Middle East Consortium on Infectious Disease Surveillance (MECIDS)

MEETING AT THE ALLLENBY/KING HUSSEIN BRIDGE, 19-20 JUNE 2006:

MECIDS Partners Consider Cooperation with IBM Research and the Consortium's Strategic Direction

Israeli, Jordanian and Palestinian participants to the Middle East Consortium for Infectious Disease Surveillance (MECIDS) as well as Search for Common Ground (SFCG) and the Nuclear Threat Initiative (NTI) met at the King Hussein/Allenby Bridge for two full day meetings on the 19th and 20th of June 2006. The first day was devoted to presentations by IBM Research (from Almaden, California and Haifa, Israel) on a proposed in-kind donation of IBM Research to build the information technology infrastructure of the project. The second day was devoted to discussing the increasingly problematic issue of Palestinian participation and the strategic direction of MECIDS. SFCG facilitated the meeting in partnership with the NTI. For a full list of attendees see Appendix A.

Day One: IBM's Proposal

IBM Research has proposed a yearlong project to work with the MECIDS partners to develop their information technology systems to allow for greater cooperation in collection, distribution and organization of disease surveillance data and information.

The proposed project is estimated to be an in-kind donation in terms of labor and equipment of $1 million (USD). The project would be based on some of the disease surveillance research conducted in the IBM Almaden laboratory in California and led by the IBM Research Haifa team. The project would work on two levels. First, it would assist in building the internal infrastructure of partner countries. For this IBM had to understand how infectious disease information is collected and distributed *within* each country. Israeli officials has briefed IBM prior to the meeting on their system. Jordan detailed its disease data and surveillance system in presentations. The Palestinian Authority participant from the Ministry of Health (MOH) was not in attendance due to permitting issues. Thus, IBM was not provided with a detailed description of the PA's disease surveillance information technology infrastructure. However, the non-governmental Palestinian participant clarified that the Gaza and West Bank systems are separate and require closer coordination.

This first step, however, is to develop the necessary software and hardware requirements within each country and to standardize the data collected. Israel's software and hardware capabilities are sufficient. Some of Jordan's operations are still not computerized, particularly the disease reporting procedures for the district laboratories reporting to the Central Laboratory. It is estimated that Jordan would need about 6 computers to computerize this reporting process. Currently, the reporting is done through paper logbooks. The other reporting stream is through the district health centers to the Disease Control Directorate. This process is computerized, but

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the two reporting streams are not coordinated and there are overlaps and procedural inefficiencies that Jordan is working on eliminating. In addition to additional computers, Jordan and the PA may also require the development of internet access capability, which IBM noted would be a requirement for any system implementation.

Second, the IBM would assist in developing the information technology infrastructure for the sharing of information *among* the partner countries. This phase involves issues of privacy/security and standardization of the data. In order to effectively share the data, the partner countries must agree to a standard format for the data. The latter includes the field format: what pieces of data are included and the actual electronic format. IBM recommended that the partners agree on an initial set of standardization criteria. This could be changed however if the partners used, for example, a "hub-and-spoke" model where the information is stored at one central server. The format could be changed for that one location easily, rather than having to go to each individual partner country to change the format. The location of this server caused some discussion, but IBM stated that it could be located almost anywhere in the world. As for the privacy and security issue, IBM stated that there could be different levels of security and privacy protection depending on the level of sensitivity of the data. Some information could be available to all government officials within certain ministries (e.g., counts of infected patients). Other information could be available only to a select few users who have a password (e.g., a non-identifying patient profile). Still other information would not be shared between countries (e.g., identifying patient information).

For mapping the spread of an infectious disease, IBM emphasized that one criterion for the data standardization should be a geographic reference for the patient. This did not have to be a specific home or office address, but it had to be something that approximated the location of the patient within the country. Israel could use zip codes. It was not clear what geographic reference Jordan or the PA would use as their postal systems are different. Jordan indicated that in many instances the clinical physicians do not obtain the patient's address at the time of diagnosis and that it is only done when the patient comes to pick up his/her lab results.

NTI emphasized the need for the information infrastructure to provide real-time data that can be used for rapid reaction.

IBM Research also presented a computer modeling program they have developed for the mapping the spread of disease. The program is called STEM - spatial and temporal epidemiological modeling - and can model the pace and direction of infection based on a range of data, including transportation links, air currents, weather patterns, population densities, etc. More importantly, the program can model the likely effect of different public policy responses, e.g., culling infected livestock, closing airports, closing highways, quarantines, vaccinations, etc. As a demonstrative example, IBM ran the program to model a modern-day pandemic flu epidemic in the United States on the scale of the 1918-19 Spanish Influenza pandemic. Such an outbreak would spread over the continental United States in less than two months and kill an estimated 1.85 million people or about 0.6% of the population. The spread would be much more rapid than in 1918-19 in today's society because of the increased transportation links. Indeed, in the example not all the airports were included in the database and thus the result was too optimistic.

The modeling program could also predict the likely economic effects of some disease outbreaks, which is important given that another pandemic flu outbreak would be devastating not only in terms of the scale of the mortality, but the compressed period of time over which those deaths would occur. The economy would have little time to adapt and thus the ability of a society and its government to respond would be severely hampered once the outbreak hit a certain point.

