

Results of One of Nation's Largest COVID-19 Serological Testing Study: Masking Plays Vital Role in Protection

Beaumont Researchers Studied Risk of Exposure for Frontline Health Care Workers

In mid-April the Beaumont Research Institute announced it was conducting [one of the nation's largest testing study for COVID-19 antibodies](#), now the team's first findings have been published in the journal [Clinical Infectious Diseases](#).

"It's nice to have proof masking really works," said lead author of the research paper, [Dr. Matthew Sims](#), director, Infectious Diseases Research, Beaumont Health. "Masks play a vital role in protecting people and can dramatically reduce the risk of contracting [COVID-19](#)."

In the study, blood samples were collected from 20,614 employees across Beaumont Health, which includes eight hospitals in Southeast Michigan. A total of 1,818 or 8.8% of participants were seropositive between April 13 and May 28, 2020. The term seropositive means the study participants were previously exposed to COVID-19 and antibodies were present in their blood.

Dr. Sims said, "There are three key takeaways from the data collected.

- Masks do play a major role in protecting people and dramatically reduce the risk of infection.
- For frontline caregivers, job duties played a significant role in defining who was at greater risk of contracting COVID-19.
- People with higher levels of exposure were more likely to get it."

For Beaumont staff, the impact of [mask wearing](#) was statistically significant. Research showed that people who were exposed to COVID-19 patients with no masks on had an 18% risk of getting sick. That dropped nearly in half, down to 10%, for people wearing N95 masks. And for those who did wear masks, but got infected, nearly 30% were asymptomatic – a total reaching nearly 40% for those wearing N95 masks.



Dr. Matthew Sims



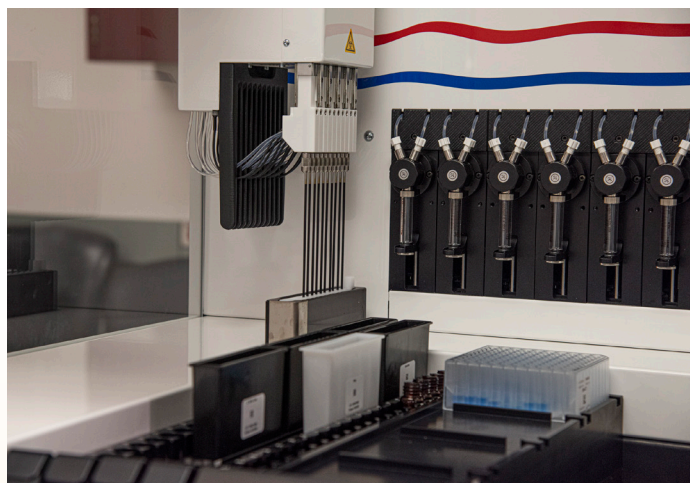
The three job categories who had a higher rate of infection were:

- **Nurses** – who spent a great amount of time with multiple patients each day and who were in direct physical contact with those patients.
- **Phlebotomists** – many of whom were infected before universal masking and testing for all patients who came to the hospital for care, whether for COVID-19 or another condition.
- **Respiratory therapists** – who were responsible for intubating patients and who came into heaviest contact with patient airways and exhalations.

Explained Dr. Sims, “The more time a person spends in close contact with an infected individual, the higher the risk of that person contracting the virus themselves. For example, doctors displayed a relatively low incidence of infection most likely due in large part to the fact that while they were working with patients, the duration of their direct contact with patients was limited.”

The research was funded by Beaumont Health and major donors through the Beaumont Health Foundation. The following donors have contributed more than \$5 million in philanthropic contributions to help support COVID-19 serological research: Sidney and Madeline Forbes; Nathan and Catherine Forbes; Levy Dresner Foundation; Stephen and Bobbi Polk; Warren Rose and the Rose Family; Mickey, Steven, Margie and Edward Shapiro; and Gwen and S. Evan Weiner.

Added Dr. Sims, “Our research team had the first of what we hope will be many BLAST COVID-19 (Beaumont’s Large-scale Analysis of Serological Testing in COVID-19) papers accepted for publication, sharing with the medical and scientific communities some of our initial findings and how they may apply to the treatment and prevention of the novel coronavirus. We continue to track and test nearly 2,000 study participants who were antibody positive in the initial round of assessment, in pursuit of a better understanding of how long antibodies last and how much protection they are providing.”



The published paper, “[COVID-19 seropositivity and asymptomatic rates in healthcare workers are associated with job function and masking](#)” is posted online.

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