

Educating People about the Covid-19 Epidemic Prevention in the Community: A Case Study in Vietnam

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Ensuring the health of the people in the community is always an important issue for every nation and locality. When faced with a complicated pandemic situation due to a new strain of coronavirus (covid-19), and recognising what happened in Wuhan City, Hubei Province, China, from that moment Vietnam had solutions for disease prevention. The objective of this study is to propose solutions to limit the spread of disease in the community. The research methodology used was the review of survey data published by the World Health Organization (WHO) and updated data from countries. In Vietnam, the main source of data reviewed by the research team was from the Ministry of Health, informed by the head of the Vietnam Government. We used mathematical methods and mathematical models to analyse and predict trends of disease related to public health. In the research results we propose solutions that have been initially tested in Vietnam with positive results on curbing the spread of disease.

Key words: *Community Health, Covid-19, Disease.*

Introduction

Promoting community health protection is rapidly developing and is facing unpredictable hazards. At the heart of this development is a new community health mindset around health protection processes rather than disease determinants (Guanghai Wang, Yunting Zhang, Jin Zhao, Jun Zhang, Fan Jiang, 2020). Rahmat Alyakin Dakhi, Heru Santosa, Juanita and Zulfendri (2020) stated that health performance indicators are no longer limited to various

indicators of medical services, but also various indicators of public health services such as behaviour, infectious diseases and environmental health.

Improving health is developing into a broad but unified concept. In a sense, it can be considered a major manifestation of the change from short-term thinking to the current comprehensive thinking. In my opinion, it is the change of focus on specific diseases to the way we protect the health of our community. Creating a new kind of research facility to promote health will not be easy. Promoting a way to protect public health as a research and policy approach is rapidly developing in the health sector. At the heart of this development is a new public health mindset around health protection processes rather than disease determinants. Promoting health is developing into a broad, but at the same time, unified concept. In a sense, it can be considered a major manifestation of the shift from short-term thinking to the current comprehensive thinking. In my opinion, changing the focus from specific diseases to the way we protect the health of the community has created a new type of research facility to promote health.

At present, we have to face the difficulty of an epidemic that is spreading throughout the world and in Vietnam (a new strain of coronavirus that began in Wuhan City, China) (WHO, 2020a). The SARS outbreaks were at times characterised by several superspreading events, eg, hotel-based transmission from one infected hotel guest to others who travelled to Canada, Singapore, and Vietnam (Peiris JS, Yuen KY, Osterhaus AD, Stohr K, 2003). David L Heymann and Nahoko Shindo (2020) stated that, “genetic analysis early in the outbreak of covid-19 in China revealed that the virus was similar to, but distinct from, severe acute respiratory syndrome coronavirus (SARS-CoV)”. The identification of valid and meaningful measures for the protection of human virus infiltration is a major problem that needs a solution.

According to WHO (2020c, 2020d), the virus that causes covid-19 is infectious to people of all ages. However, the evidence so far shows that the two groups of people are at higher risk of covid-19: older people (those who are over 60 years old); and people with underlying medical conditions (such as cardiovascular disease, diabetes, chronic respiratory disease and cancer). The risk of serious illness increases with age starting at about 40 years old. It is important for adults of this age to protect themselves and in turn protect others who may be more vulnerable.

WHO has provided advice to these two groups and the community to ensure that these two groups are protected from covid-19 without isolation, stigma, abandonment, vulnerability or inability to access to basic terms and social care. This advice covers the topic of receiving guests, planning to supply medicine and food, going out safely in public, and staying connected with others through phone calls or other means. It is essential that these groups are supported by their community during the covid-19 outbreak. WHO emphasises that everyone must protect themselves from covid-19.



Research methods

Objectives

The study aims to propose feasible measures to help prevent the spread of covid-19 in the community, so that the locality has better time to prepare resources to treat the sick.

Methods

The research team used survey methods to obtain evaluation data and studied theories about past forms of disease treatment, methods of tracing the patients, and how to localise the virus zone. The method of social impact and consciousness education is considered to be the most practical method of handling the situation and in helping zoning with the epidemic in Vietnam.

Analysis and Discussion

The team look at each case in addition to factors affecting the pathogen and the spread of the virus. We analyse a number of solutions to control the disease outbreak.

