



A PILOT STUDY REPORT ON HEALTH CENTRES PREPAREDNESS TOWARDS PANDEMIC INFLUENZA : NEED OF THE HOUR

Healthcare

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ABSTRACT

Introduction- In addition to the threat of high morbidity and mortality, influenza pandemics can overwhelm health systems and cause significant societal and economic disruption. Pandemic preparedness is vital for ensuring health and other essential systems continue functioning during a pandemic, thereby reducing the economic and social cost. (1) The impact of pandemic influenza outbreaks on individuals and societies can be reduced by being well prepared. This means having a comprehensive plan, that has been tested and refined through conducting exercises, engaging the whole of society. National plans should be flexible enough to respond to outbreaks of various intensity. (2) **Methods-** This pilot study report presents the health centre preparedness data collected from 20 health care workers with the help of a structured questionnaire across the Health centres from the selected city in October 2021 through a Non-experimental descriptive research design. Probability cluster sampling technique was used for selection of participants with the objective of assessing the health centres preparedness towards pandemic influenza in the selected areas. The collected data was tabulated in master sheet and analyzed by using descriptive and inferential statistics as per the objectives of the study. The preparedness domains assessed were Communication, Surge capacity, infrastructure availability, health worker safety, essential support services, infection control and patient care. **Results-** Sociodemographic profile distribution of respondents according to their Age depicted that highest percentage (28.2%) were in age group of 30 to 35 years, (25.6%) 20 to 25 years, (10.3%) 40 to 45 years (7.7%) 35 to 40 years. All the respondents were Females 20(100%). Religion depicts that highest percentage (87.2%) were Hind (7.7%) Christian (2.6 %) Muslim (2.6%) other religion. Education depicts that highest percentage (48.7%) had completed General Nursing and Midwifery, (43.6%) Post Basic B.Sc. Nursing (7.7%) Basic B.Sc. Nursing. According to their area of work depicts that highest percentage (48.7%) were working in Urban Health Dispensary, (12.8%) Urban Health Training Centre (2.6%) Urban Health Centre (Health Post). Distribution of respondents as per years of experience depicts that highest percentage (51.3%) were having 0 to 5 years of experience (15.4%) 10 to 15 years of experience and (10.3 %) 15 to 20 and (0%) above 20 years of experience. Analysis of level of health centre preparedness depicts that highest percentage (75%) of health centres were highly prepared (20%) of them were adequately prepared and (5 %) were inadequately prepared. **Conclusion and Implications-** Health centres across the city demonstrated different levels of influenza pandemic preparedness and planning. If a more severe influenza pandemic than that of 2009 arose the health centres are adequately prepared for the same. Various strategies, including education and communication, should be included with in-service training to provide staff with confidence in their ability to work safely during a future pandemic.

KEYWORDS

Pandemic, Influenza, Health Centres, Preparedness

INTRODUCTION

Pandemics caused by influenza and other respiratory viruses have occurred in the past in human history and will occur again. With certainty, there will be a next influenza pandemic, although we do not know exactly when or what strain of the virus it will be. As seen in previous influenza pandemics, e.g., the 1918 Pandemic and the 2009 H1N1 pandemic. An influenza pandemic can cause up to millions of deaths, put a strain on health systems, and impose significant economic costs. Therefore, preparedness for the next pandemic is critical to achieve optimal response outcomes and is also urgent, because the next influenza, or other virus pandemic, can occur at any time. Pandemic preparedness presents opportunities to strengthen the core capacities needed to manage smoothly a pandemic, such as emergency coordination, collaborative surveillance, community protection, clinical care and access to medical products. Strengthening core capacities are fundamental to the implementation of international health regulations (IHR) (2005) (2)

An influenza pandemic is projected to have a worldwide impact on morbidity and mortality, thus requiring a sustained, large-scale response that has the potential to quickly overwhelm hospitals and the healthcare system regionally and nationally. Because an influenza pandemic may quickly overwhelm the healthcare community (hospitals, outpatient clinics, the pre-hospital environment, nursing homes, assisted living centers, and private home healthcare) planning should address: internal continuation of care and coordination of services with local, state, and federal healthcare agencies. (3)

Healthcare resources are not easily shared or redistributed; a pandemic will magnify and strain resources on a much larger scale. Collaboration with state and federal partners is vital to ensure that healthcare facilities have assistance with consumables, medication, and vaccines during the pandemic (4,5)

