COVID-19: A FAST-EVOLVING PANDEMIC

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Abstract:

This article is comparative analysis of those countries who have best medical care service in the world, the present study provides an outline of the coronavirus wellness 2019 (COVID-19) irruption that has speedily extended globally at intervals a brief amount. COVID-19 may be an extremely infectious disease caused by a replacement coronavirus called SARS-CoV-2 (severe acute metabolic process syndrome-coronavirus-2). SARS-CoV-2 is totally different from the usual coronaviruses accountable for a delicate's illness likes a respiratory disease among people at large. It's crucial to grasp the impact and outcome of this pandemic. We tend to so summary the changes within the curves of COVID-19 confirmed cases and rate in China and out of doors of China from the thirty-first of Dec 2019 to twenty-fifth of March 2020. We tend to additionally aim to assess the temporal developments and death rate of COVID-19 in China and worldwide. Over 414,179 confirmed cases of COVID-19 are according to 197 countries, together with eighty-one,848 cases in China and 332,331 outside of China. What is more, 18,440 infected patients died from COVID-19 infection; three,287 cases were from China and fifteen,153 fatalities were according worldwide. Among the worldwide infected cases, 113,802 patients are recovered and discharged from totally different hospitals. Effective bar and management measures ought to be taken to manage wellness. The given Chinese model (protocol) of wellness bar and management may be utilized to curb the pandemic scenario.

KEYWORDS: Pandemic, Health Care, SARS-CoV-2

INTRODUCTION:

The present study provides an outline of the coronavirus sickness 2019 (COVID-19) happening that has apace extended globally among a brief amount. COVID-19 could be a extremely infectious disease caused by a replacement coronavirus called SARS-CoV-2 (severe acute metastasis syndrome-coronavirus-2).[1] SARS-CoV-2 is completely different from usual coronaviruses accountable for delicate illness like cold among citizenries. it is crucial to know the impact and outcome of this pandemic. we tend to thus summary the changes within the curves of COVID-19 confirmed cases and mortality rate in China and out of doors of China from thirty first of we tend to conjointly aimed to assess the temporal developments and death rate of COVID-19 in China and worldwide. over 414,179 confirmed cases of COVID-19 are reportable in 197 countries, as well as eighty-one,848 cases in China and 332,331 outside of China. what is more, 18,440 infected patients died from COVID-19 infection; three,287 cases were from China and fifteen,153 fatalities were reportable worldwide. Among the worldwide infected cases, 113,802 patients are recovered and discharged from completely different hospitals.

OBJECTIVES:

The main objective of this COVID-19 set up is to stop, space find and effectively answer any COVID-19 irruption This tool is intended to support risk communication, community engagement workers and responders operating with national health authorities, and different partners to develop, implement and monitor a good action plan for act effectively with the general public, partaking with communities, native partners, and also the possible outcome on health preparedness.

METHODOLOGY:

MATERIAL AND METHODS Collection of data: COVID-19 confirmed cases and number of deaths are collected from Parameters used in study: Three parameters such as COVID-19 confirmed cases, number of deaths, deaths rate per 1000 confirmed cases are used in present study.

Model study: Comparison is used for analysis the progress of disease.

SERIAL NO	COUNTRY	CONFIRMED CASES			DEATHS			DATES PER 1000		
		A	B	C	A	B	C	A	B	C
1	CHINA	80,967	81,285	0.39	3,248	3,287	1.2	40.12	40.44	0.8
2	ITALY	41,035	74,386	81,275	3,404	7,503	120.352	82.98	100.87	21.56
3	FRANCE	10,995	25,223	129.2	372	1,331	257.796	33.83	52.75	55.91
4	USA	16,067	68,594	326.92	219	1,036	373.059	13.63	15.1	10.81
5	INDIA	223	695	211.66	5	14	180	22.42	20.34	-10.16

This grade of classification is done on the basis of COVID- 19 affects.

1) From where it was started, first case which highlight after china was USA and then Italy has the wrose affect from COVID- 19.
2) USA, Italy, France are compared as the top health care industry all over the globe, taking their example would be much easier to explain what are their preparedness and outcome in COVID- 19 case.
3) Further classification is done on the basis on demographic location connectivity to other resources (health care facilites logistics medical equipment's population per sq. km)
4) Taking example of USA, China, France, Italy. the future plan for controlling the covid 19 cases are well prepared in compare to other countries.
5) In the above table different phase are shown with marking of a by, what were their death rate, confirmed case, with targeting 1000 people.

