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ACTIVITY REPORT

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Assessment of Infectious Disease
Surveillance Systems in Tanzania

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by

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Individuals who were continuously involved in all or most stages of planning and conducting the activities. (Their names are not repeated in each of the subsequent sections.)

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ACRONYMS

AFP	Acute Flacid Paralysis, clinical criterion for diagnosis of polio
CDC	Centers for Disease Control and Prevention
DMO	District Health Manager
EDP	Essential Drug Program
EHP	Environmental Health Project
HIV/AIDS	Human ImmunoDeficiency Virus/Aquired ImmunoDeficiency
IDS	infectious disease surveillane
IDWE	Infectious Disease Week Ending reporting surveillane system
MCH	Maternal and Child Health (program)
MOH	Ministry of Health
MOIC	Medical Officer-in-Charge (of hospitals)
MTUHA	KiSwahili acronym for the national health management information system
RMO	Regional Medical Officer
TBA	traditional birth attendant
USAID	U.S. Agency for International Development
VHW	village health worker
WHO	World Health Organization
WHO/AFRO	WHO regional office for Africa, located in Harare

EXECUTIVE SUMMARY

Background and Purpose

The Republic of Tanzania's Ministry of Health (TMOH) is engaged in reforms to decentralize authority and improve the quality and efficiency of health services. Consistent with these reforms, the MOH wants to develop an integrated infectious disease surveillance (IDS) system to provide accurate, timely, and useful information to its staff at district, regional, and national levels.

The MOH requested assistance from the U.S. Agency for International Development (USAID) to assess the existing surveillance systems and develop a plan of action for improving surveillance of infectious diseases. USAID undertook this project in collaboration with the World Health Organization (WHO) and the U.S. Centers for Disease Control and Prevention (CDC). The Environmental Health Project (EHP), operating under contract to the USAID, provided the team leader and local coordinator.

The assessment was planned in September-October 1998 and was conducted in November 1998. An initial draft report was prepared at the conclusion of the assessment. The data analysis was completed in December 1998, and this report was prepared in January 1999. The plan of action was developed at a workshop and associated consultations in February 1999. Staff from various levels of the MOH as well as from USAID, WHO/Geneva, WHO/AFRO, CDC, and EHP were involved at each stage of the project.

This report documents the methods and findings of the assessment. The workshop and consultations in February 1999 and resulting Action Plan appear as a separate document (EHP Activity Report 63.)

Existing IDS systems

As of January 1999, there are five surveillance systems for infectious diseases in Tanzania:

- C the national health management information system, known by its Ki-Swahili acronym "MTUHA"
- C the Infectious Disease Week Ending (IDWE) system

- C HIV/AIDS and Sexually Transmitted Diseases (HIV/AIDS)
- C Tuberculosis and Leprosy (TB/Leprosy)
- C Acute Flacid Paralysis (AFP), the clinical criterion for diagnosis of polio.

The MTUHA, IDWE, and AFP systems require that all government health facilities send initial reports to the appropriate District Medical Officer (DMO). The DMO then summarizes information from all facilities within the district and reports to the Regional Medical Officer (RMO), who performs a similar process and reports to the national headquarters. The system is similar for HIV/AIDS and TB/Leprosy, except that district-level staff visit health centers and dispensaries to gather the initial reports of cases. The MTUHA system has enrolled a number of privately-operated health facilities in its reporting system.

Structure of the Assessment

A disease surveillance system that is operating properly includes the following activities: case detection and registration, case confirmation, data reporting, data analysis, outbreak investigations, retrospective and prospective responses, and feedback and communication. Health authorities must also provide appropriate supervision, training, and resources. The assessment team examined each of these functions for each of the five existing IDS systems.

The assessment team divided into three groups and visited three regions: Mwanza, Dodoma, and Kilimanjaro. In each region, the team visited the regional MOH office, at least three district offices and their associated laboratories, and a number of hospitals, health centers, and dispensaries in at least two districts. Most of the districts and health facilities were selected at random. Results are included in this report from 46 sites, including 3 regional offices, 11 district offices, 10 hospitals, 8 health centers, and 14 dispensaries.

Key Findings

The most important findings from the assessment are as follows:

Overall participation. A large proportion (87%) of the sites visited are reporting to the MTUHA system, including all of the regional and district offices. By contrast, 30% or fewer of the sites visited are reporting to each of the other four systems, and these are mostly regional and district offices; very few health facilities are reporting. The low participation of health facilities means that information in the IDWE and HIV/AIDS systems is seriously incomplete; the same may be true of the TB/Leprosy and AFP systems, as well.

Detection and confirmation. Most of the health facilities visited maintained a current clinical registry for the past six months (64-80% of facilities, depending on type). This is in large part because the MTUHA program provides registers to all facilities. Thus, the first repository of information on cases exists at most facilities. However, standard case definitions have been established for only 3 of the 21 diseases reportable under the MTUHA and IDWE systems, and even these were not available at most of the health facilities visited. Very few reported cases are ever confirmed, either by reviewing clinical records to compare a patient's symptoms with diagnostic criteria or by laboratory analysis.

Reporting. The assessment team asked to examine reports submitted for four recent reporting periods under each of the IDS systems. Only one quarter of the sites had submitted complete reports for MTUHA in all four periods, and even fewer (less than 10%) had done so for the other systems. Information gathered in the Mwanza region indicates that health facilities typically submit reports to the district office one to two months after they are due, and reporting from districts to regions is often delayed further. Just over half of the sites visited (59%) had maintained an adequate supply of MTUHA reporting forms throughout the past six months. The IDWE system does not distribute a standard reporting form to health facilities. For the other three systems, only 10% of the sites visited had maintained adequate supplies of reporting forms. Many NGO and private health facilities do not report to any of the systems regularly or completely. Community-based (nonclinical) sources occasionally report outbreaks, but there is no formal system for routine community-based

reporting.

Data Analysis. Overall, at most health facilities and some district-level offices, there is little appreciation of the meaning or methods of data analysis. Most sites (61%) report that they analyze data for the MTUHA reports. Observations by the assessment team, however, found that data are primarily aggregated by demographic category only for purposes of reporting (two-thirds of sites). Only one-third of sites aggregate data by patient's location, and even fewer do so by time, i.e., make entries on trend charts. (Analyses by time and location are most important for identifying outbreaks.) For most of the systems, at most sites, there was little evidence that current surveillance data are systematically compared with similar data from previous periods to identify changes in disease trends or possible outbreaks. As many as 40% of districts may have sufficient information on the size of the population being served by health facilities (i.e., "denominator data") that they could calculate meaningful morbidity rates; however, there is no evidence that such rates are in fact calculated and used. On the positive side, the MTUHA system does provide a framework for aggregating data and compiling information for reports, and many sites appear to follow the guidelines accurately. Therefore, there is reason to believe that sites could do a better job of analyzing data if systematic procedures for doing so were clearly laid out as part of the reporting forms package.

Outbreak Investigations. Each of the regions visited experienced outbreaks of infectious diseases in 1997. Most were of cholera; individual cases of polio (AFP), measles, meningitis, and plague are also investigated. Virtually all of the IDS staff at regional and district offices, plus many from health facilities, have been involved in cholera investigations. However, the nature and extent of the investigations appear incomplete: once the presence of cholera has been confirmed in a few patients, attention shifts to providing clinical treatment and other control measures. Most investigations do not employ case-control or cohort studies to identify the cause of the outbreak; only the measles and polio investigations include tracking contacts to trace the chain of infection among affected people.

Retrospective and Prospective Responses. Regional and district offices do not have sufficient capacity to respond retrospectively to epidemics. Drugs

and clinical supplies are most often provided by national-level program offices after they have been notified of the outbreak and have received clearance from senior MOH officials. On the other hand, most sites (59%) report having implemented some form of community-level prevention and control measures (a “prospective” response) on the basis of local data. The assessment team could not determine whether the number of such programs represented a large or small proportion of the number of occasions for which they would have been appropriate. Thus, the fact that some prevention programs have been established demonstrates that some capacity exists for such actions at the district- and facility-levels. Nonetheless, it still appears that surveillance data are not being used to their full potential for planning and implementing prevention and control programs.

Feedback and Supervision. The MTUHA, IDWE, and AFP systems do not provide systematic written feedback from higher levels to lower levels regarding surveillance data reported by the lower levels. Only 35% of the sites visited report having received feedback in any format (including verbal) regarding reports submitted under the MTUHA system, and even fewer sites (11-20%) report any feedback under the other systems. Feedback is more common at the national/regional interface than it is at lower levels: under MTUHA, two of the three regional offices visited report having received feedback from the national level, whereas only 3 of 11 district offices, 4 of 10 hospitals, 1 of 8 health centers, and 6 of 14 dispensaries report receiving feedback from a higher level of the organization.

Training. Most of the people responsible for reporting to and maintaining the five surveillance systems have not received any formal training in epidemiology or surveillance beyond what might have been included in their basic medical or nursing training. Furthermore, such training is not readily accessible to most staff working in most of the systems (except possibly TB/Leprosy). The

MTUHA system does provide some instruction in the use of its reporting forms; 71% of people at dispensaries, 60% of relevant hospital staff, and staff at 63% of the health centers reported having received such training. Where people responsible for reporting had not been trained for the MTUHA system, it was because the initial training had been provided to higher level officials and the “on-training” had not always occurred, or because people who had been trained had since gone on to other jobs.

Resources. The implementation of the MTUHA and IDWE systems is significantly handicapped by the lack of adequate resources of all kinds. Most programs are heavily dependent upon external funding, without which programs could not be sustained. Multiple vertical systems in many situations compete for the time of staff involved at the district level and lower or result in a duplication of effort among staff. Resource limitations severely reduce the completeness and timeliness of reporting, supervision of system staff, and communications among the various levels of the MOH, particularly at the periphery.

Laboratory Capabilities. Most health centers have microscopes and the apparent capacity to diagnose malaria. There are secondary and tertiary laboratories (at the districts and regions, respectively) that appear able to test for all of the reportable infectious diseases other than AFP and yellow fever. However, most health facilities do not have easy access to the secondary and tertiary laboratories. The assessment did not include a full review of laboratory capacity and testing practices, and so it was not possible to determine the proportion of clinically-diagnosed cases that were tested and confirmed; the general timeliness of testing; whether the most contemporary test was used; the quality of testing process and the proficiency of lab staff; and whether results were reported to the submitting source. A more systematic evaluation of laboratory capacity is still needed.

1 INTRODUCTION

1.1 Origin of the Project

The Tanzania Ministry of Health (MOH) is pursuing a program of health sector reforms to decentralize authority within its structure and improve the quality and efficiency of the health services it provides. One of the problems the ministry wishes to address is the lack of accurate and timely information on the occurrence of infectious diseases, despite the existence of several disease surveillance systems. The MOH intends to develop an integrated infectious disease surveillance (IDS) system that will provide accurate, timely, and useful information to decision makers at the district, regional, and national levels of the ministry. It is important that the improved system be *integrated*, i.e., that it be one system or a coordinated set of systems operated by the MOH, rather than a collection of separate systems operated by and for particular vertical disease control programs. It is also important that the improved system be *action-oriented* and that it inform decision-making at the *district level* in order to support the broader purposes of health sector reform, under which district-level officials will assume substantial responsibility and authority for planning, resource allocation, and the initiation of disease prevention and control actions. For a description of the organizational levels of social and health services, see Appendix A.

The MOH requested assistance from the U.S. Agency for International Development (USAID) to help conduct an assessment of the existing disease surveillance systems and to develop a plan of action for modifying and improving disease surveillance. USAID undertook this project in collaboration with the World Health Organization (WHO) and the U.S. Centers for Disease Control and Prevention (CDC). Members of the assessment team are listed in the Acknowledgements; they include staff from the MOH, the CDC, and WHO staff from its

headquarters in Geneva, the Africa regional office in Harare (WHO/AFRO), and the Tanzania country office in Dar es Salaam. The Environmental Health Project (EHP), operating under contract to the USAID and at the request of the USAID Africa Bureau, provided the team leader and the local coordinator for this activity.

1.2 Goal and Objectives of the Project

Disease surveillance is the ongoing systematic collection, analysis, interpretation, and dissemination of data on specific disease incidence, prevalence, and outcomes (e.g., cases, deaths) to those who need to know for use in health sector planning, implementation of disease control efforts and evaluation of public health practice. Accurate and timely disease surveillance is a vital component of an effective public health system. The important uses of surveillance data with respect to infectious diseases include quantitatively estimating the magnitude of infectious diseases and other health problems, determining the natural history of diseases (e.g., the life cycle of an infectious organism), detecting epidemics, documenting the distribution and spread of diseases, facilitating epidemiologic and laboratory research, forming hypotheses of disease causation, evaluating disease control and prevention measures, monitoring changes in infectious agents (e.g., development of resistance to curative drugs), and planning the allocation of health sector resources.

The long-term goal that this activity supports is to strengthen infectious disease surveillance in Tanzania and to increase its effectiveness for disease prevention and control. The specific objectives of this activity are to conduct an assessment of the existing IDS systems in Tanzania and to prepare a plan of action for developing an integrated and improved IDS system.

1.3 Infectious Disease Surveillance Systems in Tanzania

Infectious diseases are currently reportable under five separate IDS systems in Tanzania. The systems require that all government health facilities send initial reports to the appropriate District Medical Officer (DMO). The DMO then summarizes information from all facilities within the district and reports to the Regional Medical Officer (RMO), who performs a similar process and reports to the national headquarters.

The *Infectious Disease Week Ending* (IDWE) system requires weekly submission of reports on cases of cholera, plague, relapsing fever, yellow fever, Acute Flaccid Paralysis (AFP), dysentery, other diarrheas, malaria, measles, meningococcal meningitis, neonatal tetanus, rabies/rabid animal bites, and typhoid. Immediate notification to district-level authorities (the District Medical Officer) is required for cases of the epidemic-prone diseases (cholera, plague, relapsing fever, yellow fever, AFP, measles, and meningococcal meningitis) and for neonatal tetanus, rabies, rabid animal bites and typhoid. All health facilities within the public system as well as private hospitals are required to report observed cases. Reports under the IDWE system ultimately come to the Chief of Epidemiology and Disease Control within the MOH's Directorate of Preventive Services. Notifications regarding cases of neonatal tetanus and measles are also passed to the Expanded Program of Immunization (EPI) program office.

Three vertical disease prevention and control programs operate surveillance systems: *HIV/AIDS and Sexually Transmitted Diseases*, *Tuberculosis and Leprosy*, and *Acute Flacid Paralysis* (AFP). Each system has its own forms for reporting cases, which are kept separate at each level of the reporting chain. The information is ultimately passed to the national coordinating office of the program in question.

The national *Health Management Information System*, known by its KiSwahili acronym "MTUHA," has an infectious disease reporting component and many other components that focus on the status of various resources and programs at

the reporting facilities. MTUHA requires quarterly reporting. The information is received at the national level by the Directorate for Policy and Planning, which then passes relevant information to other offices within the ministry. MOH has made an effort to get private hospitals and other private health facilities to report to the MTUHA system, in addition to government facilities. Table 1 lists the diseases reportable under MTUHA which have an infectious disease etiology.

1.4 Project Components and Schedule

This project was implemented in three steps.

- C *Plan the Assessment.* The assessment team leader and a representative of the USAID Africa Bureau visited Tanzania in September 1998 to meet with MOH officials and determine the scope of the assessment, gather background information, identify MOH participants in the assessment, and develop a general strategy for the project.
- C *Conduct the assessment.* The assessment instruments were developed in draft form in October 1998. The protocol was field tested and finalized in Dar es Salaam from November 9 to 14, and the assessment was conducted in three regions from November 14 to 29. The assessment team reassembled in Dar es Salaam to review results, analyze data, and prepare a draft report from November 30 to December 4, 1998. The team leader and team members from CDC completed the data analysis and finalized the report during December 1998 and January 1999.
- C *Prepare the Action Plan.* An Action Plan for strengthening surveillance of infectious diseases in Tanzania was developed during consultations and at a workshop held January 25 through February 5, 1999.

This report documents the methods and findings of the assessment. The Action Plan and report of the workshop are published as EHP Activity Report No. 63.

Table 1
Reportable Diseases under the Tanzanian Health
Management Information System (MTUHA)

<i>For Out-patient Diagnoses</i>	<i>For In-patient Admissions and Deaths</i>
Measles	Acute Respiratory Infections
Acute Respiratory Infections	Diarrheal diseases
Diarrheal diseases (unless in IDWE)	Intestinal worms
Intestinal worms	Pneumonia
Pneumonia	Eye infections
Eye infections	Ear infections
Ear infections	Genital Discharge Syndrome
Skin infections	Genital Ulcer Diseases
Non-skin fungal infections	Other sexually transmitted diseases
Genital Discharge Syndrome	Pelvic Inflammatory Disease
Genital Ulcer Diseases	Schistosomiasis
Other sexually transmitted diseases	Tuberculosis
Urinary Tract Infections	Leprosy
Pelvic Inflammatory Disease	Other Respiratory Diseases
Schistosomiasis	Hepatitis
Tuberculosis	Malaria
Leprosy	
Clinical AIDS	

2 DESCRIPTION OF THE ASSESSMENT

2.1 Objectives

The assessment examined the five existing IDS systems. The specific objectives of the assessment were as follows:

- C Determine how the systems function relative to their objectives, in terms of their completeness and timeliness.
- C Identify how the data are being analyzed and used, and the MOH staff's current capacity to use surveillance information for priority-setting, intervention and other purposes.
- C Identify the efforts involved in the collection, analysis, reporting, and use of surveillance data.
- C Identify obstacles that staff face in operating the systems and in using surveillance information.
- C Identify the role of supervision and training in operating and strengthening the systems.
- C Identify elements of the systems that could be better integrated, including both new and existing resources.
- C Discuss with personnel operating and using the systems changes that they feel should be considered at all levels of the system.
- C Identify available and needed resources for more effective operation of the systems.

2.2 The Assessment Protocol

2.2.1 Instruments

A well-operating disease surveillance system includes case detection and registration, case confirmation, data reporting, data analysis, outbreak investigations, retrospective and prospective responses, and feedback and communication. Health authorities must also provide appropriate supervision, training, and resources for the system to operate properly. This

list of necessary activities provides the conceptual structure for reviewing a surveillance system: the assessment must examine how well the system performs with regard to each of the activities. The assessment team developed a set of quantifiable indicators corresponding to these activities and then used the indicators as the basis for developing questionnaires and observational guides for the assessment. (The indicators are listed in Appendix B, and the tabulated data appears in Appendix C. Appendix D contains the assessment questionnaire and observational guides.)

After consulting with MOH officials to determine the nature and scope of the assessment, the team leader prepared initial drafts of several questionnaires based on templates that had been developed by WHO and CDC for use in earlier assessments. The draft forms were distributed for comment to the MOH, USAID, and members of the assessment team from WHO and CDC. The team leader and team members from CDC then made extensive revisions to address reviewers' comments, including developing a set of indicators, adding questions, reformatting the interview tables, and developing two guides for recording observations made by team members, as a complement to the questionnaires. After the full assessment team assembled in Dar es Salaam, the questionnaires and observational guides were field tested in Kibaha and Dar es Salaam regions. The team used lessons learned from those field tests to make additional revisions and then finalized the assessment instruments.

