

Preparedness of Jindal Institute of Medical Sciences for COVID-19



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INTRODUCTION

- In December 2019, Wuhan, China reported a number of viral pneumonia cases, which was believed to be caused by a newly identified coronavirus, initially named as 2019-novel coronavirus.
- According to health experts, SARS coronavirus2 is thought to have a zoonotic origin from bats or pangolins.
- People of every age group are susceptible to this disease. The infection is transmitted mainly through symptomatic patients and asymptomatic carriers to others through respiratory droplets .
- Hospitals play a very critical and essential role within the health system in providing medical care to the community, especially during any crisis like an epidemic or a pandemic. Prolonged outbreaks of such endemics or pandemics can lead to continuous spread of disease which results in rapidly increasing service demands that can potentially overwhelm the capacity of hospitals and health system.

REVIEW OF LITERATURE

➤ According to Cao.Y,2020

In this study author wants to highlight the preparedness of West China Hospital's emergency department.

- The author retrospectively reviewed the daily emergency visits and PPE supply records from January 13 to February 1, 2020. There was increase in the number of patients complaining of fever in this time period with maximum patients reported on January 25th.
- The author highlights that emergency and disaster preparedness was a global issue at the time of COVID-19. The West China Hospital invested efforts to establish an emergency management system. These measures concentrated the limited supply through the hospital on the staff who mostly needed protection.
- The author also highlights the interim measures taken by the hospital like online consultation, separate isolation areas for patients suspected of COVID-19, postponing elective and non-essential services,
- Hospital followed a series of measures to achieve “zero infection”

■ **Gupta, Federman, 2020**

- In this study conducted in a hospital in U.S.A, the authors want to highlight the outline of how Connecticut Veterans Affairs Healthcare System prepared for COVID-19.
- The first step was to form an Incident Command Group comprising of the Head of the departments of all the institutional departments of hospital.
- The second step was gatekeeping that is they started screening the patients at the entrance, cancelling and postponing elective and non-urgent services, limitation on the number of visitors.
- Third was provision of PPE kits to the healthcare workers, trainings were provided to enhance the knowledge.
- Fourth, redistribution of hospital beds in order to prepare for COVID-19 patients.

Rooij, 2020

- The aim of this study is to define preparedness of healthcare institutions during threat of infectious diseases that require centralized care.
- Also to develop a standardized preparedness system, describing preparedness activities for healthcare institutions by defining phases of preparedness during threat.
- The phases ranged from no outbreak to a situation where many patients whether suspected or confirmed are admitted to the hospital.
- It was a qualitative three-step study with an iterative design of in-depth interviews and a focus group.
- The study population includes professionals from various levels in healthcare institutions and public healthcare organizations.
- The author highlights the four Pandemics (SARS, H1N1, MERS, Ebola) that have emerged since the beginning of this century, that necessitates global awareness and optimal control strategies

OBJECTIVE

- To assess the status of the hospital preparedness for COVID-19 using the WHO Hospital Emergency response checklist

METHODOLOGY

- **STUDY DESIGN:** Descriptive study
- **STUDY AREA:** Jindal Institute of Medical Sciences
- **DURATION OF STUDY:** 3 months (February, 2020- April, 2020)
- **STUDY TOOL:** WHO hospital emergency response checklist
- **DATA COLLECTION PROCEDURE:** Assessment was done with the help of hospital staff and direct observation. Each component of the checklist was assessed after discussion with the designated staff of the hospital.

WHO EMERGENCY RESPONSE CHECKLIST

The World Health organization, developed an emergency response checklist to guide and assist hospital and emergency managers. This checklist guides the managers and integrates priority actions required for rapid and effective response to any crisis that is approaching.

