

EDITORIAL

Call Centers, Disaster Medicine, and Public Health Preparedness

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The first American poison center was created in Chicago in 1953.¹ The concept evolved from the exploratory efforts of the American Academy of Pediatrics Committee on Accident Prevention to reduce childhood injuries. Although this effort was initially developed to assist health care providers in their delivery of care, the poison center movement rapidly recognized the importance of assisting members of the community. Federal efforts in 1973 through the Emergency Medical Services Systems Act led to progress and support from the US Department of Health and Human Services. Continuing leadership from the Health Resources and Services Administration/Maternal and Child Health Bureau and the Centers for Disease Control and Prevention, both in the Department of Health and Human Services, led to the Poison Control Center Enhancement and Awareness Act of 2000.²

The assistance and leadership of these federal agencies allowed the American poison center movement to make the transition from a local effort with rudimentary information systems to a highly integrated national system using an 800 telephone number and 60 poison centers providing universal coverage and immediate access to the entire country 24 hours per day, 7 days per week with highly sophisticated computerized information resources and mechanisms for surveillance and data analysis.³

The professional staff working in poison centers has become more and more sophisticated as training and knowledge have advanced. There are many training programs for poison information specialists, nurses, pharmacists, and physicians. Diversified faculty members play critical roles in day-to-day operations as well as in the training of young medical and pharmacy students, residents, and fellows in the specialty of medical toxicology. Because a structured call mechanism is used, the poison information specialists actively involve medical toxicology fellows and/or faculty in case management. They in turn call upon senior faculty in emergency medicine and medical toxicology who may also make essential clinical contributions at the bedside. Many of the centers are integrated within the public health establishment and work on nonpoisoning aspects of public health such as rabies, weather (extreme heat and cold-related emergencies), and most recently influenza.

What can we learn from the 2 small studies about disaster-related events published in this issue of *Disaster Medicine and Public Health Preparedness*? The first by Forrester⁴ repeats

prior studies about the role of poison centers in the early detection of increases in carbon monoxide and gasoline exposure following hurricanes. The second by Pavelchak et al⁵ reviews the potential unintended consequences of increased carbon monoxide concentrations at the treatment site when drive-through mass vaccination clinics are created for public health infectious disease emergencies.

So what do these advances in poison centers and the small studies in this issue of the journal have to do with public health, preparedness, and disasters? The poison centers of our country receive in excess of 2 million calls annually.⁶ The real value may be the education of a family or physician assisting in the care of a poisoned patient (or as is more common, in the care of an individual with the possibility of an exposure to an unknown substance), or in appropriate use or nonuse of limited resources (an ambulance, a hospital visit, an antidote, dialysis, or an intensive care unit bed), with these improvements leading to decreased morbidity and mortality. Both national⁷ and several individual poison center studies^{8,9} suggest national annual cost savings in the \$10 to \$20 million range due to the existence of the poison center system. These savings are created by the reduction of visits to emergency departments and reduction of ambulance use by 15% to 20% by the individuals who call poison centers before accessing the health care system. These are remarkable intellectual and organizational accomplishments that effectively address the psychological and behavioral consequences associated with personal uncertainty with regard to the world around us. The efforts of poison centers greatly improve the individual human health experience and decrease morbidity and mortality while also saving money.

In reality, what surprises me most is that a national system of continuous open access for the public to the health professional is only available to poisoned or possibly exposed individuals. In this field, we have learned that many who call the poison center do not call with regard to poisonings or actual exposure to toxins. Our experience, along with that of other concerned and knowledgeable physicians, is that we can help those who are seriously ill even when these patients are not actually poisoned. These discussions are a valuable part of the public health system that offers an acceptable organized means to answer questions for providers in need of answers from a nonjudgmental altruistic system.

It seems that many suggestions for an all-hazards disasters approach that will be valuable in the event of earthquakes, hurricanes, blackouts, influenza, and any form of terrorism will benefit from access to highly functional call systems that cover our population as effectively as our poison center system. One of the models, the Health Emergency Assistance Line and Triage Hub, integrates the poison center effort, a nurse call-in line, and the state of Colorado health line and embraces the aforementioned values.^{10,11}

The conceptual design of this Agency for Healthcare Research and Quality-funded research project has great potential to meet the needs of the general population in a comprehensive manner without burdening the emergency management system, hospital emergency departments, and primary care physicians. The Denver project offers broad-access integration into local and state public health agencies offering triage, decision and clinical support, epidemiological surveillance, and investigation and control measures. Obviously, an established system that works well every day for all of our health concerns would be ideal and easily adapted when disasters occur.^{12,13}

Can you imagine the benefit to our country during the recent (and current) novel H1N1 influenza epidemic to having a system as functional as exists in our poison centers that would permit families to have stayed at home with increased knowledge and reduced anxiety? Can you imagine how much more functional our New York City emergency departments would have been without the dramatic increase in patient visits with mild viral illnesses during May 2009?

Although there were approximately 250 calls per day to the Texas poison center during the month of September 2008 from the individuals in the counties declared disaster areas due to Hurricane Ike, there were 4.3 million faced with mandatory evacuation and the population of the counties later declared disaster areas was 5.6 million.⁴ I do not doubt that the few who were served by the poison center received wonderful assistance, but I am sure that focusing on the creation of a better system for assisting those millions in need of health advice could be developed using the trusted US model of the universally accessible poison center. Society would be placing a more appropriate focus on health emergency assistance and triage. We would then have better preventive health through education, better public health preparedness, and better service for disasters, as well as on most days when disasters are perceived as individual and not societal. This is not *rationing* of care. The 50 years of the poison center experience have shown that this is *rationalization* of care. This is an advance in population health that builds bridges between medical care and population health consistent with the values of Trust for America's Health.^{14,15} From numerous perspectives creating call centers for all Americans all of the time is good personal health and public health while using our societal resources more effectively. The poison center experience is a model that can be generalized to broader population needs having achieved standards

consistent with the Obama administration's health care reform principle of expanding access to and implementation of simple systemwide solutions that improve outcomes and reduce expenditures.¹⁶

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Author's Disclosures

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