

It's a Matter of Life and Death

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Support for core public health capacity is diminishing; outbreaks of microbial threats are not. In 2012 there were a number of high-profile threats (see the box below) that demanded public health intervention to protect the public. It is well understood that the role of a physician in responding to patients during these outbreaks can save lives one at a time. The impact of a well-trained, well-equipped public health system can multiply that benefit exponentially through prevention, early detection, and response to microbial threats. That impact, however, depends on a strong public health foundation.

Major Multistate Outbreaks in 2012

- **West Nile virus:** 5,890 cases of West Nile virus disease in people, including 243 deaths, were reported across 49 states.
- **Fungal meningitis:** 693 cases and 45 deaths across 10 states, caused by a fungal infection associated with the injection of *methylprednisolone* acetate solution from a single compounding pharmacy.
- **Salmonella Bredeney infections:** 42 people across 20 states were infected with the outbreak strain of *Salmonella* Bredeney linked to peanut butter.
- **Salmonella infections:** 261 cases and 3 deaths across 24 states, caused by the outbreak of *Salmonella* Typhimurium and *Salmonella* Newport infections linked to cantaloupes.

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State health agencies' ability to quickly detect and respond to infectious diseases depends on having strong capabilities, as outlined in the recent Institute of Medicine (IOM) report entitled *For the Public's Health: Investing in a Healthier Future* (2012). These core capacities, sometimes referred to as the "public health infrastructure," are essential for planning, delivering, and evaluating public health. State health agencies require effective and efficient systems for preventing infectious disease morbidity and mortality, ensuring control of outbreaks and vigilance against existing diseases, and preventing and responding to emerging and reemerging infectious disease threats.

Since 2008, survey results from the Association of State and Territorial Health Officials show continuing erosion of this important core capacity. Eighty-seven percent of state health agencies have reported budget cuts, 91 percent have experienced job losses, and 100 percent have implemented cost-saving measures. At the federal level, public health experienced an 8 percent cut in 2010. These cuts translate to limited ability to respond, as illustrated by the example below:

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The response to the [Washington State whooping cough] epidemic has been hampered by the recession, which has left state and local health departments on the front lines of defense weakened by years of sustained budget cuts. (Johnson, 2012)

Washington State reported epidemic levels of pertussis in 2012, with a total case report of 4,870.

The 2012 West Nile virus outbreak saw record numbers of cases since first being detected in the United States in 1999. There were 5,890 reported cases of West Nile virus, including 243 deaths, across 49 states in 2012. Yet, federal funding for West Nile virus and other arboviral diseases has been drastically cut, from nearly \$35 million in 2002 to less than \$10 million in 2012—in many cases leaving it up to cash-strapped localities to fend for themselves. For example, town officials in Cooper Canyon, Texas, worry there may be mosquitoes carrying West Nile virus in town, but limited resources are forcing them to request outside help, which has yet to arrive (Harden, 2012).

Although states try their best to prepare for outbreaks of pertussis or West Nile virus, they never could have predicted the meningitis outbreak of 2012, when an investigation sparked by the Tennessee Department of Health revealed cases of meningitis associated with steroid injections. When evidence indicated a link to a product from the New England Compounding Center, the product was recalled. Taking prompt action got the tainted product off shelves, and for patients who had already been injected with the product, health departments and providers worked together to inform and care for them. The impact of this single episode was 707 cases and 47 deaths. The herculean response to the meningitis outbreak was done in addition to dealing with foodborne outbreaks, emergence of new strains of swine flu in the Midwest, and outbreaks of health care–associated infections.

During an outbreak, time is of the essence to save lives and protect health. With adequate capacity, such as that outlined in the 2012 IOM report, state health agencies can stand ready to quickly identify the cause of disease and communicate information about what steps to take. A timely and complete public health response can save lives, avert illness, and help restrain the growth of health care costs.

We cannot maintain a piecemeal public health infrastructure for infectious diseases—it takes a multifaceted enterprise that has sustained funding and core capabilities to effectively detect and respond to the many microbial threats we anticipate and those we don't. It's a matter of life and death.

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<http://www.iom.edu/aMatterofLifeandDeath>

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