

BIRD FLU

PANDEMIC

History Warns of Economic Pain, Though Some Might Gain

BY THOMAS A. GARRETT

Bird flu, avian flu, the H5N1 virus. Whatever it's called, the possibility of a world-wide influenza pandemic is of concern for many countries around the globe, several of which have prepared national plans to deal with a flu pandemic.¹ The World Bank estimates that a global flu pandemic would kill tens of millions of people and cost the world economy \$800 billion.² The U.S. Department of Health and Human Services estimates that a flu outbreak would cause 1.9 million deaths in the U.S. and have initial economic costs near \$200 billion.³

These predictions are based on mortalities and costs from the flu pandemic of 1918. Occurring from the spring of 1918 through the spring of 1919, the pandemic killed 40 million people worldwide, including 675,000 in the U.S. (about 0.75 percent of the 1910 population).⁴ Despite a scarcity of economic data from the era, several studies—including one by this author—have looked at the economic effects of the 1918 outbreak. These studies, plus information garnered from newspaper articles from that period, paint a picture of life during the influenza pandemic—and what life may be like during a modern-day pandemic.

Economics of the 1918 Influenza

This author's research examined the immediate effect of influenza mortalities on manufacturing wages in U.S. cities and states.⁵ The paper's hypothesis is that cities and states having had greater influenza mortalities would have experienced a greater increase in wages, at least initially. The conceptual basis for the hypothesis is that influenza mortalities decreased the supply of manufacturing workers, thereby resulting in a reduction in labor supply, an increase in the marginal product of labor, an increase in capital per worker and an increase in real wages. The author found empirical evidence that cities and states having had greater influenza mortalities during the pandemic experienced a greater increase in manufacturing wage growth over the years 1914-1919.

Two other researchers conducted a similar analysis of the economic effects of the 1918 pandemic, but instead focused on the decade following the pandemic.⁶ The authors hypothesized that states that had experienced larger numbers of influenza deaths per capita would have experienced higher rates of growth in per capita income following the pandemic as capital per worker (and, thus, output per worker) rose in the years following the pandemic. Using state-level personal income estimates for 1919-1921 and 1930, the authors found a positive and statistically significant relationship between statewide influenza mortality rates and subsequent state per capita income growth. Of course, no reasonable argument can be made that the benefits from wage growth outweighed the costs from the tremendous loss of life and overall economic activity.⁷

Another paper explored the longer-term effects of the 1918 influenza.⁸ The author questioned whether in utero exposure to the influenza had negative economic consequences for individuals later in their lives, after reviewing evidence that suggested pregnant women who were exposed to the flu in 1918 gave birth to children who had greater than normal medical problems later in life, such as schizophrenia, diabetes and stroke. The author's hypothesis is that an individual's health is positively related to his human capital and productivity, and, thus, wages and income.

Using 1960-1980 decennial census data, the author found that people who were in utero during the 1918 pandemic had reduced educational attainment, higher rates of physical disability and lower income. Specifically, “men and women show large and discontinuous reductions in educational attainment if they had been in utero during the pandemic. The children of infected mothers were up to 15 percent less likely to graduate from high school. Wages of men were 5-9 percent lower because of infection.”⁹

Implications for Today

The works of two prominent authors, in addition to anecdotal information in newspapers, provides insight into the possible effects of a modern-day pandemic.¹⁰

Given the positive correlation between population density and flu deaths, cities are likely to have greater mortality rates than rural areas. Compared with 1918, however, the urban and rural areas are more connected today, meaning the difference in mortality rates between cities and rural areas may drop. Similarly, a greater percentage of the U.S. population is now considered urban (about 80 percent) compared with the U.S. population at the time of the pandemic (51 percent in 1920).

Nonwhite groups as a whole have a greater chance of death because roughly 90 percent of all nonwhites live in urban areas (compared with about 77 percent of whites). This correlates with lower-income individuals being more likely to die—nonwhite (excluding Asians) households have lower median income (\$30,858 in 2005) compared with white households (\$50,784 in 2005).¹¹ Similarly, only 10 percent of whites were below the poverty level in 2005 compared with over 20 percent for various minority groups (except Asians).¹²

Urban dwellers are likely to have, on average, better physical access to quality health care, although nearly 19 percent of the city population in the U.S. has no health coverage compared with only 14 percent of the rural population.¹³ The question remains as to affordability of health care and whether emergency rooms and clinics (the most likely choices for the uninsured) are able to handle a pandemic.