METHODS-

This pilot study studied the health centre preparedness through the data

collected from 20 samples (health care workers) working in selected health centres of the city with the help of structured questionnaire which was tested for reliability using Cronbachs alpha for internal consistency. Reliability coefficient for internal consistency was 0.967 is Excellent. Tool was prepared based on the Pandemic Influenza Preparedness and Response Guidance for Healthcare Workers and Healthcare Employers by OSHA and WHO checklist for influenza pandemic preparedness planning. The preparedness domains assessed were Communication, Surge capacity, infrastructure availability, health worker safety, essential support services, infection control and patient care. (7)

The study proceeded only after the ethical clearance and due permission of the health department of the city in October 2021 through an Quantitative Non-experimental descriptive research design. Probability cluster sampling technique was used for selection of study participants with the objective of assessing the health centres preparedness towards pandemic Influenza in the selected areas. Setting of the study was urban and rural health centres of the city.

RESULTS-

Analysis of the data showed the Sociodemographic characteristics distribution of respondents according to their Age depicted that highest percentage (28.2%) were in age group of 30 to 35 years, (25.6%) 20 to 25 years, (10.3%) 40 to 45 years and (7.7%) 35 to 40 years. All the respondents were Females 20(100%). Religion depicts that highest percentage (87.2%) were Hindu, (7.7%) Christian (2.6 %) Muslim religion (2.6 %) from other religion. Education depicts that highest percentage (48.7%) completed General Nursing and Midwifery, (43.6%) Post Basic B.Sc. Nursing (7.7%) Basic B.Sc. Nursing. Percentage wise distribution of respondents according to area of work depicts that highest percentage (48.7%) were working in Urban Health Dispensary, (12.8%) Urban Health Training Centre and (2.6%) Urban Health Centre (Health Post). Distribution of respondents according to their year of experience depicts that highest percentage (51.3%) having 0 to 5 years of experience (15.4%) having 10 to 15

years of experience and (10.3 %) having 15 to 20 and above 20 years of experience. (Table 1) As per the objective analysis shows that level of health centre preparedness depicts that highest percentage of health centres (75%) were highly prepared and (20%) of them were adequately prepared (5 %) were inadequately prepared. (Table 2) and Item Analysis of the structured questionnaire was also done. (Table 3)

Table No-1 Frequency and percentage wise distribution of demographic Variables

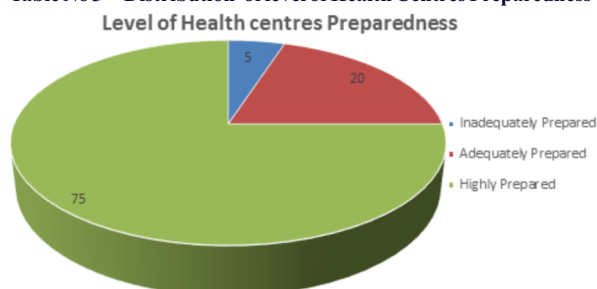
Sr. No.	Socio-demographic data	Appropriate Answer	P Value
1. Age			
1	20 – 25 years	1(5.0%)	0.112
2	25 – 30 years	5(25.0%)	
3	30 – 35 years	8(40.0%)	
4.	35 – 40 years	2(10.0%)	
5.	40 – 45years	4(20.0%)	
2. Gender			
1	Male	0 (0%)	-
2	Female	20(100%)	
3.Religion			
1	Hindu	19 (95.0%)	0.00
2	Christian	1(5%)	
3	Muslim	0(0%)	
4	Others	0(0%)	
4. Education			
1	Auxillary Nurse Midwife	0(0%)	0.086
2	General Nursing & Midwifery	11 (55.0%)	
3.	Basic B.Sc Nursing	3 (15.0%)	
4.	Post Basic B.Sc Nursing	6 (30.0%)	
5. Area of work			
1.	Urban health centre (Health Posts)	1(5.0%)	0.006
2.	Urban Health Dispensary	6(30.0%)	
3.	Urban Health Training Centre	2(10.0%)	
4.	Primary Health Centre	11(55.0%)	
6. Years Of Experience			
1.	0-5 years	5(25.0%)	0.827
2.	5-10 years	2(10.0%)	
3.	10-15 years	5(25.0%)	
4.	15 – 20 years.	4(20.0%)	
5.	20 years and above	4(20.0%)	

Table No 2- Frequency and percentage wise distribution of level of health centre preparedness

Level of Health centres preparedness			
	Frequency	Percent	P Value
Inadequately Prepared	1	5.0	0.00
Adequately Prepared	4	20.0	
Highly Prepared	15	75.0	
Total	20	100.0	

Percentage wise distribution of respondents according to the level of health centre preparedness depicts that highest percentage (75%) were highly prepared and (20%) of them were adequately prepared and (5 %) were inadequately prepared.

