Perspective

Combating COVID 19 in a public sector hospital in Pakistan

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1. Introduction

COVID-19 pandemic has taken the world by storm. Since declaration as pandemic by WHO on March 12, 2020, its devastation has jolted everyone mentally, psychosocially and economically [1]. As of recent updates, it has affected 213 countries with 22, 646, 894 cases and 792, 358 deaths reported worldwide [2]. Pakistan was no exception with first case reported on February 26, 2020 in Karachi which . The confirmed cases to date are 292,174 with 6231 deaths [3]. Even the richest of nations were not ready for the havoc they faced in the first few days. Even in countries with highly advanced healthcare systems the strain of pandemic has been felt [4]. Pakistan is a developing country with meagre resources with less than 1% GDP spent on health. To accept the challenge of managing this pandemic was a mammoth task with limited resources. In this article we outline the steps taken by us at a public sector hospital in the city of Lahore, Punjab under the supervision of the Minister for Primary & Secondary Health, Specialized Healthcare & Medical Education and Health Department Punjab.

Fig. 1

2. Protection of health care personnel performing duties during pandemic

Health care personnel (HCP) safety was the priority as we had seen many HCP dying in Spain, Italy and UK [5]. The first step that was taken by the administration was to ensure the safety of the healthcare personnel according to the guidelines issued by World Health Organisation [6].

In this regard the acquisition of Personal Protection equipment (PPEs) was done on emergency basis. At the start of the pandemic, the hospital had a very limited supply of PPEs as they were seldom used in such high quantities before. Furthermore there was a shortage of PPE in the market due to closure of borders and other factors. The existing PPEs were only available at an exorbitant price. However, it was ensured that every doctor, nurse or para-medic performing duty in hospital was provided with the adequate PPE as per their duty level. Donning And Doffing drills were carried out regularly for HCP in different batches. In order to further mitigate the effect of the disease an alternating rota was setup. In collaboration of the department of medicine and infectious diseases it was decided that the health care professionals in areas of high COVID-19 risk would perform duty for a week and then isolate for the next two weeks. In other areas only necessary personnel were called for duty in order to minimize the exposure. The available personnel were divided into teams which would work sequentially to ensure the provision of service and at the same time limit the exposure.

Health care workers with co-morbidities that would place them at increased risk of disease were excluded from the duties to ensure their protection.

3. Preparing the frontline healthcare personnel

Since it was a new disease, a decision was taken to familiarize all the health care professionals regarding this disease. In this regard multiple
repeated sessions of information and education were conducted to ensure that all involved were aware of the disease, its prevention and management. Teams of experts from the institute’s medical and infection disease department were on the forefront in this.

The panic created by the disease in its initial days was enough to cause anyone’s nerves to strain. The threat of not only being infected but also carrying home the disease to one’s near and dear ones with tragic results bore heavily on the mind of everyone. Anxiety, fear and depression has been reported amongst healthcare workers as they were afraid of risking their families lives in particular [7]. Regular rounds and visits were carried out. These were done by senior members of the academic and administrative staff. These were in addition to their regular assigned duties. The purpose was to lift the spirits of the HCPs performing duties.

Considering the large number of cases that were being reported all over the world along with the burden placed on the health care providers it was also expected that if only the medical and allied department were left to deal with this pandemic it would likely strain and break those standing against the disease. It was therefore decided very early on that the whole of the hospital and all of it personnel would fight the disease as one. In this regard doctors from the sub specialties and even surgery and allied performed duties along with their medical counterparts.

4. Guidelines

We developed local guidelines according to WHO in collaboration with Corona Experts Advisory Group (CEAG) which were shared with our faculty and all doctors on duty [8]. This greatly facilitated them in better patient care. Guidelines were also developed for PPEs, staff roster, sampling, isolation and quarantine, patient education, management, disinfection, transfer of suspected patients, transport of samples and dead body management and burial.

5. Setting up the first COVID-19 ward in Punjab

Even before the first case had been reported in Punjab, steps to prepare for the upcoming pandemic were being taken. In this regard, our hospital was one of the first in Punjab, Pakistan to set up the COVID-19 isolation ward with facilities for intensive monitoring and ventilation. Fig. 3.

With the evolving government policy, addition of 14 isolation rooms for confirmed cases was done. Along with the addition of 18 isolation rooms for the quarantine of suspected patients awaiting the results of
their test was also undertaken. Thus a total of 40 beds were immediately set aside for the COVID-19 patients. Fig. 4

6. Setting up COVID-19 counter

In order to facilitate the patients coming with symptoms of COVID-19 to the hospital as well as to ensure protection of the healthcare workers, a separate COVID-19 Counter was established in both the ER and OPD. The purpose of this was to carry out triage and limit the mixing of the suspected cases with the routine cases. Social distancing was ensured by keeping separation between the patients and HCP by use of a glass wall and use of two way speakers and microphone for communication. Proper ventilation was ensured. At the same time masks and sanitizers were ensured at the counter for all presenting. Triage with the use of questionnaire and thermal guns was also done. To impress upon the patients social distancing circles were marked to ensure that proper distance was maintained while in queue. Fig. 5