Health care is irrelevant unless systems are in place to ensure that a flu pandemic will not knock out health care provision and will not prevent the rapid disposal of the dead in the cities (as it did in Philadelphia, where the problem in 1918 was exacerbated by leaves for medical people who were sent overseas during World War I). If medical staff succumb to the flu and if facilities are overwhelmed, the duration and severity of the pandemic will be increased. In Philadelphia during the 1918 pandemic, the city

morgue had as many as 10 times as many bodies as coffins.¹⁴

Some businesses could experience revenue decreases in excess of 50 percent. Others, such as those providing health services and products, may experience an increase in business (unless a full quarantine exists). A greater percentage of families with life insurance would mitigate the financial effects from the loss of a family's primary breadwinner. However, lower-income families are less likely to be protected with insurance than are higher-income families.

Local quarantines would likely hurt businesses in the short run. Employees would likely be laid off. Even families with no flu contact may experience financial hardships. To prevent spread, quarantines would have to be complete (e.g., no activity allowed outside of the home). Partial quarantines (closing of schools and churches but not public transportation or restaurants, as was done in Philadelphia, St. Louis and Washington, D.C.) would do little to stop the spread of flu. Then, there's the question of whether people today would respect any quarantine orders.

Is the U.S. Ready?

Should Americans rely on local, state and federal governments to help in the case of a modern-day pandemic? A 2005 report suggests that the United States is far from prepared for another influenza pandemic.¹⁵ The government has been ineffective in responding to disasters in the past, e.g., Hurricane Katrina. Local private charities and volunteer organizations like the American Red Cross, however, often perform admirably and are frequently the first to respond to a disaster. Assuming that citizens want government to prevent or mitigate a flu outbreak, then there should be great concern over government's readiness and ability to protect citizens from any future pandemic.

Although federal, state and local governments in the United States have started to focus on preparedness, it is fair to say that progress has been slow, especially at local levels of government.¹⁶ Perhaps public education on flu mitigation, a greater reliance on charitable and volunteer organizations, and a dose of personal responsibility—along with flu vaccines—may be the best ways to protect Americans in the event of a future influenza pandemic.

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HEADLINES FROM 1918

How did the 1918 pandemic affect the Eighth District economy?

See www.stlouisfed.org/publications/RE.

ENDNOTES

- 1 See www.who.int/csr/disease/influenza/nationalpandemic/en/index.html.
- 2 See Brahmabhatt (2005).
- 3 See U.S. Department of Health and Human Services (2005).
- 4 See Potter (2001). The influenza pandemic of 1918 was termed the “Spanish Flu” by the allies of World War I since Spain had one of the worst early outbreaks of the disease, with nearly 8 million people infected by early 1918.
- 5 See Garrett (2006).
- 6 See Brainerd and Siegler (2003).
- 7 The positive wage effects of the 1918 influenza are less likely to occur with a modern-day pandemic, given greater labor mobility and an easier substitution from labor to capital.
- 8 See Almond (2006).
- 9 See Almond (2006, p. 673).
- 10 See Crosby (2003) and Barry (2004).
- 11 U.S. Census Bureau, Income, Poverty, and Health Insurance Coverage in the United States: 2005, Table 1. See www.census.gov/prod/2006pubs/p60-231.pdf.
- 12 Ibid, Table 4.
- 13 Ibid, Table 8.
- 14 See Crosby (2003).
- 15 Infectious Diseases Society of America. “IDSA's Principles for Actions Needed to Prepare the U.S. to Effectively Respond to Interpandemic/Pandemic Influenza.” March 2005. See www.idsociety.org.
- 16 See www.pandemicflu.gov, a site managed by the U.S. Department of Health and Human Services. The lack of influenza vaccines, low production capacity, inadequate supply networks, slow government response and poor public education are cited as problems.

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