |

**Table 2: Expectations for IDSR Performance at Facility Level**

| Steps   | Desired Performance  |
|---|--|
| <b>A. Identify or confirm diagnosis</b>   | <ul style="list-style-type: none"> <li>▲ Make proper diagnosis (based on standard case definitions and laboratory results)</li> </ul>                                    |
| <b>B. Record presumptive/confirmed diagnosis</b>                                  | <ul style="list-style-type: none"> <li>▲ Record diagnosis completely and accurately on register</li> </ul>   |
| <b>C. Diagnosis/outbreak confirmation from laboratory</b>                         | <ul style="list-style-type: none"> <li>▲ Take specimen(s) (at laboratory or by clinician)</li> </ul>   |
|   | <ul style="list-style-type: none"> <li>▲ Test specimen(s)</li> </ul>   |
|   | <ul style="list-style-type: none"> <li>▲ Confirm diagnosis</li> </ul>  |
|   | <ul style="list-style-type: none"> <li>▲ Confirm outbreak using standard thresholds</li> </ul>   |
| <b>D. Treat/refer case</b>  | <ul style="list-style-type: none"> <li>▲ Manage case appropriately for presumptively or definitively diagnosed case</li> </ul>   |
| <b>E. Record outcome</b>  | <ul style="list-style-type: none"> <li>▲ Record outcome for inpatients at discharge</li> </ul>   |
| <b>F. Communicate diagnosis for outbreak-prone diseases to district/community</b> | <ul style="list-style-type: none"> <li>▲ Communicate to district office in a timely manner potential diagnosis for outbreak-prone disease based on thresholds</li> </ul> |
| <b>G. Participate in outbreak investigation and response and case treatment</b>   | <ul style="list-style-type: none"> <li>▲ Participate and collaborate with district (teams) in case investigation and case treatment</li> </ul>                           |
| <b>H. Compile weekly summary data</b>   | <ul style="list-style-type: none"> <li>▲ Complete weekly summary reports on time</li> </ul>  |
| <b>I. Compile monthly summary data</b>  | <ul style="list-style-type: none"> <li>▲ Complete monthly summary reports on time</li> </ul>   |
| <b>J. Report to district</b>  | <ul style="list-style-type: none"> <li>▲ Communicate summary reports to district on time</li> </ul>  |

| Steps  | Desired Performance   |
|--|---|
| <b>K. Analyze data</b>   | ▲ Analyze data according to protocol and needs of facilities  |
| <b>L. Use analyzed data for action</b>                                 | ▲ Be aware of disease trends and patterns within facility catchment area<br>▲ Determine needs for facility and outreach efforts |
| <b>M. Feedback analyzed data and outbreak information to community</b> | ▲ Feed back information to communities and outreach/community health workers  |

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### 3.2 The District Context and Staff Perceptions of Surveillance

The two districts have many features in common, but also many differences that can affect performance of surveillance responsibilities. Dodoma Rural is a much larger district, geographically and demographically. Babati has fewer facilities, but a larger proportion of non-MOH facilities than Dodoma Rural. Both districts are impeded by insufficient staffing, poor communications infrastructure, and limited access to facilities, due to both difficult geographic conditions and limited transport.

In 2001, the Babati CHMT organized a training workshop on IDSR for approximately 40 facility in-charges, at which copies of parts of the guidelines were distributed. Since that training the CHMT had been using the IDSR weekly reporting form, but the IDSR monthly form was not in use. Dodoma Rural had not yet received any formal training in IDSR, and CHMT members did not have copies of the national IDSR guidelines for distribution to lower-level health facilities.

During in-depth interviews with health facility and laboratory staff in Dodoma Rural and Babati, health workers described varying levels of understanding of the purpose of surveillance; they tended to view it only as related to outbreaks. There was also variability in the perception of their roles in surveillance. Laboratory staff cited laboratory duties; some clinicians cited health education, treatment, and prevention; only a few mention reporting. Responses indicate that the link between surveillance and disease control programming was not well understood.

