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MEETING SUMMARY

Confronting COVID-19: Finding Hospital Capacity and Improving Patient Flow

A Webinar Series Hosted by PCORI for Hospitals and Health Systems

Part 5 – Discharging Patients Recovering from COVID-19

April 28, 2020

Overview

Faced with an actual or potential surge of COVID-19 patients, hospitals across the country are encountering enormous challenges with capacity and patient flow. Learning from clinicians, health system leaders, and operations management experts about how to manage capacity in real time can help health systems adapt to evolving circumstances surrounding the current pandemic.

On April 28, 2020, PCORI (the Patient-Centered Outcomes Research Institute) hosted "Part 5 – Discharging Patients Recovering from COVID-19" of its webinar series. Hospitals that have treated patients with COVID-19 encounter multiple challenges in discharging them, from discerning when discharge is clinically appropriate to determining where these discharged patients can or should go. At the same time, post-acute facilities and home healthcare agencies face their own challenges in accepting recovering patients and caring for them appropriately, such as the ongoing need to protect staff from infection. During this webinar, health system leaders in New York addressed these issues, including the lessons learned and promising practices that are emerging from the pandemic.

The expert panel included the following individuals:

Speakers

- **Katherine Hochman, MD,** Associate Professor of Medicine, Associate Chair for Quality of Care, and Assistant Chief of Medicine, NYU Langone Health
- **Susan Northover,** Senior Vice President, Patient Care Services, Visiting Nurse Service of New York
- **David Rosales,** Executive Vice President and Chief Strategy Officer, Visiting Nurse Service of New York
- **Marie Rosenthal,** Senior Administrator, Terence Cardinal Cooke Health Care Center, ArchCare

Moderator

Susan Dentzer, Senior Policy Fellow, Duke-Margolis Center for Health Policy

Discussants

- **Eugene Litvak,** President and Chief Executive Officer, Institute for Healthcare Optimization (a nonprofit organization that catalyzes and spreads improvements in operations management and patient flow across the healthcare delivery system); Adjunct Professor, Operations Management, Department of Health Policy and Management, Harvard T. H. Chan School of Public Health

- **Pat Rutherford, RN, MS**, Vice President, Institute for Healthcare Improvement (a nonprofit organization that seeks to improve health care worldwide).

Webinar recordings are available at www.pcori.org/confronting-COVID-19.

Discharging Patients Recovering from COVID-19

As with every aspect of the COVID-19 pandemic, challenges have been considerable in discharging recovering patients from hospitals and moving them through the care continuum. Clinical knowledge has been changing across almost every dimension, including about when patients who have fought COVID-19 are well enough to leave the hospital. Lack of adequate supplies of personal protective equipment (PPE) and staff illness and absence from work have at times led to bottlenecks as organizations have lacked the resources to care for patients. Organizations have nonetheless evolved promising practices as they work toward a new normal. Four healthcare leaders who lived these issues since February 2020 described their experiences in what remains the epicenter of the pandemic in the United States—New York City.

From Surge to Discharge Planning

COVID-19 cases peaked in New York in March and early to mid-April. By late April, hospitals were seeing fewer COVID-positive admissions, and the numbers of emergency department arrivals, hospital admissions, and discharges per day were declining, albeit at a slower rate than the ramp-up phase of the pandemic. Nonetheless, healthcare leaders continued to manage impacts of the pandemic across the entire healthcare delivery system, from hospitals to nursing homes and other post-acute care services and home health care.

Major bottlenecks and logjams in moving patients out of hospitals into downstream care had occurred earlier in part because of decisions by state and national officials to prioritize delivery of scarce PPE to hospitals. This response had consequences for downstream healthcare and social services providers, such as home health agencies, whose access to PPE was limited. A shortage of testing kits for COVID-19 also created broad lack of awareness about which patients had been infected with the SARS-CoV-2 virus and contributed to lack of patient flow among facilities.

