



Community Strict Management Model by Three-Person Team for Contacts of COVID-19 Cases in Shenzhen, an Immigrant, and Fastest Economic Development City of China

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Abstract

Since December 2019, Coronavirus Disease 2019 (COVID-19) emerged in Wuhan city, rapidly spread throughout China and all over the world. China activated a Level I public health emergency response from January to March 2020. Community strict management model by three-person team (composed of community General Practitioners (GPs), street officials, and policemen) for contacts with COVID-19 pneumonia was established in Shenzhen, an immigrant, and fastest economic development city of China to contain the spread of the virus, which is a useful exploration for the prevention and control of COVID-19, worthy of promotion and application in other regions and countries.

Keywords: COVID-19; Management model; Community; General practitioners

Introduction

On December 31st, 2019, the World Health Organization (WHO) was alerted to several cases of pneumonia of unknown etiology in Wuhan, the capital city of Hubei Province in Central China. A COVID-19 was identified as the causative virus by Chinese authorities on January 7th, 2020 [1]. China CDC has named the associated disease as Novel Coronavirus-Infected Pneumonia (NCIP), and named Coronavirus Disease 2019, COVID-19 by WHO February 11th, 2020 [2-3]. At present, COVID-19 spreads rapidly across China and all over the world [4,5]. Deeply concerned both by the alarming levels of spread and severity, and by the alarming levels of inaction, WHO made the assessment that COVID-19 can be characterized as a pandemic March 11th, 2020. As of July 20th, 2021, the National Health Commission (NHC) of China had confirmed a total of 119,815 cases of COVID-2019 in Mainland China, including 5,621 death cases, and 111,190 recoveries. The latest case numbers can be seen on China CDC website: <http://2019ncov.chinacdc.cn/2019-nCoV/>, while globally, there have been 191,762,926 confirmed cases of COVID-19, including 4,110,313 deaths, reported to WHO.

China has carried out emergency responses quickly for COVID-19 pandemic since January 2020, the whole country has activated a level I public health emergency response from January to March 2020: China severely restricted movement across Hubei Province in 16 cities [6,7]. Authorities have closed public transit and canceled outbound transportation (air, train, and long-haul buses). Vehicular traffic in Wuhan was banned. China also imposed a ban on overseas travel with tour groups and suspended sale of flight and hotel packages. Authorities delayed spring festival holidays, resumption of work and school start time, all large gatherings were banned. All people who enter and leave public places and public transportation must detect body temperature and wear masks. Chinese health authorities stressed all-around community-based efforts to prevent and control the spread of COVID-19 [8].

Shenzhen is an immigrant, fastest economic development city in China, with more than 90% of its residents being immigrants from outside cities.

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By August 06th, 2021, a total of 564 confirmed COVID-19 cases have been reported. The Chinese Lunar New Year is the largest annual mass travel event worldwide, risking amplification of the spread of COVID-19. It is too early to predict how widespread and pathogenic COVID-19 will become when the migrant workers return to Shenzhen after spring festival holidays. In order to strengthen medical observation and management for the contact person of COVID-19, and isolate the source of infection, community strict management model by three-person team, same as a Joint defense team, for contacts with COVID-19 was established in Shenzhen to contain the spread of the virus [9]. China has been making positive contributions in the fight against the pandemic during the past few months. Here, we hope that share our experiences, international colleagues could benefit from what worked well and what went less well.

What is community strict management model by three-person team for contacts with COVID-19? The community three-person team refers to COVID-19 Prevention and Control Team, which is mainly, composed of community General Practitioners (GPs), street officials, and policemen. They are mainly responsible for joint prevention and control of COVID-19; screen residents who contacted the COVID-19 confirmed cases, or commuters entering regions under surveillance in the past 14 days; follow up the isolated contact person of COVID-19; unite community medical staffs to provide continuous and dynamic health management, disease prevention and diagnosis and treatment services for isolated objects; they conducted daily health monitoring and provide psychological support. They provided advice to individuals under quarantine or medical surveillance on how to disinfect their homes and properly process their domestic waste, and provide medical referral for the suspicious patients. Community strict management model by three-person team for contacts with COVID-19, like a firewall to prevent and control COVID-19 in Shenzhen, China.