In this study, we do not investigate the characteristics of the new covid-19 virus, we focus on explaining the pathway of covid-19 infection in the community. The research team then looked at treatments to prevent the outbreak of covid-19 in some localities, mainly in Hanoi, Vietnam, where the population is densely populated and there is a diversity of hometown, industry and age,

With the mathematical analysis tool, we predict the effectiveness of the proposed measures, including those that are being implemented by Hanoi and other localities.

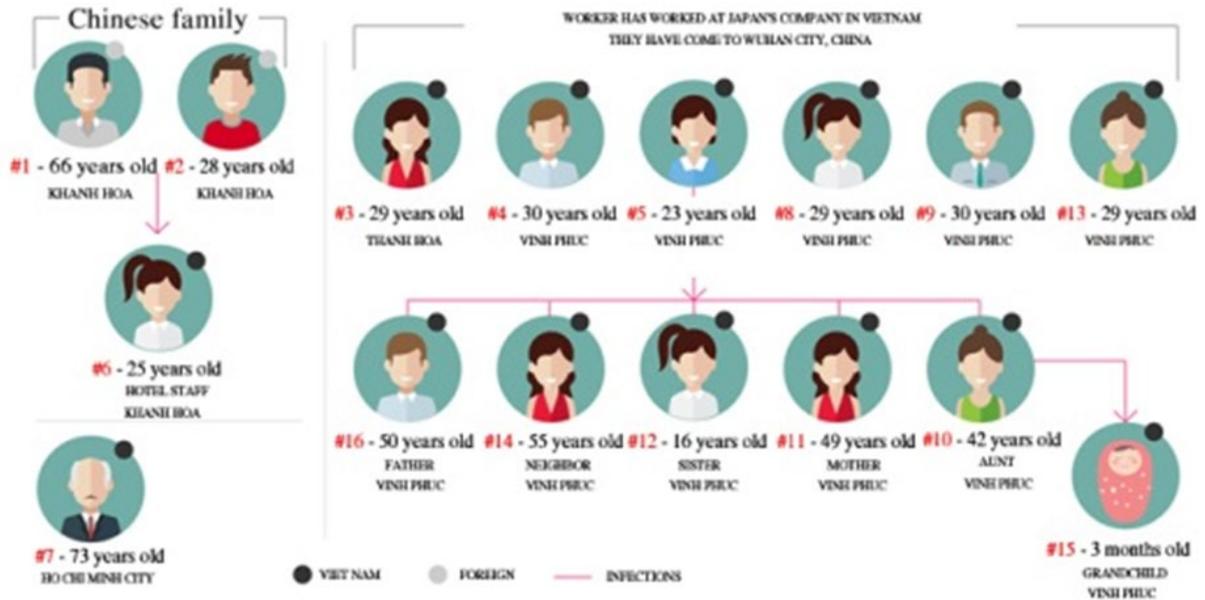
Research Results

The Government of Vietnam and the Ministry of Health recognise that the covid-19 virus is not like the normal strains of influenza, it is much more dangerous. As observed in China, we found that it is spreading very fast. There is difficulty in treating those with the virus when the number of infected people increases rapidly which puts great pressure on hospitals. If the process of spreading in the community is not controlled, disaster will occur.

Studying Traces of Patients

On the evening of 23 January, Cho Ray Hospital (Ho Chi Minh City) confirmed the first two patients that tested positive for the covid-19 virus in Vietnam. The two patients were father and

son. The father is Li Ding (66 years old); and the son is Li Zichao (28 years old). These are the patients covid-19 No. 1 and No. 2 in Vietnam.



Li Ding and his wife from Wuhan City (Hubei Province, China) arrived in Hanoi on January 13, then moved to Nha Trang on 16 January. Li Zichao worked in Long An province, went to Nha Trang to meet his father, then went from Nha Trang to Ho Chi Minh City and returned to Long An. On 17 January, the father started to have a fever and on 20 January, his son had similar symptoms. They were taken to Cho Ray Hospital on the evening of 22 January. On 29 January, the son was discharged (after 7 days of treatment). After 13 days, the father was discharged from the hospital (12 February).