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### 3.3 Current Performance of the Surveillance and Response System

An effective surveillance and response system can be viewed as achieving three major results:

- ▲ Availability of quality data
- ▲ Drawing appropriate conclusions from the data
- ▲ Using information to take appropriate action

The following sections will detail the findings of the situation analysis in each of these areas.

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### 3.3.1 Availability of Quality Surveillance Data in Babati and Dodoma Rural

#### *Ability of the system to detect cases in the community*

Currently the starting point for the IDSR system is when a case presents at the health facilities or otherwise comes to the attention of health workers. However, discussions with community members, health staff, and CHMT members in both Babati and Dodoma Rural districts indicate that a significant number of cases do not arrive at health facilities for treatment. As a result, the current mechanism for detection may not provide full or representative data of disease burden or trends in the community.

During recent outbreaks of cholera and measles (1999 and 2000) in Babati, some case information was recorded, but staff recognized that probably not all cholera cases were registered, as people continued to seek treatment from traditional healers.

Community-level standard case definitions have not been put into effect in either district. (In Dodoma, facility staff did not have copies of facility-level standard case definitions.)

During recent outbreaks, community leaders played an important role. They reported any unusual event to health facility staff and worked hand-in-hand with health personnel in identifying the affected households during outbreak investigations. They also participated in the organization of treatment camps and enforcement of by-laws. In Dodoma it was reported that community leaders supervised the burial of cholera victims. Religious institutions worked closely with the health personnel in informing people about the outbreaks, including the various measures of prevention.

#### *Identification and recording of cases for the 13 IDS priority diseases*

Health care providers are supposed to record all case information in the patient register and apply the standard case definitions (SCD) when recording diagnoses. In Dodoma Rural, no one had received the SCDs, whereas Babati staff attending the IDSR training had received copies. In both districts, most providers interviewed had a fair clinical understanding of the 13 IDSR diseases,<sup>3</sup> but this level of comprehension does not support sufficient standardization for identifying cases and recording information from a surveillance point of view.

In terms of routine recording of patient information into the national Health Management Information System (MTUHA) registers, some providers had not received any training on their MTUHA responsibilities and there was no consistent way of recording diagnoses (e.g., diagnosis vs. etiologic agent vs. symptoms). In addition, the standard register does not accommodate recording of outcomes or modifications in diagnosis resulting from laboratory testing, and not all providers record the information at the time of the consultation. Many providers complained about the time required to record all the MTUHA information properly. Some health workers indicated understanding of the utility of recording data during outbreaks, but not of reporting on non-epidemic diseases.

Provider access to laboratory confirmation of non-epidemic diseases is fairly limited in most facilities, due to lack of laboratory personnel, equipment, or adequate supplies. In both districts,

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<sup>3</sup> Acute flaccid paralysis (AFP), cholera, CS meningitis, diarrhea, dysentery, malaria, measles, neonatal tetanus, plague, pneumonia, rabies, typhoid fever, yellow fever

usefulness of lab results was hindered by delays and lack of confidence in the results (especially for malaria and typhoid).

### ***Compiling and reporting of facility-level information***

Health facilities are required to immediately notify the CHMT when they suspect an outbreak, provide weekly reports for seven outbreak-prone diseases, and report on all 13 diseases in a monthly IDSR report. While there is a good understanding of the need to notify the CHMT and commitment to ensure quick communication of potential outbreaks, some providers have limited knowledge of thresholds that would trigger immediate notification or action.

Some routine reports are being collected during supervision and outreach visits, but these are irregular. In Babati less than 40 percent of facilities have access to radio calls or telephones to facilitate the communication of this information. In the four months after the new IDSR weekly report form was introduced, only 50 percent of government facilities turned in 50 percent or more of the required weekly forms, and not all government facilities were submitting the monthly form. In addition, some private facilities did not submit even a single infectious disease week ending (IDWE) report and others had no reporting forms.

Dodoma Rural district has established an alternative system for submitting IDWE reports, which was used by 28 of the 72 facilities. Fourteen are those with radio calls with staff standing by around the clock and 14 are facilities along major roads. Other facilities are not required to do weekly zero reporting but use radio calls at the nearest facility when there is a case to report. In Dodoma Rural, the timeliness of weekly reporting from facility to district improved from 11 percent to 67 percent during 2002, through implementation of a negative incentive mechanism. Monthly reporting coverage to the region averages 89 percent.

