

## **Report from the John Peter Smith Health Network: Developing Surge Capacity to Address COVID Positive Psychiatric Hospitalizations.**

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*Introduction:* The COVID-19 pandemic has created many unique challenges for behavioral health (BH) services. Within the John Peter Smith Health Network (JPS), one of our major challenges has been managing acute psychiatric conditions requiring hospitalization in the context of fluctuating numbers of COVID+ patients. An early surge in the number of such cases created unprecedented stress on our system of care. In this report, we describe our experience accommodating two such surges, present the protocols we developed, and discuss strategies which were critical in addressing these challenges.

*Setting:* JPS is a county-funded, 573-bed safety net hospital with a level I Trauma Service located in Fort Worth, Texas. System-wide, the hospital treats approximately 220,000 unique individuals a year during 1.2 million patient encounters. JPS houses the county's only psychiatric emergency center (PEC), which is among the busiest in the United States (~20,000 visits annually), and a psychiatry consultation-liaison team with a census of 40-60 patients daily. The BH Service also operates five inpatient psychiatric units (132 total inpatient beds). Importantly, the BH Service operates as part of a highly integrated multi-specialty, interdisciplinary healthcare system. As such, addressing the needs of acutely ill COVID+ psychiatric patients requires extensive collaboration between the BH-based COVID Clinical Steering Committee and the hospital-wide COVID Command Center.

*Surge #1:* In late April, the first psychiatric inpatient reported cough and fever, and a Cepheid Rapid RT-PCR test confirmed that this patient was COVID+. Testing was performed for all exposed psychiatric inpatients and staff defined as "High Priority" per CDC guidelines at the time and revealed that seven of the 35 patients being treated in the affected unit and nine staff members were also COVID+.

The BH department's previously developed psychiatric "surge plan" called for conversion of an existing psychiatric unit into a dedicated COVID+ unit when the number of COVID+ psychiatric inpatients in the hospital numbered at least five. Strong strategic leadership and coordination was critical to operationalize this previously developed plan. A daily huddle facilitated consistent and timely conversations among medical directors of the inpatient psychiatry and consultation-liaison services, the psychiatric emergency center, and the BH COVID Clinical Steering Committee. A multidisciplinary team including infectious disease and infection control specialists assisted in design of the COVID unit. A 16-bed unit was closed and sealed off to house the COVID+ patients, and nearby offices became donning and doffing stations for PPE.

While this dedicated unit was being prepared, the seven COVID+ patients were transferred to an inpatient medical service where they were managed by the BH consultation-liaison team. Meanwhile, the original unit where COVID+ patients were discovered was re-classified as a (COVID) Persons Under Investigation (PUI) unit and placed on 14-day quarantine (meaning no new admissions). The remaining 18 patients on that unit were housed in single occupancy rooms and tested every other day. Additional patients who tested positive were transferred to the COVID unit. Each time an additional patient tested

positive on the original unit, the quarantine time period was reset to 14 days. That unit experienced a total of 30 days of quarantine. The PUI classification was removed after this time period and psychiatric patients who tested COVID negative were again admitted.

Over the next several weeks, the dedicated COVID+ unit census increased to 11 patients. Once all patients on this COVID+ unit were finally discharged or able to be transferred to non-COVID psychiatric units, the COVID unit was closed and sanitized.

Patients housed in any of the hospital's psychiatric units are in an open milieu environment that not only encourages social engagement and peer support but also, unfortunately, promotes infection spread. This first surge experience underscored the need for stringent testing of all patients admitted to inpatient psychiatric units, and stricter admission measures were subsequently implemented. Admission to any of these units then required a negative COVID test, performed rapidly in-house. A second negative test using ProPath testing with 24-hour turnaround (to preserve the hospital's rapid test supply) was required for admission to the extended stay psychiatric unit. Implementation of these testing protocols again required system-wide coordination, particularly with internal medicine, emergency medicine, obstetrics/ gynecology, laboratory, and information technology services.

The number of COVID+ psychiatric patients requiring inpatient psychiatric care remained low for the next several months, during which time COVID+ psychiatric patients were treated on medical floors, even if asymptomatic. The already stretched consultation-liaison service managed 1-4 of these patients daily with assistance of 24-hour, one-on-one observation by BH technicians.

*Surge #2:* A second surge of COVID+ cases began in mid-September. Seven COVID+ patients requiring inpatient psychiatric care were again simultaneously present on the hospital consultation-liaison service, necessitating re-activation of a surge protocol to relieve pressure on the consultation-liaison service and one-on-one staff.

This time, the dedicated COVID psych unit was configured differently. Six double occupancy patient rooms were carved out of two adjacent units and repurposed to provide capacity for eight COVID+ patients. There were four patient rooms with two beds each. The two remaining rooms were repurposed -- one for group activities and recreation, and the other reserved for seclusion/restraint in case of acute agitation. Two offices were used for entry and exit, complete with donning and doffing stations for PPE. Airways under doors between units were again sealed.

The organizational approach to the second surge was different in some important ways from that of the first surge. Communication with the other medical services and departments was clearer and more efficient. Daily meetings among psychiatric service medical leaders also enabled many care-related decisions to be made and communicated in real time. The staff was overall more prepared and better coordinated during launch and management of this second dedicated COVID unit. The testing protocol that had been developed during the first surge remained in place, but there was a much better understanding of how these patients could be safely admitted to psychiatry.

