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I debunk junk science and flawed public policy..

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CDC's Approach To Legionnaire's Disease Causes Preventable Outbreaks

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New York City is in the throes of a major outbreak of Legionnaires' disease. A hundred people have been stricken and at least ten are dead. The origin is thought to be building cooling towers in which bacteria are growing.

Although they receive little attention, outbreaks of Legionnaire's disease, which is caused by a bacterium called *Legionella*, are not uncommon, and they're increasing. The number of cases in New York City has tripled during the last decade, increasing from 73 in 2004 to 225 in 2014. Nationally, reported cases more than tripled between 2001 and 2012. The fatality rate is 5 to 30 percent.

The country is ill-prepared to stem the tide of Legionnaire's outbreaks, in large part because of the flawed policies of the federal Centers for Disease Control and Prevention (CDC).

Legionella lurks at low levels in natural fresh water sources (such as rivers, lakes and streams) in virtually every part the world, most often with little impact on humans. It becomes hazardous when it survives municipal water treatments and subsequently contaminates and grows in man-made building water systems such as hot tubs, decorative fountains, shower heads and cooling towers. Left undetected in these sites, it can multiply to high concentrations. People become sickened after inhaling contaminated aerosol droplets generated from these sources. Unlike most other pneumonias caused by microorganisms, this disease is not transmitted person-to-person; it is purely of environmental origin.

The only way to determine whether a water source is a high-risk *Legionella*-contaminated system is to take samples of the water to see whether the bacteria grow from them, in a simple and inexpensive culture test in a laboratory. But instead of mandating regular monitoring of possible sources, the CDC endorses a “disease surveillance” strategy—a reactive approach that relies on screening for bacteria after cases are detected, at which time a response is quickly undertaken to prevent further infections. Although this strategy works well for person-to-person transmissible diseases where the source of the disease is another infected individual, it is not well suited to situations in which the source of disease is in the environment.

Former Assistant U.S. Surgeon General Dr. J. Donald Millar, who used the disease surveillance approach as the head of CDC’s hugely successful Smallpox Eradication Program, has long been critical of CDC’s approach to Legionnaire’s disease. In 1997 he warned (<http://books.google.com/books?id=KBbHmp2yisEC&pg=PA329&dq=millar+%22Legionnaires+disease:+seeking+effective+prevention%22&hl=en&sa=X&e>) that disease surveillance was being misapplied to the prevention of Legionnaires’ disease because it is not transmitted from person to person but is contracted solely by exposure to bacteria-contaminated aqueous sources. For such diseases of environmental origin, proactive environmental surveillance, rather than reactive disease surveillance, is the appropriate prevention strategy.

And yet CDC officials remain intransigent, discouraging environmental testing until an outbreak occurs, at which point they demand testing to demonstrate that all evidence of *Legionella* is absent for up to a year after the outbreak. Inexplicably, CDC’s current recommendation (<http://www.cdc.gov/legionella/specimen-collect-mgmt/sampling-protocol.html>) is still that “*an epidemiological association with a probable source should be established before intervention methods, such as disinfection, are undertaken*” [emphasis added].

This contradiction—environmental surveillance not indicated before an outbreak, but required afterwards—in effect uses people as “canaries in the coal mine” to detect high-risk water sources.