

7 August 2020

BRIEF19

A daily review of covid-19 research and policy.

RESEARCH BRIEFING

The decline and return of hospitalizations for heart attacks.

Previous studies from both the United States and Europe have demonstrated how the covid-19 pandemic has led to a decrease in acute myocardial infarction cases (AMI, or heart attacks) presenting to hospitals. A new cross-sectional study released [today](#) in *JAMA Cardiology* also addresses that same topic in more detail. The authors sought to not only investigate case rates, but also treatment approaches and in-hospital outcomes.

The authors studied data from the 49 hospitals in the Providence St. Joseph Health System in six states (mostly in the western United States and Texas) and compared three time periods: pre-covid-19 (December 2019 to February 2020), early covid-19 (February to March) and later covid-19 (March to May). A total of 15,244 hospitalizations occurred for AMI. During this span, 33 percent were “classic” heart attack known as ST-segment elevation myocardial infarctions (STEMIs) and 67 percent were milder events known as non-ST-segment elevation myocardial infarction (NSTEMIs). Of these, 14,724 were unique (non-repeat) patients. The majority of the patients were men (66 percent) with a mean age of 68 years old. Similarly to what researchers have found in previous studies, a 19 percent decline in hospitalizations was seen during the early pandemic period. Following the decline, an increase of 10.5 percent per week was seen in the later period. At time of the manuscript writing, hospitalization rates had still not returned to previous baselines at these hospitals. Additionally, median lengths of stay were shorter during the early and late periods compared to the pre-covid period. In-hospital mortality was similar among all groups, but patients with STEMI had a statistically greater risk during the late period after statistical adjustments. Overall, STEMI patients had higher than expected mortality rates during all three time periods.

The decline in hospitalizations and the slow rebound that followed is consistent with findings from previous studies. The study’s authors suggest the increase during the later phase was possibly due to health care institutions deliberately encouraging the public to seek immediate medical attention in the case of an emergency, despite fears of hospitals brought about by the covid-19 pandemic. The researchers also speculate that patients experienced shorter lengths of stay, both because hospitals attempted to maintain bed availability and patients’ desires to avoid possible covid-19 exposure. The authors also acknowledged that increased mortality in AMI could be due to concurrent covid-19 infections. This paper affirms a national trend that patients are slowly coming back to hospitals but also dying more often, though the reason for the latter observation remains unclear.

—*Christopher Sampson, MD*

POLICY BRIEFING

In the quest to understand immunity, immunity passports lose favor.

We still have much to learn regarding immunity conferred from a prior covid-19 infection, and there are many potential implications. At this point, we know that a positive SARS-CoV-2 antibody test reveals a prior covid-19 infection, whether or not that individual was symptomatic. However, there are concerns that positive antibodies may not completely prevent re-infection, putting a wrench in the proposal of granting “[immunity certificates](#)” to those with a reported positive antibody test, allowing them to move about more freely.

[Seroprevalence](#) is a measure of the percentage of individuals in the population who have tested positive for antibodies to a particular pathogen—in this case covid-19. This information can help researchers estimate how many individuals in the greater population have likely been infected and track other characteristics such as geographic location and age distribution of cases. Current testing provides either qualitative results, a simple positive or negative, or quantitative results, which reports the concentration of antibodies.

Recently, the Food and Drug Administration (FDA) [released](#) an Emergency Use Authorization for Siemens' ADVIA Centaur SARS-CoV-2 IgG (COV2G) and Atellica IM SARS-CoV-2 IgG (COV2G) tests. These tests Siemens are semi-quantitative blood tests which provide an estimate of the covid-19 antibodies present in an individual. Epidemiologists hope that these quantitative antibody tests will provide a better understanding of potential covid-19 immunity and the presence of covid-19 in the general population. However, given potential testing [inaccuracies](#), positive individuals are still encouraged to continue with social distancing precautions. *Various.* —*Onyeka Otugo, MD MPH*

The legalities of state-by-state travel restrictions.

Both at the beginning of the covid-19 pandemic and more recently, many states have sought to impose interstate travel restrictions, including mandatory quarantine for travelers from other states. These restrictions have included all states at some point but have typically been enacted towards states with a high rate of covid-19 diagnoses. An [article](#) in *The New England Journal of Medicine* discusses the legal limbo that these mandates fall into. Citing previous judicial decisions, the authors note that bans on interstate travel are highly scrutinized. Laws must both serve an important government interest and be no more restrictive than absolutely necessary to serve the intended purpose. The Supreme Court of the United States has previously upheld a Constitutional right to travel including the ability to travel between states, to be treated not as an “unwelcome alien,” and to establish residence in whichever state one chooses.

The authors mention three challenges to state mandates in court during the covid-19 crisis. In Kentucky, an order to self-quarantine following out-of-state travel was struck down under the pretense that the law was too broad. A second mandate in Maine was upheld after the court found that the alternatives offered by the plaintiffs as less restrictive alternatives were not practically feasible. A federal court in Hawaii also upheld that state's mandatory quarantine orders on two occasions in July. Perhaps most interestingly, the authors note that the case in Maine found that the state's order was discriminatory against those who were not homeowners within the state, as they would have a more difficult time finding a location in which they could quarantine. Noting that the historical trend of anti-travel laws was often to prevent minorities and people with low income from migrating to a state, the authors reason that states imposing restrictions on all travelers may find more favor in judicial thought. The article also quips that interstate travel restrictions would likely not be necessary if not for such slipshod federal leadership in response to the ongoing public health crisis. —*Jordan M. Warchol, MD, MPH*

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