CORRESPONDENCE

COVID-19 NOTES

To rapidly communicate short reports of innovative responses to Covid-19 around the world, along with a range of current thinking on policy and strategy relevant to the pandemic, the Journal *has initiated the Covid-19 Notes series.*

Staying Ahead of the Wave

In the Covid-19 pandemic, the most hard-hit area in the world is the New York City metro area, which includes Long Island (with roughly 1.5 million inhabitants of Suffolk County alone), where we are located. Although the Centers for Disease Control and Prevention definition of persons under investigation for Covid-19 has evolved, it generally includes the presence of fever and signs and symptoms of respiratory illness. The first patient with suspected Covid-19 was seen in our emergency department (ED) on February 7, 2020. Since then, we have seen more than 3500 such patients.

In order to meet this growing demand, our hospital opened an incident command center. We created a 16-bed "forward triage" and treatment unit for ED patients in our ambulatory care center off site in order to establish a split-flow process to expedite the care of persons under investigation with less acute illness. This space was later needed to further increase the number of hospital beds, and we moved into a field ED tent where we saw more than 100 patients per shift while in full personal protective equipment (PPE), thereby allowing our main ED to function and respond to the needs of critically ill patients. Use of the field tent has required a structured and efficient approach, including front-door ED screening to direct patients to the tent, nurse-led triage, and evaluation of each patient by both a midlevel practitioner and an attending physician.

The most common symptoms we see include cough, fever, shortness of breath, myalgia, fatigue, and diarrhea. Contact with sick people (including those with Covid-19) has been reported by nearly half of patients. Of more than 2000 chest x-rays, half have shown opacities, in most cases in both lungs. Many patients are not tachypneic or hypoxic and are discharged; less than 5% have returned within several days after discharge.

To increase much-needed staff, physicians and nurses — including retired clinicians — have been rapidly retrained and reassigned according to need. Surgeons, dermatologists, and psychiatrists (as well as many other specialists) are caring for patients normally cared for by medical hospitalists and intensivists. Personnel from other hospitals are being added as needed (www.localsyr.com/health/coronavirus/suny-upstate-sends-nursing-staff-to-assist-stony-brook-hospital/). We have also used social networks to learn from other providers in our area and throughout the world while sharing our own experience.

In order to be informed by our own data, we established a hospital-wide registry of persons under investigation for Covid-19. We learned that most (70%) of these patients who are seen in the ED can be sent home. Of the 30% of patients who are admitted, approximately 10% require immediate intensive care or mechanical ventilation, and another 15% require these scarce resources within approximately 2 days after admission. This information has helped us predict how many patients will require intensive care and ventilation at any given time, thus providing a window for us to prepare and proactively intervene. To minimize direct contact with patients and to conserve PPE, we rapidly deployed a telehealth solution that involves giving patients iPads to communicate with health care staff and consultants. Our engineers and chemists have been producing face shields, masks, a prototype ventilator, and hand sanitizer (https://news.stonybrook.edu/sb_medicine/stony-brook-ingenuity-takes-on-coronavirus/). We have found a safe and effective way to sterilize used N95 respirators to further conserve PPE (www.battelle.org/newsroom/news-details/battelle-cleared-to-sterilize-n95-masks-at-max-capacity-operate-in-other-states-to-fight-coronavirus-ppe

-shortage). Our engineering and information-technology staff have greatly expanded our numbers of beds and negative-pressure rooms, intensive care unit capacity, and telehealth capabilities, which has been critical in handling the surge.

For clinicians in areas that have not yet been hard hit, the pandemic wave will surely come. Persons under investigation for Covid-19 should be treated as if they are infected. These patients often have a progression of disease severity, with approximately 15% of admitted patients requiring upgrades in care. We hope that lessons from our center will help prepare other physicians and hospitals for what is likely to come so they can stay ahead of the wave.

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