

BRIEF19

A daily review of covid-19 research and policy.

RESEARCH BRIEFING

Risk of contracting covid-19 in hospitals with dedicated covid-19 units appears low.

Is it safe to go the hospital in the covid-19 era for non-covid-19 problems? An important [paper](#) published in *JAMA Network Open* from researchers at Brigham and Women's Hospital (Boston, MA) assessed the risk of acquiring covid-19 after being admitted to the hospital. Stated another way, the primary outcome of the study was whether patients without covid-19 when admitted to the hospital and later contracted covid-19 were exposed while in the community or whether they became infected while in the hospital for other reasons.

Notably, the hospital implemented a comprehensive infection control program that included dedicated, isolated covid-19 units, PPE for healthcare providers, donning and doffing monitoring, universal masking, and visitor restrictions. The infection control program evolved over the course of the study. Given this background, researchers looked at data for patients without covid-19 admitted to their hospital between March 7 to May 30, 2020. Patients and their outcomes were followed through June 17, 2020.

Over the study period, 9,149 patients were admitted to the hospital of which 81 percent were tested for covid-19. Of the 697 who tested positive (9.4 percent), 12 patients (1.7 percent) tested positive on hospital day 3 or later. Of those 12 patients, in only 1 case was the infection deemed to be acquired during the hospitalization. In that particular case, a pre-symptomatic spouse who was visiting the hospitalized patient daily (before visitor restrictions and masking were implemented) and who was later diagnosed with covid-19 appears to have been the source.

As for the 8,730 non-covid-19 patients admitted to the hospital, just 11 (0.1 percent) patients tested positive within 14 days of hospital admission. Only 1 case was deemed to have been "hospital acquired," though the infection control program was unable to determine the exposure in that case.

While this study represents only one U.S. institution, the results are nonetheless encouraging. When hospitals implement comprehensive infection control programs with liberal and robust SARS-CoV-2 testing, the risk to patients of acquiring covid-19 while in the hospital on non-covid-19 units is likely close to negligible, and possibly no different than the risk of getting the infection if they had not been hospitalized at all and had simply been going about their normal lives in the community, where the virus also lurks. [10 September 2020](#).
—Joshua Niforatos, MD

What happens when young adults get covid-19?

One of the fastest growing segments of the covid-19 pandemic in the United States is the young adult population. Early data showed mortality to be high in the older adult population and was thought to be much less in young adults.

A letter released this week in *JAMA Internal Medicine* from Boston researchers followed the clinical trajectory of 3,222 young adults (age 18-34) in an attempt to better understand this growing demographic. Using the Premier Healthcare Database which includes 1,030 US Hospitals and 8 million annual inpatient admissions, non-pregnant young adults who were hospitalized for covid-19 from April 1 through June 30 were selected for study. Only the first hospitalization was included. Diagnosis and billing codes were used to obtain much of the information (which does limit some of the results).

Of the 780,969 total adults discharged from hospitals over the three month time period, 8.1 percent were given an ICD-10 code for covid-19. Among from that 63,103, 5 percent were non-pregnant young adults who were admitted to 419 US hospitals. The mean age of the hospitalized patients was 28 years, with a predominance of males (58 percent). Black and Hispanics accounted for 57 percent of the young adults requiring hospitalization.

The most common comorbidities found were obesity (37 percent), morbid obesity (24.5 percent) and diabetes (18 percent). The hospital course (i.e. how the patients fared after being hospitalized but before being sent home) was also analyzed; 21 percent of the group required admission to an intensive care unit at some point during their hospital stay and 10 percent needed mechanical ventilation.

Mortality was low with only 88 deaths (2.7 percent) occurring. The median hospital length of stay was 4 days and only 3 percent were discharged to post-acute care facilities. This means that most were well enough to go home.

A deeper look at the data found that males with morbid obesity and hypertension were associated with a greater risk of death or the requirement for mechanical ventilation. Morbid obesity was present in 41 percent of those who died.

Despite the low mortality rate, young adults still required significant health care resources, with more than 20 percent of the admissions needing intensive care and around half of those requiring ventilators. Moving forward, one focus should be identifying young adults with recognized comorbidities who are at risk for serious complications. [9 September 2020](#). —*Christopher Sampson, MD, FACEP*

Poor outcomes associated with obesity and hypertension, even in young adults.

A new [study](#) in *JAMA Internal Medicine* has shown that even for young adults, obesity and high blood pressure are serious risk factors when it comes to mortality and the need for mechanical ventilation. In order to answer this question, researchers used the Premier Healthcare Database (PHD) to look at outcomes of adults aged 18 to 34 admitted to the hospital with covid-19. The PHD is a frequently used database amongst health services researchers and it includes patient data from 1,030 U.S. hospitals across the United States.

Between April 1 and June 30, 2020, approximately 781,000 patients were discharged from hospitals within the PHD, of which 8.1 percent carried a diagnosis of covid-19 at discharge. Only five percent of this group were between the ages of 18 and 34. They were primarily men (57.6 percent) and Black or Hispanic (57 percent) with 61.3 percent having either obesity or morbid obesity, 18.2 percent with diabetes, and 16.1 percent with hypertension. 31 percent of these young adults required either ICU level care and/or mechanical ventilation during their hospital stay, and 2.7 percent died while in the hospital. Morbid obesity, hypertension and male sex were all identified as risk factors associated with death and the need for mechanical ventilation in this population. At least in this database, there were no disparities associated with race/ethnicity and risk of dying or requiring ventilation.

As with all large retrospective studies, numerous limitations are worth noting. The major limitation of this study is the lack of granularity of data at the patient level, which makes it difficult to assess how these patients presented to ERs and hospitals, as well as nuances of their hospital course. Furthermore, patients with covid-19 were identified with ICD-10 billing codes as opposed to direct evidence of nasopharyngeal PCR or radiographic evidence of covid-19. Finally, in these kinds of large datasets, race/ethnicity information is not always reliably identified for patients on a systematic level.

While other limitations certainly exist, this paper is important as it reveals that relatively younger age is not necessarily a protective factor for those sick enough to be admitted to the hospital infected with the SARS-CoV-2 virus. In other words, risk factors previously identified as being associated with devastating outcomes for older adult patients admitted to the hospital with covid-19—obesity, hypertension, diabetes, just to name a few—also confer an increased risk of devastating outcomes in young adults. [11 September 2020](#). —*Joshua Niforatos, MD, Research Section Editor*

Kane Elfman PhD, Publishing and design.

Anna Fang, Week in Review.

Jeremy Samuel Faust MD MS, Editor-in-Chief.

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Twitter: [@brief_19](#)

submissions@brief19.com

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 policy, and public policy.