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CDE-Quiz   ✪ **Police**   🔥**Fire**   ✚ **Medical**

On the Frontline: What Everyone Should Understand About the Role of the Emergency Fire Dispatcher

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There is no doubt that uncontrolled fire is one of nature's most destructive forces. Mankind has experienced its ravaging effects for centuries. Thousands of people die each year from fire-related incidents. According to the National Fire Protection Association (NFPA) more than 74% of these deaths occur *in the home*. Anecdotally, firefighters will tell you that many of these victims are found near or next to exits—showing us quite dramatically how people faced with the danger of fire will, in many instances, make critical mistakes
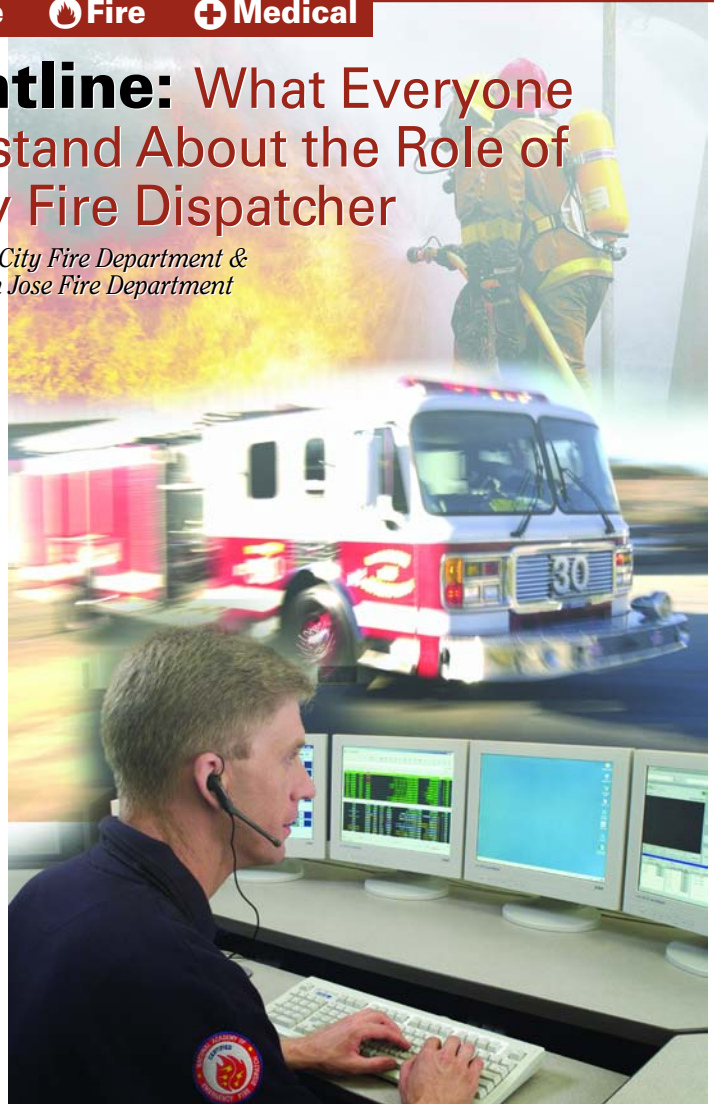
Management Q & A

Using Academy Dispatch Protocols as an Early Warning System: Detecting Bioterrorism, SARS and Other Emerging Threats

By Brett Patterson & Greg Scott

Since the national anthrax scare that followed the September 11th attacks in the U.S., and the more recent SARS outbreaks in several populous cities, early disease and threat detection has become an international public safety and public health priority. Because emergency dispatch is on the front line of this battlefield, the NAED has been evaluating the potential of using the MPDS and FPDS as tools in the fight against

rising threats to our safety. The question now being studied is: How can we adapt and use the Academy dispatch protocols to protect us from the frightening realities of our changing world?

Most of the research done on biosurveillance (A.K.A. syndromic surveillance), suggests a pressing need for better methods and systems to collect and interpret related data. A Harvard University study detailing the current ability of public health care systems to identify trends concluded that current systems are antiquated and slow. Consequently, it would be difficult to identify a silent bioterrorist attack or contagious disease outbreak until well after the event had taken place.

Harvard's Dr. Kenneth D. Mandl has estimated that a real-time biosurveillance system could assess the threat of smallpox five days earlier than current methods and reduce the fatalities by five orders of magnitude. He also suggests that such a system could identify an anthrax attack two days earlier than is currently possible and significantly reduce fatalities by a factor of seven.[1]

The Academy is very interested in the development of proactive, biosurveillance systems. As noted by Keith Griffiths, NAED Board of Trustees Member and Executive Editor of Homeland First Response Magazine, "Using data from 9-1-1 calls is attractive to public health officials because it comes from a centralized, standardized database in near real-time."

Based on available research and literature, the essential characteristics of an early warning system can be identified.

Early warning systems must be:

- **Fast** -They must be fast enough to provide early notification to the proper public health and public

safety authorities. Data evaluation must occur on a real-time basis.

- **Sensitive-**They must be *sensitive* enough to detect a statistically significant change in frequency of disease symptoms within a given population and geographic region.

- **Specific-**They must be *specific* enough to provide relevant, detailed and accurate information on patterns and symptoms of specific diseases within a given population and geographic region.

- **Safe and Ethical-**They must be able to facilitate notification of responders regarding 'high-risk' patients, while also providing reasonable and prudent safeguards to ensure patient confidentiality.

