

Republic of Korea – World Bank Group Partnership on COVID-19 Preparedness and Response

Country Case Study: Vietnam



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On the cover: Fishermen working at sunrise on the beach in Binh Thuan, Vietnam.

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LIST OF ACRONYMS

| ACRONYM | EXPANDED FORM |
|-----------------|--|
| 5K | 5K message—facemask (Khẩu trang), disinfection (Khử khuẩn), distance (Khoảng cách), no gathering (Không tụ tập), and health declaration (Khai báo y tế) |
| ASEAN | Association of Southeast Asian Nations |
| CDC | Center for Disease Control and Prevention (provincial level) |
| COVID-19 | Coronavirus disease 2019 |
| DPT4 | Diphtheria, whooping cough, tetanus |
| DOH | Department of Health (provincial level) |
| EBS | Event base surveillance |
| EUA | Emergency use authorization |
| FETP | Field Epidemiology Training Program |
| F0 | Confirmed case; in contact tracing sometimes it indicates the first case of the cluster, where other contacts of F0 are F1 |
| F1 | Contacts of F0 that have not turned out positive yet |
| GDP | Gross domestic product |
| GSO | General Statistics Office |
| GDPM | General Department of Preventive Medicine |
| ICT | Information and communication technology |
| JE | Japanese encephalitis |
| MOET | Ministry of Education and Training |
| MOH | Ministry of Health |
| MR | Measles-rubella |
| NA | National Assembly |
| OOP | Out-of-pocket |
| PCR | Polymerase chain reaction |
| PPE | Personal protective equipment |
| PPP | Public and private partnership |
| QR | Quick response |
| RT-PCR | Real-time polymerase chain reaction |

| ACRONYM | EXPANDED FORM |
|-------------------|--|
| SARS | Severe acute respiratory syndrome |
| SARS-CoV-2 | The new (secondary) coronavirus found as the cause of COVID-19, which is similar to SARS |
| UHC | Universal health coverage |
| VNPT | Water, sanitation, and hygiene |
| WHO | World Health Organization |
| VN | Vietnam |
| VND | Vietnamese dong (currency) |



Immunization against COVID-19 at school for children in Ia Peng commune, Phu Thien, Gia Lai 2022

EXECUTIVE SUMMARY

The COVID-19 pandemic has caused unprecedented damage to the economy and health of people worldwide. It has led to considerable losses in human life and the economy, exposing underlying health system challenges and inequities. In Vietnam, too, the pandemic posed significant disruption to the economy and the health care system. This country case study documents the epidemiology of COVID-19 from January 16, 2020 (before the first case was found in Vietnam on January 23), to June 30, 2022, in Vietnam, and covers its pandemic preparedness and control policies, governance, and health care system, as well as the impact on the economy and businesses. Lessons learned in the country and challenges for better preparation for the future are described.

Hoh Chi Minh City's business central district view at night



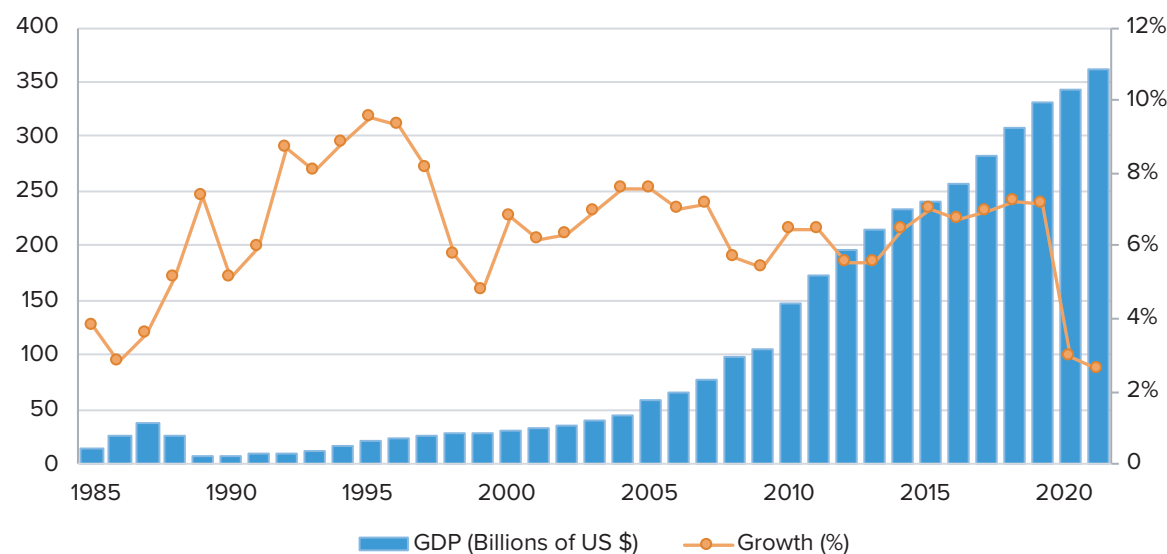
1. INTRODUCTION

A COVID-19 outbreak was first reported in Wuhan, China, in December 2019 (WHO 2020). The World Health Organization (WHO) declared COVID-19 (caused by the SARS-CoV-2 virus) to be a pandemic on March 11, 2020. As of June 30, 2022, it had affected over 554 million people and caused nearly 6.3 million deaths worldwide. Vietnam recorded 11 million cases and 43,000 deaths during the same period (Worldometer 2020a).

Prompt and effective policy making has been a critical factor in controlling the pandemic. A study demonstrated that timely government policy and media responses, including effective measures to classify and quarantine people from pandemic zones,

contributed to limiting the effect of COVID-19 on the economy in 2020 (Ha et al. 2020, Lam and Thanh 2020). Vietnam is one of the few countries that witnessed an increase in the gross domestic product (GDP) in 2020 according to a World Bank report, although this increase was much lower than that in previous years. GDP in Vietnam averaged \$US84.67 billion from 1985 until 2020, reaching an all-time high of US\$271.16 billion in 2020 and a record low of US\$6.29 billion in 1989. In 2020, the Association of Southeast Asian Nations (ASEAN) recorded an average decrease in GDP of -3.3 percent, while Vietnam's GDP increased, up to 2.9 percent.

Figure 1: GDP growth in Vietnam from 1985 to 2021



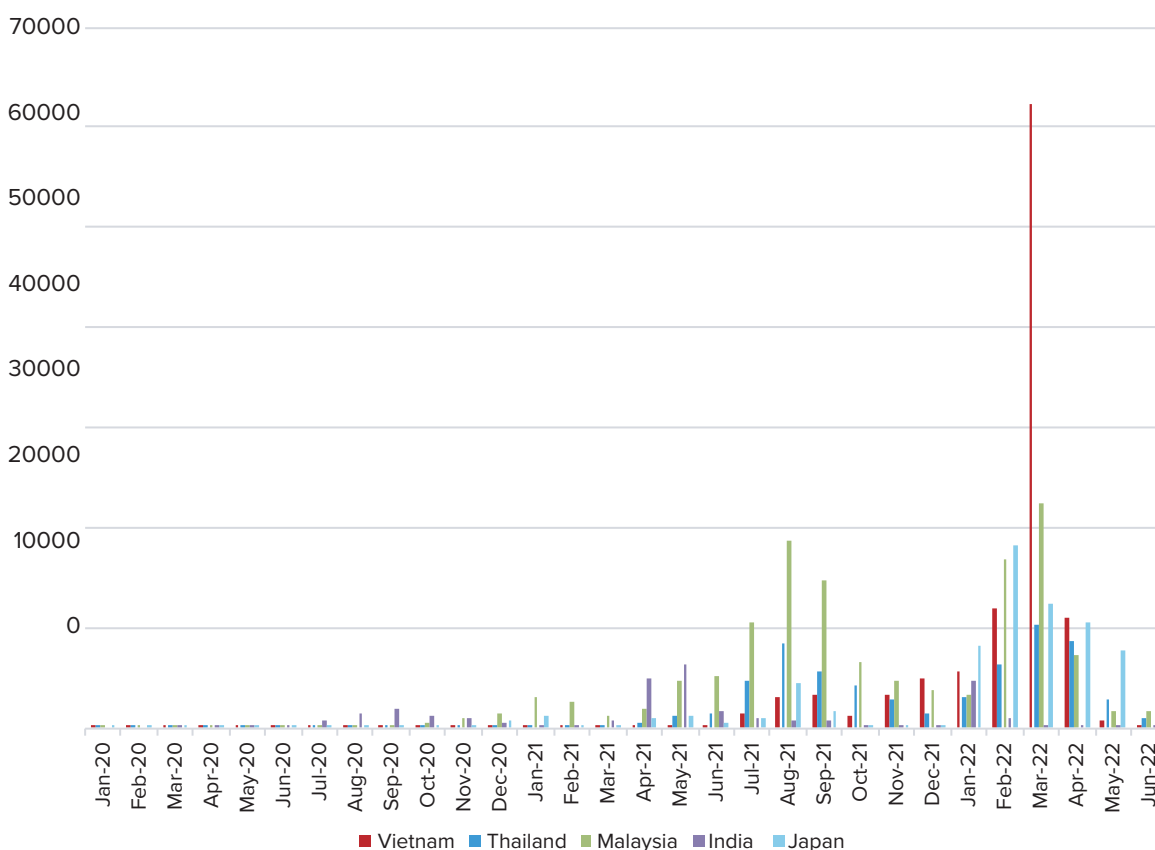
Vietnam has a history of successfully managing disease outbreaks—it was the first country recognized by the WHO as SARS-free in 2003. In addition, many policy reforms, measures, and interventions were pioneered during and after SARS, which have helped respond to COVID-19. Similarly, the public’s prior experience with a respiratory infection outbreak may have led to a greater willingness to comply with the government’s centrally directed public health response (WHO 2003).

1.1. Epidemiology of COVID-19

Despite its proximity to China and the vulnerabilities of its health care system, Vietnam had been able to

contain the spread of the virus, especially through the earlier waves.¹ The number of cases reported in Vietnam is low in comparison with that in other Asian countries and in many countries worldwide (Figure 2) (COVID Live—Coronavirus Statistics—Worldometer 2020b). The first case of COVID-19 in Vietnam was declared on January 23, 2020. Until June 30, 2022, Vietnam reported a total of 10,746,470 cases with 43,087 deaths, corresponding to a fatality rate of about 0.4 percent (General Department of Preventive Medicine 2022). These relatively lower rates can be explained by some key factors, including a well-developed public health system, a strong central government, and a proactive containment strategy based on comprehensive testing, tracing, and quarantining.

Figure 2: New cases of COVID-19 per million population, in some Asian countries



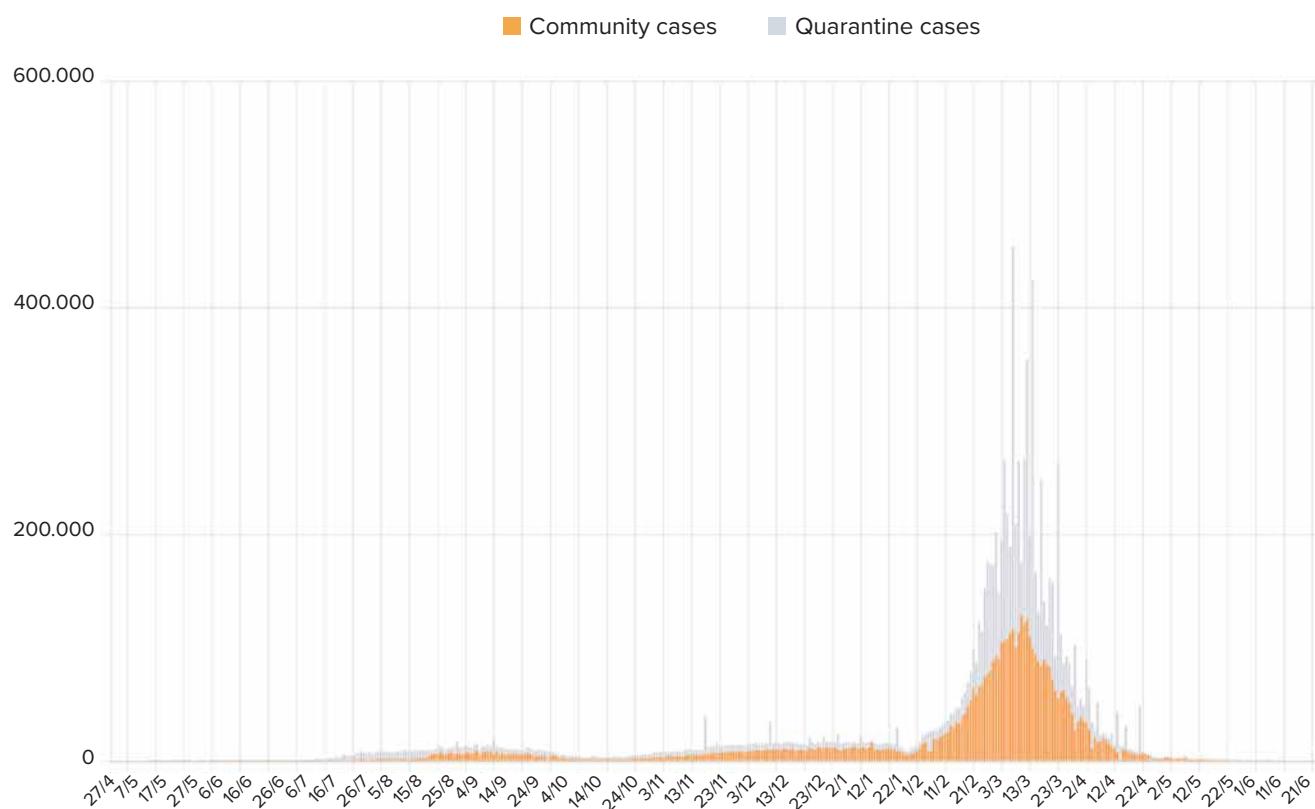
¹ The definition of the waves of COVID-19 infection in Vietnam (described later in the case study) is different from that in several other countries.

