ENVIRONMENTAL HEALTH PROJECT

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Action Planning to Strengthen Infectious
Disease Surveillance Systems
in Tanzania

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by

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This project had two phases: (i) planning and carrying out an assessment of the disease surveillance systems in Tanzania, and (ii) developing an Action Plan to strengthen the surveillance systems and the epidemiologic response capability. The program succeeded in both phases because many persons from many organizations contributed to and participated in it. The project required sustained effort by several people and additional inputs by many others at specific points in the process. Those persons and their contributions are listed here.

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.)

Tanzania Ministry of Health:

- Peter Kilima, MD, Director, Division of Preventive Services
- Nicholas N. Eseko, MD, MMed (Paed.), MPhil (Epi), Chief, Epidemiology and Disease Control
- Mary Kibona, MD, Chief, Disease Surveillance Unit

United States Agency for International Development:

- Robert Cunnane, Health Officer, PHN, USAID Mission, Dar es Salaam, Tanzania

World Health Organization:

- Christopher Kamugisha, Director, Health Information and Promotion, WHO Tanzania, Dar es Salaam
- Nestor Ndayimirije, MD, Epidemiologist, WHO/AFRO Sub-Regional Office, Kampala, Uganda

Centers for Disease Control and Prevention:

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Environmental Health Project

- Wayne G. Brown, MSPH, MPH, EHP Team Leader, Epidemiology Consultant, Stone Mountain, Ga.
- Adeline I. Kimambo, MD, Director, Tanzania Public Health Assoc., EHP Coordinator in Tanzania
- Gene Brantly, JD, MS, EHPActivity Manager, Arlington, Va.

Pre-planning of the assessment. In addition to those listed above, many people contributed to this phase in one or more ways: by identifying or collecting information needed to plan the assessment (**C**); by providing specific information about Tanzania, the Ministry of Health, and disease surveillance practices (**P**); or by participating in the translation of that information into an assessment plan and making specific preparations for the assessment (**T**):

Tanzania Ministry of Health:

- M. J. Mwaffisi, Permanent Secretary (P)
- Kagaruki, Manager, Expanded Program for Immunization (P)
- Rafael Kalinga, MD, Chief, Vector-borne Disiseases Unit (P)
- Katenga, MD, Chief, Eye Care and Onchocerciasis Unit (P)
- Mandike, MD, Chief, Malaria Control Program (P)
- Joel Ndayongeje, Statistician, National AIDS Control Program (P)
- Samuel E. Ngatunga, Senior Programme Officer (HIS) (P)
- Range, Acting Chief, TB and Leprosy Unit (P)
- Philip Setel, Ph.D., Project Director, Adult Morbidity and Mortality Project, Department of Medicine, University of Newcastle Upon Tyne, UK DFID, Dar es Salaam (P)
- Simba, MD, MTUHA, Division of Planning (P)
- David Whiting, Data Manager, Adult Morbidity and Mortality Project, Department of Medicine, University of Newcastle Upon Tyne, UK DFID, Dar es Salaam (P)

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- Jed Meline, MPH, Population, Health andNutrition Officer, USAID Mission, Dar es Salaam (C, T)
- Michael Mushi, Project Management Specialist, USAID Mission, Dar es Salaam (P)

World Health Organization:

- H. Dirk Warning, MD, WHO Country Representative, Dar es Salaam (departed, 11/98) (P)
- L. Mgalula, MD, Tz Essential Health Intervention Project (TEHIP), WHO, Dar es Salaam (P)

Centers for Disease Control and Prevention:

- Tadessa Wuhib, MD, MPH, Medical Epidemiologist, Epidemiology Program Office, New Orleans, La. (T)

Pilot testing and revising the assessment materials, conducting the assessment, analyzing the assessment data and drafting the assessment report. Again, individuals listed here are in addition to those involved throughout the entire process:

Tanzania Ministry of Health:

- Rafael Kalinga, MD, Chief, Vector-borne Disease Unit (Dodoma Region Team leader)
- Josibert J. Rubona, MSci.(Medical Demography), Health Information and Research Section, Planning Division, MOH, Dar es Salaam (Arusha Region Team Leader)

Others who should be recognized for their particular contributions:

- Joel Ndayongeje (Statistician, National AIDS Control Program) guided the compilation of assessment data.
- Peter Riwa (Family Planning, MCH) provided excellent meeting facilitation to revise the assessment protocol, share it with NGOs, and analyze the resulting data.

The Regional Medical Officers, District Medical Officers, and program managers and staff assisted in many ways in testing the draft materials (Dar es Salaam and Coastal Regions), and in the assessment itself (Dodoma, Mwanza and Arusha Regions): providing guidance, making specific arrangements for site visits, making introductions, and making their time available to provide the information needed for the assessment.

World Health Organization:

- Stella Shin Chungong, MD, MPH, Medical Officer, Communicable Disease Surveillance and Response, WHO, Geneva, Switzerland

Centers for Disease Control and Prevention:

- Tadessa Wuhib, MD, MPH, Medical Epidemiologist, Epidemiology Program Office, New Orleans, La.

Consulting and preparing for development of the Action Plan. These individuals met with assessment coordinating team members and were given a copy of the assessment report. Their views and guidance were valuable in developing the Action Plan:

Tanzania Ministry of Health:

- G. L. Upunda, MD, M. Med., MPH, Chief Medical Officer, MOH, Dar es Salaam
- Esther Mvungi, Health Officer, Disease Surveillance Unit
- Gilbert R. Mliga, MD, MPH, MHPEd, Director, Human Resources Development

United States Agency for International Development:

- Nancy Godfrey, Health Sector Advisor, USAID Mission, Dar es Salaam

Nongovernmental and Private Organizations:

- Sandra L. Baldwin, Health and Population Coordinator, Department For International Development (DFID), Sector Coordination Office, British High Commission, Dar es Salaam
- Margaret Kaseje, MPH, Regional Health Program Officer, Aga Khan Foundation (East Africa), Dar es Salaam
- Kaushik, MD, Secretary, Assoc. of Private Hospitals; Shree Hinou Mandal Hospital, Dar es Salaam
- Frederick C. Kigadye, MD, Director, Christian Social Services Commission (CSSC), Dar es Salaam
- Leshabari, MD, Professor, Institute of Public Health, Muhimbili
- Manangalila, MD, Sr. Program Officer, Human Resources, World Bank, Dar es Salaam
- Pemba, MD, Private Consultant (former Director, Preventive Medicine, MOH), Dar es Salaam

World Health Organization:

- Wedson Mwambazi, MD, WHO Representative to Tanzania, Dar es Salaam

Developing the Action Plan. These individuals helped interpret the findings of the surveillance assessment report; developed the goals, objectives, and action steps necessary to integrate and strengthen surveillance and epidemiologic response; and drafted the report on their conclusions which then became recommendations to the Ministry of Health for change:

Tanzania Ministry of Health:

- Caroline Akim, MD, EPI Program, MOH, Dar es Salaam
- Sardi M. Egwaga, MD, District Medical Officer, Dar es Salaam
- Vicky D. Kipendi, MD, District Medical Officer, Muheza, Tanga
- Gabriel E.Y. Masuki, MD, District Medical Officer, Sanya Juu
- Christopher D. Mtamakaya, MD, District Medical Officer, Moshi
- Wolufoo P.G. Munisi, MD, Morogoro
- Esther Mvungi, Health Officer, Disease Surveillance Unit, MOH, Dar es Salaam
- Winfred J. Mwafongo, National Malaria Control Program, MOH, Dar es Salaam
- Samuel E. Ngatunga, Senior Programme Officer (HIS), MOH, Dar es Salaam
- Peter Riwa, (meeting facilitator) Family Planning, MCH, MOH, Dar es Salaam
- Josibert J. Rubona, MSci. (Medical Demography), Health Information and Research Section, Planning Division, MOH, Dar es Salaam

- Philip Setel, Ph.D., Project Director, Adult Morbidity and Mortality Project, Department of Medicine, University of Newcastle Upon Tyne, UK DFID, Dar es Salaam
- Roland O. Swai, MD, National AIDS Control Program, MOH, Dar es Salaam
- Jacob D. Twange, Regional Health Officer, Sumbawanga, Rukwae