7. PCR testing

At the start of the pandemic our hospital didn’t have a PCR lab for carrying out of testing of suspected patients. Nasopharyngeal swabs would be collected and taken for testing. Special training was imparted to the personnel taking the swabs to improve the detection rate [9]. As per the government policy free testing was offered to all patients suspected to be having COVID-19.
8. Establishing and running COVID-19 ICU

By the end of March 2020, due to the increasing number of cases the government of Punjab decided to impose a lockdown on the province [10]. It was also expected that as the number of cases increase there would be a marked increase in the severity of the disease as well as the number of mortalities. In order to prepare for the expected surge, the breathing space provided by this lockdown was used to set up a COVID-19 intensive care unit (ICU).

Challenges of setting up a COVID-19 ICU had immense challenges. It involved streamlining the workflows for rapid diagnosis, isolation and temporary clearing and emptying of two floors of the new OPD building. The focus was on infrastructure, supplies and staff management. The wards were redesigned and upgraded. Central Oxygen supply was made available. 32 beds electromechanical beds were brought in along with 32 ventilators to establish the two floored 32 bedded ICU. Special glass partition was set up along with donning and doffing areas to prevent spread of the disease. Disinfection both at entry and exit of the wards was made possible by means of mistifiers. Fig. 6

Intensive care units have played a key role in saving the patient’s life all across the world [11,12]. Doctors from various units of the hospital volunteered and performed duties at the ICU after undergoing training by the Pulmonology department. CCTV system was installed at the ICU to enable video surveillance of all the patients and limit unnecessary time in the infective environment. Additional trained personnel were also deputed at the ICU by the end of July he COVID ICU has served more than 250 patients.

9. Online education

In this situation of pandemic it is almost likely to be forgotten that the regular academic session of MBBS(Bachelor of Medicine, Bachelor of Surgery) being held at our affiliated medical college had to be suspended keeping in view the local guidelines. It has been almost 4 months since the regular classes were suspended. Almost 600 people had been directly exposed to the patient leading to the fear that a huge outbreak of the disease would take place at the Jail and lead to a disaster. From experience in other parts of the world it had been seen that nursing facilities and prisons were responsible for huge spikes [16]. On the orders of the Specialized Health care and medical Education department the task of setting up and managing a COVID-19 Care facility at Camp Jail was given to our institute. A team from our institute visited the Camp Jail and formulated and implemented plan to setup a 100-bedded hospital at Camp Jail. Screening of 500+ prisoners and staff was done in a herculean task within a couple of days. 59 COVID-19 positive cases were identified and managed at the facility without any incident. Fig. 9 Even though now the Camp Jail has been COVID-19 free for over a month the facility in still in place to deal with any emergency. All this was done in light of international guidelines.[17] The detailed experience has also been published [18].
12. Collaboration with philanthropists

A large number of philanthropists stepped forward to help in this time of crisis. Considering their requests for anonymity only some of the works done by them are highlighted. Contribution towards PPE for HCP working during the COVID-19 pandemic was made. Provision of meals for all the admitted patients was done. Meals for Camp Jail hospital were also provided. They also provided sanitization tunnels.

By October 2020, our hospital has provided services to almost 3800 suspected COVID-19 patients. Of these 567 were confirmed as COVID-19. 520 patients have recovered and have been discharged while there was mortality of 47 patients.

13. Provenance and peer review

Not commissioned, externally peer reviewed.

14. Conclusion

Managing a pandemic is a stressful task. Even the best healthcare systems of the world have faced enormous problems in this regard. By taking necessary steps and implementing difficult decisions we have been able to fight effectively against the pandemic. Our experience provides hope that even with limited resources one can fight against the pandemic provided there is will power and dedicated personnel.
Ethical approval

No direct patient study done. Only steps taken to combat COVID-19 outlined.

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Author contribution

Ayyaz M - study concept, data collection, data analysis, writing the paper.
Chima KK - study concept, data collection, data analysis, writing the paper.
Khan WH - data collection, data analysis, writing the paper.
Butt UI - study concept, data collection, data analysis, writing the paper.
Umar M - study concept, data collection, writing the paper.
Wasim T - data collection, data analysis, writing the paper.
Farooka MW - data collection, data analysis, writing the paper.

Registration of research studies

Name of the registry: NO DIRECT PATIENT STUDY DONE. ONLY STEPS TAKEN TO COMBAT COVID-19 OUTLINED
Unique Identifying number or registration ID:
Hyperlink to your specific registration (must be publicly accessible and will be checked):
Guarantor

Mahmood Ayyaz.

Consent

No direct patient study done. Only steps taken to combat covid-19 outlined.

Declaration of competing interest

Nil.
Picture 8. Open OPD with triage counters and seating arrangements.

Picture 9. COVID-19 facility at camp jail.
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