The assessment employed five questionnaires and two observational guides (indicated by "O"):

- C Form 1 for determining the timeliness of MTUHA and IDWE reports;
- C Form 2 for interviews with Regional Medical Officers (RMOs), District Medical Officers (DMOs), and Medical Officers-in-Charge (MOICs) of hospitals;

- C Form 3 and Form 3O for collecting information at district and regional offices;
- C Form 4 and Form 4O for collecting information at dispensaries, health centers, and hospitals; and
- C Form 5 for collecting information at laboratories.

The assessment instruments are included in this report at Appendix D.

2.2.2 Procedures

At each location visited, the team interviewed the people responsible for the IDS systems. The team completed one questionnaire for each IDS system at each location. The RMOs, DMOs and MOICs were interviewed together with their respective teams; these meetings were used as discussion sessions. The individuals were interviewed in the language of their choice. At the dispensaries and health centers, interviews were often conducted in Ki-Swahili.

The general and specific procedures followed at each organizational level are listed below.

General procedures applied at all levels, at each location —

- C All team members were present for the interview of the most senior person. This person was given a copy of all questionnaires and observational guides that would be used at that location.
- C Team members interviewed all people who had programmatic responsibility for tracking a reportable disease, processing surveillance data, or conducting laboratory work related to the tracking process.
- C The purpose of the assessment was described to the interviewees. The team emphasized that the information being gathered would be used to understand how the surveillance systems work and not to evaluate any particular individual or program.
- C Team members discussed the importance of and requested the following sources of information from staff:
 - C written copies of case definitions
 - C out-patient and in-patient registries
 - C all surveillance reporting forms
 - C copies of recent surveillance reports submitted to higher levels

- C analyzed data (graphs, tables), and
- C surveillance summaries or bulletins, including any produced at that level and those received from higher levels.
- C Important negative or unanticipated responses and other significant problems were probed and a description of the event and contributing causes was obtained. Team members also asked staff for their views on ways to prevent, remedy or improve the particular situation.
- C At the conclusion of all assessment activities in each region, the team held a half-day “all hands” meeting with the RMO, DMOs, and site representatives to discuss the team’s observations and get feedback. Most of the people interviewed were invited to the meeting.

Procedures applied at the regional level —

- C The team met first with the RMO to present an overview of the project and discuss how they intended to proceed within the region.
- C The team asked the RMO to escort them to the office of the Regional Administrative Secretary. There, they once again presented an overview of the project and plans.
- C The team met again with the RMO to
 - C interview the RMO;
 - C identify regional staff with responsibility for reportable diseases and the five vertical IDS systems;
 - C select the urban and rural districts to be visited;
 - C identify regional staff, if any, who would accompany the assessment team during its visits to the districts and health facilities;
 - C make arrangements for debriefing the RMO and the “all-hands” meeting after the visits had been completed.
- C The team then interviewed all regional staff who have responsibility for reportable diseases and IDS systems.

Procedures applied at the district level —

- C The team met first with the DMO to explain the purpose of the visit, interview the DMO, identify other district-level staff to be interviewed, select the health facilities to be visited, and determine if any members of the

DMO staff would accompany the team to the health facilities.

- C The team then interviewed district-level staff responsible for the IDS systems.

Procedures applied at the health facility —

- C The team met first with the health facility manager or clinical officer to give an overview of the project, answer questions, and identify staff who should be interviewed.
- C The team then interviewed people at the facility with responsibility for one or more of the IDS systems.

2.3 Locations Visited

Below the national headquarters, the MOH is organized into regions and districts. There are three types of public health facilities: hospitals, health centers, and dispensaries. All health facilities fall under the jurisdiction of a district office; district offices report to regional offices. A more thorough description of the MOH's organizational structure is included at Appendix A.

The MOH determined that the assessment should be conducted in three regions: Mwanza, Dodoma, and Kilimanjaro. The assessment team was divided into three groups, each of which included one national-level officer from the MOH, the MOH Regional Health Officer (RHO), one member from WHO, and one member from either CDC or EHP. The RHO has responsibility for supervising surveillance activities within a region. The group assignments were as follows:

Mwanza:

Dr. Kibona, MOH
Mr. Kamugisha, WHO
Dr. Wuhib, CDC, RMO, MOH

Dodoma:

Dr. Kalinga, MOH
Dr. Chungong, WHO

Mr. Brown, EHP, RMO, MOH

Kilimanjaro:

Mr. Rubona, MOH
Dr. Ndayimirije, WHO
Dr. Nsubuga, CDC, RMO, MOH

The assessment team collected information at the regional, district, and health-facility levels.

*At the regional level—*In each of the three regions, the team visited the regional-level office, hospital, and laboratory.

*At the district level —*The team selected three districts within each region. These included the urban district (there is only one in each region), a rural district selected at random, and an additional rural district selected purposively. The team visited the district office and laboratory in each of the three districts.

*At the facility level —*The team visited at least one hospital, one health center, and two dispensaries in the urban district and the randomly-selected rural district. The health center and dispensaries were selected at random; whenever possible, the team selected one dispensary operated by the MOH and another operated by an NGO or private proprietor. There is only one hospital in most districts. In a few districts where there are two hospitals—one public, the other private—the team visited both.

The assessment teams visited 50 sites overall, including 3 regional offices, 11 district offices, 12 hospitals (7 government, 5 private), 10 health centers (7 government, 3 private), and 14 dispensaries (8 government, 6 private). Results from 2 hospitals and 2 health centers were later excluded because of incomplete data; thus, results from 46 sites are included in this report. The distribution by type of site and region is shown in Table 2.

Table 2
Sites Included in the Assessment

Region	Regional Office	District Office	Hospital	Health Center	Dispensary	Total
Dodoma	1	5	4	3	7	20
Kilimanjaro	1	3	4	3	3	14
Mwanza	1	3	2	2	4	12
Total	3	11	10	8	14	46

3 FINDINGS

Quantitative data are available for 31 performance indicators, corresponding to the eight disease surveillance functions: case detection, case registration, case confirmation, data reporting, data analysis, outbreak investigation, retrospective and prospective responses, plus feedback and communication. This section summarizes the key findings and some of the indicator data for each of the basic functions. Findings regarding supervision, training, and resources are also described. The complete set of tabulated data for all indicators is included as Appendix C.

3.1 Presence of the Infectious Disease Surveillance Systems

The level of participation in the five infectious disease surveillance systems in the facilities visited is summarized in Table 3. A system was generally judged to be “present” if the appropriate member of the staff indicated that the site submits reports

to the system. Most sites participate in the MTUHA system. Other systems were judged to be present if the staff member indicated awareness of and compliance with any system requirements that differ from MTUHA, for example completing a special reporting form, forwarding reports through a different reporting chain, submitting reports on a different schedule, or referring cases to a different level of the health system to make or confirm a diagnosis.

Overall, MTUHA was present at 87% of all sites visited, including 100% of the regional and district offices. By contrast, each of the other four systems was present at 30% or fewer of the sites overall and was practically nonexistent below the district office (i.e., at health facilities). The IDWE, HIV/AIDS, and TB/Leprosy systems are still being supported by 100% of the regional offices and most of the district offices, but the low participation by health facilities means that information held in these systems at the upper levels is extremely incomplete.

Table 3
Presence of IDS Systems at the Sites Visited

IDS System	Regional Office n (%)	District Office n (%)	Hospital n (%)	Health Center n (%)	Dispensary n (%)	Total n (%)
Total sites	3	11	10	8	14	46
MTUHA	3 (100%)	11 (100%)	8 (80%)	6 (75%)	12 (86%)	40 (87%)
IDWE	3 (100%)	7 (64%)	0 (0%)	0 (0%)	1 (7%)	11 (24%)
HIV/AIDS	3 (100%)	5 (45%)	2 (20%)	1 (13%)	2 (14%)	13 (28%)
TB/Leprosy	3 (100%)	7 (64%)	2 (20%)	1 (13%)	0 (0%)	13 (28%)
AFP	2 (67%)	7 (64%)	2 (20%)	1 (13%)	2 (14%)	14 (30%)

3.2 Case Detection and

Registration

All of the IDS systems are passive and rely on health facilities to identify, record, and report cases. That is, most cases are detected when an ill person comes to a health facility seeking treatment. At the facility, the patient's diagnosis is entered in the facility's case registry. If the patient is diagnosed with a reportable disease, the case should be reported either immediately or in the next regular report, depending on the disease. (For the HIV/AIDS and TB/Leprosy systems, a district-level staff member travels to the facilities and examines the registers to identify cases.) A facility's registry is the source document for surveillance reports. Therefore, whether the facility maintains its registry properly is an important indicator of the accuracy and completeness of surveillance.

Table 4 summarizes information on the availability of currently maintained registries at the facilities visited. Overall, 81% of health facilities had well maintained clinical registers. This result was consistent across the three regions, in large part because the MTUHA system prepares and distributes high quality, bound registers to all health facilities.

Cases are sometimes detected in other ways, as well. Community leaders or health workers sometimes report outbreaks or a cluster of cases of an epidemic-prone disease. However, community sources generally do not detect individual cases of a disease. Village health workers, traditional birth attendants, and the members of village health committees sometimes report individual cases to a nearby health facility. However, not all villages have a health committee,

and there is no regularized, routine system for community-based reporting.

The assessment team heard of one district in which community-based reporting appears to make a contribution to disease surveillance. In the Moshi urban district of Kilimanjaro region, the ten-cell leaders of the community report to the ward health assistant whenever there is a case or cluster of cases of epidemic-prone diseases. These leaders have been trained by the health assistant to recognize and report these diseases. They reportedly perform daily house-to-house searches for individual cases. Subsequently, the health assistant conducts a case investigation, compiles information for cases he was able to verify, and then reports to the district. At the same time, he also takes appropriate action locally. Such actions might include quarantine, referring people to health facilities, and community education.

3.3 Case Confirmation

In a surveillance system that is functioning properly, supervisory personnel routinely review patient diagnoses to confirm cases of reportable diseases. The supervisor should examine the patient's clinical records to confirm that the patient exhibited all of the signs and symptoms listed in the standard case definition. If the case is confirmed, it may be investigated and other actions initiated. Without standard case definitions, reported cases cannot be confirmed and there is no assurance that cases reported by all facilities are

Table 4
Presence of Current Clinical Registers at Health Facilities

Number of health facilities	Hospital n	Health Center n	Dispensary n	Total n (%)
Number visited	10	8	14	32
Number with a current register	8	6	12	26 (81%)

comparable. Thus, the availability of standard case definitions in writing at a health facility is an important indicator of practices regarding case identification and confirmation.

Standard case definitions for use in surveillance have been established for AFP, neonatal tetanus, and measles. Copies of these three definitions are available at the RMO and

DMO offices and at some health facilities. Standard surveillance case definitions have not been established for the other reportable diseases. Moreover, even for the three diseases with standard definitions, facility staff reported that cases are not confirmed by personnel other than the primary care giver. Therefore, it is clear that neither health facility staff nor supervisory staff at higher levels are confirming cases of reportable diseases.

Cases may also be confirmed by laboratory analyses. Health centers and dispensaries generally have a microscope and (presumably) can confirm cases of malaria. However, laboratory facilities at these locations are not sufficient to confirm any of the other reportable diseases. Some of the hospital-based laboratories have extensive analytical capabilities and can confirm all of the reportable diseases except yellow fever and AFP. However, these laboratories are not accessible to all of the health facilities and, in practice, few reportable cases are confirmed by laboratory analysis unless the patient is admitted to a hospital. More information on laboratory capabilities is presented in section 3.12.

3.4 Data Reporting

Under the MTUHA, IDWE, and AFP systems, health facilities are required to send periodic reports to district offices, district offices report to regional offices, and regional offices report to national coordinators. The HIV/AIDS and TB/Leprosy systems operate similarly except that at the facility level, only hospitals are required to report cases; district-level staff travel to the health centers and dispensaries periodically to examine registers and identify cases. During interviews at health facilities, the assessment team asked to see evidence of the facility's recent reports under each of the IDS systems. For MTUHA, the team asked to see copies of reports the facility had submitted for the last four reporting periods; the MTUHA

report form is designed to produce a copy for the facility to retain. Facilities generally did not have copies of reports submitted under the other systems, so the team asked about reporting practices and, where possible, examined a report under preparation or one that had been prepared but not yet submitted. At district and regional offices, the team asked to see corresponding copies of reports submitted by lower-level sites, as well as copies of reports that were forwarded to the next higher level. Results from this part of the assessment are shown in Tables 5 and 6. The data were sufficient in all three regions to determine the number of reports that had been submitted at each level. In the Mwanza region, the team also gathered enough information to determine the timeliness of reports for some levels.

The results show that the reporting chains are not functioning effectively for any of the IDS systems, including MTUHA. Across the three regions visited, only 26% of the sites submitted all four of the reports required under MTUHA for the last four reporting periods. Performance was even lower in the other systems, with only four district offices having submitted reports under IDWE for the recent periods examined, and even fewer sites having reported under the other three systems. Within MTUHA, health centers and dispensaries complied with reporting requirements to a greater extent than did hospitals and district offices (38% and 43% versus 0% and 18%, respectively).

The reporting chain appears to function somewhat better in the Mwanza region than in the other two regions. Hospitals in Mwanza are reporting to the district offices regularly (100% of reports submitted for IDWE and 75% for MTUHA for the periods examined) with modest delays (1 month for IDWE, 4 months for MTUHA). For health centers and dispensaries, only half of the facilities are reporting, but those do so with just a modest delay (1 to 2 months). The

Table 5
Sites That Submitted Complete Reports in Four Recent Reporting Periods

IDS System	Regional office	District office	Hospital	Health Center	Dispensary	Total
Number of sites	3	11	10	8	14	46
MTUHA	1 (33%)	2 (18%)	0	3 (38%)	6 (43%)	12 (26%)
IDWE	0	4	0	0	0	4 (9%)
HIV/AIDS	0	0	0	n/a	n/a	0
TB/Leprosy	0	2	0	n/a	n/a	2 (8%)
AFP	0	2	0	1	0	3 (7%)

district offices are submitting half of the reports required under MTUHA and 75% of those required under IDWE. The MTUHA reports are quite late, however, with an average delay of almost a year. Readers should note that a one-month delay in reporting infectious diseases is considered by some to be too long, since a subsequent response by the receiving level may be too late to prevent an epidemic from gaining strength or an infected individual from exposing others. Furthermore, Table 6 may present a

picture that is somewhat better than reality, because half of the facility-level data collected is for an urban district. In the urban district, the hospital is close to the district office and regular, informal contact (i.e., "reporting") is practical. Over the region, however, there is only one urban district and there are many rural districts; thus, the average performance over all districts would be a weighted average in which the urban district has much less impact than is the case in Table 6.

Table 6
Timeliness of Recent MTUHA and IDWE Reporting in Mwanza Region

Reporting link	MTUHA*		IDWE**	
	Percent of reports received at higher level	Average delay in submission from lower level (months)	Percent of reports received at higher level	Average delay in submission from lower level (months)
Regions to national		not examined		
Districts to region	50 %	11.5	75 %	could not be determined
Hospitals to district	75 %	4	100 %	1
Health centers to district	50 %	1	50 %	1.7
Dispensaries to district	50%	1.4	37 %	1.2

* The reporting frequency for MTUHA changed from monthly to quarterly in 1998. MTUHA reports were examined for September 1997, October 1997, 1st quarter 1998, and 2nd quarter 1998.

** Reports were examined for the last two weeks of February 1998 and the first two weeks of June 1998.

The team collected information regarding two important factors in reporting rates: the availability

of reporting forms and amount of staff time required to prepare the reports. Data on availability of forms is presented in Table 7; information regarding staff time required is shown in Table 8.

MTUHA reporting forms were available throughout the last six months in all regional and district offices and in approximately 60% of health facilities. The availability of MTUHA forms at health facilities varied by region: 50% of the facilities in the Dodoma region, 73% in Mwanza, and 100% in Kilimanjaro reported having an adequate supply of forms for the past six months (not shown in Table 7). The percentage of facilities reporting adequate availability of MTUHA forms was consistent across the three types of health facilities; 60%, 63%, and 57% for hospitals, health centers, and dispensaries, respectively.

Less than 15% of facilities reported having an adequate supply of forms for the other IDS systems. Forms were often missing or the facilities reported having been without the forms at some time during the past six months. The entry for IDWE in Table 7 is “not applicable” because MOH has not established a standard reporting form for the system. Each facility is expected to prepare its own form based on the

nationally standardized list of reportable diseases. At some facilities, the team observed reporting forms prepared by the facility that omitted one or more diseases on the IDWE list; such omissions would result in nonreporting for those diseases. In addition, the beginning and ending of the weeks for IDWE are not standardized; although there is guidance that facilities should report on Friday or Saturday, the dates are not specified and so there is some variability of reporting dates among facilities.

Another factor that affects compliance with reporting requirements is the availability of staff time to complete the reporting forms. The assessment team expected that time constraints would be most significant at the health facilities, where staff members responsible for IDS reporting are also responsible for patient care and, at least for MTUHA and IDWE, they must summarize some of the same data for reporting under two separate systems. Table 8 indicates that staff members responsible for MTUHA reporting regard the process as “time consuming” at 70% of the hospitals, 50% of the health centers, and 29% of the dispensaries visited. These figures are consistent with the data in Table 5, showing that none of the hospitals, 38% of

Table 7
Number of Health Facilities with an Adequate Supply of Reporting Forms Throughout the Past Six Months

IDS System	Hospital	Health Center	Dispensary	Total
Number visited	10	8	14	32
MTUHA	6	5	8	19 (59%)
IDWE				not applicable*
HIV/AIDS				3 (9%)
TB/Leprosy				3 (9%)
AFP				4 (13%)

* The IDWE system has not distributed a standard national form for reporting.

health centers, and 43% of dispensaries had submitted all of the last four reports required under MTUHA. Hospitals regard the reporting as most burdensome and have the lowest reporting

rate among facilities; reporting is perceived as less burdensome by staff at the dispensaries, which have a higher rate of compliance in reporting. This corresponds to the team’s perception that

clinical officers at the hospitals and health centers have much higher demands on their time for patient care than do staff at the dispensaries. Nonetheless, time constraints may not be as important as anticipated. Regional and district offices, which do not have patient-care responsibilities, had a lower reporting rate than health centers and dispensaries: only one of three regional offices and 18% of district offices submitted MTUHA reports in all of the last four periods, compared to 38% of dispensaries and 43% of health centers.

Staff who were interviewed indicated that the main barrier to better reporting is the lack of funds for or means of transportation, with the weakest link being between health facilities and district offices. No specific funds are allocated for surveillance reporting, so health workers incur out-of-pocket expenses to report to higher levels or do not report, especially since reports are typically submitted in person. Postal service, though inexpensive and widely available, is considered unreliable and, thus, is generally not used for reporting.

Staff also identified several other factors that are barriers to more regular IDS reporting. Insufficient numbers, skills, and motivation of health workers, especially at the lower levels, have

contributed to incomplete and untimely reporting. The standard packet of MTUHA forms is not tailored to the different types of sites; it includes forms that are often not appropriate to the level at which they are being completed. Also, in 1998, MTUHA reporting from the regional offices to the national level was delayed because the new computer program that runs version two of the MTUHA system had not yet been installed at the regional offices.

Staff and team members identified several ways in which the transportation problem could be addressed to improve the timeliness of reporting. Facility health workers visit the district office each month to obtain their salaries, and members of the district health management team visit the peripheral health sites periodically for various purposes; visits by various people in both directions could be used to convey surveillance reports and feedback. Some sites have also arranged to send their reports to higher—level sites via members of their community travelling to those areas. In the Dodoma region, the regional office and its corresponding district offices are linked by radio, providing a quick and inexpensive means to report cases for which immediate reporting and follow-up are required.

