Jordan Surveillance Project Evaluation Final Report
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Executive Summary

The Jordan Surveillance Project (JSP) is an integrated set of public health initiatives run by the Jordan Ministry of Health with technical assistance from the US Centers for Disease Control and Prevention (CDC) in collaboration with the US Agency for International Development (USAID). The project includes training in applied epidemiologic methods for Ministry of Health physicians, health directorate managers, health statisticians and others, enhancement of Jordan's infectious and noncommunicable disease and mortality reporting surveillance systems, development of a hospital discharge data surveillance system, and development of a behavioral risk factor surveillance system to guide interventions to prevent noncommunicable disease. JSP began in 1997 and is currently completing Phase II of funding. In preparation for planning Phase III of funding for 2004-2009, USAID requested an independent evaluation of the accomplishments of JSP and recommendations for improvements for the next phase.

The evaluation team consisted of two senior staff from CDC, with special expertise in public health training programs and in noncommunicable disease surveillance, who visited Jordan from May 9 to May 15, 2004. Their evaluation included interviews with approximate 40 persons including current and past participants and teachers of the Field Epidemiology Training Program and Data for Decision Making training program, national and local infectious disease and noncommunicable disease surveillance directors and their staff, and other senior staff within the Ministry of Health. Preliminary results were presented to the Minister of Health and to the Chief of the USAID Mission during the team visit.

Overall, the evaluation team found that the Jordan Surveillance Project has made excellent progress in achieving all of the stated objectives of the project, and strongly recommends that the next phase of the project be supported. Specific recommendations for improvements for the next phase of the project are presented in detail within this report and are summarized below.

1. For infectious disease surveillance:
   - As planned, continue making improvements in the completeness, timeliness and accuracy of the data collected.
   - Negotiate arrangements for MOH, universities, and other partners to analyze and publish collaboratively the surveillance data collected by MOH. Such cooperation would increase visibility of the surveillance systems as well as increase the actual use of the collected data.

2. For noncommunicable disease surveillance and interventions:
   - Give more priority to this area to reflect the fact that most of the leading causes of morbidity and mortality in Jordan are noncommunicable diseases.
   - Focus on systems development, and explore opportunities for harmonization/ synthesis to prevent vertical surveillance streams for each disease (note: one system to cover everything is not feasible). Focusing on systems development will help to integrate emerging and priority issues as they arise (e.g. HIV).

3. Increase JSP staff to adequately support the expanding project and enhance mentoring support for the participants—the heavy workload of existing staff could compromise JSP over the long-term.

4. Consider renaming JSP to reflect its diverse integrated components, including training, surveillance, and interventions, that are helping to strengthen the public health infrastructure in Jordan. Combinations of the words Jordan, Epidemiology, Training, Surveillance, Interventions, and Project could yield acronyms such as JSTEP, JESTIP, JESIT, JETSP, JETSIP, and others.

5. Provide more opportunities for FETP/DDM participant and partner networking and follow-up:
   - Hold a 2-day annual meeting of FETP/DDM graduates and current attendees to provide updates on new topic areas, deliver presentations on current projects, share experiences to help analyze problems, and network with each other.
   - Consider inviting partners (e.g. NGOs, universities) to the annual meeting to showcase accomplishments and facilitate potential collaboration.
   - Provide periodic refresher training to improve skills in upgraded and new technology and in emerging topic areas, such as micronutrients, monitoring health impacts, advocating information to policy makers, developing sustainable programs, etc., and specific skill-building topics.

6. Identify staff to serve as managing editor for the proposed periodic (weekly, monthly, or quarterly) surveillance bulletin to help facilitate the sharing of experiences and dissemination of information on a regular basis.

7. Support 2-3 small grants for outstanding projects by FETP/DDM participants to facilitate turning good ideas into concrete action.

8. Continue providing opportunities for participants to attend and present at regional and international conferences and meetings.

9. Consider holding governorate meetings in each region to showcase the work and increase the visibility of tools/research implemented through JSP with other physicians and hospital staff in the governorates.

10. Explore links with JUST or Jordan University to enhance FETP so that participants may receive a masters degree and/or board level certification, as well as the applied epidemiology training.