Detail infromation are given in the review parts what were their plan, stragies, which help them to normalized their cases in COVID- 19

LITERTURE REIVEW

HEALTH CARE SYSTEM –

India has a mixed health-care system, inclusive of public and private health-care service providers. However, most of the private health-care providers are concentrated in urban India, providing secondary and tertiary care health-care services. The health-care infrastructure has been developed as a three-tier system based on the population norms and described below.

SUB - CENTRE (SC)

This established in a very plain space with a population of 5000 individuals and in hilly/difficult to reach/tribal areas with a population of 3000, and it's the foremost peripheral and first contact purpose between the first health-care system and also the community. Every SC is needed to be staffed by a minimum of one auxiliary nurse accouche use (ANM)/female medical expert and one male medical expert (for details see suggested structure. SCs are allotted tasks concerning social communication to bring forth activity modification and supply services in relevance maternal and kid health, family welfare, nutrition, immunization, symptom management.

PRIMARY HEALTH FACILITY'S.

A primary health centre (PHC) is established in a very plain space with a population of 30000 individuals and in hilly/difficult to reach/tribal areas with a population of 20,000 and is that the first contact purpose between the village community and also the medical officer. PHCs were envisaged to produce integrated curative and preventive tending to the agricultural population with stress on the preventive and encouraging aspects of health care. The PHCs area unit established and maintained by the State Governments below the Minimum desires Program (MNP)/Basic Minimum Services (BMS) Program. As per minimum demand, a PHC is to be employees by a medical officer supported by fourteen paramedical and alternative staff. Under NRHM, there is a provision for 2 further employees nurses at PHCs on a contract basis.

COMMUNITY HEALTH CENTRES.

Community health centres (CHCs) are established and maintained by the State Government under the MNP/BMS program in an area with a population of 120 000 people and in hilly/difficult to As per minimum norms, CHC is required to be staffed by four medical specialists, that is, surgeon, physician, gynaecologist/obstetrician, and paediatrician supported by 21 paramedical and other staff. It has 30 beds with operating theatre, X-ray, labour room, and laboratory facilities. It serves as a referral centre for PHCs within the block and offers facilities for obstetric care and specialist consultations.

SUBDIVISION FOR HEALTH CARE SYSTEM

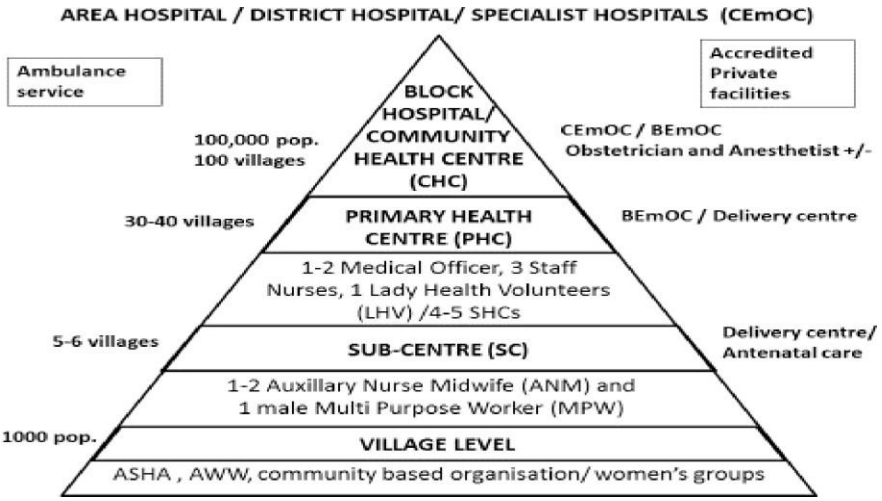

Fig1: This the representations of Health care system around the world.

WHAT IS PANDEMIC?