This checklist has 9 components:

- Command and control
- Communication
- Safety and security
- Triage
- Surge capacity
- Continuity of essential services
- Human resources
- Logistics and supply management
- Post-disaster recovery

RESULTS

For 9 components:

KEY COMPONENT 1:COMMAND AND CONTROL

Activate the hospital incident command group (ICG) or establish an ad hoc ICG, i.e. a supervisory body responsible for directing hospital-based emergency management operations	COMPLETED
Designate a hospital command centre, i.e. a specific location prepared to convene and coordinate hospital-wide emergency response activities and equipped with effective means of communication.	COMPLETED
For each of the nine key components listed in this document, designate an individual (focal point) to ensure the appropriate management and coordination of related response activities.	COMPLETED
Designate prospective replacements for directors and focal points to guarantee continuity of the command-and-control structure and function.	COMPLETED
Implement or develop job action sheets that briefly list the essential qualifications, duties and resources required of ICG members, hospital managers and staff for emergency-response activities	COMPLETED
Ensure that all ICG members have been adequately trained on the structure and functions of the incident command system (ICS) and that other hospital staff and community networks are aware of their roles within the ICS	COMPLETED

FINDINGS FOR KEY COMPONENT 1

The ICG consists of members of hospital representing:

- Hospital administration, Security, nursing administration, human resource, pharmacy, infection control, engineering and maintenance.
- All the Duties and responsibilities of ICG members are listed in the Disaster Management Manual of JIMS and yearly inductive refresher training is provided to all the members.

KEY COMPONENT 2: COMMUNICATION

Recommended Action	Status
Appoint a public information spokesperson to coordinate hospital communication with the public, the media and health authorities	COMPLETED
Draft brief key messages for target audiences (e.g. patients, staff, public) in preparation for the most likely disaster scenarios.	COMPLETED
Ensure that all communications to the public, media, staff (in general) and health authorities are approved by the incident commander or ICG.	COMPLETED
Establish streamlined mechanisms of information exchange between hospital administration, department/unit heads and facility staff	COMPLETED
Brief hospital staff on their roles and responsibilities within the incident action plan.	COMPLETED
Ensure that all decisions related to patient prioritization (e.g. adapted admission and discharge criteria, triage methods, infection prevention and control measures) are communicated to all relevant staff and stakeholders.	COMPLETED
Ensure the availability of reliable and sustainable primary and back-up communication systems (e.g. satellite phones, mobile devices, landlines, Internet connections, pagers, two-way radios, unlisted numbers), as well as access to an updated contact list.	COMPLETED

KEY COMPONENT 3: SAFETY AND SECURITY

Recommended Action	Status
Appoint a hospital security team responsible for all hospital safety and security activities.	COMPLETED
Prioritize security needs in collaboration with the hospital ICG. Identify areas where increased vulnerability is anticipated (e.g. entry/exits, food/water access points, pharmaceutical stockpiles).	COMPLETED
Ensure the early control of facility access point(s), triage site(s) and other areas of patient flow, traffic and parking. Limit visitor access as appropriate.	COMPLETED
Establish a reliable mode of identifying authorized hospital personnel, patients and visitors	COMPLETED
Provide a mechanism for escorting emergency medical personnel and their families to patient care areas.	COMPLETED
Ensure that security measures required for safe and efficient hospital evacuation are clearly defined.	COMPLETED
Ensure that the rules for engagement in crowd control are clearly defined.	COMPLETED
Establish an area for radioactive, biological and chemical decontamination and isolation	COMPLETED
Identify information insecurity risks. Implement procedures to ensure the secure collection, storage and reporting of confidential information.	COMPLETED

FINDINGS FOR KEY COMPONENT 3

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- All the entries/exits were guarded by security guards.
- Guards were given extra training to restrict visitors and crowd.
- Only one attendant was allowed with the patient.
- Entry within the hospital was allowed only after showing Visitor pass for the attendants and Employee ID card for the staff.
- Regular/Periodic announcement on public address system to urge patients to come to hospital only in case of emergency.
- Markings for social distancing were done all over the hospital to ensure safe distance between two people
- An ambulance from the hospital was sent to pick up doctors for night shift to ensure safety.