World Health Organization:

- Cornelia Atsyor, MD, EPI Program, WHO, Dar es Salaam
- Stella Shin Chungong, MD, MPH, Medical Officer, Communicable Disease Surveillance and Response, WHO, Geneva, Switzerland
- G. E. Gomile, MD, NIDs/EPI Officer, WHO, Dar es Salaam

Nongovernmental and Private Organizations:

- James P. Ng'wandu, MD, Doctor Mvumi Hospital, Mvumi, Dodoma

ACRONYMS

CBO	community based organization
DHMT	District Health Management Team
HF	health facility
HFW	health facility worker
HMIS	health management information system
IDS	infectious disease surveillance
MOH	Ministry of Health
QC	quality control
RHMT	Regional Health Management Team
SCD	standardized case definition
TA	technical assistance
TBA	traditional birth attendant
TH	traditional healer
TOT	training of trainers
USAID	U.S. Agency for International Development
WHO	World Health Organization

EXECUTIVE SUMMARY

From February 1 to 4, 1999, the Ministry of Health (MOH) of the United Republic of Tanzania conducted a workshop in Dar es Salaam to develop a plan of action for integrating and strengthening Tanzania's disease surveillance system. The workshop was attended by public health professionals representing the national, regional, and district levels of the MOH; nongovernmental organizations (NGOs) working in the health sector in Tanzania; the headquarters, regional, and country offices of the World Health Organization (WHO); the U.S. Centers for Disease Control and Prevention (CDC); and the USAID-sponsored Environmental Health Project (EHP). (A list of individuals attending the workshop is found in Appendix A.)

Several factors led to the call for such an effort. WHO recently recommended that every country have an integrated disease surveillance system, rather than multiple vertical program-based surveillance systems. In fact, such vertical systems were in place in Tanzania; a formal assessment of the existing disease surveillance systems was undertaken September-December 1998. It revealed in detail the ways in which current surveillance practices were not producing the information needed for disease control, limitations on the ability of public health officials to use surveillance data, and conditions that contributed to this situation.

In the February workshop, which is described in Part 1 of this report, subgroups were formed to address the strengthening needed in each of the areas that comprise disease surveillance. Each subgroup proceeded similarly:

1. Review of the pertinent findings of the disease surveillance assessment completed in December 1998. (See EHP Activity Report No. 62)
2. Discussion of the implications of the findings for effective, timely surveillance and for the appropriate use of data.
3. The articulation of objectives, and required actions for each, that would appropriately strengthen that particular surveillance activity.
4. Review and modification of the subgroups' work in plenary session.
5. Development of indicators for implementation of these activities, an implementation timeline, identification of implementing unit or individuals, resources needed, and obstacles that might be expected.

The product of this workshop is the Action Plan (Part 2 of this report) which contains 21 objectives for strengthening and integrating disease surveillance. These objectives span the whole range of surveillance activities, from improving clinic and community reporting to expanding the role of laboratories. The plan also addresses improvements needed in communications, training, and ongoing supervision. For each objective or small group of related objectives, action steps and related information needs are specified.

At the conclusion of the workshop, the Action Plan was presented and discussed at a debriefing for donors and MOH officials (see Appendix B). The next steps include the MOH establishing a task force to develop an implementation plan, assigning specific responsibilities, and obtaining formal approval and support of the MOH.

Part 1

Workshop to Develop the Action Plan

1 BACKGROUND TO THE DEVELOPMENT OF THE ACTION PLAN

1.1 The Assessment Report

Early in 1998 the Tanzania Ministry of Health (MOH) concluded that its disease surveillance systems were not producing the data required for effective disease prevention and control. Further stimulated by a World Health Organization recommendation that countries follow a strategy of integrated disease surveillance systems and an offer of assistance from the U.S. Agency for International Development (USAID), the MOH proposed an assessment of its surveillance systems, followed by the development of an Action Plan to integrate and strengthen disease surveillance. Since September 1998 the Ministry of Health, USAID, WHO, the U.S. Centers for Disease Control and Prevention (CDC), and the Environmental Health Project (EHP) have been collaborating on such a project. The first step was to assess the existing disease surveillance systems in Tanzania. In December 1998, the assessment was completed. (For the complete assessment report, see EHP Activity Report No. 62.)

The assessment team also completed an initial analysis of the data it gathered and prepared a draft report of its findings. The draft report was reviewed by all team members and the Ministry of Health. A draft report was provided to the Ministry of Health on January 26, 1999, and subsequently distributed widely among donor organizations in Tanzania.

1.2 Workshop Preparation

In late January 1999, members of the assessment team (from MOH and EHP) met individually with staff of the MOH, donor and private organizations, and Muhimbili University. Those individuals, organizations, and units of the MOH had been identified as being particularly important to the anticipated efforts to integrate and strengthen disease surveillance. The meetings had several purposes:

- to provide each organization with a copy of the assessment report;
- to discuss the report's major findings, interpretations, and conclusions;
- to identify the organization's or individual's specific interests in and suggestions for how disease surveillance could be improved;
- to respond to their questions;
- and to invite their participation in the workshop to design the Action Plan and the debriefing to be conducted after the workshop.

Even though this was not an exhaustive series of meetings, it was a very valuable thing to do. Although each organization has its own constituency, priorities, experiences, and values, as a group they overlap and share a common interest. Indeed, the MOH has an opportunity to serve in a coordinating role by identifying shared interests and ways for these organizations to work together. Overall, the participation of these organizations provided an unequaled opportunity to learn of the diverse interests, concerns, capabilities, and resources that exist in the health sector and are important to public health.

The individuals and organizations met with are listed below. Highlights of the discussions are included in Appendix A.

- Aga Khan Foundation (Margaret Kaseje, Regional Health Program Officer)
- Association of Private Hospitals (Dr. Kaushik, Secretary)
- Christian Social Services Commission (Dr. F. C. Kigadye, Director)
- Department For International Development (DFID), British High Commission (Sandra Baldwin, Health and Population Coordinator)
- Institute of Public Health, College of Health Sciences, Muhimbili University (Professor Leshabari, Chairman of the Institute)
- MOH: Chief Medical Officer (Dr. G. L. Upunda)
- MOH: Division of Preventive Health Services (Dr. Peter Kilima, Director)
- MOH: Health Management Information System (Dr. Simba, Division of Planning)
- MOH: Human Resources Development (Dr. Mliga, Director)
- Private Consultant to MOH and formerly Director, Preventive Health Services, (Dr. Pemba)
- World Bank (Dr. Manangalila, Public Health Specialist, Human Resources Div.)
- World Health Organization Country Representative (Dr. Weston Mwambazi)

During that same period, the meeting agenda was completed and the workshop facilitator oriented to the topic and desired outcomes. Workshop leaders were identified; arrangements completed for the site; materials prepared; and travel arranged for out-of-town participants.

1.3 Workshop Purpose, Process, and Participants

The purpose of the workshop was to develop an Action Plan for integrating and strengthening infectious disease surveillance in Tanzania. (The goals, objectives, and methods used at the workshop are given in Appendix B.) The process involved bringing together disease control program or surveillance program managers from the national level, and regional and district medical officers, and others from several regions in Tanzania. (For a list of workshop registrants, see Appendix C.) Those from the district level were deliberately selected for their experience either in related community morbidity and mortality studies or in using data and working with the community to develop district health plans.

Participants were asked to review the surveillance assessment findings and from these determine the major weaknesses to address and then to identify appropriate objectives for strengthening the system. They were then to identify the actions to take to achieve each objective, implementation indicators, a time-line, the organization or group primarily responsible for implementation, resources needed, and potential obstacles.

To make the task more manageable, participants were divided into four working groups of five people each. Each half day two surveillance activities were selected and two teams worked independently on each topic. Following two to three hours of work, those groups presented their results in plenary session. Subsequently, each team's work was discussed in open session by all participants. Later, taking into account the plenary discussions, the products of the two teams working on the same topic were merged to a single proposal for the assigned topic. During this process, staff from the MOH, WHO, CDC, and EHP were available for technical issues.