Table 8
Number of Sites Reporting That Completing the MTUHA Forms Is Time Consuming

Number of health facilities	Hospital	Health Center	Dispensary	Total
Total visited	10	8	14	32
Sites at which staff feel reporting is time consuming	7 (70%)	4 (50%)	4 (29%)	15 (47%)

3.5 Data Analysis

Tables 9 through 12 present information regarding data analysis practices. Table 9 summarizes responses to the question “Do you analyze infectious disease surveillance data at this site?” Staff at approximately 60% of sites report analyzing MTUHA data, and at approximately 20%

of sites for the other systems. However, based on observations (see below), it was clear that the persons interviewed did not fully understand what the assessment team meant by “analyzing” data.

Members of the assessment team asked to examine examples of data analysis for each of the systems; Tables 10, 11, and 12 summarize results from these observations. These tables reveal that,

for the MTUHA system, approximately two-thirds of sites aggregate data by demographic category (gender, age, etc.); one-third of sites aggregate data by the location of the patient’s residence; and very few sites aggregate data across time to examine trends. The same relative order applies to the

other systems as well (some attention to demographic categories, less to place of residence, very little to time). However, many fewer sites analyze data in these ways for the other systems than do so for MTUHA data.

**Table 9
Number of Sites That Report Analyzing IDS Data**

IDS System	Regional Office	District Office	Hospital	Health Center	Dispensary	Total
Total sites	3	11	10	8	14	46
MTUHA	1	8	6	5	8	28 (61%)
IDWE	1	7	0	0	1	9 (20%)
HIV/AIDS	2	4	2	0	1	9 (20%)
TB/Leprosy	2	4	2	0	0	8 (17%)
AFP	3	4	1	1	1	10 (22%)

**Table 10
Number of Sites at Which Staff Aggregate Case Data by Demographic Category**

IDS System	Regional Office	District Office	Hospital	Health Center	Dispensary	Total
Total sites	3	11	10	8	14	46
MTUHA	2	8	8	5	7	30
IDWE	2	7	0	0	7	16
HIV/AIDS	2	2	1	0	2	7
TB/Leprosy	1	6	2	0	0	9
AFP	2	5	1	0	0	8

There is both good and bad news in these results. The good news is that when procedures are specified and forms are provided for aggregating data, as is the case under MTUHA, then staff at the majority of sites comply with the procedures. Furthermore, MTUHA recommends that after compiling the information in various ways, staff discuss the results among themselves. When staff responded “yes” to the question “do you analyze the MTUHA data,” they apparently

were reporting on such discussions, indicating that at the majority of sites there is some internal discussion of the infectious disease data being reported.

The bad news is that data analysis steps which should be performed at the facility and district levels have not been adequately defined, and that useful analysis of the data (in order to recognize significant changes and support follow-up actions) is fairly rare. Improving disease surveillance will

require that much more attention be devoted to defining and performing appropriate analyses of

surveillance data.

Table 11
Number of Sites at Which Staff Aggregate Case Data by Patient's Location

IDS System	Regional Office	District Office	Hospital	Health Center	Dispensary	Total
Total sites	3	11	10	8	14	46
MTUHA	1	6	1	2	3	13
IDWE	1	1	0	0	3	5
HIV/AIDS	0	2	0	0	0	2
TB/Leprosy	2	2	2	1	0	7
AFP	2	3	0	0	0	5

Table 12
Number of Sites at Which Staff Aggregate Surveillance Data over Time in Trend Charts

IDS System	Regional Office	District Office	Hospital	Health Center	Dispensary	Total
Total sites	3	11	10	8	14	46
MTUHA	0	0	1	1	1	3
IDWE	0	0	0	0	1	1
HIV/AIDS	2	3	0	0	0	5
TB/Leprosy	2	0	1	1	0	4
AFP	2	1	0	0	0	3

3.6 Outbreak Investigation

All of the regions visited experienced outbreaks of various diseases in 1997. The great majority of outbreaks were of cholera; there were also some cases of AFP, measles, meningitis, and plague. Table 13 presents information on the number of sites that reported having conducted or been involved in the investigation of an outbreak. The data show that virtually all of the IDS staff at

regional and district offices have been involved in such investigations, and that staff from many health facilities have also participated in some capacity.

The assessment team also gained the following impressions from discussions with staff at various levels. There is no standard definition for an "outbreak" of any disease, and there is no specified, systematic method for identifying outbreaks. Outbreaks are generally recognized

first at the facility level, based on observing an unusually high number of cases at a facility. The responsibility for reviewing data to identify outbreaks actually resides with district office staff, and they do in fact identify some outbreaks when facilities have submitted the necessary reports. Once notified, regional and district office staff lead the outbreak investigations. Most of the investigations are of cholera outbreaks; individual cases of measles and polio (AFP) are also investigated. The cholera investigations generally consist of travelling to the affected area, confirming the presence of a few cases, and setting up appropriate treatment facilities. The investigations do not employ case-control or cohort studies to identify the cause of the outbreak, nor do they track contacts to trace the chain of infection among affected people (the measles and polio investigations do include

tracking contacts). At some times and in some areas, the medical staff use village and ward development committees to conduct house-to-house searches for cases and to impart health education messages.

3.7 Retrospective and Prospective Responses

For infectious diseases, a “retrospective response” involves actions to control an outbreak that is already underway. A “prospective response” involves preventive actions such as immunization, community education, and pre-positioning drug supplies to prevent future outbreaks and to prepare for responding to such outbreaks when they occur.

Table 13
Number of Health Facilities That Have Conducted or Been Involved in an Outbreak Investigation

IDS System	Regional Office	District Office	Hospital	Health Center	Dispensary	Total
Total sites	3	11	10	8	14	46
MTUHA	2	10	4	4	5	25 (54%)
IDWE	2	7	0	0	1	10 (22%)
HIV/AIDS	----- not applicable -----					
TB/Leprosy	----- not applicable -----					
AFP	2	4	0	0	1	7 (15%)

Regarding retrospective responses, the regional and district offices and health facilities have inadequate capacity to respond to epidemics. Threshold criteria for initiating responsive actions exist only for the epidemic-prone diseases. Supplies (e.g., drugs for treatment) are most often provided by national-level program offices. Such assistance must be approved by the MOH Permanent Secretary’s office; this step often causes some additional delay, even after the time required to notify the national office of an outbreak. Such delays may interfere with timely

response to control the outbreak.

Surveillance data may also be used to conduct “prospective responses,” i.e., to improve conditions and knowledge that will help prevent or mitigate future outbreaks. For example, information on the causes of recent outbreaks, obtained during outbreak investigations, could be used in community education programs and to design other location-specific disease prevention and control programs.

In an effort to find examples of such “prospective responses,” the assessment team

asked interviewees whether they were aware of any occasions on which surveillance data had been used to design prevention and control measures, had been discussed in meetings with community members, or had been used in internal discussions at the site to improve the staff's familiarity with the causes of outbreaks. Tables 14 through 16 report results from these questions.

Table 14 shows the number and percent of sites visited that had used locally-obtained surveillance data in the selection and implementation of prevention and control measures at any time in the past two years. This ranges from 13% to 59% of the sites, depending on the reporting system that produced the information used by those sites. Thus, almost 60% of the MTUHA staff interviewed were able to identify at least one example in which

surveillance data had been used to initiate, design, or modify community-level prevention and control measures, including staff at 10 of the 11 district offices and 5 of the 8 health centers visited. A similar number of sites had made some effort to meet with community groups during the past six months, and even more of the sites had at least discussed surveillance data internally to "update staff knowledge." These are encouraging results, since they indicate that information gathered in surveillance activities may be contributing to preventive actions, even if retrospective responses are not timely. However, these percentages may overstate the case since they do not take into account the amount or variety of information collected by the different systems or which information was used. How many times a particular site used

Table 14
Number of Sites at Which Community Prevention and Control Measures Were Implemented Based on Local Data

IDS System	Regional Office	District Office	Hospital	Health Center	Dispensary	Total
Total sites	3	11	10	8	14	46
MTUHA	1	10	4	5	7	27 (59%)
IDWE	1	7	0	0	1	9 (20%)
HIV/AIDS	3	2	2	0	2	9 (20%)
TB/Leprosy	1	4	0	1	0	6 (13%)
AFP	2	4	0	1	1	8 (17%)

Table 15
Number of Sites That Conducted at Least One Meeting with
Community-based Groups in the Previous Six Months

IDS System	Regional Office	District Office	Hospital	Health Center	Dispensary	Total
Total sites	3	11	10	8	14	46
MTUHA	3	10	2	5	8	28 (61%)
IDWE	2	5	0	0	1	8 (17%)
HIV/AIDS	1	2	2	0	2	7 (15%)
TB/Leprosy	0	2	0	1	0	3 (7%)
AFP	1	3	0	1	0	5 (11%)

Table 16
Number of Sites That Review Findings of
Outbreak Investigations or Other Local Data with Staff

IDS System	Regional Office	District Office	Hospital	Health Center	Dispensary	Total
Total sites	3	11	10	8	14	46
MTUHA	3	8	1	4	8	24
IDWE	2	6	0	0	1	9
HIV/AIDS	1	2	2	0	1	6
TB/Leprosy	2	4	1	1	0	8
AFP	2	5	0	1	0	8

local information is not known, nor is the number of locations in the site's service delivery area where some opportunity existed for the data to be used.

Despite indications that surveillance data are sometimes used for community education and prevention programs, the most common uses of surveillance data are still related to planning clinical services, e.g., to identify the ten most common diseases, identify and count outbreaks of epidemic-prone diseases, and anticipate future needs for drugs and vaccines. The assessment team did not observe epidemic preparedness plans

at any level or location. Individuals who understand and use the MTUHA system said that the system is useful to them. However, people who collect the data do not have the power to act on it, which limits the system's capacity for taking timely and locally-appropriate actions.

3.8 Feedback and Communication

In an IDS system that is functioning properly, the district, regional, and national-level offices will provide routine written feedback to the lower

reporting levels. Such feedback would typically include a printed compilation of data from all sites reporting to that level (e.g., a district office would prepare a compilation of data from all facilities within the district and provide the compilation to each facility). Other forms of written feedback might include a national bulletin, questions from the next higher level regarding surveillance data reported by the facility, inquiries concerning specific cases, and “performance reports” indicating the completeness and timeliness of surveillance reports from the facility over the last review period.

After asking whether staff at a facility had ever received a national bulletin on infectious diseases, interviewers asked “Have you ever received any other feedback in any format from a higher level on surveillance data you collected?” Table 17 reports results from this question. Only 35% of sites report having received any feedback for reports under the MTUHA system, and 20% or fewer of sites report having received feedback under the other systems.

Furthermore, the information reported by hospitals, health centers, and dispensaries apparently refers to verbal feedback that the sites received during visits from district or regional staff. The assessment team was not able to identify any occasions on which district or regional officials had provided written feedback to

reporting facilities. Although the MTUHA program distributes the Health Statistical Abstracts to the regional offices each year, neither these nor any other MOH bulletin was observed at any of the health facilities. Annual reports for the TB/Leprosy and HIV/AIDS programs were observed in one regional office. The NGO hospitals produce detailed annual reports that are distributed to their donors, respective district medical offices and to staff within the hospital. Although the lack of funds and materials (stationery, printers, photocopiers) for surveillance has clearly hampered provision of written feedback, it is also clear that existing opportunities for providing such feedback (e.g., supervisory visits, magazines, and other meetings) either were not explored or were underutilized.

3.9 Supervision

Regular supervision is an important part of an effective surveillance system. In systems that are functioning properly, some form of supervision occurs frequently, and informal supervision may be provided almost continuously. The MTUHA system procedures state that each health facility should receive a supervisory visit from district- or regional-level staff once every three months.

Table 17
Number of Sites That Report Having Received Feedback from a Higher Level

IDS System	Regional Office	District Office	Hospital	Health Center	Dispensary	Total
Total sites	3	11	10	8	14	46
MTUHA	2	3	4	1	6	16 (35%)
IDWE	3	2	0	0	0	5 (11%)
HIV/AIDS	1	3	1	0	1	6 (13%)
TB/Leprosy	2	5	1	1	0	9 (20%)
AFP	3	3	0	0	1	7 (15%)

Table 18
Number of Health Facilities That Received Supervisory Visits Regarding
Their Surveillance Activities During the Last 3 Months

IDS System	Regional Office	District Office	Hospital	Health Center	Dispensary	Total
Total sites	3	11	10	8	14	46
MTUHA	0	3	6	2	3	14 (30%)
IDWE	0	2	0	0	2	4 (9%)
HIV/AIDS	1	1	0	1	0	3 (7%)
TB/Leprosy	1	6	2	0	0	9 (20%)
AFP	0	4	1	0	1	6 (13%)

Table 18 summarizes the team's findings regarding supervision. For the MTUHA system, it shows that only 11 of the 32 health facilities and only 3 of the 11 district offices had received visits from supervisory personnel during the last three months. Supervisory visits are even less frequent under the other systems.

The main reasons given for the low rate of supervision and implementation of supervisory recommendations were lack of funds for fuel and per-diem, plus lack of other resources and appropriate knowledge. However, supervision was also incomplete at health facilities within walking distance from the regional and/or district health offices. This is most apparent for hospitals, which are generally located close to the district or regional office. Even where lack of transportation is not a barrier, MTUHA system supervisors had visited IDS staff at only six of the ten hospitals during the last three months.

The MTUHA and AFP systems have each prepared a checklist for supervisors to use. These checklists, however, do not cover the entire spectrum of surveillance functions. The MTUHA supervisory checklist is apparently quite long, taking at least two or three hours to complete per facility; this may have contributed to its underutilization. Where supervisors did visit, they often signed the visitors' book but did not fill out the supervisory checklist, and, hence, it is difficult to establish what was discussed during the visit,

whether any new recommendations were made, or whether supervisors followed up to determine if previous suggestions for change had been implemented. When supervisory visits do occur, discussions apparently focus mostly on checking data collection, reporting, completeness and accuracy, and there are minimal discussions regarding data analysis and use.

3.10 Training

It is important that people who are responsible for managing surveillance and disease control programs have some formal training in epidemiology. Otherwise, it is unlikely that surveillance data will be analyzed correctly or that outbreak investigations will be conducted properly. Table 19 reports information on training. It shows that the staff responsible for IDS activities have been trained in epidemiological methods at less than 10% of the sites. Most of the people who have been trained are on staff at the district offices.

Most of the people who are responsible for managing the IDS systems or corresponding disease control programs on a daily basis have not received training in epidemiology or disease surveillance. AFP and MTUHA courses constituted the only exposure to

Table 19
Number of Health Facilities at Which IDS System Staff Have Received Some Formal Training in Epidemiology Beyond Their Basic Professional Education

IDS System	Regional Office	District Office	Hospital	Health Center	Dispensary	Total
Total sites	3	11	10	8	14	46
MTUHA	0	0	0	0	0	0 (0%)
IDWE	1	2	0	0	1	4 (9%)
HIV/AIDS	0	1	1	0	0	2 (4%)
TB/Leprosy	0	3	0	0	0	3 (7%)
AFP	0	1	0	0	0	1 (2%)

surveillance training for most of the IDS staff. These courses focus mostly on procedures for collecting data and completing the reporting forms, not on basic epidemiology, investigatory methods, or practical information on how to use data for deciding whether to take action. Furthermore, there are several other problems related to training for MTUHA: although higher-level individuals were trained, lower-level staff do most of the routine work and the higher-level staff have not always passed their learnings on to the others; relatively little training has been provided regarding the MTUHA second version; and finally, due to a high rate of staff turnover, some of the personnel who are operating the MTUHA system at private health facilities had not attended the courses. MTUHA training has focused primarily on how to collect data and complete reporting forms, with little attention to how to analyze or use data for taking action.

3.11 Resources

Table 20 summarizes information collected on the availability of critical resources at health facilities. Material resources and adequate numbers of

suitably trained staff are available at the regional office but are often not available at lower levels. Government hospitals typically do not have working vehicles; however, they are sharing with the regional and district medical offices.

3.12 Laboratory Capabilities

Tanzania has a system of primary, secondary, and tertiary laboratories. The analytical capabilities of laboratories that the team visited are summarized in Table 21. At the most basic (primary) level, dispensaries and health centers are equipped with microscopes and can confirm only malaria cases. Some primary laboratories have limited capacity for performing other tests. Secondary laboratories are primarily at the district-level hospitals. Most of the secondary laboratories are able to perform tests to confirm most of the diseases that are reportable under IDWE. Finally, there are several tertiary laboratories at the country's reference hospitals. These laboratories are quite sophisticated and are able to test for all of the reportable infectious diseases except AFP and yellow fever.

Table 20
Resource Availability at Health Facilities

Resource	Regional Office	District Office	Hospital	Health Center	Dispensary
Total sites	3	10	10	8	14
Electricity	3	8	10	5	7
Stationery	2	9	7	8	10
Telephone service	3	7	8	3	3
Fax	2	1	2	0	0
CB radio	1	3	2	2	0
Postal service	3	10	10	4	8
Calculator	3	10	10	6	9
Computer	3	1	4	0	1
Computer with modem	1	0	1	0	0
Word processor	3	0	2	0	0
Statistical package	3	1	1	0	0
Vehicle	3	10	6	3	2
Fuel	2	7	5	2	2
Motorcycle	1	7	2	3	0
Public transportation	3	9	9	7	10

Table 21
Laboratory Capabilities for Confirming Reportable Diseases

Diseases	Primary	Secondary	Tertiary
Total number of laboratories	12	7	2
<i>Laboratories can confirm the indicated disease on site:</i>			
Cholera	1	5	2
Plague	1	1	2
Relapsing Fever	4	5	2
Yellow fever	0	0	0
AFP (Polio)	0	0	0
Dysentery	7	4	2
Malaria	12	7	2
Meningitis	2	6	2
Typhoid	3	4	2
Trypanosomiasis	1	3	2
Tuberculosis	5	7	2
Leprosy	3	7	2
Onchocerciasis	1	0	2
<i>Laboratories can perform drug sensitivity tests for:</i>			
Malaria	0	0	1
Tuberculosis	0	1	1
Streptococcus pneumoniae	1	2	2
Haemophilus influenzae	1	1	2

3.13 Consensus Findings by Members of the Assessment Team

Table 22 summarizes the assessment team's qualitative and quantitative findings. This table, representing the consensus opinion of all members of the assessment team, was developed immediately following the data collection. It is the most important statement of the conclusions reached about the surveillance systems assessed. The entries in each cell attempt to summarize all of the available relevant information for that particular surveillance function and system. To arrive at these findings, the team reviewed and discussed at length the interview responses and on-site observations obtained and, equally

importantly, integrated their interpretations of how the surveillance systems were actually functioning and serving the needs of the MOH. Some of these conclusions may appear to contradict information presented in previous tables; where such conflicts exist, the authors place greater faith in the accuracy of information in this section, since it is based on a reasoned evaluation of information from all three regions by people who conducted the assessment. Inevitably, the team's impressions and judgments are based on more information than can be summarized in the preceding tables. Apparent discrepancies may also be due to not yet having found the best performance indicator(s) for a particular function or the best way to phrase interview questions during the site visit. It is also possible that some questions were systematically misunderstood by the persons being interviewed.