As of April, these challenges began to resolve, and patients were moving somewhat more smoothly from hospitals to post-acute facilities and home care. Clinical indications for hospital discharge were evolving as well. At the same time, clinicians were also becoming more aware of problems that continue to pose a threat to recovering patients postdischarge, such as the likelihood that they will experience heart arrhythmias and strokes, and thus would need careful monitoring and care after the worst of their symptoms had resolved.

Hospitals

NYU Langone is an academic medical center affiliated with New York University that includes six hospitals and more than 30 ambulatory facilities in Manhattan, Brooklyn, Queens, and Long Island. As of late April, it had discharged its 1,000th patient who was COVID-positive. In March and early April alone, the hospital system cared for more than 4,000 patients with COVID-19, of whom 49% were hospitalized. A study published as a non-peer-reviewed preprint in April, carried out by NYU Langone researchers, reported outcomes for 80% of these patients (those hospitalized between March 1, 2020 and April 2, 2020, with follow-up through April 7, 2020). Of these, 59% were discharged without complication, and 41% experienced critical illness, with 19% of patients who were admitted dying or discharged to hospice. Among patients with critical illness, 69% required ventilators.

A substantial proportion of patients who required ventilator support needed it for three to four weeks or longer; as a result, as the peak of COVID-19 cases passed, the hospitals still had more patients in intensive care units (ICUs) than on floor units. It was quite likely that many of these patients would not recover sufficiently to go home and would be discharged to long-term care hospitals, where they could remain for an unknown period.

As other patients recovered, NYU Langone was developing protocols to assess how, when, and to where these patients could be safely discharged. The system had created a discharge readiness scale embedded in its electronic health record, with factors such as patients' need for supplemental oxygen for several days. Although initially the system required patients to breathe safely on room air alone for 24 hours before being discharged, the protocol changed over time, and by late April, NYU Langone was aiming for patients to be stable on oxygen support equal to two liters or less of oxygen per minute for two to three days before being discharged. The system was also working with its partners to ensure that patients could receive that level of oxygen therapy as nursing home residents or at home.

NYU Langone clinicians also recognized that many discharged patients have a high risk for thrombosis or clotting, which can lead to strokes, meaning that patients may be more likely to be discharged on anticoagulant therapies such as subcutaneous heparin.

Post-Acute and Long-Term Care

Terence Cardinal Cooke Health Care Center is a skilled nursing facility in Manhattan with additional specialty care units for children and for HIV care. The center is a division of ArchCare, the Continuing Care Community of the Roman Catholic Archdiocese of New York, which cares for people of all ages at home, in the community, and in skilled nursing homes and assisted living. The center has 615 beds, including 57 dedicated for pediatric specialty care and 150 beds for HIV care. More than 200 patients and residents tested positive for COVID-19, starting in mid-March. Initial cases appeared to stem from a combination of at

least one discharged hospital patient who had COVID-19 as well as community spread that may have infected center staff.

The center's administration initially thought that any patients and residents suffering from COVID-19 would be transferred to hospitals for treatment but soon learned that those with mild to moderate symptoms would have to be cared for within the center itself. The center's administration also realized that it would have to receive and accommodate recovering patients who were discharged from hospitals to help decant patients from those overcrowded institutions. The organization began taking discharged COVID-19 patients from hospitals on April 1 and discovered that many of these patients were medically fragile and could decompensate rapidly. The average length of stay for these patients was 25 days. As of late April, the center had received 62 such patients, a large subset of the roughly 100 recovering COVID-19 patients in the facility at any time.

Home Health Agencies

Visiting Nurse Service of New York (VNSNY) is one of the largest not-for-profit home- and community-based healthcare organizations in the United States, serving patients in New York City; Nassau, Suffolk, and Westchester Counties; and parts of upstate New York. Along with licensed practical and registered nurses, its workforce includes physical, occupational, and speech language therapists; social workers; home health aides and home attendants; physicians; registered dietitians; and psychologists.