For the first three waves from the onset of COVID-19 to April 2021, timely and appropriate responses have been vital in controlling the infection in Vietnam.

For the first three waves from the onset of COVID-19 to April 2021, timely and appropriate responses have been vital in controlling the infection in Vietnam (Duc, Vui, and Ha 2020; Ha et al. 2020). The Vietnam Ministry of Health (MOH) mandated actions based on the available scientific knowledge of the pandemic, such as the 5K message—facemask (**K**hẩu trang), disinfection (**K**hử khuẩn), distance (**K**hoảng cách), no gathering (**K**hông tụ tập), and

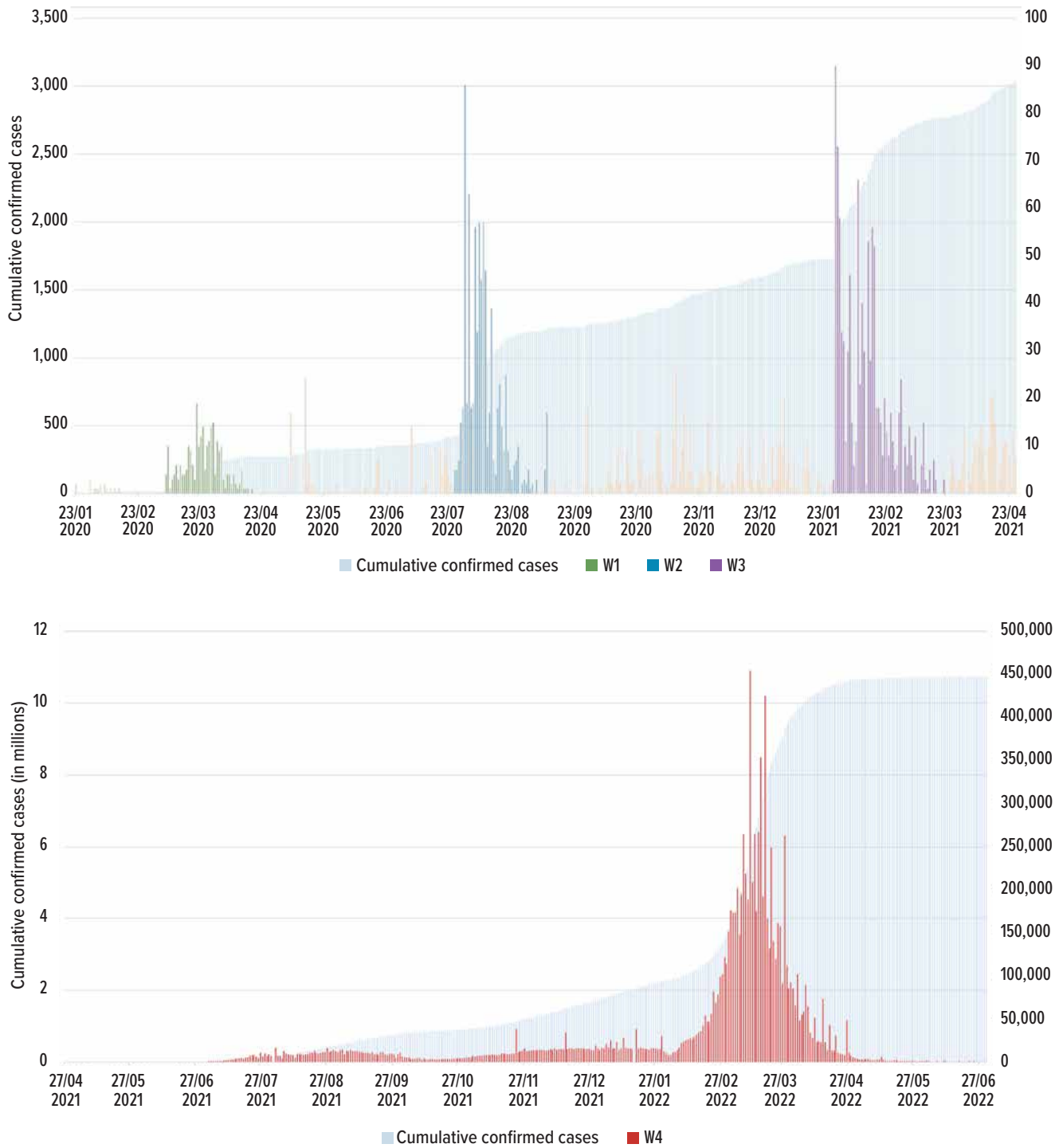
health declaration (**K**hai báo y tế) (Vietnamese Government 2020a). However, the battle against COVID-19 continues in Vietnam, as the country is in its fourth wave. To understand the situation better, this case study explored the data split between the period of the first through third wave (January 2020 to April 2021) and the fourth wave (end-April 2021 to June 30, 2022) (Figure 3, Figure 4A, and 4B).

Figure 3: The number of daily new confirmed cases, split by community transmission (orange) and in quarantine (gray)



Source: <https://covid19.ncsc.gov.vn/dulieu/graph> [online source]

Figure 4: (Waves 1 to 3) and Figure 4B. (Wave 4) in Vietnam



The first wave commenced on January 22, 2020 (Figure 4A). The original case had a travel history from Wuhan, China, to Vietnam, where he visited his son, who also tested positive for COVID-19 later (MOH 2020b). The next three patients were Vietnamese citizens who had traveled on the same flight from Wuhan on business (Van Cuong et al. 2020). These three cases led to a 14-day lockdown of a whole village (Son Loi) in the country’s northern province

(Vinh Phuc). Fourteen confirmed cases from this province were isolated in a designated hospital. In addition, the province activated community-wide screening for COVID-19 (Thanh et al. 2020).

The second wave was triggered on March 6, 2020, when a 26-year-old person who had traveled to infected areas in Europe arrived in Vietnam and tested positive. Soon after the confirmation, the MOH successfully tracked and isolated about 200 people

who had close contact, lived on the same street, or were on the same flight to Vietnam (Đình et al. 2020). From the date of entry into Vietnam to before the date of detection in the community in Da Nang City, there were 399 cases; 301 of these were imported and 98 were due to community transmission. This was followed by 99 days with no cases detected in the community (MOH 2020b), (Tran et al. 2020).

The third wave was identified with the COVID-19 outbreak in Da Nang city from July 23, 2020, to October 2020. A total of 388 cases and 35 deaths were reported. This was followed by a wider outbreak from January 25, 2021, to March 26, 2021, with 901 cases reported in 13 provinces and cities (National Steering Committee for COVID-19 Prevention and Control 2021b).

The fourth wave started in late April 2021 and is continuing. This has been the most severe, with over 10 million infected with a case fatality of more than 40,000 until the end of June 2022. This time, many policies changed in response to the availability of vaccines and antiviral drugs.

The number of COVID-19 infections in the south of Vietnam from June to September 2021 increased very rapidly due to the Delta variant, leading to an increase in severe cases and deaths. Most of the deaths were among the elderly and people with underlying diseases. In Ho Chi Minh City, 85 percent of deaths were among the unvaccinated or those with only one dose of the vaccine (VnExpress Jan 2022).



Data entry into the covid vaccination information system at the school in Ia Peng commune, Phu Thien, Gia Lai 2022

1.2 Overview of Vietnam's Health Care System

Vietnam invested heavily in its health care system, with an 80 percent increase in public health expenditure per capita between 1995 and 2012 (Hoang et al. 2015). These investments have paid off, with improving indicators. Between 1990 and 2020, life expectancy increased from 66 years in males and 75 years in females to 71 and 80 years, respectively. The under-five mortality rate fell from 52 to 21 deaths per 1000 live births, and the mortality rate (2017) from 139 to 43 deaths per 100,000 live births (World Bank 2022). The country has many policies to improve the quantity and quality of human resources in the health sector: diversified forms of human resource training, preferential vocational policies, special allowances, and staff rotation policy (Quy 2019). The prime minister approved the “Project to reduce hospital overload in the period 2013–2020” according to Decision No. 92/QĐ-TTg, dated January 9, 2013. The positive impact of these policies has resulted in the increase in the number of medical staff and the number of hospital beds, together with the improved quality of care. Between 2015 and 2021, the number of doctors per 10,000 inhabitants increased from 8.0 to 11.1; the number of patient-beds per 10,000 inhabitants increased from 26.5 to 31.2 (General Statistics Office of Vietnam 2021b).

The country has robust data systems to collect and analyze data from public health entities. The database system shifted to a central, real-time Web-based system in 2009. Since 2016, hospitals have been required to report notifiable diseases (case-based) within 24 hours to a central database, enabling the MOH to track epidemiological developments across the country in real time (Balajee et al. 2017). In collaboration with the U.S. Centers for Disease Control and Prevention (US CDC), Vietnam piloted an “event-based” surveillance program in 2016 and scaled it up nationally in 2018. Event-based surveillance accurately identifies clusters of people with symptoms, which could prevent an outbreak from spreading (Clara et al. 2018). This system also allows key stakeholders, including teachers, pharmacists, religious leaders, community leaders, and traditional medicine healers, to report public health events.



Taking samples for COVID-19 testing at Hoa Phong commune, Krong Bong district, Dak Lak province 2020

2. METHODOLOGY AND DATA SOURCES

The case study has synthesized and evaluated relevant policies classified by agencies, periods, types of policy communication, and category of policy responses. It is a combination of both

quantitative and qualitative methods. A total of 435 documents from the government to MOH level were obtained during the analysis period (Table 1).

Table 1: Data sources and limitations

| | |
|---------------------|---|
| Data sources | <ul style="list-style-type: none"> • Data on COVID cases, compiled from the https://covid19.gov.vn website of the MOH • Nineteen policy documents from 33 agencies at the central (national) to provincial levels, sourced from two main channels: https://thuvienphapluat.vn/ (legal library) (Legal library 2021)—the official website on Vietnamese legal documents—and https://ncov.moh.gov.vn/web/guest/trang-chu (MOH 2021) • Reports on COVID-19 prevention and policies from official press, articles, reports, briefs, and presentations from reliable data sources in Vietnam and globally • Interview data from key persons in health sector and survey |
| Limitations | <p>All information, including that from key interviews, is in Vietnamese, and accurate translation can sometimes be complex.</p> |

Vaccination against COVID-19 for frontline workers against epidemics in Gia Lai province in March 2021



3. PREPAREDNESS

3.1 Governance for disease surveillance and preparedness

Organizational structure

Vietnam has a centralized governance system for infectious disease control. The General Department of Preventive Medicine (GDPM) at the MOH plays a key role in health planning and policy formulation and implementation at the national level. Under the GDPM, there are four regional institutions that oversee infectious disease management: Northern Region—National Institute of Hygiene and Epidemiology (directly managing 28 CDCs), Central Region—Pasteur Institute Nha Trang (directly managing 11 CDCs), Southern Region—Pasteur Institute in Ho Chi Minh City (directly managing 20 CDCs), and Highland Region—Tay Nguyen Institute of Hygiene and Epidemiology (directly managing 4 CDCs). In addition to the CDCs, the GDPM manages national hospitals, including psychiatric and tuberculosis hospitals, and implements various public health policies by collaborating with local governments.