Many facility staff in both districts indicated that compiling and submitting weekly and monthly reports was burdensome. In some facilities, however, personnel work together as a team to complete their reports. In Dodoma, facility staff noted that the data compilation process delays reporting. In neither district were tally sheets consistently used.

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### **3.3.2 Ability of CHMT to Draw Appropriate Conclusions from Data**

#### ***Analysis and interpretation of IDSR data***

There was little evidence in either district that IDSR data was analyzed at district or facility levels. In Dodoma Rural, simple analyses are carried out at some facilities but skills and appreciation of the purpose of analysis vary. At the district level in Babati, some limited place and person analysis was done during the recent cholera outbreak, but lack of clear formats and expectations has led to analysis being given a low priority. In fact, districts do not have clear protocols and expectations for IDSR data analysis. The IDSR guidelines contain information on analysis but are not clear on when and how often such analysis is necessary.<sup>4</sup> Denominators are not standardized and are a mix of census projections and direct counts. Little or no analysis of laboratory data is done, and it is not linked with other surveillance information.

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<sup>4</sup> In Babati the national guidelines have been distributed and staff have been trained, but the guidelines are not available in Dodoma Rural.

One exception in Dodoma district is the development of a malaria database to determine action thresholds for 71 facilities. This activity is under the auspices of the Ministry of Health's National Malaria Control Programme. At the time of the situation analysis, the programme was in a development stage, but weekly monitoring of malaria cases and deaths at the facility level is now operational (January 2003).

There are computers in both district offices, but they are not used for analysis. Available computers are generally used for secretarial services, especially in Babati. The majority of health personnel lack computer skills, especially in relation to data processing and analysis software programs.

CHMT staff do monitor completeness and timeliness of reporting in Dodoma and Babati, although capability varies.

### ***Investigation and confirmation of outbreaks***

Recent experience with cholera and measles outbreaks indicate that investigations were carried out quickly in both districts. In Dodoma Rural, they reported that they conducted daily meetings, provided adequate supplies in time, made daily visits to affected sites, and engaged community leaders in identifying sources of infection. Most staff at facilities in Dodoma Rural know their roles during outbreaks and respond immediately while waiting for a response from the CHMT, with whom there is a good relationship on the investigation function.

In both Dodoma Rural and Babati, recent cholera outbreaks were laboratory-confirmed. In Babati, relatively good access to a well-equipped regional laboratory meant that confirmation and notification of results was quick. Specimen collection kits for cholera were available through Doctors Without Borders, but their continued availability is uncertain. District staff were not capable of preparing transport media for cholera specimens, which is linked with lack of protocols for this. Regional laboratorians mentioned that information accompanying specimens in general is inadequate and no standard form exists. For both districts, there were cases of poor quality or poorly labeled specimens arriving at the laboratory for testing.

Each district has someone responsible for all laboratory issues to ensure adequate specimen collection, supplies, procedures, and recording of results related to outbreak confirmation. The role of laboratory personnel in outbreak confirmation and surveillance has been discussed at workshops, but it was noted that there was no coordination. For a measles outbreak in Babati, no results or feedback on the sample were ever provided back to the District Medical Officer from the national reference laboratory. The laboratory at Mvumi private hospital in Dodoma has capability for meningitis, cholera, and typhoid confirmation, but has not been asked to participate in laboratory confirmation of outbreaks in the district. Laboratory use guidelines limit such networking; districts are required to send specimens to regional laboratories and nowhere else.

Neither district had standing epidemic preparedness, investigation, or response teams. Babati lacked guidance on forming an investigation team and writing an outbreak report. Neither Babati nor Dodoma Rural CHMTs are currently using Form 10 (Outbreak Investigation Form).

Babati district appeared to have some difficulty initially in accessing funds from local government for the outbreak investigation. Dodoma lower-level facilities have the option of obtaining funds from cost sharing, as well as from the village government. However, they often experienced difficulties in accessing them. In Babati, they had problems in getting reimbursement for specimen transport to labs.