The term "pandemic" has not been outlined by several medical texts, however there are a unit some key options of a pestilence, together with wide geographic extension, unwellness movement, novelty, severity, high attack rates and explosiveness, lowest population immunity, infectiousness and contagiousness, that facilitate North American nation to know the thought higher, if we tend to examine similarities and variations. The pandemic connected crises are associated with huge negative impacts on health, economy, society, and security of national and world communities. As well, they need caused important political and social disruption

Pandemics area unit for the foremost half unwellness outbreaks that become widespread as result of the unfold of human-to-human infection. There are several important unwellness outbreaks and pandemics recorded in history, together with Spanish respiratory disorder, urban centre respiratory disorder, SARS, H7N9, Ebola, Zika (WHO, 2011b).

MAJOR PANDEMIC HIT IN LAST DECADE.

- **541–542:** Plague of Justinian
- **1346–1350:** The Black Death
- **1899–1923:** Sixth cholera pandemic
- **1918–1920:** Spanish flu (H1NI)
- **1957–1958:** Asian flu (H2N2)
- **1968–1969:** Hong Kong flu

- **2009–2010:** Swine flu (H1N1)
- **2020:** COVID-19

WHAT IS EPIDEMIC?

An Epidemic is mostly outlined because the method of quickly spreading of infectious diseases at intervals a brief amount of your time into an oversized range of individuals in a very given population and meet to many countries or continent. An Epidemic comes from a Greek word that refers to upon or higher than individuals. Bubonic plague, Cholera, Influenza, SARS and variola major, area unit a few the common samples of Epidemics.

MAJOR DIFFERNCE
between
[PANDEMIC & EPIDEMIC]

EPIDEMIC	PANDEMIC
Is an out- break of diseases that affects many in population and spread rapidly.	Pandemic is a larger epidemic. A pandemic covers several countries
A disease is considered an epidemic if it affects a certain number of people within a short period of time, typically within 2 weeks.	In pandemic outbreaks, the number of people affected or killed does not matter as much as the rate of spread and how far it has spread
Few examples of epidemic diseases are the West African Ebola	Few examples of pandemic diseases are HIV AIDS, Asian Influenza and Cholera

COVID-19 GLOBAL PREPAREDNESS?

Preparedness of COVID-19 have ready the govt bodies in designing and implementing numerous measures round the world in higher helping their communities throughout the illness crisis. nearly each country is doing its best to stay the illness treed to avoid continuation the nightmares of SARS and MERS. for example, China implementing "round the clock closed management" system, Italia declaring the "red zone" alert, France asserting "nationwide ban on gatherings," and also the USA implementing "containment areas" would be few mentions of what completely different countries do in ceasing the unfold additionally, to avoid panic and info, measures area unit in situ in enhancing the transparency between government bodies and also the public, which might facilitate.

So far, the experiences of COVID-19 area unit raw, visceral, and will be thought-about a rehearsal. This pandemic has clearly created governments fathom their strengths and weaknesses concerning their health care systems in responding to outbreaks.7 as an example, being one amongst the foremost leading countries in health care, Italia is unsuccessful in limiting the unfold of COVID-19; whereas, countries like Singapore, Hong Kong, and Taiwan are hailed for the measures taken to combat the illness and succeeded to keep their morbidity and mortality rates lower, despite their stronger links to China.12 Of note, Taiwan, a rustic on China's threshold, managed to contain COVID-19 by building its public health infrastructure that would be launched throughout associate emergency crisis. They additionally

established a Central Epidemic Command Centre that responds to epidemics, biological pathogens, act of terrorism, and medical emergencies.

COVID 19 HEALTH CARE PREPARDENESS IN PANDEMIC

GOVERNMENT MANAGAMENT EFFICENCY			QUARANTINE EFFICIENCY	
MONITORING SYSTEM DISATER MANAGEMENT	LEVEL OF SECURITY & DEFENSE ADVANCEMENT		SCALE OF QUARANTINE	QUARANTINE TIMELINE
RAPID EMERGENCY MOBILIZATION	LEVEL OF GOVERNMENT TECH DEVELOPMENT		ECONOMICS SUPPORT FOR QUARANTINED CITIZENS	CRIMINAL PENALTIES FOR VIOLATING QUARANTINE
			TRAVEL RESTRICTION	ECONOMICS & SUPPLY CHAIN