At the beginning of the crisis, VNSNY quickly recognized that it would play a critical role in helping decant New York hospitals by assisting those patients who could be discharged to home or home hospice. However, in March, it faced significant challenges in executing this role. These challenges, shared by other home health agencies in New York City, included severe initial shortages of PPE for staff; widespread staff illness that affected as much of 30% of the agency's personnel; and the difficulties of providing care for frail, elderly adults whose family or hired caregivers might have contracted the virus. The PPE shortage was especially problematic; VNSNY officials described having to become almost overnight their own supply-chain procurement and distribution system.

After more PPE became available, VNSNY staff could begin caring for patients who had tested positive for or had been treated for COVID-19. At one point, the organization mailed surgical masks directly to more than 6,000 of its home health aides. The system also developed training and protocols to help staff don and doff PPE safely in the field—for example, just outside, or even inside, patients' apartments and homes. As of late April, VNSNY was caring for 1,500 COVID-positive patients in the New York City metropolitan area.

Challenges to Discharge

Health systems, post-acute care facilities, nursing homes, and home health agencies identified multiple challenges to discharging patients from the hospital after their condition stabilized and caring for them in other locations. Bottlenecks and logjams, driven by a variety of factors, impeded the flow of patients from the hospital to post-acute facilities and to home. Although these bottlenecks eased over time, at earlier phases of the crisis they had been pronounced, as follows:

- **City shelters.** Homeless shelters in New York City initially refused to take, or to allow the return of, patients who had tested positive for COVID-19. Hospitals were unable to return shelter residents with even mild symptoms to shelters or to discharge shelter patients posttreatment. Eventually, New York City arranged to allow recovering homeless people, or those with mild symptoms who needed to self-isolate, to be housed in hotel rooms retained by the city government. However, this program was available only to individuals who already were known to the shelter system, leaving some undetermined number of homeless individuals with no place to go.
- **Post-acute facilities**. Subacute care facilities and New York's managed long-term care plans, which provide home care or adult day care, varied in their policies for taking patients who had been treated for COVID-19. Some required two negative polymerase chain reaction (PCR) nasal swab tests before accepting a patient, which created delays while testing was performed and results were obtained. Eventually, some, but not all, institutions recognized the bottleneck that the testing demand created and moved to a requirement that patients had to be symptom-free (chiefly without fever) for several days, meaning that the symptoms had largely resolved. In addition, many subacute facilities and long-term acute care hospitals (LTACHs) were not equipped to handle the overwhelming number of patients requiring ventilators or feeding tubes to allow nutrition, fluids, and medications to be placed directly into the stomach through percutaneous endoscopic gastrostomy, or PEG).
- **Hospices.** In the early weeks of the crisis, hospice agencies did not necessarily have PPE available, and their staff lacked safety training to properly wear and remove PPE or otherwise care for patients with COVID-19. These factors created a barrier to admitting patients to both inpatient hospice and home hospice services.
- **Support for return home.** Many family members and home health aides essential to supporting the care of frail patients at home also contracted the virus, leaving them unable to resume care for a patient who could otherwise be discharged.
- **Supplies.** Suppliers of home durable medical equipment initially were reluctant because of safety concerns to deliver equipment to the homes of patients who were COVID-positive. This factor impeded both care of patients at home as well as the return home of discharged hospital patients who needed supplemental oxygen.
- **Staffing.** Healthcare professionals had been diagnosed with or exposed to COVID-19 at

high rates, leaving staffing shortages of 30% or more at some facilities early in the pandemic and further limiting organizations' ability to assume care for patients discharged from hospitals.

- **Reimbursement.** VNSNY employed telehealth and other virtual care modalities to provide care for some patients at home, on the grounds that doing so could reduce exposures for patients, families, and staff. However, many of these services were not reimbursed by payers, creating financial challenges for the organization.
- **Funeral homes.** Local funeral homes have been overwhelmed by demand, creating delays and obstacles in moving the bodies of deceased patients out of homes. VNSNY had to partner with local emergency management authorities to address this challenge, as its aides stayed to assist families for a time after a patient died.

