

Preparedness of COVID 19 in our hospital setting**P. N. Agrawal^{1*}, Neelima Agrawal²**¹ *Consultant Respiratory and Critical care Agrawal Hospital ,Bhopal.M.P.,India*² *Consultant,Obstretics and Gynaecology,Agrawal Hospital ,Bhopal, M.P.,India***Received: 22-01-2021 / Revised: 20-03-2021 / Accepted: 03-05-2021****Abstract**

Objective: Ours is a multispecialty non-covid hospital, therefore the objective was to do strategic preparedness and to make response plan for our hospital during covid 19. Main aims were, 1. To protect staff & healthcare workers from getting infected. 2. To be able to offer uninterrupted services to all our patients. 3. To prevent hospitalization of COVID-19 patients in our setup. **Methods** It is a retrospective study of 9 months from 1st April 2020 to 31st December 2020 in which we assessed the nonstop working of our OPD, IPD, emergency and OT. Different strategies were adopted according to the interim guidance protocols of WHO and Government of India guidelines to deal with the crisis situation of the COVID-19 pandemic. **Results** Our adopted strategies were directed to mitigate the challenges of administration, hospital space organization, management of staff and supplies, maintenance of standard of care, and ethics during this pandemic. We formulated protocols and guidelines for uninterrupted service and that data is being now used for our own improvement and further planning. Data was tabulated and converted into bar diagrams. Various aspects were analysed and future protocols and policies were devised. Based on strategies adopted by us, we feel more confident and prepared to deal with COVID-19 pandemic. **Conclusion** Strict Adherence to the WHO and Government of India guideline, Meticulous planning, adequate protection of health care workers, uninterrupted supply of PPE kit, sanitizers masks, proper screening and early detection and transfer of suspected cases were the key features in the fight with COVID-19. Our approach for preparing for the COVID-19 pandemic may not be the best one but we believe that the basic managerial principles we adopted will guide many other institutions to find their path in tackling the pandemic in the best possible way.

Keywords: COVID-19 pandemic, health care workers, protocols and guidelines

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Introduction

India is facing the pandemic of coronavirus disease (COVID-19) just like the whole world. The private sector is the backbone of a healthcare facility in India. Presently, only a few major hospitals in the country are actively dealing with the COVID-19 patients while others are facing troubles due to lack of manpower, management, and required experience to face the pandemic. Despite all possible efforts, the cases are ever increasing and each and every hospital in the country should be prepared to face this pandemic the world has never seen before. As one of the major respiratory and critical care hospital and being a non-covid center, we regularly got patients from all parts of M.P. and adjoining states. Our challenges were many, major being: A) To impart uninterrupted health services in OPD, IPD, obstetric & surgical care.

B) To protect our HCW's, nursing staff, front desk staff and even 4th class workers, Patients & their attendants from getting infected. C) To

Methodology and Observation

cater to those people who are not able to reach our hospital due to lockdown or various other reasons. We developed and adopted various protocols and made some strategies for better preparedness to face the surge of this pandemic. These were adopted and promptly modified according to the interim guidance protocols of WHO and Government of India guidelines issued from time to time to deal with the crisis situation of the COVID-19 pandemic. These aimed to slow and stop disease transmission, prevent outbreaks and delay spread. It also provided optimized care for all patients. Lastly to minimize the impact of the epidemic on health systems, social services and economic activity. We would like to share our experience and hope that the strategies laid down and adopted by us will help many other acute care facilities in many parts of India[1-3]