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### 3.3.3 Ability of CHMT to Take Appropriate Action

#### *Organizing and implementing response measures*

Experience in both districts with recent outbreaks of cholera, and measles in Babati, indicated that the CHMTs and facility staff were reasonably knowledgeable about the actions needed and used appropriate mechanisms to gain community involvement in control and prevention measures. However, CHMT staff indicated that there were no clear protocols for epidemic response, sufficient funding for the control of outbreaks is not always available, and they did not know the exact process and procedures for accessing central emergency and disaster funds. They did note that if the outbreak is large, there is communication between the district, region, and the disaster unit in the MOH in order to access funds.

The CHMT felt they had good communication with council/district leaders. During the last cholera outbreak, all district officials and regional leaders were informed. The District Planning Officer indicated that some additional funds could be tapped, and it is necessary to increase cooperation between administrative and executive staff for community sensitization. In addition, the District Commissioner needs to be involved in sensitization but lacks funds. In both districts, community leaders were responsible for mobilizing communities and enforcing bylaws. District and facility staff did indicate that there was some resistance from the community to various control measures, that compliance was not as good or as quick as they would have liked, and that communities seem to feel less urgency with cholera now than they did when it first struck the districts. Traditional healers do not get involved or are slow to do so.

With regard to response to non-epidemic diseases, district and facility staff in Babati noted less effective collaboration with some ward and village leaders and other sectors. In Dodoma Rural, facility staff say they use data for identifying needs, but they were rather general about which data and how they were used.

#### *Providing feedback to stakeholders on surveillance and response*

Currently there are no formal mechanisms used for routine feedback to stakeholders, including to local leaders and the community related to IDSR diseases or response efforts, nor to staff on their performance related to surveillance and response. The only exception in Babati appears to be the Expanded Program on Immunization, where some facility staff share information on immunization coverage during Ward Development Committee meetings.

Monthly supervision in Babati has been irregular in the past two years (2000-2001). Twenty percent of district facilities had received no visits during those two years and no facility received more than three visits per year. In 2001, 61 percent of facilities received at least one visit (76 percent of government facilities, 35 percent of private facilities). Dodoma Rural was more successful in ensuring adequate frequency of supervision, with a median of six visits per year per facility.

Community leaders and district and facility staff in both districts perceive feedback as valuable, and district staff recognize that they should be providing feedback. There are different perceptions about what constitutes feedback in Dodoma Rural, as facility staff says they want written feedback from the CHMT on disease reporting, but the CHMT feels they are providing feedback because they give a written copy of supervision reports to the health facility. In addition to this, facilities expressed the need for feedback on the analyzed data that shows trends and patterns for different diseases in their districts. A similar situation exists at the community level in Dodoma Rural, where the

community wants detailed information during an outbreak and feels there is insufficient feedback and follow-up after the outbreak is over; however, the CHMT reports that community leaders were provided with information.

## 4. Direct Use of Results in Babati and Dodoma Rural Districts

For the two districts involved, the situation analysis provided pertinent information to apply in their own planning processes. Equally important, it served to increase district-level awareness and understanding of IDSR, as well as commitment to it. The Babati and Dodoma Rural CHMTs were active players in all aspects of the situation analysis. Their input was important in interpreting how the IDSR guidelines translate to specific desired actions for district- and facility-level personnel. These actions serve as the cornerstone for understanding how IDSR performance can be improved, and, in turn, the activities appropriate to effect such improvements.

Both districts used the findings as a basis for building some IDSR strengthening activities into their Comprehensive Council Health Plans (CCHP). For example:

- ▲ In addition to the development of disease control interventions for specific diseases, the two districts included an objective in their 2003 CCHPs to improve the timeliness of reporting and outbreak response. Under this objective, Babati district specifically budgeted for training for health facility workers, procurement of supplies, and reimbursement for expenses incurred in transmission of weekly reports.
- ▲ In Dodoma Rural district, surveillance-strengthening activities were specifically budgeted for measles, AFP, and malaria.
- ▲ The Babati CHMT reported that, by participating in the situation analysis and subsequent discussions, they now understood how collecting and applying surveillance data could point out key problem areas to target; this helped them justify funding allocations to address these problems and facilitated their planning process overall.