Surveillance system in Vietnam

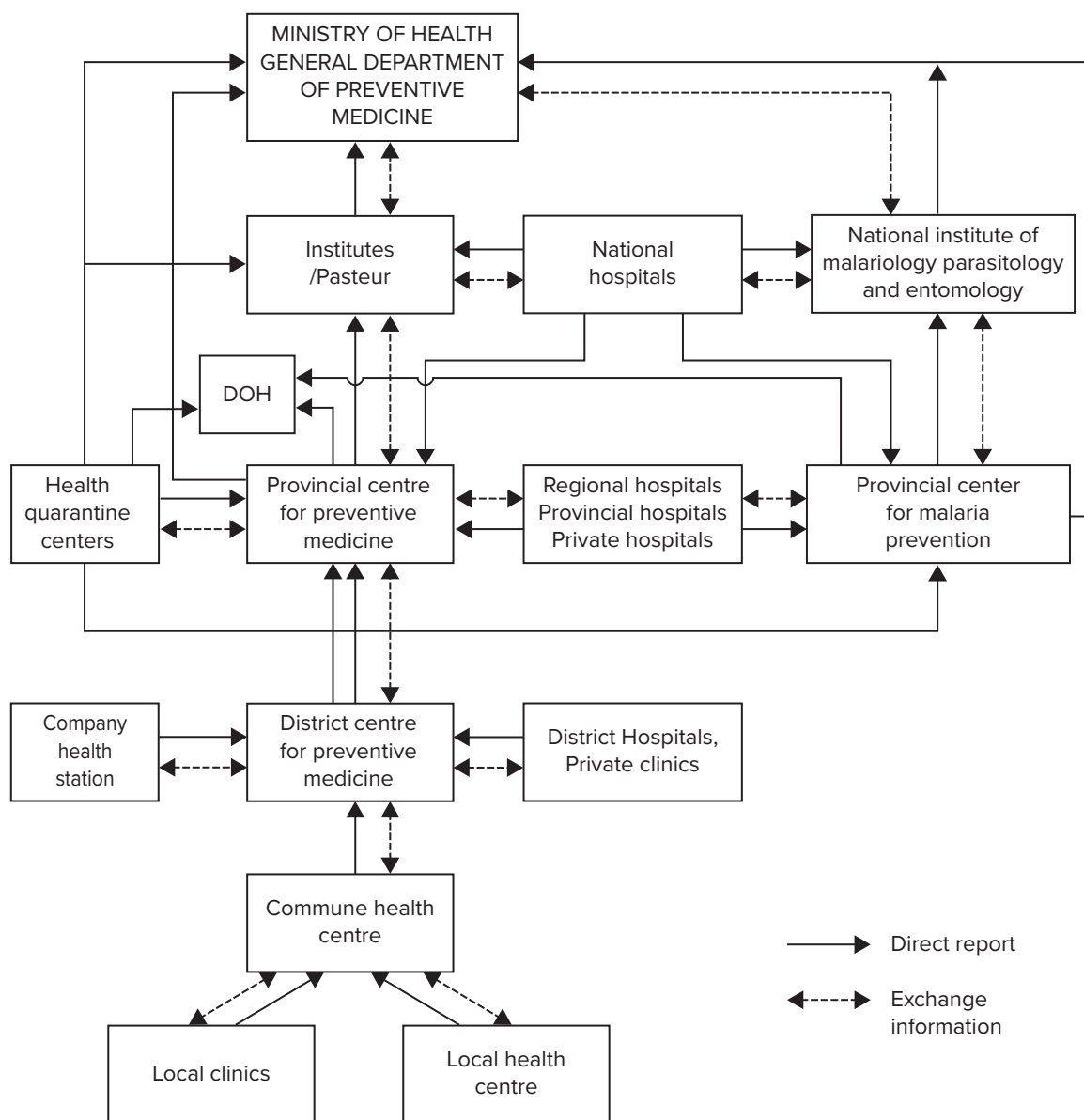
The communicable disease surveillance system is managed and controlled nationally and is responsible for collecting surveillance data and receiving reports



Activities of the Rapid response information team to prevent and control the COVID-19 epidemic, established in 2020, headquartered in Hanoi

from all levels of administration, from the commune to the national level. The data is reported weekly and monthly (reporting modes used are fax, landline/mobile phone, and emails), even in the absence of any case of communicable disease during that period. Data includes the number of new patients, deaths, and surveillance results and line-listing in case of an outbreak. In case of an incidence of a communicable disease in any hospital, data is sought from the related community to identify additional cases, if any.

Figure 5: Flow of surveillance reporting for communicable diseases
Based on circular No 48 /2010/TT-BYT of Ministry of Health, dated December 31, 2010



Despite the robust surveillance system, there could be errors at times. Most communicable diseases are identified clinically, and not by laboratory testing. Case definitions and surveillance techniques are not standardized across the health system, and there could be differences from province to province.

Legal framework, government directives, and government-led COVID-19 response

The “Law on prevention and control of infectious diseases” No. 03/2007/QH12, dated November 21, 2007, was established to enact legal actions for

infectious disease control. The law also mandates vaccinating the population to control vaccine-preventable diseases. In 2013, the MOH issued Circular No. 13/2013/TT-BYT, “Guidelines for infectious disease surveillance,” dated April 17, 2013, requesting all hospitals to join the reporting system. By 2016, Circular No. 54 mandated hospitals at all levels reported more than 40 communicable diseases through the web-based system. During the pandemic, this system recorded and reported COVID-19 statistics from all levels.

The pandemic prevention and control system was a timely and effective response of the government and health care workers, and it reflected the public’s



Training on EPI for district staff in Gia Lai province, 2022

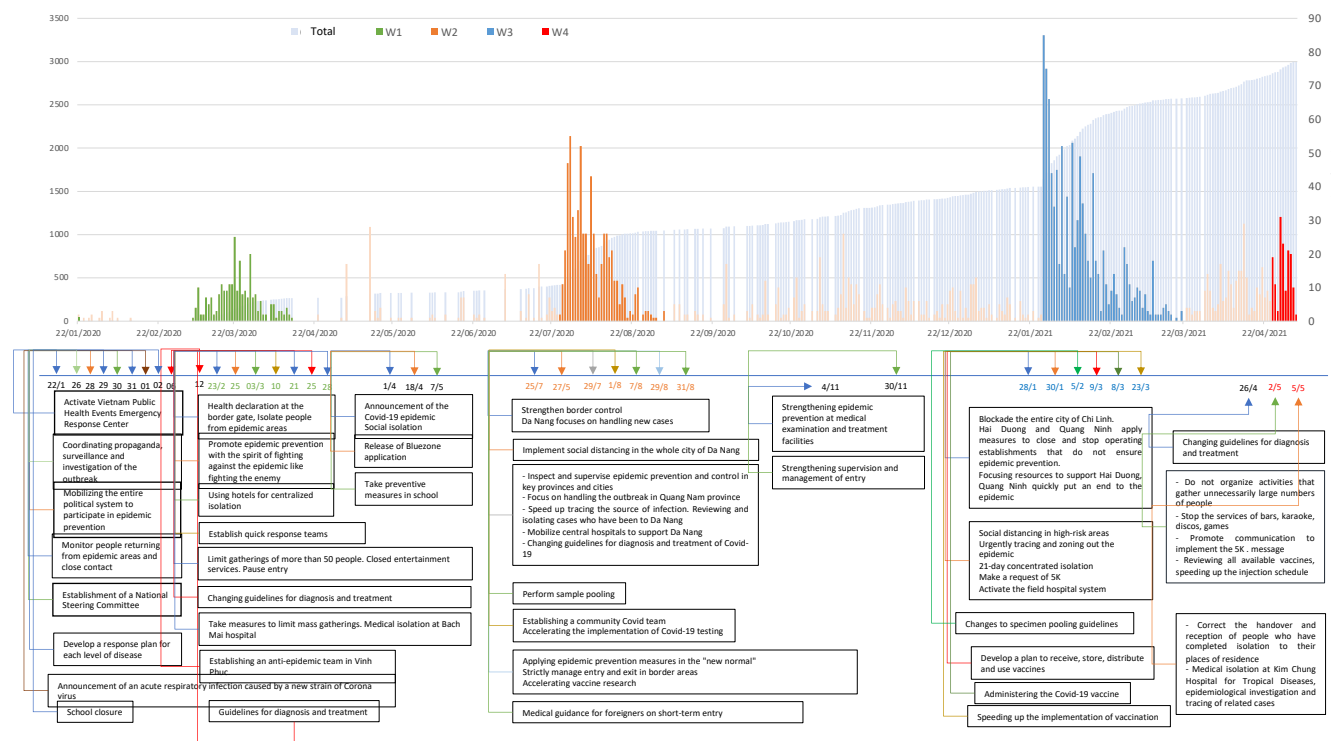
trust, solidarity, and support. As soon as the first case of COVID-19 was reported in Vietnam, following the direction of the Standing Politburo, the government and the prime minister proposed a motto—“fighting the pandemic is like fighting the enemy.” This step mobilized strong participation within the political system and the public and promoted discipline

and accountability. The actions were focused on implementation of strategies and measures to control the infection. Later, on July 2, 2021, at the government’s online conference with localities, the government focused on directing the implementation of “dual goals”—developing the economy and ensuring social security, while continuing with prevention and control.

A Steering Committee for COVID-19 Prevention and Control was established at the national and regional levels to manage and control the pandemic. The following measures were implemented:

- (i) “compartment block—quick detection—social distancing—quarantine—effective outbreak response and treatment”;
- (ii) the motto “4 on the spot,” which entailed leadership on-spot; human resources on-spot; means on-spot; and logistics on-spot;
- (iii) Directives No. 15/CT-TTg, dated March 27, 2020; No. 16/CT-TTg, dated March 31, 2020; and No. 19/CT—TTg, dated April 24, 2020, of the Prime Minister’s “5K principle.”

Figure 6: Four waves of COVID-19 pandemic in Vietnam and the government’s intervention strategies



Control mechanism

Period of the first three waves (from January 23, 2020, to April 26, 2021):

Vietnam applied the five strategic principles to control the outbreak: “prevention, detection, isolating, zoning, and effective treatment.” The government implemented these measures prior to the WHO recommendation by issuing directives² by the prime minister that provide guidance to localities in responding to the outbreak. The MOH actively developed and proposed implementation plans and scenarios for COVID-19 prevention and control soon after the disease was recorded in Wuhan (China). This plan has been continuously updated according to actual developments and levels of infection.

Vietnam focused on implementing adequate and timely measures to not only minimize the incidence and case fatality rate, but also to promote economic development through its dual goal strategy. Vietnam is the first country to apply the mandatory measure of medical declaration for people on entry, and at the same time it continues to organize concentrated isolation for all citizens entering the country. The government also provided substantial financial support to workers who lost their jobs and/or experienced a significant impact on their businesses through a support package worth 62,000 billion Vietnamese dong (VND) approved on April 9, 2020. The government also reallocated and mobilized security and armed forces personnel for tasks such as isolation, control of entry on border lines, restriction and temporary suspension of entry visa issuance, and extension or validation of an exemption certificate.



