Management of COVID-19 by China – Lessons Learned

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Abstract

The latest threat to global health is the ongoing outbreak of the respiratory disease the name Covid-19. As in two preceding instances of emergence of coronavirus disease in the past 18 years — SARS and MERS, the Covid-19 outbreak has posed critical challenges for the public health, research, and medical communities. The outbreak is a stark reminder of the ongoing challenge of emerging and re-emerging infectious pathogens and the need for constant surveillance, prompt diagnosis, and robust research to understand the basic biology of new organisms and our susceptibilities to them, as well as to develop effective countermeasures. The virus has already infected more than 10.5 million people worldwide. With the majority of the travels blocked, schools and colleges closed, countries imposing lockdowns, this virus has already taken over the normal life of people around the globe. This review article highlights the various measures taken by China in tackling the management of COVID-19.

Keywords: COVID-19; Pandemic; Impact; Lessons learned

Introduction

When everyone around the world was getting ready to celebrate the end of a decade, even before the countdowns could begin the year's predication had begun. On 31 December 2019, at around 1:38 pm the office of the World Health Organization in China received notification of cases of unexplained etiology pneumonia in Wuhan city, Hubei province, Central China. The virus was soon identified as a novel beta-coronavirus and shared the genetic sequence on January 12, 2020. Soon the virus was named COVID – 19. It was the third zoonotic breakout of coronavirus in the first two decades of the 21st century which enabled human-to-human transmission and raised global health concerns [1]. News of this outbreak gave an involuntary shudder to many public health officials as they remembered the similarities to the outbreak of SARS that occurred in China in November 2002. Within less than a month, COVID-19 spread through China and neighboring nations, including the United States and Europe [2]. Over the next few days since its entry, international travels were frozen, economic activities were extinguished, humans were confined at homes, and millions of people were infected. This article is an overview of how China managed to fight against this virus and reduce its intensity.

Public health emergency

On 30 December 2019, SARS-CoV-2 was first isolated from the Wuhan Jinyintan Hospital in the bronchoalveolar lavage fluid (BALF) of three affected patients [3]. As from the sources the virus is thought to have originated in bats, which may have passed it on to an intermediate species that then passed it on to humans from the Wuhan market. Unable to understand the virus, the viral genome sequence was put into a public database to everyone's notice. Based on genome sequencing, the virus was later identified as 89 percent identical with bat SARS-like-CoVZXC21, 82 percent identical with human SARS-CoV, and about 50 percent with MERS-CoV, respectively (Chan 2020). The outbreak was declared an international public health emergency on 30 January 2020 by the World Health Organization. This announcement was made as a concern that it could spread to countries with weaker health systems. Also, it was an alert to the global countries, as the complete epidemiological profile of the virus was not known [4].

Preparedness

China's government has sought to enhance and develop its epidemic response capabilities for potential outbreaks, and the effects are clear when evaluating previous diseases. The Chinese government was still seeking to expand its performance in public hospitalization insurance programs. This led to a fourteen-fold increase in the State expenditure between 2003 and 2018 [5]. Similarly, the insurance scope was expanded to cover hospitalization costs and routine prescription drug supply was ensured, and a delivery system was established during COVID-19. To resolve daily treatment, in many jurisdictions, all hospitals were provided with electronic referral services [6]. Many health

system preparedness initiatives have been set in place by Chinese authorities including aggressive house-to-house surveillance, mobile tracking of people, temperature control in public areas, contact tracing, physical distancing, and containment. Statistics available show an increase in online telemedicine consultations in China during the lockdown time [7].