## 5. Discussion and Strategic Directions for IDSR Strengthening Project

The situation analysis in Babati and Dodoma Rural adds to existing knowledge of IDS performance in Tanzania by providing current, in-depth information. It identified not only specific problem areas and their causes, but also initiated improvements with the CHMTs to address these issues, given their strengths and opportunities. For the project overall, it served to identify both the common themes and strategies that can benefit many districts, and the constraints and issues requiring resolution at higher levels of the system. The situation analysis also resulted in the mapping of the IDSR process at facility and district levels and performance expectations of district and facility staff related to IDSR.

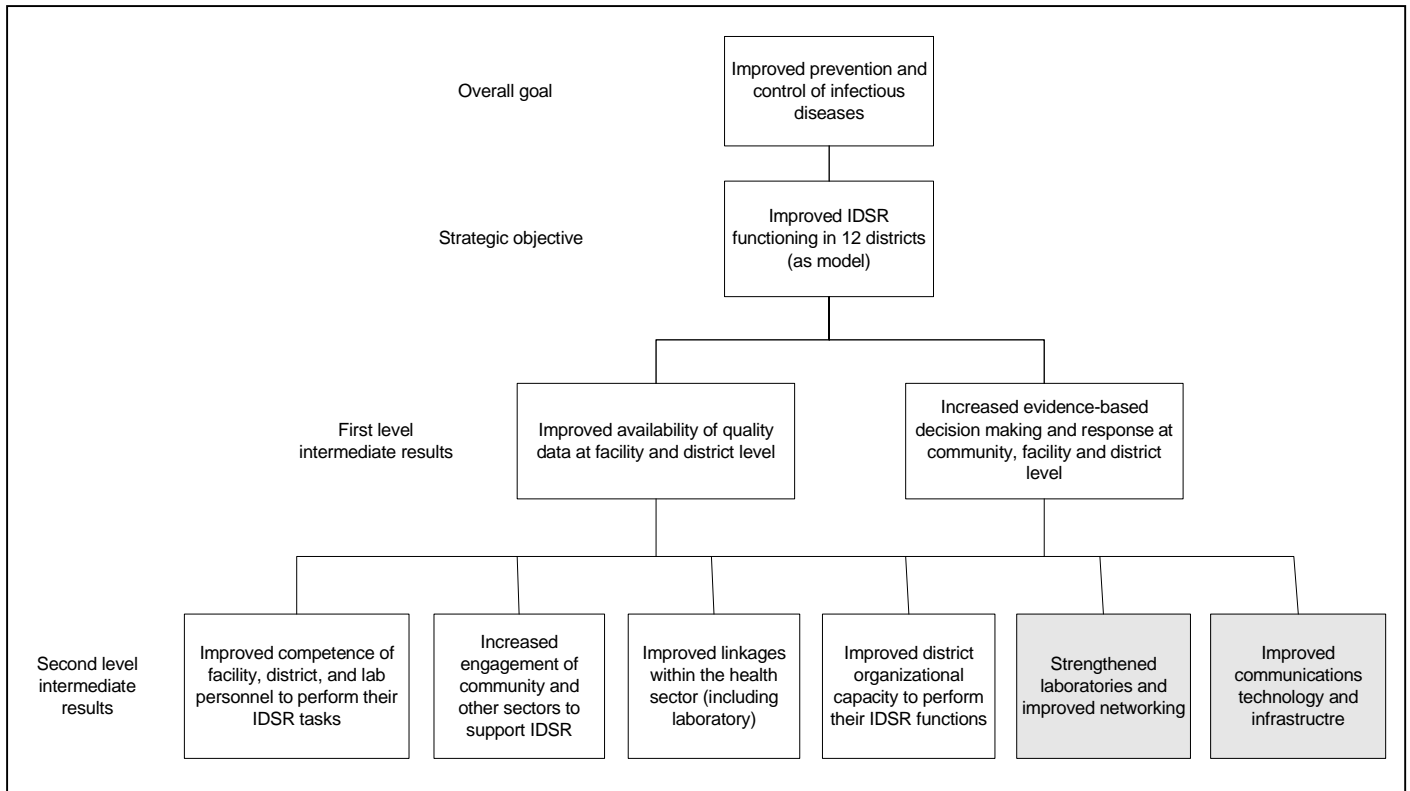
By employing qualitative research, the situation analysis provides insights into the perceptions, attitudes, and beliefs of community members, health workers, CHMT members, and other district officials regarding IDSR. The findings of the situation analysis have served as the basis both for determining the design of IDSR project interventions and for sharpening the overall project objectives.

