



COVID-19 research update

April 20, 2020

The Health Policy Institute of Ohio is collecting the latest research so that Ohio policymakers and other stakeholders can make informed decisions on the rapidly evolving COVID-19 pandemic and publishes updates on Mondays, Tuesdays and Thursdays. HPIO has also created a [Coronavirus \(COVID-19\) resource page](#) to serve as a "one-stop-shop" for links to the Ohio Department of Health, Centers for Disease Control and Prevention and other sources of frequently updated, reliable information. If this update was forwarded to you, you can [click here to join our mailing list](#).

Aerosol transmission of COVID-19 and the role of face masks

New analysis provides information on how COVID-19 is transmitted and the role masks can play in reducing spread of the disease.

[An experiment on COVID-19 transmission](#) (New England Journal of Medicine, April 15) and accompanying video use laser light to show that speech generates respiratory droplets and to test the effectiveness of a mouth covering to reduce droplets. The experiment and video illustrate the need for people to wear masks in public to protect others.

A [letter on the transmission of the COVID-19 virus](#) (New England Journal of Medicine, April 15) explains that talking and breathing generate aerosolized particles in addition to respiratory droplets. Research has shown that aerosolized particles can contain SARS-CoV-2, the virus that causes COVID-19. The author explains that aerosolized particles can be inhaled into the lungs and, therefore, may be a source for transmitting SARS-CoV-2. This letter provides additional explanation of the importance of wearing masks in public.

A [commentary on "mass masking"](#) (Lancet, April 16) argues that the practice is a low-cost and potentially effective mechanism to reduce the spread of infection and that it should be encouraged and/or required during the next phase of the COVID-19 pandemic. This strategy can be promoted as a matter of protecting others rather than as a strategy to protect oneself.

SARS-CoV-2 prevalence and co-infection rates

[A study on COVID-19 antibodies](#) (MedRxIV, April 11) tested residents of a California county for antibodies to SARS-CoV-2. Participants were recruited using Facebook ads targeting a representative sample of the county by demographic and geographic characteristics. Under three testing scenarios, the population prevalence of COVID-19 in Santa Clara ranged from 2.49% to 4.16%. These prevalence estimates represent a range between 48,000 and 81,000 people infected in Santa Clara County by early April, which is 50-85 times higher than the number of confirmed cases in the county. This research suggests that SARS-CoV-2 infection may be much more widespread than indicated by the number of confirmed cases. Population prevalence estimates, like the one in this study, can be used to calibrate epidemic and mortality projections. The authors noted that the sampling strategy was not random and selected individuals with access to

Facebook and a car to attend drive-through testing sites. This resulted in an over representation of white women between the ages of 19 and 64, and an under representation of Hispanic and Asian populations, relative to that community.

[An analysis of patients with COVID-19 symptoms](#) (JAMA, April 15) found that 116 of the 1,217 patients tested were positive for SARS-CoV-2. Of those who tested positive for SARS-CoV-2, 20.7% were also positive for one or more other pathogens. The researchers note that this is a higher percentage than had been reported previously in China. They conclude that "routine testing for non-SARS-CoV-2 respiratory pathogens during the COVID-19 pandemic is unlikely to provide clinical benefit unless a positive result would change disease management." This finding could be useful in guiding testing protocols for people with symptoms in that a positive test for another pathogen does not necessarily rule out the presence of SARS-CoV-2.

COVID-19 transmission dynamics in California, Washington

[An examination of enrollees in the Kaiser Permanente health plan](#) (MedRxIV, April 16) identified 1,277 hospitalized patients with COVID-19 out of nearly 9.6 million people enrolled in health plans, with hospitalization rates ranging from 10.6 to 14.6 per 100,000. The authors found that 42% of hospitalized patients required intensive care, higher than the 30% reported from China. They also found an average 11-day length of stay, which is similar to China, but higher than that used by some models to project hospital capacity needs. Frequency of hospitalization was higher for people over the age of 80. The effective reproductive number of the virus declined to less than 1 during the time period of the study, indicating that non-pharmaceutical interventions put in place in California and Washington resulted in reduced transmission.