On 30 January, the Ministry of Health confirmed 3 more cases of covid-19 infection in Vietnam. These patients include N.T.T (female, 25 years old), from Thanh Hoa province; P.V.C (male, 29 years old) from Tam Duong district, Vinh Phuc province; N.T.D (female, 23 years old) from Binh Xuyen district, Vinh Phuc province. These are cases No. 3, 4 and 5 in Vietnam.

All 3 patients, along with 8 other Vietnamese, were sent to China to train in Wuhan from November by Nihon Plast Co., Ltd. (hereinafter referred to as Nihon Plast Company) of Japan and returned to Vietnam on 17 January on Southern China Flight CZ8315, passing Noi Bai International Airport (Hanoi). These patients developed the illness between 23 and 25 January and were then admitted to a hospital for treatment. Before that, all 3 patients had communication with many people.



NTD (Patient No. 5), who later became co-infected with covid-19, was in communication with many people, including her father, mother, sister, and 2 neighbours with whom she had close contact.

Patient No. 3 was discharged from hospital on 2 February, after 11 days of treatment. On 10 October (after nearly 20 days of treatment), patients No.s 4 and 5 were discharged from the hospital.

On 1 February, a 25-year-old woman who was a hotel receptionist in Nha Trang was diagnosed with covid-19. This patient was infected by close contact with the Chinese father and son (patients No.s 1 and 2). This was the 6th patient of Vietnam. However, only 3 days later, on 4 February, this patient was discharged.

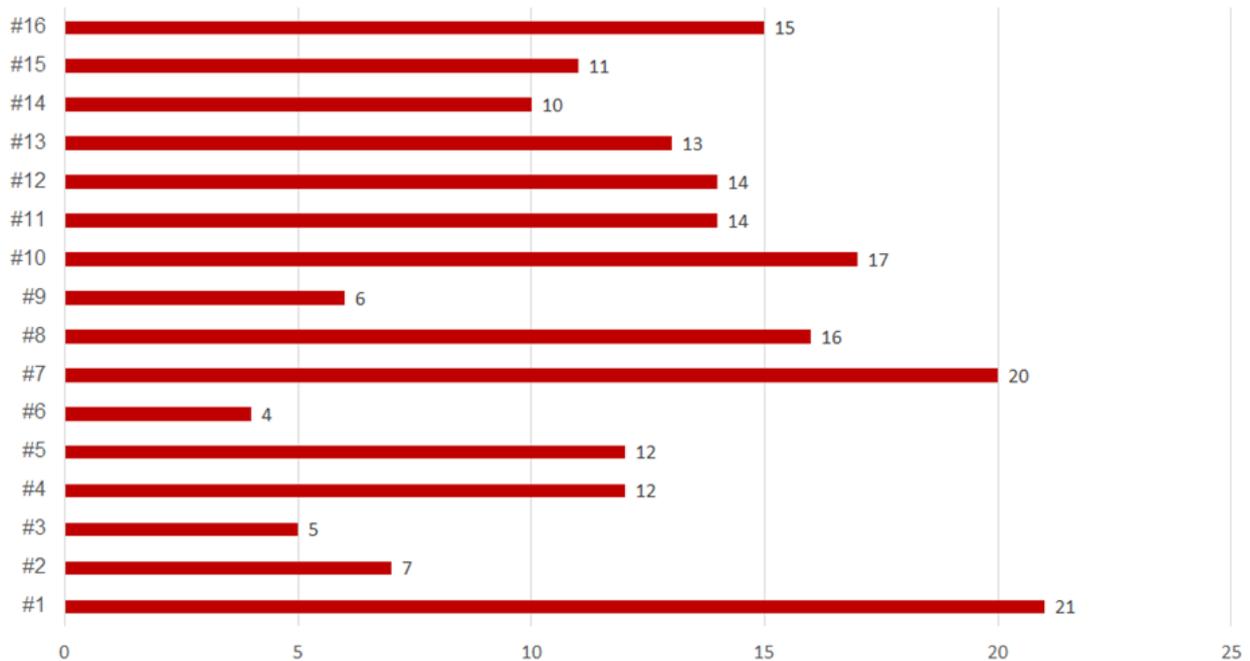
On 2 February, a Vietnamese-American (73 years old) was infected with covid-19 due to a 2-hour transit at Wuhan Tianhe International Airport on a trip from the United States to Vietnam. This person became the 7th patient of Vietnam.

