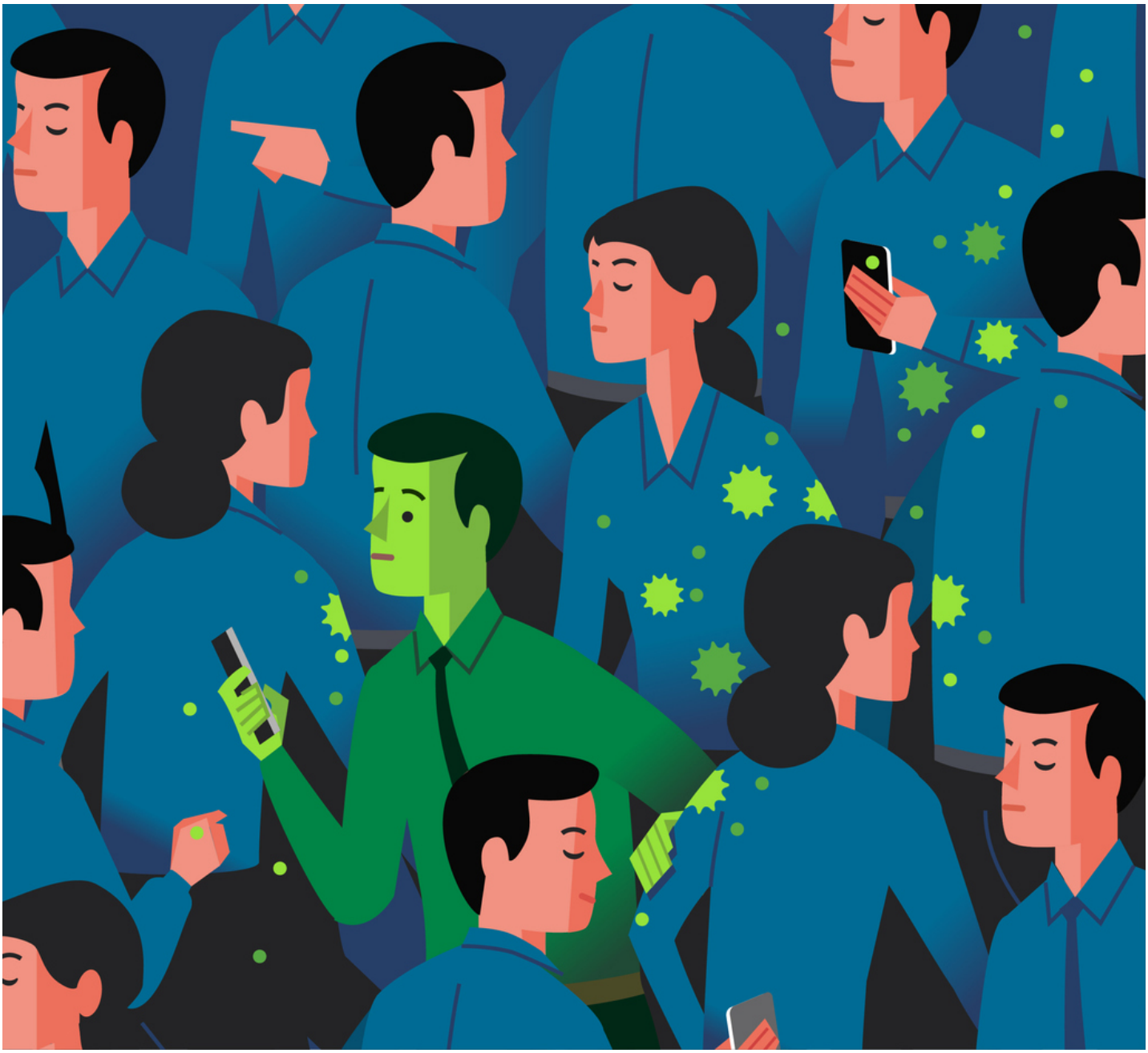
ABOUT 35% OF ALL COVID-19 CASES NEVER SHOW SYMPTOMS

August 23, 2021: A new study found that 35% of all COVID-19 cases are asymptomatic. Children are most likely to lack symptoms, while the elderly are least likely.