The last part of the three and one-half day period was used to review all objectives, actions, and other implementation-related topics, and to draft a presentation to be made at a meeting of donor organizations on the afternoon of the fourth day. (See Appendix D for a list of participants at this meeting.)

2 EXPLANATION OF CATEGORIES

The Action Plan comprises a description and timetable for the necessary actions proposed to achieve 21 explicit objectives for strengthening disease surveillance. The 21 objectives address changes needed in each of seven functional areas normally thought of as defining the public health practice of infectious disease surveillance (plus an eighth, to reflect the new surveillance strategy) and in each of four typical areas of support.

Basic Disease Surveillance Functions:

I. Case-patient detection
II. Case-patient registry
III. Case confirmation
IV. Reporting
V. Data analysis
VI. Retrospective response
VII. Prospective response
VIII. Integration of surveillance systems

Essential Support Functions:

IX. Communications
X. Training
XI. Supervision
XII. Laboratory capacity and involvement

The objectives that were established by the planning group are listed below, grouped in these 12 functional areas.

Basic Disease Surveillance Functions:

I. Case-patient detection

Objective #1: Develop (and implement each activity of) a community-based surveillance system to enhance early detection, reporting, and response.

II. Case-patient registry

Objective #2: Strengthen the case-patient registration system in health facilities, including temporary treatment centers (in- and out-patient facilities).

Objective #3: Strengthen the birth and death (vital) registration and disease notification systems at the community level.

III. Case confirmation

Objective #4: Establish standardised case definitions (SCDs) for all reportable health conditions.

Objective #5: Strengthen the capabilities of laboratories at all facilities in support of surveillance.

IV. Reporting

Objective #6: Improve completeness and timeliness of reporting.

V. Data analysis

Objective #7: Increase the number of health facilities analyzing data using standard procedures.

Objective #8: Strengthen the capacity of health personnel in data utilisation and analysis.

Objective #9: Develop guidelines for data analysis and use for the health facility, district, and regional levels.

VI. Retrospective response

Objective #10: Empower (or strengthen) the Tanzanian health system's capacity to use surveillance data for decision-making (e.g., outbreak investigation, community

sensitization, planning, monitoring, and evaluation).

VII. *Prospective response*

Objective #11: Strengthen regions, districts, and health facilities for efficient, timely, and effective responses to epidemics.

Objective #12: Strengthen DHMT to have the capacity to promptly and effectively respond to reports of cases and outbreaks of diseases.

Objective #13: Strengthen capacities of DHMT and RMHT to predict epidemics.

VIII. *Integration of surveillance systems*

Objective # 14: Build a functioning, integrated, district-focused, action-oriented national communicable disease surveillance system with the flexibility to expand to other important health outcomes.

Essential Support Functions:

IX. *Communications*

Objective #15: Install a system for giving feedback health facility workers and the community.

X. *Training*

Objective #16: Build competencies for health facility-, district-, and national-level MOH staff in epidemiology and disease surveillance.

XI. *Supervision*

Objective #17: Develop a comprehensive checklist and implement a system for regular and high quality supervision.

XII. *Laboratory capacity and involvement*

Objective #18: Strengthen all primary laboratories to diagnose parasitic and bacterial infections causing epidemics.

Objective #19: Strengthen all secondary laboratories to be able to confirm and perform drug sensitivity tests for all bacterial infections.

Objective #20: Empower tertiary (referral) laboratories to be able to conduct serological confirmation of viral infections of public health importance, including those targeted for eradication.

Objective #21: Establish a referral network at all levels.

As is apparent in the above list, virtually every area of disease surveillance was addressed with one or more recommended objectives. Certain surveillance functional areas received several objectives, which probably indicates the workshop participants' judgment of the relative importance of the activity and its current state (as reflected in the assessment report and from their own experience). These functions were data analysis (with 3 objectives), prospective responses (3 objectives), and laboratory capacity (4 objectives). These objectives may also require the most creativity and effort to accomplish.

3 PRESENTATION OF THE ACTION PLAN AT A MEETING OF DONOR ORGANIZATIONS

The debriefing was the final scheduled activity of the Action Plan development workshop. Its purpose was to share right away with donor organizations and selected MOH, WHO, and USAID representatives the thinking of the work group. The debriefing also established a basis for more detailed discussions and planning with those organizations. It demonstrated that the MOH was taking a systematic approach to improved disease surveillance data collection and use. The debriefing provided an opportunity to obtain their initial impression of the direction things were going in and served to allay any concerns that the process of change might not be transparent.

The debriefing consisted of three main parts:

- An overview by Dr. Chungong of the World Health Organization's rationale and strategy for integrated disease surveillance and the core activities of communicable disease surveillance.
- A review by Dr. Eseko of the MOH of the methods and results of the recently completed disease surveillance assessment; how the group developed the Action Plan in the workshop; and examples of the objectives and activities that were proposed. He concluded with a discussion of next steps, including how the MOH hoped to work with NGOs and others to finalize the plan.
- An open discussion of the plan by all in attendance.

In closing, Dr. Kilima, representing Dr. Upunda, expressed the support of the MOH for the process of the assessment and plan development, and its intent to support implementation.

4 NEXT STEPS

4.1 Presentation of the Assessment and Planning Process at an Afro-sponsored Meeting of Donor Organizations

The African Regional Office of the WHO invited Dr. Nicholas Eseko, Chief, Epidemiology and Disease Control, MOH, to present the methods involved and requirements of the assessment of the surveillance systems and the subsequent development of the Action Plan. The occasion was a three-day meeting of WHO officials, Heads or Directors of Epidemiology or Disease Control Divisions from 12 African countries (many of which would themselves soon begin a similar process in their own country) , and representatives of donor organizations in Southern Africa. The purpose of the meeting was to inform participants of the integrated disease surveillance strategy being implemented by the AFRO to improve the prevention and control communicable diseases, and how that strategy might be implemented.

4.2 Formation of an MOH Action Planning Task Force

The principle work of the Task Force is to determine how the Action Plan should be implemented (that is, to develop a plan for managing the implementation of the recommendations in the Action Plan) and to formulate and advocate a specific proposal for doing so.

The implementation plan must settle several issues, including:

- How to group similar or closely related actions required to achieve the stated objectives.
- How best to implement each group of actions and who should be involved.
- What specific resources are needed and how to mobilize them.
- How best to schedule each action for initiation and completion.
- Naming an individual to be responsible for each group of actions.
- Weighing the possible benefit of having a Task Force responsible for implementing the overall plan.
- If a Task Force is designated as overall implementer, how and at what intervals it will monitor implementation; how it will deal with implementation issues or delays; and to what higher-level officials and how often periodic progress reports should be made.

The implementation plan may also need to include certain draft or final documents that could be used by the Task Force to initiate and support implementation action, such as:

- To obtain official endorsement, making the proposed plan an MOH policy.
- To obtain funding. One such document could be a specific proposal to be included in the MOH's projected plan of work that it provides to the World Bank in support of funding proposals to donor organizations.
- To take whatever personnel actions are needed.

Then the Task Force would need to prepare a "submission package" of the recommendations and implementation plan for approval by the Ministry of Health and partners. Once approved, either the original Task Force or a second one needs to implement the recommendations and the management plan. Implementation must then be monitored and evaluated; and with that information, enter a new planning cycle.

APPENDIX A: PRE-WORKSHOP MEETINGS WITH DONOR ORGANIZATIONS AND THE MOH

Following are the organizations contacted in late January 1999 before the workshop, the individuals met, and major ideas discussed.

Aga Khan Foundation (Margaret Kaseje, Regional Health Program Officer)

The Foundation has been working with the Ministry of Health in Zanzibar on two projects. One involved doing a capacity assessment, followed by training of MOH staff. The community-based assessment was done using a guide, "Primary Health Care," developed in the 1980s by the Aga Khan Foundation, with USAID funding. The capacity assessment in Zanzibar produced results very similar to those found in the assessment of disease surveillance systems done on the mainland . Major findings of the Zanzibar survey included:

- Data collected at the local level is reported to the higher levels without being used locally.
- Health facility staff at the local level do not know how to use the data or for what purposes; they require specific training in data application.
- The central level provides very little feedback to lower levels regarding summarized, reported data.
- Different donor organizations come to Tanzania with different goals and forms, representing specialized vertical organizations and programs.