MONITORING AND DETECTION			EMERGENCY TREATMENT READINESS	
POPILATION-WIDE TESTING IN HOSPITAL TESTING	GOVERNMENT SURVELLIANCE TECHNOLOGY FOR MONITORING		INFRASTRUCTURE FOR RAPID EQUIPMENTS PRODUCTION	MOBILIZATION OF NEW HEALTHCARE RESOURCES
TESTING EFFCIENCY	SCOPE OF DIAGNOSTIC		LEVEL OF HEALTHCARE PROGRESSIVENESS	OUANTITY OF MEDICAL STUFF
AL FOR DIAGNOSTICS AND PROGNOSTICS	RELIABILITY AND TRANSPARENCY		QUANTITY OF HOSPTIAL BEDS	QUANTITY OF VENTILATOR STOCK PILE

THIS IMAGE REPRESENT GLOBAL LEVEL OF PREPARED AND OUTCOME .

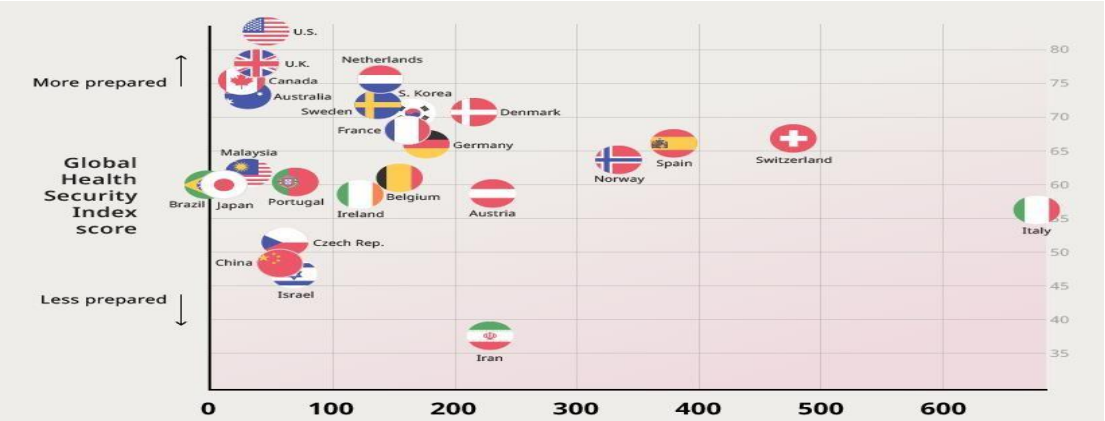

Fig :4 Global health system prepared chart

OUT COME INDICATOR IN NUMERIC VALUE;

COUNTRY	Physicians per 1000 people	Nurses per 1000 people	Healthcare costs as a percent	Per capita expenditure on health
UNITED STATES	5.0	16.2	22.01	7,347
ITALY	4.2	10.1	16.23	2,771
FRANCE	3.3	7.7	11.6	3,679
CHINA	2.3	4.3	8.6	1,567
INDIA	1.5	3.2	3.0	2,323

PREPAREDNESS TAKEN BY DIFFERENT COUNTRY AROUND THE GLOBE.

CHINA (3)

Wuhan Quarantine- Wuhan, the capital of Hubei province and the epicentre of Covid-19 pandemic in China, was put under lockdown to stem the spread of the disease across the mainland and beyond. Hubei province's treatment capacity was significantly boosted by the 346 medical teams and 42,000 medical staff from other provinces who volunteered to travel there between 24 January to 8 March. Two Covid-19 specialised hospitals equipped with 5G systems, advanced medical facilities and 2000 beds were built in the city within 10 days, while 16 makeshift hospitals (with 30,000 beds) Additionally, to identify all those infected, medical staff in Wuhan even screened all 14 million residents.

Country-wide partial quarantine -During the peak time, transport lines linking provinces, cities, or even villages were under control, and non-essential public facilities like gardens, museums, cinemas, and restaurants were closed. People were advised to avoid unnecessary travel, social activities, and gatherings. People who had recently travelled to Wuhan were classified into high-risk groups and put under home quarantine for two weeks. Those who showed Covid-19 symptoms were taken to designated hospitals by negative-pressure ambulances for further examination and treatment.

Transparency, solidarity and logistic -China was able to enhance the people's solidarity with government efforts to fight the virus through information transparency, employing effective anti-epidemic measures, and ensuring the availability of essential items. People could continue to buy whatever they wanted online, as both essential economic sectors and the logistics system are operating normally. Even during the worst days in Wuhan, the people did not suffer because a new logistics system was put into place by grassroots officials and volunteers.