Table 22
Consensus Findings by Members of the Assessment Team

Surveillance function	MTUHA		IDWE		TB/ Leprosy	HIV/ AIDS	AFP
	Epidemic-prone diseases	Non-epidemic-prone diseases	Epidemic-prone diseases	Non-epidemic-prone diseases			
Clinical register is provided by the system	YA	YA	N	N	YA	YA	N
Case definitions are provided by the system	N	N	N	N	YA	YA	YA
Case definitions are used by everyone operating the system	N	N	N	N	N	N	N
Reporting forms are provided by the system	YA	YA	N	N	YA	YA	YA
Adequate supply of forms in past 6 months (quantitative)	N	N	N	N	Y	N	N
Frequency of reporting as set by the system	YA	YQ	YQ	YA	YA	YA	YA
Is there zero reporting?	Y	Y*	Y	Y	N*	N*	Y
Frequency of zero reporting as set by the system	Q	A	A	A	-	-	A
Timeliness of reporting (qualitative)	-	Q	Q	Q	A	Q	Q
Completeness: did all sites report? were reports complete?	Q		Q	Q	A	Q	Q
Analytic framework is provided by the system	Y	Y	N	N	Y	N	N
Interpretation of data	IQ	O	O	O	IA	O	IQ
Do staff compare current with previous incidence rates to identify outbreaks (qualitative)	N	N	N	N	-	-	-
Does the system perform outbreak investigation(s)?	N	N	Y	Y	-	-	Y
Are the identified outbreaks adequately investigated?	-	-	N	N	-	-	-
Utilization of data for action	IN	YQ	YQ	YQ	YA	N	YA
Feedback & communication	IQ	IQ	N	N	YA	YA	N
Supervision (>50% facilities visited in the past 3 months?)	Q		Q		A	Q	Q
Training	YQ		N		YA	YQ	YQ
Resources	YQ		N		YA	YA	YA
Sustainable without external funding	N		N		N	N	N

Key: I = Included A = Adequate Y = Yes O = Not included Q = Inadequate N = No * = zero reporting may not be required

4 INTEGRATION

Integration of multiple vertical surveillance systems of a country is a common approach that provides a universal surveillance service using similar structure and techniques. The main purposes of integration are to eliminate duplications in data collection and reporting; to reduce cost; to improve accuracy, completeness, and timeliness of data; and to improve feedback and communication of data within and among the various public health levels.

4.1 The Need for Integrating Surveillance Systems in Tanzania

Multiple systems for infectious disease surveillance exist with little interaction among programs responsible for these systems and between these programs and heads of the various public health levels. There are no surveillance officers or boards or units with responsibility for coordinating these systems or activities at any level. Personnel, especially at the level of the health centers and dispensaries where a single individual may be responsible for multiple systems, found it difficult to report in a timely way because of duplicative data collection and reporting.

4.2 Opportunities for Integration

Health sector reform is a nationwide initiative which is currently (early 1999) being implemented. Decentralization of health services to the district level and community empowerment are central to the reform. Decentralization requires empowerment of the districts especially in the area of skilled manpower and locally-controlled and operated resources. District health boards composed of representatives from the community and district health office are to provide the leadership.

Regarding manpower, there is clear need for District Medical Officers with advanced public health training and for other skilled personnel, especially for monitoring and evaluation of prevention and control programs. Training to meet these needs should be an element of the decentralization process. "Basket" funding and cost sharing or community financing are currently being entertained to give districts adequate financial resources to conduct their work. Health sector reform is thought to be financially secure and sustainable given the expansion of the local government's tax base.

An accurate and timely health information system is critical to decision-making at the district level. The MOH's initiative to improve surveillance systems testifies to its commitment to surveillance. The IDS assessment, with the goal of providing an action plan for an integrated, action-oriented, district-based health information system, is considered the first step.

Existing integrated systems and structures, including the MTUHA and District Health Management Teams (DHMTs) and Regional Health Management Teams (RHMTs), provide excellent starts toward such a system. For instance, RHMT and DHMT members such as the Cold Chain Coordinators who make frequent visits to health facilities could be utilized to improve data collection and reporting in the integrated surveillance system. The nationwide health information system (MTUHA) was developed in 1992-93. In 1993, Mbeya region became the first to implement the system. By 1997, the MTUHA system was operational in all the 20 regions. While HIV/AIDS and TB/Leprosy programs were not to be a part of the MTUHA system, AFP, MCH and the immediately notifiable infectious diseases component of IDWE were.

Because the needs of the vertical programs were not met by the MTUHA system, either because of missing essential data elements or non-timely reporting, these programs have continued to

operate their own separate systems. Some health facilities, especially hospitals and new and existing programs, have also designed and operated their own surveillance systems to address their specific needs. For instance the Essential Drug Program (EDP) continues to use its own forms, though all of the information included in the EDP form is also included in the MTUHA forms. Kilimanjaro Christian Medical Center, an institution that trains medical record technicians and Assistant Medical Officers, does not use the MTUHA system. The following describe additional examples as they relate to the particular systems.

Hospital level

Many of the diseases in ICD for in-patient use are not included in the MTUHA system. Additional data that are of interest to the hospital that are not included in MTUHA are forms for recording the results of laboratory tests (hematology, serology, urine, body fluid, culture and sensitivity), X-ray results, and data from mobile clinics.

TB/Leprosy

Not included in the MTUHA forms are stratification by sex and by categories of new, relapse, failure, and returns; information for calculation of drugs needed; and results of laboratory investigations.

AFP/EPI

Neonatal tetanus, AFP, and measles are all in the MTUHA form #F009. These are reported immediately *only* if cases occur. Zero reporting in the MTUHA is done on a quarterly basis on form #F004. This frequency of zero reporting is considered to be not timely for the eradication and elimination purposes of the AFP and EPI programs.

IDWE

Yellow fever, other diarrhea, and malaria are not included in the MTUHA notifiable diseases form #F009 and #F004. IDWE diseases included in form #F009 are reported immediately *only* if cases occur. Zero reporting of these diseases in the MTUHA is done on a quarterly basis on form #F004. The frequency of zero reporting for the diseases included in form #F004 is considered to be not timely for the prevention and control purposes of the Division of Preventive Services.

Table 23 summarizes the assessment team's qualitative judgment of the adequacy of the MTUHA system surveillance functions to serve the other vertical surveillance systems, namely IDWE, TB/Leprosy, HIV/AIDS and AFP/EPI.

Table 23
Adequacy of MTUHA for Serving Functions of Other IDS Systems.

Surveillance Functions	MTUHA				
	IDWE		TB/ Leprosy	HIV/ AIDS	AFP
	Epidemic-prone diseases	Non-epidemic-prone disease			
Detection and registration	IA	IA	IA	IA	IA
Includes essential data elements	IQ	IQ	IQ	IQ	IA
Frequency of reporting	A	Q	Q	A	A
Frequency of zero reporting	Q	Q	Q	A	Q
Analysis (analytic framework)	IQ	IQ	IQ	IQ	IQ
Interpretation	N	N	N	N	N
Outbreak investigation	N	N	-	-	N
Response	N	N	N	N	N
Feedback & communication	IQ	IQ	IQ	IQ	IQ
Supervision	IQ	IQ	IQ	IQ	IQ
Training	N	N	N	N	N

Key

I = Included A = adequate
N = Not included Q = inadequate

The label of the second row, “Includes essential data elements,” refers to whether the case information currently being collected by the MTUHA system is sufficient to the needs of the programs for which the data are being collected. As an example of how the entries should be interpreted, “IQ” in the first cell should be interpreted as follows: “I” indicates that the

MTUHA system is collecting the right category of information (e.g., the age of reported cases); “Q” indicates that this is inadequate since the age groups used are not totally appropriate to the diseases or are not inclusive of all age categories for which the infectious disease programs need information.

5 RECOMMENDATIONS FROM REGIONAL MEETINGS

After completing visits to all of the selected locations in a region, each of the three assessment subteams held a regional meeting with representatives from all of the sites they had visited. The team made a preliminary report of its findings and sought clarification for points that were not clear. These meetings involved lively discussions among all of the participants and, for many of the facility staff, were the first time they had been asked their opinion of how the current systems are functioning. The participants had many observations and recommendations for improving the systems; these are summarized below. Some of the recommendations arose at more than one meeting; where that happened, the number of regions mentioning the topic, is given in parentheses following the recommendation.

5.1 Case Detection and Registration

The MOH should —

1. Create greater awareness of the importance of disease surveillance in villages. (2)
2. Incorporate instruction regarding surveillance into the training of village health workers (VHWS) and traditional birth attendants (TBAs).
3. Educate community leaders, traditional healers, school teachers, and other community members (including the government administrative structure such as ten-house leaders and village executive officers), as well as MCH clinic staff and PHC meeting leaders on the signs and symptoms and reporting mechanisms of notifiable diseases under surveillance.
4. Strengthen the ability of VHWS to conduct disease surveillance.
5. Provide health facilities with the tools needed for data collection.
6. Provide regular feedback to the

community on surveillance data, including what the community reported.

5.2 Case Confirmation

1. The Ministry of Health should develop standard case definitions for all diseases under surveillance and make them available to all reporting sites. (2)
2. Laboratories at the level of health centers and above should be equipped to confirm cases as specified in standard case definitions. (2)

5.3 Reporting

1. The MOH should integrate surveillance systems to minimize duplicative data collection and reporting. (6)
2. Communications from the peripheral health facilities to the districts and districts to the regions should be improved by provision of Radio Calls, especially for epidemic-prone diseases that require immediate reporting and from the regions to the MOH via provision of electronic mail and fax. (3)
3. NGO and private institutions should be required to report infectious diseases to the public health system. (3)
4. The Registrar of Private Practitioners should have the power to take action for those who do not comply with reporting requirements. (2)
5. Bicycles should be provided to health facilities to improve interactions with the community. (2)
6. Radios should be provided at the division and ward level.
7. One health worker at each facility (regional, district, and health centers) should be designated to deal with disease surveillance.
8. The MOH should provide a constant and adequate supply of standard reporting forms and stationery.
9. Disease reporting by VHWS, TBAs, and

traditional healers should be increased.

10. Diseases under surveillance should be reviewed to confirm their appropriateness and frequency of reporting through a national process.

5.4 Analysis, Investigation, Response, and Feedback

1. MOH should develop tools for data analysis.
2. To improve the timeliness of responses to epidemics, MOH should consider decentralizing epidemic response to the district office.
3. Districts should have enough flexibility to design district-specific interventions based on local data.
4. A system for providing feedback to lower levels (including the community), addressing issues such as relevant methods (on-the-job training, magazines, seminars, meetings), resources (e.g., stationery, printer, Xerox machines), and frequency should be added to existing surveillance systems and be a part of the design of new surveillance systems.

5.5 Supervision

1. The MOH should provide routine supportive supervision to the regions on surveillance. (5)
2. Supervision should encompass the areas of data analysis, data utilization, and community reporting; incorporate clinical observation of cases to verify the appropriate use of standard case definitions; and include on-the-job training.
3. Develop one integrated supervisory checklist using lessons learned from existing (MTUHA, EPI) checklists.
4. Adequate funds for supervision should be made available.
5. Motorcycles and 4-wheel drive vehicles should be provided for district and regional supervision.

5.6 Training

1. MOH should provide training to improve management skills.(2)
2. Disease surveillance concepts should be introduced in primary and secondary schools

to improve community reporting.

3. MOH should provide training in basic epidemiology for staff.
4. MOH should give on-the-job training or provide refresher courses and reading materials regularly to current health workers, especially DHMTs and RHMTs in surveillance and general epidemiological methods (the importance and use of standard case definitions, data reporting, data analysis).
5. RHMT and DHMT members should be trained in computer use.
6. Courses in surveillance and general epidemiological methods and operations of the existing surveillance systems in the country should be incorporated into the curriculum of allied health and medical institutions.
7. In regards to MTUHA, MOH should provide funding to DHMTs and RHMTs to train hospitals, health centers and dispensaries on changes introduced in MTUHA version 2 and to train a second person per facility preferably the individuals operating the system.
8. The quality of training should be improved (e.g. allow adequate time, include a practical component).

5.7 General recommendations

1. The MOH and its regional offices should provide all the materials needed to conduct surveillance.
2. MOH should supply and maintain equipment, including bicycles and motorcycles, especially at the dispensary level.
3. MOH should supply radios and telephones in strategic areas.
4. Adequate resources appropriate to the level to meet surveillance obligations should be provided.
5. At all levels, the MOH should employ skilled staff.
6. The MOH needs to employ more staff and carry out on-the-job training, especially at the health center level. Proper allocation of staff.
7. Salaries of health workers need to be raised so they are at least comparable with salaries of other government employees (teachers, soldiers)
8. Surveillance should be a line item in regional- and district-level budgets.
9. Individuals and health facilities participating in

disease surveillance should be involved in the design of new surveillance systems as well as the reform or amendment of existing ones.

10. A community health facility fund should be established.

11. Inactive village health centers should be strengthened by training and supervision.
12. Regular and timely funding is needed from the government.
13. Proper accounting of funds is needed.

Appendix A: Social and Health Services Organization in Tanzania

NATIONAL LEVEL: At this level, overall priorities, policies and procedures are established; resources are allocated to regions; specialized staff are maintained in vertical and general program areas to provide technical consultation and assistance to staff at regional and lower levels; and additional assistance is provided as needed, including vaccine and therapeutic drugs.

REGIONS: There are 20 health regions, each administered by a Regional Medical Officer. The city of Dar Es Salaam is a region, comprised of 3 health districts. There is in every regional office an epidemiology advisor to give assistance to the District level.

DISTRICTS: Regions are divided into districts (about 115 in the country). At the District level there is a District Health Management Team consisting of the District Medical Officer, 5 or 6 District Health Officers (mainly trained in environmental health issues), the District Nursing Officer, and others from MCH, dental health and the laboratory.

All districts have a hospital (although not necessarily governmental), with a lab, physicians, and midwives. Much of the information we will be seeking is at this level. This is also the level to which most authority and responsibility is now being decentralized. In general, while funding is received from both the national level and the local level, the local government is the owner of the health facilities.

DIVISIONS: Districts are divided into Divisions, with the latter comprised of about 20 villages (or 4 wards). Each Division is supposed to have a health center, typically staffed by medical assistants, midwives and traditional birth attendants. Simple lab tests may also be done here. Cold chain is basically good and vaccine is available in health centers and dispensaries. Even though health center reports of cases often are late, health centers are thought to take timely action.

WARDS (also called subdivisions): A ward usually consists of 4 or 5 villages. Health facilities at this level are staffed with rural medical aides. Duties include, e.g., oral rehydration therapy and giving anti-malarials to patients with fever. MOH is working to train ward staff in when to refer patients to the District level. The wards provide monthly case reports to District offices. There is a dispensary at this level, serving several villages. The availability of drugs at the community level is not reliable. Drugs are usually available the first two weeks of the month, and not during the last two weeks, and preventable morbidity and mortality occurs.

VILLAGE: Village populations average approximately 2,000.

Description of Health Services and Infrastructure

Hospitals

These usually provide a full range of in- and out-patient services; and have a laboratory. These are found at the District level and higher, some governmental and some NGO. There are a total of five major referral hospitals in various regions of Tanzania.

The largest medical center, Muhimbili, is located in Dar Es Salaam, and there is an associated school of medicine. This hospital has several departments, including pediatrics, surgery, and OB-Gyn. Pediatrics outpatient clinics, having 4 teams of physicians and nurses, see about 20-50 patients each per day. There are various specialty clinics: e.g., sickle cell clinic on Wednesdays, and cerebral palsy. Patients are referred here from the district hospitals. Pediatric infectious disease is mainly malaria, anemia, pneumonia and TB. When most patients come to the ward they have a history of non-response to treatment. There is also a national institute of medical research, which is now undergoing a review of its mission; and other medical centers in Dar, including the Aga Khan, supported from France.

Health Centers

These usually have a 20-35 bed capacity but do not have a physician. Instead these are staffed by Clinical Officers (also known as Medical Assistants), and have limited laboratory capability.

Dispensaries

Have no in-patient services. They usually have a microscope with which to help establish diagnoses.

Health Workers

Medical Officer: an MD (5 years of training). A medical officer can be the Medical Officer In Charge for any health facility, starting at the District level.

Assistant Medical Officer: (a non-MD doctor). A Medical Assistant with two additional years of training.

Clinical Officer (also known as a Medical Assistant): Three years of medical training beyond secondary school.

Assistant Clinical Officer (also known as a Rural Medical Aide): Three years of medical training beyond Form Four.

Maternal and Child Health Aides receive 2 years of training after completing a secondary school education.

Traditional Birth Attendants are given a 2-week course. They are usually older, experienced women. Country-wide, an estimated 57% of deliveries are attended by TBAs. They are responsible for reporting neonatal tetanus and all deaths occurring within the first 28 days of life. The Village Executive Officer records births if the TBA cannot read. (All other mortality is registered only if it occurs in a Health Facility). In one region visited (Dodoma) there were 1,702

TBAs registered in 1997, of which 1,115 had received the prescribed training.

Village Health Workers are located in villages that do not have a dispensary. These are persons who live in the community and who usually have up to two to three weeks training in health. Their job is to provide health education to the others in the village; supervise construction of latrines; and provide first aid for malaria and minor injuries. They are to be supported and paid by the village.

Traditional Healers

The MOH has not established a policy regarding them. MOH does not now get any disease surveillance information from them.

University training available in public health

Master of Medicine in Community Health, a 3-year program.

Master of Science in Tropical Disease Control, a 2-year program

Master of Public Health (including epidemiology and biostatistics), a 9-month program

Appendix B: Performance Indicators for Surveillance Activities

Guided by the stated objectives of the assessment, a table was prepared showing for each organizational level the surveillance activities expected to be performed at that level. Performance indicators were then developed for each. Questions were then developed to obtain the information needed for the performance indicators. The indicators are shown below.

I. Case Detection and Registration:

Percent of health units that have standardized case definitions for all 21 of the currently or recommended reportable infectious diseases or syndromes.

Percent of sites that have a currently maintained registry (updated at least once per week).

Percent of sites that have appropriate surveillance forms for that site at all times over the past 6 months.

II. Case Confirmation:

Percent of reported cases that are confirmed according to the case definition.

Percent of reported cases that are confirmed by laboratory examination.

III. Data Reporting:

Percent of sites that accurately reported cases from the registry into the summary report to go to district.

Percent of sites that reported each week during the past 12 weeks:

- to the next higher level.
- to the next higher level on time.

IV. Data analysis:

Percent of sites that:

- describe data by person
- describe data by place
- describe data by time
- do trend analysis (including the daily, weekly or monthly tracking of malaria and ARI).
- have an action threshold for each reportable disease
- have appropriate denominators (e.g., population <5 and =>5 years, population by village)
- use appropriate denominators
- calculate period prevalence of each reportable disease.

Percent of Districts that analyze data by village.

V. Outbreak Investigation:

Percent of sites that compare current with previous incidence to affirm an outbreak.

Percent of suspected outbreaks that were investigated in the past year.

Percent of sites that conducted an outbreak investigation.

Of sites that investigated an outbreak, percent that mapped individual cases.

Of sites that investigated an outbreak, percent that tried to identify risk factors (and the source of

the infection).

Of sites that investigated an outbreak, percent that used the data to contain the outbreak.

Percent of sites that have conducted a case-control study.

Percent of sites that have conducted a cohort study.

Percent of sites that have modified their community educational activities based on findings of outbreak investigations.

VI. Retrospective and Prospective Responses:

Percent of facilities and Districts that have a practice of investigating contacts of selected diseases (TB, measles, meningitis).

Of those facilities and Districts that investigate contacts, the percent that prophylax or treat contacts.