The Ministry of Health supervises the implementation of vaccination against COVID-19 in Trung Liet Ward, Dong Da district, Hanoi, 2021

Period of the fourth wave (from April 27, 2021, to June 30, 2022):

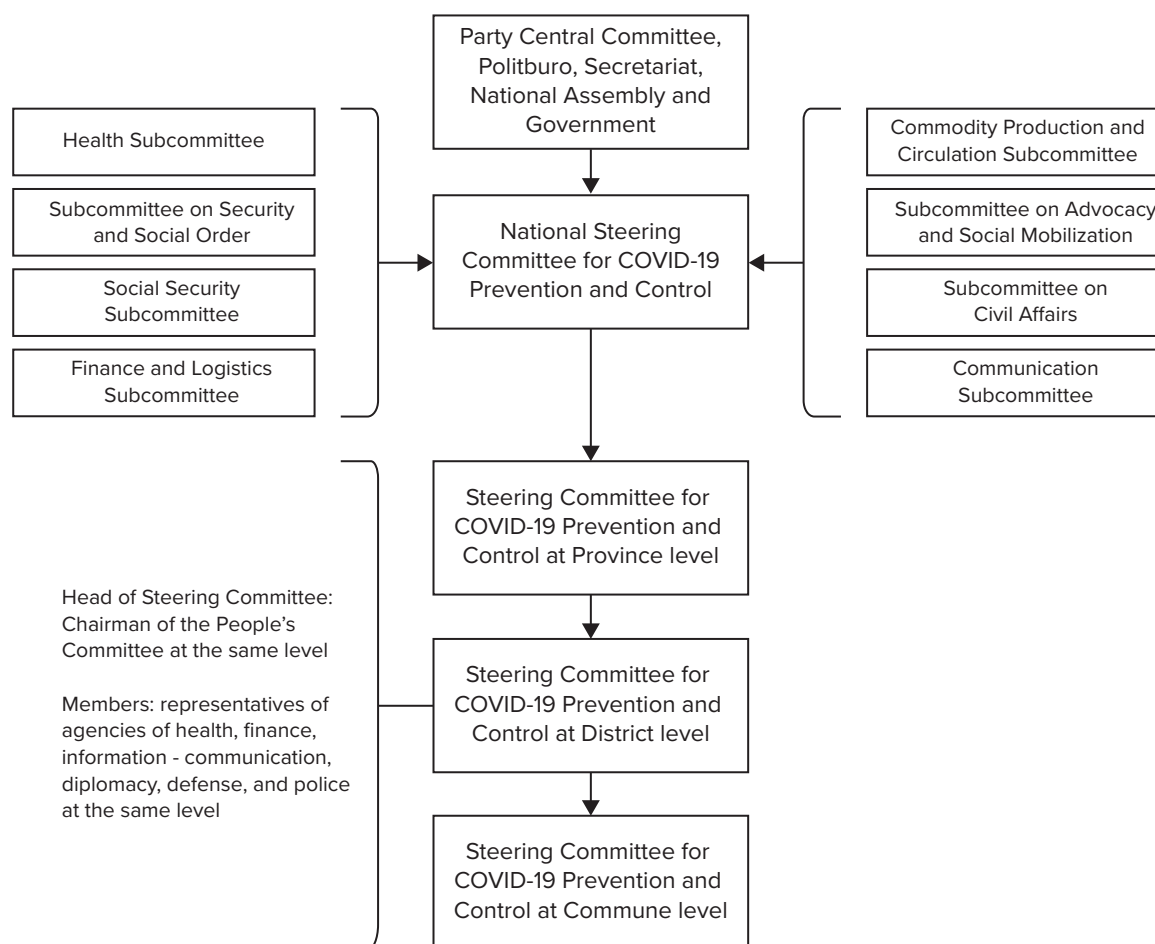
In 2021, the Government Working Group on vaccine diplomacy was set up to administer vaccines equitably and efficiently across the country. When vaccines became available in the country, initially they were not enough to cover all provinces. Full access to COVID-19 vaccines began in the third quarter of 2021. By October 2021, the country achieved a 70 percent rate of vaccination with at least one dose, and the country returned to “safely adapting, and flexibly and effectively controlling the pandemic.”

With lessons learned through the first three waves of COVID-19, the government quickly adapted resolutions, policies, and measures, and mobilized, reallocated, and redefined human and financial resources. For instance, on July 28, 2021, the National Assembly (NA) issued Resolutions No. 30/2021/QH15, No. 268/NQ-UBTVQH15, and No. 30/2021/NQ-QH15, allowing the government to promptly implement appropriate regulations, mechanisms, policies, and measures to respond to the urgent need for pandemic prevention and control. On September 30, 2021, the NA issued Resolution No. 393/NQ-UBTVQH15, which reallocated resources from the central budget for COVID-19 expenditures. Resolution No. 296/NQ-UBTVQH15, dated September 7, 2021, supported financial relief for the public on supplementing funds to buy back the exported national reserve rice for aid, relief, and support to the people. Resolution No. 03/2021/UBTVQH15, dated September 24, 2021, supported employees and employers affected by the COVID-19 pandemic through the Unemployment Insurance Fund.

The National Assembly and the government were responsible for providing direction for infectious disease preparedness and response tasks, while the Steering Committees quickly consolidated the organization, assigned tasks to members, issued working regulations, and implemented assigned activities. Ministries, departments, branches, central agencies, and localities established command centers for pandemic prevention and control at all levels. Local government actively directed and organized the implementation of COVID-19 response in their localities. The prime minister established a special working group of the government in Ho Chi Minh City to handle the prevention and control in the provinces and cities in the southern region.

² Nos. 15/CT-TTg, 16/CT-TTg, and 19/CT-TTg

Figure 7: Organization chart of the Steering Committees against COVID-19



In late 2021, the government and the National Steering Committee changed their stance and direction in combating COVID-19, in consultation with scientists and experts. These changes included (i) switching from defense to attack, implementing the three pillars of isolation, testing, and treatment; (ii) identifying communes, wards, and towns as “fortresses” and the people as “soldiers,” with the people as the center and the subject of pandemic prevention and control, thus bringing health care and social security services close to them; and (iii) focusing on mobilizing support resources and providing timely aid to localities with outbreaks or high risk of outbreaks. Several resolutions were passed to enable appropriate response and action.³

During the fourth wave, the MOH developed, adjusted, and updated plans to ensure adequate response depending on the incidence and mortality rates. Faced with the risk of penetration and spread of the Omicron variant, the government, the prime minister, and the head of the National Steering Committee for COVID-19 Prevention and Control focused on directing the implementation of drastic measures, tasks, and solutions for early detection, and timely and effective response, which included strengthening supervision and management of cases of entry, especially of cases coming from countries and regions that have recorded the new variations.

³ Resolution No. 86/NQ-CP, dated August 6, 2021, on urgent solutions to prevent and control the COVID-19 pandemic to implement Resolution No. 30/2021/QH15, dated July 28, 2021, of the XV National Assembly; Resolution No. 58/NQ-CP, dated June 8, 2021, on the Regular Government Meeting in May 2021; and Resolution 128/NQ-CP, dated October 11, 2021, which provided for “Safe adaptation, flexibility, effective control of the COVID-19 pandemic.”

3.2 Health System

Health financing

There are a number of sources, from both the central and local budgets, for the resource envelope for infectious disease prevention and control. These include the health insurance fund; aid from countries, international organizations, and other lawful funding sources; and donations and financial and in-kind support from businesses and domestic and foreign organizations/individuals through the COVID-19 Vaccine Fund, the Fatherland Front at all levels, and direct support to the authorities and medical facilities.



COVID-19 epidemic control activities of customs authorities in Mong Cai City, Quang Ninh Province, 2020

Figure 8: Financial sources for infectious disease prevention and control in Vietnam

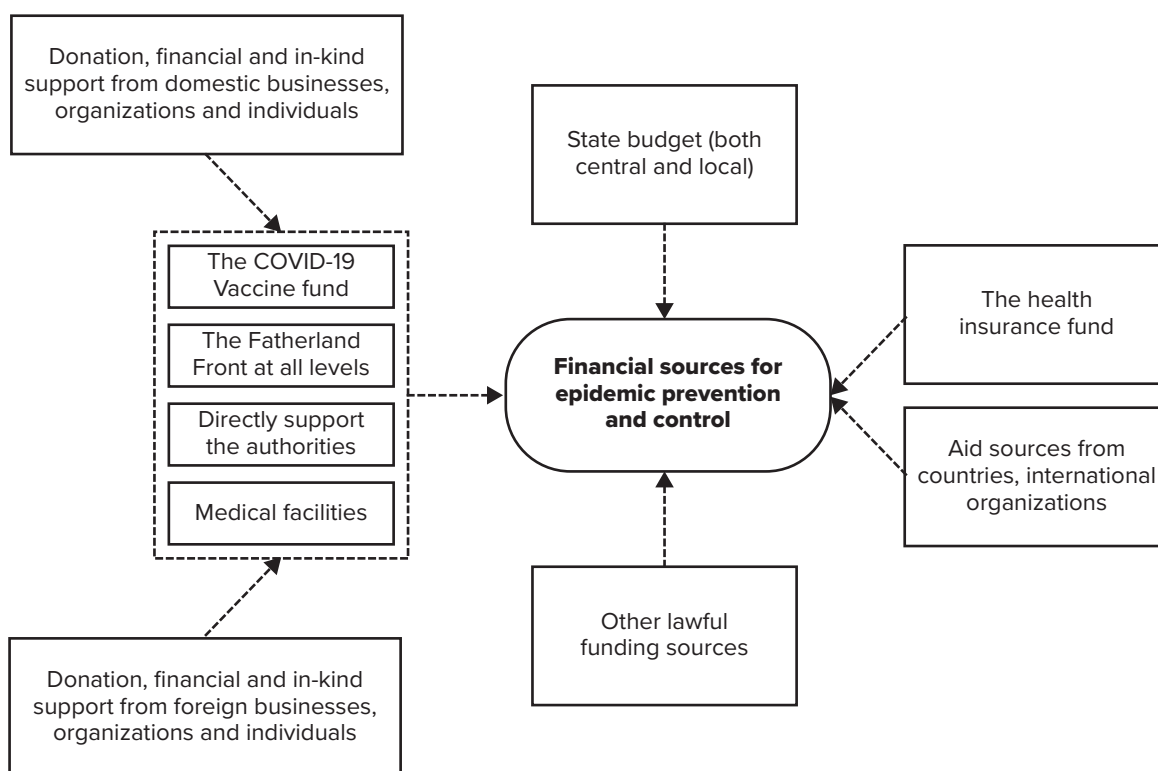


Table 2: The budget spent on pandemic prevention and control in 2020 and 2021

| Year | Central budget | Local budget | The total state budget |
|------|----------------------|--------------------|------------------------|
| 2020 | VND 8,014.57 billion | VND 11,628 billion | VND 19,642.57 billion |
| 2021 | VND 26,300 billion | VND 51,300 billion | VND 77,600 billion |

In 2022, the resources allocated by the central budget totaled about VND 30,500 billion (unused resources from 2021 have been transferred to 2022 to continue spending on public expenditures). In addition to the domestic resources dedicated to COVID-19, Vietnam received a myriad of financial and human resources support from other countries and international organizations (estimated to be several trillion VND) (Further details and the economic impact of COVID-19 are described in the following Section).

Health service delivery

There are four tiers in the health service delivery system in Vietnam: central, provincial, district, and commune levels (Figure 5). The more than 12,000 commune health centers deliver primary health care. District health centers and district hospitals, as the next level of health facilities, are available in all 760 districts. Each of the 63 provinces has at least one general hospital, with some additional specialized hospitals. Private hospitals also joined the government health service delivery, including for COVID-19 treatment and vaccination. Since 2020, telemedicine was introduced for both COVID-19 and non-COVID patients due to restricted mobility in the country. The Hanoi Medical University Hospital took the lead, starting in April 2020. COVID-19 patients benefited through digital consultations, which ensured access to information, treatment support, and timely referral, thereby contributing to lowering the severity of cases and deaths.



Deploying expanded vaccination in the situation of COVID-19 epidemic in Dak Dro commune, Krong No district, Dak Nong province – Waiting area before vaccination

Physical infrastructure and human resource capacity

In Vietnam, most tertiary level hospitals have an infectious disease department, which oversees quarantine and treatment. For COVID-19, the MOH deployed a “3-storey tower” treatment model to treat different levels of infection severity. This enabled effective management and allocation of human resources and finances.

- Level 1: treatment of mild and asymptomatic cases at home, in the community, or by mobile clinics (where established).
- Level 2: at the field hospital, for handling cases with moderate symptoms, underlying diseases, and high-risk factors.
- Level 3: for the treatment of severe and critical cases. This model was piloted in Bac Giang during the early stage of the fourth wave and deployed effectively in Ho Chi Minh City and Binh Duong, among others.

3.3 Economic support

Prompt and adequate economic policies, packages, and relief measures were implemented in response to the adverse socioeconomic impacts on businesses and individuals (Tran et al. 2020). The prime minister issued Directive No. 11/CP to assist businesses impacted by COVID-19 and provided a credit package of VND 250 billion for social welfare on March 4, 2020 (Prime Minister of Vietnam 2020, March 4). In April, the government provided an economic stimulus package valued at VND 60.9 trillion (Prime Minister of Vietnam 2020, April 9). For Vietnamese citizens in isolation in health care centers and quarantine facilities, about VND 80,000 in allowance per person per day (US\$3.40) was provided, with all direct medical costs covered. In addition, taxes were exempted or deferred, and electricity tariffs were reduced for three months for individuals and enterprises affected by the pandemic (Ministry of Industry and Trade 2020).

Ho Chi Minh City skyline and the Saigon River at sunset.



4. IMPACT OF COVID-19 PANDEMIC ON THE NATIONAL ECONOMY OF VIETNAM

4.1 Economic growth

The COVID-19 pandemic had an adverse impact on Vietnam's economic growth prospects in both the short and medium terms. However, the country's growth rate is still significantly higher than the regional and global average. According to the General Statistics Office of Vietnam (GSO), Vietnam's GDP increased by 2.87 percent in 2020 and by 2.56 percent in 2021. This however, is the lowest increase in recent years (GSO 2021a). The pandemic affected industries differently during 2020 and 2021 (Table 3). During the first nine months of 2020, almost all manufacturing sectors experienced a sharp decrease in growth compared to the previous year. However, some sectors, such as the health and information sectors, saw an increase in growth during the same period. In 2021, many sectors recovered, and the health sector recorded the highest growth rate, more than 41 percent.

