



## Juggling Chain Saws: Shutting Down Public Health Surveillance

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**Numerous public health threats, from infectious diseases to contaminated foods, do not respect state or local borders. As a result, fully functioning national-level public health research services are essential for tracking potential disease outbreaks. In particular, the U.S. Centers for Disease Control and Prevention (CDC) is the only federal entity able to conduct comprehensive, nation-wide disease surveillance and to provide assistance to state and local public health officials in responding to emerging communicable risks.**

Yet the U.S. government's shutdown forced the CDC to furlough 68 percent of its people both in the United States and globally (McKenna 2013a). This hampered many public health surveillance and prevention efforts, perhaps most notably the CDC's ability to track influenza. As *The Guardian* reported, "The Centers for Disease Control and Prevention are facing a reduced ability to detect and investigate disease outbreaks. The annual influenza program—the one that tracks the flu and helps people get flu shots—has been shut down. The CDC has also stopped offering its usual assistance to state and local authorities, who rely on the agency for help in tracking unusual outbreaks" (McCann 2013).

Among the many other public health services placed in limbo, the flu program was shuttered right at the outset of flu season. CDC spokeswoman Barbara Reynolds remarked that "there are blind spots and those blind spots are getting bigger as we continue with the shutdown" (Corwin 2013). FluView, the CDC's national surveillance summary, was last published for the week of September 21, 2013 (Corwin 2013). At the time of this writing, this means that nearly one month of flu data has been unavailable. Until the shutdown ended, former CDC director David Satcher wrote, the United States was obligated to base its "disease detection and response strategy on luck" (Satcher 2013).

This was quite an extraordinary risk for a nation of over 300 million people to take. Unwilling to rely purely on luck, with an enormous loss of data arriving at such a critical time, several private companies stepped in to attempt to fill the gap. One provider of electronic health records and other

technologies, athenahealth, started publishing its own weekly flu reports based on data from about 600,000 patients (McKay 2013). Although their data covers 49 of 50 U.S. dates, athenahealth does not make statistical adjustments to estimate true national rates (Nix 2013). As Josh Gray, vice president of athenaResearch, noted, their efforts cannot supplant the CDC's surveillance systems, which are the "gold standard" (Anderson 2013).

Additionally, Google Flu Trends (GFT) offers another alternative beyond the CDC for tracking the flu. By tracing the location of individuals when they search for relevant terms such as "flu symptoms" and "muscle aches," GFT can help predict the location of flu outbreaks and even accelerate the public health response to such threats. Preliminary evidence has shown that GFT can accurately track epidemiological data. Notably, a study performed over a 21-month period at an urban academic hospital in Baltimore, Maryland validated the use of weekly, city-level GFT data as an emergency department (ED) surveillance tool. Researchers found that GFT data, which were available 7-10 days prior to the CDC's US Influenza Sentinel Provider Network, were temporally correlated "with both positive influenza test results and volume of patients with ILI [influenza like illness] presenting to the ED" (Dugas et al 2012). Yet GFT data is greatly limited as compared to the CDC's surveillance capabilities. It does not provide key epidemiological details, such as specific strains of the flu or mortality rates.

While alternative flu tracking methods from private companies are certainly better than nothing, the evidence makes clear that they cannot replace federal government public health resources. Similarly, private and non-governmental organizations lack the CDC's abilities to address other threats, such as food-borne illnesses. In fact, a national outbreak of drug-resistant salmonella forced the CDC to recall thirty furloughed workers to monitor this foodborne illness. Dr. Thomas Frieden, director of the CDC, dubbed the inability to track the outbreak using CDC resources "an imminent threat to health and safety" (Sifferlin 2013). Frieden told Maryn McKenna of *Wired*, "We're used to juggling things at CDC, but this is like juggling chain saws" (McKenna 2013b).

The shutdown has thus highlighted the essential nature of fully funding and supporting federal public health agencies. As a matter of policy, categorizing CDC employees involved in outbreak investigations as “non-essential” clearly placed the public’s health at risk. Revising the Department of Health and Human Service’s “Contingency Staffing Plan for Operations in the Absence of Enacted Annual Appropriations” would be one important step to rectifying this major gap in services in the future (HHS 2013).

More importantly, however, congressional representatives should take action to avert a future shutdown in the first place. Even if contingency staffing plans are revised, a shutdown nonetheless intolerably interferes with national public health surveillance. In the absence of comprehensive surveillance data, we cannot even evaluate which missing data may prove crucial in tracing the distribution and source of a disease outbreak, and guiding our public health response. An editorial in *Nature* commented on the insidious nature of gaps in public data: “A missed moment in a data campaign may not reveal its importance until much later” (“Closed question” 2013). Political decisions permitting such missed moments are indeed akin to juggling chain saws. The documented and potential collateral damage affecting Americans’ health is far too great a risk to take.

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