11. Establish a unit within MOH focused on injury surveillance and prevention to reflect the importance of injury as one of the leading causes of morbidity and mortality in Jordan.

12. Strengthen links to Egypt, Saudi Arabia and other countries in the region to provide regional support and leadership, and contribute to strengthening capacity overall in the region.

13. Consider developing a plan to upgrade computer hardware and software periodically for FETP and DDM participants and graduates and to provide increasing technical support to maintain the equipment. This will facilitate capacity to perform electronic transmission of reports and data across the governorates and to the MOH.

14. Develop a transition strategy for the MOH to assume increasing responsibility for the project over the long term. Develop memorandums of understanding to clarify roles and responsibilities across partner agencies, such as MOH, CDC, and others.

I. Background

The goal of the Jordan Surveillance Project (JSP) is to provide the MOH with the capacity to produce sufficient health information to make policy determinations, resource allocation and programmatic improvements to increase the effectiveness and efficiency of public health practice. JSP is currently finishing phase II and preparing for phase III. As a first step in this process, an evaluation was requested by USAID in Jordan to examine how the JSP has been meeting its declared objectives and how JSP should be adapted to address emerging health issues and expanding needs. The Division of International Health of the Epidemiology Program Office at CDC selected Drs. Andrew Dannenberg and Kathy Douglas as the evaluation team.

Prior to the visit to Jordan, the evaluation team was provided with an organizational chart of the Ministry of Health, background information on the project, annual workplans, progress reports, training program curriculum, publications, and abstracts. The evaluation was conducted from 9-15 May 2004 in Amman and surrounding governorates.

During the period of the evaluation, the team performed the following duties:

1. Reviewed the new and existing surveillance systems that JSP has supported and recommended strategies for JSP to continue to improve the systems including:

a. Mortality surveillance
b. Communicable disease surveillance
c. Noncommunicable disease surveillance
d. Behavioral risk factor surveillance
e. Hospital discharge information system

2. Assessed the Field Epidemiology Training Program's (FETP) success in supporting the overall program's objectives, focusing on:
   a. Process of recruitment
   b. Process and outcome of training
   c. Career path of graduates
   d. Relation of FETP to other governmental units
   e. Budget and staffing needs for sustainability

3. Assessed the Data for Decision Making (DDM) program success in supporting the overall program's objectives, focusing on:
   a. Process of recruitment
   b. Process and outcome of training
   c. Impact of the on-the-job training on participants' day-to-day work activities
   d. Usefulness of the training in improving current job performance and future job opportunities
   e. Sustainability

4. Reviewed the existing relationships between the two training programs, FETP and DDM, and recommended strategies to enable the programs to support each other without detracting from the different training objectives.

5. Assessed opportunities to work with emerging topics, such as enhancing HIV/AIDS surveillance and prevention efforts, enhancing micronutrient deficiency surveillance and prevention, and initiating a Ministry unit focused on injury surveillance and prevention.

The evaluation team interviewed approximately 40 individuals involved in the project in various capacities, including participants and instructors of the FETP and DDM programs, supervisors of staff who had participated in FETP or DDM, and individuals conducting any of the various surveillance activities (see the list of persons interviewed in Appendix A). The JSP team will use the results of the evaluation in planning for the next phase of the project, anticipated to begin in October 2004 and cover a five-year period.

II. Overview

JSP is considered to be an excellent, efficient, and beneficial strategy for the individuals and organizations involved in the project. Many participants consider JSP to be one of the greatest opportunities in their careers. Directors supervising graduates of the FETP and DDM training programs see major shifts in the scientific ability of their staff, which in many cases has resulted in promotions for the graduates of the programs. Having

graduates of the FETP and DDM programs in each governorate also has resulted in a greater linkage across governorates toward supporting national health efforts. Specifically, JSP has resulted in the following:

- Increased access to and quality of public health information
- Improved responses to outbreaks, both in terms of timeliness and systematic approaches
- Established scientific procedures for collecting and analyzing epidemiological data
- Increased presentation skills and opportunities to share experiences at conferences and meetings for JSP participants
- Addressing work in a comprehensive manner

