

INFLUENZA

Ground the Planes During a Flu Pandemic? Studies Disagree

By scouring mortality data from 121 cities across the United States, Harvard researchers have found footprints of 9/11 that they say should guide policy during an influenza pandemic. The decline in air travel in the months after the terrorist attacks delayed the annual flu season in the United States by almost 2 weeks, they conclude—a finding that suggests that a flu pandemic, too, could be slowed down, perhaps by months. But researchers who have studied the same question using computer models—and found closing down airports to be less useful—are skeptical.

The 2003 outbreak of SARS drove home the widely held belief that global mobility helps spread infections; indeed, it's almost a cliché among researchers to say that the most important disease vector today is the Boeing 747. But air-travel restriction won't help slow a flu pandemic much, three model studies concluded earlier this year—especially when compared to the judicious use of vaccines, antiviral drugs, isolation, and quarantine.

In a paper published in July in *Nature*, for instance, Neil Ferguson of Imperial College London and his colleagues tested how the United States and the United Kingdom might best mitigate a pandemic's ravages. They found that unless they are 99% effective, border controls and internal travel restrictions won't slow viral spread by more than 2 or 3 weeks. Ben Cooper and his colleagues at the U.K. Health Protection

Agency, who modeled air travel around the world in a June paper in *PLoS Medicine*, also found limits “of surprisingly little value.” The reason, says Ferguson, is that flu spreads extraordinarily rapidly.

But in the real world, the 27% reduction in international air-travel volume after 9/11 appears to have caused a 13-day delay in the 2001–02 influenza season—considerably more than the models would predict, say John Brownstein and Kenneth Mandl of Children's Hospital Boston and Harvard Medical School in a paper released on 11 September by *PLoS Medicine*. Analyzing data from 1996 to 2005, they also found a correlation between higher air-travel volumes in the fall and a slightly earlier flu season. Extrapolations suggest that a full-blown travel ban, as opposed to the post-9/11 slump, might delay a flu pandemic by as much as 2 months, says Brownstein—precious time to activate countermeasures and work on a vaccine.

The modelers aren't convinced, however. Ferguson says there is no proof that the relation between travel and timing of the flu season is causal, and he questions the team's use of a complex statistical measure to determine the timing of the peak. Although the study is “very nice,” the 9/11 effect “is an *n* of 1; it's intriguing, but you can't draw any conclusions,” says Ira Longini of the University of Washington, Seattle, who co-authored a paper in the *Proceedings of the National Academy of Sciences* in April that also concluded that travel bans had little value.

Brownstein suspects that some of the criticism may stem from the contradiction between his data and the models. “They are making assumptions about the relationship between air travel and the spread of influenza,” he says. “But this is empirical evidence.”

Although some countries' pandemic preparedness plans list travel bans as an option, Ferguson says most governments that have studied the idea seriously have rejected it. The World Health Organization's (WHO's) Global Influenza Preparedness Plan does not recommend travel bans because enforcement “is considered impractical,” but a footnote adds that they “could be considered as an emergency measure to avert or delay a pandemic.” WHO spokesperson Gregory Hartl says the new study is “very interesting” and “opens up the debate again.”

—MARTIN ENSERINK

NASA Science Chief Calls It Quits

One year after taking the job, NASA's science chief last week told her staff she will resign this spring. A biologist and former astronaut, Mary Cleave oversees the agency's space, planetary, and earth sciences research—programs in turmoil over budget overrun pressures. Cleave, who was unavailable for comment, alienated many scientists during her brief tenure by backing the elimination of a host of projects and reduced research funding. Meanwhile, NASA Administrator Michael Griffin told key senators in a letter that a plan to eliminate space-station research funding was simply “intended to prepare for potential budget reductions.” The senators had complained that cutting research made no sense given the investment in building the orbiting lab.

—ANDREW LAWLER

Cancer Watch at Ground Zero

Public health researchers in New York will begin a long-term surveillance program next month of workers exposed to dust during rescue and recovery efforts after the 2001 World Trade Center attacks. Some 40,000 workers combed through the rubble, breathing dust laced with toxics such as dioxin or asbestos. According to a paper published in *Environmental Health Perspectives* last week, 61% of 9442 workers surveyed have developed acute respiratory problems such as labored breathing.

The new effort will receive \$26 million in federal funds until 2009 and track some 30,000 workers for long-term lung problems as well as cancers. Society owes answers to the “volunteers who leapt into the fray,” says co-leader Philip Landrigan of Mount Sinai Medical Center in New York City, one of five clinical centers on the effort. —ERIK STOKSTAD

Academic Demotion

MOSCOW—The Russian Academy of Sciences could be stripped of authority to select a president and control its own finances if proposed changes in Russia's law on science take effect. A closed Cabinet meeting last week endorsed legal changes that could clear parliament in a matter of weeks, observers say. Critics of the move say that the new scheme will give the government new authority to set the nation's basic research agenda and that the academy will be turned into a club. Many scientists fear that the government will sell off the academy's valuable property assets. Putting a good face on the situation, academy spokesperson Irina Presnyakova said that the pending changes will bring the academy prestige and fiscal certitude.

—BRYON MACWILLIAMS



Delayed. The decline in air travel after 9/11 delayed the U.S. flu season by almost 2 weeks, a new study says.

CREDIT: JASON WISE/AP PHOTO

Downloaded from <http://science.sciencemag.org/> on May 26, 2018

Ground the Planes During a Flu Pandemic? Studies Disagree

Martin Enserink

Science **313** (5793), 1555.

DOI: 10.1126/science.313.5793.1555a

ARTICLE TOOLS

<http://science.sciencemag.org/content/313/5793/1555.1>

RELATED CONTENT

<file:/content/sci/313/5793/news-summaries.full>

PERMISSIONS

<http://www.sciencemag.org/help/reprints-and-permissions>

Use of this article is subject to the [Terms of Service](#)

Science (print ISSN 0036-8075; online ISSN 1095-9203) is published by the American Association for the Advancement of Science, 1200 New York Avenue NW, Washington, DC 20005. 2017 © The Authors, some rights reserved; exclusive licensee American Association for the Advancement of Science. No claim to original U.S. Government Works. The title *Science* is a registered trademark of AAAS.