Percent of sites that conducted any community disease prevention and control activities during the past year.

Percent of sites that implemented prevention and control measures based on local data for at least one reportable disease or syndrome.

Percent of sites that routinely conduct educational activities related to reportable diseases.

Percent of sites that conducted community educational activities during the past year specifically based on local data to address an endemic problem on reportable diseases or syndrome

Percent of health facilities that conducted at least semi-annual meetings with community members to discuss results of surveillance or investigation data.

VII. Feedback and Communication:

Percent of sites that have:

- a report or bulletin that is regularly produced to disseminate surveillance data.
- received a report or bulletin from a higher level during the past six months on the data they have provided.

VIIIA. Supervision:

Percent of individuals for which:

- performance was reviewed in the past 3 months.
- in the past 3 months the supervisor at the next higher level reviewed: Surveillance practices appropriate to your level; the surveillance data available.
- The performance review was followed by specific feedback for change.
- The recommended changes were made.

Percent of supervisors that made the required number of supervisory visits in the past three months.

Average interval between the two most recent supervisory visits.

The most usual reasons for not making all required supervisory visits.

VIIIB. Training:

Among persons you supervise, which of the following surveillance activities are not being adequately performed because of insufficient skill or knowledge by the responsible person?

- Detection
- Registering
- Reporting
- Analysis

- Communication
- Retrospective response
- Prospective response
- Feedback
- Supervision

The percent of individuals that have received any training in epidemiology and surveillance.

IX. Resources:

Major methods of:

- sending required surveillance reports to higher levels.
- other kinds of communications with higher and lower levels.
- receiving supplies, equipment, pay.

Percent of sites that have: Electricity; Telephone service; Calculator; Fax, CB radio, computers, computers that have modems; Word processor; Statistical package; Vehicle.

X. Laboratory:

Percent of laboratories that have capability to correctly diagnose the 13 infectious diseases listed below

Percent of requested tests that were carried out

Percent of laboratories that maintain diagnostic capabilities for the 13 infectious diseases listed below at all times

Percent of laboratories that perform drug sensitivity tests for malaria, TB, S. pneumoniae and H. influenzae

XI. Costs:

Personnel (for each category of) for surveillance-related activities:

- Time spent per week.
- Average salary per working week.
- Cost per week and per year.

Supplies

Operating expenses

**Appendix C: Tabulated Data for
Surveillance
Indicators—Prepared by the
CDC/EPO/DIH/CDB,
December 20 1998**

Table 1: Tanzania IDSS assessment November-December 1998: Sites Visited During the Assessment by Region.

	Regional Medical	District Medical	Hospitals	Health Centers	Dispensaries
Dodoma	1	5	4	3	7
Kilimanjaro	1	3	4	3	3
Mwanza	1	3	4	4	4
Total	3	11	12	10	14

Table 2: Tanzania IDSS Assessment, November-December 1988: Sites From Where Data Used in the Analysis Were Collected

	Regional Medical	District Medical	Hospitals	Health Centers	Dispensaries
Dodoma	1	5	4	3	7
Kilimanjaro	1	3	4	3	3
Mwanza	1	3	2	2	4
Total	3	11	10	8	14

Table 3: Tanzania IDSS assessment, November-December 1998: Frequencies and Percentages of IDSS by Region and Site

	Regional Medical	District Medical	Hospitals	Health Centers	Dispensaries
MTUHA	3(100)	11(100)	8(80)	6(75)	12(86)
IDWE	3(100)	7(64)	0(0)	0(0)	1(7)
HIV/AIDS	3(100)	5(45)	2(20)	1(13)	2(14)
TB/Leprosy	3(100)	7(64)	2(20)	1(13)	0(0)
AFP	2(67)	7(64)	2(20)	1(13)	2(14)

Table 4: Tanzania IDSS Assessment November-December 1998: Summary Tables A-C, Detailed Results of the Assessment
SUMMARY TABLE A: SURVEILLANCE PRACTICES BY SYSTEM AND LEVEL

	MTUHA				
	RMO	DMO	Hospitals	H/Centers	Dispensary
Total number of sites (used to calculate percentages)	3	11	10	8	14
Sites with MTUHA	3	11	8	6	12
<i>Percentage of total sites with MTUHA</i>	<i>100%</i>	<i>100%</i>	<i>80%</i>	<i>75%</i>	<i>86%</i>
Indicators					
<i>1. Case detection and confirmation:</i>					
Have a clinical register	0	5	8	6	12
Have had an adequate supply of clinical registries in previous 6 months	1	4	8	6	9
Community reports any cases of disease	3	9	4	4	9
<i>2. Data reporting:</i>					
Have had an adequate supply of reporting forms in previous 6 months	2	8	6	5	8
Find reporting forms easy to use	1	11	6	6	6
Find reporting forms time consuming	0	2	7	4	4
Submitted all 4 previously required forms	1	2	0	3	6
Have zero reporting	3	10	7	6	12
<i>3. Data analysis:</i>					
Analyse data on site	1	8	6	5	8
Aggregate data by person	2	8	8	5	7
Aggregate data by place	1	6	1	2	3
Aggregate data by time	2	7	6	5	7
Prepare trend lines	0	0	1	1	1
Have appropriate denominators	1	3	4	0	1
Calculate case fatality rates	1	1	1	0	0
Calculate incidence or prevalence	0	0	1	0	0
<i>4. Outbreak investigation:</i>					
Compare current incidence with previous incidence to determine outbreak	2	7	2	3	4
Ever been involved or conducted an outbreak investigation	2	10	4	4	5
Modified community educational activities after outbreak	2	10	4	4	6
Conducted a community survey in past 2 years	1	9	2	2	5

5. Retrospective and prospective responses:

Implemented community prevention and control measures based on local data	1	10	4	5	7
Conducted at least 1 meeting with community in previous 6 months	3	10	2	5	8
Updated health staff knowledge based on findings of outbreak or local data	3	8	1	4	8

6. Feedback and communication:

Received any type of feedback from a higher level on surveillance data they collected	2	3	4	1	6
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7. Supervision:

Surveillance activities were supervised in previous 6 months	0	3	6	2	3
Supervisor reviewed surveillance activities during last 3 supervision visits	0	8	8	4	10
Supervisor reviewed or discussed surveillance data	0	8	7	4	10
Supervisor provided feedback on performance related to surveillance activities	0	6	7	4	10
Supervisor has ever checked on implementation of previous recommendations	0	5	3	4	9

8. Training:

Received any post basic training in general epidemiology methods	0	0	0	0	0
Received any post basic training in surveillance (including MTUHA course)	1	7	6	5	10

9. Are satisfied with the surveillance system:

Not asked	Not asked	3	4	3
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RMO DMO Hospitals H/Centers Dispensary

1. Case detection and confirmation:

Have a clinical register	0%	45%	80%	75%	86%
Have had an adequate supply of clinical registries in previous 6 months	33%	36%	80%	75%	64%
Community reports any cases of disease	100%	82%	40%	50%	64%

2. Data reporting:

Have had an adequate supply of reporting forms in previous 6 months	67%	73%	60%	63%	57%
Find reporting forms easy to use	33%	100%	60%	75%	43%
Find reporting forms time consuming	0%	18%	70%	50%	29%
Submitted all 4 previously required forms	33%	18%	0%	38%	43%
Have zero reporting	100%	91%	70%	75%	86%

3. Data analysis:

Analyse data on site	33%	73%	60%	63%	57%
Aggregate data by person	67%	73%	80%	63%	50%
Aggregate data by place	33%	55%	10%	25%	21%
Aggregate data by time	67%	64%	60%	63%	50%
Prepare trend lines	0%	0%	10%	13%	7%
Have appropriate denominators	33%	27%	40%	0%	7%
Calculate case fatality rates	33%	9%	10%	0%	0%

Calculate incidence or prevalence	0%	0%	10%	0%	0%
<i>4. Outbreak investigation:</i>					
Compare current incidence with previous incidence to determine outbreak	67%	64%	20%	38%	29%
Ever been involved or conducted an outbreak investigation	67%	91%	40%	50%	36%
Modified community educational activities after outbreak	67%	91%	40%	50%	43%
Conducted a community survey in past 2 years	33%	82%	20%	25%	36%
<i>5. Retrospective and prospective responses:</i>					
Implemented community prevention and control measures based on local data	33%	91%	40%	63%	50%
Conducted at least 1 meeting with community in previous 6 months	100%	91%	20%	63%	57%
Updated health staff knowledge based on findings of outbreak or local data	100%	73%	10%	50%	57%
<i>6. Feedback and communication:</i>					
Received any type of feedback from a higher level on surveillance data they collected	67%	27%	40%	13%	43%
<i>7. Supervision:</i>					
Surveillance activities were supervised in previous 6 months	0%	27%	60%	25%	21%
Supervisor reviewed surveillance activities during last 3 supervision visits	0%	73%	80%	50%	71%
Supervisor reviewed or discussed surveillance data	0%	73%	70%	50%	71%
Supervisor provided feedback on performance related to surveillance activities	0%	55%	70%	50%	71%
Supervisor has ever checked on implementation of previous recommendations	0%	45%	30%	50%	64%
<i>8. Training:</i>					
Received any post basic training in general epidemiology methods	0%	0%	0%	0%	0%
Received any post basic training in surveillance (including MTUHA course)	33%	64%	60%	63%	71%
<i>9. Are satisfied with the surveillance system:</i>					
	Not asked	Not asked	30%	50%	21%

	RMO	IDWE DMO	Hospitals	H/Centers	Dispensary
Total number of sites (used to calculate percentages)	3	11	10	8	14
Sites with IDWE	3	7	0	0	1
<i>Percentage of sites with IDWE</i>	<i>100%</i>	<i>64%</i>	<i>0%</i>	<i>0%</i>	<i>7%</i>
Indicators					
<i>1. Case detection and confirmation:</i>					
Have a clinical register	0	2	0	0	0
Have had an adequate supply of clinical registries in previous 6 months	1	0	0	0	1
Community reports any cases of disease	3	7	0	0	1
<i>2. Data reporting:</i>					
Have had an adequate supply of reporting forms in previous 6 months	2	3			1
Find reporting forms easy to use	2	5			1
Find reporting forms time consuming	0	2			0
Submitted all 4 previously required forms	0	4			0
Have zero reporting	3	7			1
<i>3. Data analysis:</i>					
Analyze data on site	1	7			1
Aggregate data by person	2	7			7
Aggregate data by place	1	1			3
Aggregate data by time	2	5			7
Prepare trend lines	0	0			1
Have appropriate denominators	0	3			1
Calculate case fatality rates	0	1			0
Calculate incidence or prevalence	0	1			0
<i>4. Outbreak investigation:</i>					
Compare current incidence with previous incidence to determine outbreak	2	5			0
Ever been involved or conducted an outbreak investigation	2	7			1
Modified community educational activities after outbreak	2	7			1
Conducted a community survey in past 2 years	1	1			1
<i>5. Retrospective and prospective responses:</i>					
Implemented community prevention and control measures based on local data	1	7			1
Conducted at least 1 meeting with community in previous 6 months	2	5			1
Updated health staff knowledge based on findings of outbreak or local data	2	6			1
<i>6. Feedback and communication:</i>					

Received any type of feedback from a higher level on surveillance data they collected	3	2	0
<i>7. Supervision:</i>			
Surveillance activities were supervised in previous 6 months	0	2	0
Supervisor reviewed surveillance activities during last 3 supervision visits	1	2	0
Supervisor reviewed or discussed surveillance data	1	3	0
Supervisor provided feedback on performance related to surveillance activities	1	2	0
Supervisor has ever checked on implementation of previous recommendations	0	2	0
<i>8. Training:</i>			
Received any post basic training in general epidemiology methods	1	2	1
Received any post basic training in surveillance (including MTUHA course)	2	2	10
<i>9. Are satisfied with the surveillance system:</i>	Not asked	Not asked	0

	RMO	DMO	Hospitals	H/Centers	Dispensary
<i>1. Case detection and confirmation:</i>					
Have a clinical register	0%	18%	0%	0%	0%
Have had an adequate supply of clinical registries in previous 6 months	33%	0%	0%	0%	7%
Community reports any cases of disease	100%	64%	0%	0%	7%
<i>2. Data reporting:</i>					
Have had an adequate supply of reporting forms in previous 6 months	67%	27%	0%	0%	7%
Find reporting forms easy to use	67%	45%	0%	0%	7%
Find reporting forms time consuming	0%	18%	0%	0%	0%
Submitted all 4 previously required forms	0%	36%	0%	0%	0%
Have zero reporting	100%	64%	0%	0%	7%
<i>3. Data analysis:</i>					
Analyse data on site	33%	64%	0%	0%	7%
Aggregate data by person	67%	64%	0%	0%	50%
Aggregate data by place	33%	9%	0%	0%	21%
Aggregate data by time	67%	45%	0%	0%	50%
Prepare trend lines	0%	0%	0%	0%	7%
Have appropriate denominators	0%	27%	0%	0%	7%
Calculate case fatality rates	0%	9%	0%	0%	0%
Calculate incidence or prevalence	0%	9%	0%	0%	0%

<i>4. Outbreak investigation:</i>					
Compare current incidence with previous incidence to determine outbreak	67%	45%	0%	0%	0%
Ever been involved or conducted an outbreak investigation	67%	64%	0%	0%	7%
Modified community educational activities after outbreak	67%	64%	0%	0%	7%
Conducted a community survey in past 2 years	33%	9%	0%	0%	7%
<i>5. Retrospective and prospective responses:</i>					
Implemented community prevention and control measures based on local data	33%	64%	0%	0%	7%
Conducted at least 1 meeting with community in previous 6 months	67%	45%	0%	0%	7%
Updated health staff knowledge based on findings of outbreak or local data	67%	55%	0%	0%	7%
<i>6. Feedback and communication:</i>					
Received any type of feedback from a higher level on surveillance data they collected	100%	18%	0%	0%	0%
<i>7. Supervision:</i>					
Surveillance activities were supervised in previous 6 months	0%	18%	0%	0%	0%
Supervisor reviewed surveillance activities during last 3 supervision visits	33%	18%	0%	0%	0%
Supervisor reviewed or discussed surveillance data	33%	27%	0%	0%	0%
Supervisor provided feedback on performance related to surveillance activities	33%	18%	0%	0%	0%
Supervisor has ever checked on implementation of previous recommendations	0%	18%	0%	0%	0%
<i>8. Training:</i>					
Received any post basic training in general epidemiology methods	33%	18%	0%	0%	7%
Received any post basic training in surveillance (including MTUHA course)	67%	18%	0%	0%	71%
<i>9. Are satisfied with the surveillance system:</i>					
	Not asked	Not asked	0%	0%	0%

	HIV/AIDS				
	RMO	DMO	Hospitals	H/Centers	Dispensary
Total number of sites (used to calculate percentages)	3	11	10	8	14
Sites with HIV/AIDS	3	5	2	1	2
<i>Percentage of sites with HIV/AIDS</i>	<i>100%</i>	<i>45%</i>	<i>20%</i>	<i>13%</i>	<i>14%</i>
Indicators					
<i>1. Case detection and confirmation:</i>					
Have a clinical register	1	1	0	1	2
Have had an adequate supply of clinical registries in previous 6 months	2	2	1	1	1
Community reports any cases of disease	0	2	1	0	2
<i>2. Data reporting:</i>					
Have had an adequate supply of reporting forms in previous 6 months	1	3	1	0	2
Find reporting forms easy to use	2	3	1	0	2
Find reporting forms time consuming	0	1	0	1	0
Submitted all 4 previously required forms	0	0	0	0	1
Have zero reporting	1	2	1	0	2
<i>3. Data analysis:</i>					
Analyse data on site	2	4	2	0	1
Aggregate data by person	2	2	1	0	2
Aggregate data by place	0	2	0	0	0
Aggregate data by time	2	3	1	0	2
Prepare trend lines	2	3	0	0	0
Have appropriate denominators	2	3	0	0	0
Calculate case fatality rates	0	0	0	0	0
Calculate incidence or prevalence	0	0	1	0	0
<i>4. Outbreak investigation:</i>					
Compare current incidence with previous incidence to determine outbreak	<i>Section</i>	<i>is</i>	<i>not</i>	<i>applicable</i>	
Ever been involved or conducted an outbreak investigation					
Modified community educational activities after outbreak					
Conducted a community survey in past 2 years					
<i>5. Retrospective and prospective responses:</i>					
Implemented community prevention and control measures based on local data	3	2	2	0	1
Conducted at least 1 meeting with community in previous 6 months	1	2	2	0	2
Updated health staff knowledge based on findings of outbreak or local data	1	2	2	0	1

6. Feedback and communication:

Received any type of feedback from a higher level on surveillance data they collected	1	3	1	0	1
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7. Supervision:

Surveillance activities were supervised in previous 6 months	1	1	0	1	0
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Supervisor reviewed surveillance activities during last 3 supervision visits	1	1	0	1	1
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Supervisor reviewed or discussed surveillance data	1	0	0	1	1
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Supervisor provided feedback on performance related to surveillance activities	0	0	0	1	1
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Supervisor has ever checked on implementation of previous recommendations	0	0	0	1	1
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8. Training:

Received any post basic training in general epidemiology methods	0	1	1	0	0
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Received any post basic training in surveillance (including MTUHA course)	1	2	1	0	2
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<i>9. Are satisfied with the surveillance system:</i>	Not asked	Not asked	0	0	1
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	RMO	DMO	Hospitals	H/Centers	Dispensary
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1. Case detection and confirmation:

Have a clinical register	33%	9%	0%	13%	14%
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Have had an adequate supply of clinical registries in previous 6 months	67%	18%	10%	13%	7%
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Community reports any cases of disease	0%	18%	10%	0%	14%
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2. Data reporting:

Have had an adequate supply of reporting forms in previous 6 months	33%	27%	10%	0%	14%
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Find reporting forms easy to use	67%	27%	10%	0%	14%
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Find reporting forms time consuming	0%	9%	0%	13%	0%
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Submitted all 4 previously required forms	0%	0%	0%	0%	7%
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Have zero reporting	33%	18%	10%	0%	14%
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3. Data analysis:

Analyse data on site	67%	36%	20%	0%	7%
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Aggregate data by person	67%	18%	10%	0%	14%
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Aggregate data by place	0%	18%	0%	0%	0%
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Aggregate data by time	67%	27%	10%	0%	14%
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Prepare trend lines	67%	27%	0%	0%	0%
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Have appropriate denominators	67%	27%	0%	0%	0%
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Calculate case fatality rates	0%	0%	0%	0%	0%
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Calculate incidence or prevalence	0%	0%	10%	0%	0%
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	<i>Section</i>	<i>is</i>	<i>not</i>	<i>applicable</i>	
<i>4. Outbreak investigation:</i>					
Compare current incidence with previous incidence to determine outbreak					
Ever been involved or conducted an outbreak investigation					
Modified community educational activities after outbreak					
Conducted a community survey in past 2 years					
<i>5. Retrospective and prospective responses:</i>					
Implemented community prevention and control measures based on local data	100%	18%	20%	0%	7%
Conducted at least 1 meeting with community in previous 6 months	33%	18%	20%	0%	14%
Updated health staff knowledge based on findings of outbreak or local data	33%	18%	20%	0%	7%
<i>6. Feedback and communication:</i>					
Received any type of feedback from a higher level on surveillance data they collected	33%	27%	10%	0%	7%
<i>7. Supervision:</i>					
Surveillance activities were supervised in previous 6 months	33%	9%	0%	13%	0%
Supervisor reviewed surveillance activities during last 3 supervision visits	33%	9%	0%	13%	7%
Supervisor reviewed or discussed surveillance data	33%	0%	0%	13%	7%
Supervisor provided feedback on performance related to surveillance activities	0%	0%	0%	13%	7%
Supervisor has ever checked on implementation of previous recommendations	0%	0%	0%	13%	7%
<i>8. Training:</i>					
Received any post basic training in general epidemiology methods	0%	9%	10%	0%	0%
Received any post basic training in surveillance (including MTUHA course)	33%	18%	10%	0%	14%
<i>9. Are satisfied with the surveillance system:</i>					
	Not asked	Not asked	0%	0%	7%