Boosting medical supplies -The fight against Covid-19 was called the 'People's War' in China: healthcare staff fighting on the frontline; officials and volunteers providing logistics support; and the common people protecting each other from being infected. To overcome the challenge, the Chinese government took two approaches simultaneously. First, producers were encouraged to expand capacity or switch to manufacturing other items that were in dire need. To ease the concerns of face mask producers, the government even promised to purchase all unsold masks after the pandemic ends. Second, the government curbed any arbitrary price hike through harsh regulations, and even set up hotlines to record consumer complaints. Chinese producers were soon able to meet domestic demand and supply to other countries.

ITALIA (4)

Italian healthcare system is one of the most well-developed systems globally. Despite this, the recent COVID-19 outbreak found the country unprepared to cope with the impact of the COVID-19 pandemic.

Despite: early responses from institutions; declaring a state of national emergency on 31 January 2020; implementing limits on public gatherings affecting schools, conferences and sport events; and healthcare restrictions in public places Extreme measures have already been undertaken, including: closure of hospital wards; restricting visitor access to hospital; identification of external triage areas; dedicated patient transport and isolation pathways; and cessation of elective surgery, with only emergency, trauma and selected oncological surgery proceeding. Notably, operating rooms are allocated as emergency critical care beds and anaesthetists have been re-allocated to critical care management and rapid response emergency care, including dedicated COVID-19 emergency teams In terms of public health, several measures have been implemented, including: the use of telemedicine consultations; domestic isolation of COVID-19 patients who are not severely unwell; production and distribution of educational videos and television segments; and firm restrictions against public gatherings. Most recently, much of northern Italy had a quarantine imposed, affecting up to 16 million residents 19, and on 11 March 2020, all Italian territories were identified as 'red zones' by the Government, with firm restrictions on any public activity.

FRANCE

The nation introduced a **nationwide ban on gatherings** of greater than 1,000 individuals, with exemptions for issues like public transit.

France has requisitioned all the nation's surgical masks for distribution to those that want them, and the authorities additionally has capped the value of hand sanitizer. The Local France experiences: 'The authorities have positioned extra restrictions on 4 zones with clusters of coronavirus instances: 'Morbihan in Brittany, Haute-Savoie in jap France close to the Swiss border and the departments of Oise and in north east France. In these locations there is a ban on all public gatherings together with markets, neighbourhood teams and church providers. President Emmanuel Macron has suggested residents nationwide towards visiting older individuals, to keep away from spreading the illness to these most weak.

USA

The advice from public health officers at places just like the Centres for sickness management and hindrance still focuses on personal measures—the belongings you will do, yourself, to do to avoid obtaining infected. Wash your hands, do not bit your face. They advise staying home if you are feeling sick. whereas all of these things square measure alleged to keep the sickness from spreading, they're additionally narratives of non-public responsibility, a ruggedly individual approach to pandemics wherever everyone seems to be alleged to stockpile their own provides and manage their own infectiousness.

This line of effort additionally includes developing and dispersive steering on:

- Recommendations for public health jurisdictions to manage cases and their contacts.
- Clinical guidance to healthcare professionals (HCP) regarding patient treatment and management
- Infection control guidance for care employees.
- Staff safety and observance.
- Medical surge management

PREPAREDNESS OUTCOME

CHINA

China's anti-epidemic strategy has proved successful. The rate of infection peaked early and soon began to decline. By 23 March, the domestic transmission of the virus had been blocked, according to the statement released after a meeting chaired by Premier Li Keqiang. China has begun an orderly resumption of work and production, while taking steps to prevent a domestic rebound in infections or imported cases. As of 28 March, 98.6% major industrial enterprises in China have resumed production. Even in Hubei, 95% major industrial enterprises have returned to normal, and about 70% workers have returned to work. Since 8 April, even Wuhan, the last area under lockdown, has come back to normal.

China has won the major campaign in the war against Covid-19. But the government and people will never forget that 79 countries, including India, and 10 international organisations, provided valuable assistance to China in the critical period of the anti-pandemic fight. Reciprocating an act of kindness is China's fine tradition. As of 31 March, China has provided emergency aid in the form of medical supplies, antivirus experience and funds to 120 countries and four international organisations. And many Chinese local governments, enterprises and non-government institutions are also actively and voluntarily contributing to the anti-pandemic campaign around the world. The Covid-19 pandemic recognises no border, ethnicity, or religion, rendering all humankind a community with a shared future. If all countries band together in the fight against Covid-19, the pandemic will soon be swept away, and the world will walk into a better future.