The Foundation is interested in forging better links with village health workers to do case follow-up.

The other Foundation project involves opening five primary care centers in the region. (The region includes Uganda, Kenya and Tanzania.) In doing so, the Foundation hopes to establish closer links with the national governments, both for the purposes of making referrals from its primary care facilities and participating in jointly sponsored continuing education. In providing training to health workers Aga Khan Foundation has avoided using computers, both because they are expensive and because health worker training programs are not adequately user-friendly.

A recommendation that came from this meeing is that the MOH work with NGOs and private groups to identify some common, shared indicators of health problems and of the impact of prevention and control programs. All parties could collect, report, and use common data sets. Organizations wanting other or more detailed data could collect it without having it become part of the required data set that is routinely reported. Another recommendation was for the indicators to be developed by a broadly constituted group addressing over-all health issues; i.e. indicators should not be developed to address specific or specialized areas (e.g., MCH, HIV).

Institute of Public Health, College of Health Sciences, Muhimbili University (Professor Leshabari, Chairman of the Institute)

The Institute of Public Health is interested in developing and conducting short courses about how to collect and use health data. It has had difficulty, at the regional level, in identifing the most important common public health problems. The Institute offers two short courses to health professionals, mainly at the district level, in health financing and in clinical diagnosis. Last year it also conducted a short course in research methods at the University, with 20 public health participants. EpiInfo is widely used by the faculty and in training. The Institute can offer such courses up to two times per year (50 persons, total). This schedule makes it unclear whether and at what cost (and how quickly) the Institute could help to address the high volume of training need as a result of decentralization of health services. One topic under consideration is the training of trainers.

The priority for admission to these courses are those persons with direct responsibility for planning at the district level. Many are physicians, but some are health officers. The Institute's courses typically last three weeks and cost $1,700 per participant.

The lack of widely accepted health indicators is a real problem. Addressing this probably should involve gathering some additional information and getting parties together to determine what data are needed.

A project of the Behavioral Science group at the Institute involves isues in the Maternal and Child Health program. Many important differences are being observed between the interpretation of signs and symptoms by clinicians and by villagers, with important negative consequences, mainly taking the form of delayed treatment.

WHO Country Representative (Dr. Weston Mwambazi)

The World Health Organization is keenly interested in fostering integrated disease surveillance. Since integration of surveillance might mean different things to different people, it should be linked to the level of competence at the district, regional, and national levels. First, the workshop must define what is meant by "surveillance." Then it will be possible to determine the kinds of related activities to be conducted and integrated. The best use of surveillance was thought to be its value in communication of disease-related problems in a timely fashion and education of the community. The health sector must not isolate itself, although that's what usually happens: health management teams often act as though they exist only for the Ministry of Health. They must go out into the community and serve its needs.

Decentralization and the development of capacity at the district level were described as key to effective integration of surveillance. A problem in developing that capacity is that everyone is talking about training them in everything. An effort is now being made to rationalize the training plans. Two other frequently discussed issues are resource allocation and whether and how extensively to computerize. Dr. Mwambazi thinks it would be useful, too, to have some kind of annual surveillance event.

On the subject of indicators, Dr. Mwambazi felt that MOH and WHO have many of them. The important thing is to agree on which ones to use.

MOH: Health Management Information System (Dr. Simba, Division of Planning)

Regarding integration of surveillance, the HMIS (MTUHA) tried from the beginning to get all views on what was needed; and initially it was not very successful. Programs were then asked, "How do you see the data management system functioning, and how do you think it should change?" Then there was a group meeting to reconcile differences. The HMIS was then redesigned using the ideas put forward and was presented at a second workshop. Dr. Simba raised the question of what can be called integration. Is it participation in the process? Or feedback? Or something else?

Regarding case definitions, the HMIS accepts the technical inputs, including case definitions, that are given to it by the particular disease programs. And adding or revising case definitions is not much of a problem since the programs can be asked to submit them. Those filling out the forms do have a problem in what constitutes a new case (attendance or re-attendance at a clinic). Also, some definitions useful for recovery of payments are not useful for monitoring cases. One conclusion from this conversation is that something other than MTUHA may be needed to handle changes in disease reporting.

MOH: Division of Preventive Health Services (Dr. Peter Kilima, Director)

The question now facing the health services is how to transition to an Action Plan, i.e., making the assessment report serve its intended purpose. Dr. Kilima's vision of a surveillance system is "... living in an informed environment, and someone is in charge." For the purposes of the coming workshop, the District Medical Officer needs to be well informed and empowered to make decisions. Presently, even if the DMO is informed, as a group they are often frustrated by the lack of empowerment. The workshop does not need to

develop a consensus on all topics in the plan. Rather it would be helpful to develop a range of reasonable views on various important topics.

Association of Private Hospitals (Dr. Kaushik, Secretary)

Member hospitals (approximately 80) meet regularly, usually monthly. The meetings always include a program, generally some continuing education topic. The annual Association meeting has a session on public health programs, most recently "National Tuberculosis Program: the Public-Private Mix."

It is a common practice among doctors, when TB or HIV is diagnosed in the hospital, to ask partners to come in for examination. And the recordkeeping of most if not all of the hospitals captures infectious disease diagnoses. A problem arises in the area of confidentiality of patient information. The MTUHA reporting system requests names of cases, so many from private hospitals or most cases go unreported. The hospitals have not been able to reconcile this problem. Another problem is that much of the data MTUHA system requests from hospitals is not useful to them, and many things that would be useful to them are not included. As a result, private hospitals do not see the reporting system as highly useful to them, and thus much of what is reported should be interpreted in that light.

Regarding MOH's interest in reviewing and revising its information system, the hospitals would very much like to be represented in those discussions. Dr. Kaushik agreed to photocopy and distribute the assessment report to the Association's membership.

World Bank (Dr. Manangalila, Public Health Specialist, Human Resources Div.)

The World Bank, as well as the Danish aid agency, DANIDA, has been supporting the HMIS, but this support ends in June 1999. Future World Bank plans involve more coordination with other donors, who will want to take on a portion of the government program. Donors need to know what assistance the government needs. On the previous day, a meeting had been held with DANIDA to discuss its 5-year support. To date, support from DANIDA has been used for portions of all MOH strategies except that of the public/private mix. The extent of support for health programs has yet to be determined. In past years, donor support was very steady and reliable, and there was not much sharing of plans among them. Things are changing with the sector-wide approach.

In this context, it would be helpful if the Action Plan could be prepared in February 1999 (for use in March) to the World Bank and DANIDA. Dr. Managalila suggested that the Action Plan should vividly identify the indicators for program implementation, and how the MOH will know when they are achieving their objectives. How will implementation be monitored? Donors are also interested in knowing specific ways in which other, nonhealth sectors might support strengthened surveillance (e.g., use of police radios for urgent reporting). Cost estimates will be needed. Because surveillance cuts across programs, the central process needs to be identified, even while decentralization is occurring.

The World Bank is preparing a 12-year project proposal for government support. It will have 3 or 4 multi-year stages. The Bank will ask for detailed plans only for the first phase (approximately 3 years). That phase would be reviewed annually, with changes made as necessary.

MOH: Chief Medical Officer (Dr. G. L. Upunda)

The surveillance assessment report has arrived at the right time: MOH is discussing the need for preparedness for emergencies, such as droughts, accidents, and epidemics. For these purposes, there is a need for a system that can provide early appropriate information. MOH can't replicate the Morogoro Rural and Hai Districts Adult Morbidity and Mortality Programs (AMMP), but it does need information. Dr. Upunda reported that he planned to send the newly designated Emergency Preparedness coordinator to the workshop.

The importance of this project is that MOH uses data more and more and is increasingly measuring and monitoring outputs. One of the problems that will be encountered in implementing decentralization and integration is the reorienting of Regional and District Medical Officers, very few of whom are public health specialists.

