One Sure Thing About COVID-19: No Telling How Many People Have It

The world's public health researchers need much more transparency about how officials are monitoring this epidemic.

March 11, 2020 By Elisabeth Rosenthal

It has been nearly three months since the first cases of a new coronavirus pneumonia appeared in Wuhan, China, and it is now a global outbreak. And yet, despite nearly 90,000 infections worldwide (most of them in China), the world still doesn't have a clear picture of some basic information about this outbreak.

In recent weeks, a smattering of scientific papers and government statements have begun to sketch the outlines of the epidemic. The Chinese national health commission has reported that more than 1,700 medical workers in the country had contracted the virus as of Feb 14. (That's alarming.) The Chinese Center for Disease Control and Prevention estimated that some 80% of those infected have a mild illness. (That's comforting.) Last week, a joint World Health Organization-China mission announced that the death rate in Wuhan was 2% to 4%, but only 0.7% in the rest of China — a difference that makes little scientific sense.

In recent days, the WHO has complained that China has not been sharing data on infections in health care workers. Last month, the editors of the journal Nature called on researchers to "ensure that their work on this outbreak is shared rapidly and openly."

Much more could be known and, in all likelihood, some scientists out there have good, if not definitive, answers. And yet, the lack of consistent, reliable and regularly updated information on the key measures of this outbreak is startling. In an era when we get flash-flood warnings on phones and weekly influenza statistics from every state, why is data on the new coronavirus so limited?

Science, politics and pride have all, in various ways, conspired to keep potentially vital, lifesaving knowledge under wraps. That is problematic at a time when more information is needed to be strategic about preparedness.

It began early in the course of the epidemic. On Dec. 30, a Chinese physician, Dr. Li Wenliang, posted on social media about a small number of people with unusual pneumonia. Though scientists in labs were already sequencing the virus, he was "warned and reprimanded" by local

officials for rumor-mongering and the “illegal activity of publishing false information online.” (Li later died of the illness.)

There is a tradition in China (and likely much of the world) for local authorities not to report bad news to their superiors. During the Great Leap Forward, an economic and social campaign by the Communist Party of China from 1958 to 1962, local officials reported exaggerated harvest yields even as millions were starving. More recently, officials in Henan province denied there was an epidemic of AIDS spread through unsanitary blood collection practices.

Indeed, even when Beijing urges greater attention to scientific reality, compliance is mixed. On Feb. 13, the Communist Party secretaries of Wuhan and Hubei provinces lost their jobs over their botched initial handling of the crisis. But damage had been done. As the virus was taking hold, doctors were not wearing proper protective equipment. Sick people, thinking they had just a cold, didn’t seek medical attention. And travelers continued to board cruise ships, spreading a new pathogen.

“Early on, management was less than optimal in Hubei and they’re paying for that now,” Ian Lipkin, MD, a professor of epidemiology at Columbia’s Mailman School of Public Health who has been working in China and advising the Chinese government since the SARS outbreak, told me.

There were, of course, genuine barriers to understanding what exactly was happening in Wuhan: Cases of pneumonia are not unusual in winter, and there was no way to know there was a novel virus. (Lipkin’s group is working on building a new test that distinguishes between different causes of viral pneumonias, with a researcher headed to China this week for testing.)

Lest Americans feel it could never happen here, Lipkin pointed out that it took many months for health officials in the United States to acknowledge and recognize HIV as a new virus, despite gay men turning up at alarming rates with unusual pneumonias and skin cancers.

Scientific competition has also slowed reaction and response, experts fear — leading to the extraordinary editors’ plea in Nature. For a young researcher, a paper in Nature or the New England Journal of Medicine is gold in career currency. Scientific prestige may encourage perfecting data for peer review, but preparedness requires rapid dissemination of information.

While federal officials in the United States warn Americans to be ready for the virus, there are important aspects of its spread about which we have little information — even though they have likely been studied by scientists and officials in China, Japan and elsewhere. Scientists in various countries are presumably gathering large amounts of data day by day and the world deserves to see more of it.

“Were there patterns around infections, places, procedures? Maybe that is being collected and readied for the medical literature. But it would be hugely important to know,” said Tom Inglesby, MD, director of the Center for Health Security of the Johns Hopkins Bloomberg School of Public Health, which studies epidemics.

For example: Of the more than 1,700 health workers infected in China, did those infections occur before they knew to wear protective equipment? Were they doing procedures that might lead to exposure? Those answers would quell fears about how the virus spreads and how to protect front-line workers.

Likewise, hundreds of people tested positive aboard the Diamond Princess cruise ship and were transferred to the hospital. But little public information has been released about what shape they were in. How many in the cohort were really sick, how many just had minor symptoms, and how many just needed isolation? Does the pattern of infection suggest a role for transmission via plumbing on the ship?

Finally, the world's public health researchers need much more transparency about how officials are monitoring this epidemic. What exactly is China's surveillance strategy among the general population? To gauge the actual death rate of COVID-19, researchers would need to know how many people actually have it, even if they have only mild symptoms. In-country surveillance may reveal a very large pool of people with mild or no symptoms at all.

Lipkin noted that because cases observed early in an epidemic are the most severe, early mortality estimates tend to be high. As more information comes out, the death rates are likely to fall. "We're probably six months out from having a good picture, and when we do I'd guess the mortality will drop dramatically," he said.

Compared with the situation in 2003, when it took about five months for the Chinese central government to publicly acknowledge a deadly crisis associated with SARS, the flow of information has clearly improved. But since then, travel and commerce between China and the rest of the world have increased manifold. The spread of information about emerging infectious diseases needs to keep up with that new reality.

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