

6 lessons we can learn from past pandemics

April 10 2020, by Lisa Marshall



A hospital in Kansas during the influenza epidemic of 1918. Credit: National Museum of Health and Medicine

With 1.4 million confirmed cases and 81,000 deaths worldwide as of this writing, the coronavirus pandemic has become a global tragedy unlike

any in our lifetimes. But, as historians remind us, this is neither our first nor our most deadly war with an infectious disease.

A century ago, the [flu epidemic](#) of 1918 swept the globe, killing as many as 100 million people —5% of the world's population—before social distancing helped curb its spread. In the early 1780s, smallpox ravaged the American West, ripping through [indigenous communities](#) with case fatality rates of 38% or higher and leading to the development of the world's first vaccine less than two decades later.

Other outbreaks—from cholera in the 1830s to HIV-AIDS in the 1980s—brought xenophobia along with disease and revealed that fear and blame can distract from efforts to find a cure.

"Epidemics highlight the fault lines in our society," says CU Boulder history Professor Elizabeth Fenn, a Pulitzer Prize winning writer, scholar of epidemics and author of *Pox Americana: The Great Smallpox Epidemic of 1775-82*. "They reveal our weaknesses, but they also illuminate the profound kindness, generosity and cooperation we are capable of. We have a lot to learn from them."

Here's a look at some of those lessons:

Lesson No. 1: Names matter

Contrary to popular belief, the flu epidemic of 1918—commonly referred to as the Spanish flu—did not originate in Spain, but likely got its start at a military base in Fort Riley, Kansas.

"It was designated the Spanish flu completely erroneously, only because Spain put out the first news accounts of it," says CU Boulder history Professor Susan Kent, author of *The Influenza Pandemic of 1918-1919*.

Spain was neutral at the time, she notes, so the country was free of the media blackouts that (in the spirit of wartime morale) prohibited warring countries like Germany, the United States and France from reporting on illness.

Some scholars have since suggested that dubbing it the Spanish flu sent the inaccurate message that it was a distant threat, delaying steps to prevent it in the United States.

Similar themes resonate today, Kent notes, in the debate over terms like "Wuhan flu" and "Chinese flu" to describe [coronavirus](#).

Lesson No. 2: Social distancing works

In 1918, as in 2020, travel swiftly spread the virus, with U.S. soldiers traveling to the East Coast and on to European battlefields and carrying it with them.

"The reason it was so deadly and passed so quickly across the entire world was that it took place during wartime," Kent says. "That's not unlike this moment of massive globalization we are living in now."

Without the luxury of today's high-tech microscopes and genetic sequencing, researchers wrongly assumed it was bacterial, and efforts to treat it or vaccinate against it failed. With no other tools to rely on, towns ultimately closed schools, theaters and libraries. The National Hockey League called off the Stanley Cup. Military leaders quarantined troops, and public servants were urged to wear masks.

In all, 675,000 people died in the United States, more than died in World War II. But it could have been more.

"The only way to prevent its spread was to isolate people from one

another. Some communities did that and fared well. Others did not and suffered high death rates," says Kent. "That lesson for us now is crucial. If we don't learn from it, shame on us."

Lesson No. 3: Viruses don't spare the young

The influenza epidemic of 1918 was most likely to hit the young and healthy, felling people ages 15 to 45 with swift lethality.

"They got sick so rapidly, some literally dropped in the streets," Kent recalls, noting that their faces often turned bluish red due to lack of oxygen.

As it turned out, the patients' own robust immune systems were part of the problem, unleashing a torrent of virus-fighting molecules called cytokines that latched on to lung tissue causing lethal damage.

While the demographics of coronavirus are very different—it's hitting older populations and the immune-compromised the hardest—its behavior in the young and healthy is eerily similar to that of the virus a century ago. Recent news reports point to immune responses called "cytokine storms" as a likely cause of the collateral damage occurring in younger patients.

"Exactly the same thing occurred in 1918," Kent notes. "Strong immune systems overwhelmed the other organs of the body, especially the lungs."

That realization is already sparking new ways of thinking about treatments for COVID-19.

Lesson No. 4: Inoculation works

During the smallpox epidemic that swept across North America from 1775 to 1782, Revolutionary War soldiers took an unusual approach to protecting themselves from the virus known as Variola major. In a process known as variolation (a.k.a. inoculation), they took virus-loaded material from an infected person's smallpox pustule, carved an incision into the flesh of a healthy soldier, and rubbed it in.

Recipients of variolation invariably got the disease, so were quarantined. About 5% died. But most got a mild version of the smallpox disease.

"There is no question that it worked," says Fenn. "Assuming you lived through it, you would garner immunity and go about the world without worrying about smallpox."

Years later, in 1796, Edward Jenner, who himself had been variolated as a child, would try a similar method, taking lesion material from a woman who had cowpox and rubbing it into the wound of an 8-year-old boy. When he later tried to infect the boy with smallpox, no disease developed.

The concept of vaccination—named after the Latin word for cow, or vacca, was born.

Fast forward to today, and variolation has come full circle, as researchers explore the idea of using "convalescent plasma" (survivor blood believed to contain antibodies to COVID-19) as a treatment.

Lesson No. 5: Don't blame the sick

With the spread of coronavirus has come a wave of anti-Asian backlash in cities across the globe, driven in part by the fact that the illness emerged in the Chinese city of Wuhan and swept through the Chinese population first.

That's nothing new, says Fenn.

"We are very prone to blaming the people who get sick," she says. "It's happened over and over throughout history."

During the cholera epidemics that hit from the 1830s to 1860s, white protestants shunned Irish immigrants as vectors of the scourge. In the 1950s, as polio swept the nation, African Americans and the poor were targeted. In the 1980s, blame was placed on the LGBTQ community for spreading HIV-AIDS.

"While people dithered around blaming (HIV-AIDS) on gay lifestyles or nightclub dancing, precious years of looking for pathogens were lost," Fenn says.

In contrast, Fenn notes, the World Health Organization in 1980 announced that smallpox was officially the first and only human infectious disease to be eradicated.

How was that accomplished? Through collaboration.

"Today, we can learn and act upon the fact that global cooperation and sharing of knowledge will help us deal with these outbreaks, or we can shut ourselves away and insist on going alone," says Kent.

Lesson No. 6: This can end

As horrific as coronavirus is, Kent does not believe its death toll will reach the meteoric levels of the flu epidemic of 1918. Our public health systems, scientific tools and medical supplies (albeit in short supply) are far better.

In comparison to past pandemics, we also have a head start in tackling

this one, adds Fenn.

"This is the first pandemic of this scope where we have known what the pathogen is from the very start."

The coming months will no doubt be painful, but with social distancing in place, herd immunity building and collaborative work underway to develop treatments and a vaccine, Fenn and Kent are hopeful.

Now, all we need is time.

Says Fenn: "I would suggest that this is a time for us to pay attention and learn what this illness reveals about us, so we can take that knowledge forward."

More information: View a recent Conference on World Affairs Panel discussion featuring Kent and Fenn:

[www.youtube.com/watch?v=M9G_Ly ... xOSfVnEGVzrtdKo5eUcQ](https://www.youtube.com/watch?v=M9G_Ly...xOSfVnEGVzrtdKo5eUcQ)

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