

Coronavirus disease 2019 in Ho Chi Minh City, Vietnam

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Abstract

The COVID-19 pandemic has become a global health crisis. Many countries are still suffered from this unprecedented outbreak whereas Vietnam overcomes it and tries to connect to other countries for economic development. This report highlights key measures that Vietnam and Ho Chi Minh City (HCMC) applied to control the COVID-19 outbreak. The national strategies were promptly and clearly stated by the government, including preventing imported cases, early detecting new possible cases and their contacts, isolating confirmed cases and their first contacts, identifying areas affected by COVID-19 and rapidly performing interventions for the outbreak control. From these strategies, tracking, testing and treating were implemented as the three main groups of activities to control the outbreak in HCMC. Moreover, the existing healthcare structure, support from non-healthcare organizations and citizens, self production of COVID-19 test kits and effective treatment of severe cases were the key factors contributing the successful story of Vietnam.

Keywords: COVID-19, Ho Chi Minh City, Vietnam and SARS-CoV-2

Background

Coronavirus disease 2019 (COVID-19) is a new infectious disease and caused by severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2). The disease was originated from Wuhan, China in December 2019¹⁾ and then spread to other countries. As a result, World Health Organization had to declare a pandemic on 11 March, 2020. In Vietnam, the first case of COVID-19 was reported on 23 January 2020²⁾. This was an imported case from China. Since then awareness of COVID-19 transmission has been noticed in HCMC and related provinces where this case travelled. As of 18 June 2020, more than 8.22 million confirmed cases and 444.800 deaths were reported³⁾ while Vietnam has a total of 342 confirmed cases, 325 recovered cases and no death. This short report aims to describe key measures to control COVID-19 in HCMC and highlights some achievements.

Measures to control the COVID-19 outbreak

Demography and healthcare system of HCMC: Ho Chi Minh City is the most populous city in Southern Vietnam with a population of approximately 13 million people. The City is divided into 24 administrative districts, which are further subdivided into 322 wards. On average, each ward has around 40,000 residents. There are currently 485 health facilities in the healthcare system which are mainly responsible for treatment and prevention as describe in Figure⁴⁾.

Strategies and actions: National policies for controlling COVID-19 have been adjusted to the situation of the spread of COVID-19 at different time points. However, five general principles or strategies are unchanged since beginning of the outbreak. These five strategies include prevention of COVID-19 invasion, promptly detection of new cases and contacts, isolation of infected

people and their first contacts, identification of areas affected by COVID-19 and interventions including case management, trace of the second and third contacts, health education via several channels, logistics and so forth. To perform the aforementioned strategies, the HCMC government called for the cooperation and participation from several organizations in healthcare and non-healthcare system, especially from 13 million citizens. Regarding activities of healthcare system, COVID-19 control could be summarized in triple "T", namely Track, Test and Treat.

Tracking contacts for quarantine: Any individual who exposed to people infected with SARS-CoV2 or travelled to Vietnam from COVID-19 affected countries must declare to local health authorities and then were isolated at designated quarantine centers for at least 14 days. For those who did not declare were traced by health staff from the existing preventive health system which includes Health Department, Center for Diseases Control (CDC), 24 Preventive Health Centers in districts and 322 health stations in wards. Besides that, healthcare system has received enormous support from information and communications system, local authorities and military forces. Especially, citizens have had significant contribution in tracking the first, the second and the third contacts. Collectively, transmission of COVID-19 in community was controlled at lowest level.

Testing: Performing PCR (polymerase chain reaction) test plays a vital role in the strategy of controlling COVID-19 in Vietnam because it helps local health authorities to promptly make decision with respect to quarantine or track the first and second contacts. The capacity testing for SARS-CoV2 in HCMC rapidly increased, from 1,000 to 5,000 tests a day. Currently, Vietnam has 58 official laboratories for SARS-CoV2 testing⁵⁾. Nine of them are located in Ho Chi Minh City and could perform few thousand tests a day.

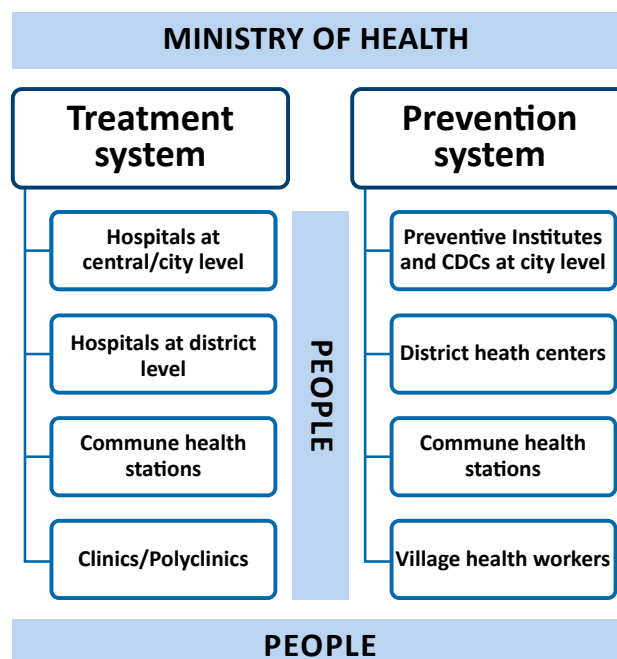


Figure. Healthcare system in Vietnam. People can seek healthcare services at any level of healthcare systems.