Table 3: Impact of COVID-19 by sector (2020–2021)

| | 2020 | 2021 |
|-------------------------------|-------|--------|
| Accommodation and food | -17% | 20.21% |
| Mining | -5.4% | |
| Transportation and storage | -4% | -3.11% |
| Other services | -4% | |
| Health sector | 9.6% | 41.01% |
| Information and communication | 7.4% | 5.08% |
| Finance/banking/insurance | 6.7% | 9.5% |
| Wholesale and retail | | 0.5% |

Source: General Statistics Office of Vietnam (2020b, 2021a).

Heavy dependence on imported and capital goods from China and South Korea increases the vulnerability of Vietnam's entire production chain. There was production stagnation in both China and South Korea, along with restriction of trade between Vietnam and these two countries during the pandemic. The value of raw materials imported by Vietnam from China accounts for 30 percent of the total export of machinery and electronic equipment from China. Vietnam also imports computers and electrical components from South Korea, accounting for the highest market share of nearly 35 percent.

4.2 Impact of COVID-19 on businesses

Due to the impact of COVID-19, many businesses temporarily suspended operations. Almost one-third (29.87 percent) of enterprises reduced production and scale of their businesses, 3.07 percent suspended production and business activities, 0.27 percent were waiting for dissolution/bankruptcy, and 0.27 percent stopped operating (NEU and JICA 2020). Many businesses had to cut labor, with the greatest reductions seen in tourism, accommodation, and catering. In 2021, the fourth COVID-19 wave, leading to strict blockades and social distancing (especially in the third quarter), had a negative impact on businesses. The total number of enterprises entering and re-entering the market in 2021 decreased by 10.7 percent (160,000 enterprises) compared to 2020. The timely promulgation and implementation of Resolution No. 128/NQ-CP, dated October 11, 2021, made an important contribution to restoring production and promoting the market, gradually creating confidence for manufacturers. The results of a survey on business trends of enterprises in the processing and manufacturing industry showed that enterprises were optimistic about the business situation in the first quarter of 2022, with 81.7 percent of them assessing it as stable (GSO 2021a).

4.3 Exports, imports, and balance of trade

Whereas the export and import market declined sharply in the second quarter of 2020, a recovery was recorded in the third quarter. Trade balance in goods in 2020 experienced a trade surplus of US\$20.1 billion compared to the previous year (US\$10.8 billion). However, this was mainly due to the fact that imports fell faster than exports. This was a concern because many domestic manufacturing industries are highly dependent on imported raw materials. Vietnam's services had a trade deficit of US\$8.16 billion, equaling 149.2 percent of service export turnover (GSO 2020b).

4.4 Financial sector

The average consumer price index increased by 3.51 percent, and the average inflation rate increased by 2.43 percent in 2020, when compared to the previous year. Food prices increased significantly, although gasoline prices decreased due to reduced transportation, entertainment, and tourism (GSO 2020a).



Activities of garment production facilities in Dau Lieu Ward, Hong Linh Town, Ha Tinh Province during the COVID-19 epidemic period in 2021

Along with direct expenditure from the state budget, support for businesses and people was also provided through insurance funds (social insurance, insurance for occupational accidents and diseases, unemployment insurance), totaling about VND 43.37 trillion.

4.5 State budget

State budget and expenditure

The country's revenue in 2020 was VND 1,512.3 trillion. For the first nine months of 2020, the total state budget revenue reached VND 975.3 trillion, equaling 64.5 percent of the financial plan of the country. For 2020, the state budget balance was VND 1,323.1 trillion, down by VND 189.2 trillion compared to the estimate. In this, the central budget revenue decreased by VND 126.5 trillion, and the local budget revenue was about VND 62.7 trillion lower compared to the estimate (Ministry of Finance of Vietnam 2020). In 2021 the country's revenue was VND 1,568.4 trillion, with the estimated expenditure reaching VND 1,854.9 trillion (Ministry of Finance of Vietnam 2021). In the first six months of 2022, state budget revenue reached VND 941.3 trillion, equaling 66.7 percent of the estimate, up 19.9 percent over the same period in 2021, with the state budget expenditure estimated at VND 713 trillion (40 percent of the estimate) (Ministry of Finance of Vietnam 2022).

As of September 23, 2020, the state budget spent about VND 17.49 trillion on pandemic prevention and control. In addition, VND 12.57 trillion has been spent to support 12.65 million people affected by the COVID-19 pandemic, according to the Government's

Resolution No. 42/NQ-CP and Decision No. 15/2020/QĐ-TTg of the Prime Minister. About 16.2 thousand tons of rice for national reserve were issued to the people.

By the end of 2021, the state budget spent VND 77.6 trillion on epidemic prevention and control (of which the central budget was VND 26.3 trillion and the local budget was VND 51.3 trillion). In addition, the COVID-19 Vaccine Fund mobilized VND 8,803 trillion until the end of December 2021. The prime minister decided to spend VND 7.95 trillion from the COVID-19 Vaccine Fund to buy about 75 million doses of the vaccine.

Along with direct expenditure from the state budget, support for businesses and people was also provided through insurance funds (social insurance, insurance for occupational accidents and diseases, unemployment insurance), totaling about VND 43.37 trillion (Ministry of Finance of Vietnam 2021). In 2021, the state budget deficit was about VND 286.5 trillion, down by VND 57.2 trillion compared to the estimate, equal to 3.41 percent of realized GDP (Ministry of Finance of Vietnam 2021).

Vaccination against COVID-19 for frontline workers against epidemics in Gia Lai province in March 2021



5. RESPONSE

5.1 Governmental response to contain COVID-19

Lockdown, travel restriction, quarantine

Travel and mobility restrictions

Even before the first case in Vietnam was confirmed, the country had taken measures to control COVID-19, such as limiting mobility for citizens and international travelers at the borders. Due to its proximity to China, the country suspended visa issuance to Chinese tourists as a temporary measure, and the Civil Aviation Authority of Vietnam suspended all flights to and from China on February 1 (when the number of cases was in the single digits) (Prime Minister of Vietnam 2020). Flights from the Schengen countries and the United Kingdom (UK) were suspended on March 15, after the second wave of cases, which were traced to people who had traveled in Europe, and all visa issuance was discontinued on March 18. Vietnam closed its borders and suspended all international flights for a two-day period between March 20 and March 22.

Vietnam also implemented quarantine and isolation to control COVID-19 early on. In early February 2020, the country initiated a 14-day quarantine, in large government-run centers, for travelers from reported hotspots. International flights were diverted from

airports that were still used for domestic travel. On March 22, 2020, The Government Office temporarily suspended entry for all foreigners coming to Vietnam (Prime Minister of Vietnam 2020, March 21), and this was implemented until the end of 2021. Mass quarantines were implemented at suspected hotspots in the country, based on evolving epidemiological evidence over time (Annex 1). On April 1, 2020, a national lockdown was announced, first for 15 days, but later extended to 21 days in most parts of the country (MOH 2020a). During the second and third waves of COVID-19, instead of country-wide lockdowns, certain hospitals in Da Nang that had outbreaks within them underwent a “blockade.” Social distancing was implemented in the provinces of Da Nang and Hai Duong. During the first few days of the fourth outbreak, close contacts of confirmed cases needed to self-monitor and isolate at home for 5 to 7 days. Later this guidance was changed to only close contacts, needing to ensure infection prevention measures and to limit going to crowded places. On March 15, 2022, the MOH issued Official Letter No. 1265/BYT-DP providing guidance for international travelers to the country: requirement of a negative result for SARS-CoV-2 before departure—within 72 hours if the polymerase chain reaction (PCR) test is done, or within 24 hours if the rapid antigen test is done—and self-monitoring without isolation for 10 days after entry.

During the first wave, testing focused on high-risk areas, detecting infection, and serving as a basis for guidance on the social distance norms.

Testing, contact tracing, and isolation

In late January 2020, the Ministry of Science and Technology hosted a meeting with virologists to encourage the development of diagnostic tests. By early March 2020 the country developed four locally made COVID-19 tests that were validated by the Ministry of Defense and National Institute of Hygiene and Epidemiology, although their efficacy had not been verified by the WHO (Klingler-Vidra et al. 2020). Testing capacity ramped up quickly with the locally manufactured tests, from just two testing sites in late January to 63 sites across the country by May 1, 2020 (Thai et al. 2021).

The government commenced testing nationally to identify clusters and prevent wider transmission. When community transmission was detected, the government reacted quickly with contact tracing, commune-level lockdowns, and widespread testing in the community to ensure no cases were missed (Markovitz 2020). From 2020 until the middle of 2021, the testing rate was about 1000 tests per one positive case found. This rate was much higher than that for any other country at that time (for example, Taiwan, China, and Korea, respectively, reported 200 and 170 tests per one positive case).

Almost all provinces gradually increased their testing capacity. Coordination of testing and sampling improved through each wave, with both top-down and bottom-up participation (military, police, volunteers, and neighboring localities); organized mobile testing; and effective combination of rapid antigen testing, real-time PCR (RT-PCR) testing, and pooled sample testing. This enabled increased testing speed and reduced costs, and the application of information technology (using QR codes) shortened the time of return test results.

During the first wave, testing focused on high-risk areas, detecting infection, and serving as a basis for guidance on the social distance norms. By July 2020, Vietnam was faced with increasing incidence. Employing large-scale testing with the pooled PCR

method in Da Nang helped to speed up testing and tracing. In the third wave, the Alpha variant appeared, increasing the rate of secondary infection, risk of hospitalization, and fatality. Large-scale testing carried out in the outbreak areas, along with rapid antigen testing for screening in Bac Giang, Bac Ninh, and Ho Chi Minh City, helped early detection, isolation, and control. During the fourth wave, in which the Delta variant spread with a higher infection rate than Alpha, testing remained key and was carried out quickly to detect and prevent infection. For each mass testing campaign, the tests were carried out in two to three batches, each batch lasting three to four days. In high-risk areas, such as medical facilities, industrial parks, and production and business establishments, proactive screening and sample testing, together with organizing the entry and exit of personnel, working shifts, meals, and other activities, helped control infection. The principle of rapid testing to detect the index case (FO refers to any confirmed cases, but for contact tracing, FO can mean the index case detected) helped to identify the source of infection, isolate, and provide timely care, thereby reducing the severity of illness, spread of infection, and deaths. Ho Chi Minh City alone, in the seventh phase of the testing campaign, completed three rounds of testing in seven days, isolated 35,000 positive cases detected in the community, and provided them with treatment either in designated centers or at their respective homes. This reduced community positivity from 3.6 percent in the early rounds to 0.1 percent in the final rounds of the campaign. This strategy was implemented in localities such as Bac Giang, Bac Ninh, Hanoi, Nam Dinh, Khanh Hoa, Dong Thap, and Ho Chi Minh City (District 7, Cu Chi, Can Gio).

