

AHRQ Research Relevant to Bioterrorism Preparedness

Agency for Healthcare Research and Quality • 2101 East Jefferson Street • Rockville, MD 20852



AHRQ is the lead Federal agency charged with supporting research designed to improve the quality of health care, reduce its cost, address patient safety and medical errors, and broaden access to essential services. AHRQ sponsors and conducts research that provides evidence-based information on health care outcomes; quality; and cost, use, and access.

The information helps health care decisionmakers—patients and clinicians, health system leaders, and policymakers—make more informed decisions and improve the quality of health care services.



U.S. Department of Health
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Background

In fiscal year 2000, the Agency for Healthcare Research and Quality (AHRQ), as part of its reauthorization, received \$5 million to support and conduct research to improve the capacity of the Nation's health care system to respond to possible incidents of bioterrorism. Since that time, AHRQ has initiated several major projects and activities designed to assess and enhance the linkages between the clinical care delivery system and the public health infrastructure. AHRQ's work is a critical component of the larger initiative of the U.S. Department of Health and Human Services to develop public health programs to combat bioterrorism.

AHRQ's Goals for Bioterrorism Research

AHRQ's investment in bioterrorism research recognizes that community clinicians, hospitals, and health care systems have essential roles in the public health infrastructure. To inform and assist these groups in meeting the health care needs of the U.S. population in the face of bioterrorist threats, AHRQ-supported research focuses on the following:

- Emergency preparedness of hospitals and health care systems for bioterrorism and other rare public health events.
- Technologies and methods to improve the linkages between the personal health care system, emergency response networks, and public health agencies.
- Training and information needed to prepare community clinicians to recognize the manifestations of bioterrorist agents and manage patients appropriately.

AHRQ's portfolio of bioterrorism research is a natural outgrowth of the agency's ongoing efforts to develop evidence-based information aimed at improving the quality of the U.S. health care system. Projects and activities comprising AHRQ's comprehensive bioterrorism preparedness initiative are summarized below.

Assessing and Improving Health Care System Preparedness

Integrated delivery systems and clinical preparedness for bioterrorism. This project uses computer simulations to develop models for planning citywide response to bioterrorist attacks, including optimally distributing antibiotics to



ambulatory patients and improving hospital treatment capacity. During the anthrax event in New York City in October 2001, the research team – part of AHRQ's Integrated Delivery System Research Network – did live testing of the models they had developed. (Principal Investigator: Alvin Mushlin, M.D., Weill Medical College of Cornell University; collaborating organizations: New York City Department of Health, Mayor's Office of Emergency Preparedness. Contract No. 290-00-0013-1).

Understanding needs for health system preparedness and capacity for bioterrorist attacks. This project is developing a questionnaire to help assess the current level of preparedness of hospitals or health systems and their capacity to respond to a bioterrorist event. Model plans for hospitals and health systems and innovative approaches for increasing capacity will also be developed. (Principal Investigator: Sue Losch, R.N., B.S.N.C., Booz-Allen & Hamilton; collaborating organizations: University of Maryland, Emory University, District of Columbia Hospital Association. Contract No. 290-00-0019-1).

Recommendations for effective system linkages to detect and respond to a bioterrorist event. This project assesses and recommends improvements in the linkages between the medical care, public health, and emergency preparedness systems to detect and respond to bioterrorist events. (Principal Investigator: Robert Coullahan, C.E.M., Science Applications International Corporation; collaborating organizations: Johns Hopkins University, George Washington University, Joint Commission on Accreditation of Healthcare Organizations. Contract

No. 290-00-0023-1).

City-wide electronic medical records system as a model for surveillance and detection of potential bioterrorism events. ResNet, one of AHRQ's Primary Care Practice-based Research Networks, is studying an electronic medical records system as a model for observation and detection of potential bioterrorism events across a wide range of health care facilities, including primary care practices, public health clinics, emergency rooms, and hospitals. (Principal Investigator: William M. Tierney, M.D., Indiana University. Grant No. P20 HS11226-S).