Commitment has been demonstrated by the MOH to strengthen JSP infrastructure. Actions already taken, or to be taken in the near future, by the MOH include:

- Making JSP an organizational unit, known as the Division of Applied Training in Epidemiology, within the MOH organigram (completed)
- Expanding space for the project team from five to eight offices (in progress)
- Providing additional staff (1 new full time staff person to begin in late May 2004; at least 2 additional staff are needed)

Current weaknesses of JSP include not yet having a plan established to sustain and expand the project over the long-term, with the MOH assuming progressively more financial and technical support of the project. Further, some JSP activities, such as the periodic surveillance bulletin, have not been implemented due to understaffing. Additional staff specific to project areas, such as noncommunicable disease, mortality and hospital discharge data systems, and injury surveillance and prevention, would greatly enhance the project.

III. Project Area Recommendations

The following JSP project areas were evaluated:

1. Field Epidemiology Training Program (FETP)
2. Data for Decision Making Program (DDM)
3. Surveillance for infectious diseases
4. Surveillance for noncommunicable diseases
5. Behavioral risk factor surveillance
6. Mortality reporting
7. Hospital discharge data reporting
8. Opportunities for work with emerging topics

Preliminary results were delivered to His Excellency Said S. Darwazah, Minister of Health, on 12 May 2004 (see Appendix B for presentation summary). Results also were presented to the Chief of the Jordan USAID Mission on 13 May 2004 (see Appendix C for presentation summary).

Strengths, weaknesses, and recommendations for each project area are described below.

1. Field Epidemiology Training Program (FETP)

Strengths

1. FETP has trained or is training 30 physician participants who use their enhanced skills to benefit public health in Jordan.
2. Many participants reported that the training substantially improved their skills in epidemiology, computers, research, surveillance, presentations, report writing, and field investigations. Some also indicated their skills improved in speaking, reading and writing in English.
3. Supervisors of FETP graduates consistently reported that these graduates do outstanding work in epidemiology, surveillance, and other aspects of public health.
4. FETP graduates are reported to conduct outbreak investigations quickly and systematically, and to help ensure that all suspected outbreaks are examined. Prior to the project, many actual or potential outbreaks were not investigated.
5. FETP provides more practical experience than existing public health degree programs; universities and other agencies approach MOH to ask about the practical epidemiology field experiences for their students.
6. Recruitment of appropriate and well qualified MOH physicians into FETP has been successful to date.
7. Having graduates of the FETP and DDM programs in each governorate has resulted in a greater linkage across governorates toward supporting national public health efforts.

Weaknesses

1. The FETP program is not linked to an academic degree or other credential that might increase the participant's job potential (e.g. increased salary). This absence may be a deterrent for recruiting some highly capable physicians into the field of public health.
2. The existing project staff work on numerous projects simultaneously, and at times these other commitments reduce their availability to facilitate/mentor program participants on the individual projects.

Recommendations

1. Develop an annual two-day conference for FETP and DDM graduates and current participants to provide continuing education, showcase accomplishments, and enhance networking. Consider inviting university and other partner organization staff to attend at least part of the two-day conference to motivate partners to collaborate on specific activities. A planning meeting with these partners to determine collaborative roles and responsibilities could be held following the two-day conference.
2. Explore associating the FETP with a higher level academic credential. Based on preliminary discussions with the Chairman of the Dept. of Public Health at JUST, it may be possible to offer a degree such as an MPH in conjunction with the FETP if the resident could fulfill some course requirements (estimated at 9-16 credits) and use an FETP project for thesis credit. The FETP should further explore this and other possibilities with the Dean at JUST and at other academic institutions. The potential for FETP experience to count toward board level certification deserves further consideration.