Next, on 3 February, Vietnam announced the eighth patient- a 29-year-old woman from Vinh Phuc. This person was in the same group of the Nihon Plast Company of Japan to Wuhan. This is patient No 8 of Vietnam.

A day later (4 February), a 30-year-old male patient from Vinh Phuc, also belonging to a training group of Nihon Plast Company of Japan, returned from Wuhan was positive for covid-19 virus. This person became the 9th patient in Vietnam.

In the afternoon of the same day, the case of Vietnam's 10th covid-19 patient was also identified as a 42-year-old woman, infected by contact with a fifth patient during the Lunar New Year holiday.

The Treatment Period was from the Time of Detection of Being Tested Positive for Covid-19 to the Time of the Negative Result and the Discharge of the First 16 Patients in Vietnam



Source: Ministry of Health Vietnam

By 6 February, the mother (49 years old) and the younger sister (16 years old) of the 5th patient were also confirmed to be infected with covid-19. These are the cases of patients No 11 and 12 of Vietnam.

By 7 February, another case in the Nihon Plast group of workers was a 29-year-old worker who was also confirmed to be positive for covid-19. This is the 13th case.

Then, on 9 February, a 55-year-old woman, a neighbour of the fifth patient, also confirmed positive for covid-19 virus. This is the 14th case. Case No 15 was determined on 11 February, a 3-month-old grandson of patient No. 10.

On 13 February, the father (50 years old) of the number 5 patient was also diagnosed with covid-19, becoming the 16th patient of Vietnam.

The aforementioned patients were treated at local and central hospitals and were discharged in turn. On 25 February, 1 month after the first case, the 16th patient is the last of the first 16 cases of covid-19 in Vietnam and is discharged from the hospital.

The above is a summary of the first 16 patients of covid-19 infection in Vietnam



By 23:00 on 10 April, 2020, Vietnam had a total of 255 people with covid-19 (considered by us to be F0). With the tracing of each patient to find the source of infection, currently Vietnam has 2,544 suspected people (called F1, concentrated isolation) for cases of close contact with F1 is called F2 (case F2 are required for home isolation and being controlled), close contact cases with F2 (known as F3, request exposure restrictions and regular health reporting).

Improve Awareness and Responsibility of the People in Controlling the Spread of Covid-19 Disease

The Government of Vietnam has made every effort to control the covid-19 epidemic. The representatives of the Government of Vietnam are Prime Minister Nguyen Xuan Phuc and Deputy Prime Minister Vu Duc Dam. Together with the Ministry of Health, they have called on the people to act against the spread of the disease, and have made recommendations to the people, specifically:

Solution 1: Propagate about the danger of the covid-19 virus. Messages are automatically sent to every citizen via phone every day, reminding people how to prevent the spread of covid-19. Use technology to update one's health via applications that are easily installed on a phone. Declaring the health of relatives (to find information for those who use the phone less often and do not understand information technology).

Solution 2: Create trust in providing enough necessities for people in each locality, hamlet and family. Avoid collecting stockpiles, causing market instability and insecurity in preventing the spread of viruses.

Solution 3: Study the treatment regimen and local guidelines for treatment of patients with the covid-19 virus. Raise people's awareness and create confidence in the ability to cure the covid-19 virus locally. Restrict the movement of people infected with the covid-19 virus to avoid spreading within the community. Carry out studies to produce experimental supplements to check for the presence of the covid-19 virus in humans. Conduct extensive research from previous studies related to vaccines and treatment drugs.

Solution 4: Every citizen is educated in awareness and responsibility to society in describing the entire life and traveling process of people infected with covid-19 (F0) during the period before the onset of illness. Then F1, F2 and F3 will be controlled. For F0, in Vietnam, isolation and treatment will be carried out at local hospitals.

F1 will be tested and in concentrated isolation for 14 days after 3 negative tests for covid-19, the testing time will follow WHO recommendations.



F2 will be isolated at home with a team of doctors to check health 3 times per day. The isolated F2 area is supervised by the task force assigned by the locality.

F3 should raise awareness of symptoms if any, limiting contact with others.

Solution 5: Stop all business activities throughout Vietnam, except for food and drug stores. People are suggested to stay indoors and go out when needed only. Schools temporarily stop operating. The slogans such as "At home is patriotism", "Every citizen is a soldier" are raised throughout the country.

