

Global Outbreaks Are Likely to Increase

Pandemic experts say the new coronavirus shouldn't have come as a surprise at all

By JON HILSENATH

The rapid and global spread of the deadly new coronavirus caught households, business leaders, investors and policy makers off guard, but health experts and economists who study pandemics say it shouldn't have come as a surprise at all.

Epidemics of infectious diseases have become a regular part of the global landscape in the past quarter-century, thanks in part to economic trends including urbanization, globalization and increased human consumption of animal proteins as society becomes more prosperous, these experts say.

The public needs to prepare for more of them, they add.

An old rule of thumb in pandemic research was that such events happened about three times every century, said David Finnoff, an economist at the University of Wyoming College of Business. So far this century, the world has already confronted an array of viral scares, including SARS in 2002 and 2003, the swine flu (also known as H1N1) in 2009, MERS in 2012, Ebola in 2014 to 2016, Zika in 2015 and Dengue fever in 2016.

The incidence of infectious disease events has more than doubled from the 1940s to 1960s, according to EcoHealth Alliance, a New York-based

nonprofit research group that built a database tracking disease events globally. The rate of such incidents surged in the 1980s with the advent of HIV and is now rising, says Peter Daszak, the group's president.

"They're increasing exponentially," he said.

Already this century infectious disease pandemics—not counting the common influenza—have claimed more than 300,000 lives globally, according to Harvard researchers David Bloom and Daniel Cadarette.

Mr. Daszak estimates pandemics could cost as much as \$23.5 trillion over the next 30 years. That estimate includes not just lost economic activity and property, but also the statistical value of lost human lives.

Urbanization means people are packing together more tightly, making them more prone to catching bugs from others. Ebola is one example. It isn't a new disease but became widespread and deadly when it spread to large cities in Liberia and Sierra Leone.

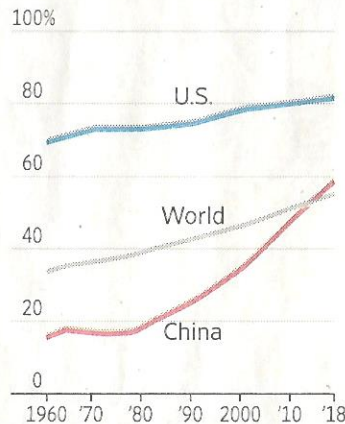
At the same time, globalization means people are venturing out farther across borders, giving bugs wider reach.

Moreover, animal-protein consumption is putting people in closer contact with livestock such as pigs and chickens, which can act as carriers of disease from other species. Between 2000 and 2019, global consumption of chicken grew to 97 million metric tons from 53 million, according to the U.S. Department of Agriculture. And as dense popula-

Growing Exposure

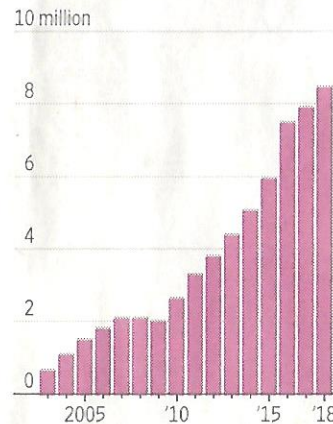
Epidemics have proliferated as people have moved closer together and travel globally at a rising rate.

Percentage of population living in urban areas



Sources: World Bank (urban population); Bureau of Transportation Statistics (passengers)

Airline passengers between U.S. and China



tions spread, Mr. Daszak says, people and their livestock are coming into closer direct contact with wildlife such as bats that are direct carriers of disease.

"Urbanization, agricultural intensification and deforestation are all part of the land-use change variable that was significantly correlated with emerging infectious diseases," Mr. Daszak said.

China, the epicenter of the latest outbreak, is also the epicenter of many of the economic trends giving unhealthy viruses a wider canvas on which to multiply. No country has urbanized more rapidly in the past quarter-century, according to World Bank estimates. In 2018, 59% of its population lived in urban areas, according to the World Bank, up from 36% in 2000 and 19%

in 1980.

The U.S. has urbanized, too, though at a slower rate. Between 2000 and 2018 its urban population increased to 82% of total population from 79%.

During the same period, China became the center of globalization, as multinational companies built their manufacturing bases there. Between 2003 and 2018, air traffic between the U.S. and China increased to 8.5 million passengers from fewer than 700,000, according to the U.S. Transportation Department.

"Viruses don't need passports," said Michael Merson, a professor at Duke University's Global Health Institute.

Wuhan, the Chinese city where the new coronavirus and the illness it causes, Covid-19, first showed up, is an example

of these trends. Between 2000 and 2018, its population grew from eight million to 11 million. In the process, developed land in the city more than tripled from about 210 square kilometers to 720 square kilometers, according to the Wuhan Statistics Bureau.

Wuhan opened a subway system in 2004 as a single line with 10 stations, the Communist Party-run People's Daily reported at the time. By December, it had grown to nine lines with 228 stations that handled 1.2 billion trips last year, according to state broadcaster Wuhan TV.

People have been flowing into the city in greater numbers, too, aided by more and speedier travel links. Wuhan hosted about 20 million tourists in 2000 and 288 million in 2018. In 2009, the city got high-speed rail service to Guangzhou, a prosperous megacity in southern China, as well as its third passenger railway station, according to the local Communist Party-run Changjiang Daily.

Travelers can reach 25 major cities from Wuhan on high-speed trains, cutting the time it takes to get to Beijing from 10 hours to five. Wuhan Tianhe International Airport replaced an older airport in 1995 and by the second half of 2018 had flights to 52 international destinations and 84 domestic ones, according to the provincial government of Hubei, of which Wuhan is the capital.

This development in the city coexists with trade in wildlife, a presumed vector of

infection that Chinese authorities have promised to shut down across the country.

The rise of global pandemics creates a problem of collective action, says Ramanan Laxminarayan, a researcher at Princeton University. One of the best ways to combat the spread of a virus is for authorities to report their emergence rapidly to isolate bugs in early stages.

Individual countries, however, have an incentive to delay reporting until a problem is certain, because notifying others comes with economic costs, such as reduced travel and trade. In that context, reporting delays in China and Iran aren't a surprise, Mr. Laxminarayan said.

Mr. Finnoff said the U.S. needs to build a stronger health infrastructure to fight future pandemics.

"We have a huge military that is out there ready to be deployed to reduce the risk to this country from anything that occurs. Most of the time it is not being used, it is waiting," he said. The U.S. needs to start thinking about preparing for pandemics the same way, he said.

Mr. Daszak said he thinks the current crisis will prove to be manageable, noting that the mortality rate of Covid-19 isn't as great as SARS and the spread isn't rampant. "I'm not hiding in my bunker right now," he said. "We're going to get hit by a much bigger one sometime in the next 10 years."

—Xiao Xiao in Beijing
contributed to this article.