3. Identify resources to support additional FETP program staff to fulfill their expanding responsibilities, respond to new opportunities, and enhance mentoring of program participants.
4. Support 2-3 small grants ($5000-$10000 range) for outstanding projects by FETP/DDM participants and graduates. To do this, establish a committee to review submitted proposals and select ones that make explicit contributions to improving public health practice. These projects could be showcased in various settings and serve as models for future projects by FETP/DDM participants.
5. Develop a strategy for involving FETP/DDM graduates in new classes of training, or for sharing current work projects with each other to help maintain and enhance skills and increase networking.
6. Explore options to enroll participants into FETP from other countries in the Middle East to enhance international networking and improve public health across the region.
7. Consider providing additional training on analysis of complex surveys as requested by some FETP graduates.
8. Consider providing an electronic reference library on CD-ROM to FETP and DDM participants and graduates to enhance their access to current information at a modest cost.

2. Data for Decision Making Program (DDM)

Strengths

1. DDM has trained or is training 52 senior and mid-level managerial and technical public health professionals in epidemiology, biostatistics, surveillance, management, communication, and economics to improve their use of data in making decisions to protect the public's health.
2. Persons trained include district public health officers, program managers, and deputy directors of health governorates.
3. Comments from current and past DDM participants indicate high satisfaction with quality and usefulness of training received.
4. Training two-person teams from each governorate is valuable for building public health capacity in those governorates.
5. By training high level public health professionals, DDM helps improve management skills and increase understanding of applied epidemiologic skills of the supervisors of FETP graduates.

Weaknesses

1. Some participants indicated they could have used more time for the DDM training, although increased time commitment would have competed with their regular job responsibilities.
2. The selection process has not been ideal; participants were nominated by their supervisors and some did not fit into program well. 7 of 15 program managers did not complete the 2002-03 class due to other commitments or insufficient interest.

Recommendations

1. Identify the next target groups for DDM. Hospital administrators may be appropriate in that such training would improve their links to public health and may facilitate improving hospital discharge data surveillance activities.
2. Develop a mechanism for ongoing continuing education of DDM graduates. This might include a periodic conference (at least annually; see recommendation #1 under FETP above) to review and update relevant information, a periodic written or electronic bulletin, and/or other methods.
3. Give further thought to identifying the optimal method for selecting DDM participants, to minimize the number of overcommitted or disinterested participants who join and then drop out of the training.
4. Develop a strategy for involving FETP/DDM graduates in new classes of training, or for sharing current work projects with each other to help maintain and enhance skills and increase networking.
5. Review the program-related transportation needs of DDM participants, an issue that was raised as a concern by some participants.

3. Surveillance for infectious diseases

Strengths

1. Over the past several years, surveillance of infectious diseases in Jordan has greatly improved in completeness, timeliness, and accuracy, with weekly reporting of 42 conditions now occurring regularly at the local and national level.
2. The FETP and DDM training programs have contributed substantially to these improvements by training local and national staff to conduct infectious disease surveillance and run the computer database systems. Local and national staff demonstrate substantial energy and enthusiasm for their work with these surveillance systems.
3. FETP trainees working with other MOH staff are now providing timely responses to investigate real and suspected increases in disease events identified in the surveillance system.

Weaknesses

1. Several informants indicated that insufficient resources have been available at times to maintain and upgrade the surveillance system, such as updated computer hardware and software and transportation for investigations.
2. A periodic bulletin to disseminate surveillance data has been planned but not published regularly due to insufficient staff resources.
3. Several informants indicated that surveillance for sexually transmitted diseases has been limited due to the sensitive nature of the topic.
4. While cooperation on disease reporting has been excellent with public health clinics and hospitals, less cooperation has been obtained from physicians in the private sector.

Recommendations

1. Consider developing an MOH plan to insure periodic updating of computer hardware and software used for surveillance on the local and national levels.
2. Obtain necessary staff (perhaps ½ FTE) to edit and manage a periodic (weekly, monthly, or quarterly) surveillance bulletin that would have great value for disseminating information and as a teaching tool for FETP trainees who could write much of its content.
3. Negotiate arrangements for MOH, universities, and other partners to analyze and publish collaboratively the surveillance data collected by MOH. Such cooperation would increase visibility of the surveillance systems as well as increase the actual use of the collected data.
4. Establish at MOH a regular review (perhaps every 1 – 2 years) of the list of reportable conditions to insure optimal use of surveillance resources.
5. Consider asking questions about risk factors for sexually transmitted diseases on one cycle of the BRFS survey to assess the magnitude of the problem of STDs in Jordan.
6. Offer encouragement such as training and feedback to private sector physicians to improve their cooperation in disease reporting.
7. Continue work with the MOH electronic reportable disease database, including electronic transmission of data from directorates to MOH, and periodic dissemination of surveillance reports.