Solution 6: Wearing a mask when leaving the house or in the workplace is mandatory. The distance between individuals is at least 2m. Always use hand sanitizer and keep clean. If establishments dealing in medical supplies (especially masks, disinfectants, etc.) sell these products at prices higher than normal levels, they will be immediately prosecuted according to law (Vietnamese government's Directive 2020; The Prime Minister 2020).

Solution 7: Temporarily stop all flights in and out of Vietnam (in special cases, there must be approval of the head of Government). Suspend the operation of public transport during a time of potential outbreak (Vietnamese government's Directive, number 118/TB-VPCP). On 21 March, 2020, the Prime Minister decided to suspend entry for all foreigners from 0:00 on 22 March, and at the same time carry out a concentrated isolation of 14 days in all cases of entry.

Solution 8: The Deputy Prime Minister let it be known his high appreciation for the people, their efforts and consensus against the epidemic. The people of Vietnam have been struck by the spirit of patriotism, compatriotism and unyielding will (Vu Duc Dam, 2020).

Findings

With the implemented solutions, we realize that Vietnam has achieved good results in limiting the spread of the covid-19 epidemic. Specifically:

Stage 1: The First 16 People were Infected with Covid-19

Case No 1 was found on 23 January, 2020. By the end of 4 March, 2020 Vietnam cured 16 cases of covid-19. Thus, after the period from 23 January, 2020 to 4 March, 2020, Vietnam had effectively controlled the spread of covid-19 to the community and was completely cured.



Stage 2: Infections from Abroad

Case No 17 appeared at 10 PM on 6 March, 2020. From this point on, Vietnam has been tightening its control over disease outbreaks, activating every system to prevent the spread of diseases (as described above). As of 6 AM on 19 March 2020, there were 85 people infected with covid-19 in Vietnam.

Stage 3: The Risk of Spreading in the Community, Losing Track of F0

On the afternoon of 20 March, the Ministry of Health announced 2 patients of covid-19, 86th and 87th, 2 female nurses of Bach Mai Hospital (Hanoi). Worth mentioning is that the epidemiological history of these 2 patients did not show the source of transmission of the virus when both had no history of contact with covid-19 patients. On the same day, the Ministry of Health announced No. 91, a pilot of Vietnam Airlines returning from England. These three patients opened the third stage of the covid-19 epidemic in Vietnam where the disease spread in the community and it was unable to trace the source of infection (F0). However, as of 18:00 PM 18 April, 2020, Vietnam had 268 people infected with covid-19. This is a very good signal because of the control over the spread of the covid-19 virus in Vietnam.

Update 18 April, 2020 at 6:00 PM in Vietnam

Coronavirus Cases: 268

Deaths: 0

Recovered: 203

Chart 1. Total Coronavirus Cases in Vietnam (Ministry of Health Vietnam, update 18 April, 2020 at 6:00 PM)