Private Consultant to MOH and formerly Director, Preventive Health Services, (Dr. Pemba)

Dr. Pemba was formerly responsible, as a consultant, for designing and conducting training for the implementation of MTUHA at the regional and district levels, and he now conducts district-level training in the interpretation and use of MTUHA data for the development of district health plans and for supervision. The target group for the training he provides is the District Health Management Team. Two teams of two people each spend five days on-site to deliver the training program. The program started in January 1999 and will continue through June 1999. Originally it was hoped to be able to reach all DHMTs by June, but that will not be possible. Dr. Pemba and his team will develop similar hospital-oriented training. A frequent question from district-level staff is, "We've reported (the data); now what happens next?"

Department For International Development (DFID), British High Commission (Sandra Baldwin, Health and Population Coordinator)

One thing that is needed is a "big picture" vision of what is required of surveillance data so that the process of identifying future data needs does not become impossibly complex. Also needed is a good answer to the question of how communities can be involved in the planning process. An opportunity for this and similar workshops is to facilitate the formation of a center of gravity or core within the MOH where there is a coalescing of wisdom from recent years of experience with decentralization planning. The biggest risk of the workshop is lack of coordination - and that the result will be a limited, sector-wide approach.

Christian Social Services Commission (Dr. F. C. Kigadye, Director)

Historically, the Commission's function has been to coordinate NGO social services, often health-related, through the Christian Medical Association. Most NGO social services are now mainly involved in health and education. In the health arena, the Commission has three organizational units: Support; Program; and Policy, Research and Advocacy. They mainly see themselves as facilitators. Presently they are experimenting with planning together in three districts.

For community programs to be successful, the communities have to be involved, and the programs must be sustained- and too often they are not. Whatever you are going out there to do, it needs to involve the community. And people in the community need to know why you are doing the project.

Who can speak for the village? There are always people in the village that others listen to. You have to be willing to listen and discuss topics important to the village, whether these topics are central to your responsibilities or purpose. One way to begin working with a village is to start with others who are already involved in projects in that setting.

MOH: Human Resources Development (Dr. Mliga, Director)

Three important training-related topics came up in the discussion:

- the need is for training for all public health staff in surveillance, diagnosis, etc.;
- the need for disease-specific training in geographic areas which have experienced certain kinds of disease outbreaks;
- and evaluation of the training system used to implement MTUHA.

Resources available include national level, zonal, and regional training centers that can be used to support implementation of essential components. A major limitation is that funds are not available to retain instructors or compensate those who help in training delivery.

There is an observable gap between what is being taught (e.g., surveillance, in medical school) and what is being used. Much of the necessary technical content is present in professionals' basic training, but they often apparently did not learn how to apply it. People often don't integrate what they learned into their practices. One explanation is that the training often is theoretical, without opportunities for supervised practice sessions, so people often really do not understand how to apply what they have learned. Whether a trained person is properly supported on the job is also important. The District Health Management Teams should be our target for training.

APPENDIX B: WORKSHOP GOALS, OBJECTIVES, METHODS, AND AGENDA

Workshop: Action Plan Development for Disease Surveillance
Ministry of Health, United Republic of Tanzania
February 1 – 4, 1999

Workshop Goal: *The goal of this workshop is to develop an Action Plan for integrating and strengthening disease surveillance in Tanzania.*

Workshop Objectives:

1. Define the disease surveillance roles and responsibilities of each level of the MOH, focusing on the District level as the primary user of the surveillance data and as the first line of response to situations requiring epidemiologic investigation and control.
2. Develop an Action Plan containing short- and long-term recommendations, objectives, activities, indicators, and time-lines based upon assessment findings.
3. Identify areas for integration of the existing surveillance systems at all levels, to the maximum extent possible, by streamlining the existing systems.
4. Recommend an action-oriented surveillance system that allows for the rapid detection and follow up of reported cases of selected infectious diseases, outbreaks and other conditions (emerging and re-emerging disease, toxins, disasters), and the routine collection, analysis and use of surveillance data.
5. Identify the resources necessary to implement the plan at the District level.

Workshop Guidelines:

1. Workshop participants will be organized into work groups to address specific issues. If possible, the maximum size of a work group should be five persons. Because the District level is the primary focus, there should be a District Medical Officer in each work group.
2. Each work group will designate both a chairperson and rapporteur. At the end of each session, the rapporteur will be responsible for presenting the group's findings to the other groups in a plenary session.
3. At the beginning of each session, the facilitator will present an example or model of the theme to be discussed. This model could be from another country but must illustrate how the session theme could be treated throughout the process of consideration of relevant findings and the development of recommendations, objectives, activities, indicators, timelines, resources, and obstacles to implementation for that theme.
4. At the end of each day, the Secretariat will organize the individual work group findings into a comprehensive report for plenary review on the following day. At the end of the workshop, the Secretariat will prepare draft action plan based on the previous work group reports. After plenary review of this draft action plan, Secretariat will prepare final draft of action plan.

Workshop Themes:

1. Surveillance reform process
2. Integration
3. District-level focus
4. Action-oriented approach
5. Detection of case-patients
6. Confirmation of case-patients
7. Reporting
8. Analysis of data
9. Retrospective response
10. Prospective response
11. Communications
12. Training
13. Supervision
14. Role of Laboratory
15. Implementation issues
16. Advocacy

Workshop Schedule

Day	Theme	Outputs
Session A:	**Plenary Session:**	
	C Welcome and background of the assessment and change process, **Dr. Eseko**	Objectives for Workshop
Monday	C Purpose, process and outputs of the workshop, **Mr. Brown**	Overview of Meeting Design
1 February, 10:00 AM	C Introductions of participants, **Mr. Riwa**	Assignments of participants to Work Groups
Facilitator:	C Overview of surveillance, **Dr. Nsubuga**	
Mr. Riwa	C Review of the assessment and key conclusions, **Dr. Kibona and Mr. Rubona**	
	C Organization of workgroups and task description, **Mr. Riwa**	
1:30	**LUNCH**	
Session B:	**Recurring themes:**	
	C Integration	Completion and submission of session worksheet
Monday	C District-level focus	
1 February	C Action-oriented approach	
		Work Group presentation to plenary
2:30 – 5:00 PM	**Work Group Topics:**	
Facilitator:	**Groups I, III, & V:**	
Mr. Riwa	Detection/Confirmation Of Cases Of Reportable Disease	
	Groups II & IV: Communication and Reporting	
	Group Presentations and Discussion	
Evening	Secretariat: Combine proposals for each topic for review in plenary on Tuesday AM	Combined proposals

Session C: **Tuesday** **2 February** **8:00 AM** **Facilitator:** **Mr. Riwa**	**Recurring themes:** C Integration C District-level focus C Action-oriented approach **Plenary: Presentation of combined proposals from Monday sessions on** Detection And Confirmation Of Disease **and** Communication And Reporting	Secretariat presentation of combined work group reports Completion and submission of session worksheet Work Group presentation to plenary
12:00 **Session D:** **Tuesday** **2 February** **1 - 5 PM** **Facilitator:** **Mr. Riwa**	**LUNCH** **Work Group Topics:** **Groups I, III, & V:** Training and Supervision **Groups II & IV:** Role of the Laboratory **Group Presentations and Discussion**	Completion and submission of session worksheet Work Group presentation to plenary
Tuesday Evening	Secretariat: Prepare combined proposal for each topic for review in plenary on Wednesday AM	Combined proposals
Session E: **Wednesday** **3 February** **_____ AM** **Facilitator:** **_____**	**Recurring themes:** Integration District-level focus Action-oriented approach **Plenary: Presentation of combined proposals from Tuesday sessions on** Analysis of Surveillance Data **and** Retrospective And Prospective Response **Form new work groups:** National Level Staff Regional Medical Officers District Medical Officers Regional and District Health Officers Health Facility Staff **Work groups: Review combined proposals** to identify potential problems with implementation of recommended actions at their level of responsibility, and to identify issues related to advocacy	Secretariat presentation of combined work group reports Work Group presentation to plenary Completion and submission of session worksheet