Provider and social work interactions were entirely virtual except in case of medical emergency. Interviews were completed via Skype for Business, which is a secure, in-house only connection. The only persons who physically entered the unit were nurses and BH technicians, and these staff members

were provided with head-to-toe PPE and training on proper precautions. A nurse remained on the unit at all times. Upon admission into the unit, patients were provided with masks and educated about social distancing. They were given access to a wireless handset for thirty minutes at a time to communicate with family and community supports. They were also allowed daily periods of outdoor recreation, and therapeutic activities were provided on the unit. Meals were taken in patient rooms. A full description of our surge capacity protocol is found in Appendix I of this paper.

*Discussion:* Although a surge plan had been formulated, our first surge experience exceeded our projections, forcing us to address the need for flexible surge response. Surges in COVID cases will likely continue to be unpredictable not only in frequency, but also in volume of affected patients and symptom severity as long as the pandemic continues. We have discovered that only a multi-specialty or interdisciplinary approach can facilitate completion of any of the following complex, essential tasks:

- Ensuring availability of rapid COVID testing
- Providing coverage when staff members tested positive
- Enabling interactions with patients via telehealth
- Converting units to house COVID+ patients in a rapid and safe manner
- Disinfecting units upon return to normal operations
- Updating the electronic health record (EHR) to enable appropriate testing and medication orders and to facilitate process flow

The identification of COVID positive patients is of critical importance. Sending tests to outside facilities for analysis can delay processes by 24-48 hours, leading to severe downstream consequences. For instance, delays in testing can retard patient transitions between inhouse services, which in turn can lead to significant problems related to legal limitations and the time-sensitive process of involuntary detainment for psychiatric reasons. On the other hand, when rapid on-site testing supplies are in short supply across the hospital, many discussions will be focused on the distribution of supplies to appropriate departments. In our case, obtaining access to rapid on-site testing required strong advocacy from BH to the other departments.

In conclusion, surges in the number of COVID+ cases place significant stress upon a healthcare system. Our pandemic experience thus far has demonstrated that with adequate institutional flexibility, strong leadership, and excellent hospital-wide communication processes, management of the multiple, complex, and unexpected challenges that arise during COVID surges can support strong, new appropriate patient care protocols.

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*All authors deny any conflict of interest related to this report.*

## Appendix I:

### *Current Protocol*

Patients arrive at one of two entry points and progress in a stepwise manner across the services.

#### **Initial Assessment in the PEC or the Medicine Floor**

- Step 1: The patient is evaluated, and a decision is made to discharge or admit.
- Step 2: If a decision is made to admit to a psychiatric hospital, then an order is placed for the ID-Now Rapid COVID test.
- Step 3a: If the patient is positive and meets the below criteria, then the patient may be transferred to the COVID+ psych unit.
  - o Oxygen saturation > 90%
  - o Heart rate < 125 bpm
  - o Systolic blood pressure > 100 mmHg
  - o Afebrile, temperature < 101°F
  - o Asymptomatic, or symptoms are mild and do not require additional medical support
- Step 3b: If the patient is positive but is not medically appropriate to transfer off the medical floor, then the patient will remain on the medical floor and will be treated by the consultation-liaison team.

#### **Transfer from the COVID psych unit to the Medicine Floor**

- Vitals and potential symptoms of COVID-19 are tracked daily.
- If vital signs worsen and any of the criteria listed above are met, then the protocol allows for direct transfer to the internal medicine service, bypassing the emergency room.
- On the medicine floor, the patient is placed on psychiatric precautions, provided a BH technician one-on-one for safety, and managed by the consultation-liaison team.
- Patients may return to the psychiatric hospital once they are medically appropriate.

#### **Transfer from the COVID psych unit to a regular psych unit**

- If the patient has remained in the COVID psych unit for 14 days and continues to require psychiatric hospitalization, the patient may be moved to a regular psych unit if he/she has been quarantined for 14 days, asymptomatic and afebrile for 24 hours and also has tested positive for IgG total antibodies via a-blood sample. Rapid test is no longer required by CDC after 10 days of quarantine. The decision for 14 days and antibody test was a collaborative discussion and plan between COVID steering committee and BH COVID committee which exceeded the CDC recommendation to ensure safety of general inpatient psychiatric milieu.

#### **Discharge from COVID psych unit**

If a patient's psychiatric reason for admission resolves and the patient no longer requires psychiatric hospitalization, discharge to home was considered once the following criteria for discharge was met:

1. Quarantined 10 days of hospitalization
2. No fever for the last 24 hours without antipyretics.

These criteria was implemented in keeping with the CDC guidelines\*.

- Patients who were to return home did not require further testing. The patient's COVID+ status was communicated with family as a public health warning. Patients were instructed to self-quarantine.
- Patients who were homeless did not require further testing. Patients were instructed to self-quarantine and provided with information for a local shelter developed by the city of Fort Worth for COVID+ persons.
- Patients who were to live in a group home did not require further testing. However, if the group home requested a negative test, a test was performed. The ProPath send-out COVID test involved 24-hours turn-around time and was used to conserve in-house rapid test supply.