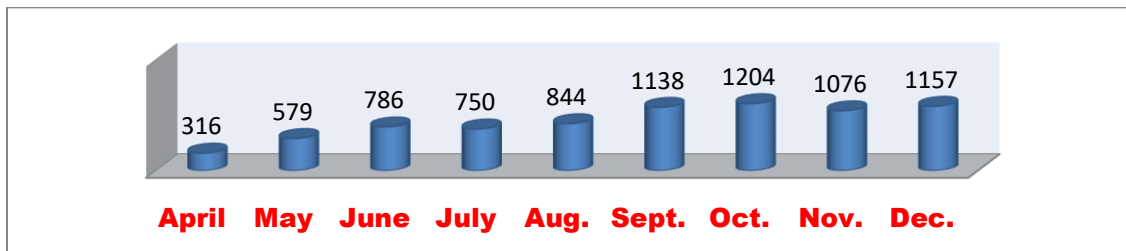


Fig 1: Number of patients in OPD

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Fig 1 shows no. of OPD patients in last 9 months which gives an idea about the estimated footfall, load on the front desk and how to manage appointment slots so as to reduce congestion and wait time of the patient. Overall aim is to give better service and to increase patient satisfaction rate. Primary screening was conducted on

everyone entering the facility, including questions about exposure to COVID19, personal symptoms and signs, saturation and temperature checks. Hand washing and sanitization was also done there. Masks were made mandatory for everyone and attendants were allowed on one to one basis only[4,5].

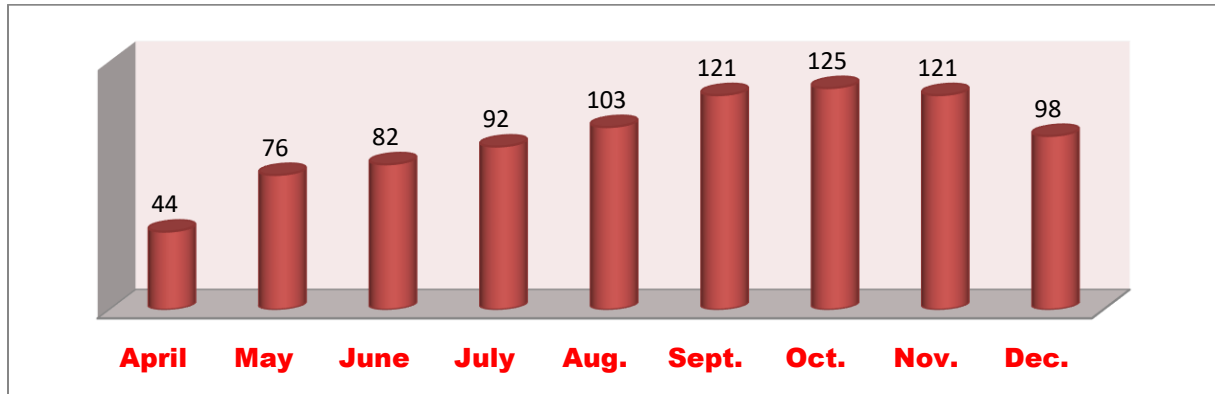


Fig 2: Number of patients in IPD

Fig 2 shows number of patients admitted in our hospital wards and ICU during these nine months. OT, ICU, IPD and Emergency departments were continuously running without interruption all through the year without any break including Sundays and festivals reduction of time spent at bedside was a major goal for HCWs providing care while still ensuring state-of-the-art care and management. HRCT was done which was very much conclusive and patients were dealt accordingly. CDC

guidelines for respiratory isolation with airborne precautions were followed. Till confirmation of suspected patient, everyone was kept in an isolation room and limited staff attended the patient. Private rooms were also prepared for a surge of patients if needed. Strict protocols were instituted for any aerosol-producing procedures including nasopharyngeal sample collection, nebulizer administration, bronchoscopy and intubation [6,7].

