

FIGHTING COVID IN UN MISSION – DESPERATE SITUATION, UNIQUE CHALLENGES: EXPERIENCE OF INDIAN HOSPITAL, MONUSCO, DR CONGO

General Medicine

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ABSTRACT

The ongoing COVID-19 pandemic has put an unprecedented stress on the healthcare facilities and logistics chains all over the world. The UN medical establishments are similar yet unique due to location and peculiar logistic challenges. Amidst the stir and principally to stand erect in the face of the pandemic the capabilities of this Indian hospital were augmented both in terms of infrastructure, manpower and the capabilities too. We illustrate the challenges faced and the mitigation strategies instituted by the hospital to surpass the insurmountable odds. This was made possible by synergistic efforts of UN and Indian authorities and this article intends to share the hospital's challenges and experiences during this trying time.

KEYWORDS

COVID-19 Pandemic, logistics challenges, manpower and resource augmentation, mitigation strategies, patient and staff flow

INTRODUCTION.

The fall of 2019 saw a new infectious disease caused by a recently discovered coronavirus (SARS-CoV-2) spread like a wildfire under the radar of medical establishments worldwide and by March 2020, the World Health Organization (WHO) had declared the COVID-19 outbreak a global pandemic. Worldwide it has severely ravaged even the robust healthcare system of developed European countries and has hampered economic and social progress. Over last one and a half years despite earnest efforts by governments all over the globe, the war against this disease is far from over, and as on 20 August 2021, there are over **209 million** confirmed COVID-19 cases and over **4.4 million** deaths across the globe^[1].

DR Congo is the largest country in sub-Saharan Africa and with a population of approx 106 million, it is the fifteenth most populous country in the world and fourth most populous country in Africa. The conflict torn country with a low human development index (0.480), ranking 175 in 189 countries assessed^[2,3]. The existing state of healthcare infrastructure and delivery is also a huge concern, as a result, the population is almost always lamented by some or the other epidemic spread, killing millions. This also extrapolates towards the lack of resources to test and manage SARS –CoV-2. Hence, assessment of true disease burden and limiting the spread of disease a proverbial “Gordian Knot” and the struggle to meet the requirements is still on^[4].

The footprint of the UN in DR Congo is huge with a peacekeeping mission (MONUSCO) with 17,456 personnel and 22 other programs, funds and agencies assisting the DRC government towards its efforts in stabilisation and developing this country. This Indian hospital is a multispecialty apex field medical establishment in the United Nations, duly recognised and HQPS (Healthcare Quality and Patient Safety) certified by the UN system of accreditation. This medical institution also has been mandated to manage combat and related injuries in addition to the routine ailments and emergencies affecting the MONUSCO personnel^[2,3].

Peculiarities Of Medical Supply Chain Logistics In UN MSN.

Indian Hospital, MONUSCO is a self-sustained hospital, meaning that the hospital is self-responsible for providing manpower, equipment, expendables and also their maintenance. The supply chain from India is long with protracted delivery time and limited funds/ opportunity to manoeuvre for unforeseen emergencies, COVID in the present circumstances.

The medical procurement for the hospital is through two primary sources, the central procurement from India, which accounts for the bulk of supply and a miniscule amount of local purchase from DR Congo. The average lag time for procurement and subsequent supply to mission area from India is approximately 12–18 months. This constitutes the major source of medical expendables and non-

expendables to the hospital. On the other hand, there is limited opportunity to procure medicines in mission area due to limited and timely availability of funds, high cost of medicines and expendables and non-availability of vendors or medicines or both at times. The current situation due to the COVID induced global travel and logistics flow restrictions has only worsened, to say the least, which has largely affected the availability of stores and supplies of all kinds, hampering the effective provision of health care to its clientele.

