

Early Herd Immunity against COVID-19: A Dangerous Misconception

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We have listened with concern to voices erroneously suggesting that herd immunity may “soon slow the spread”¹ of COVID-19. For example, Rush Limbaugh² recently claimed that “herd immunity has occurred in California.” As infectious disease epidemiologists, we wish to state clearly that herd immunity against COVID-19 will not be achieved at a population level in 2020, barring a public health catastrophe.

Although more than 2.5 million confirmed cases of COVID-19 have been reported worldwide, studies suggest that (as of early April 2020) no more than 2-4%³⁻⁵ of any country’s population has been infected with SARS-CoV-2 (the coronavirus that causes COVID-19). Even in hotspots like New York City that have been hit hardest by the pandemic, initial studies suggest that perhaps 15-21%^{6,7} of people have been exposed so far. In getting to that level of exposure, more than 17,500 of the 8.4 million people in New York City (about 1 in every 500 New Yorkers) have died, with the overall death rate in the city suggesting deaths may be undercounted and mortality may be even higher.⁸

Some have entertained the idea of “controlled voluntary infection,”⁹ akin to the “chickenpox parties” of the 1980s. However, COVID-19 is 100 times more lethal than the chickenpox. For example, on the Diamond Princess cruise ship, the mortality rate among those infected with SARS-CoV-2 was 1%. Someone who goes to a “coronavirus party” to get infected would not only be substantially increasing their own chance of dying in the next month, they would also be putting their families and friends at risk. COVID-19 is now the leading cause of death in the United States, killing almost 2,000 Americans every day.⁸ Chickenpox never killed more than 150 Americans in a year.⁹

To reach herd immunity for COVID-19, likely 70% or more of the population would need to be immune. Without a vaccine, over 200 million Americans would have to get infected before we reach this threshold. Put another way, even if the current pace of the COVID-19 pandemic continues in the United

As we discuss when and how to phase in re-opening,¹⁰ it is important to understand how vulnerable we remain. Increased testing will help us better understand the scope of infection, but it is clear this pandemic is still only beginning to unfold.

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