

# PPE, plus training, lowers risk of COVID-19 for health care workers

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Health care workers carry a significant burden of coronavirus infections worldwide, but a new evidence review by researchers at Oregon Health & Science University shows the rate can be lowered with the use of personal protective equipment combined with proper training in infection control.

The review, funded by the World Health Organization, published today in the *Annals of Internal Medicine*.

"Most people understand it's a high priority to protect our nurses and doctors," said senior author Roger Chou, M.D., director of the Pacific Northwest Evidence-based Practice Center at OHSU and a professor of medicine (general internal medicine and geriatrics) in the OHSU School of Medicine. "In addition to the impact that COVID-19 would have on infected health care workers, they can pose a transmission risk. Plus, they can't work if they become infected, and maintaining health care capacity throughout the pandemic is important."

Adequate supplies of personal protective equipment such as masks, gowns and eye protection have been the subject of heightened attention throughout the pandemic. Chou said the evidence suggests that lowering the rate of infection among health care workers must also include adequate training and education to ensure workers use the equipment properly.

"Infection control training is important," Chou said. "It's not just about providing the equipment, but helping health care workers understand how they need to use it. Training and education were consistently associated with decreased risk of infection."

## Other key findings:

- **Front-line exposures:** Certain exposures, such as involvement in intubations, direct contact with infected patients, or contact with bodily secretions, were associated with increased risk of infection.
- **Mental health impact:** Researchers found high rates of depression, anxiety and psychological stress among health care workers on the front lines of the pandemic. Chou said this finding underscores the importance of focused employee wellness programs such as one instigated by OHSU.

Researchers conducted an evidence review of 64 studies related to rates of infection among health care workers exposed to the new coronavirus that causes COVID-19 along with earlier outbreaks caused by coronaviruses known as Severe Acute Respiratory Syndrome, or SARS, and Middle Eastern Respiratory Syndrome, or MERS.

The researchers will continue to track new evidence and update the findings as a "living rapid review."

Chou noted that the SARS-Cov-2 virus appears to

be much more transmissible than the strains involved in the previous outbreaks of SARS and MERS. With some health care workers staying in hotels to isolate themselves from family members, researchers looked for evidence about the risk of transmission in their own homes.

"Unfortunately, we have no data yet for risk factors on health care workers transmitting the [infection](#) to household contacts," Chou said. "That's a big area we need to understand in order to reduce risk of transmission from [health care workers](#) to [family members](#) and other close contacts."

**More information:** Roger Chou et al, Epidemiology of and Risk Factors for Coronavirus Infection in Health Care Workers, *Annals of Internal Medicine* (2020). [DOI: 10.7326/M20-1632](https://doi.org/10.7326/M20-1632)

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