

Global Health

Study Explores Psychological Harm to Health Workers During Outbreaks

Researchers in Australia have identified dozens of factors that can either increase or decrease clinicians' risk of psychological harm during emerging disease outbreaks.

The researchers' [meta-analysis](#) included 59 studies from a dozen countries that assessed clinician well-being during outbreaks of severe acute respiratory syndrome coronavirus, Middle East respiratory syndrome coronavirus, influenza A(H1N1), influenza A(H7N9), Ebola virus, and severe acute respiratory syndrome coronavirus 2. Their analysis showed that clinicians who had direct contact with infected patients had a 71% increased risk of developing acute or posttraumatic stress compared with clinicians who had lower-risk exposures. Clinicians in the studies reported distress during outbreaks and afterward for up to 3 years.

Younger clinicians and those with dependent children or an infected family member were at increased risk of psychological harm. In addition, longer quarantines, lack of practical support, and stigma against hospital workers also posed harm. Protective factors included having more clinical experience, feeling adequately trained and supported, and having adequate breaks and time off. Being supplied with appropriate protective gear and having support from peers and family also decreased clinicians' psychological risks.

According to the authors, health facilities can reduce risks by providing clear communications, infectious diseases training, and reduced patient density on the wards. Breaks with meals provided are helpful, too. Additional protective measures include providing alternative accommodations to reduce the risk of infecting family members, and access to video calls to keep in touch with family while living apart.

New Hypertension Guidelines Apply to Diverse Socioeconomic Settings

The International Society of Hypertension has released a simplified [guideline](#) for managing hypertension.

Globally, hypertension affects an estimated 1.39 billion people and is considered

the leading cause of death worldwide, the authors wrote. Although many countries, particularly high-resource nations, release their own guidelines, those recommendations may be impractical in low- and middle-income settings where almost three-quarters of patients with hypertension reside. The new guideline was designed to be used in any setting by a range of clinicians including physicians, nurses, and community health workers.

"We believe these simplified guidelines will be of use globally and may be of most use in countries that do not have their own national hypertension practice guidelines," coauthor Richard Wainford, PhD, of the Boston University School of Medicine, said in a [statement](#).

The guideline defines hypertension as having a systolic blood pressure greater than or equal to 140 mm Hg and/or a diastolic blood pressure greater or equal to 90 mm Hg confirmed after several office visits. Home-based readings can also be used for diagnosis. Clinicians should suggest lifestyle modification as a first-line treatment for hypertension.

All patients with a blood pressure greater than or equal to 160/100 mm Hg and those with levels of 140 to 159/90 to 99 mm Hg who are at high risk of or have cardiovascular disease, chronic kidney disease, diabetes, or hypertension-mediated organ damage should receive medication immediately, according to the guideline. It also has recommendations for patients with comorbid conditions and treatment-resistant hypertension.

Genetic Analysis Tracks SARS-CoV-2 Mutations in Human Hosts

An [analysis](#) of severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) genomes collected from more than 7500 patients worldwide has identified mutations in the virus that could aid in drug and vaccine development.

The researchers found that the virus's genetic diversity in most countries is similar to what it is globally, suggesting that it was introduced repeatedly by many infected people in each country rather than by a



A recent study described circumstances that affect health workers' risk of psychological harm during emerging disease outbreaks.

"patient zero." The analysis found 198 mutations that have occurred more than once, indicating that the virus is undergoing selective pressure as it adapts to its human host.

"Mutations in themselves are not a bad thing and there is nothing to suggest SARS-CoV-2 is mutating faster or slower than expected," co-lead author Francois Balloux, PhD, of the University College London Genetics Institute, said in a [statement](#). "So far we cannot say whether SARS-CoV-2 is becoming more or less lethal and contagious."

In fact, the majority of the mutations are likely neutral or deleterious to the virus, the authors wrote. Some of the recurrent mutations might affect the response of human immune CD4+ cells, which activate B cells to make antibodies, and CD8+ T cells, which kill virus-infected cells. They also found recurrent mutations in genes encoding the virus' spike proteins, which enable the virus to enter human cells.

"A major challenge to defeating viruses is that a vaccine or drug might no longer be effective if the virus has mutated," Balloux said. "If we focus our efforts on parts of the virus that are less likely to mutate, we have a better chance of developing drugs that will be effective in the long run." – **Bridget M. Kuehn, MSJ**

Note: Source references are available through embedded hyperlinks in the article text online.