Testing capacity has been markedly improved in Vietnam over the course of the pandemic. To meet the increased testing demand, the MOH expanded the capacity significantly. Initially, it was mainly carried out in the laboratories of the Institutes of Hygiene and Epidemiology, the Pasteur Institute, and a number of CDCs and last-line hospitals. By the beginning of the second wave, 67 units had been approved

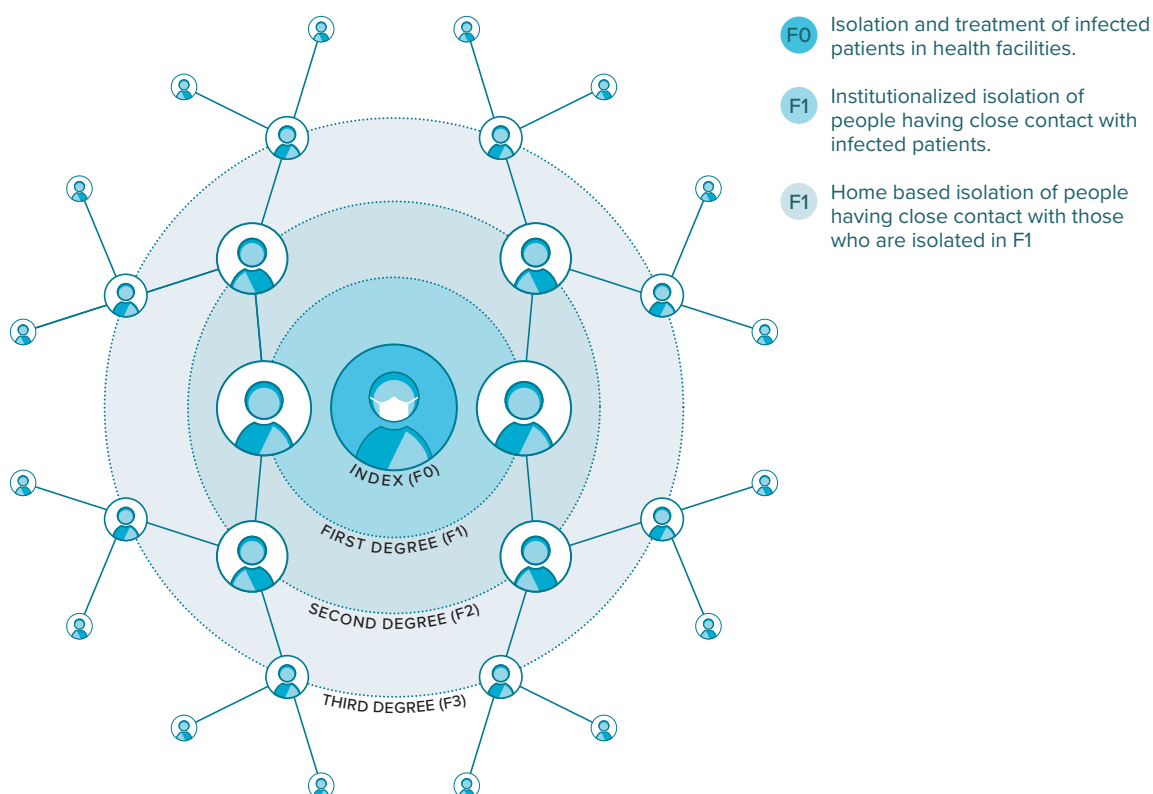
by the ministry to carry out COVID-19 testing. At the beginning of the third wave, 96 units were licensed for confirmatory testing. Currently, provinces, cities, and many units of the MOH and branches can perform confirmatory tests for SARS-CoV-2, including rapid antigen tests and antibody tests. There are currently 357 laboratories in the country capable of testing for SARS-CoV-2 through real-time reverse transcription polymerase chain reaction (real-time RT-PCR), with a maximum testing capacity of about 350,000 samples per day (public sector: 331 labs; private sector: 26 labs).

5.2 Contact Tracing

Testing is used for detecting an infection, whereas contact tracing and quarantine are the key parts of containment. Vietnam’s contact tracing strategy is based on the following process: once a patient with COVID-19 is identified, the MOH, with support from health professionals, security officers, the military, and other civil servants, works with the patient to identify whom they might have been in contact with and

therefore potentially infected, in the past 14 days. All close contacts—defined as people who have been within two meters of, or have had a face-to-face contact with, a confirmed COVID case—are identified and tested for the virus. If a close contact tests positive for the virus, that person is placed in isolation at a hospital, at no cost, regardless of symptoms. If the close contact does not test positive, that person is quarantined at a government-run quarantine center for 14 days. Subsequently, the secondary close contacts (F2) of the primary close contacts (F1) of the index case (F0) are required to self-isolate at home until the testing results from F1 are returned. If the F1 tests are negative, then their close contacts (F2) can end the home self-isolation; however, if F1 tests are positive, then the F2 contacts need to isolate at a government-run quarantine center for 14 days (MOH 2020a). One noteworthy aspect of Vietnam’s approach is that it identified and quarantined suspected cases based on their epidemiological risk of infection (if they had contact with a confirmed case or traveled to a COVID-affected country), not on whether they exhibited symptoms, and this may have helped curb the speed of virus transmission.

Figure 9: Contact Tracing in Vietnam (Chau et al. 2021)



Risk communication and information disclosure

The Vietnamese government communicated clearly and transparently about the risk of infection even before the first case was reported in the country. On January 9, 2020, the MOH first warned citizens of the threat. Since then, the government has communicated frequently with the public, taking advantage of Vietnam's high use of social media. By 2020, 75 percent of all internet users between 16 and 64 years old in Vietnam were using Facebook Messenger and 76.5 percent were using Zalo (*Thanh Nien Magazine* 2021).

The country also used several creative measures to reduce the risk of infection. In late February 2020, the National Institute of Occupational and Environmental Health released “Ghen Co Vy,” a pop song turned into a hand-washing public service announcement (PSA) that went viral on TikTok and other social media. In addition, the MOH sent SMS messages to all mobile phone users in the country to encourage and motivate the country to fight the pandemic: “Fighting the pandemic is like fighting against the enemy.” In early March 2020, the ministry also worked with telecom companies to launch the NCOVI application, which provides citizens with real-time information on COVID-19, including a map of location of detected cases and clusters of infections. People used the app to declare their own health status, report suspected cases, and watch real-time movement of people placed under quarantine. In mid-April, the Vietnamese cybersecurity firm BKAV launched Bluezone, a Bluetooth-enabled mobile app that notifies users if they have been within two meters of a confirmed case within the previous 14 days. When users are notified of exposure, they were encouraged to contact public health officials immediately. Although the apps have fostered a “neighborhood watch system” that may have helped to slow transmission of the virus, they have also drawn criticism from privacy advocates.

On April 14, 2020, Vietnam passed a decree allowing authorities to fine people who use social media to “share false, untruthful, distorted, or slanderous information.” This ordinance, too, generated opposition from Amnesty International and others. However, according to data from You Gov, as of April 2020, 93 percent of the Vietnamese people believed the government was responding “very” or “somewhat” well.



Vaccination against COVID-19 at Phong Tho District General Hospital, Lai Chau province, 2021

5.3 Health system response

Hospital response and linkages to primary care

Treatment and care management were organized with the motto “four on the spot,” proactively supported by experts from central hospitals. The government quickly established 51 *national mobile teams*⁴ to strengthen support for localities in COVID-19 management, care, and treatment, especially for severe/critical cases. Local hospitals established treatment units at all levels (district, provincial, central). The MOH established the Center for Management and Operation to support testing, isolation, diagnosis, and treatment of COVID-19 patients online through information technology and telecommunications. It also established special working groups in Vinh Phuc, Da Nang, Hai Duong, Bac Ninh, and Bac Giang, to provide support.

During the fourth wave, the central and local health forces focused their effort on treatment to reduce mortality by setting up rehabilitation centers. The MOH set up 11 intensive care centers, including five centers with 4,600 intensive care beds in Ho Chi Minh City. Ho Chi Minh City and southern provinces mobilized 184 COVID-19 treatment hospitals with a scale of 132,000 beds. The ministry set up a field warehouse in Ho Chi Minh City for medicines, equipment, and medical supplies to provide timely support to localities in the area. The Ministry of Public Security also coordinated with the central hospitals to deploy a field hospital in Ho Chi Minh City with a capacity of 300 beds. Military medical forces participated in taking samples, testing, and taking

⁴ Local mobile teams, in contrast, are responsible for the field work and could manage mild cases.

care of COVID-19 patients at home and in support hospitals, isolation centers, and treatment.

The government also focused on strengthening the delivery of COVID-19-related services through the reallocation of resources to primary health care levels. Ho Chi Minh City alone established 536 mobile medical stations within one week, and these have assisted in the management and treatment of over 152,000 cases. Mobile medical stations performed preliminary first aid, rapid testing, vaccination, support for referrals, and supply of home treatment/remedies. This resource reallocation has been highly effective, providing early and easier access to health services, especially for the vulnerable.

Medications to support treatment for COVID-19

In July 2021, the government issued a resolution to help local governments and health facilities procure equipment and consumables. The MOH ensured timely delivery and access of drugs and mobilized resources to supply drugs such as antiviral medicines like Remdesivir, Favipiravir, and Molnupiravir, according to treatment needs for COVID-19. For medical oxygen products, the government directed functional branches to change the purpose of using oxygen from industrial to medical use, thereby ensuring availability of oxygen for treatment across the country.

The government created favorable conditions to import, license, research, and produce drugs in the country. The National Assembly Standing Committee issued Resolution No. 12/2021/UBTVQH15, dated December 30, 2021, and the government issued Resolution No. 168/NQ-CP, dated December 30, 2021, allowing the implementation of a number of mechanisms and policies in the health sector to serve pandemic prevention and control.

Human resources for health

During the COVID-19 pandemic, human resources for health have been challenged, and thus resources from ministries, hospitals, provinces, and cities were mobilized to meet the demand. Medical human resources were deployed to provide support to areas affected, at different points in time. During the first wave, a mobile team was dispatched from Bach Mai Hospital to support the Central Hospital for Tropical Diseases. In the second wave of the outbreaks in Da Nang, Quang Nam, teams from Bach Mai Hospital and Cho Ray Hospital were mobilized to strengthen the hospitals of Da Nang City. Teams from Ho Chi Minh City University of Medicine and Pharmacy Hospital, as well as the Hospital for Tropical Diseases, Ho Chi Minh City, strengthened Quang Nam Central General Hospital. The National Hospital for Tropical Diseases in Hanoi, and Hanoi Medical University Hospital strengthened human resources for Hue Central Hospital, in addition to support from Hai Phong, Thua Thien, and Hue Departments of Health. care of COVID-19 patients at home and in support hospitals, isolation centers, and treatment.



Supervising the prevention of COVID-19 epidemic in Quang Trung ward, Hai Duong City, Hai Duong province, 2021

The government paid special attention to transparent and effective risk communication to the public with the motto “communication goes first.”

In the fourth wave, the government mobilized a large force of health workers, army, and police to support Ho Chi Minh City, Hanoi, and other localities experiencing outbreaks. Military medical forces supported and deployed 536 mobile medical stations in Ho Chi Minh City. Support forces have closely coordinated with local forces to synchronously implement measures to prevent and control the pandemic and support social security work. The support and local forces worked tirelessly and arduously, taking on risks and even making sacrifices while on duty.

Thirty-four training institutions of the health sector mobilized their human resources to participate in COVID-19 prevention, with 19,935 people supporting Ho Chi Minh City, Southeast Region. Up to now, 19,883 of them have completed their tasks and returned to their respective work and study places.

Ensuring access to essential health services

Access to essential health services for non-COVID-19 patients has also been a priority for Vietnam since the start of the pandemic. Ever since the country began



Routine immunization for children at out-of-station vaccination sites

identifying outbreak zones and ensuring that strict social distancing was followed, all activities, including access to routine health care, remained unchanged in the “safe zones.” In the unsafe zones, however, there was a restriction—testing was mandatory for going to a hospital. In outbreak areas, this restriction also applied to any individual who came as a family caregiver and wanted to stay in the hospital with the patient. Telemedicine was also used to access these health services.

5.4 Public’s response

Social distancing, personal hygiene, and social norms

The 5K interventions, including social distancing, were followed by the public according to the situation on the ground and location of the outbreak.

Trust in government and social institutions

The government paid special attention to transparent and effective risk communication to the public with the motto “communication goes first.” This explained the policies, created awareness among all citizens, created consensus on pandemic prevention and control solutions, and supported public supervision. In 2021, the Communications Subcommittee under the National Steering Committee for COVID-19 Prevention and Control brought about a reform in communication, ensuring uniform, timely, and accurate information and guiding viewpoints, and explaining effective control solutions given by the government, the prime minister, and the National Steering Committee.

The MOH organized communication campaigns to mobilize people to support and actively participate in the fight against COVID-19 and to receive safe vaccination. For instance, the 5K Dance campaign of the ministry, in collaboration with Unilever Vietnam Foundation in July/August 2021, used vibrant tunes

to help the community remember and comply with the 5K measures. TikTok dances and songs and the campaign “Vaccination—Stay confident” incentivized people to socially distance while actively participating in getting vaccinated.

Communication ensured that the principles of publicity; transparency; and timely, accurate, and objective provision of information on the pandemic would serve as a basis for leadership, direction, administration, and implementation. With the help of effective communication, the public could understand and share the difficulties and allow volunteers to participate in prevention and control activities. From the start, information about the disease has been reported by ministries, at the central and local levels, based on the MOH’s bulletins thrice daily. Newsletters were provided on all communication platforms, including Facebook, Zalo, and Viber, to Party leaders, government, provinces, cities, and press agencies. Media, grassroots organizations, and telecommunications networks also spearheaded the general secretary’s call on pandemic prevention and control to ensure the public’s trust, closely follow the situation and developments, and handle misinformation. The MOH built an electronic database with nearly 1,800 communications products related to COVID-19 prevention and control, including infographics, videoclips, audio clips, music videos, and posters. This helped quick distribution to all 63 provinces, cities, units, and press agencies (Annex 2).