	TB/Leprosy				
	RMO	DMO	Hospitals	H/Centers	Dispensary
Total number of sites (used to calculate percentages)	3	11	10	8	14
Sites with TB/Leprosy	3	7	2	1	0
<i>Percentage of sites with TB/Leprosy</i>	<i>100%</i>	<i>64%</i>	<i>20%</i>	<i>13%</i>	<i>0%</i>
Indicators					
<i>1. Case detection and confirmation:</i>					
Have a clinical register	1	7	2	1	
Have had an adequate supply of clinical registries in previous 6 months	3	5	2	1	
Community reports any cases of disease	2	4	0	1	
<i>2. Data reporting:</i>					
Have had an adequate supply of reporting forms in previous 6 months	1	7	2	1	
Find reporting forms easy to use	3	5	2	1	
Find reporting forms time consuming	0	4	1	1	
Submitted all 4 previously required forms	0	2	0	1	
Have zero reporting	2	2	2	1	
<i>3. Data analysis:</i>					
Analyse data on site	2	4	2	0	
Aggregate data by person	1	6	2	0	
Aggregate data by place	2	2	2	1	
Aggregate data by time	3	4	2	1	
Prepare trend lines	2	0	1	1	
Have appropriate denominators	0	0	0	0	
Calculate case fatality rates	0	0	0	0	
Calculate incidence or prevalence	1	1	0	0	
<i>4. Outbreak investigation:</i>					
Compare current incidence with previous incidence to determine outbreak	<i>Section</i>	<i>is</i>	<i>not</i>	<i>applicable</i>	
Ever been involved or conducted an outbreak investigation					
Modified community educational activities after outbreak					
Conducted a community survey in past 2 years					
<i>5. Retrospective and prospective responses:</i>					
Implemented community prevention and control measures based on local data	1	4	0	1	
Conducted at least 1 meeting with community in previous 6 months	0	2	0	1	
Updated health staff knowledge based on findings of outbreak or local data	2	4	1	1	

6. Feedback and communication:

Received any type of feedback from a higher level on surveillance data they collected	2	5	1	1
---	---	---	---	---

7. Supervision:

Surveillance activities were supervised in previous 6 months	1	6	2	0
Supervisor reviewed surveillance activities during last 3 supervision visits	2	6	2	1
Supervisor reviewed or discussed surveillance data	2	6	2	1
Supervisor provided feedback on performance related to surveillance activities	2	5	1	1
Supervisor has ever checked on implementation of previous recommendations	1	6	1	1

8. Training:

Received any post basic training in general epidemiology methods	0	3	0	0
Received any post basic training in surveillance (including MTUHA course)	0	4	1	1

9. Are satisfied with the surveillance system:

Not asked	Not asked	0	1
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	RMO	DMO	Hospitals	H/Centers	Dispensary
--	-----	-----	-----------	-----------	------------

1. Case detection and confirmation:

Have a clinical register	33%	64%	20%	13%	0%
Have had an adequate supply of clinical registries in previous 6 months	100%	45%	20%	13%	0%
Community reports any cases of disease	67%	36%	0%	13%	0%

2. Data reporting:

Have had an adequate supply of reporting forms in previous 6 months	33%	64%	20%	13%	0%
Find reporting forms easy to use	100%	45%	20%	13%	0%
Find reporting forms time consuming	0%	36%	10%	13%	0%
Submitted all 4 previously required forms	0%	18%	0%	13%	0%
Have zero reporting	67%	18%	20%	13%	0%

3. Data analysis:

Analyse data on site	67%	36%	20%	0%	0%
Aggregate data by person	33%	55%	20%	0%	0%
Aggregate data by place	67%	18%	20%	13%	0%
Aggregate data by time	100%	36%	20%	13%	0%
Prepare trend lines	67%	0%	10%	13%	0%
Have appropriate denominators	0%	0%	0%	0%	0%
Calculate case fatality rates	0%	0%	0%	0%	0%
Calculate incidence or prevalence	33%	9%	0%	0%	0%

	<i>Section</i>	<i>is</i>	<i>not</i>	<i>applicable</i>	
<i>4. Outbreak investigation:</i>					
Compare current incidence with previous incidence to determine outbreak					
Ever been involved or conducted an outbreak investigation					
Modified community educational activities after outbreak					
Conducted a community survey in past 2 years					
<i>5. Retrospective and prospective responses:</i>					
Implemented community prevention and control measures based on local data	33%	36%	0%	13%	0%
Conducted at least 1 meeting with community in previous 6 months	0%	18%	0%	13%	0%
Updated health staff knowledge based on findings of outbreak or local data	67%	36%	10%	13%	0%
<i>6. Feedback and communication:</i>					
Received any type of feedback from a higher level on surveillance data they collected	67%	45%	10%	13%	0%
<i>7. Supervision:</i>					
Surveillance activities were supervised in previous 6 months	33%	55%	20%	0%	0%
Supervisor reviewed surveillance activities during last 3 supervision visits	67%	55%	20%	13%	0%
Supervisor reviewed or discussed surveillance data	67%	55%	20%	13%	0%
Supervisor provided feedback on performance related to surveillance activities	67%	45%	10%	13%	0%
Supervisor has ever checked on implementation of previous recommendations	33%	55%	10%	13%	0%
<i>8. Training:</i>					
Received any post basic training in general epidemiology methods	0%	27%	0%	0%	0%
Received any post basic training in surveillance (including MTUHA course)	0%	36%	10%	13%	0%
<i>9. Are satisfied with the surveillance system:</i>					
	Not asked	Not asked	0%	13%	0%

	Acute Flaccid Paralysis				
	RMO	DMO	Hospitals	H/Centers	Dispensary
Total number of sites (used to calculate percentages)	3	11	10	8	14
Sites with Acute Flaccid Paralysis	2	7	2	1	2
<i>Percentage of sites with AFP</i>	<i>67%</i>	<i>64%</i>	<i>20%</i>	<i>13%</i>	<i>14%</i>
Indicators					
<i>1. Case detection and confirmation:</i>					
Have a clinical register	0	2	1	1	2
Have had an adequate supply of clinical registries in previous 6 months	1	3	2	1	2
Community reports any cases of disease	1	3	0	0	1
<i>2. Data reporting:</i>					
Have had an adequate supply of reporting forms in previous 6 months	1	6	1	1	2
Find reporting forms easy to use	3	7	2	1	2
Find reporting forms time consuming	1	1	1	1	1
Submitted all 4 previously required forms	0	2	0	1	0
Have zero reporting	3	7	1	1	2
<i>3. Data analysis:</i>					
Analyse data on site	3	4	1	1	1
Aggregate data by person	2	5	1	0	0
Aggregate data by place	2	3	0	0	0
Aggregate data by time	3	6	1	0	0
Prepare trend lines	2	1	0	0	0
Have appropriate denominators	2	1	0	0	0
Calculate case fatality rates	0	0	0	0	0
Calculate incidence or prevalence	1	0	0	0	0
<i>4. Outbreak investigation:</i>					
Compare current incidence with previous incidence to determine outbreak	2	3	0	0	1
Ever been involved or conducted an outbreak investigation	2	4	0	1	0
Modified community educational activities after outbreak	1	4	0	1	1
Conducted a community survey in past 2 years	0	1	0	1	0
<i>5. Retrospective and prospective responses:</i>					
Implemented community prevention and control measures based on local data	2	4	0	1	1
Conducted at least 1 meeting with community in previous 6 months	1	3	0	1	0
Updated health staff knowledge based on findings of outbreak or local data	2	5	0	1	0

6. Feedback and communication:

Received any type of feedback from a higher level on surveillance data they collected	3	3	0	0	1
---	---	---	---	---	---

7. Supervision:

Surveillance activities were supervised in previous 6 months	0	4	1	0	1
--	---	---	---	---	---

Supervisor reviewed surveillance activities during last 3 supervision visits	2	3	0	0	1
--	---	---	---	---	---

Supervisor reviewed or discussed surveillance data	1	4	0	0	1
--	---	---	---	---	---

Supervisor provided feedback on performance related to surveillance activities	1	4	0	0	0
--	---	---	---	---	---

Supervisor has ever checked on implementation of previous recommendations	0	3	0	0	0
---	---	---	---	---	---

8. Training:

Received any post basic training in general epidemiology methods	0	1	0	0	0
--	---	---	---	---	---

Received any post basic training in surveillance (including MTUHA course)	2	7	1	0	1
---	---	---	---	---	---

<i>9. Are satisfied with the surveillance system:</i>	Not asked	Not asked	1	1	1
---	-----------	-----------	---	---	---

	RMO	DMO	Hospitals	H/Centers	Dispensary
--	-----	-----	-----------	-----------	------------

1. Case detection and confirmation:

Have a clinical register	0%	18%	10%	13%	14%
--------------------------	----	-----	-----	-----	-----

Have had an adequate supply of clinical registries in previous 6 months	33%	27%	20%	13%	14%
---	-----	-----	-----	-----	-----

Community reports any cases of disease	33%	27%	0%	0%	7%
--	-----	-----	----	----	----

2. Data reporting:

Have had an adequate supply of reporting forms in previous 6 months	33%	55%	10%	13%	14%
---	-----	-----	-----	-----	-----

Find reporting forms easy to use	100%	64%	20%	13%	14%
----------------------------------	------	-----	-----	-----	-----

Find reporting forms time consuming	33%	9%	10%	13%	7%
-------------------------------------	-----	----	-----	-----	----

Submitted all 4 previously required forms	0%	18%	0%	13%	0%
---	----	-----	----	-----	----

Have zero reporting	100%	64%	10%	13%	14%
---------------------	------	-----	-----	-----	-----

3. Data analysis:

Analyse data on site	100%	36%	10%	13%	7%
----------------------	------	-----	-----	-----	----

Aggregate data by person	67%	45%	10%	0%	0%
--------------------------	-----	-----	-----	----	----

Aggregate data by place	67%	27%	0%	0%	0%
-------------------------	-----	-----	----	----	----

Aggregate data by time	100%	55%	10%	0%	0%
------------------------	------	-----	-----	----	----

Prepare trend lines	67%	9%	0%	0%	0%
---------------------	-----	----	----	----	----

Have appropriate denominators	67%	9%	0%	0%	0%
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Calculate case fatality rates	0%	0%	0%	0%	0%
-------------------------------	----	----	----	----	----

Calculate incidence or prevalence	33%	0%	0%	0%	0%
-----------------------------------	-----	----	----	----	----

<i>4. Outbreak investigation:</i>					
Compare current incidence with previous incidence to determine outbreak	67%	27%	0%	0%	7%
Ever been involved or conducted an outbreak investigation	67%	36%	0%	13%	0%
Modified community educational activities after outbreak	33%	36%	0%	13%	7%
Conducted a community survey in past 2 years	0%	9%	0%	13%	0%
<i>5. Retrospective and prospective responses:</i>					
Implemented community prevention and control measures based on local data	67%	36%	0%	13%	7%
Conducted at least 1 meeting with community in previous 6 months	33%	27%	0%	13%	0%
Updated health staff knowledge based on findings of outbreak or local data	67%	45%	0%	13%	0%
<i>6. Feedback and communication:</i>					
Received any type of feedback from a higher level on surveillance data they collected	100%	27%	0%	0%	7%
<i>7. Supervision:</i>					
Surveillance activities were supervised in previous 6 months	0%	36%	10%	0%	7%
Supervisor reviewed surveillance activities during last 3 supervision visits	67%	27%	0%	0%	7%
Supervisor reviewed or discussed surveillance data	33%	36%	0%	0%	7%
Supervisor provided feedback on performance related to surveillance activities	33%	36%	0%	0%	0%
Supervisor has ever checked on implementation of previous recommendations	0%	27%	0%	0%	0%
<i>8. Training:</i>					
Received any post basic training in general epidemiology methods	0%	9%	0%	0%	0%
Received any post basic training in surveillance (including MTUHA course)	67%	64%	10%	0%	7%
<i>9. Are satisfied with the surveillance system:</i>					
	Not asked	Not asked	10%	13%	7%

SUMMARY TABLE B: LABORATORIES

	Primary 12	Secondary 7	Tertiary 2
Total number of laboratories			
Indicators			
<i>1. Can confirm disease (listed below) on site</i>			
Cholera	1	5	2
Plague	1	1	2
Relapsing Fever	4	5	2
Yellow fever	0	0	0
AFP (Polio)	0	0	0
Dysentery	7	4	2
Malaria	12	7	2
Meningitis	2	6	2
Typhoid	3	4	2
Trypanosomiasis	1	3	2
Tuberculosis	5	7	2
Leprosy	3	7	2
Onchocerciasis	1	0	2
<i>2. Can perform drug sensitivity tests for:</i>			
Malaria	0	0	1
Tuberculosis	0	1	1
Streptococcus pneumoniae	1	2	2
Haemophilus influenzae	1	1	2
 <i>1. Can confirm disease (listed below) on site</i>			
Cholera	8%	71%	100%
Plague	8%	14%	100%
Relapsing Fever	33%	71%	100%
Yellow fever	0%	0%	0%
AFP (Polio)	0%	0%	0%
Dysentery	58%	57%	100%
Malaria	100%	100%	100%
Meningitis	17%	86%	100%
Typhoid	25%	57%	100%
Trypanosomiasis	8%	43%	100%
Tuberculosis	42%	100%	100%

Leprosy	25%	100%	100%
Onchocerciasis	8%	0%	100%
<i>2. Can perform drug sensitivity tests for:</i>			
Malaria	0%	0%	50%
Tuberculosis	0%	14%	50%
Streptococcus pneumoniae	8%	29%	100%
Haemophilus influenzae	8%	14%	100%

SUMMARY TABLE C: RESOURCES AVAILABLE

	RMO	DMO	HOSP	H/C	DISP
Total sites	3	10	10	8	14
<i>Resources available:</i>					
Electricity	3	8	10	5	7
Stationery	2	9	7	8	10
Telephone service	3	7	8	3	3
Calculator	3	10	10	6	9
Fax	2	1	2	0	0
CB radio	1	3	2	2	0
Computer	3	1	4	0	1
Computer with modem	1	0	1	0	0
Word Processor	3	0	2	0	0
Statistical Package	3	1	1	0	0
Vehicle	3	10	6	3	2
Fuel	2	7	5	2	2
Motorcycle	1	7	2	3	0
Public transportation	3	9	9	7	10
Postal service	3	10	10	4	8
	RMO	DMO	HOSP	H/C	DISP
Electricity	100%	80%	100%	63%	50%
Stationery	67%	90%	70%	100%	71%
Telephone service	100%	70%	80%	38%	21%
Calculator	100%	100%	100%	75%	64%
Fax	67%	10%	20%	0%	0%
CB radio	33%	30%	20%	25%	0%
Computer	100%	10%	40%	0%	7%
Computer with modem	33%	0%	10%	0%	0%
Word Processor	100%	0%	20%	0%	0%
Statistical Package	100%	10%	10%	0%	0%
Vehicle	100%	100%	60%	38%	14%
Fuel	67%	70%	50%	25%	14%
Motorcycle	33%	70%	20%	38%	0%
Public transportation	100%	90%	90%	88%	71%

Postal service

100%

100%

100%

50%

57%

Appendix D: Assessment Questionnaires and Observational Guides

1. FORM #1: TIMELINESS OF MTUHA AND IDWE REPORTING

(Unlike the other forms, just one of these should be completed for each region. If more than 2 districts are visited, or more than 2 health facilities per district are visited, add more data entry spaces.)

For the period January - June, 1998:

A. MTUHA reports: Report 1 (quarter 1) = Jan - Mar; Report 2 (quarter 2) = Apr - Jun

1. Date received at the national level from this region:

Report 1: _____ Report 2: _____

2. Date received at this region from:

District A (name: _____) :

Report 1: _____ Report 2: _____

District B (name: _____):

Report 1: _____ Report 2: _____

Regional Hospital (name: _____):

Report 1: _____ Report 2: _____

3. Date received at district A (name: _____)

Hospital A1 (name: _____):

Report 1: _____ Report 2: _____

Hospital A2 (name: _____):

Report 1: _____ Report 2: _____

Hospital B1 (name: _____):

Report 1: _____ Report 2: _____

Hospital B2 (name: _____):

Report 1: _____ Report 2: _____

health center A (name: _____):

Report 1: _____ Report 2: _____

health center B (name: _____):

Report 1: _____ Report 2: _____

Dispensary A1 (name: _____):

Report 1: _____ Report 2: _____

Dispensary A2 (name: _____):

Report 1: _____ Report 2: _____

Dispensary B1 (name: _____):

Report 1: _____ Report 2: _____

Dispensary B2 (name: _____):

Report 1: _____ Report 2: _____

B. For the Week Ending on June 6 or 7 and June 12 or 13, 1998:

A. IDWE reports: Report 1 = June 6/7

Report 2 = June 12/13

4. Date received at the national level from this region:

Report 1: _____ Report 2: _____

5. Date received at this region from

District A (name: _____):

Report 1: _____ Report 2: _____

District B (name: _____): _____

Report 1: _____ Report 2: _____

Regional Hospital (name: _____):

Report 1: _____ Report 2: _____

6. Date received at district A (name: _____)

Hospital A1 (name: _____):

Report 1: _____ Report 2: _____

Hospital A2 (name: _____): _____

Report 1: _____ Report 2: _____

Hospital B1 (name: _____):

Report 1: _____ Report 2: _____

Hospital B2 (name: _____): _____

Report 1: _____ Report 2: _____

health center A (name: _____): _____

Report 1: _____ Report 2: _____

health center B (name: _____): _____

Report 1: _____ Report 2: _____

Dispensary A1 (name: _____): _____

Report 1: _____ Report 2: _____

Dispensary A2 (name: _____): _____

Report 1: _____ Report 2: _____

Dispensary B1 (name: _____): _____

Report 1: _____ Report 2: _____

Dispensary B2 (name: _____): _____

Report 1: _____ Report 2: _____

2. FORM #2: RMO, DMO AND MO IN-CHARGE QUESTIONNAIRE

PART A: IDENTIFICATION

A.1 Team: _____ A.2 Interviewer: _____ A.3 Date: _____

A.4 Is the person being interviewed 1. RMO _____ 2. DMO: _____ 3. MO: _____

A.5 Region: _____ A.6 District: _____

A.7 Is this a Hospital? 1. Yes _____ 2. No _____

A.7.1 If "YES," name of hospital: _____

A.8 Phone: _____ A.9 Fax: _____

A.10 Other method of communication: _____

A.11 Mailing address: _____

PART B: OVERVIEW QUESTIONS

B.1. How many surveillance systems exist at your site? _____

B.2. What are the objectives of surveillance ? _____

B.3. What are the strengths of surveillance systems? _____

B.4. What are the weaknesses of surveillance systems? _____

B.5. Are there special groups or hard-to-reach populations (refugees, nomads, fishermen...) in your

C.4. For what purposes do you use surveillance data (reports,...)? _____ _____ _____	
C.5. How do you set program priorities for your area?	
C.6. How do you evaluate progress of your programs? _____ _____ _____	
C.7. Who reviews compiled/analyzed data? _____ _____	
C.8. Does this site compare current data with previous incidence data to identify a suspected outbreak?	Y N
C.9. Has this site ever conducted or been involved in an outbreak investigation? C.9.1. If “YES,” ask: Did you modify your community educational activities based on findings of an outbreak investigations? Please describe: _____ _____	Y N Y N
C.10. Has this site conducted any community surveys of any kind in the past two years? Please describe:	Y N
C.11. Has your site implemented prevention and control measures (such as community education activities) based on local data ? (<u>Excludes</u> educational messages handed down from higher or national level)	Y N
C.12. Has your site conducted at least two meetings in the last 6 months with community members to discuss results of surveillance or outbreak investigation data? observe: minutes of committee meetings	Y N
C.13. Has your site conducted at least two meetings in the last 6 months with health management team to discuss surveillance or outbreak investigation data? observe: minutes of committee meetings	Y N
C.14. Has your site conducted at least two meetings in the last 6 months primary health care committees (PHC) to discuss surveillance or outbreak investigation data? observe: minutes of committee meetings	Y N

C.23. During any of the last 3 visits, did the supervisor provide feedback on your performance related to your surveillance activities?	Y N NA
C.24. During any follow-up visit, did the supervisor check on implementation of previous recommendations?	Y N NA

C.25. Have you received post-basic training in general epidemiologic methods?.	Y N
C.26. Have you received training in surveillance?.(MTUHA course accepted)	Y N
C.27. Please describe all training you have received in epidemiology and surveillance, when you received it, and its duration:_____	

C.28. Are you satisfied with the current surveillance systems? Y N

C.28.1 If "NO," please explain why: _____

C.29. How can the Ministry of Health improve surveillance in the future? (Interviewer: probe)

PART D: DISEASE-SPECIFIC SURVEILLANCE ACTIVITIES

F#	Disease or syndrome	Standard case definition (Y/N) (1)	Confirm using case definition (Y/N) (2)	Confirm using laboratory (Y/N) (3)	Case Investigation (Y/N) (4)	Contact tracing (Y/N) (5)	Standard reporting form (Y/N) If yes, indicate source of Form (6)	Frequency of reporting (time period: I, W, M, Q, A) (7)	Have action threshold (Y/N) (8)
D.1	Cholera								
D.2	Plague								
D.3	Relapsing Fever								
D.4	Yellow Fever								
D.5	Acute Flaccid Paralysis								
D.6	Dysentery								

(1). Do you have a **standard** case definition (Y/N)?