Figure 2 provides a schematic presentation of the goals, objectives, and expected results of the project. Key results that were defined based on the results of the situation analysis include improved availability of quality information at facility and district levels and increased evidence-based decision making and response at community, facility, and district levels. The project will focus on the following strategies to achieve these results:

- ▲ Improving competence (knowledge, skills, and attitudes) of facility, district, and laboratory personnel to perform their respective IDSR tasks;
- ▲ Increasing engagement of community and other sectors to support IDSR;
- ▲ Improving linkages within the health sector (including laboratory) at the district level; and,
- ▲ Improving district organizational capacity to perform IDSR functions.

The project will also link with other efforts to strengthen laboratory performance and networking, and improve communications technology and infrastructure.

**Figure 2: Strategic Framework for IDSR Strengthening at District Level**



### 5.1 Improved Competence of Facility, District, and Laboratory Staff to Perform their IDSR Tasks

A major finding of the situation analysis is that, while the national policies related to IDSR are well defined, the operationalization of the policies at various levels is not clear. For example, the specific roles and responsibilities of different levels of health personnel have not been defined or introduced to staff. At the request of the Ministry of Health, the IDSR project will work help “repackage” current MOH policies and guidelines and build local capacity so that facility and district staff are clear about expectations, are competent and motivated to meet these expectations, and have tools that will assist them in this process. This will involve clarification of roles and responsibilities, development (where needed) or refinement of specific protocols and procedures, development of job aids and handbooks to assist health staff in their routine and urgent IDSR tasks, and development of a range of capacity-building approaches that focus on key IDSR tasks. Building on information gathered on key constraints and enablers to performance, the project will work with health staff and other stakeholders to increase health worker motivation for IDSR tasks.

The project will take a broad approach to building technical capability and competence, drawing on the understanding that “competence” comprises knowledge, skills, and attitudes. Three overarching categories of factors will be addressed: technical surveillance standards and principles; the health system/working context in which skills are utilized; and behavioral factors affecting how IDSR is valued by health personnel who are expected to carry out IDSR tasks.

Performance is affected by both external factors (i.e., the working environment) and internal factors. While knowledge is an important internal factor, other factors, such as perceived

consequences of actions (positive and negative), accountability, social norms, and self-efficacy (confidence in their own skills) are often equally or more important in determining health worker behavior. Situation analysis findings indicated that health worker appreciation of disease surveillance duties is high in outbreak response situations, when their efforts yield immediate and tangible consequences. But in non-outbreak situations, such appreciation is lower: surveillance duties are one among several draws on health workers' time, they receive little or no recognition for their efforts, and, they may, in fact, be punished if their reports are not submitted on time. Such negative incentives often bring about short-term improvements, but seldom result in sustainable gains in performance because they do not change fundamental attitudes.

The project's work in capacity building will specifically seek and develop ways of increasing the relevance and value of disease surveillance to health workers, taking into account how this varies in outbreak and non-outbreak situations.

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## **5.2 Increased Engagement of the Community and Other Sectors to Support IDSR**

Stakeholders in infectious disease control include not just district and facility health personnel, but non-health government sectors, leaders at community and district levels, and the public at large. Ultimately, their demand for both surveillance data and its appropriate use are critical to sustaining support for IDSR activities. For example, community leaders and members expressed the wish to receive more feedback and information about their general health status than has been the case to date. Another issue noted was that the extent and duration of community engagement in outbreak response measures was not always sufficient to stop disease transmission. This suggests the need for strengthened ties with community members and leadership by trusted district officials. The situation analysis findings also indicate that the understanding and appreciation of IDSR by such stakeholders is somewhat limited, and that the understanding is most apparent with regard to responding to outbreaks.