Table No 3- Distribution of level of Health Centres Preparedness



Limitations

The main limitations of this study is small number of sample size, and a relatively low response rate. In addition, the planning frameworks identified by respondents only represent the knowledge of the respondents rather than the practice that might be implemented. The study was also strengthened by the addition of qualitative interview data to expand on the quantitative survey results.

DISCUSSIONS-

Pandemics can be variable in their disease severity ranging from very mild, as occurred in 2009, to very severe, as happened in the 'Spanish influenza' of 1918-19 when an estimated 50 million people died globally. ⁽⁸⁾ Moderate pandemics were seen with the more recent Asian flu in 1957 (H2N2) and the Hong Kong flu in 1968 (H3N2) in which there were an estimated two million and one million deaths worldwide, respectively. When the pandemic arrived in May 2009, health centres were in varying stages of preparation and many found their plans to be inadequate to the challenges at hand. ⁽¹⁾

A research conducted on Hospital capacity and management preparedness for pandemic influenza in Victoria stated that Staff from 22 hospitals provided responses to the questionnaire, a response rate of 51%. Seven responses were received from rural/ regional hospitals (7/16 = 44%) and 15 from metropolitan hospitals (15/27 = 56%) with the latter including one private hospital. Hospital sizes ranged from 35 to 885 hospital inpatient beds (median = 260, metropolitan median = 352, rural/regional median = 101) with 184 to 5,000 full-time equivalent staff (median = 2,370, metropolitan median = 2,485, rural/regional median = 944) and between 8 and 62 ED and ICU beds combined (median = 44, metropolitan median = 52, rural/regional median = 17). All but two rural services (91%) reported confirmed cases of H1N1 influenza at their hospital during the 2009 H1N1 pandemic. Nine participants (41%) indicated that they were the Emergency Management Coordinator or similar title, five respondents (23%) held positions related to infection control, four (18%) were ED Managers and three respondents (14%) identified their role as relating to Nursing or Acute Services. Half of the questionnaire responders consented to an interview. All respondents surveyed indicated that an incident control system (ICS) was in place and all but three had been internally reviewed within the last two years (86%). ⁽²⁾

The cross-sectional study was conducted to determine the primary health care facility preparedness toward the provision of safe outpatient services during the COVID-19 pandemic in India among 60 supervisors and managers of primary health care facilities attached to medical colleges and institutions in India. Data was collected through a rapid survey from April 24 to 30, 2020, using a Google Forms online digital questionnaire, preparedness domains assessed were infrastructure availability, health worker safety, and patient care. A total of 51 faculties responded to the survey. Each medical college and institution had on average a total of 2.94 (SD 1.7) PHCs under its jurisdiction. Infrastructural and infection control deficits at the PHC were reported of limited physical space and queuing capacity, lack of separate entry and exit gates (n=25, 49%), inadequate ventilation (n=29, 57%), and negligible airborne infection control measures (n=38, 75.5%). N95 masks were available at 26 (50.9%) sites. Infection prevention and control measures were also suboptimal with inadequate facilities for handwashing and hand hygiene reported in 23.5% (n=12) and 27.4% (n=14) of sites, respectively. The operation of outpatient services, particularly related to maternal and child health, was significantly disrupted (P<.001) during the COVID-19 pandemic. ⁽³⁾

The lack of citations for the state or national frameworks as the basis for hospital pandemic plans was surprising, and although the reasons for this were not explored, the lack of a consistent framework on which hospital pandemic plans were based may hamper state and national co-ordination efforts in the future. The WHO emergency response framework was the most commonly cited basis for hospital pandemic plans. This framework was designed for external situations likely to challenge a hospital's capacity to maintain normal services, ⁽³⁾

Conclusion and Implications–

Health centres across the city demonstrated different levels of influenza pandemic preparedness and planning. If a more severe influenza pandemic than that of 2009 arose the health centres are now adequately prepared for the same. Various strategies, including education and communication, should be included with in-service

training to provide staff with confidence in their ability to work safely during a future pandemic. Efforts should be targeted at inculcating relevant knowledge and educating the health care workers to improve practices in the current pandemic, as well as for future epidemics. Phasing of Pandemic Preparedness and Response and the Action plan for Preparedness & Response should be developed based on the Influenza pandemic preparedness and response plan prepared by the Directorate General of Health Services, Ministry of Health and Family Welfare, Government of India.⁽⁹⁾

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Competing interests

The authors declare that they have no competing interests.

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