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As the national emphasis has progressed from testing to vaccinating, many regions let slip thoughts of how COVID-19 transmits. But sometimes, it helps to get back to the basics.

We know that presymptomatic people are the most infectious. But what is the role in transmission of the people who silently carry the virus that causes COVID-19?

According to a new study, these people—who may not even know they are infected—account for 35% of all COVID-19 cases. The study authors also found that not everyone has an equal chance of acquiring an asymptomatic infection of COVID-19: children win that lottery by a landslide.

that are asymptomatic.

“And by asymptomatic, we mean *truly* without symptoms over the course of their infection,” says Singer, who is a distinguished visiting professor of epidemiology in UF's College of Liberal Arts and Sciences Deparment of Mathematics. “This is different than people who may not have symptoms when they get tested, test positive, then later develop symptoms.”

For a virus that seeks to replicate itself, asymptomatic carriers are akin to a cavalry of Trojan horses.

Children and the elderly

The study authors found that of the truly asymptomatic cases they analyzed, nearly 47% were children and 20% were elderly. This age discrepancy was significant.

“This is not entirely surprising because the elderly tend to have multiple medical conditions, and they are among the most vulnerable population to infection,” Singer says. “Their immune systems are frequently not up to snuff so to speak. I think this does not come as a shock to anybody, but this work nails it down with COVID.”

By comparison, children tend to have more robust immune systems that are in the process of becoming educated by encounters with a variety of pathogenic agents.

“What this shows us is that screening for symptoms is not enough when kids go back to school,” Singer says. “We need to get vaccines approved for children. They need to be vaccinated to help block transmission chains.”

The authors also report that independent of age, people with comorbidities had significantly lower rates of asymptomaticity compared to those with no underlying medical conditions. While this finding is not new, it lends validity to the study’s methods and major findings.

Zeroing in on the asymptomatics

The team sifted through the literature to pinpoint studies which identified cases where people never developed symptoms over time, despite testing positive for COVID-19. Studies in which people lacked symptoms at the time of their testing, but later developed symptoms, were also excluded.

“A big source of bias is when the presymptomatic cases are mistakenly called asymptomatic,” says Singer, who is also affiliated with UF's Emerging Pathogens Institute. “Including them gives too high a

The team also minimized bias in their findings by excluding from their analysis all index cases. This refers to the first case identified in an outbreak cluster, which may or may not include symptoms. Because of the uncertainty, data involving these cases was not considered.

Looking forward: Public health implications

Singer says the work holds two major implications for public health measures.

- First, it provides a basis for arguing that vaccinating children will help to break transmission chains and reduce community spread.
- Second, it raises questions about the role of vaccinated individuals in general.

While the available vaccines have proved effective at reducing severe diseases and death, they are not bulletproof in terms of preventing infection. Singer suspects that, at the present time, vaccinated individuals may be among the asymptomatic cases.

At the time the current study was carried out, vaccination campaigns in the US were just beginning. Now, with a greater proportion of the population vaccinated, he wonders what their role may be in asymptomatic spread.

“There is a fiction out there, that if you are vaccinated you can go anywhere and do anything,” Singer says. “Think again. Being vaccinated does not protect you from getting an infection.”

Individuals may not see the effects of the infection, thanks to their vaccination. And they may be asymptomatic, but they may also still be able to transmit the virus.

“What this work says is that once a vaccination program is going, we’d better do more extensive testing to find out where the asymptomatics are," Singer says. "Because there could be silent spreaders out there that would not have been that way before we had vaccines.”

A year ago, Singer was involved with a similar study that estimated roughly half of all COVID-19 cases are spread silently. However, that work lumped together *presymptomatic* and *asymptomatic* cases. The prior study was also done partly in response to a public health campaign that emphasized testing and screening only symptomatic people.

But just as the prior study directed attention to the role of symptomless spread, the current study highlights the singular role of people who never develop symptoms despite becoming infected and

Written by DeLene Beeland

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