Interviewer must verify the presence of standard case definitions from MOH, WHO, or UNICEF

(2). Is there someone (you or somebody else) at this site that review all or a sample of reported cases to see if they meet the standard case definition (Y/N)?

(3). Do you use the laboratory to confirm cases (Y/N)?

(4). Do you perform community-based investigation of individual case? If “YES,” describe (risk factors, sources,...): _____

(5). Do you perform community-based tracing of contacts of reported cases (Y/N)?

(6). Do you have MOH-designed standard reporting form (Y/N)? If “YES,” indicate source of form (MTUHA, EPI,...)?

(7). How often do you report to the higher level? (immediate[I], weekly[W], monthly[M], quarterly[Q], annually[A])? **Interviewer: If multiple reporting, indicate the shortest duration**

(8). Do you have an action threshold (how many cases are required to initiate an action or investigation)

[Swahili: **kiwango cha chini**] (Y/N)? Interviewer: explain action threshold to the interviewee

PART D: DISEASE-SPECIFIC SURVEILLANCE ACTIVITIES

F#	Disease or syndrome	Standard case definition (Y/N) (1)	Confirm using case definition (Y/N) (2)	Confirm using laboratory (Y/N) (3)	Case Investigation (Y/N) (4)	Contact tracing (Y/N) (5)	Standard reporting form (Y/N) If yes, indicate source of Form (6)	Frequency of reporting (time period: I, W, M, Q, A) (7)	Have action threshold (Y/N) (8)
D.7	Other diarrhea								
D.8	Malaria								
D.9	Measles								
D.10	Meningococcal Meningitis								
D.11	Rabies								

(1). Do you have a **standard** case definition (Y/N)?

Interviewer must verify the presence of standard case definitions from MoH, WHO, or UNICEF

(2). Is there someone (you or somebody else) at this site that review all or a sample of reported cases to see if they meet the standard case definition (Y/N)?

(3). Do you use the laboratory to confirm cases (Y/N)?

(4). Do you perform community-based investigation of individual case? If “YES,” describe (risk factors, sources,...): _____

(5). Do you perform community-based tracing of contacts of reported cases (Y/N)?

(6). Do you have MOH-designed standard reporting form (Y/N)? If “YES,” indicate source of form (MTUHA, EPI,...)?

(7). How often do you report to the higher level? (immediate[I], weekly[W], monthly[M], quarterly[Q], annually[A])?

Interviewer: If multiple reporting, indicate the shortest duration

(8). Do you have an action threshold (how many cases are required to initiate an action or investigation)

[Swahili: **kiwango cha chini**] (Y/N)? Interviewer: explain action threshold to the interviewee

PART D: DISEASE-SPECIFIC SURVEILLANCE ACTIVITIES

F#	Disease or syndrome	Standard case definition (Y/N) (1)	Confirm using case definition (Y/N) (2)	Confirm using laboratory (Y/N) (3)	Case Investigation (Y/N) (4)	Contact tracing (Y/N) (5)	Standard reporting form (Y/N) If yes, indicate source of Form (6)	Frequency of reporting (time period: I, W, M, Q, A) (7)	Have action threshold (Y/N) (8)
D.12	Animal bites								
D.13	Neonatal tetanus								
D.14	Typhoid								
D.15	Trypanosomiasis								
D.16	TB								
D.17	Viral hemorrhagic fever								

(1). Do you have a **standard** case definition (Y/N)?

Interviewer must verify the presence of standard case definitions from MOH, WHO, or UNICEF

(2). Is there someone (you or somebody else) at this site that review all or a sample of reported cases to see if they meet the standard case definition (Y/N)?

(3). Do you use the laboratory to confirm cases (Y/N)?

(4). Do you perform community-based investigation of individual case? If “YES,” describe (risk factors, sources,...): _____

(5). Do you perform community-based tracing of contacts of reported cases (Y/N)?

(6). Do you have MOH-designed standard reporting form (Y/N)? If “YES,” indicate source of form (MTUHA, EPI,...)?

(7). How often do you report to the higher level? (immediate[I], weekly[W], monthly[M], quarterly[Q], annually[A])? **Interviewer: If multiple reporting, indicate the shortest duration**

(8). Do you have an action threshold (how many cases are required to initiate an action or investigation)

[Swahili: **kiwango cha chini**] (Y/N)? Interviewer: explain action threshold to the interviewee

PART D: DISEASE-SPECIFIC SURVEILLANCE ACTIVITIES

F#	Disease or syndrome	Standard case definition (Y/N) (1)	Confirm using case definition (Y/N) (2)	Confirm using laboratory (Y/N) (3)	Case Investigation (Y/N) (4)	Contact tracing (Y/N) (5)	Standard reporting form (Y/N) If yes, indicate source of Form (6)	Frequency of reporting (time period: I, W, M, Q, A) (7)	Have action threshold (Y/N) (8)
D.18	Leprosy								
D.19	HIV								
D.20	AIDS								
D.21	STDs								
D.22	Onchocerciasis								
D.23	Childhood ARI								
D.24	Childhood Pneumonia								

(1). Do you have a **standard** case definition (Y/N)?

Interviewer must verify the presence of standard case definitions from MoH, WHO, or UNICEF

(2). Is there someone (you or somebody else) at this site that review all or a sample of reported cases to see if they meet the standard case definition (Y/N)?

(3). Do you use the laboratory to confirm cases (Y/N)?

(4). Do you perform community-based investigation of individual case? If “YES,” describe (risk factors, sources,...): _____

(5). Do you perform community-based tracing of contacts of reported cases (Y/N)?

(6). Do you have MOH-designed standard reporting form (Y/N)? If “YES,” indicate source of form (MTUHA, EPI,...)?

(7). How often do you report to the higher level? (immediate[I], weekly[W], monthly[M], quarterly[Q], annually[A])? **Interviewer: If multiple reporting, indicate the shortest duration**

(8). Do you have an action threshold (how many cases are required to initiate an action or investigation)

[Swahili: **kiwango cha chini**] (Y/N)? Interviewer: explain action threshold to the interviewee

PART E: RESOURCES

	Resources	Available at site (Y/N)	Functioning at present (Y/N)	Use for surveillance (Y/N)	Do you experience shortages? (Y/N)
E.1	Electricity				
E.2	Stationery (paper, pen)				
E.3	Telephone				
E.4	Calculator				
E.5	Fax				
E.6	CB radio				
E.7	Computer				
E.8	Computer with modem				
E.9	Word processor (name)				
E.10	Statistical package (name)				
E.11	Vehicle (type)				
E.12	Fuel for vehicle				
E.13	Motorcycle				
E.14	Public transport				
E.15	Postal service				

3A. FORM #3: DISTRICT AND REGIONAL LEVEL QUESTIONNAIRE

PART A: IDENTIFICATION

A.1 Team: _____ A.2. Interviewer: _____ A.3. Date: _____

A.4. Region: _____ A.5. District: _____

A.6 Title of person interviewed: _____.

A.7. Disease control program(s) for which responsible at this level 1. IDWE _____
2. TB/Leprosy _____ 3. Malaria _____ 4. EPI/AFP _____ 5. HIV/AIDS 6. MTUHA _____

A.8 Phone: _____ A.9 Fax: _____

A.10 Other method of communication: _____.

A.11 Mailing address: _____.

PART B: OVERVIEW QUESTIONS

B.1. What are the objectives of this surveillance system ? _____

B.2. What are the strengths of this surveillance system? _____

B.3 What are the weaknesses of this surveillance system? _____

B.4 In what ways will decentralization or health sector reform affect your surveillance system?

B.5 Do you have any surveillance activities carried out jointly with other programs or institutions (NGOs,...) At your site?

B.5.1 If "YES," describe: _____

PART C: PROGRAM PRACTICES

I. Case Detection and Registration

C.1 Does the community report any cases of disease? C.1.1 If "YES," describe (outbreak, community leader, routine...): _____ _____ _____	Y N
<i>Ask for TB and HIV/AIDS:</i>	
C.2. Have you had an adequate supply of appropriate registry forms throughout the past 6 months?	Y N

II. Data Reporting:

C.3 Is (are) the reporting form(s) easy to use? C.3.1 If "NO," please describe the reasons why? _____ _____ _____	Y N
C.4 Is (are) the form(s) you use for reporting time consuming to complete?	Y N
C.5 How long does it take to prepare the (weekly/monthly/quarterly) report (time period) to the higher level?	hrs.
C.6 Have you had an adequate supply of appropriate reporting forms throughout the past 6 months?	Y N
C.7 Who prepares the reports? Title:	
C.8 Is there "zero reporting" (Do you submit a report even if there are no reportable cases)?	Y N
C.9 How do you report to a higher level? (Could have more than one answer) 1. Mail 2. Public transport 3. Phone 4. Fax 5. In-person 6. Other: _____	
C.10 What barriers or constraints do you have in reporting to a higher level? _____ _____ _____	
C.11 Who at this level collects surveillance reports from lower levels? Title	
C.12 How do you receive reports from the lower level? (Could have more than one answer) 1. Mail 2. Public transport 3. Phone 4. Fax 5. In-person 6. Other: _____	
C.13 How many sources are supposed to report to you (at district level, # of health facilities; at regional level, # of districts)?	

<p>C.14 From how many of these sources did you receive the required reports during July-September?</p> <p>C.14.1 If not “100% reporting,” ask what are the reasons for not receiving reports from lower levels: 1. Transportation not available 2. Forms not available 3. No funds for postage 4. Other _____</p> <p>_____</p> <p>_____</p>	
<p>For districts:</p> <p>C.15 How many private (NGO,...) hospitals, health centers, and dispensaries exist in your district?</p> <p>C.15.1 From how many of these institutions do you receive surveillance data?</p>	
<p>C.16 Can you comment on the accuracy and completeness of reports you receive from the lower levels?</p> <p>_____</p> <p>_____</p>	

III. Data analysis:

C.17 Who analyzes data at this site? Title:	
<p>C.18 Do you analyze data?</p> <p>If “YES,” complete the observation section</p>	Y N

IV. Outbreak Investigation: (skip for HIV/AIDS, TB)

C.19 Does this site compare current data with previous incidence data to identify a suspected outbreak?	Y N
<p>C.20 Has this site ever conducted or involved in an outbreak investigation?</p> <p>C.20.1 If “YES,” ask: Did you modify your community educational activities based on findings of an outbreak investigations? Please describe: _____</p> <p>_____</p>	<p>Y N</p> <p>Y N</p>
C.21 Has this site conducted any community surveys of any kind in the past two years? Please describe:	Y N

V. Retrospective and Prospective Responses:

C.22 Has your site implemented prevention and control measures (such as community education activities) based on local data ? (<u>Excludes</u> educational messages handed down from higher or national level)	Y N
C.23 Has your site conducted at least one meeting in the last 6 months with community members to discuss results of surveillance or outbreak investigation data?	Y N

VI. Feedback and Communication:

C.25 Do you produce a surveillance report or bulletin or summary routinely at this site? If “Yes,” ask:	Y N
C.25.1 Do you distribute copies to staff at this level?	Y N
C.25.2 Do you distribute copies to higher levels?	Y N
C.25.3 Do you distribute copies to lower levels?	Y N
C.25.4 Do you distribute copies to the community level	Y N
C.26 Have you received a surveillance report or bulletin or summary from a higher level? C.26.1 If “Yes,” how often?: _____	Y N
C.27 Have you ever received any other feedback from a higher level in any format on surveillance data you collected? C.27.1 If yes, please describe:	Y N

VII. Supervision:

C.28 Have you been supervised on your surveillance activities in the last 3 months?	Y N
C.29 During any of the last 3 visits, did the supervisor review your surveillance activities?	Y N NA
C.30 During any of the last 3 visits, did the supervisor review or discuss surveillance data with you?	Y N NA
C.31 During any of the last 3 visits, did the supervisor provide feedback on your performance related to your surveillance activities?	Y N NA
C.32 During any follow-up visit, did the supervisor check on implementation of previous recommendations?	Y N NA

C.33 How many sites do you supervise? C.33.1 Of these sites, how many were you able to visit in the past 3 months? C.33.2 If you were not able to get to all sites, what were the usual reasons? _____ C.33.3 On average, how long is it between visits to the same site? Indicate the longest interval	
C.34 Do you use a guide by which to evaluate the person’s surveillance-related activities?	Y N

IX: Training:

C.35 Have you received post-basic training in general epidemiologic methods?.	Y N
C.36 Have you received training in surveillance?.(MTUHA course accepted)	Y N
C.37 Please describe all training you have received in epidemiology and surveillance, when you received it, and its duration:_____	

PART D: DISEASE-SPECIFIC SURVEILLANCE ACTIVITIES

F#	Disease or syndrome	Standard case definition (Y/N) (1)	Confirm using case definition (Y/N) (2)	Confirm using laboratory (Y/N) (3)	Case investigation (Y/N) (4)	Contact tracing (Y/N) (5)	Standard reporting form (Y/N) If yes, indicate source of Form (6)	Frequency of reporting (time period: I, W, M,Q,A) (7)	Have action threshold (Y/N) (8)
D.1	Cholera								
D.2	Plague								
D.3	Relapsing Fever								
D.4	Yellow Fever								
D.5	Acute Flaccid Paralysis								
D.6	Dysentery								

- (1). Do you have a **standard** case definition (Y/N)? **Interviewer must verify the presence of standard case definitions from MoH, WHO, or UNICEF**
- (2). Is there someone (you or somebody else) at this site that review all or a sample of reported cases to see if they meet the standard case definition (Y/N)?
- (3). Do you use the laboratory to confirm cases (Y/N)?
- (4). Do you perform community-based investigation of individual case? If “YES,” describe (risk factors, sources,...): _____
- (5). Do you perform community-based tracing of contacts of reported cases (Y/N)?
- (6). Do you have MOH-designed standard reporting form (Y/N)? If “YES,” indicate source of form (MTUHA, EPI,...)7
- (7). How often do you report to the higher level? (immediate[I], weekly[W], monthly[M], quarterly[Q], annually[A])? **Interviewer: If multiple reporting, indicate the shortest duration**
- (8). Do you have an action threshold (how many cases are required to initiate an action or investigation) [Swahili: **kiwango cha chini**] (Y/N)? Interviewer: explain action threshold to the interviewee

PART D: DISEASE-SPECIFIC SURVEILLANCE ACTIVITIES

F#	Disease or syndrome	Standard case definition (Y/N) (1)	Confirm using case definition (Y/N) (2)	Confirm using laboratory (Y/N) (3)	Case investigation (Y/N) (4)	Contact tracing (Y/N) (5)	Standard reporting form (Y/N) If yes, indicate source of Form (6)	Frequency of reporting (time period: I, W, M, Q, A) (7)	Have action threshold (Y/N) (8)
D.7	Other diarrhea								
D.8	Malaria								
D.9	Measles								
D.10	Meningococcal Meningitis								
D.11	Rabies								

(1). Do you have a **standard** case definition (Y/N)?

Interviewer must verify the presence of standard case definitions from MOH, WHO, or UNICEF

(2). Is there someone (you or somebody else) at this site that review all or a sample of reported cases to see if they meet the standard case definition (Y/N)?

(3). Do you use the laboratory to confirm cases (Y/N)?

(4). Do you perform community-based investigation of individual case? If “YES,” describe (risk factors, sources,...): _____

(5). Do you perform community-based tracing of contacts of reported cases (Y/N)?

(6). Do you have MOH-designed standard reporting form (Y/N)? If “YES,” indicate source of form (MTUHA, EPI,...)?

(7). How often do you report to the higher level? (immediate[I], weekly[W], monthly[M], quarterly[Q], annually[A])?

Interviewer: If multiple reporting, indicate the shortest duration

(8). Do you have an action threshold (how many cases are required to initiate an action or investigation)

[Swahili: **kiwango cha chini**] (Y/N)? Interviewer: explain action threshold to the interviewee

PART D: DISEASE-SPECIFIC SURVEILLANCE ACTIVITIES

F#	Disease or syndrome	Standard case definition (Y/N) (1)	Confirm using case definition (Y/N) (2)	Confirm using laboratory (Y/N) (3)	Case investigation (Y/N) (4)	Contact tracing (Y/N) (5)	Standard reporting form (Y/N) If yes, indicate source of Form (6)	Frequency of reporting (time period: I, W, M, Q, A) (7)	Have action threshold (Y/N) (8)
D.12	Animal bites								
D.13	Neonatal tetanus								
D.14	Typhoid								
D.15	Trypanosomiasis								
D.16	TB								
D.17	Viral hemorrhagic fever								

(1). Do you have a **standard** case definition (Y/N)?

Interviewer must verify the presence of standard case definitions from MOH, WHO, or UNICEF

(2). Is there someone (you or somebody else) at this site that review all or a sample of reported cases to see if they meet the standard case definition (Y/N)?

(3). Do you use the laboratory to confirm cases (Y/N)?