4. Surveillance for noncommunicable diseases

Strengths

1. Excellent cancer registry has been developed and is in place.
2. Various partner organizations and professionals in a range of functions all recognize that both noncommunicable disease data collection and program planning/ implementation are important and need strengthening.

Weakness

1. As is the case for many countries, this area needs to be given more priority and developed.

Recommendations

1. Identify cardiovascular disease as a priority to match its status as the leading cause of death in Jordan (based on preliminary data) and develop a strategy and timeline to begin collecting and analyzing relevant data for action.
2. Implement screening at the primary health care center level to assess diabetes complications.
3. Consider recruiting non-physicians, especially behavioral scientists (e.g., sociologists, psychologists, and social workers), to enhance the noncommunicable disease area and adequately address the complexity of response needed.
4. Plan interventions based on improved noncommunicable disease surveillance so that data collection will result in public health action.
5. Explore linkages with other noncommunicable disease efforts, such as the WHO/CDC Evidence-Based Chronic Disease Prevention training program, to help strengthen noncommunicable disease capacity.

5. Behavioral risk factor surveillance

Strengths

1. Successful implementation of BRFS in 2002 involving a nationally representative sample.
2. Current plans are underway to repeat implementation of BRFS in 2004.
3. Fewer resources are required to collect self-report behavioral and related risk factors, as compared to the collection of physical and biochemical measures.

Weaknesses

1. How to use BRFS data remains problematic because the field of noncommunicable diseases overall is not considered a priority by many health policy decision makers (problem throughout the world).
2. Concern about future BRFS implementation: the extra resources needed for the simultaneous collection of self-report data and of physical and biochemical measures may reduce the likelihood of having rapid and regular collection of self-report data (every 2-years) which is important to ensure effective linkage of data collection to data use for prevention purposes.

Recommendation

1. Support current goal to conduct BRFS (self-report behavioral indicators) every 2 years to provide timely trend data for program and policy planning, and for linking data collection to data use.

6. Mortality reporting

Strengths

1. The MOH Information Center has redesigned mortality reporting forms, which has resulted in improved mortality report quality.
2. Hospitals have significantly increased their submission of mortality reports to the Information Center using the newly redesigned forms.
3. Cancer mortality data have been standardized and therefore are more useful for assessing trends and for comparisons with other countries.

Weakness

1. There are an insufficient number of professionals working as mortality coders.

Recommendations

1. Provide further training to physicians on accurate and complete submission of medical information for death certificates.
2. Increase the number of persons trained in ICD-10 coding to assist the current MOH staff with this responsibility. These individuals need to understand medical terminology, but do not need to be physicians. The coders should be supervised by a physician who can resolve difficult coding problems.
3. Increase dissemination of mortality data ("surveillance is data for action") to health policy decision makers and academic researchers.

7. Hospital discharge data reporting

Strength

1. Hospital discharge data coding has begun at Bashir Hospital and is being done by an energetic and enthusiastic, but overworked, physician.

Weaknesses

1. Hospital discharge data quality is currently poor and incomplete.
2. Physicians are currently not motivated to provide complete and accurate diagnosis records.
3. There are an insufficient number of professionals working as coders.

Recommendations

1. Increase number of persons trained to code hospital discharge data. These non-physicians need to understand medical terminology and should be supervised by a physician who can resolve difficult coding problems.
2. Support the proposal for a hospital discharge information system submitted by the MOH and JSP on 29 January 2004 which has 4 objectives to: (1) create a coding unit within 25 MOH hospitals by 2008, (2) train personnel in ICD-10 coding, (3) furnish the 25 hospitals with the necessary equipment and supplies, and (4) support a centralized location within the MOH to serve as a central data warehouse.
3. Consider implementing a hospital accreditation process that will require physicians to properly record discharge diagnoses.
4. Consider implementing a requirement that physicians provide complete and accurate records to maintain hospital privileges.
5. Increase dissemination of hospital discharge data to hospital administrators, health policy decision makers, and academic researchers.