Session F: **Wednesday** **3 February** **_____ PM** **Facilitator:** **_____**	Continuation of morning activities	Work group presentations to plenary with identification of necessary changes and suggestions
Wednesday Evening	Secretariat: Prepare draft action plan and executive summary -- circulate to participants	Draft of action plan

Session G:	Secretariat: Prepare final draft of action plan	Final draft of action plan
Thursday **4 February**		
_____ AM		
Session H:	Presentation of action plan and executive summary by Dr. Eseko	Final draft of action plan
Thursday **4 February**	Discussion and approval of action plan by workshop participants	Participants comments annotated on action plan and executive summary
_____ PM		
Facilitator:	Completion of workshop evaluation questionnaire by participants	Participants' completed workshop evaluation questionnaires
_____	Presentation of workshop evaluation results	Report on results of workshop evaluation
	Closing ceremony	

APPENDIX C: WORKSHOP REGISTRANTS

Action Plan Development Workshop
to Strengthen Disease Surveillance in Tanzania, February 1-4, 1999

1. Akim, Caroline, MD, EPI Program, MOH, DES, TZ
2. Atsyor, Cornelia, MD, EPI Program, WHO, TZ
3. Brown, Wayne, MSPH, EHP, Atlanta
4. Chungong, Stella, MD, WHO, Geneva
5. Egwaga, Sardi M., MD, District Medical Officer, DES, Box 9083 (tel: 110-677; fax: 123-676; e-mail: tantci@intafrica.com)
6. Eseko, Nicholas, MD, Director, Epidemiolgy and Disease Control, MOH, Box 983, DES, TZ
7. Gomile, G., MD, NIDs/EPI Officer, WHO, DES, TZ
8. Kibona, Mary, MD, Head, Surveillance Unit, MOH, DES, TZ, Box 9083, DES, TZ (tel: 120-261)
9. Kimambo, Adeline I., MD, President, Tanzania Public Health Association, Box 7785, DES, TZ (tel: 131-441; fax: 136-126, e-mail: tpha@muchs.ac.tz)
10. Kipendi, Vicky D., MD, Box 51, Muheza, Tanga (tel/fax: 053-44121)
11. Masuki, Gabriel E.Y. , MD, District Medical Officer, Box 14, Sanya Juu
12. McNabb, Scott, PhD, Chief, CDB, DIH, EPO, CDC, Atlanta, GA
13. Mtamakaya, Christopher D., MD, District Medical Officer, Box 318, Moshi (tel: 54371)
14. Munisi, Wolufoo P.G, MD, Box 110, Morogoro (tel: 4439)
15. Mvungi, Esther, MOH, Box 9083, DES, TZ
16. Mwafongo, Winfred J., National Malaria Control Program
17. Ndayimirije, Nestor, MD, Epidemiologist, WHO, Kampala (e-mail: ndayimirijen@who.imul.com)
18. Ngatunga, Samuel E., HMIS, MOH, Box 9083, Dar (tel. 120-261)
19. Ng'wandu, James P., MD, Doctor Mvumi Hospital, Box 82, Mvumi, Dodoma
20. Nsubuga, Peter, MD, CDC, Atlanta, GA
21. Riwa, Peter, MOH, Box 9083, DES, TZ
22. Rubona, Josibert J., Msci., HMIS, MOH, Box 9083, DES, TZ (tel: 120-261)
23. Setel, Philip, PhD, Project Director, AMMP, Box 65243, Dar (tel: 116-145; fax: 112-669)
24. Swai, Roland O., MD, National AIDS Control Program, MOH, Dar
25. Twange, Jacob D., RHO, Box 413, Sumbawanga, Rukwa (tel: 065-802-078)

APPENDIX D: LIST OF PARTICIPANTS AT THE DEBRIEFING MEETING

Aga Khan Foundation	Ms. Margaret Kaseje
Christian Social Services Commission	Dr. Frederick C. Kigadye
Centers for Disease Control and Prevention	Dr. Scott McNabb Dr. Peter Nsubuga
Environmental Health Project	Mr. Wayne G. Brown Dr. Adeline I. Kimambo (Tanzania Public Health Association)
Irish Aid	Ms. Amina Ali
Tanzania Ministry of Health	Dr. C. S. Akim Dr. Said M. Egwaga Dr. R. B. Kaunga Dr. Mary Kibona Dr. Peter Kilima Ms. Esther Mvungi Mr. Samuel Ngatunga Mr. Josibert R. Rubona Dr. R. O. Swai
Ministry of Health/DFID/AMMP	Mr. David Whiting
Ministry of Health/Japan ICA	Dr. Nobuyuki Mitsubiyashi
Regional Health Officer - Rukwa	Mr. Jacob D. Twange
Regional Hospital - Morogoro	Dr. Woinfoo Munisi
District Medical Officer - Hai	Dr. Masuki
District Medical Officer - Moshi Urban	Dr. C. D. Mtamakaya
District Medical Officer - Muheza	Dr. Vicki Kipendi

Part 2

Action Plan for Integrating and Strengthening Disease Surveillance

Action Plan for Integrating and Strengthening Disease Surveillance Tanzanian Ministry of Health

February 4, 1999

The following proposal contains 21 objectives for integrating and strengthening disease surveillance in Tanzania. Each objective is accompanied by a list of the necessary actions, indicators of implementation, a time-line, who should be responsible, resources needed, and potential obstacles to the achievement of the objective.

I. Case-patient detection

Objective #1: Develop (and implement each activity of) a community-based surveillance system to enhance early detection, reporting, and response.

Activities:

a. Inventory and define existing and emerging community-based organisations (CBOs), village health workers, traditional healers (THs), traditional birth attendants (TBAs), etc.
b. Organise, sensitise, and train CBOs, village health workers, traditional healers, TBAs and other influential persons in the community to be able to detect and report to the health facility (HF), and provide them with working tools.
c. Develop standard case definitions for community-based surveillance.
d. Develop a national guideline to identify diseases and conditions for community surveillance.
e. Train community-based health workers, etc., to sensitise the community on infectious diseases.
f. Orientation of HF workers to be able to link and support CBOs.

Indicators	Time-line	Implementers	Resources	Obstacles to Implementation
i. Community inventories are completed.	1 year	District Health Management Teams (DHMT); Health Facility Workers (HFW)	Funds; human resources	Lack of funds; other engagements; poor cooperation; poor planning and management
ii. CBOs, TBAs and others are organized and trained.	6 months	DHMTs; HFWs	Funds; human resources	Same
iii. Standard case definitions for surveillance are developed.	6 months	Ministry of Health (MOH)	Funds; human resources	Lack of funds; poor planning and management

II. Case-patient registry

Objective #2: Strengthen the case-patient registration system in health facilities, including temporary treatment centers (in- and out-patient facilities).

Activities:

a. Review the existing registration system.
b. Modify as necessary.
c. Develop incentives/enablers/enforcement for registration (so health workers will use registers).
d. Develop (if necessary) a register for epidemic-prone diseases.
e. Print and distribute for use.

Objective #3: Strengthen the birth and death (vital) registration and disease notification systems at the community level.

Activities:

a. Strengthen the sentinel system for village registration for deaths.
b. Train CBOs in simple case definition and reporting.
c. Review/streamline HMIS register #3 to incorporate disease surveillance.

Indicators	Time-line	Implementers	Resources	Obstacles to Implementation
i. Existing registration system reviewed and modified.	1 month	MOH	Funds; human resources	Lack of funds; drop outs; poor planning and management; other engagements
ii. Register for epidemic-prone diseases developed.	1 week	MOH	Same	Same
iii. New registers printed and distributed.	1 week	MOH	Same	Lack of funds
iv. National guideline is developed.	2 weeks	MOH		Lack of funds; other engagements; low commitment; poor planning and management
v. Percent of community members sensitized on infectious diseases.	1 year	Trained community based health workers	Funds; human resources	Lack of funds; other engagements; poor planning and management
vi. Percent of HFWs oriented to link and support CBOs.	1 year	DHMTs	Same	Lack of funds; drop outs; other engagements; poor planning and management

III. Confirmation

Objective #4: Establish standardised case definitions (SCD) for all reportable health conditions.

