

Preparing for a Pandemic: Our Plans and Lessons Learnt as a Department in a Tertiary Care Hospital

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ABSTRACT

This is a descriptive article aiming to present and analyse the steps of preparedness and troubleshooting of problems faced at operating rooms and intensive care unit during the ongoing coronavirus infectious disease 2019 (COVID-19) pandemic in Our Lady of Lourdes Hospital, a tertiary care hospital in Ireland from February 2020 to March 2020. Concerning preparation, we reviewed all aspects of our clinical and potential logistic issues and their accessible solutions in times of limited resources. Analysing availability of critical care staff and essential escalation of care area capacity during the ongoing pandemic, we observed that there was strong communication, commitment and team work among departmental and other non-critical care staff, and disciplines. Being the only regional teaching hospital with critical care unit in county Louth, we found ourselves confident and content with our preparation. We found good communication and training as critical factors in the preparation for a pandemic.

Key Words: COVID-19, Pandemic, Preparation, Challenges.

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The most communicable and life-threatening infections in the world could be on our doorstep overnight. Could we handle the disease or avert it from spreading or will this be a mystery for long till we suffer a significant loss of lives. The first case of COVID-19 was diagnosed in Ireland on 28th February, 2020, and we received the first case in our hospital on 16th March, 2020. Coronaviruses circulate among animals including camels, cats and bats with a possible spread from animals to humans.¹ Illness caused by coronaviruses may range from the common cold to more severe respiratory (lung) diseases, like Middle-East Respiratory Syndrome (MERS) and Severe Acute Respiratory Syndrome (SARS).^{2,3} There are 24,876 patients of COVID-19 in Ireland at the time of writing this paper.⁴

We analysed our preparedness and planning for a pandemic requiring quarantine and containment, like COVID-19, and the lessons learnt when those plans were put into effect. All the measures taken have resulted in the efficient management of this crisis in our hospital. In the case of a future surge, we will be better prepared to handle the situation by reflecting on and applying the knowledge we have gained from this current global crisis.

The first plan to handle any pandemic is to educate and disseminate knowledge by which the spread of the infection is controlled or kept limited. We issued detailed health guidelines about the importance of handwashing and how to do it effectively by running hand-hygiene sessions in our department, and ensured that each and every one get certified. Looking into the wave of COVID-19 spreading from China to all around the world, we made up our strategic plans to address the COVID-19 pandemic by effective forms of communication within our department involving employees and all responsible stakeholders.

Enhancing awareness regarding COVID-19 pandemic:

We developed an easily accessible two-way communication that involved management, department leads, crisis response teams and other healthcare staff. To reduce the loss of workforce, we trained our office staff to work from home/remote locations along with the provision of status updates, so that they know when it is not only safe but also expected, for them to return to work. We encouraged early reporting of symptoms to the occupational health system by employees to limit the hospital spread among healthcare staff and ensure staff well-being. Many of the staff members regularly travelled to join the duties. Limiting travel during a widespread pandemic will help reduce the likelihood of spread of infection among employees. Our organisation provided non-shared accommodation to hospital employees to decrease the possibility of contracting the infection and possible spread to other family members.

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Staffing/shift work:

To make possible the availability of adequate staff in a time of the surge, we advertised job positions for both consultants and junior staff. We recruited locum consultants and trainees/non-consultant hospital doctors (NCHD) well beforehand. Joining of the locum physicians was prioritised to properly give them an orientation of the critical and non-critical areas of the hospital, documentation and familiarity with hospital blood reporting and imaging system along with essential emergency bleeps and significant telephone extension numbers. We divided the duties of all our staff, *i.e.* faculty and junior physicians into 12-hour day and night shifts. We ensured equal and minimum possible exposure of each staff to COVID-19 positive patients.

Training of non-anaesthesia doctors and staff:

To handle the pandemic, before the surge, we started multidisciplinary meetings, and with mutual agreement, allowed and trained non-anaesthesia doctors for the care of the critical patients in intensive care unit (ICU) and emergency department. We did countless simulation training sessions on proper donning and doffing of PPE, managing airway with simple to advanced airway equipment, along with training for invasive monitoring and interpretation of arterial blood gases (ABGs) and investigations.

Knowledge about the pathogenic pathway and management strategy of COVID-19 infection is still evolving. Based on the experiences and challenges shared by different authors on managing COVID-19 patients in various parts of the world, we drafted guidelines for triage of COVID-19 patients in the emergency department, admission criteria, ventilatory management with non-invasive and invasive techniques, proning, hemodynamic and renal support, nutrition, weaning, extubation/tracheostomy, transfer, care in step-down, and discharge of recovered patient of COVID-19.

Guidelines and education:

To minimise the ICU admission and for timely management of patients presenting moderate signs and symptoms of COVID-19 disease, the staff was trained in the respiratory unit to manage patients with continuous positive airway pressure. Through bi-level positive airway pressure modes of non-invasive ventilation, we prevented many patients from going to the invasive mode of ventilation (intubation). All elective cases of each sub-speciality of surgery were cancelled and scheduled to a future date, to ensure the availability of hospital beds to the maximum possible number of COVID patients and to decrease the burden on nursing staff in the case of a surge.

Escalation of Critical Care beds:

The way this pandemic spread all around the world, we were expecting a sudden rise in admissions of highly suspected/-

confirmed cases of COVID-19. To be ready to accommodate the possibly large number of patients, we increased the capacity of our ICU from 8 beds to 22 beds by converting the operation theatres and the post-anaesthesia recovery area to intensive care beds. We set up anaesthesia machines and portable ventilators in operation theatres and the post-anaesthesia care area. In addition, several nursing staff from the non-critical care area were trained under critical care nurses, for their timely orientation.

Government roles:

The measures taken by the Irish government, *i.e.* closing aerial and land borders, banning gatherings, closing schools and introducing strict quarantine measures, contributed towards the flattening of the curve and controlling the pandemic. On a larger scale, these measures have been acknowledged by the international scientific community, and Ireland was named among some of the top countries, which has managed the crisis well.⁵ The Irish government has announced a 5-phase de-escalation plan starting from the 18th of May, 2020, and we hope to see the life going towards normality again with standard precautions of social distancing and face mask in place.

CONFLICT OF INTEREST:

The authors declared no conflict of interest.

AUTHORS' CONTRIBUTION:

SL, EK: Literature search, and initial writeup.

MA: Literature search, and final write-up.

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