(4). Do you perform community-based investigation of individual case? If “YES,” describe (risk factors, sources,...): _____

(5). Do you perform community-based tracing of contacts of reported cases (Y/N)?

(6). Do you have MOH-designed standard reporting form (Y/N)? If “YES,” indicate source of form (MTUHA, EPI,...)?

(7). How often do you report to the higher level? (immediate[I], weekly[W], monthly[M], quarterly[Q], annually[A])? **Interviewer: If multiple reporting, indicate the shortest duration**

(8). Do you have an action threshold (how many cases are required to initiate an action or investigation)

[Swahilli: **kiwango cha chini**] (Y/N)? Interviewer: explain action threshold to the interviewee

PART D: DISEASE-SPECIFIC SURVEILLANCE ACTIVITIES

F#	Disease or syndrome	Standard case definition (Y/N) (1)	Confirm using case definition (Y/N) (2)	Confirm using laboratory (Y/N) (3)	Case investigation (Y/N) (4)	Contact tracing (Y/N) (5)	Standard reporting form (Y/N) If yes, indicate source of Form (6)	Frequency of reporting (time period: I, W, M,Q,A) (7)	Have action threshold (Y/N) (8)
D.18	Leprosy								
D.19	HIV								
D.20	AIDS								
D.21	STDs								
D.22	Onchocerciasis								
D.23	Childhood ARI								
D.24	Childhood Pneumonia								

- (1). Do you have a **standard** case definition (Y/N)? **Interviewer must verify the presence of standard case definitions from MoH, WHO, or UNICEF**
- (2). Is there someone (you or somebody else) at this site that review all or a sample of reported cases to see if they meet the standard case definition (Y/N)?
- (3). Do you use the laboratory to confirm cases (Y/N)?
- (4). Do you perform community-based investigation of individual case? If “YES,” describe (risk factors, sources,...): _____
- (5). Do you perform community-based tracing of contacts of reported cases (Y/N)?
- (6). Do you have MOH-designed standard reporting form (Y/N)? If “YES,” indicate source of form (MTUHA, EPI,...)7
- (7). How often do you report to the higher level? (immediate[I], weekly[W], monthly[M], quarterly[Q], annually[A])? **Interviewer: If multiple reporting, indicate the shortest duration**
- (8). Do you have an action threshold (how many cases are required to initiate an action or investigation) [Swahili: **kiwango cha chini**] (Y/N)? Interviewer: explain action threshold to the interviewee

PART E: RESOURCES

Resources	Available at site (Y/N)	Functioning at present (Y/N)	Use for surveillance (Y/N)	Do you experience shortages? (Y/N)
E.1 Electricity				
E.2 Stationery (paper, pen)				
E.3 Telephone				
E.4 Calculator				
E.5 Fax				
E.6 CB radio				
E.7 Computer				
E.8 Computer with modem				
E.9 Word processor (name)				
E.10 Statistical package (name)				
E.11 Vehicle (type)				
E.12 Fuel for vehicle				
E.13 Motorcycle				
E.14 Public transport				
E.15 Postal service				

PART F: SUPERVISOR'S OBSERVATIONS

1. Number of individual(s) you supervise: _____

Collecting (n)	Reporting (n)	Analyzing (n)	Communicating (n)	Using data for action (n)	Supervising (n)

3B. FORM 30. OBSERVATIONS: DISTRICT AND REGIONAL LEVELS

- To prepare:
1. TB and HIV/AIDS clinical registers.
 2. The last four reports prepared by the different systems to higher levels.
 3. Any summarized data (annual, ...).
 4. Standard case definitions.
 5. MTUHA reports (1st and 2nd quarters, 1998) and IDWE reports (weeks ending June 6 and 13, 1998).

1. I. Case Detection and Registration:(for TB and HIV/AIDS)

- 1.1 - Is there a clinical register? Y N
- 1.2 - Percent of most recent 50 cases in the registry that have all the variables completely filled out. _____%

2. II. Data Reporting:

- 2.1 - Is there zero reporting? Y N
- 2.2 - Of the last 4 required reports, the number that were prepared _____
- 2.3 - Of the last 4 required reports, the number that were submitted _____
- 2.4-Of the last 4 required reports, the number that are completely filled out. _____

3.IV. Data analysis:

- 3.1 - Are the data aggregated by time (month, year)? Y N
- 3.2 - Are the data aggregated by person (age, sex)? Y N
- 3.3 - Are the data aggregated by place (village, ward, district)? Y N
- 3.4 - Are trends prepared (month, year)? Y N
- 3.5 - Are any rates (prevalence, incidence) calculated? Y N
- 3.6 - Is case fatality calculated? Y N
- 3.7 - Have denominator data Y N

4. VII. Feedback and Communication:

- 4.1- Examine the best surveillance bulletin, report or written communication produced at this site for
 - 4.1.1 -- appropriate language used for the target audience. Y N
 - 4.1.2 -- adequate level of detail. Y N
 - 4.1.3 -- data interpretation (policy, education message). Y N
 - 4.1.4 -- number of times in the last year
- 4.2- Examine the best surveillance bulletin, report or written communication from a higher level.
 - 4.2.1 -- appropriate language used for the target audience. Y N
 - 4.2.2 -- adequate level of detail. Y N
 - 4.2.3 -- data interpretation (policy, education message). Y N
 - number of times in the last year

4A. FORM 4: HEALTH FACILITY QUESTIONNAIRE

PART A: IDENTIFICATION

A.1 Team: _____ A.2 Interviewer: _____ A.3 Date: _____.

A.4 Region: _____ A.5 District: _____ A.6 Facility: _____.

A.7 Health facility is: Dispensary? ____ Health Center? ____ Hospital? ____ Is an NGO? ____.

A.8 Title of person interviewed: _____.

A.9 Disease control program(s) for which responsible at this level:
 __ IDWE, __ TB/Leprosy, __ AFP, __ HIV/AIDS, __ MTUHA

A.10 Phone: _____ A.11 Fax: _____.

A.12 Other method of communication: _____.

A.13 Mailing address: _____.

PART B: PROGRAM PRACTICES

I. Case Detection and Registration:

B.1 Does the community report any cases of disease? Y N B.1.1 If "YES," describe (outbreak, community leader, routine...): _____ _____ _____ _____	
B.2 Have you had an adequate supply of appropriate clinical registry forms (or book) throughout the past 6 months? Y N	

II. Case Confirmation: None.

III. Data Reporting:

B.3 Who prepares the reports at this level? Title:	
B.4 Is (are) the reporting form(s) easy to use? B.4.1 If "NO," please describe the reasons why? _____ _____	Y N
B.5 Is (are) the form(s) you use for reporting time consuming to complete?	Y N
B.6 How long does it take to prepare the (weekly/monthly/quarterly) report (time period)?	hrs.
B.7 Have you had an adequate supply of reporting forms during the past six months?	Y N

B.8 What means do you use to report to a higher level? (Could have more than one answer) Mail Public transport Phone Fax In-person Other: _____
B.9 What barriers or constraints do you have in reporting to a higher level? _____ _____

IV. Data analysis:

B.10 Do you analyze data at this site? If “YES,” complete the observation section	Y N
B.11 Who analyzes data? Title: _____	

V. Outbreak Investigation: (skip for HIV/AIDS, TB)

B.12 Does this site compare current data with previous incidence data to identify a suspected outbreak?	Y N
B.13 Has this site ever conducted or involved in an outbreak investigation?	Y N
B. 13.1 If “YES,” ask: Did you modify your community educational activities based on findings of an outbreak investigations? Please describe: _____ _____	Y N
B.14 Has this site conducted any community surveys of any kind in the past two years? Please describe:	Y N

VI. Retrospective and Prospective Responses:

B.15 Has your site implemented prevention and control measures (such as community education activities) based on local data ? (<u>Excludes</u> educational messages handed down from higher or national level)	Y N
B.16 Has your site conducted at least at least one meeting in the last 6 months with community members to discuss results of surveillance or outbreak investigation data?	Y N
B.17 Has this site updated health staff knowledge and skills based on findings of outbreak investigations or local data? Please describe:	Y N

VII. Feedback and Communication

B.18 Do you produce a surveillance report or bulletin or summary routinely at this site?	Y N
If “Yes,” ask:	
B.18.1 Do you distribute copies to staff at this level?	Y N
B.18.2 Do you distribute copies to higher levels?	Y N
B.18.3 Do you distribute copies to lower levels?	Y N
B.18.4 Do you distribute copies to the community level?	Y N
B.19 Have you received a surveillance report or bulletin or summary from a higher level?	Y N
B.19.1 If “Yes,” how often?: _____	
B.20 Have you ever received any other feedback from a higher level in any format on surveillance data you collected?	Y N
B.20.1 If “yes,” please describe:	

VIII. Supervision:

B.21 Have you been supervised on your surveillance activities in the last 3 months?	Y N
B.22 During any of the last 3 visits, did the supervisor review your surveillance activities?	Y N NA
B.23 During any of the last 3 visits, did the supervisor review or discuss surveillance data with you?	Y N NA
B.24 During any of the last 3 visits, did the supervisor provide feedback on your performance related to your surveillance activities?	Y N NA
B.25 During any follow-up visit, did the supervisor check on implementation of previous recommendations?	Y N NA

IX: Training:

B.26 Have you received post-basic training in general epidemiologic methods?.	Y N
B.26.1 Have you received training in surveillance? (MTUHA course accepted)	Y N
B.26.2 Please describe all training you have received in epidemiology and surveillance, when you received it, and its duration: _____	

B.27 XII. General questions

1. Are you satisfied with the current surveillance system? Y N

If "NO," please explain why:

2. How can the Ministry of Health improve surveillance in the future? (Interviewer: probe)

PART C: DISEASE-SPECIFIC SURVEILLANCE ACTIVITIES

F#	Disease or syndrome	Standard case definition (Y/N) (1)	Confirm using case definition (Y/N) (2)	Confirm using laboratory (Y/N) (3)	Case Investigation (Y/N) (4)	Contact tracing (Y/N) (5)	Standard reporting form (Y/N) If yes, indicate source of Form (6)	Frequency of reporting (time period: I, W, M, Q, A) (7)	Have action threshold (Y/N) (8)
1	Cholera								
2	Plague								
3	Relapsing Fever								
4	Yellow Fever								
5	Acute Flaccid Paralysis								
6	Dysentery								

(1). Do you have a **standard** case definition (Y/N)?

Interviewer must verify the presence of standard case definitions from MOH, WHO, or UNICEF

(2). Is there someone (you or somebody else) at this site that review all or a sample of reported cases to see if they meet the standard case definition (Y/N)?

(3). Do you use the laboratory to confirm cases (Y/N)?

(4). Do you perform community-based investigation of individual case? If “YES,” describe (risk factors, sources,...): _____

(5). Do you perform community-based tracing of contacts of reported cases (Y/N)?

(6). Do you have MOH-designed standard reporting form (Y/N)? If “YES,” indicate source of form (MTUHA, EPI,...)7

(7). How often do you report to the higher level? (immediate[I], weekly[W], monthly[M], quarterly[Q], annually[A])? **Interviewer:**

multiple reporting, indicate the shortest duration

If

(8). Do you have an action threshold (how many cases are required to initiate an action or investigation)

[Swahilli: **kiwango cha chini**] (Y/N)? Interviewer: explain action threshold to the interviewee

PART C: DISEASE-SPECIFIC SURVEILLANCE ACTIVITIES

F#	Disease or syndrome	Standard case Definition (Y/N) (1)	Confirm using case definition (Y/N) (2)	Confirm using laboratory (Y/N) (3)	Case Investigation (Y/N) (4)	Contact tracing (Y/N) (5)	Standard reporting form (Y/N) If yes, indicate source of Form (6)	Frequency of reporting (time period: I, W, M, Q, A) (7)	Have action threshold (Y/N) (8)
7	Other diarrhea								
8	Malaria								
9	Measles								
10	Meningococcal Meningitis								
11	Rabies								

(1). Do you have a **standard** case definition (Y/N)?

Interviewer must verify the presence of standard case definitions from MOH, WHO, or UNICEF

(2). Is there someone (you or somebody else) at this site that review all or a sample of reported cases to see if they meet the standard case definition (Y/N)?

(3). Do you use the laboratory to confirm cases (Y/N)?

(4). Do you perform community-based investigation of individual case? If “YES,” describe (risk factors, sources,...): _____

(5). Do you perform community-based tracing of contacts of reported cases (Y/N)?

(6). Do you have MOH-designed standard reporting form (Y/N)? If “YES,” indicate source of form (MTUHA, EPI,...)?

(7). How often do you report to the higher level? (immediate[I], weekly[W], monthly[M], quarterly[Q], annually[A])?

Interviewer: If multiple reporting, indicate the shortest duration

(8). Do you have an action threshold (how many cases are required to initiate an action or investigation)

[Swahili: **kiwango cha chini**] (Y/N)? Interviewer: explain action threshold to the interviewee

PART C: DISEASE-SPECIFIC SURVEILLANCE ACTIVITIES

F#	Disease or syndrome	Standard case Definition (Y/N) (1)	Confirm using case definition (Y/N) (2)	Confirm using laboratory (Y/N) (3)	Case Investigation (Y/N) (4)	Contact tracing (Y/N) (5)	Standard reporting form (Y/N) If yes, indicate source of Form (6)	Frequency of reporting (time period: I, W, M, Q, A) (7)	Have action threshold (Y/N) (8)
12	Animal bites								
13	Neonatal tetanus								
14	Typhoid								
15	Trypanosomiasis								
16	TB								
17	Viral hemorrhagic fever								

(1). Do you have a **standard** case definition (Y/N)?

Interviewer must verify the presence of standard case definitions from MOH, WHO, or UNICEF

(2). Is there someone (you or somebody else) at this site that review all or a sample of reported cases to see if they meet the standard case definition (Y/N)?

(3). Do you use the laboratory to confirm cases (Y/N)?

(4). Do you perform community-based investigation of individual case? If “YES,” describe (risk factors, sources,...): _____

(5). Do you perform community-based tracing of contacts of reported cases (Y/N)?

(6). Do you have MOH-designed standard reporting form (Y/N)? If “YES,” indicate source of form (MTUHA, EPI,...)?

(7). How often do you report to the higher level? (immediate[I], weekly[W], monthly[M], quarterly[Q], annually[A])? **Interviewer: If multiple reporting, indicate the shortest duration**

(8). Do you have an action threshold (how many cases are required to initiate an action or investigation)

[Swahilli: **kiwango cha chini**] (Y/N)? Interviewer: explain action threshold to the interviewee

PART C: DISEASE-SPECIFIC SURVEILLANCE ACTIVITIES

F#	Disease or syndrome	Standard case Definition (Y/N) (1)	Confirm using case definition (Y/N) (2)	Confirm using laboratory (Y/N) (3)	Case Investigation (Y/N) (4)	Contact tracing (Y/N) (5)	Standard reporting form (Y/N) If yes, indicate source of Form (6)	Frequency of reporting (time period: I, W, M,Q,A) (7)	Have action threshold (Y/N) (8)
18	Leprosy								
19	HIV								
20	AIDS								
21	STDs								
22	Onchocerciasis								
23	Childhood ARI								
24	Childhood Pneumonia								

(1). Do you have a **standard** case definition (Y/N)?

Interviewer must verify the presence of standard case definitions from MOH, WHO, or UNICEF

(2). Is there someone (you or somebody else) at this site that review all or a sample of reported cases to see if they meet the standard case definition (Y/N)?

(3). Do you use the laboratory to confirm cases (Y/N)?

(4). Do you perform community-based investigation of individual case? If “YES,” describe (risk factors, sources,...): _____

(5). Do you perform community-based tracing of contacts of reported cases (Y/N)?

(6). Do you have MOH-designed standard reporting form (Y/N)? If “YES,” indicate source of form (MTUHA, EPI,...)?

(7). How often do you report to the higher level? (immediate[I], weekly[W], monthly[M], quarterly[Q], annually[A])? **Interviewer: If multiple reporting, indicate the shortest duration**

(8). Do you have an action threshold (how many cases are required to initiate an action or investigation)

[Swahilli: **kiwango cha chini**] (Y/N)? Interviewer: explain action threshold to the interviewee

PART D: RESOURCES

Resources	Available at site (Y/N)	Functioning at present (Y/N)	Use for surveillance (Y/N)	Do you experience shortages? (Y/N)
Electricity				
Stationery (paper, pen)				
Telephone				
Calculator				
Fax				
CB radio				
Computer				
Computer with modem				
Word processor (name)				
Statistical package (name)				
Vehicle (type)				
Fuel for vehicle				
Motorcycle				
Public transport				
Postal service				

4B. FORM # 40. OBSERVATIONS: HEALTH FACILITY

To prepare:

1. Clinical register
2. The last four reports prepared by the site to the different systems
3. Any summarized data (annual, ...)
4. Standard case definitions

I. Case Detection and Registration:

1. Is there a clinical register? Y N
2. Percent of most recent 50 cases in the registry that have all the variables completely filled out. _____%

II. Data Reporting:

3. Is there zero reporting? Y N
4. Of the last 4 required reports, the number that were prepared _____
5. Of the last 4 required reports, the number that were submitted _____
6. Of the last 4 required reports, the number that are completely filled out. _____

IV. Data analysis:

7. Are the data aggregated by time (month, year)? Y N
8. Are the data aggregated by person (age, sex)? Y N
9. Are the data aggregated by place (village, ward, district)? Y N
10. Are trends prepared (month, year)? Y N
11. Are any rates (prevalence, incidence) calculated? Y N
12. Is case fatality calculated? Y N
 - Have denominator data Y N

13. VII. Feedback and Communication:

- 13.1 Examine THE BEST surveillance bulletin, report or written communication produced at this site for
 - appropriate language used for the target audience. Y N
 - adequate level of detail. Y N
 - data interpretation (policy, education message). Y N
 - number of times in the last year
- 13.2 Examine THE BEST surveillance bulletin, report or written communication from a higher level.
 - appropriate language used for the target audience. Y N
 - adequate level of detail. Y N
 - data interpretation (policy, education message). Y N
 - number of times in the last year

5. FORM # 5: LABORATORY QUESTIONNAIRE

PART A: IDENTIFICATION

A.1 Team: _____ A.2 Interviewer: _____ A.3 Date: _____
 A.4 Region: _____ A.5 District: _____ A.6 Facility: _____
 A.7 Health facility is: Dispensary? ____ Health Center? ____ Hospital? ____ Is an NGO? ____
 A.8 Name and title of person interviewed: _____
 A.9 Phone: _____ A.10 Fax: _____
 A.11 Other method of communication: _____
 A.12 Mailing address: _____

PART B. LABORATORY SUPPORT

Diseases/ Syndrome	Can confirm by testing here? (Y/N)	What laboratory test do you use to confirm?	Do you have diagnostic capability or reagents at all times (Y/N)	No. of specimens processed in 1997
B.1 Cholera				
B.2 Plague				
B.3 Relapsing fever				
B.4 Yellow fever				
B.5 AFP				
B.6 Dysentery				
B.7 Malaria				
B.8 Meningitis				
B.9 Typhoid				
B.10 Trypanosomiasis				
B.11 TB				
B.12 Leprosy				
B.13 Onchocerciasis				

PART C. SENSITIVITY TESTING

C.1 Do you perform drug sensitivity tests for malaria?	Y N
C.2 Do you perform drug sensitivity tests for TB?	Y N
C.3 Do you perform drug sensitivity tests for <u>S. pneumoniae</u> ?	Y N
C.4 Do you perform drug sensitivity tests for <u>H. influenzae</u> ?	Y N