MPDS Objectives: Evolving to Serve a Changing World

The first versions of the MPDS were designed simply to prioritize EMS calls and provide basic patient care instructions to callers in need. As these early versions evolved into systemized protocols, caller interrogation, determinant descriptors, and post-dispatch and pre-arrival instructions became much more detailed and targeted specific objectives. Later versions placed much more emphasis on safety as patients, bystanders, and responders

became increasingly exposed to the hazards of more populated and technologically-complex environments. More recently, the MPDS has been used to proactively alert hospitals with stroke patient information that facilitates early thrombolytic therapy. The latest version of the MPDS is designed to accomplish four primary objectives: *safety, patient care, resource allocation and priority, and information for responders and other caregivers.*

In West Yorkshire, England, EMS managers are using MPDS determinant code data to plot the demographics of specific chief complaint types and address illness and injury trends in their community. This illustrates how the MPDS can be adapted to accomplish new objectives. The twin threats of a bioterrorist attack or natural disease outbreak have recently focused the Academy's attention to the need for early warning systems. Hence, a new MPDS objective has evolved: to provide protocol users and healthcare officials with an increasing volume of accurate information related to the early detection of threats to public safety.

Academy Protocols Are Changing

The Academy's recently formed *Chemical, Biological, Radiological and Nuclear (CBRN)* Standards Committee brings together experts in
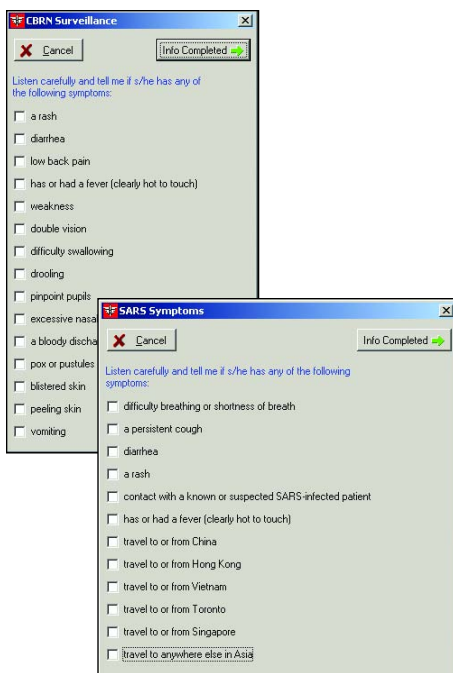
Fig. 1: *These drop-down menus are from the newest 3.4.1 ProQA. Current licensed users can download the most recent updates for ProQA at **pdcftp.com**.*

public health, bio-terrorism, epidemiology, and emergency dispatch. Their goal is to identify and catalogue signs and symptoms associated with a bioterrorist or chemical attack, and naturally evolved contagious diseases like SARS, in an effort to create and maintain unified national protocols. Standardizing the way these events are discovered, recorded, and reported can facilitate an appropriate response for public health agencies worldwide. This group is working with partner vendors to develop technology-based solutions, and with healthcare officials to ensure the best possible dissemination of data. Poised for change, the Academy is expanding the basic objectives of the MPDS and FPDS protocols.

FirstWatch, an integrated surveillance software system, is currently deployed in nine states, covering a population of more then 7.5 million citizens. Installations include: Kansas City, MO; Sedgwick and Johnson Counties, KS; Richmond, VA; Tulsa and Oklahoma City, OK; Reno and

Las Vegas, NV; Fort Wayne, IN; Fort Worth and Plano, Texas; Pinellas, County, FL; and San Diego, CA. Among others internationally, the *East Anglian Ambulance Authority*, Norwich, England will be installed soon.

FirstWatch mines ProQA data in real time, searching for recorded symptoms that may be associated with a specific contagious disease. These data are then compared to historical records to see if any significant anomalies occur and to automatically trigger an alert when they do. These integrated systems are designed so that an agency may "turn on" the enhanced features based on need, such as an elevated national alert status or a local, regional, or statewide threat. They are also designed to generate a standard set of data that can be used locally to customize safety alerts, post-dispatch instructions, and responses. Data can be reported to, and monitored by, all levels of public safety in an effort to discover trends that may signify an actual threat.

The newest version of ProQA, now undergoing final testing, will include options for data collection specific to biological or chemical terrorism, or naturally evolved contagious diseases like SARS. These additional features will function after basic protocol objectives are accomplished and can be turned on, or off, at the agency's discretion. The new version (3.4.1) will soon be available to licensed users of the MPDS *(See generic example, Fig. 1)*. The specific questioning and data set are being designed, and implemented, at an accelerated pace by a special Standards Council group with the help of alliances and experts in related fields.

Summary

Heightened awareness of the fast-spreading, potentially deadly threats associated with terrorism or naturally occurring microbes has prompted the

Academy to explore the expansion of protocol capabilities to facilitate the early detection and reporting of such events. Many of the essentials of such an early warning system have been identified and the Academy is currently incorporating them into upcoming versions of emergency dispatch protocols. This is being accomplished with the help of the newly formed CBRN committee and vendor partners armed with specific expertise and new technologies and with consideration to the needs of local, national, and international healthcare agencies.

The science of early threat detection is new and rapidly evolving. It is likely that many 9-1-1 and EMS call centers will need to become much more proactive and play a key role in protecting society. This necessitates a dramatic shift in the traditionally reactive culture and methods of EMS and public safety services. The Academy is committed to meeting the challenges our changing world offers by encouraging, enabling, and embracing change in the interest of patient care.

The following links offer more specific information concerning SARS:
http://www.who.int/csr/sars/en/
http://www.cdc.gov/ncidod/sars

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1 *Source: Harvard Medical School:*
   http://dsg.bwh.harvard.edu/courses/hst950/5.pdf