

07-EC-03

Committee: Executive

Title: Support and reinstatement of funding for CDC's Outbreak Management System

Statement of the Problem:

Public health preparedness and response to natural and intentional infectious disease outbreaks require that State and local public health staff have electronic data management tools available that support triage of suspected cases, case management, tracking of patients and their contacts, and rapid compilation and analysis of these data. It is critical to efficiently collect and manage exposure data for cases and contacts, track multiple laboratory and/or environmental specimens associated with those patients, follow contacts, issue and track isolation and quarantine orders, and manage the workflow required for these activities. Many state and local health departments do not currently have an adequate data management tool to efficiently handle large or complex outbreaks and may not be able to provide timely information to decision-makers when needed. The 2003 outbreak of SARS, as well as the anthrax attacks of 2001, illustrate the overwhelming necessity and importance of such a tool. The absence of robust data management software systems was cited by multiple after action reports produced in Canada following the Toronto outbreak of SARS as one of the primary impediments to outbreak control.

The Outbreak Management System (OMS) developed by CDC is an example of a system that has the potential to meet these needs. It was developed with the intention of providing it at no cost to prospective users in public health. CDC OMS has multiple unique features including:

- suitability and flexibility for epidemiologic investigations,
- ability to support and facilitate workflow,
- robust case and contact management and follow-up,
- ability to link cases and contacts to multiple potential exposures or other objects in the database such as places, or vehicles,
- ability to link and track relationships between entities in order to describe social networks and patterns amongst communities during outbreaks,
- use of standard PHIN-compliant core vocabulary, which will support investigations across jurisdictions, and messaging between database systems, such as surveillance databases and laboratory databases (a critical feature), combined with
- support for user-defined vocabulary and supplemental question sets
- flexibility and capacity to allow the user to reuse and edit existing question sets,
- support of multiple versions of questionnaires,
- ease of data analysis and export,
- capacity for multiple users to access and use the system simultaneously.

The current Beta version of OMS (1.2) is a tool that was developed by CDC with the active input of state and local health department epidemiology professionals. Version 1.2 has benefited from lessons learned during local public health outbreak investigations and reflects the needs of ground level epidemiology in addition to more global assets. It is currently fully deployed in at least two jurisdictions (Tennessee and Houston, Texas) and is in the process of being deployed or evaluated by several more. OMS 1.2 has proved to be a usable tool both in the field as well as in two recent pandemic influenza exercises conducted at CDC. However, without the capacity to exchange messages with other databases, particularly with surveillance and laboratory databases, its usefulness is limited. Critical features were planned for the next version (1.3), including the ability to send and receive XML and HL7 messages.

CDC cooperative agreements for emergency preparedness for bioterrorism and pandemic influenza expressly require the recipients to develop PHIN compliant electronic software systems for managing data during outbreaks, both to ensure that health departments are prepared for public health emergencies, and so that data can be reported, managed and exchanged efficiently with partners at the state, local and federal levels.

CDC announced in September 2006 that it was pausing the development of OMS while it was conducting an evaluation of the system. A beta version of OMS 1.2 was released in early 2007 to a small number of jurisdictions; CDC has not been able to provide training or support for OMS 1.2.

CSTE, at the request of CDC, has conducted a needs assessment for a data-management system such as OMS. This was completed in February 2007, and the report was distributed to CDC staff (NCPHI and COTPER) on March 20, 2007. Fifty out of 50 States and 6 out of 11 large urban areas responded. The full report can be accessed on:
<http://www.cste.org/pdffiles/2007/CSTEOMSassessmentreport20070320final.pdf>

The findings were as follows:

- Most jurisdictions do not currently feel prepared to manage data of complex outbreaks.
- States and local health departments stated that it is very important to have a system such as CDC's OMS.
- Many jurisdictions have not developed an in-house solution and had been planning to evaluate/ implement CDC-OMS 1.2.
- There is strong interest in CDC-OMS as a possible solution, but many jurisdictions have limited exposure to the most recent version and expressed concerns over whether the application will continue to be developed and supported to meet the outbreak management needs of state and local health departments.
- States and local public health jurisdictions want an outbreak management system to be able to exchange messages with surveillance and laboratory systems.
- Strong interest was expressed in having an outbreak management system developed as a web-based and client-server application.

The OMS development team that had been extremely responsive to the needs of CSTE members has now been disbanded and assigned to other duties. This is of tremendous concern to CSTE because of the inevitable loss of momentum and institutional knowledge, which will be difficult if not impossible to recapture regardless of the outcome of the evaluation. CSTE strongly urges CDC not to waste the tremendous amount of work and thought that has gone into OMS. Building a comparable and viable outbreak management system would be virtually impossible for individual state and local health departments. Developing a viable tool in the private sector or customizing an already existing tool would also require substantial input and investment by state, local and federal users of such a system. The need for such a system is urgent; public health has to be ready to respond.

Statement of the desired action(s) to be taken:

1. CSTE requests that CDC immediately provide ongoing funding for the development of OMS, including the messaging component while an evaluation is taking place, to prevent further loss of OMS development team staff and loss of institutional knowledge and momentum.
2. CDC reinstate support for OMS version 1.2 for training, deployment, and help desk and reconvene the OMS working group.
3. Prioritization of future enhancements of OMS should include feedback from experience of OMS 1.2 in the field and from the OMS working group.
4. Messaging and other specific high value enhancements should be prioritized for completion in the next version.
5. If funding for the messaging component is not provided, CDC should provide the source code for OMS to States and Territorial health departments, so that a consortium of State and Territorial health departments can collaboratively work on developing the messaging component or other necessary enhancements.
6. CDC should investigate the options to provide source code to States and Territorial health departments that need access to the source code for the purpose of integrating with other electronic surveillance systems.

Public Health Impact:

Adoption of these recommendations will:

- 1) Improve state and local preparedness for large scale outbreaks of infectious disease or environmental public health emergencies.
- 2) Increase the ability of public health staff to respond efficiently and effectively to outbreaks to minimize morbidity, mortality and economic impact.
- 3) Make more efficient use of public funding for development of outbreak management software.
- 4) Support the capacity for public health agencies to share and exchange critical public health data during large or multijurisdictional outbreaks.
- 5) Complete a critical component of the PHIN.

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