Treating: HCMC Health Department carefully prepared a plan for three possible scenarios of COVID-19 in the City with approximately 13 million people⁶⁾. Accordingly, HCMC prepared sufficient resources for treating up to 500 patients with COVID-19 at the same time. For example, all health staff were trained on how to manage a COVID-19 case and hospitals were supplied enough personal protective equipment (PPE), ventilators and beds for critically ill patients in Intensive Care Units (ICU beds). National guidelines on treatment and prevention of COVID-19 has been frequently updated and informed to all health staff.

Key results and discussion

Overall picture of COVID-19 outbreak in Vietnam: From 23 January to 14 June 2020, a total of 334 COVID-19 cases were reported by Vietnam Ministry of Health⁷⁾. Of those, 228 cases (68.3%) were imported from other countries and 106 cases (31.7%) were secondary infections from imported cases⁸⁾. Of note, 96.7% of patients were recovery; 11 cases (3.3%) are still treated in hospitals and there is not any patient who died of COVID-19. Progress of COVID-19 pandemic in Vietnam and Ho Chi Minh City (HCMC) could be divided into 4 stages as described in Table 1.

COVID-19 in HCMC: In terms of tracking individuals who came to HCMC from other countries, as of 20 June 2020, the number of people who were followed-up in quarantine centers or at their living place in Vietnam was 6,176⁷⁾. Of those, there were 219 people staying in HCMC. All of them returned from countries with active COVID-19 outbreak and were quarantined right after stepped on Vietnam land⁹⁾. These numbers are significantly lower than that of two months ago¹⁰⁾. This suggests that the current COVID-19 outbreak in HCMC and Vietnam is mostly controlled and normal life nearly comes back.

For COVID-19 testing: As of 4 April 2020, HCMC performed around 14,000 PCR tests for people who were isolated in quarantine centers and the results showed that 49 people (0.35%) were positive with SARS-CoV-2¹⁰⁾. Moreover, HCMC continues to do PCR test for all crew of international flights who came to Tan Son Nhat airport and stayed in HCMC. As of 20 June 2020, a total of 1,545 flight attendants and pilots have been tested for detection of SARS-CoV-2. The result showed that 1,532 (99.16%) of cases were negative with SARS-CoV-2; two cases (patient number 321 and 322) were positive (0.13%) and 11 cases (0.71%) are waiting for result. In summary, the proportion of people who were positive with SARS-CoV-2 ranged from 0.13% in crew to 0.35% in quarantine group. This result is consistent with¹¹⁾ where noted that there were 349 confirmed cases among 275,000 people tested with SARS-CoV-2 (up to 20 June 2020). This figure is significantly lower than that in several Asian countries such as Taiwan (446/74,699), Malaysia (8,535/674,551), Japan (17,740/403,380), South of Korea (12373/1,170,903), Philippines (28,459/565,248), Singapore (41,615/576,189) and Indonesia (43,803/601,239).

Regarding treatment: As of 20 June 2020, HCMC had a total of 60 confirmed cases. Median age was 30.5 years old, with the range being from 10 to 73 years. Male and foreigners accounted for approximately 62% and 40%, respectively. The two proportions are significantly higher than that of other provinces (Table 2). Ninety five percent of patients recovered while three cases (5%) are being treated in hospitals. Of note, patient number 91 is the most severe case in Vietnam. He is currently treated at a hospital in HCMC and is gradually recovering for the last couple weeks after 50 day-treatment with extracorporeal membrane oxygenation (ECMO). The treatment doctors reveal that this patient currently doesn't need oxygen supply. His lungs have recovered around 90%. He can walk for short distance and expects to return his home country –the UK as soon as possible.

In summary, good strategies from the government, strict compliance of local authorities, strong and successful implementation of triple “T” in healthcare system, enormous support from non- healthcare organizations and voluntarily participation of people are the key factors creating preliminary success of Vietnam and HCMC in controlling the COVID-19 outbreak.

Table 1. Four stages of COVID-19 in HCMC and Vietnam

Phase	HCMC (n=60)	Other provinces (n=274)	Whole country (n=334)	Description
Phase 1 23-Jan to 25-Feb	3 (5.0)	13 (4.7)	16 (4.8)	Patients had history travel to China
Phase 2 06-Mar to 19-Mar	9 (15.0)	51 (18.6)	60 (18.0)	Patients came/returned from other countries, but it was easy to identify sources of spread.
Phase 3 20-Mar to 21-Apr	43 (71.7)	148 (54.0)	191 (57.2)	Disease transmission in community was identified, especially in places with high dense population. Sources of spread have unsuccessfully identified.
Phase 4 22-Apr to 15 June	5 (8.3)	62 (22.6)	67 (20.1)	COVID-19 outbreak has been controlled. Vietnam continues to apply basic preventive measures for controlling imported cases and reducing risk of transmission in community. Lockdown was lifted and Vietnam currently returns to the “new normal life”.

Table 2. Demography information of COVID-19 cases in HCMC and Vietnam.

Demographics	HCMC (n=60)	Other provinces (n=274)	Whole country (n=334)
Age in years (median, min-max)	30.5 (10-73)	30 (0*-88)	30 (0*-88)
Male/female	37/23 (61.7/38.3)	131/143 (47.8/52.2)	168/166 (50.3/49.7)
Vietnamese/Foreigners (n, %)	36/24 (60/40)	249/25 (90.9/9.1)	285/49 (85.3/14.7)
Imported cases (n, %)	34 (56.7)	194 (70.8)	228 (68.3)
Cases infected by imported cases (n, %)	26 (43.3)	80 (29.2)	106 (31.7)
Outcome (n, %)			
•Recovery	57 (95)	266 (97.1)	323 (96.7)
•In hospital	3 (5)	8 (2.9)	11 (3.3)
•Death	0	0	0

*: less than one month old

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