Research dissemination audio Web-assisted conferences for State and local health policymakers for bioterrorism preparedness. This series of three 1.5-hour audio teleconferences on April 29, April 30, and May 1, 2002, will inform State and local health policymakers of related AHRQ research findings that could be used to assess and strengthen the capacity of the health care system within their jurisdictions to respond to bioterrorist events. (Contact: Marcia Clark, AHRQ Office of Health Care Information/ User Liaison Program).

Role of Information Technology in Bioterrorism Preparedness
Bioterrorism: Role of decision support systems in disease management. This project reviews and synthesizes the available evidence on the information needs of first-responder clinicians in the event of a bioterrorist attack and the role of information technologies and decision support systems to assist in the rapid diagnosis and management of disease resulting from such an event. An evidence report is in preparation. (Principal Investigator: Douglas K. Owens, M.D.,

M.S., University of California San Francisco/Stanford University Evidence-based Practice Center [EPC]. Contract No. 290-97-0013-5).

Bioterrorism: Automated decision support and clinical data collection. This project is developing a prototype database and Web site to facilitate clinician reporting of trends reflecting possible bioterrorist events. Four prototypes of decision support systems are being developed for clinicians to give “just-in-time” information and advice on appropriate responses. These information systems would link the public health infrastructure with the clinical care delivery system to speed reporting and enhance rapid dissemination of relevant information. (Principal Investigator: Michael Shannon, M.D., Boston Children’s Hospital, Harvard University. Contract No. 290-00-0020-1).

Using information technology to improve clinical preparedness for bioterrorism. This project is developing the “Real-time Outbreak and Disease Surveillance” (RODS) system. The system aims to provide early warning of infectious disease outbreaks, possibly caused by an act of bioterrorism, so that treatment and control measures can be initiated to protect and minimize casualties. Investigators consulted with officials at the 2002 Winter Olympics in Salt Lake City about the surveillance system. (Principal Investigator: Michael Wagner, M.D., Ph.D., MPC Corporation-University of Pittsburgh/Carnegie Mellon University. Contract No. 290-00-0009-1).

Training for Health Care Providers

Bioterrorism: Training clinicians for rare public health events. This project reviews and synthesizes available evidence on effective methods for training physicians, nurses, community health workers, and others to respond to rare public health

events, particularly bioterrorism. An evidence summary and full report, *Training of Clinicians for Public Health Events Relevant to Bioterrorism Preparedness* (Evidence Report/Technology Assessment No. 51), are available in print format from the AHRQ Publications Clearinghouse at 1-800-358-9295 or on the AHRQ Web site at www.ahrq.gov. (Co-Principal Investigators: Christina Catlett, M.D., and Trish Perl, M.D., Johns Hopkins University EPC. Contract No. 290-97-0006-6).

Summary only—AHRQ Pub. No. 02-E007

Report (with summary)—AHRQ Pub. No. 02-E011

Innovative approaches to training clinicians for bioterrorist attacks: Online modules.

This project has developed interactive Web-based training modules to teach health professionals how to address varied biological agents, including anthrax, smallpox, botulism, tularemia, viral hemorrhagic fever, and plague. Separate training modules are posted for emergency room physicians and nurses, radiologists, pathologists, and infection control specialists (see www.bioterrorism.uab.edu). Continuing medical education credit is available. (Principal Investigator: Thomas Terndrup, M.D., University of Alabama at Birmingham. Contract No. 290-00-0022-1).

Innovative approaches to training clinicians for bioterrorist attacks: Prototype simulations.

This project – which includes an advisory committee of clinicians, medical educators, health systems leaders, and others – will develop two prototype approaches for training clinicians to recognize and respond appropriately to a possible bioterrorist attack. (Principal Investigator: Kathleen Lohr, Ph.D., Research Triangle Institute. Contract No. 290-00-0021-1).





Linking primary care providers' offices to the hospital and public health systems. The AAFP National Network for Family Practice and Primary Care Research, part of the AHRQ-supported Primary Care Practice-based Research Network, is exploring the adequacy of linkages between providers' offices and public health and emergency preparedness agencies. (Principal Investigator: Herbert F. Young, M.D., M.A., American Academy of Family Physicians. Grant No. P20 HS11182-S).

For More Information

For more information on AHRQ's projects related to bioterrorism preparedness contact:

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