

# A Rising Tide: No Hospital Is an Island Unto Itself in the Era of COVID-19

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The early phase of the COVID-19 pandemic was an extraordinarily uncertain, yet innovative, time.<sup>1</sup> Few data describe site-level effects of the many adaptations made to deal with surging case numbers, but studies of larger hospital referral regions (HRR) provide important clues.

In this issue of the *Journal of Hospital Medicine*, Janke et al<sup>2</sup> describe how availability of hospital resources in a region relate to COVID-19 mortality between March and June 2020. The authors' findings suggest that, at least for early periods of the pandemic, having more intensive care unit (ICU), hospital bed, or nursing capacity per COVID-19 case was associated with lower mortality, while physician availability was not. Moreover, months later there were no associations between service or physician availability and HRR COVID-19 mortality. The authors observed variations in mortality rates in places commonly thought to have been overwhelmed early in the pandemic (April 2020), as well as in cities (Boston, Philadelphia, Hartford, Detroit, and Camden, New Jersey) that had a less prominent place in the news at that time.

Larger hospitals tend to have the resources necessary to make wholesale changes when preparing for a pandemic wave. Thus, Janke et al's results may not have fully captured the pandemic's potential impact in settings with fewer resources or in smaller hospitals, which are currently being overwhelmed.<sup>3</sup>

The number of cases and hospitalizations in this third wave of COVID-19 continues to rise, and the strain on healthcare resources has been felt across entire regions, making the results of this study even more salient. Hospital outcomes for COVID-19 are sensitive to limitations in physical locations (number of beds, ICU capacity) and nursing capacity. Nurses more often are assigned specifically to a bed or unit, and the number of patients per nurse is limited by state or local statute. Innovations such as COVID-19 field hospitals or redeploying existing beds (eg, converting postanesthesia care units to ICUs) offset

physically constrained resources.<sup>4</sup> On the other hand, lower acuity in this phase of the pandemic (eg, fewer ICU admissions) and shorter lengths of stay may produce higher turnover, producing more workforce stress, regardless of bed availability.

Early work of our COVID-19 collaborative<sup>5</sup> suggests that the focus on localizing patients to geographic units or teams has given way to strategies that utilize more flexible team and bed-finding approaches. Clinical care has evolved to focus on more aggressive discharge strategies, with remote monitoring and hospital-at-home capabilities. Overall, the pandemic is providing fodder for future studies examining interaction between case volumes, physician and nurse availability, and evolution in clinical care practices. Most critically, it provides an opportunity to study health system flexibility and robustness with a lens that incorporates a view of the hospital and its surroundings as tightly related parts of care delivery. Because if there is one thing the pandemic is teaching us, it is that, more than ever, no hospital can be an island unto itself, and each hospital is part of a larger ecosystem where rising tides are felt throughout.

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