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PATIENT MOBILITY

LIVENGOOD®

ARE HOSPITALS READY FOR THE CORONAVIRUS?:

PART I: PREPARING FOR HOSPITAL OVERFLOW

On January 30, 2020, the World Health Organization declared the outbreak of the coronavirus ("COVID-19") a "public health emergency of international concern;"[1] a few weeks later, the Center for Disease Control & Prevention announced that "at some point, widespread transmission of COVID-19 in the United States *will* occur," warning that "public health and healthcare systems may become overloaded, with elevated rates of hospitalizations and deaths," and that emergency medical services, healthcare providers, and hospitals "may be overwhelmed."[1] Three weeks after the introduction of the coronavirus, hospitals in Italy are operating at 200% patient capacity, and Giulio Gallera, the top health official in Lombardy describes the search for more acute care beds as a "race against time."[2] In the US, the medical director Dr. John Hick echoes this warning, saying that: "People don't understand how close the health system runs to capacity every day. We just don't have the trained staff to staff much beyond what we have now. Patients are waiting in the emergency department in many cities on a routine basis. Then you talk about adding a pandemic onto that? There are going to be compromises." So, what creative options are available for maximizing existing hospital space?

The mobi is an equipment consolidator that can be set up in any space that has an electrical outlet: next to a chair, a bed, a cot in the hallway, a cafeteria, or anywhere patients need to be located, allowing for monitors, ventilators, pumps, and IV poles to be continually with the patient.

KEY FACTS:

- 10% of the patients who test positive for coronavirus must be admitted to intensive-care units.[3]
- According to the American Hospital Association, since 1975, the improvements in medical practice, pharmaceuticals, and outpatient options (as well as pressure from insurance companies) have steadily reduced the number of both hospitals (12%) and hospital beds (16%). This system of consolidation and emphasis on outpatient treatment has limited the hospital system's ability to accommodate for surges in demand. Many developed countries have 5.4 hospital beds available for every 1,000 patients. In the US, the number is 2.8.[7]
- Only a small minority of US states have a formal protocol in place for dealing with a large-scale medical emergency. The existing plans are designed to maximize existing space by putting patients in doubled-up rooms, conference rooms, and any other unused spaces. [4]

- According to the Centers for Medicare and Medicaid Services, coronavirus patients who do not require intubation can be safely isolated in a typical room, rather than a "negative pressure room." Jane Englebright, CEO of HCA Healthcare Inc. has asked hospital staff to look for any space that might be modified for patient use, including storage closets and previously closed buildings. Cleveland Clinic has responded by planning to shift more than 1,000 non-coronavirus patients to nearby hotel rooms. Crews at Providence hospitals are building new isolation rooms with portable equipment: "It looks like MacGyver has been working in our hospitals…We have fans and filters and holes that have been filled up through any means necessary. Duct tape solves a lot of problems."[7]
- In Oregon, hospitals "are scouring inside and outside their walls for space to put patients, tightly managing dwindling stocks of medical supplies and hunting for critical equipment," but consistently run up against the problem of space. Even the largest hospitals "have a finite number of rooms." [7]
- Based on a series of CDC scenarios between 2.4 and 21 million people in the US could require hospitalization due to the coronavirus, overwhelming the national medical system, which has fewer than 1 million staffed hospital beds (including beds designated for neonatal care and burn units), of which less than 100,000 are designed for critically ill patients.[5]
- If the U.S. experiences an outbreak equivalent to the one in Wuhan, China, the need for ICU beds may exceed availability by 300%. [7]
- Even severe flu seasons have been known to stretch hospital resources, to the point where tents must be set up in parking lots and patients are held in emergency rooms for days. Dr. James Lawler estimates that coronavirus is likely to cause 5-10 times the burden of influenza, urging hospitals to "get prepared to take care of a heck of a lot of people." Dr. Lawler estimates that 96 million people could be infected; assuming a 5% hospitalization rate, at least 2 million people would require intensive care and 1 million would require ventilators. [5]
- In the epicenter of Italy's coronavirus epidemic, 80% of the region's 1,123 acute care beds occupied by patients with coronavirus, and 223 new beds have been established to cope with the influx of new patients.[3]
- Many non-coronavirus patients have been evacuated out of the region's epicenter, and some impacted hospitals are suspending ordinary treatments to focus healthcare staff on coronavirus patients, forcing non-coronavirus patients to seek help elsewhere. The effect is that even hospitals that have not yet been directly impacted by the coronavirus are experiencing a surge in patient admissions. [3]
- A doctor in Milan has warned that, without sufficient beds and ventilators, some patients cannot be treated at all. [3]
- Although dozens of research groups around the globe are struggling to produce an effective vaccine for the coronavirus, with human trials starting as early as April, the

process for evaluating and refining a safe, effective vaccine requires rounds of testing. According to the professor of emerging infectious diseases at the London School of Hygiene and Tropical Medicine, the best-case scenario is that a vaccine will be available in 18 months. Even then, reproducing the vaccine in global quantities is risky and time-consuming, and politics and economics will limit the speed and breadth of distribution. Virologists estimate that the pandemic will have peaked and declined before widespread vaccination becomes an option.[6]

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