The remaining time on the first day was devoted to question and answers about IBM's proposal. IBM again raised the issue of geographic references. The partners emphasized the privacy concerns. NTI noted that the STEM project was useful only to the extent MECIDS had the standardized data necessary for the model to run the projections. At the conclusion, IBM indicated what it needed from the partners to begin work:
- signed confidentiality agreements
- a signed contract with NTI that would have attached non-binding memoranda of intent to work with IBM from the partners. IBM needed some tangible statement that indicated that the partners want the in-kind donation as described in the Statement of Work, but the partners do not need to sign Statement of Work. Also, IBM noted that the Statement of Work is not final and welcomed feedback (deadline: end of June)
- set up time for regular communication (e.g., monthly conference. call) (target date for first call: second week of July, 5 p.m.)
- designate points of contact, primary and alternate (timeframe connected to confidentiality agreement).

The partners agreed to provide these things.

Day Two: Next Steps for MECIDS

The first part of the second day was devoted to the Palestinian participation issue. The attendees discussed the reasons for permitting problem. Some thought that it was a change of policy influenced by politics. Others thought that it was a question of using the correct administrative procedures. Still others noted that the PA MOH participant was too high-ranking for the Israeli government to allow its officials to meet with him. One attendee noted that this was the third time that the PA's MOH was not represented at a MECIDS meeting, and proposed that MECIDS not hold another meeting without the PA since what was originally conceived as a trilateral process was becoming a bilateral one. The Palestinian participant also stated that the exclusion of the PA's MOH official was making his position within the Ministry more vulnerable. Given that the permitting process was less than transparent, the attendees could not offer definitive solutions, but did make some specific proposals.[1]

The participants agreed to do several things to increase the chances that the Israeli government would allow for PA participation. First, they would draft a list of permanent MECIDS participants. This list would be submitted as part of an application for a general permit for all future MECIDS meetings, which would also be scheduled. The application would take

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[1] For a description of what information Search for Common Ground does have about the permitting process and the denial in this case see Appendix B at the end of this document.

advantage of the recently solidified contact policy of the Israeli government which included contact with
the PA concerning avian flu issues.   Also, both SFCG and NTI met with the senior Palestinian participant in Ramallah to brief him on the meeting. NTI met with him before the meeting. SFCG met with him afterward. SFCG has also taken steps to facilitate a videoconference between IBM and the PA for the week following the meeting. To get more detail to the PA's information technology infrastructure, IBM plans to return to the region to meet with PA officials regarding the project.

After this discussion, the attendees moved to the issue of MECIDS strategic direction. NTI advocated that the partners take more ownership of the process. Specifically, NTI proposed that the partners bring on an epidemiologist to act a technical coordinator for the work that MECIDS is doing. This will be important to facilitate the IBM process and to allow MECIDS to move forward as its objectives become more technical.

SFCG reviewed the accomplishments to date, which included:
- number of foodborne disease isolates has increased
- regular data exchange, monthly, data from sentinel labs to MECIDS website
- have started to develop a plan to coordinate and enhance a policy level response to avian flu

NTI set forth several discussion goals centered on articulating a shared understanding of how to put MECIDS on self-sustained footing over the long-term (5-10 years). A key issue was the organizational structure. NTI suggested that the project it has in Southeast Asia with several countries working together running the process themselves would serve as a useful model. A permanent Secretariat with a full-time epidemiologist would run the day-to-day operations. The partners would have two seats on an Executive Board with a rotating chairpersonship. This would make the process more partner-driven and self-sustaining. These self-sustaining structures would also make the project more attractive to potential donors, NTI said.

As to the donor issue, the Palestinian participant suggested that the Gulf State financial resources should be tapped. Such financing might be readily obtainable, if there were a letter of support from the United States Secretary of State endorsing MECIDS. The Palestinian participant also emphasized the added value that MECIDS brings to the region:
- multinational, likely to expand
- includes both government and academia
- media attention it could attract given its connection to avian flu
- its history of achievement
- umbrella that is American
- funding is not just for meetings but also implementation

Jordan set forth some near-term goals for MECIDS:
- increase the number of pathogens
- expand the number of sentinel labs
- improve level of communication

The participants then drafted a sketch of the objectives for a three year business plan:
- collaborate with IBM to build the communication infrastructure
- add shigella to the foodborne disease surveillance system
- Pulse Field Gel Electrophoresis (PFGE) – Israel will share with other partners until other equipment is purchased
- Draft joint analysis report on the salmonella data that also highlights the added value of collaboration and includes common protocols (preliminary draft of Jordan section is written). Schedule meeting to finalize report after each country has analyzed its own data
- Publish paper(s) based on report
- Common plan of action on avian flu in time for upcoming fall migrations
- Tabletop exercises (NTI models from Southeast Asia)
- NTI will draft protocol that develops an agreed-upon coordination procedure/mechanism and division of responsibilities
- Include in monthly report anti-microbial susceptibility
- Draft business plan that includes timetables for these objectives
- Training and research
- Plan for critical equipment needs

Conclusion

The partners and NTI agreed the MECIDS is entering a critical phase and all want to work hard to help it succeed and become self-sustaining.