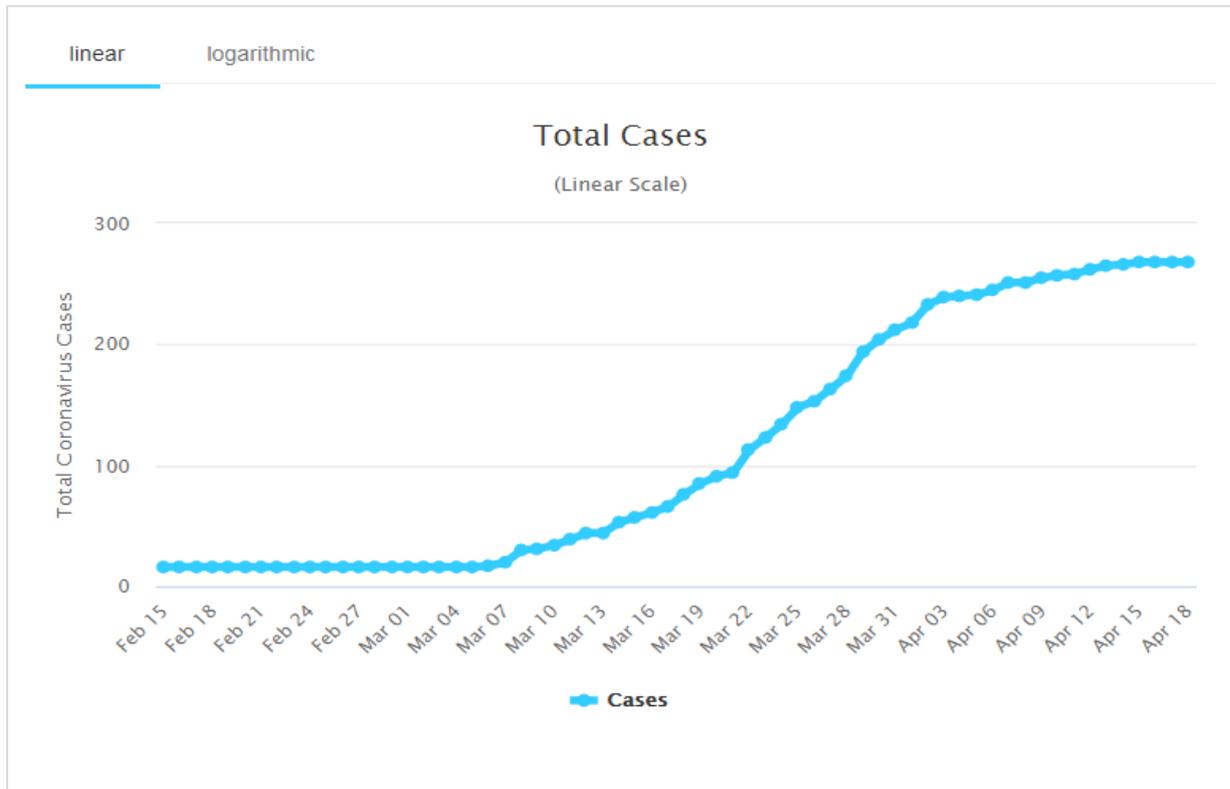


Chart 2. Daily New Cases in Vietnam (Ministry of Health Vietnam, update 18 April, 2020 at 6:00 PM)

