



AMIA Recommendations for National Health Threat Surveillance and Response

AMIA released recommendations late last year to assist in the fight against national health threats. These recommendations and other collaborative efforts by the AMIA National Health Threats Task Force during the AMIA 2001 Annual Symposium are presented in a special section on Bioterrorism in this issue of *JAMIA*. This report tracks follow-up developments of the AMIA National Health Threats Task Force, including attendance at key meetings and the development of bioterrorism resources on the AMIA Web site. In addition, key points from the AMIA Primary Care Informatics Working Group (PCIWG) special sessions at the AMIA Annual Symposium, and recommendations developed by the PCIWG, contribute to AMIA's growing involvement in this area. The AMIA Prevention and Public Health Working Group has also been involved, presenting recommendations on information systems for bioterrorism and public health.

Throughout this news report the term *surveillance* is defined as "the ongoing systematic collection, analysis, and interpretation of outcome-specific data for use in the planning, implementation and evaluation of public health practice."¹

Members of the AMIA National Health Threats Task Force have attended many important meetings over the past few months with key government, state, and local officials to discuss the needs of the U.S. Health care system, especially in the development and implementation of stronger information technology solutions. AMIA representatives at these meetings included J. Marc Overhage, MD, PhD; W. Edward Hammond, PhD; Michael Wagner, MD, PhD; Luis G.

Kun, PhD; William A. Yasnoff, MD, PhD; AMIA Executive Director, Dennis Reynolds; and others.

The Task Force has assisted AMIA in the development of bioterrorism information resources for the AMIA Web site. These resources include:

- Daily updates to articles in the news related to current activity in the areas of information technology implementation, bioterrorism, and governmental policy discussion and implementation
- Links to pertinent government, state, local, association/society, and other sites that provide the latest information
- Posting of scientific articles and recent reports related to information technology in bioterrorism defense
- Congressional activity and testimony

The Primary Care Informatics Working Group of AMIA addressed information technology requirements for effective primary care surveillance and rapid response throughout the United States. In special sessions held at the AMIA 2001 Annual Symposium, presentations were made on bioterrorism and the requirements for primary care physicians in the United States to provide essential surveillance. The following key points were derived from the presentations:

- Primary care providers are the U.S. "frontline forces" for bioterrorism surveillance, detection, and immediate care.
- Hospitals and emergency departments in the United States are often filled to capacity under

normal traffic and do not have the current ability to assume the task of evaluating, in the general population, flu-like syndromes for anthrax exposure or other conditions that may first present as abnormal epidemics of common symptoms.

- Effective bioterrorism surveillance is a complex task to which there are multiple approaches, including mechanistic, laboratory, and sentinel surveillance.
- Voluntary reporting of surveillance data is problematic, especially if a condition does not appear or if the reporting process involves significant time and resources outside the normal practices of a physician.

Based on the key points, the following recommendations were made by members of the PCIWG:

1. Every primary care physician in the United States should be provided now with information on bioterrorism surveillance and detection using our current resources, especially in anticipation of the flu season, both to provide appropriate care and to avoid enormous unnecessary panic and health care expense.
2. Every primary care physician in the United States should have and use a fully functional electronic medical record (EMR) with standardized clinical data for current and future domestic surveillance against biological, chemical, and nuclear weapons on civilian populations.
 - The EMRs must "fit" the primary care environment to be effective
 - The data obtained must be available for epidemiologic surveillance regionally and nationally while protecting patient confidentiality.
 - Relevant expert knowledge and decision support at the point of care must be linked to the EMR.
 - Development of such EMRs requires a national commitment to defining standards to which industry can respond.
 - Primary care acquisition and implementation of such EMRs requires funding mechanisms.
3. The Primary Care Informatics Working Group offers its expertise to work with all health care organizations, public health officials, the Department of Defense, other agencies, vendors, payers, and the public (patients) to assist in the development of a comprehensive and integrated plan.

Members of the AMIA Prevention and Public Health Working Group collaborated to produce a report that outlines some of the key public health informatics capabilities and challenges in disease surveillance and alerting systems, and discusses related issues of public health workforce and organizational capabilities. The report in its entirety is located under "AMIA National Health Threats Task Force Resources" on the AMIA Web site, at <http://www.amia.org>. Recommendations made in the report, which are grounded in the comprehensive National Agenda for Public Health Informatics, developed at the AMIA 2001 Spring Congress, include the following:

- Extend electronic regional disease surveillance activities to individual providers, clinics, hospitals, and laboratories. Manual reporting of surveillance data, while useful in heightened surveillance situations, should be de-emphasized.
- Promote clinical information systems that produce surveillance data in standard formats (e.g., HL7 Public Health Notification messages) as a component of the clinical workflow.
- Ensure that the infrastructure for bioterrorism surveillance is not separate from the standing infrastructure for public health surveillance. These regional surveillance networks should be tested realistically, e.g., by the use of shadow patients or simulated volume spikes in reported symptoms.
- Install adequate capacity for securely transmitting data to and receiving information from local, state, and federal public health agencies, and ensure that this capacity conforms to national standards, particularly those identified in the system architecture of the National Electronic Disease Surveillance System (NEDSS) (e.g., ebXML, PKI).
- Support further research and follow-on capacity for comprehensive, real-time analysis of and forecasting from large volumes of multi-source surveillance data.
- Build Internet connectivity and basic information technology infrastructure (such as that supported through the Health Alert Network of the CDC) to reach all state and local health departments.
- Provide adequate informatics training for the public health workforce and adequate organizational informatics capabilities at state and local health departments.
- Ensure that new information systems and organizational units can respond to a wide range of future biological and chemical attacks, so that the nation is

fully prepared for the spectrum of threats to the public health that it faces in this new era.

- Tie informatics research laboratories to the practical issues of public health agencies through projects that use national standards to leverage the strengths of the different participants.
- Assign clear responsibility for the implementation of these recommendations to a single administrative entity. This entity must have experienced information technology leadership that brings together all relevant stakeholders, collaborates with existing organizations and activities working toward these objectives, and establishes and measures attainment of specific objectives and timelines. This entity will particularly need to work to achieve a new and stable balance of local, state, and federal responsibilities.

AMIA will continue to post updates and current activities of the AMIA National Health Threats Task Force,

and keep current with news and informative links to the special AMIA Web site section devoted to this topic. Information can be found at <http://www.amia.org>.—PATRICIA FLATLEY BRENNAN, RN, PhD

References ■

1. Teutsch M, Churchill RE (eds). *Principles and Practice of Public Health Surveillance*. 2nd Ed. New York, NY; Oxford University Press, 2000, p. 1.
2. Zapp JA. AMIA Primary Care Informatics Working Group National Strategic Plan, 2001.

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