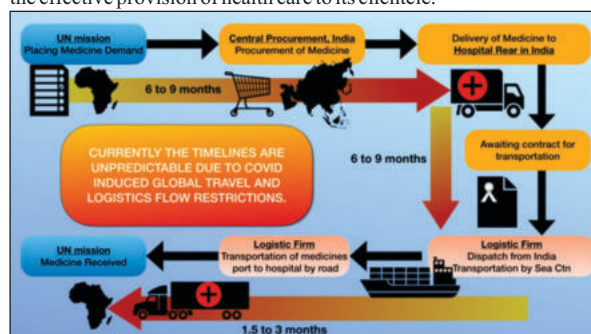


Figure 1: Medical Logistics For Indian Hospitals In United Nations

COVID-19 And Changes In Hospital Demographics And Functioning.

The UN hospital in mission area is primarily to deal with combat injuries – providing immediate life and limb saving treatment and subsequent evacuation to higher medical setup outside the mission area or repatriation to the home country. The hospital is a 50 bedded facility and is equipped to hold 4 critical patients for a period of 30 days. However, COVID 19 pandemic has caused a significant change in admission rate, disease profile, length of stay in hospital and oxygen consumption of the hospital. The oxygen stock sufficient for 6 months under normal circumstances was expended in managing a few critical COVID patients in one week due to the high oxygen requirements in cases of severe patients.

Additionally, the ramification on the hospital working included increased working hours of hospital staff donning PPE which was very uncomfortable, preventing medical staff even to drink water and attend nature's call; unforeseen logistic challenges like increasing isolation facility to ~40% of the sanctioned hospital bed capacity, unavailability of medicine in the local country, increased usage and difficulty in refilling of oxygen; protracted procedure and administrative and medical hurdles in evacuation of critically ill COVID patients to a respiratory center^[5,6].

Another major challenge was to ensure early turnaround of the diagnostic COVID RT-PCR report which was affecting instituting

timely medical care of the patients. Preventing accidental exposure of non-COVID patients and staff was an additional challenge to limit hospital staff and its clientele from the peril of contracting the infection. Decongesting the living area of medical personnel in limited accommodation to prevent accidental spread caused by occupational exposure was a huge challenge too^[5,7].

Mitigation Strategies

Amidst this stir and principally to stand erect in the face of this pandemic, the capabilities of this hospital were augmented in terms of infrastructure, manpower, equipment, processes and procedures flow and the training.

Infrastructure:

Primarily, the infrastructure was augmented by instituting an additional dedicated COVID bed complement of the hospital by 19 beds which included COVID ICU (3 beds), COVID HDU (6 beds), and COVID isolation ward (10 beds). The additional ward was made available by appropriating the co-located administrative offices and making modification to make them fit for hospital use. The patient beds were made available from crisis expansion stores of the hospital and related stores; equipment like ventilators, multipara monitors, oxygen concentrators were pooled-in from hospital and the UN resources.

Consumables:

Consumables like full body PPE, sanitizers, cleaning/ disinfectants, drugs/ injectable were made available by the Indian and UN logistics agencies. Through a special flight, India assisted by induction of a 15 member COVID augmentation team along with other essential medical resources. A contract for oxygen refilling was instituted with a local vendor to ensure a steady supply of oxygen for critical care patients.

Manpower Augmentation:

The multi-capability augmentation team (mentioned above) infused a sense of importance and adequacy in the existing members and brought in a huge confidence in the system of UN. It made management of rotations and prolonged deployment in PPEs more scientific and logical making the processes a rich concoction of optimum utilisation which helped prevent mental and physical burnouts to a large extent. It made the division of the augmented work burden/ threats possible. The augmentation also gave more time in hand to carry out team binding and communication training sessions to deal with the new challenges imposed by the COVID like situations.

Maintaining Business Continuity:

Team concept for COVID-19 medical staff was implemented to ensure functional continuity in event of occupational exposure to hospital staff. The hospital staff were divided into 4 teams: (3 clinical teams with standardized manpower category and numbers and 1 Adm team). Institution and following team concept not only ensured that the staff gets adequate time between two rotations in COVID ward/ ICU but also kept the main hospital complex optimally functional to cater to the routine cases and emergencies.