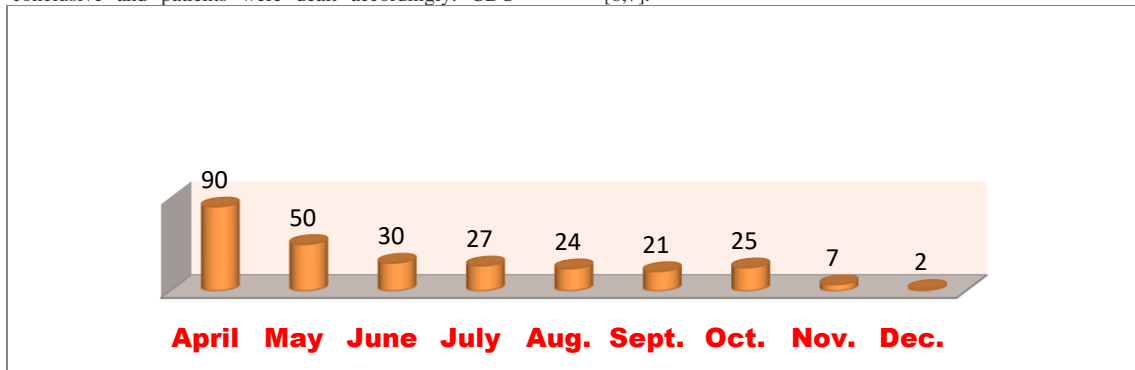


Fig 3: Teleconferencing and phone consultation

Outpatient clinics underwent a rapid succession of conversion to video-medicine clinics. When video visits were not feasible, telephone clinics were established. Patient was given appointment on phone and previous papers, medical history and ongoing treatment was seen on whatsapp. Then on given slot, the patients used to videocall and tell his/her complaints .After patiently hearing the

problems, adequate advice and medicines were prescribed by the doctor and prescription scanned and sent to him/her on whatsapp. A reasonable consultation fee was charged by UPI payment mode. Since the lockdown, there have been many patients who have benefitted from this facility of ours and have appreciated us for the same[8-10]

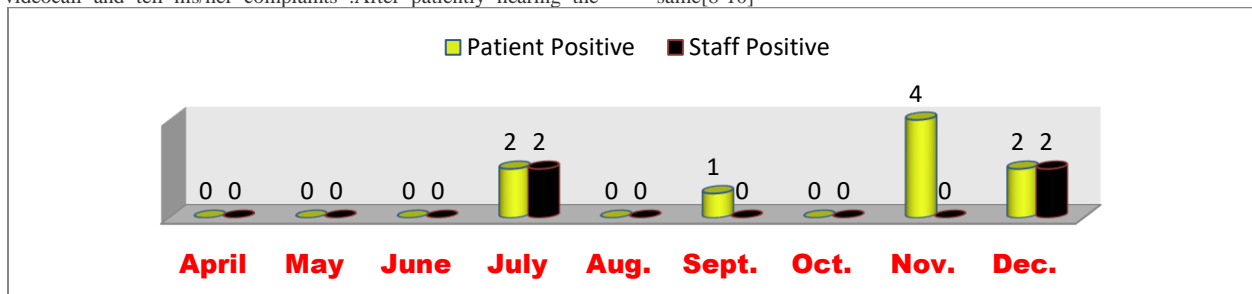


Fig 4: Depict number of positive patients and staff members

Even after many precautions, there were instances when some of our patients and few staff members were found positive. Due care was taken to shift out the patients and staff members to their convenient nearby COVID hospitals. Contact tracing was done and staff persons who were in contact were adequately quarantined and closely watched for any symptoms. Till December only 9 patients and 4 staff members were found positive for the virus and aggressively dealt with[11-13]