Activities:

a. Establish a working group to review and develop SCDs.
b. Select/develop SCDs for all reportable diseases.
c. Conduct consensus workshops at district and national levels.
d. Print paper versions.
e. Conduct on-the-job training on SCDs at all levels.
f. Integrate into district supervision to ensure usage of SCDs.
g. Translate into Swahili.
h. Distribute SCDs to all units (including health facilities and training institutions).
i. Assess the use of SCDs in health facilities.

Indicators	Time-line	Implementers	Resources	Obstacles to Implementation

i. Working group to review SCDs established.	April 1999	MOH-EPID; HMIS; Program managers; RMOs; DMOs	Transport; venue; persons	Lack of time; funds
ii. SCDs pre-tested	July 1999	MOH-EPID; RHMT; DHMT	Same	Lack of funds
iii. Consensus workshop conducted.	Sept. 1999	MOH; RHMT; DHMT	Same	
iv. SCDs are available in Swahili.	Sept. 1999			
v. SCDs for all reportable diseases in place (adopted).	Oct. 1999	MOH	Same	
vi. SCD document printed.	December 1999	MOH-EPID; RHMT; DHMT		
vii. On the job training done and SCDs are in use.	April-May 2000	MOH; RHMT; DHMT		
viii. SCDs distributed to health facilities and training institutions.	December 2000	MOH-EPID and Human Resources; RHMT	Personnel; transport	Lack of funds
ix. Results of SCDs use in health facilities are available.	December 2000	MOH-EPID	Stationery; personnel; funds	Lack of funds, time

Objective #5: Strengthen the capabilities of laboratories at all facilities in support of surveillance.

Activities:

a. Procure and install standard equipment according to MOH guidelines.
b. Procure essential lab supplies (e.g., media, specimen containers, reagents).
c. In-service training for key laboratory staff on epidemiology and new techniques of reportable diseases.
d. Improve integration of transport systems at HF and district level, including specimen transportation.
e. Develop a Public Health Reference Laboratory at the National level.

Indicators	Time-line	Implementers	Resources	Obstacles to Implementation
i. Standard laboratory equipment is available.	July-Dec. 2000	RHMT; DHMT	Funds	Funds
ii. Laboratory staff trained.	Jan.-June 2000	MOH-EPID & Diagnostic Section	Personnel	Funds
iii. Improved specimen transportation.	July 2000	RHMTs; DHMTs		
iv. Public health (reference) laboratory established.	July 2005	MOH	Funds; personnel; building	Funds; personnel

IV. Reporting

Objective #6: Improve completeness and timeliness of reporting.

Activities:

a. Build capacity (knowledge, skill, and competency) of health workers (with emphasis on the DHMT and RHMT) to carry out disease surveillance.
b. Redefine the health worker job description with a specialised surveillance focus at the district and regional level.
c. Improve transport and communication (e.g. radio-call networks) between the health units and districts for surveillance in collaboration with other partners (provide a budget for reimbursing public transport).
d. Develop/revise and simplify reporting forms for disease surveillance and explore possibilities of integrating (HMIS, etc.).
e. Establish a feedback mechanism for sources about completeness of reporting.

Indicators	Time-line	Implementers	Resources	Obstacles to Implementation
i. Percent of health facilities reporting in time.	3 months	DHMT; Health Facility In-Charges	Logistics	Lack knowledge, skill
ii. Percent of health facilities submitting complete reports.	3 months	DHMT; Health Facility In-Charges	Funds; transport; stationery	Lack of stationery
iii. Percent of Districts reporting in time.	3 months	RHMTs; DHMTs		Lack of transport
iv. Redefined job description at regional and district levels on disease surveillance.	3 months	MOH; RHMT		Lack of governance
v. Integrated simple diseases surveillance reporting forms.	2 years	DHMTs		Lack of commitment or priority

V. Data analysis

Objective #7: Increase the number of health facilities analyzing data using standard procedures.

Activities:

a. Establish a task force to review data analysis procedures at all levels based on the national disease surveillance document.
b. Conduct a review of analytic procedures.
c. Conduct a consensus workshop to discuss proposed analytic procedures.
d. Print documents for analysis.
e. Conduct training at all levels on analytic procedures to be used.

Objective #8: Strengthen the capacity of health personnel in data utilisation and analysis.

Activities:

a. Revise and develop curriculum for health cadres to include modules on disease surveillance and data utilisation.
b. Organise on-the-job training.

Objective #9: Develop guidelines for data analysis and use for the health facility, district, and regional levels.

Activities:

a. Prepare guidelines for data analysis and use at the regional, district, and HF levels.
b. Print and distribute.

Indicators	Time-line	Implementers	Resources	Obstacles to Implementation
i. Task force to review data analysis procedures is formed.	May-June 1999			Lack of funds, priority, commitment
ii. Review of analytical procedures conducted.	July-Aug. 1999			Lack of funds
iii. Consensus workshop for the analytical procedures done.	Aug.-Oct. 1999			Lack of funds, compliance
iv. Number of documents for analysis are printed and available.	Oct. 1999			Lack of funds
v. Number of training sessions conducted per level.	End of 1999 - mid-2000			Lack of funds
vi. Number of curricula revised.	Nov. 1999-Jan 2000	MOH-EPID & Human Resources; interested partners		Lack of priority, commitment
vii. Number of on-the-job training sessions done.	Feb.-Dec. 2000	RHMTs; DHMTs; interested partners		Lack of funds, training materials, facilitators
viii. Guidelines prepared.	July 1999	Task Force		Lack of funds, working materials
viii. Number of guidelines printed and distributed.	Oct.-Nov. 1999	MOH; interested partners		Lack of funds

VI. Retrospective response

Objective #10: Empower (or strengthen) the Tanzanian health system's capacity to use surveillance data for decision-making (e.g., outbreak investigation, community sensitization, planning, monitoring, and evaluation).

Activities:

a. Evaluate obstacles to decision-making and taking public health action.
b. Provide block funding to facilitate disease surveillance.
c. Provide equipment and supplies if necessary.
d. Train health workers to generate quality data.
e. Train health workers to use data collected to design prevention and control measures of IDS.
f. Train health workers in communication skills and in the use of surveillance data to raise community awareness in the prevention and control of IDS.

[Indicators, etc., for Objectives #10 through #13 are included in a single table following Objective #13.]

VII. Prospective response

Objective #11: Strengthen regions, districts, and health facilities for efficient, timely, and effective response to epidemics.

Activities:

a. Conduct inventory of available communication facilities for use in notification of epidemics at all levels including phone, e-mail, fax, radio-calls, long-distance runners, and traditional media (e.g. drums).
b. Identify and strengthen appropriate communication facilities at different levels.
c. Strategically stockpile drugs, supplies, vaccines, and protective materials at appropriate levels.
d. Identify and strengthen committees for epidemic management all levels.
e. Appoint rapid response teams for various epidemic prone diseases at the district level.
f. Review, adopt, develop, and print national epidemic control guidelines and manuals for procedures, including case management of specific diseases.
g. Prepare and submit epidemic preparedness budget to appropriate authorities.
h. Evaluate the impact of epidemic control interventions.
i. Disseminate disease information to policy makers and planners.

Objective #12: Strengthen DHMT to have the capacity to promptly and effectively respond to reports of cases and outbreaks of diseases.

Activities:

a. Identify which diseases the districts would maintain preparedness based on epidemiologic patterns.
b. Specify the criteria for different diseases that would trigger an epidemiologic response.
c. Identify necessary resources for effective response (human, supplies, funds, communication, and transport).
d. DHMT to identify other key actors (e.g., agriculture, police, teachers, religious leaders) to participate in epidemic response.
e. Build capacity for conducting outbreak investigation, including active case finding, contact tracing, identification of susceptible groups, and identifying risk factors through analytic methods.

Objective #13: Strengthen capacities DHMT and RMHT to predict epidemics.

Activities:

a. Provide training in trend analyses.