ITALIA

The central Italian government is providing extra resources, like transfers of critically unwell patients to different regions, emergency funding, personnel, and intensive care unit instrumentation. The goal is to make sure that Associate in Nursing intensive care unit bed is offered for each patient who needs one. different health care systems ought to indurate a huge increase in intensive care unit demand throughout Associate in Nursing uncontained happening of COVID-19. This expertise would counsel that solely Associate in Nursing intensive care unit network will offer the initial immediate surge response to permit each patient in would like for Associate in Nursing intensive care unit bed to receive one. Health care systems not organized in cooperative emergency networks.

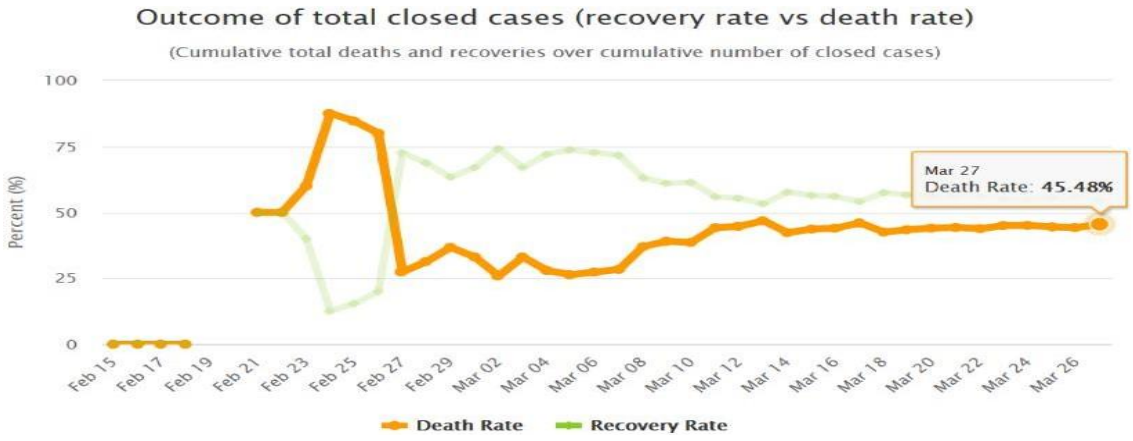

Fig2: The picture represent the Outcome of the total closed cases in Italy

FRANCE

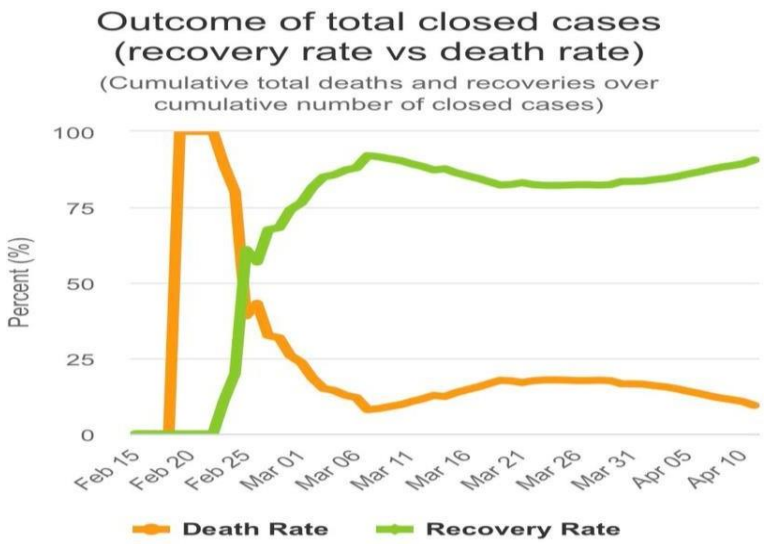

Fig3: As given in the diagram the following situation shows signified growth in recovery rate. Nation-wide ban on gathering has been very effective outcome to France.