Who is the management object?

The management object of community three-person team included: No pneumonia-related symptoms people who contacted the COVID-19 patients or suspected cases; or have the history of living and passing through medium and high risk areas came from countries and regions outside China in the last 14 days, those who were identified by the health department as centralized isolation objects.

Work process

1. When the community workers or policemen got the list of management objects by the higher-level department, they notified the three-person team to conduct the verification work together (Figure 1A).
2. Checked the basic information of the management objects by phone, filled in the forms and determined the inspection time.
3. The three-person team completed personal protection including wearing medical masks and protective caps under the guidance of general practitioner.
4. Visited the management object (Figure 1B): Verified the demographic information and epidemiological history, symptomatic examination, temperature measurement, and implement health education about COVID-19, signed "Commitment on Home or Designated Medical Observation".
5. Community medical staff monitored the health status of the management objects for 14 days and feedback to CDC every day (Figure 1C).
6. During home isolation or designated isolation, nucleic acid detection of COVID-19 was carried to every management object, if the management objects have symptoms or related suspected positive results, the three-person team will call "120", and send the





Figure 2: Working photos of healthy station; A) Morning shift meeting; B) Daily rounds; C) Medical staff were analyzing the test results; D) Contact person of NCIP were released.

management object to the treatment hospital (Figure 1D).

7. “Guideline for the work of a community three-person team for the prevention and control of COVID-19” and “Guideline for the management of medical observation for contacts of COVID-19” should be strictly followed throughout the whole process.

8. After 14 days of medical observation, those who met the conditions for dismissal of medical observation will get the “Notice of Dismissal of Medical Observation” signed by three-person team, and completed the medical observation.

Establish healthy station and implement designated isolation

The Shenzhen government provides designated isolation facilities for people who cannot secure accommodation during medical observation. The government requisitioned at least one hotel every street using as healthy station for designated isolation of management objects who was without fixed residence or home isolation conditions. Medical staffs stayed at the health station all day, and provided medical services, medical monitoring, psychological counseling and necessary life care for management objects, which was the comprehensive protection for the health and livelihood of the centrally isolate objects (Figure 2).

Discussion

It is the key role for public health emergencies to accurately cut off the source of infection and implement early detection and isolation. Among that, community is “the first line of defense” in epidemic prevention and control. Implementation of comprehensive prevention and control measures that focus on communities will effectively contain the COVID-19 outbreak [10-11]. Since January 23rd, 2020, Chinese health authorities have stressed all-around community-based efforts to prevent and control the spread of

COVID-19.

The community-based prevent and control for COVID-19 including screening, assessment, isolation, transfer and health education need multisectoral collaboration. It means that health sector alone is not enough, society and government involvements are necessary [12]. Hence, Shenzhen, China established and implements a community strict management model by three-person team for contacts with COVID-19 to contain the spread of the virus, and Joint prevention and control COVID-19 by Community GPs, street staff and policemen. They represented the health department, government and public security departments, and integrate the three departments [13-16]. They worked together to build the firewall to prevent and control COVID-19 in Shenzhen.

Healthy station provides a qualified medical isolation place for contact person of COVID-19, came from and pass through Hubei or came from countries and regions outside China the past 14 days, who were without fixed residence or home isolation conditions. The medical isolate objects in healthy station got the professional medical services, scientific testing and heartwarming care, which plays an important role in cutting off the source of COVID-19 infection, prevention and control the spread of COVID-19, even stabilize society in an epidemic.

In summary, community strict management model by three-person team for contacts with COVID-19 in Shenzhen, China is a useful exploration for the prevention and control of COVID-19, worthy of promotion and application in other regions.

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