8. Linkage with emerging priority topics (HIV, micronutrients, injuries)

Strength

1. The Ministry has identified and initiated work in a number of emerging priority topics by its process of periodic updates of the list of reportable diseases.

Weakness

1. Work on new priority topics is often guided by the availability of new resources for such projects.

Recommendations

1. HIV/AIDS is a major cause of morbidity and mortality globally, although the incidence remains low in Jordan at present. Increased efforts in HIV surveillance and education, especially in high risk populations, would be valuable to reduce the likelihood of increased HIV incidence in Jordan.
2. Deficiencies of micronutrients, such iron, folic acid, vitamin A, and iodine, lead to highly preventable diseases and disabilities. Increased efforts for surveillance for these deficiencies and appropriate interventions would be highly cost-efficient.

3. Injuries, especially related to motor vehicles, are one of the leading causes (third based on preliminary data) of mortality and morbidity in Jordan as in much of the developed and developing world. The Ministry currently has no active programs focused on injury prevention; data on motor vehicle crashes are collected by the Department of Safety but not reviewed by MOH. Developing a small unit within the Ministry to improve injury surveillance and to identify and implement appropriate injury prevention strategies would yield substantial health benefits for Jordan. The National Center for Injury Prevention and Control at CDC could provide technical assistance to help develop such a unit. Based on limited information, the leading causes of injury in Jordan are expected to be motor vehicle crashes, falls, and burns; proven intervention strategies exist for these and other major causes of injury.

IV. Recommendations covering multiple components of project

1. Maintain separate, yet supporting functions of the two training programs, FETP and DDM, targeted to different participant audiences, providing differing depths of epidemiologic material coverage, offering differing course content (e.g. management and leadership content in the DDM training program), and providing training that requires different time commitments and covering different time periods. The FETP program is working well, targeting appropriate participants from entry and mid-level MOH staff, who can commit to the two-year intensive program, and who can return to their positions to strengthen epidemiologic technical work. DDM, on the other hand, targets middle- to senior-level staff who are in a position to strengthen not only technical functions of their work, but also administrative functions. Including some of the epidemiologic training from FETP into the DDM program generates "buy-in" and increases the understanding of these DDM individuals regarding the scientific basis of the technical work conducted by the FETP graduates. Providing management and leadership training in the DDM program also helps to enhance the skills required to improve health center operations.

2. Strengthen links of the project to Egypt, Saudi Arabia and other countries in the region to provide regional support and leadership, and contribute to strengthening capacity overall in the region. Because both infectious diseases and the risk factors for noncommunicable diseases transcend national boundaries and have major economic, socio-cultural, political, and environmental consequences on health, and because most countries do not have resources to address both infectious and noncommunicable diseases adequately, disease burden can no longer be effectively addressed by each country alone, but must be addressed across countries together to have maximum impact. Sharing project objectives and training programs with professionals from countries in the region to exchange information and best practices will not only help strengthen Jordan's health response, but will help to raise the standard overall for the region.

3. Develop a transition strategy for the MOH to assume increasing responsibility for the project over the long term. Develop a memorandum of understanding for each agreed-upon project activity to improve communication and clarify roles and responsibilities across partner agencies, such as MOH, CDC, and others.

V. Summary

JSP is much more than a surveillance initiative. It is an integrated applied epidemiology program that has already begun to strengthen the health infrastructure in Jordan. Systematic infectious, noncommunicable disease, including behavioral risk factors, and mortality surveillance efforts have improved as a result of this project. Further, medical professionals who have participated in either the FETP or DDM consider JSP to be the best field application program offered in the country. This is supported by directors supervising these professionals, who have noticed significant changes in epidemiological skills among these professionals, as exercised routinely in day-to-day work. Because JSP is considered by all interviewed to be a tremendous success to date, the overall recommendation from this evaluation is to provide continued technical and financial support to strengthen and further expand this project, while considering the suggested changes described in this report.

