

BRIEF19

A daily review of covid-19 research and policy

RESEARCH BRIEFING

What happens to patients 60 days after they are hospitalized with covid-19?

A new [paper](#) in *Annals of Internal Medicine* reports on outcomes 60 days after a covid-19-related hospitalization. Previously, most covid-19 research has focused on 14-28 day outcomes patients hospitalized for covid-19. Beyond that, most of our information on longer term outcomes have been anecdotal; largely personal experiences of the growing phenomenon of “[long covid-19](#),” or “long haulers,” in the outpatient setting.

In this new paper, researchers from Michigan assessed 60-day outcomes of hospitalized patients, using data from the MI-Covid19 initiative, a 38-hospital statewide consortium sponsored by Blue Cross Blue Shield of Michigan and Blue Care network. Simply put, the primary outcome of the study by day 60 after discharge was, *what happened to these patients?* To determine the status of patients, researchers looked at patients’ medical records up to day 60 after discharge. If no current records were available, researchers contacted patients by telephone.

A total of 1,648 covid-19 patients were admitted to the hospitals included in the study of which 24 percent died while hospitalized. Among the remaining 76 percent who survived (1,250), another nearly 7 percent of that group had died by day 60 after hospital discharge and 15 percent were rehospitalized. Overall, this brings the mortality from covid-19 in the MI-COVID19 initiative to over 29 percent of patients hospitalized with a diagnosis of covid-19, a staggering statistic.

Researchers then reached out to survivors among whom 488 completed an in-depth survey. Here’s what we know from the people who completed the survey:

- 33 percent had cardiopulmonary symptoms (cough, difficulty breathing, etc).
- 23 percent could not walk up stairs without becoming significantly short of breath.
- 19 percent reported new or worsening symptoms.
- 12 percent reported new or worsening difficulty completing their usual activities.
- 49 percent reported emotional suffering since hospital discharge.
- ~10 percent had to use most or all of their savings.
- 7 percent reported having to start rationing food, heat, housing, or medications due to loss of finances.
- 78 of 195 patients (40 percent) could not return to work because of their health.
- 30 of 117 (26 percent) who returned to work were working reduced hours because of their health.

These data speak for themselves. Many died *after* the usual period (14-28 days) covered by most other research. Among survivors, many reported lingering or new health issues from covid-19, and/or devastating financial impact. A great limitation to this study is that fewer than half of people completed the post-discharge survey. Another problem is that these data were not compared to survivors of other serious infections; so these findings may say as much about the long-term effects of serious viral illnesses as they do about the coronavirus itself. Regardless, these data confirm and provide preliminary evidence for the extensive toll covid-19 takes on patients and their families well beyond hospitalization—even among survivors.

—Joshua Niforatos, MD

POLICY BRIEFING

Pfizer vaccine implementation limitations. Was last week's major announcement actually 'news we can use'? Not if it can't reach you.

Pfizer and Biontech made headlines last week with their [announcement](#) of a vaccine candidate that they say has demonstrated 90 percent efficacy in preventing covid-19 symptoms in participants who had no evidence of previous infection--though we do not yet know whether this means infections and spread of disease was prevented, as a *Brief19* [analysis](#) showed.

Nevertheless, while the possibility of an effective vaccine remains exciting, it is important to look at the [limitations](#) for this particular vaccine, in particular those relating to its storage requirements. The first is the temperature; this vaccine must be kept at no greater than negative 70 degrees Celsius (-94 degrees Fahrenheit), and specialized freezers are required to maintain this level of cold. The necessary equipment is uncommon or lacking in many locations outside of urban and specialized medical centers both in the US and abroad. When stored at this temperature, the vaccine can last up to six months, but the genetic material (mRNA) that forms the core of the vaccine starts deteriorating (denaturing) after just five days of normal refrigeration. Proper storage also requires a specific type of thermal-resistant glass to avoid shattering, which could lead to shortages during the initial ramp up period.

Aside from the requirements of on-sight storage, transportation logistics also remain a major hurdle. Pfizer has created special storage containers that use dry ice to maintain the proper temperature, buying anywhere from ten to twenty five days of storage, but frequency of opening and replenishment will alter the effective shelf life. Additionally, boxes of the vaccine carry between one thousand and five thousand doses, a number that likely exceeds a physician's or pharmacy's ability to distribute all of the lots before the five day viability expires. This is why some states are considering centralized vaccination centers. Unfortunately, some states lack the resources to fund such an endeavor; this, combined with many of the most vulnerable patients unable to travel long distances to reach such centers, leaves some of the anticipated problems around vaccine rollout unsolved. *Various*.

—Joshua Lesko, MD

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Brief19 is a daily executive summary of covid-19-related medical research, news, and public policy. It was founded and created by frontline emergency medicine physicians with expertise in medical research critique, health and public policy.