As the world grapples with accelerating cases of coronavirus disease 2019 (COVID-19), experts have called for a surge in hospital capacity to provide acute care for individuals with pneumonia and other serious complications.1 Despite efforts at mitigation, including social distancing and rapid testing and isolation of cases, hospitals in many places, including New York City, are overwhelmed with patients. Current estimates project that the US will have at least 60,000 deaths and 10 times that number requiring hospitalization.

Hospitals are facing significant supply challenges of beds, staff, and equipment, including personal protective equipment. Overcrowding may be associated with higher rates of complications due to delays in care and overworked teams, increased danger of developing COVID-19 for health care workers and other patients, and emotional distress for families.

Current policy solutions aim to eliminate barriers for hospitals to hire additional staff or to repurpose or expand bed capacity. One idea that has not been widely explored is hospital-at-home programs. The concept of a hospital stay in the home has been tested and proven to be effective in a wide variety of settings and clinical conditions.2 We propose expanding access to hospital-at-home programs as part of the COVID-19 response.

Hospital-at-Home Model

As an example of how hospital-at-home care could work, a patient with congestive heart failure presenting to an emergency department would receive an initial evaluation including imaging and blood tests. If the patient required hospitalization, the emergency department staff would consult with a hospitalist, who would determine whether the patient is appropriate for hospital-at-home care and coordinate their transfer home, including any necessary tests, drugs, or equipment. The patient would thereafter receive 24/7 nursing care through a combination of virtual and in-person visits and be seen each day by a doctor until they could be shifted back to self-care or care from a family member.

Hospital-at-home care would primarily be directed at individuals requiring hospitalization for reasons other than COVID-19. However, with additional evidence generation, hospital-at-home could be an option for individuals with COVID-19, particularly those who are deemed to be lower risk or those who have been monitored for a period of time in a traditional setting. For COVID-19 patients in particular, critical clinical staff, such as respiratory therapists, can be made available within a certain mileage along with enhanced respiratory remote monitoring to follow timely changes in pulse oximetry and other vital signs. As far as reimbursement for hospital-at-home programs, insurance companies would make a usual payment to the hospital but with an adjustment for the transfer fee, and the hospital would either directly provide home-based services or subcontract with a service that would adhere to quality standards.

Evidence Base

A 2016 Cochrane review2 evaluating the effectiveness and cost of hospital care at home found no difference in 6-month mortality (moderate-certainty evidence), no difference in being transferred or
readmitted to a hospital (moderate-certainty evidence), higher satisfaction with health care (low-certainty evidence), and lower costs (low-certainty evidence). Reasons for hospitalization were varied and included chronic obstructive pulmonary disease, stroke, cellulitis, fever and neutropenia, frail elderly with dementia, and neuromuscular disease. In another randomized controlled trial, patients hospitalized at home were less sedentary and also had lower rates of readmission.

Although none of the studies to date were of COVID-19, 1 study was of high-risk patients with respiratory tract infection, in which interventions included use of a portable ventilator, a respiratory therapist who made daily visits for the first 3 days of home care, district nurses and caregivers trained in respiratory care, and telephone access to respiratory specialists.

Benefits

The benefits of the hospital-at-home model for the COVID-19 pandemic may be substantial. First, compared with admitting more patients into already crowded hospitals or transferring them to makeshift hospitals in hotels or conference centers, hospital-at-home care is a more patient-centered solution that might also be more or less feasible given shifts in workforce availability. Second, during a pandemic, hospitals may carry the greatest risk of transmission, and patients and their caregivers who are not infected may, depending on severity and risk profile, be safer in their homes. Third, through advanced technology, such as remote monitoring, doctors can manage appropriate patients more efficiently, which is critical given surging demand, and with less personal protective equipment, of which there is currently a shortage.

Policy Considerations

Critical shortages of hospital beds remain a major concern. The Centers for Medicare and Medicaid Services recently announced a series of regulatory changes, including temporarily permitting nonhospital buildings and spaces to be used for patient care and quarantine, allowing physician-owned hospitals to temporarily increase the number of their licensed beds, and enabling hospitals to bill for services provided outside their walls.

To further expand access to hospital-level care, we recommend that health care providers be allowed to develop and evaluate hospital-at-home programs. We call upon the federal government to mobilize the following actions in short order:

1. The Centers for Medicare and Medicaid Services should immediately waive requirements for hospital stays to last at least 2 nights (the 2-midnight rule) and other regulatory barriers for beneficiaries to receive care inside the home.
2. Accelerate health services research to establish and identify real-world demonstration studies and comparative effectiveness of hospital-at-home programs, particularly for the management of COVID-19.
3. Issue guidance to health information vendors certified through the Department of Health and Human Services Office of the National Coordinator for Health Information Technology to enable streamlined electronic medical record systems for patients hospitalized at home.
4. Disseminate training materials to support hospitals in implementing hospital-at-home programs, including utilizing massive open online courses.
5. Consider hospital-at-home as a recommended strategy in hot-spot areas, such as New York City, with particular concern for the elderly and those most vulnerable to hospital-acquired infections, including coronavirus.
6. Identify a pathway to reimbursement that would acknowledge the cost of transfer home but also account for cost savings associated with home-based hospitalizations.

Hospital-at-home care is a proven clinical intervention that should be proactively monitored and assessed for effectiveness as it is implemented in hot-spot communities. But given the limited set of options for hospitals urgently seeking to increase capacity in response to COVID-19, it is a viable and patient-centered alternative that should be strongly considered.
ARTICLE INFORMATION

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