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You're Likely to Get the Coronavirus

Most cases are not life-threatening, which is also what makes the virus a historic challenge to contain.

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References: [Bai et al. \(2020\)](#)

Coronavirus Pandemic

Take-Aways

- Milder symptoms make for deadlier viruses.
- COVID-19 may be impossible to contain.
- COVID-19 may join the common cold and flu as a seasonal hazard.
- Vaccine development is faster than ever, but may not be fast enough.

Recommendation

You're washing your hands, practicing social distancing and coughing into your arm like a good citizen, but will this stop the spread of COVID-19? Your efforts may slow the spread, which offers social benefits, but the ship probably already sailed when it comes to actually stopping the virus. So will the world be able to pull it together and limit impending global disaster? James Hamblin, MD explains the barriers to a happy COVID-19 resolution in this article from *The Atlantic*, and describes what would be necessary for effective global responses to future pandemics.

Summary

Milder symptoms make for deadlier viruses.

H5N1 [avian flu virus that infected humans] has a high (roughly 60%) mortality rate, yet only 455 people have died of H5N1 since 2003. Milder strains of the flu have a 0.1% mortality rate, yet they kill hundreds of thousands each year. When a majority of people experience only mild symptoms, an illness is difficult to contain. When symptoms are severe, sudden and lead to death, people spring into action, limiting spread. H5N1 is a good example. The first death was in May 1997. By August, the Chinese government killed 1.5 million chickens, and people who caught the virus were quarantined or died so quickly they couldn't pass it on.

"This was seen as a successful global response, and the virus was not seen again for years."

The novel coronavirus, which has a fatality rate of around 2%, is dangerous precisely because it's so mild in most cases. People can easily pass it on when they don't know they have it.

[Editors Note: Coronavirus disease 2019 (COVID-19) is an infectious viral respiratory disease caused by severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2), also known as "novel coronavirus." Reports in December 2019, from Wuhan, China, first cited the disease, which has spread globally, resulting in the 2019–20 coronavirus pandemic that affects people and businesses worldwide.]

COVID-19 may be impossible to contain.

SARS (severe acute respiratory syndrome) and MERS (Middle East respiratory syndrome) are diseases caused by coronaviruses that tend to kill their hosts, making them less successful when it comes to mass spread. The coronaviruses that thrive in humans seem to have evolved for successful spreading. They don't kill their hosts.

"I think the likely outcome is that it will ultimately not be containable." – Marc Lipsitch, Harvard epidemiology professor"

The novel coronavirus may end up becoming the 5th coronavirus that lingers in the human population. Its mortality rate, at around 2%, is certainly higher than that of the common cold, but for many its symptoms

aren't easily recognizable. A hint of this characteristic emerged early when 14 Americans disembarked from a Japanese cruise ship feeling just fine, though they'd tested positive for COVID-19. Widespread testing in asymptomatic people is the only way to know whether current predictions about the spread of the disease are correct.

COVID-19 may join the common cold and flu as a seasonal hazard.

Worldwide containment measures for COVID-19 were swift, in some cases extreme, and largely ineffective. The practice of testing only those who have symptoms doesn't protect the larger population. On February 21st, *JAMA* [*Journal of the American Medical Association*] published a report of an asymptomatic man who appears to have spread the virus despite a normal chest CT.

"With its potent mix of characteristics, this virus is unlike most that capture popular attention: It is deadly, but not too deadly. It makes people sick, but not in predictable, uniquely identifiable ways."

Harvard epidemiologist Marc Lipsitch suggests that infection rates will hover between 40-70% within a year, but many cases will be so mild that they won't require medical care. Humans don't seem to develop a robust immunity to the other four endemic coronaviruses. If the same holds true for the novel coronavirus, COVID-19 may join the common cold and the flu as a predictable seasonal illness.

Vaccine development is faster than ever, but may not be fast enough.

Small biotech companies like Inovio, CureVac, Moderna and Novavax are all working on a novel coronavirus vaccine, as are federal scientists and universities. Some have succeeded in isolating promising RNA sequences that might produce a vaccine that strikes the precarious balance between providing immunity and not spurring symptoms. Vaccine development is faster now than ever. Sometimes they can get to phase 1 clinical trials in about three months. Subsequent trials would be needed, however, and Richard Hatchett, CEO of the Coalition for Epidemic Preparedness (CEPI), predicts it would take between 12 and 18 months to develop a reliable, effective and safe product.

"If we're putting all our hopes in a vaccine as being the answer, we're in trouble." – Jason Schwartz, Yale School of Public Health

Development would cost hundreds of millions, a sum that's out of reach for start-ups, academics and federal scientists. Big drug companies have the funds, but may lack interest – vaccine development has proven an iffy investment in the best of times. In times of emergency, with billions of doses needed, disrupted supply chains and closed borders, the challenges multiply. By the time the vaccine is ready, demand may fizzle. Drug companies can't count on profits for vaccines that treat possibly short-lived pandemics, or, in the case of long-term demand, drugs that will need continual development due to mutating viruses.

"The more the world enters lockdown and self-preservation mode, the more difficult it could be to soberly assess risk and effectively distribute tools, from vaccines and respirator masks to food and hand soap."

Federal funding may come through for COVID-19, but what's needed is continual, foundational research and preparedness for pandemics. If the SARS vaccine weren't abandoned after that emergency was over, scientists would be closer to developing a vaccine for close relative COVID-19. Unfortunately, US President Donald Trump's latest budget cuts CDC, NIH and foreign aid funding, all of which are vital to an effective pandemic response. COVID-19 now belongs to the whole world – it's unlikely that any country will escape its effects.

About the Author

Dr. James Hamblin lectures at the Yale School of Public Health. He's a regular contributor to *The Atlantic*, and author of *Clean*, which will be released in July 2020.



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