Results

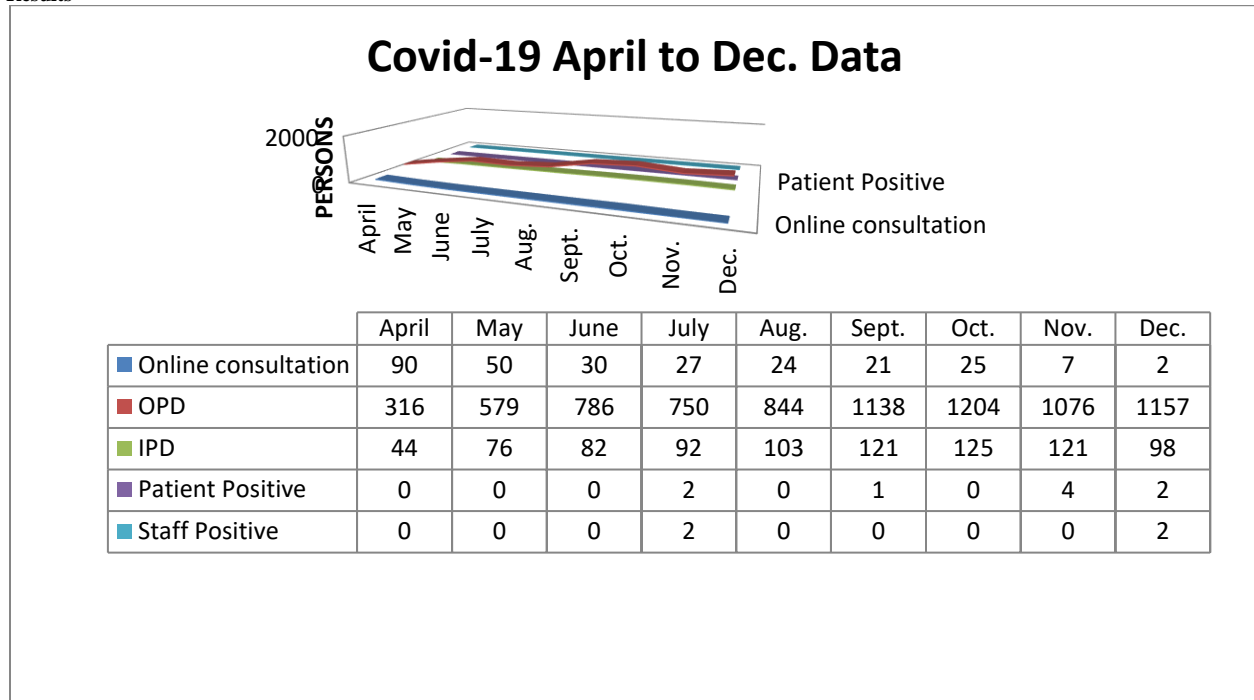


Fig 5: Depict number of positive patients and staff members

Line diagrams made to summarize the assimilated data which tells us about the various trends being followed throughout the year and we could estimate a similar trend and be prepared accordingly.

Statistical Analysis: Data was compiled using MS excel 2007 and analysis was done with the help of Epi-Info 7 software. Frequency and percentage were calculated. Pie Figs and bar diagrams were made using Microsoft word 2016 and line diagrams also made to summarize the assimilated data.

Discussion

Response to pandemic is a multi-disciplinary team effort with efficient leadership that meets several times daily to work at a quick pace in order to make effective implementation of preparatory measures before the actual arrival of the first infected patients followed by a continuity of the same diligence to ensure modifications in plans as needed and addressing new demands as they arise. Outpatient clinics underwent a rapid succession of conversion to video-medicine clinics. We were first in Bhopal to start with video conferencing and conversion from in-person clinic visits to video visits was effortless and immediate. When video visits were not feasible, telephone clinics were established. For people visiting the OPD, entrance to our hospital was limited to the emergency room (ER) and on manned entrance, we ensured primary screening was conducted on everyone entering the facility, including questions about exposure to COVID19, personal symptoms and signs, saturation and temperature checks. Hand washing and sanitization was also done there. Masks were made mandatory for everyone and attendants were allowed on one to one basis only. Those who failed primary screening received a secondary screen by a physician who examined and collected samples for testing as indicated. HRCT was done which was very much conclusive and patients were dealt accordingly. CDC guidelines for respiratory isolation with airborne precautions were followed. Till confirmation of suspected patient,