Modifications In Patient And Staff Flow In Hospital:

A 24 X 7 helpline and tele-consultation center was established to streamline appointment-based consultation and follow-up of quarantined patients. Flu Clinic and screening center were established outside the main hospital complex to prevent inadvertent exposure of hospital staff and non-COVID patients. Patient entry zones and direction of patient flow were regulated and reoriented to segregate COVID suspects from non-COVID patients.

Dedicated COVID 19 ambulances with earmarked manpower were instituted. Regular and stringent training protocols for COVID appropriate behaviors, use of PPE, disposal of hospital waste and handling of emergencies were continuously revised, and drills rehearsed. The emphasis of clean zones and contaminated zones and drills to ensure appropriate patient and staff movements were instituted and rehearsed.

Even in the peak of COVID 19 pandemic, when the hospital was receiving a large volume of COVID patients, the hospital continued running regular OPD services, and attended to routine non COVID workload and providing life and limb saving surgeries to battle casualties and other trauma cases along with routine medical emergencies.

Diagnostic Facilities:

A major limitation in early institution of treatment was poor availability and long lead time for getting a COVID RT-PCR test. Hence, a point of care RT-PCR machine was installed by the hospital through the UN support to augment the testing capability which brought down the lead time for obtaining a report from 10-14 days to 4 hours, which is comparable to international standards too and has eventually helped in timely and early institution of the definitive treatment leading to a positive outcome. A dedicated COVID radio-diagnostic facility with dedicated X-ray and ultrasonography machine was also established in the Flu Clinic of the hospital to address the requirements specially of patients with flu like illness.

Training, Motivation and Stress Management:

Regular training to institute COVID appropriate behavior, prevent accidental occupational exposure and effective screening and identification of danger signs for COVID patients were instituted and rehearsed.

Stress management lectures were regularly conducted by the Psychiatrist and early signs of stress were identified and remedial actions were taken. The team members were constantly motivated and encouraged by regular formal and informal interaction between Chief Medical Officer, Doctors, specialists and the paramedic staff. They were encouraged to follow the COVID appropriate behavior and PPE usage guidelines. Regular training helped in increasing the confidence of the paramedical staff in their ability and helped in allaying apprehensions about working in the COVID ward. Due to adequate training and emphasis on following protocols strictly, this hospital has till-date managed to keep its healthcare staff safe from contracting the infection.

Vaccination

In the backdrop of the global COVID-19 pandemic, vaccination against COVID 19 has been identified and accepted globally as the primary preventive modality for curbing the disease spread and improving the clinical outcomes of those infected. With this intent, a COVID-19 vaccination programme was launched at this Hospital. This mega vaccination drive was planned to cover all the UN employees and volunteers. Despite the short supply of the COVID vaccine worldwide, more than 4000 MONUSCO pers have been vaccinated with the requisite two doses of Covishield.

In addition to the provision of hospital-based treatment and vaccination efforts, this hospital has also contributed to the outreach programme of the UN to provide vaccination to the personnel deployed in far-flung reaches of Congo. Ensuring the transportation of vaccine to the periphery locations while maintaining the cold chain was a major challenge which was effectively tackled by modification of thermocol boxes into cold storage containers.

CONCLUSION

The challenges of COVID 19 pandemic were many and appeared insurmountable to start with. But it is said that "*difficulties create new windows of opportunity to augment the processes and demonstrate the capabilities to the fullest*" and this hospital stood up to utilize this opportunity for the benefit of its clientele. This hospital converted the global challenge to an opportunity with thorough planning, teamwork, appropriate and timely augmentation and replenishment of resources and manpower, which has led this hospital to successfully manage hundreds of COVID patients till date in addition to the regular hospital workload. High morale, standardized policies and protocols, continued training and support from UN and Indian authorities were force-multipliers.

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