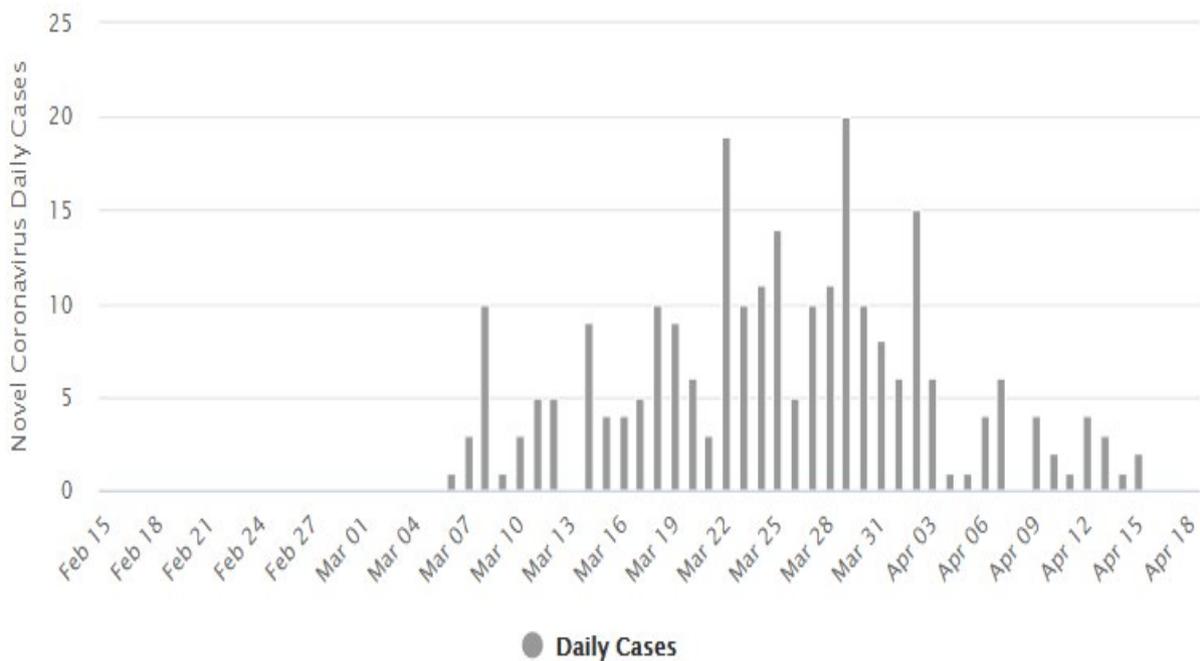
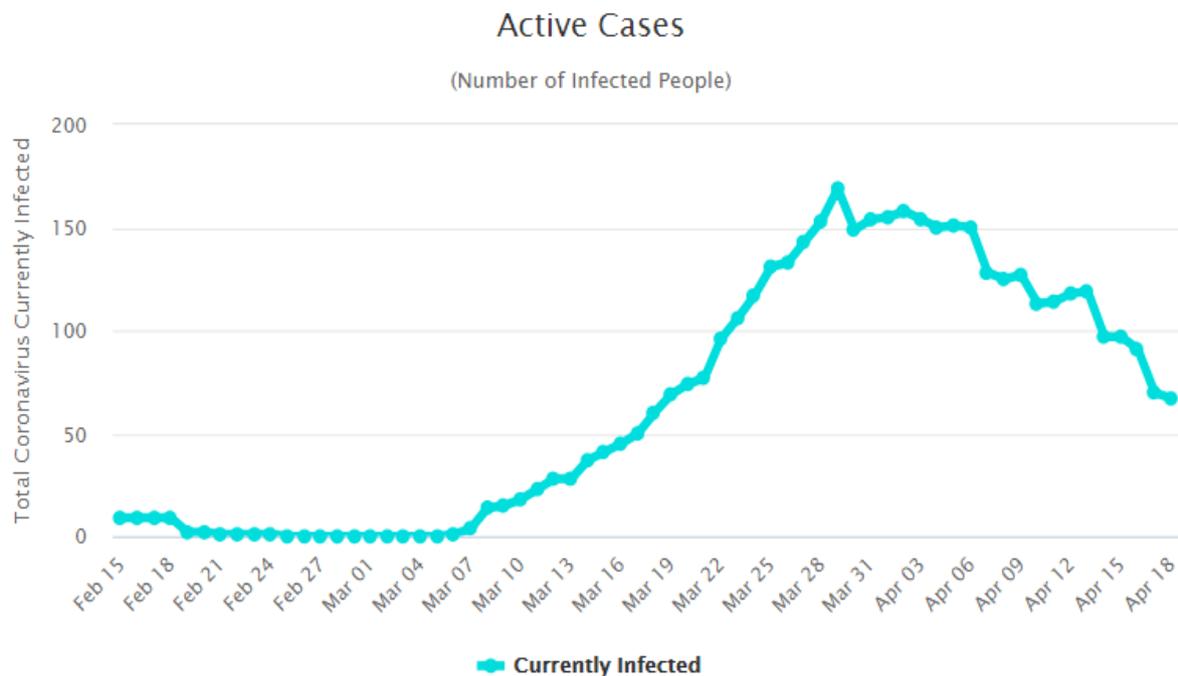


Chart 3. Active Cases in Vietnam (Ministry of Health Vietnam, update 18 April, 2020 at 6:00 PM)



With the application of a comprehensive system of measures, up to now Vietnam is one of the few countries that can curb the spread of covid-19 virus for a long time and there has been no deaths. The research team believes that the measures being implemented by the Vietnamese government will bring about high effectiveness in preventing the spread of the covid-19 virus to the community. As a result, the health sector has time to treat patients, add equipment and human resources to support the treatment.

Conclusion

From the very beginning, Vietnam has taken measures to prevent epidemics and be transparent, especially notification of the epidemic situation and preventive measures for people. These preventive measures have contributed to limiting the spread of disease. The success of Vietnam is to recognise the crisis early, inform the public daily, and provide successful models to respond quickly and effectively to this global crisis. With limited resources, Vietnam has sought to prevent the covid-19 pandemic by implementing preventive measures such as mass isolation and thorough monitoring of suspected cases. EFE quoted an official from the World Health Organization (WHO) in Hanoi, Mr. Park Kidong, who said “social distance”, “early activation of the response system” and “approach to the whole commune under strong leadership” are the reasons leading to the success of Vietnam up to the present time.



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