everyone was kept in an isolation room and limited staff attended the patient. Strict protocols were instituted for any aerosol-producing procedures including nasopharyngeal sample collection, nebulizer administration, bronchoscopy and intubation. Full PPE [gown, gloves and either N-95 respirator with face shield] was ensured to prevent infection among HCWs[14]. Care of our staff was utmost priority because if a HCW acquires the infection, it leads to a double burden on the health-care system, as not only does the HCW become unavailable to work but also becomes one who now needs to be cared for. In addition, the morale of other HCWs could take a toll. Hence, it is imperative to do all that it takes to prevent infection to the HCWs. PPE kits, jumpsuits, N-95 face masks. HCQ prophylaxis was given in sufficient numbers to all health workers. Handwashing, Sanitizers or soap and water was provided at the entrance of each area – OPD, wards, etc., and its use mandated before entry. Within work areas, the use of hand sanitizers/washing with soap and water may be practiced before and after touching patient/patient bed. Regular trainings, knowledge about disease, its spread, signs and symptoms and early detection were the key in controlling the spread. OT, ICU, IPD and Emergency departments were continuously running without interruption all through the year without any break including Sundays and festivals. To ensure availability of adequate staff and to minimize possibility of infection from public transport, hospital vehicle was employed which brought staff members from all nook and corners of the town in all the 3 shifts. Reduction of time spent at bedside was a major goal for HCWs providing care while still ensuring state-of-the-art care and management. This helps protect HCWs from unnecessary exposure and save PPEs, which are still in short supply. This was achieved by in-depth education to HCWs on novel way of providing healthcare. Providers were trained to conduct team huddles to review all data they would need, examination findings they would look for, and information they

would provide to the patient at bedside. Carefully planned bedside nursing visit that would provide meal, medications, vital sign checks, and all other required care in the same visit if possible.

Decontamination of door handles, floor, table tops, nursing stations, common areas and equipment with strong disinfectant wipes was done on regular basis. Simulation was conducted several times for all HCWs to be fully conversant on conducting resuscitation and emergency procedures patients, as these involve high-risk aerosol-generating manoeuvres. Measures were placed by intensivists and anaesthesiologists for reduction of aerosol generation for example using intubation box[15] Being a respiratory care unit, procedures like laryngoscopes and bronchoscopies were regularly done. We specially designed a plastic disposable screen out of file cover which was specially used during bronchoscopies. This was a major concern as bronchoscopy and intubation invoked quite a few aerosol spread chances. Number of in-room personnel was streamlined significantly, with pre-designated roles. All educational and clinical classes were immediately converted to virtual meetings to ensure social distancing. A distance of 6 feet between providers was underscored. Containers of disinfectant wipes were placed in all workstations. HCW teams were restructured to provide longer resting periods between service times to allow for de-stressing and for high intensity care during service hours. This was done to allay fears, to enhance preparedness, to strengthen workforce and continue the dedication toward education. Though rapidly evolving guidelines, trepidation about the disease, logistic delays, and lack of support systems for people under quarantine were the challenges in the containment exercise. But challenges were encountered and overcome through interdisciplinary collaboration and iterative surge planning as ICU admissions. Support was provided for both clinical and nonclinical staff[15]

Summary

a) Every effort was made on our part to slow and stop transmission. It paid us dividends as very few of our staff members were infected with the disease and we were able to impart uninterrupted 24/7 services throughout the tough period.

b) Every patient was dealt with utmost care and safety, even those who could not reach us were advised adequate treatment on video call and whatsapp.

c) Screening at all levels enabled us in early detection and containment of the disease. The patients and staff which was found positive was meticulously shifted to nearby covid facility with due care and precautions.

d) Various protocols and strategies for better preparedness to face the surge of this pandemic were adopted and promptly modified according to the interim guidance protocols of WHO and Government of India guidelines issued from time to time to deal with the crisis situation of the COVID-19 pandemic.

Conclusion

Pandemic response has never been this quickly needed globally, nor this better informed. The COVID-19 pandemic has occurred in the age of unprecedented global connectivity, and has affected countries worldwide, turning necessity of information sharing into a blessing. While these are unprecedented and frightening times, a coordinated, facile, and effective response can help minimize the impact of this pandemic.

What this study added to existing knowledge

Our experience with hospital preparedness at our facility has been multidisciplinary and effective, largely because we ensured quick and thoughtful application of measures and helped us organize our response. While some of the measures used at our facility may not be applicable at resource-limited healthcare systems, most of our preparedness steps can be implemented globally, and we share them

here to help other institutions learn from our experience, if and as needed.

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