Structure of COVID-19 Isolation Wards and the Use of Inpatient Telemedicine in a Corporate Hospital in Urban India

Indira Kedlaya  
Consultant Physician, Columbia Asia Hospital, Whitefield, Bengaluru, Karnataka

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Background

The first case of COVID-19 in India was reported on January 30, 2020 and the first in the state of Karnataka on March 9, 2020. For most healthcare providers, the COVID-19 pandemic is their first real pandemic experience. The 2009 H1N1 and SARS-1 pandemics were much less widespread than the current COVID-19 pandemic, and therefore had a less significant impact on the functioning of hospitals. In contrast, the COVID-19 pandemic has had many ramifications on hospital organization. Planning and apt utilization of resources has been and will continue to be crucial in mitigating these consequences.

Introduction

A pandemic such as COVID-19 necessitates drastic changes in hospital functioning and structure. During the peak of the pandemic, non-urgent outpatient visits and surgeries were put on hold in most countries to accommodate sick COVID patients. The rules and admission criteria during the pandemic have been vastly different in each country based on its needs and resources. In India, each state has its own guidelines, which have evolved constantly in accordance with government recommendations and the healthcare system has adapted very quickly to these changes. Telemedicine in India has been used informally for a long time following the country’s digital transformation. However, in March 2020, it was formalized by the Indian government and a framework was created for its use. Telemedicine was quickly embraced in India in the outpatient setting, however, is not being used as a primary mode of rounds in the COVID isolation wards in India. On a pubmed review, there was only one other instance of telemedicine used in the COVID isolation wards. Stanford Health implemented inpatient telemedicine in 3 of their affiliated hospitals in March, 2020 and concluded that this is a feasible option. The following is another example of successful implementation of telemedicine in the inpatient setting.

Columbia Asia is a chain of corporate hospitals in India. The Columbia Asia Hospital in Whitefield, Bengaluru (CAHW), is a 143-bed hospital. The Internal Medicine (IM) department (which has 5 full-time and 2 part-time consultants) and the pulmonary department (which has one pulmonologist) are primarily responsible for the care of COVID-19 patients (except the ones admitted to the ICU).

Structure of COVID Isolation Wards

In the state of Karnataka, during the initial few weeks of the pandemic, all positive cases irrespective of severity or symptoms were admitted. In addition, most hospitals have also had to incorporate an exclusive fever clinic to separate suspected COVID-19 patients from other patients. The medicine and pulmonary departments initially managed the IM outpatient department (OPD), pulmonary clinic, fever clinic, and isolation/non-isolation wards. Increasing admissions in the isolation wards created a significant increase in work-load and consultants in IM and pulmonary departments started using telemedicine as the primary mode to conduct rounds in COVID isolation wards. Since then, patients admitted to the COVID isolation wards have been divided amongst 7 Internal Medicine consultants and 1 pulmonologist,
who are responsible for the complete care of COVID patients throughout the hospital stay (excluding ICU stay). Consultants in other medical specialties and junior doctors assist in conducting physical rounds in the COVID isolation wards every day on a rotating schedule. On average, each doctor conducts 2 isolation duties per month in which they obtain patient history, perform pertinent physical examination, order diagnostics and medications in coordination with the assigned doctor doing telemedicine rounds. The assigned telemedicine doctor also apprises family members of patients’ condition in the isolation wards on a daily basis and provides post-hospital care to patients in the respective OPDs. This arrangement has greatly enhanced patient and physician satisfaction and has provided good continuity of care.

Platforms of Telemedicine Used

The primary modality of contact is telephone consultation. Video consultation is also used when necessary, using platforms such as Microsoft Teams and WhatsApp. Other referral consultants also use telemedicine to manage coexisting medical conditions in the COVID isolation wards when required. The COVID isolation wards are equipped with tablets and smartphones to perform video consultations with patients and with other healthcare providers to coordinate care. Patients also use email and WhatsApp to share relevant past medical history, medications and diagnostics with the consultants.

Structure of ICU During the Pandemic

The ICU in CAHW has 2 consultants and 5 junior doctors. The ICU team is also assisted by the department of anesthesia to a limited extent. The ICU is divided into 3 pods, namely COVID, COVID-suspect and non-COVID. The ICU always has at least 2 doctors available, one of which is dedicated to the COVID pod. All patient monitors in the COVID pod are connected to central monitors, placed in the non-COVID pod for additional supervision.

Conclusion

With its first admission in June 2020, CAHW has admitted 1131 COVID-19 cases as of January 24th 2021, of which there have been 26 reported deaths. On the 10th and 12th of October 2020, the highest occupancy in the isolation wards was reported, with 80 patients on both these days. On the 16th of September, the highest occupancy in the COVID-ICU was reported, at 11 patients. I believe these numbers validate that inpatient telemedicine is an effective strategy during these trying times. The unique restructuring of ward rounds has enabled physicians in our hospital to provide optimal care to patients in the COVID isolation wards while keeping physician burnout low. The COVID-19 pandemic will have a protracted course and we need a sustainable plan. Being a small hospital, our constraints are many, but we have been able to overcome manpower shortage with this strategy and the satisfaction that it has given the doctors has been immense. This is a potential model for other hospitals to follow during the pandemic and perhaps for hospital medicine in rural areas during non-COVID times as well. Telemedicine has been a boon to outpatient medicine during the pandemic, but can be successfully implemented in the inpatient sector as demonstrated in our hospital. “The doctor is just a phone call away”.

References