KEY COMPONENT 4: TRIAGE

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Recommended Action	Status
Designate an experienced triage officer to oversee all triage operations (e.g. trauma or emergency physician or a well-trained emergency nurse in a supervisory position).	COMPLETED
Ensure that areas for receiving patients, as well as waiting areas, are effectively covered, secure from potential environmental hazards and provided with adequate work space, lighting and access to auxiliary power.	COMPLETED
Ensure that the triage area is in close proximity to essential personnel, medical supplies and key care services (e.g. the emergency department, operative suites, the intensive care unit).	COMPLETED
Ensure that entrance and exit routes to/from the triage area are clearly identified.	COMPLETED
Identify a contingency site for receipt and triage of mass-casualties.	COMPLETED
Establish a mass-casualty triage protocol based on severity of illness/injury, survivability and hospital capacity that follows internationally accepted principles and guidelines	COMPLETED
Establish a clear method of patient triage identification; ensure adequate supply of triage tags	COMPLETED
Identify a mechanism whereby the hospital emergency response plan can be activated from the emergency department or triage site.	COMPLETED
Ensure that adapted protocols on hospital admission, discharge, referral and operative suite access are operational when the disaster plan is activated to facilitate efficient patient processing.	COMPLETED

FINDINGS FOR KEY COMPONENT 4

- The medical officers oversee all the triage operations.
- There is a covered receiving area in front of emergency, and there is a waiting area at the entry of the emergency
- The emergency department is at ground floor with easy access to Radiology department, OT, and is in close proximity to Trauma ICU. There is an isolation room in the emergency department itself, all suspected patients of COVID-19 is immediately isolated to contain virus transmission.
- The main entrance and exit of emergency department is guarded by security guards.
- South African Triage is followed.
- Screening of all patients and attendants at the first point of contact with the health system in order to identify individuals that have suspected or confirmed COVID-19
- After screening and isolation, patients who are suspected COVID-19 are triaged with a standardized triage tool such as Interagency Integrated Triage Tool, and evaluated to determine disease severity.

KEY COMPONENT 5: SURGE CAPACITY

Recommended Action	Status
Calculate maximal capacity required for patient admission and care based not only on total number of beds required but also on availability of human and essential resources and the adaptability of facility space for critical care.	COMPLETED
Estimate the increase in demand for hospital services, using available planning assumptions and tools	COMPLETED
Identify methods of expanding hospital inpatient capacity (taking physical space, staff, supplies and processes into consideration).	COMPLETED
Verify the availability of vehicles and resources required for patient transportation.	COMPLETED
Prioritize/cancel nonessential services (e.g. elective surgery) when necessary.	COMPLETED
Designate an area for use as a temporary morgue. Ensure the adequate supply of body bags.	COMPLETED

FINDINGS FOR KEY COMPONENT 5

- Amid the COVID-19 pandemic, 125 beds were kept for isolation of suspected and or positive patients, and ventilators in negative pressure isolation room. In case of admission of COVID-19 positive patients, were admitted in Medical east (isolation ICU) The patients were transported via designated route
- All non-emergency OPD, Routine OPD were stalled till 22nd April,2020, to prevent overcrowding. To take care of patients follow up OPD, Emergency OPD, Emergency patients were taken care.
- A helpdesk was set up to enable telephonic OPD, through which patients can book time-slots to seek OPD consultation between 10 AM to 6 PM
- All elective surgeries were cancelled.
- The ambulance service is outsourced at JIMS, the ambulance contractor was instructed to be a standalone facility only for JIMS

Time Slot	Departments			
10AM-12Noon	ENT	Surgery	Medicine	Dental
12Noon-2PM	Pead.	Cardiac	Nephro	Medicine
2PM-4PM	Plas. Sur	Ortho	Gastro	Onco
4PM-6PM	Gynae.	N.Surg	Eye	Urology

KEY COMPONENT 6: CONTINUITY OF ESSENTIAL SERVICES

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Recommended Action	Status
List all hospital services, ranking them in order of priority.	COMPLETED
Identify and maintain the essential hospital services, i.e. those that need to be available at all times in any circumstances.	COMPLETED
Identify the resources needed to ensure the continuity of essential hospital services, in particular those for the critically ill and other vulnerable groups (e.g. paediatric, elderly and disabled patients)	COMPLETED
Coordinate with the health authorities, neighbouring hospitals and private practitioners on defining the roles and responsibilities of each member of the local health-care network to ensure the continuous provision of essential medical services throughout the community.	COMPLETED
Ensure the availability of appropriate back-up arrangements for essential life lines, including water, power and oxygen.	COMPLETED
Ensure contingency mechanisms for the collection and disposal of human, hazardous and other hospital waste	COMPLETED

FINDINGS FOR KEY COMPONENT 6

- There is a list in which all the services provided by the hospital are listed.
- Although OPD was closed, but all the essential services were running 24*7. and even for public convenience Telephonic OPD was started.
- For continuous provision of medical services, JIMS was in contact with the local government hospital and medical college.
- Power backup is available round the clock. Levels of oxygen is monitored daily.
- There is a proper biomedical waste management for segregation, collection and disposal for biomedical waste generated from COVID-19 patients, which is separate from normal patients.