Solutions for Improving Discharge Capacity and Patient Flow

Early in the pandemic, policies for isolating patients within institutions sometimes did not reflect how easily the virus was transmitted. As caseloads mounted, all three organizations quickly changed how they delivered care to address peak needs and to keep patients moving through the system as they became sicker or as they recovered. A key intervention was cohorting patients according to whether they were suspected of infection with SARS-CoV-2 or determined through testing to be infected as well as according to their COVID-19 disease acuity or degree of recovery.

NYU Langone, as a large academic medical center, had the ability to cohort patients in multiple buildings. Patients determined to have COVID-19 upon admission were placed into one of the organization's six hospitals, where additional private, negative-pressure rooms and surge ICU capacity had been created. As patients stabilized, they were moved to an adjacent hospital that functioned as a broad medical/surgical unit. Once patients were recovered or nearly recovered, those who could not be discharged directly were moved to still another hospital, NYU's orthopedic hospital, which was temporarily repurposed to house patients approaching or ready for discharge care because all elective as well as other orthopedic surgeries had been canceled. Patients awaiting discharge were overseen by geriatricians and supported by social workers who helped coordinate safe discharge plans.

Terence Cardinal Cooke created dedicated units to care for patients who were COVID-positive, including 51 post-acute beds and two long-term care units. Consolidating care helped the center deploy staff and PPE efficiently.

Lessons Learned

Healthcare systems and services in New York have adapted in real time to the unexpected demands and requirements for discharging patients who are recovering from COVID-19. Looking ahead to possible future waves of widespread infection, healthcare provider networks in New York are planning ways to build on what they learned in March and April.

In addition to the importance of cohorting patients, and ensuring that downstream healthcare providers as well as hospitals had ample supplies of PPE, other lessons learned included the following:

Coordinate actions across sectors. In the best of circumstances, hospitals, skilled nursing facilities, and home health and other organizations have shared expertise on PPE, clinical knowledge, and resources for discharge planning. Having ongoing communications channels that connected all these sectors enabled organizations to work together to address systemic challenges.

Advocate for consistent policies for post-acute care admission. Variation in requirements across facilities slows down patient discharge from hospitals. Helping post-acute and long-term care facilities train on proper use of PPE could help reduce concerns about admitting patients who have been hospitalized for COVID-19.

Plan to care for skilled nursing facility residents on-site. As noted earlier, leadership at Terence Cardinal Cooke initially hoped they would be able to send any residents who were COVID-positive to hospitals for care. Given the burden on New York area hospitals, center leaders now recognize they should have planned to isolate and care for infected residents and patients in place.

Assume patients are COVID-positive. Given the transmissibility of SARS-CoV-2, all facilities, particularly long-term care facilities, should have assumed that any roommates of symptomatic residents or patients would also contract the virus, and these facilities should have implemented isolation practices to help limit further transmission.

Monitor staff health. Terence Cardinal Cooke checked employees' temperatures upon entering and leaving the facility at each shift and screened employees by phone if they had symptoms such as fever or respiratory distress.

Communicate internally. Terence Cardinal Cooke established a COVID-19 task force early in March and then added a daily clinical meeting to address new challenges and discuss complicated cases. Management communicated with staff through texts, a COVID-19 hotline, open forums, and webinars with the chief executive officer.

Stay in touch with families. At NYU Langone, frontline staff often lacked time to update families about patient status and whether visiting hours had been canceled. To help families remain connected, NYU Langone created a program called NYU Family Connect, in which a team of 65 radiologists and 75 trained medical students attended rounds, reviewed charts, and made more than 500 calls daily to provide families with updates.

Assess patients' social needs. Understanding and addressing patients' social needs is an important factor for discharge success. Health system staff, including community health

workers, can conduct virtual assessments of patients and their caregivers so that they can refer discharged patients to appropriate support services.

Expand virtual care. As noted earlier, VNSNY expanded the use of telehealth in caring for patients, although with significant reimbursement gaps. It will be necessary to work with payers to correct this deficiency if telehealth is to be a useful strategy in the future. Other telehealth strategies that could be employed include virtual monitoring for low-acuity patients who could be managed at home. Protocols should be established in advance to support quick transitions to virtual care.