Indicators [for Objectives 10-13]	Time-line	Implementers	Resources	Obstacles to Implementation
i. Rapid response teams appointed.	3 months	DHMTs		Lack of skilled personnel
ii. National epidemic control guidelines and manual reviewed, developed, and printed.	2 months	MOH	Personnel, stationery	Lack of skilled personnel
iii. Budget for epidemic preparedness prepared and submitted.	3 months	MOH; RHMTs; DHMTs	Personnel	Lack of skilled personnel
iv. Impact of epidemic control intervention evaluated.	During epidemics	DHMTs		Lack of skilled personnel
v. Disease surveillance information disseminated to policy makers and planners.	Continuous	MOH; RHMTs; DHMTs; HFs		

VIII. Integration of surveillance systems

Objective # 14: Build a functioning, integrated, district-focused, action oriented national communicable disease surveillance system with the flexibility to expand to other important health outcomes.

Activities:

a. Develop mechanisms for integration.
b. Progress review of integration process (two year intervals).
c. Provide resources for effective integration.
d. Conduct operations research (e.g., cost-effectiveness of integration).

Indicators	Time-line	Implementers	Resources	Obstacles to Implementation
i. Task force for integration in place.	1 month	MOH	Funds; TA	Finalization of action plan
ii. Integration plan approved.	1-3 months			
iii. Percent of districts implementing new system.				Partner non-participation
iv. Program review minutes.	2 years	MOH	Funds	Lack of funds; skills; partners
v. Percent of plan funded.	Jan. 2000			
vi. Number of operations research commitments; percent of facilities in new system.				

IX. Communications

Objective #15: Install a system for giving feedback to health facility workers and the community.

Activities:

a. Develop tools for data analysis.
b. Develop special types of feedback (e.g., written feedback or signboards).
c. Use existing opportunities like supervision visits to provide feedback.
d. MOH to provide bulletins on disease surveillance for distribution to all levels.
e. Identification of disease surveillance reports for dissemination to other parties including district and community leaders.
f. Disease surveillance focal point person to attend meetings at the district level.

Indicators	Time-line	Implementers	Resources	Obstacles to Implementation
i. Established feedback mechanism in place.	6 months	MOH; RHMTs; DHMTs	Feedback materials	Lack of feedback materials
ii. Percent of health facilities receiving quarterly feedback reports.	3 months	DHMTs	Logistics support	Inadequate logistics
iii. Percent of disease surveillance reports in the community and at the health facility level.	6 months	DHMTs	Logistics support	Poor governance

X. Training

Objective #16: Build competencies for health facility-, district-, and national-level MOH staff in epidemiology and disease surveillance.

Activities:

a. Identify trainers.
b. Review training manuals on disease surveillance based on WHO generic modules.
c. Develop training manuals.
d. Conduct training for *training of trainers* (TOT).
e. TOT to train health workers at all levels.
f. Develop curriculum for health institutions (long-term institutions).
g. Prepare plan and budget for training.
h. Identify resource persons and facilities.
i. Conduct on the job training and refresher courses.
j. Implement training program.
k. Monitor and evaluate training.

Indicators	Time-line	Implementers	Resources	Obstacles to Implementation
i. Trainers identified.	1 week	MOH	Funds; human resources	Lack of funds; dropouts; other engagements
ii. Training manuals reviewed.	2 weeks	MOH	Funds; human resources	Lack of funds; other engagements; lack of skills and knowledge
iii. TOT training conducted.	1 week	MOH	Funds; human resources	Lack of funds; dropouts; other engagements
iv. Number of health facilities workers trained.	6 months	MOH/TOT	Funds; human resources	Lack of funds; other engagements; lack of skills and knowledge
v. Curriculum for health institutions developed.	Long-term	MOH	Funds; human resources	Lack of commitment; other engagements
vi. Plan and budget for training is prepared.	1 week	MOH	Funds; human resources	Lack of commitment; other engagements
vii. Resource persons and facilities identified.	1 week	MOH	Funds; human resources	Lack of commitment; other engagements
viii. On-the-job training and refresher courses conducted.	Long-term strategy	MOH	Funds; human resources	Lack of funds; other engagements; poor planning and management

XI. Supervision

Objective #17: Develop and implement improved regularity and quality of supervision using comprehensive checklist.

Activities:

a. Form a task force to review and develop a comprehensive checklist based on national PHC guidelines.
b. Pre-test and adopt the checklist.
c. Print checklists.
d. Train and distribute the checklist for use.
e. Make a budget for supervision.
f. Evaluate supervision.
g. Mobilisation of resources to sustain disease surveillance activities at all levels and funds for fuel and *per diem.*

Indicators	Time-line	Implementers	Resources	Obstacles to Implementation
i. Pre-testing done.	Feb.-July 2000	MOH	Funds	Lack of funds
ii. Checklist printed.	January 2000	MOH	Same	Same
iii. Checklist in use.	Feb.-July 2000	MOH(MSD); RHMTs; DHMTs	Transport	Same
iv. Budget in place	July 1999	MOH; RHMTs; DHMTs		
v. Evaluation findings available.	December 2000	MOH	Personnel; transport	Lack of time; funds

XII. Laboratory

Objective #18: Strengthen all primary laboratories to diagnose parasitic and bacterial infections causing epidemics.

Objective #19: Strengthen all secondary laboratories to be able to confirm and perform drug sensitivity tests for all bacterial infections.

Objective #20: Empower tertiary (referral) laboratories to be able to conduct serological confirmation of viral infections of public health importance, including those targeted for eradication.

Objective #21: Establish a referral network at all levels.

Activities (for the four objectives):

a. Conduct laboratory inventory to assess their technical capacity (staff, equipment, and supportive services including buildings, space, and utilities) for both public and private sectors including networking capabilities.
b. Categorise the different laboratory capacities based on the inventory findings.
c. Establish laboratory networks at different levels from primary to national and above including feedback mechanisms.
d. Provide the necessary infrastructure and resources at all levels in the public facilities and give guidelines to private sector labs.
e. Monitor labs and certify them for competency, safety, and QC.
f. Strengthen, streamline, and develop appropriate recording forms and mechanisms of reporting forms and mechanisms of reporting results.
g. Improve knowledge and skills of laboratory personnel based on inventory findings.
h. Streamline linkages between laboratories and clinical practices including utilisation of results at all levels.
i. Improve Muhimbili laboratory to be a public health laboratory.
j. Plan a complete assessment of the laboratory capacity (all aspects of technical quality of the work performed in the laboratory, and reporting of results).
k. Review the guidelines put up by the diagnostic unit under the hospital services in view of the new initiative on IDS and recommend revision if necessary.
l. Improve access of health facilities to secondary and tertiary laboratory services.

Indicators	Time-line	Implementers	Resources	Obstacles to Implementation
i. Inventory completed.	Sept. 1999	MOH	Time	
ii. Laboratories' capacities categorized.				
iii. Laboratory inventory and assessment on technical capacity done.	July 1999	MOH; Consultants	Funds; consultants	Lack of priority
iv. Laboratory network established.	Nov. 1999-April 2000	MOH; RHMTs; DHMTs; local authorities; interested partners	Funds	Lack of funds
v. Number of laboratories with adequate resources.	2000-2002	MOH; RHMTs; DHMTs; local authorities; interested partners	Funds	Lack of funding; lack of priority, communications
vi. Number of laboratories monitored and certified.	2000	MOH; interested partners	Funds	
vii. Reporting mechanism developed.	Jan. 2000	MOH-Diagnostic Section & EPID; interested partners	Funds; materials	Lack of funds; staff
viii. Number of laboratory personnel trained in laboratory techniques.	Oct. 1999	MOH; RHMTs; DHMTs; interested partners		Lack of funds
ix. Linkage between laboratory and clinical practices streamlined.	Oct. 1999	MOH; RHMTs; DHMTs; interested partners		Lack of priority; time
x. Public health laboratory established at MMC.	2000-2003	MOH; Consultants; MMC; interested partners	Equipment; supplies; staff; funds	Lack of funds; political will
xi. Guidelines put up by diagnostic unit reviewed.	June 1999	MOH-EPID, Diagnostic Section; interested partners	Time; funds	
xii. Number of health facilities with access to secondary and tertiary laboratory facilities.	2000-2002	MOH; RHMTs; DHMTs; interested partners	Funds; transport	Lack of funds; communication problems