5.5 Vaccination

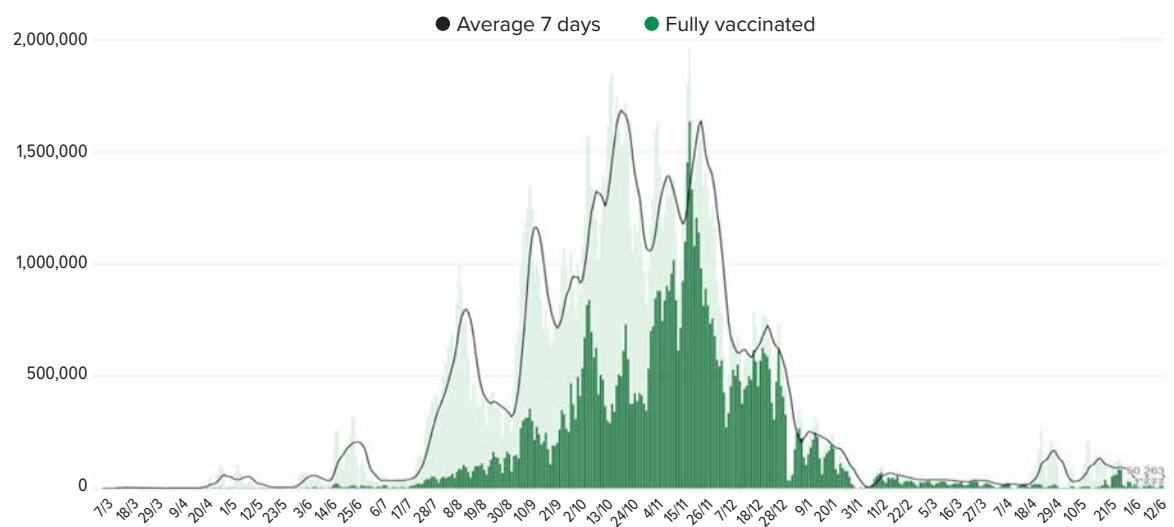
Procurement, access, and deployment-distribution

The government prioritized effective and safe vaccination for the public. In the largest vaccination campaign in the history of vaccination in Vietnam, the government managed the procurement, distribution, and administration of vaccines at no cost in a timely manner for everyone residing and working in the country. In late May 2021, the government established a COVID-19 vaccine fund and established a working group on vaccine diplomacy to promote aid for vaccines, therapeutic drugs, and medical products. Six vaccines have been approved and are in use in Vietnam: AstraZeneca, Sinopharm (Verocell and Heyat), Pfizer (Comirnaty), Moderna (Spike vac), Sputnik V, and Abdala. As of June 2022, a total of 255,371,154 vaccine doses were available from different sources (procurement from the state budget, international aid, and domestic funding among others) and 228,825,994 doses of vaccines were distributed nationwide (the number of vaccine doses administered is very close to the number distributed). By December 2021, the first booster was given to those 18 years of age and older, with administration of the second booster starting in May 2022. Vaccination began in November 2021 for 12-to-17-year-olds, who were administered the first booster dose until June 2022. In April 2022, vaccination was started for the 5-to-11-year-old group.

Table 4: Distribution of COVID-19 vaccine in Vietnam by manufacturers (as of June 14, 2022)

| Vaccines | 1st doses | 2nd doses | 3rd doses ⁵ | Additional dose | 1st booster dose | 2nd booster dose |
|--------------------|-------------------|-------------------|------------------------|-------------------|-------------------|------------------|
| AstraZeneca | 29,131,079 | 24,878,351 | 236 | 3,928,552 | 14,101,362 | 29,898 |
| Comirnaty (Pfizer) | 20,880,246 | 23,934,873 | 26 | 7,475,400 | 20,042,191 | 1,604,952 |
| Spikevax (Moderna) | 8,571,947 | 3,990,712 | 8 | 1,715,347 | 7,922,549 | 106,494 |
| Vero cell | 23,940,098 | 22,637,988 | 0 | 1,822,437 | 768,537 | 1,534 |
| Abdala | 1,667,579 | 1,506,245 | 1,508,001 | 25,821 | 331,138 | 1,576 |
| Sputnik V+Light | 744,868 | 732,471 | 0 | 477 | 3,035 | 0 |
| Total | 84,935,817 | 77,680,640 | 1,508,271 | 14,968,034 | 43,168,812 | 1,744,454 |

⁵ The Abdala vaccine required 3 doses of primary immunization⁷ and later some other vaccines also required an additional dose in the primary series.

Figure 10: COVID-19 vaccine deployment in Vietnam (from March 7, 2021, to June 13, 2022)

Financing (donation, government budget)

Financing sources for vaccines include both public and private sources. A government budget report had projected that vaccinating the eligible population in Vietnam would cost VND 25,000 billion, including VND 8,000 billion from a donation campaign spearheaded by the prime minister. This fund has not been used in full, as 60 percent of vaccines used were donated as part of “vaccine diplomacy.”

Coverage and equity

Vaccination started in May 2021. Priority was given to front-line health care workers, volunteers dealing with managing the outbreaks, the elderly, and those with comorbidities. By June 14, 2022, 100 percent of the population older than 18 years had as been vaccinated with the primary doses, and 64.2 percent had received the first booster dose. In addition, more than 97 percent of the 12-to-17-year-old group, and 44 percent of the 5-to-11-year-old group, had received the primary dose of vaccine; and 55.6 percent of the 12-to-17-year-old group had received the first booster dose (Technology Center National COVID-19 Prevention 2022).

Information, communication, and compliance

Around March 2021, vaccine hesitancy was high among health care workers, and vaccination was slow to start with. However, after the big outbreak in the south in late July 2021, people understood the need for vaccination, and vaccination rates increased

substantially. A record of about 2 million doses were administered in one day in August 2021.

5.6 Protecting vulnerable people

1. In Vietnam, unlike many developed countries, older people mostly live with their families, with often three to five generations living in the same household. Hence, managing nursing homes or long-term care facilities during the pandemic has not been an issue in the country. Due to the risk of infection in health facilities at the peak of COVID-19 infections, the older population was advised to stay home. By late 2021, the government had facilitated vaccinating this group, including at their homes.
2. Women and children: Vaccination was not recommended initially for pregnant women. However, when there were reports of some COVID-19-related deaths during pregnancy, the vaccination program was extended to this group. In Vietnam, there is no discrimination affecting women in terms of health service access or gender-based violence as a fallout of the pandemic (Communist Party of Vietnam Online Newspaper 2021, October 11).
3. The poor and migrant workers: There has been no discrimination affecting the poor with respect to COVID-19 testing, treatment, and vaccination in Vietnam. The government provided financial support to those adversely affected by the lockdowns. However, due to the big outbreak in the south, many migrant workers in the area were substantially affected by COVID-19 and were pushed into poverty (Vietnamplus 2022, GSO 2022a).

5.7 Innovation through leapfrogging

Information and communication technologies (ICTs)

The application of information technology helped the country to effectively manage pandemic prevention and control. When new cases appeared, the contact tracing platform was used to identify the source, localize the patients, and prevent the infection from spreading to the community. Technology-based contact tracing also helped localities to identify issues and solutions that they could promptly propose to the government, such as the management of infected people while implementing Directive 16-CT/TTg. The government followed up, mobilizing many businesses and experts to build solutions and software to support efforts during the pandemic. COVID-19 has provided an opportunity to accelerate the digital transformation of health care in the country.

Many initiatives were supported, such as establishing a technology group for COVID-19 prevention and control in the area of ICT. Technology applications were created, such as BLUEZONE (now PC-COVID), which allows contact tracing and provides vaccine certificates, travel permits, and health declarations in one app. When the PC-COVID application was deployed, localities made efforts to coordinate with many related units to promptly update vaccination information and test results, and help people participate in activities. As of February 21, 2022, according to statistics from the Ministry of Information and Communications, more than 71,680,100 PC-COVID-19 applications have been installed in the country.

Telemedicine and social networks also played a significant role in Vietnam COVID-19 control. As the number of infections in the community increased, many localities deployed the F0 Home Care Call Center (F0 here refers to a COVID-19 confirmed patient). The “virtual assistants” made and received thousands of calls every day to support F0 health care at home. In addition, the “virtual assistants” actively called the F0 cases who were being treated at home to support their health care and record their health information.

Collaboration with other countries and public and private partnerships (PPP)

Vietnam was one of the first four countries in the world to isolate the virus. Four vaccines have been clinically tested in the country—three with technology transfer from Russia, Japan, and the USA; and two vaccines with technology cooperation from China and Cuba. To date, the Nanocovax vaccine has completed phase 3 clinical trials; the COVIVAC vaccine is completing its midterm report phase 2; and the ARCT-154 vaccine has entered a phase 3c clinical trial, among others. Research and technology transfer is also ongoing with Japan and France for drugs to treat COVID-19.

Vietnam’s health sector faced many challenges due to COVID-19, such as shortage of hospital beds, supplies, and equipment; severe cases, especially among old people and migrant workers; and poor quality of medical services in some regions and health care facilities. For the health system to be resilient and respond to such a crisis, the role of the



Data entry into the COVID vaccination information system in Phu Dong ward, Pleiku city, Gia Lai in 2021

private sector during COVID-19 has been critical. Governmental agencies and private companies worked closely to cope with the pandemic, particularly with contact tracing (Viettel Corp and VNPT). Several local manufacturers helped to develop test kits. In addition, the government and private media joined to effectively communicate with the public. The private sector created infographics, which helped disseminate COVID-19 information to the public.

5.8 Measures to contain COVID-19 with a human capital perspective

Education

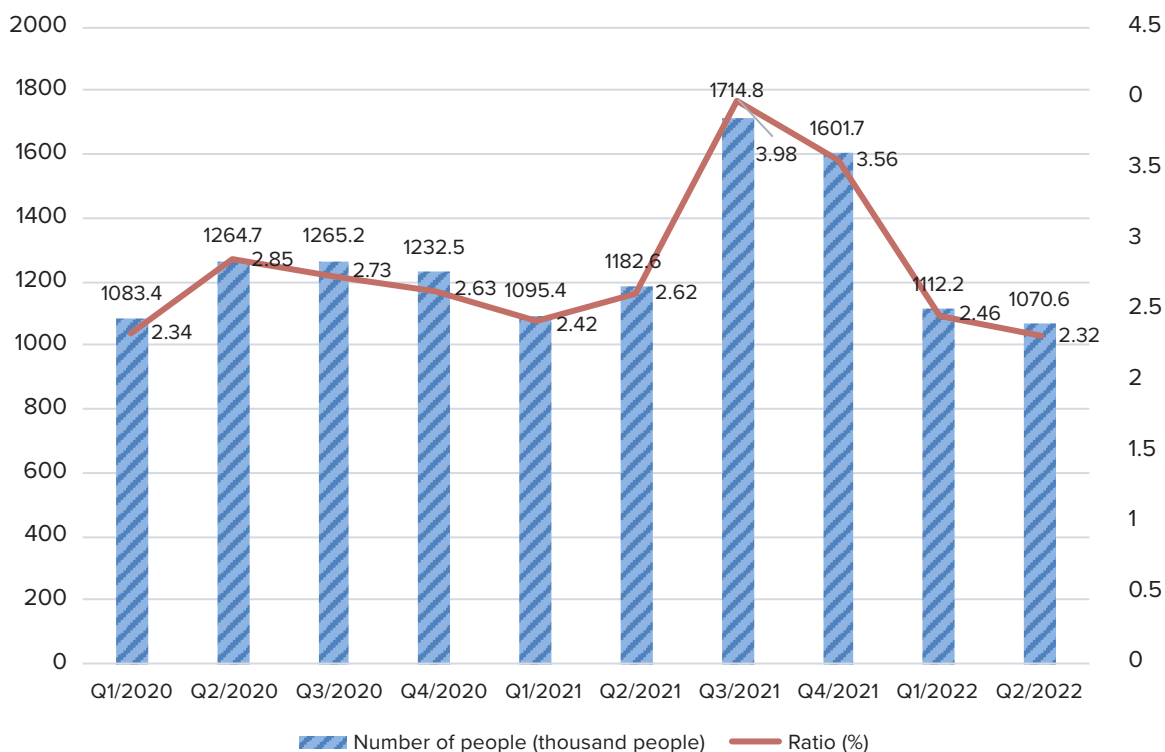
Educational services were provided normally during the first three phases of the pandemic (from January 22, 2020, to April 26, 2021). Virtual classes were held only for the high-risk areas—defined as “red zones”⁶—while the other zones (defined as medium risk or “yellow” and with no cases or “green”) were not affected. Many organizations sponsored more than one million computers under the “wifi/4G and computer for children” scheme, including the information and communication industry. During the fourth wave (from April 27, 2021, to June 30, 2022),

the government closed the schools in all affected areas for three months starting August 5, 2021. The telecommunications businesses provided a preferential package to support telecommunications services for that period, with a total value of nearly VND 10,000 billion. Remote education was carried out with this preferential package.