Response

The country started its investigations shortly after the outbreak and tracked the epidemic to the seafood market where live bats were marketed and suspected to be the source of the virus. On January 1, 2020, the Wuhan market went into a shutdown, to prevent the transmission of the virus [7-10]. As there is no particular antiviral agent available to treat this infection, and there is no vaccine, the protection steps, implemented in China, aimed at preventing transmission. On 23–24 January a regional quarantine of Wuhan and surrounding towns was implemented [8]. To recognize people with fevers, many airports and train stations have begun temperature screening programs. All public transportation in Wuhan was suspended from January 23, including all outbound trains and flights, and all bus, subway and ferry lines; all outbound trains and flights were also stopped [9].

Construction of an all-new 60,000 square meter structure with space for 1,000 beds and 30 intensive care wards was done by China in a matter of just 10 days [11-17]. Though China locked down the province of Hubei, it ensured a proper system was put in place to supply all necessary commodities to people's doorsteps. China made good use of its AI (Artificial Intelligence) skills to track most people from the province of Wuhan and Hubei who had traveled outside the province and started tracking their safety in hospitals or quarantine centers. China also sent thousands of military medical staff as well as soldiers to the province of Hubei and helped local authorities set up large, unchanged field hospitals in record time, which also helped to treat the increasing number of patients with COVID-19 [18].

Recovery

To make the situation stable, more than 40,000 healthcare and medical staff were sent to Wuhan from across the countries to assist the response. Additionally, China's National Health Commission has focused on tracking COVID-19 among healthcare staff, revising safety requirements and criteria, and improving hospital prevention and control measures against the disease. Because of all these measures, transmission within healthcare settings in China does not appear to be a major transmission feature of COVID-19. Gradually the number of cases reduced from thousands to hundreds, in the following days. This improvement can also be noticed as more than 95 percent of the infected cases have recovered in the very high rate of recovery. Health authorities confirmed zero new local COVID-19 cases across 4 consecutive days from March 19 to March 22 in Wuhan and Hubei provinces [19].

Mitigation

China has set fast accelerated measures in place. Mitigation steps such as social distancing by limiting travel, preventing the congregation of citizens, and encouraging effective preventive practices such as using mouth mask was continued even after zero cases of COVID-19. The Ministry of Education of China on 27 January postponed the dates of the semester for all schools and universities. Even post lockdown, the students were asked to wear a face mask for schools. Most of the shopping malls laid a plan for the customers to purchase without gathering [20].

Lessons learned

Managing and containing an epidemic of a novel pathogen of spread from person to person which is a daunting activity in this increasingly mobile world. Nevertheless, the government and citizens of China were up to the task and were able to control the epidemic inside their nation's boundaries. China gives the rest of the world optimism and tells many countries that sometimes the most difficult circumstances can be turned around. A reaction to the COVID-19 crisis and the high degree of concerted action in a multicultural community of over 11 million inhabitants is to be measured and has shocked the whole planet. Countries need to benefit from China's reaction to COVID-19 and urgently begin adopting prevention and control measures as every country is at risk of being the global epicenter of viruses. Bearing in mind that each country is unique, the possible advantages and adverse effects of each implemented approach will be measured. Additionally, countries should work on enhancing their systems and staff to be more prepared for future outbreaks and to reduce impacts when they strike.

Discussions

History undoubtedly includes a litany of epidemics, plague, smallpox, measles, cholera, influenza and many more. Yet devastating epidemics killing millions is exceptionally rare, with just a handful happening in the past millennium. And what we are facing now is a pathogen with the right balance of infectiousness and virulence in one of those rare moments [21]. The pandemic is more than just a health problem. It needs a complete response from the government and from the whole of society [22]. A major reason the WHO declared an international public health emergency in January, so countries and communities particularly those with poor health systems will have time to plan. But unfortunately, even before we could think, the virus has taken over much [23]. These may be the points that other countries need to focus, in order to avoid such rising numbers.

Conclusion

We are at much higher risk of irrational fears and misplaced expectations currently. There are many other examples of communities that are concerned about a minor threat while ignoring far bigger threats that are concealed from plain view. The history of epidemics provides significant guidance, but only when people know the past and react wisdom fully.

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