Team Approach to Improve Throughput During COVID-19 Pandemic

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Background

- The Coronavirus Disease (COVID-19) has placed a severe strain on health systems worldwide with large and rapid changes in demand for inpatient care. Ensuring safe and timely care to both COVID-19 patients and those with other conditions are crucial aspects of response to the crisis.
- The entire world scrambled to implement interventions that will increase hospital capacity in response to the pandemic and differs globally.
- To address bed capacity issues locally, Houston Methodist Healthcare System, opened its Highly Infectious Disease Unit (HIDU) in Katy, Texas opened its door to COVID-19 patients on March 23, 2020. HIDU pulled COVID patients from across the Houston Methodist system to decompress hospitals, prevent ED saturation and maximize surge capacity.
- Loaded with equipment designed to specifically treat patients suffering from the Coronavirus, HIDU offered cohorting benefits which included treatment consistency, and opened bed capacity which resulted in adequate staffing at transferring facility.

Goals

- Outline and execute the different HIDU transfer processes and the adjustments that were made over time.
- Demonstrate the effectiveness of the previous (2020) and current (2021) processes in improving the throughput of the patient population affected by COVID-19.
- Identify the factors that helped to expedite the movement of COVID-19 patients from the acute care hospital (HMW) to the Highly Infectious Disease Unit (HIDU).
- Identify the different criteria that were utilized to determine which patients are appropriate for HIDU transfer.

HIDU Key Components

- State-of-the-art 44 bed isolation unit
- All negative pressure rooms with HEPA filtration and monitors
- High acuity experienced nurses for high acuity patients with 1:3 ratios
- Unique nursing staffing with dedicated nurses from across seven hospitals volunteering to work in this Highly Infectious Disease Unit
- Following services: Internal Medicine, Pulmonary/Critical, Cardiology, Nephrology, Infectious Disease, and many others
- 24/7 in-house physician extender coverage
- Standard hospital services: PT/OT/ST, Wound Care, Radiology, Laboratory

HIDU Guidelines from Referral to Admission & Transfer

As COVID-19 evolves so as the guidelines for transferring patients to our Highly Infectious Disease Unit. Case Management department must keep abreast of ongoing process changes as they come. Good communication and collaboration among all the team members were essential for smooth transition of our patients to HIDU. Below were some of the guidelines that were put together.

2020 Admission Guidelines

- COVID-19+ resulted in EPIC or documented in MD note (if tested outside HM)
- Level of Care: Acute
  - VS q ≤ 4 hours
  - Physical Assessment/Neuro Checks q ≤ 4 hours
- Cardiac
  - Exclude HR <40 or >130
  - Exclude Hypertension SBP/DBP > 200/100
  - Exclude titratable vasoactive drips
- Pulmonary
  - Exclude those on continuous CPAP or BiPAP
  - Exclude those with evidence of increasing respiratory rate with increasing O_2 demands (re-evaluate for transfer in 12hours)
- Exclude those needing sub-specialist care
  - Ventricular Assist Devices
  - Transplant Medicine

2020 Transfer Process

- Transfers were initiated within 24hrs of admission and no later than 48hrs.
- Charge RN secure transfer order from attending physician.
- Informed patient and family the reason for transfer to HIDU
- Contact Houston Methodist Hospital (HMH) transfer center
  - Doc to Doc report
  - RN to RN report
  - Transport arranged
- Concerns with transfer denials were escalated to HIDU leadership.

2021 Admission Guidelines

Minimum Criteria for HMCCH HIDU Transfer Consideration:

☑COVID +
☑LOS ≥ 3 days
☑O_2 ≤ 15 Liters

Hold referral if patient demonstrates:

- O_2 level trending up over 12-48 hours
- SpO_2 trending down in the past 12-48 hours
- Respiratory Rate with increased trend in the past 12-48 hours
- Inflammatory markers trending up

2021 Transfer Process

- Coordinated with patient's attending service of plan or recommendation to transfer to HMCCH HIDU.
- Communicated with patient/family about transfer to HMCCH for continuation of COVID specialty care
  - Discuss transfer plan as early as possible
  - Order to transfer was not required
  - Lower acuity patients with evidence of being medically stable under current treatment plan were prioritized for bed and did not require MD to MD handoff prior to approval of transfer.
  - This process supported expediting bed assignments earlier in the day
- HIDU Transfer Coordinator documented in patient's chart the status of referral. When approved for transfer, Coordinator called the Case Manager to inform of approval and documented MOT information in EPIC.

Outcomes

2020

	Discharge Volume	Average of ALOS	Average of Exp LOS
LTACH	10	20.0	17.7
HIDU	221	6.1	12.9

2021

	Discharge Volume	Average of ALOS	Average of ExpLOS
LTACH	71	12.7	12.9
HIDU	333	6.5	13.5

Data Analysis

- The volume of patient transferred in 2021 was higher when we changed the process in comparison to 2020.
- HIDU length of stay (LOS) were lower compared to those patients that were transferred to Long Term Acute Care Hospital (LTACH) because HIDU had the ability to take patient in isolation.
- LOS for patients who were transferred to HIDU was shorter compared to those who needed to stay in the hospital to comply with CDC isolation guidelines.

Summary

- National and local guidelines for safe transition to post-acute care of hospitalized COVID patients created a bottleneck in acute care hospitals. HIDU's ability to cohort COVID patients without compromising the care of the patients was instrumental in increasing hospital capacity across our hospital system and helped in decreasing the bottleneck especially in ED
- A critical component of this process is the direct involvement of the Case Manager and the close collaboration among the members of the interdisciplinary team including physicians, social workers, charge nurses, bedside nurses, and the receiving team in HIDU.

References

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