USA

The containment zone method which is used by USA. Has been a symbolic work for the stoppage of novel coronavirus. this method has stop the exchange of virus from one to another . covid 19 tends to spread very fast buy body touch, without mask, it travels very fast from one people to another. The containment method has stopped the spread of this virus.

INDIA (MUMBAI)

The BMC is now following the testing policy recommended by the Indian Council of Medical Research.

This means testing priority will be for symptomatic patients, those with fever, cough or breathing difficulty. Close contacts of Covid-19 patients will be tested only if they are symptomatic, all pregnant women even if they are asymptomatic, while patients on dialysis can be tested if Testing is not required for patients completing home isolation and no testing is needed at the time of discharge for mild and moderate patient.

RESULTS

During previous outbreaks because of different coronavirus (Middle East metabolism Syndrome (MERS) and Severe Acute metabolism Syndrome (SARS), human-to-human transmission

occurred through droplets, contact and fomites, suggesting that the transmission mode of the COVID-19 is similar. the essential principles to cut back the general risk of transmission of acute metabolism infections embody the following:

- Avoiding shut contact with folks littered with acute metabolism infections.
- Frequent handwashing, particularly once direct contact with sick folks or their setting.
- folks with symptoms of acute infection ought to follow cough prescript (maintain distance, cover coughs and sneezes with disposable tissues or covering, and wash hands)

DISCUSSION

The aim of this study was to define preparedness during an unfolding threat of an infectious disease that requires centralized care. Second, we aimed to develop a standardized system describing preparedness activities per preparedness phase for healthcare institutions. We developed this standardized system by defining phases of preparedness during a threat and their corresponding preparedness activities, within both the perspective of individual healthcare institutions and of the collaborative network in which these institutions need to function. e four identified preparedness phases were based on (a) the likelihood of presentation of an infected patient to one of the healthcare institutions and (b) the unrest among the general population and staff. Phases ranged from no outbreak to the situation in which several potential or confirmed patients were hospitalized, conceivably leading to other referral pathways in the country. is system could be used for any future threat from an infectious disease requiring centralized care.

The most significant preparedness challenges that we identified were the result of pressures on public budgets and associated restructuring and reorganization of public health systems, which brought about consequences ranging from limiting the opportunities for training and exercises; making it more difficult to recruit and retain experienced, well trained staff; and for systematically identifying good practices and lessons learned that could be incorporated into protocols. Although our study design did not permit significant investigations into local-level variations in preparedness, budgetary challenges have been reported before in other contexts at both national and local levels, so it is likely that this challenge is also reflected at local level in at least some of the participating countries. An overriding conclusion, therefore, is that countries must ensure that sustainable human resource and funding capacity for public health preparedness and response activities is secured at all administrative levels, based on systematic risk assessment and risk ranking exercises.

RECOMMENDATIONS AND CONCLUSION

Human-to-human transmission is happening, that means that additional COVID-19 cases square measure expected to be reported within the future, which may doubtless cause disruptions of worldwide public health systems and though sustained human-to-human transmission is anticipated in China, this transmission cannot be quantified with this epidemiologic knowledge out there. hindrance measures square measure enforced globally, and investigations square measure current to search out the supply of the malady and to know additional regarding the virus's characteristics, unhealthiest severity. Major gaps square measure given because the majority of what we all know regarding the virus is predicated on similar coronaviruses, however the work on treatment is promising. to possess a far better understanding of the new virus, countries ought to work on providing reliable knowledge through openness and knowledge sharing, similarly as conducting additional additionally, countries ought to keep performing on up the preventive measures enforced to scale back the amount of infected patients and transmissions at a similar

LIMITATIONS OF STUDY

Our study has several limitations. Firstly, almost all the deceased patients were classified as being severely or critically ill, whereas a large proportion of recovered patients might be classified as having moderate disease. This patient setting reflects the real world situation where most confirmed cases are mild or moderate. Nevertheless, the high incidence of cardiac complications in deceased patients is of great importance, raising awareness of the need for earlier monitoring and cardiac supportive care. the median length of hospital admission before death was about five days, information on the dynamic changes in laboratory variables in deceased patients was lacking, and the data collected for each patient on admission may have been from different disease stages. Therefore, further study is warranted to gain a better understanding of risk factors for and outcome of covid-19, which ultimately may help to guide efforts aimed at reducing the fatality rate.

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