Appendix A – Special presentations and persons interviewed

Special presentations

His Excellency Eng. Said S. Darwazah – Jordan Minister of Health
Ms. Anne Aarnes – Chief of USAID Mission, US Embassy, Amman

Persons interviewed, Jordan Surveillance Project Evaluation, May 9-15, 2004

Dr. Saed Kharabsheh – Secretary General, MOH
Dr. Ali Assad - Assistant Secretary General for Primary Health Care, MOH
Dr. Adel Belbeisi - Director for Disease Control, Ministry of Health (MOH)
Dr. Henry Walke – Jordan Surveillance Project Resident Advisor, CDC assignee
Mr. David Piet - Team Leader, Population and Family Health Sector, USAID
Dr. Salwa Bitar Qtiet – Senior Project Management Specialist, USAID
Dr. Fawaz Shehab – MOH Counterpart for Jordan Surveillance Program
Dr. Meyasser Zinah - Non-Communicable Disease Program Manager, MOH
Dr. Sief Ed-Din Saleh - Director of Infectious Disease Surveillance, MOH
Dr. Faris Debabneh – Director of Information Center, MOH
Dr. Hydar Otoum - Director of School Health, MOH
Dr. Moh'd Abu Sleih – Director, Community Medicine Program, Health Academy, MOH
Dr. Salah Mawajdeh – Director General, Jordan Food and Drug Administration
Dr. Bassam Hijawi - Director of Health Safety, MOH
Eng. Wisam Qarqash – Micronutrient Program Manager, MOH
Dr. Khaled Al-Hyari – Health Director, Salt
Dr. Zeyadd Abanda, Director, Director of Health Directorate, Ajloun
Prof. Ahmed M.B. Alkafajei – Chairman, Dept of Public Health, Community and Family Medicine, Jordan University of Science and Technology, Irbid
Dr. Awai Hamid – Deputy Director, Bashir Hospital, Amman
Dr. Kamal Abu-Arqoup – Hospital discharge coder, Bashir Hospital, Amman

Data for Decision Making Program participants

Dr. Khaled Abbas Al-Kharabsheh, DDM 1999-2000, Deputy Director, Amman Health Directorate
Dr. Neyla Gargouri, DDM 2002-2003, Deputy Director, Laboratory Directorate
Ms. Wisam Qarqash, DDM 2002-2003, Head, Nutrition Department, MOH
Dr. Youssef Moh'd Abdellat, DDM 2004, Deputy Director, Amman Directorate
Ms. Nabila Jeedi, DDM 2004, Epidemiologist, Amman Directorate
Dr. Ali Al-Dergham, DDM 2004, Deputy Director, Balqa Directorate, Salt
Mr. Abdullah Al-Jendi, DDM 2004, Epidemiologist, Balqa Directorate, Salt
Dr. Ziad Abandah, DDM 2004, Director of Health, Ajloun Directorate, Ajloun
Mr. Ayman Smadi, DDM 2004, Epidemiologist, Ajloun Directorate, Ajloun

Field Epidemiology Training Program participants

Dr. Fawaz Shehab, FETP 1999-2001, JSP, Amman
Dr. Samir Khalil, FETP 1999-2001, Director of Surveillance, Amman Directorate

Dr. Assad Rahal, FETP 1999-2001, Primary Health Care, HIV, MOH
Dr. Kariman Zein, FETP 2000-2002, Diarrhea surveillance, MOH
Dr. Sami Sheikh Ali, FETP 2000-2002, Director of Surveillance, Salt
Dr. Mohamad Syouf, FETP 2000-2002, Deputy EPI Manager, MOH
Dr. Taiseer Ennab, FETP 2002-2003, Chief of Surveillance, Ajloon
Dr. Majed Assad, FETP 2002-2003, Informatics Directorate, MOH
Dr. Neyla Gargouri, FETP 2003-2004, Leishmaniasis surveillance, MOH

Appendix B – presentation to Jordan Minister of Health

Appendix C – presentation to Chief of USAID Mission