KEY COMPONENT 7: HUMAN RESOURCES

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Recommended Action	Status
Update the hospital staff contact list.	Completed
Estimate and continuously monitor staff absenteeism.	Completed
Establish a clear staff sick-leave policy, including contingencies for ill or injured family members or dependents of staff.	Completed
Identify the minimum needs in terms of health-care workers and other hospital staff to ensure the operational sufficiency of a given hospital department	Completed
Establish a contingency plan for the provision of food, water and living space for hospital personnel.	Due for review
Prioritize staffing requirements and distribute personnel accordingly.	Completed
Provide training and exercises in areas of potential increased clinical demand, including emergency and intensive care, to ensure adequate staff capacity and competency.	Completed
Cross-train health-care providers in high-demand services (e.g. emergency, surgical, and intensive care units).	Completed
Ensure adequate shift rotation and self-care for clinical staff to support morale and reduce medical error.	Completed
Identify domestic support measures(e.g. travel, childcare for ill or disabled family members) to enable staff flexibility for shift reassignment and longer working hours.	In progress
Ensure staff dealing with epidemic-prone respiratory illness are provided with appropriate vaccinations, in accordance with national policy and guidelines of the health authority.	Complete

FINDINGS OF KEY COMPONENT 7

- The H.R department has a list of all the details of all the staff in hospital and staff is expected to inform the department if any changes in details occur.
- Monitoring staff absenteeism is NABH KPI that all NABH accredited hospitals have to maintain.
- Several trainings have been provided to both clinical and non-clinical staff to ensure adequate staff capacity and competency.
- More experienced and qualified staff is posted in critical areas.
- There is an adequate shift rotation and self-care for staff working in clinical areas as on contact with positive patients, sample is taken for COVID-19 testing and staff is quarantined for 14 days.
- All the staff in hospital are vaccinated for diseases(Hep. B, tetanus)



KEY COMPONENT 8: LOGISTICS AND SUPPLY MANAGEMENT

Recommended Action	Status
Develop and maintain an updated inventory of all equipment, supplies and pharmaceuticals; establish a shortage-alert mechanism.	Completed
Estimate the consumption of essential supplies and pharmaceuticals, (e.g. amount used per week) using the most likely disaster scenarios	Completed
Consult with authorities to ensure the continuous provision of essential medications and supplies (e.g. those available from institutional and central stockpiles and through emergency agreements with local suppliers and national and international aid agencies).	Completed
Assess the quality of contingency items prior to purchase; request quality certification if available.	Completed
Establish contingency agreements (e.g. memoranda of understanding, mutual aid agreements) with vendors to ensure the procurement and prompt delivery of equipment, supplies and other resources in times of shortage	In progress
Identify physical space within the hospital for the storage and stockpiling of additional supplies, taking ease of access, security, temperature, ventilation, light exposure, and humidity level into consideration. Ensure an uninterrupted cold chain for essential items requiring refrigeration.	Completed
Stockpile essential supplies and pharmaceuticals in accordance with national guidelines. Ensure the timely use of stockpiled items to avoid loss due to expiration.	Completed
Ensure that a mechanism exists for the prompt maintenance and repair of equipment required for essential services. Postpone all non-essential services when necessary.	Completed

FINDINGS FOR KEY COMPONENT 8

- In routine operations, the lead time is 1.5 months but in COVID-19 Pandemic the lead time is increased to 2 months. Lead time is increased as the consumption has been decreased. 15 days is the reorder period.
- Consumption of essential supplies and pharmaceuticals is monitored daily and a chart is prepared daily to see the amount of consumption.
- For continuous supply of essentials during lockdown the CMO of district was sent a list of essential items needed in the hospital. Local authorities and dealers were contacted
- Materials procured are approved by DTC, WHO, JMP, USFDA, European certified, DGCI.
- There are 4 stores within hospital premises, meeting the requirements such as proper temperature, humidity, and light exposure

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