



COVID-19

research update

April 23, 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](#).

New guidelines, research on treating COVID-19 patients

A [new set of COVID-19 treatment guidelines](#) (National Institutes of Health, April 21) have been developed to inform clinicians on how to care for patients with COVID-19. The guidelines state that, at present, no drug has been proven to be safe and effective for treating COVID-19. There are insufficient data to recommend either for or against the use of any drug therapy in patients with COVID-19 who have mild, moderate, severe or critical illness. Because clinical information about the optimal management of COVID-19 is evolving quickly, these guidelines will be updated frequently as published data and other authoritative information becomes available.

A [review of 73 studies of acute viral respiratory infections or conditions commonly caused by respiratory viruses](#) (WHO, April 19) found that there is no evidence of severe adverse events in patients with respiratory conditions as a result of the use of non-steroidal anti-inflammatory drugs (NSAIDs), which had previously been reported as potentially dangerous for COVID-19 patients. This analysis can inform the practices and recommendations of healthcare providers related to NSAID use and COVID-19. The authors note, however, that the research provides no direct evidence from patients with COVID-19, SARS or MERS. Therefore, all evidence included should be considered indirect evidence with respect to the use of NSAIDs and COVID-19.

Insights on modeling the COVID-19 pandemic

A [study to determine the optimal lockdown policy for COVID-19](#) (National Bureau of Economic Research, April 2020) combines tactics for reducing pandemic fatalities while minimizing the economic costs of the lockdown. The researchers use an epidemiological model to estimate fatalities and assume that testing is available that allows those who recover to go back to work. The economic cost analysis includes economic activity lost during a lockdown, as well as costs due to deaths. The authors conclude that the optimal policy includes a severe lockdown beginning two weeks after the

outbreak, covers 60% of the population after a month, and is gradually withdrawn covering 20% of the population after 3 months. They also find that the absence of testing increases the economic costs of the lockdown. The authors note that because this is a modeling study, it makes several assumptions regarding transmission, fatality rates, economic conditions, the value of life and other factors. It does not capture the actual effectiveness of social distancing policies or effectiveness of clinical care. In addition, long-term economic impacts are not assessed.

A [perspective piece on mathematical and epidemiological models](#) (JAMA, April 16) discusses some limitations and challenges to COVID-19 modeling, and in particular examines the widely cited [IHME model](#). The many unknown factors related to COVID-19 have made modeling challenging, with wide variations in estimates from numerous sources. The authors make several recommendations: 1) models should be dynamic, 2) assumptions used should be disclosed, 3) all should provide ranges of possibilities, 4) models should incorporate new data as it becomes available and 5) public reporting "must be appropriately circumspect and include key caveats."

Alternative ventilation strategies

A [literature review of current guidance treating COVID-19 patients with ventilators](#) (American Journal of Tropical Medicine and Hygiene, April 21) finds that supplemental oxygen is a first essential step for the treatment of severe COVID-19 patients with low oxygen levels and should be a primary focus in resource-limited settings where capacity for invasive ventilation is limited. The presence of only low oxygen levels should in general not trigger intubation, the authors conclude. The authors suggest that this ventilation strategy, which reduces the use of ventilators among COVID-19 patients, might reduce the currently very high case fatality rate (more than 50%) in invasively ventilated COVID-19 patients.

A [commentary on COVID treatment](#) (Lancet Respiratory Medicine, April 20) argues that healthcare workers should continue using less invasive treatments to treat COVID-19, including continuous positive airway pressure (CPAP) or non-invasive ventilation (NIV), when appropriate. Early intubation of every patient suspected to have COVID-19 could result in the unnecessary use of an invasive procedure and lead to equipment shortages for patients that need mechanical ventilation. The author states that the use of NIV during the SARS epidemic was not associated with an increased risk of transmission of the virus to healthcare workers, whereas, intubation was associated with an increased risk of aerosolization and infection of healthcare workers. There is also evidence that, in a series of 20 patients with SARS, endotracheal intubation was avoided in 14 (70%) patients with the use of NIV.

