

36 inches



The Frontlines of Medicine Project:

A Proposal for the Standardized Communication of Emergency Department Data for Public Health Uses Including Syndromic Surveillance for Biological and Chemical Terrorism



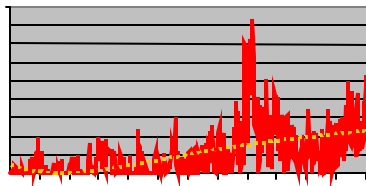
Edward N. Barthell, MD, William H. Cordell, MD, John C. Moorhead, MD, Jonathan Handler, MD, Craig Feied, MD, Mark S. Smith, MD, Dennis G. Cochrane, MD, Christopher W. Felton, MD, Michael A. Collins, Kim Pemble, MS, Brian F. Keaton, MD

Objective: The nation's emergency departments (EDs) are a potential source of surveillance information. The Frontlines of Medicine Project is a collaborative effort of emergency medicine (including Emergency Medical Services and Clinical Toxicology), public health, emergency government, law enforcement, and informatics to develop non-proprietary, standardized methods for reporting emergency department patient data. The Project conceptualizes the rapid deployment of a non-proprietary, vendor-neutral, standards-based regional public health information infrastructure. This infrastructure, composed of inter-linked regional public health networks, could be used as a surveillance and "early warning" system to potentially detect chemical and biological terrorism. Although syndromic surveillance is a high public health priority today because of the threat of terrorism, standardizing the transmission of patient data from the front lines of healthcare could serve to improve the health of the public in other ways in the future.

Background While the sense of urgency has recently increased, previous initiatives have recommended improvements in public health surveillance systems. Healthy People 2010 calls for improved surveillance systems as a key objective in the nation's pursuit of improved health status for its citizens.¹ As another example, a national conference in 1994 sponsored by the Josiah Macy, Jr Foundation noted that shortcomings in emergency department records limit our capacity to answer many fundamental clinical, epidemiologic and health service utilization questions about emergency patients.² Despite research that has identified the potential of such a system to improve the public health, no effective system has been widely implemented to collect and analyze population based emergency encounter data.



Conclusion: The Frontlines of Medicine project has created a recommended message structure for communication of ED triage information to regional surveillance centers to encourage rapid deployment of syndromic surveillance. Further details are available at www.frontlinesmed.org. Additional work will be needed to more fully evaluate the Frontlines of Medicine recommendations, the effectiveness of data collection systems, how to best analyze the data, and how to present it in a useful fashion to public health authorities. Evaluation should proceed in accordance with updated guidelines recently published by the Epidemiology Program Office of the CDC.³ We hope that the Frontlines of Medicine Project can rapidly contribute to the nation's safety from chemical and biological terrorism. Moreover, we hope that the process will foster a spirit of collaboration to embrace a perhaps unprecedented opportunity to improve the public health information infrastructure in the USA and other nations.



Planning and Methods: The initial Frontlines of Medicine proposal was published in April 2002.³ The initial proposal reviewed previous surveillance efforts, proposed a standardized XML based message structure for reporting triage information from emergency departments to regional surveillance centers, and called for reader comments. Subsequently a consensus conference, with attendees chosen through a modified nominal consensus process, was held in late April to discuss the initial Frontlines proposal and provide recommendations for next steps. Since the consensus conference, an internet based Delphi survey technique has been used to further refine the Frontlines recommendations. The Delphi survey has led to a definition of data elements to be included in a standardized triage surveillance message, and has created a list of ICD9 coded chief complaint categories as preferred values for the chief complaint data element.

Results: The Delphi survey technique was utilized for two rounds to yield a consensus exceeding 75% acceptance of the proposed data elements and chief complaint values. The data elements for the triage surveillance report include provider facility ID, patient ID, encounter ID, patient age, age unit, gender, date/time first documented in ED, date/time symptom onset, chief complaint, first ED responsiveness assessment, first ED systolic blood pressure, first ED diastolic blood pressure, first ED heart rate, first ED temperature, ED temperature unit, and zip codes for home, work and incident site. These data elements are defined using methods consistent with standards proposed by Health Level 7 and Data Elements for Emergency Department Systems (DEEDS). The preferred chief complaint categories include 159 complaints arranged in 16 hierarchical categories that are expected to describe the reason for visit in greater than 99% of ED encounters.

48 inches