

- Mark your confusion.
- Purposefully annotate the article (1-2 mature, thoughtful responses per page to what the author is saying)
- Write a 250+ word response to the article.

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The Growing Viral Threat

By *The Week* staff, Feb 29, 2020

Infectious disease experts warn that it's inevitable that a virus will jump from animals to humans and kill tens of millions. Here's everything you need to know:

Why are experts worried?

Picture a new viral disease like the Wuhan coronavirus, now called COVID-19, that passes easily from person to person and spreads rapidly around the globe. But unlike COVID-19, which kills perhaps 2 or 3 percent of its victims, this virus kills 20 percent of those infected. Or 40 percent. It might sound like a disaster movie premise (and in fact it was, in 2011's *Contagion*), but viral disease experts are in wide agreement that such a pandemic is coming, and that it will inflict unimaginable devastation. The only question is when it will hit. Last September, the Global Preparedness Monitoring Board (GPMB), a group convened in 2018 by the World Bank and the World Health Organization, warned of "a very real threat" of a pandemic that would kill 50 million to 80 million people, cost \$3 trillion, and create "widespread havoc, instability, and insecurity." We need only look to the recent past to see how dire things can get: The Spanish flu of 1918 killed between 50 million and 100 million (including 675,000 Americans), or about 3 percent of the global population.

Where would such a virus come from?

The most likely scenario is a pathogen that jumps from animals to humans and can spread through the air. The outbreak of COVID-19 was traced to a live-animal market in Wuhan, China, where a bat virus appears to have added some genetic material from a soldierfish. Many viral diseases have been traced to animals, including HIV (which originated in chimpanzees), MERS (camels), SARS (probably bats and civet cats), and Ebola (unknown, but probably bats). Last year researchers at Johns Hopkins ran a simulation of a hypothetical coronavirus emerging from a Brazilian pig farm: The result was 65 million dead within 18 months. Another concern is a familiar very deadly virus that mutates, allowing it to spread more easily. The avian flu H5N1, for example, has proven highly lethal but not very communicable — so far. The intentional or accidental release of a manmade pathogen is another threat; new genetic engineering tools have made them far easier to create. A laptop captured from ISIS in 2014 contained instructions on how to weaponize plague bacteria.

Why is this more of a problem now?

Human population growth. People are encroaching on previously wild areas where unknown viruses and bacteria lurk in animals; those who become infected carry the pathogens back to densely packed cities, where disease is easily spread. The 1998 emergence of the Nipah virus, for example, was linked to deforestation in Malaysia that displaced fruit bats and put them near pig farms. Pigs became infected, and the virus then spread to farmworkers. In the past 50 years, more than 300 pathogens have emerged or re-emerged, including Zika and yellow fever. At the same time, climate change has enabled insects and animals that carry disease to expand their habitats to new regions. Human migratory patterns are a factor as well: The surge in international travel allows viruses to spread around the globe quickly. "We've created an interconnected, dynamically changing world that provides innumerable opportunities to microbes," says Richard Hatchett of the Coalition for Epidemic Preparedness Innovations. "If there's weakness anywhere, there's weakness everywhere."

Are we prepared for a major pandemic?

Not at all. A report released last October by the Global Health Security Index found glaring gaps in readiness; out of 195 countries surveyed, not one was judged fully prepared to handle a major event. In the U.S. under President Trump, the federal budgets for both research and response preparation have been cut, the National Security Council's global health security unit has been disbanded, and the White

House official in charge of pandemic response left his job in 2018 and has not been replaced. We're caught in a "cycle of panic and neglect," World Health Organization Director-General Tedros Adhanom Ghebreyesus said. "We throw money at an outbreak, and when it's over, we forget about it and do nothing to prevent the next one."

What needs to be done?

Experts say the U.S. and other countries need to spend vastly more money on pandemic preparedness. We need to develop better diagnostic tools, stockpile drugs and vaccines, and fund research into new treatments and vaccine technologies. Above all, there needs to be an international effort to improve sanitation, medical care, and response capability in poorer countries where new diseases are most likely to arise and spread. All of this requires a major change in mindset, say experts. "The world needs to prepare for pandemics the same way it prepares for war," said Microsoft founder Bill Gates, who's invested tens of millions in viral disease research. Humanity's biggest threat, he says, is "not missiles, but microbes."

It's happened many times before

Epidemics have been a fact of life since the first human settlements. As humans built cities and trade routes, the capacity for pandemics grew, and history is marred by many devastating outbreaks. The earliest on record dates to 430 B.C., when a pestilence that may have been typhoid fever took root in Athens, killing up to two-thirds of the city's population. In A.D. 541, the Justinian plague spread through the Mediterranean world; recurrences over the next two centuries would kill more than 25 percent of the world's population. In the 14th century, another outbreak of plague, called the Black Death — driven by fleas that live on rats but can bite humans — claimed over 75 million lives, including some 60 percent of the population of Europe, whose cities were piled with reeking corpses. In the 16th and 17th centuries Native Americans were ravaged by smallpox and other diseases brought by European conquerors and colonists; in some areas as much as 90 percent of native populations were wiped out. The pandemic with the greatest number of casualties in history was the Spanish flu of 1918. It infected some 500 million people worldwide — a third of the population — and killed as many as 100 million.

Response option(s):

- According to the article, why is the world at risk of a bad virus in a way that the world hasn't been at risk in the past? What are the solutions proposed in the article?
- What new information do you learn in this article? What information were you already familiar with?
- Summarize any point made in the article and respond.