The IDSR strengthening project will work with stakeholders to improve the IDSR functions of detection, response, and feedback so that public health measures are fully accepted and facilitated, when appropriate, by the community and its leaders. This will involve identifying key actors at the community level, developing a better understanding of who they are and the particular ways in which they can support IDSR, designing approaches to improve detection and response, and supporting involvement (including feedback). Key aspects of building and maintaining this support will be added to the capacity-building plans for facility and district health staff. At the district level, the project will work with the CHMTs to engage the range of local government and non-health government technical agencies in the process of epidemic preparedness and response.

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## **5.3 Improving Linkages within the Health Sector at District Level**

The health sector includes private, voluntary, and government providers. Even within the government sector, various disease control programs operate separate surveillance information systems, each with a separate focal person. Sometimes they send their data directly to the national level without sharing it with the CHMT for local use. Similarly, some private facilities do not understand that they are required to share their data with the CHMT, or they may face disincentives to doing so. Effective implementation of integrated disease surveillance and response requires coordinated efforts and collaborative relationships. The project will seek to assist the CHMT to strengthen linkages by:

- ▲ Improving internal communication and sharing of information across government programs in order to improve CHMT ability to apply data in planning, monitoring, and evaluation;
- ▲ Involving private (for-profit and not-for-profit) facilities in capacity-building activities and other efforts to improve the detection and reporting of IDS diseases;
- ▲ Strengthening vertical links among the various levels of the health system, from facility to CHMT to region to laboratory to national level, including laboratory services at each level. Linkages with laboratory services will focus on clarifying roles and responsibilities and developing specimen collection protocols in collaboration with laboratory services.

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#### **5.4 Improving Districts' Organizational Capacity to Perform Their IDSR Tasks**

The project will work with the districts to strengthen organizational capacity to plan and organize for sustainable IDSR functioning. This includes strengthening epidemic preparedness and multi-sector response – in terms of both establishing teams and resource planning. The project will develop guidelines for epidemic preparedness planning and for annual planning with IDSR data and for IDSR activities. It will assist districts in developing strategies for communication networks and specimen transportation plans.

There are organizational capacity issues at the district level that can directly impact on worker motivation. Thus the project will also work with the districts to strengthen supervision of IDSR and foster health worker motivation through design and evaluation of positive consequences for good performance (e.g., positive recognition or non-monetary incentives) and through clarification of how personnel are accountable for disease surveillance tasks.

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#### **5.5 Addressing Issues with Laboratory and Communications Technology**

The situation analysis revealed limited capacity for laboratory confirmation of key IDSR diseases. Thus, laboratory networking and strengthening laboratories will be a key focus of CDC's support in Tanzania. Communications were also a large constraint for facility and district staff. The project will help the districts to assess their communications technology needs and possibly work to test out the feasibility and effectiveness of various technologies.



## 6. Conclusions

The situation analysis in Babati and Dodoma Rural districts provided a wealth of information about the operational issues faced by facility and district staff in implementing IDSR responsibilities. It also highlighted key issues related to community understanding and collaboration on detection and response to IDSR priority diseases. This kind of information was important in order to (a) understand how IDSR works at the district and facility levels, (b) identify key constraints and enabling factors, (c) develop clear expectations for performance, and (d) engage the support of CHMT members in the design and implementation of the project. The participatory nature of the processes was particularly important for this last factor.

The findings were used both by the districts for planning purposes and by project and MOH staff to determine key priorities and strategic directions for improving IDSR functioning. More specifically, they allowed stakeholders to plan how to address the technical, systems, and behavioral constraints of the Tanzanian district context. As IDSR strengthening efforts advance, the project will continue to utilize participatory processes to update constraints, strengths, and performance expectations, and to design and introduce project strategies and activities.