Social protection and jobs

People were severely affected by the COVID-19 pandemic, both in terms of morbidity, in both physical and mental health, and mortality. Income and employment were seriously affected, especially for workers in industrial zones and those working in the service industry. The unemployment rate of working age groups from the first quarter of 2020 to the second quarter of 2022 ranged from 2.32 percent (1.07 million people) to 3.98 percent (1.71 million people) (GSO 2022b). High unemployment particularly affected the south of Vietnam during the lockdown. The government helped those affected by providing relief funds to either all or targeted households, employment retention subsidies to support small business owners, and employment insurance, among other support.

Figure 11: Number of people unemployed and unemployment rate among working-age population, by quarter, 2020–2022



6 Red zones are very high-risk areas with clusters of infected cases whose source of infection is unknown or where the identified sources of infection are industrial parks, schools, large supermarkets, and areas where the source is difficult to control or hard to trace (National Steering Committee for COVID-19 Prevention and Control 2021).

Reduced income without a strong and accessible social protection system pushed many households to below poverty levels (World Bank Group 2021). As regular services were disrupted, families had to spend more to cover extra costs for essential pandemic prevention materials, pay higher transportation costs when bringing children for health checks or treatment, and provide nutritious meals for children. Poorer families with children had to seek exemptions or reductions for tuition fees as well as support for books and school supplies. They have coped by cutting spending on food and borrowing money (International Labor Organization 2020).

Different groups of workers experienced differing impacts due to COVID-19. Those employed in the formal sector, in general, coped better due to their stable sources of income and social protection support. In contrast, those in the informal sector struggled substantially. Heads of households and/or caregivers who lost jobs or income were unable to finance the additional cost for their families or children to access essential services and meet their basic needs. The impact, confirmed by studies, on women-headed households is particularly stark. Families had no choice but to slash household expenditure. Poorer, wage-dependent families with no savings reported falling into debt, having to sell assets and lower their quality of meals. Employment opportunities and livelihood security were clearly identified as long-term needs of families with children. Many professed that the need for work would see them returning to their previous employment if opportunities allowed, rather than to seek employment guaranteeing more secure and stable income (International Labor Organization 2020).

In April 2020, the government issued a US\$2.6 billion social protection package for cash support to the most vulnerable people and workers who had lost their jobs due to social distancing and lockdowns; it also provided affected enterprises with credit at zero or low interest rates to pay workers' salaries. In addition, the government embarked on an expansionary fiscal stance to strengthen its national health systems, shore up the local economy, and provide income assistance to the most vulnerable and impoverished. The government also issued a substantial financial package for restructuring loans and has approved a plan to delay collection of taxes and land rent to assist impacted enterprises in selected sectors. All ministries, central agencies, and provincial/city authorities have implemented national directives on "Measures to Ensure Citizens' Health, Social Security and Assist Enterprises in



Vaccination at school

Production and Business," carried out comprehensive assessments of the impact of the pandemic on local socio-economic development, and proposed relevant measures for economic recovery and social security. The government promoted ICT solutions that helped enterprises and citizens avoid having to go to public administration offices. Online shopping and banking systems were also promoted. The development of private sector mobile distribution networks has accelerated in the cities.

During the third and fourth waves, the government issued Resolution 68/NQ-CP, dated July 1, 2021, implementing some policies to support employees and employers in difficulty because of the pandemic. These included reduction of premiums for occupational accidents and diseases, loans to pay wages and restore production, support for employees through training and job security, a provision to suspend/terminate labor contracts with one-time allowances of a specified amount, and unpaid leave support for those who stop working with a one-time allowance of VND 1,000,000 per person. The National Assembly Standing Committee promulgated Resolution No. 03/2021/UBTVQH15, dated September 24, 2021, promoting a policy for affected employees and employers to obtain help from the unemployment insurance fund.

When local transmission of the virus ceased in April 2021, the government of Vietnam began to ease physical distancing measures and focus on socio-economic recovery, in line with the orientation set out by Deputy Prime Minister Vu Duc Dam, the chair of the National Steering Committee on COVID-19, for "safe co-existence with COVID-19" for both people and enterprises. During the subsequent wave, from July 25, 2021, onwards, the government focused on establishing a balance between intensive control measures in affected areas and maintaining nationwide efforts for socio-economic recovery.

Implement vaccination against COVID-19 for medical staff in a field hospital treating patients with COVID-19 epidemic in Gia Lai province in March 2021



6. COVID-19 IMPACT ON THE PROGRESS OF UNIVERSAL HEALTH COVERAGE (UHC) AND SUSTAINABILITY

Service coverage: When COVID-19 infections appeared in the community, some people delayed or even canceled going to medical facilities for medical examination and treatment, which can adversely affect disease status, health, and life (UN Women 2021). Some pregnant women canceled routine antenatal visits, which potentially could have increased the risk of obstetric complications and maternal mortality. The birth rate at health facilities in the provinces and cities in the first quarter of 2020 decreased from 5 to 15 percent compared to the first quarter of 2019. The rate of use of modern contraceptives in the first quarter of 2020 also decreased by 5 to 10 percent compared to the first quarter of 2019 in some population groups (UNFPA 2020). Many families have found it more challenging to access health care services for their children during social distancing.

About 88 percent of commune health stations had to temporarily stop providing routine vaccination services due to social distancing. Similarly, the regular growth monitoring of “under-five” children was also affected. Administrative data from the Ministry of Health (2020) shows that, in most provinces and cities, in the first three months of 2020, there was a decrease in vaccination rates against measles-rubella (MR), diphtheria, whooping cough, tetanus (DPT4), and Japanese encephalitis (JE). In 13 provinces, the rate of MR vaccination decreased by 10 percent; and in seven provinces, the rate of DPT4 vaccination decreased by 10 percent. Statistics of the Central Institute of Hygiene and Epidemiology, MOH, also

show that the rate of fully immunized infants in the first five months of 2020 was lower than in the same period in 2019 (37.2 percent versus a projected 40 percent, respectively). MR and DPT4 vaccination rates for 18-month-old children were 31.2 percent and 28.9 percent lower, respectively, in the first five months of 2019. The 2021 outbreak also adversely affected routine vaccination services.

COVID-19 caused service and supply chain disruptions in the regions. There was a shortage of drugs, supplies, and local medical equipment at many medical facilities across the country. The prolonged pandemic has also negatively impacted the medical staff due to increased work pressure and occupational risk of infection (MOH 2022b).



Diphtheria PCD checkpoint in Quang Hoa commune, Dak Glong district, Dak Nong province in 2020 – an example of quarantine area

Lights of Tran Quoc Pagoda reflected in lake by night, Hanoi



7. LESSONS LEARNED

The COVID-19 pandemic has had a detrimental impact on Vietnam's economy and the health of the people. The country experienced a relative decrease in GDP growth rate, a decrease in imports and exports, an increase in debt, and a decrease in revenue with an increase in state budget expenditure. However, with flexible financial policies, Vietnam has managed to control these effects, resulting in positive GDP growth projections, while ensuring social security. A multisectoral committee for COVID-19 control and prevention under the leadership of the prime minister spearheaded the pandemic response and resilience actions. Several lessons have been learned, including from challenges faced, and these are described below.

1. Coordination and mobilization of all stakeholders.

The scale of the pandemic required all levels of support from not only the government (local and central), but also from the police, army, and private sector enterprises to ensure security and social order in the country. In addition, the support from international organizations and other countries has been critical. Vietnam not only received financial support and donations, but also benefited from vaccine diplomacy, knowledge exchanges, and sharing of lessons from other countries for the prevention and control of the crisis.

2. Community COVID-19 group: The community COVID-19 group has been critical in influencing people's behaviors and social norms during the pandemic. This community COVID group model was first piloted during the Son Loi outbreak in Vinh Phuc (first wave), and then scaled up to other affected areas such as Bac Ninh, Bac Giang, Ho Chi Minh City, and Binh Duong. The groups operate on a voluntary basis, led by civil organizations in the community and volunteers, under the supervision of the government and local police officers. Each group is in charge of 40 to 50 households. The groups mobilize and promote behaviors to prevent and control the infection, guide people to self-monitor their health, and help families make medical decisions when a family member falls sick. The groups also support the monitoring, detection, and reporting to local authorities and health care facilities when there is a suspected case of COVID-19 in a household.

3. Model of mobile medical station: Mobile medical stations were set up to ensure access to medical services in a timely manner. This enabled early diagnosis and timely referral to higher-level health facilities, thereby minimizing the risk of severe cases and deaths. The stations made oxygen masks available when needed and were allowed to conduct rapid testing and vaccination in their communities. These mobile medical stations also

provided essential health services and medical examinations for other common diseases to ensure that people in the outbreak areas had access to timely healthcare. Mobile stations were established mainly in Ho Chi Minh City and Binh Duong. Ho Chi Minh City established 536 mobile medical stations to provide care and manage infected patients at home. Binh Duong province was the first province to set up mobile medical stations in industrial zones, with 43 mobile medical stations established.

- 4. Rapid and targeted COVID-19 testing:** Rapid testing in high or very high-risk areas helped to detect and isolate cases, limiting the spread of the outbreak, and helped infected people access health care facilities. Effective large-scale testing was possible due to the mobilization and coordination of key stakeholders, including local and central government, grassroots organizations, and the public.
- 5. Treatment stratification:** The “3-storeytower” treatment model was deployed due to the fact that treatment facilities could not accommodate and treat all COVID-19 patients. Level 1 is the treatment of mild and asymptomatic cases; level 2 is the field hospital, which specializes in handling cases with moderate symptoms, underlying diseases, and high-risk factors; and level 3 is management of severe and critical cases. This model was piloted in Bac Giang and deployed in Ho Chi Minh City and Binh Duong.
- 6. Managing home treatment for infected people (FO):** The Ministry of Health coordinated with Ho Chi Minh City to implement a pilot program for controlled treatment of cases at their homes and in their communities. The pilot included four main activities: (i) taking samples for testing; (ii) providing necessary medicines (these were packaged as A, B, or C based on the medications required); (iii) supporting counseling for prevention and control; and (iv) providing food packages for the patient(s) and family members at home, thereby contributing to reducing the risk of transmission. These measures contributed to the reduction in the case fatality rate in Ho Chi Minh City.
- 7. Teleconsultation support:** The implementation of remote consultations helped those in need of support to access information on COVID-19, treatment, and referral, especially during the period of strict social distancing. It also provided consultations for non-COVID-19 conditions.
- 8. Transparent and clear communication to the public.** The role of the government was critical in communicating to the public on the pandemic and shaping the public’s behaviors and social norms. The role of the media was also important. Using all forms of communication, such as social media to reach the younger population, is recommended.
- 9. Innovative communication strategies:** Many creative communication programs (as described earlier also) with diverse content achieved improved communication and necessary behavior change. For instance, the program “People ask—The city answers” in Ho Chi Minh City created a strong connection between the people and the government. The Ministry of Culture, Sports and Tourism directed the development and broadcast of 15 reportages and 150 video clips to guide the public in exercises at home, in isolation areas, and at work, with the theme “The whole family practice

Effective large-scale testing was possible due to the mobilization and coordination of key stakeholders, including local and central government, grassroots organizations, and the public.



Deploying vaccination against covid -19 for the whole population in Phu Dong ward, Pleiku city, Gia Lai in 2021

now, fight COVID-19.” The “Boundaries” (Ranh giới) by Vietnam Television highlighted the difficulties, pain, and efforts of all forces involved in pandemic prevention and control, and the “Take off” program created opportunities for many experts to share experiences and lessons in pandemic prevention and control.

10. Use of scientific evidence to inform decision-making, while being flexible: It is critical to accurately understand the situation with the best available evidence at that time, make evidence-based projections, and thus inform policy makers so they can implement timely and effective measures. Policy, legal framework, and decision-making should be based on science and flexibility, responding to new and evolving evidence while taking into account the country’s capacity and resources.

11. Legal framework: Although the government made substantial reforms to support COVID-19 control, the legal provisions did not cover all areas in response to an outbreak of disease. In addition, while these legal frameworks and policies have been established, operationalization was sometimes more difficult. The translation of policy reforms into actions was weak at times—for instance, many localities did not implement the risk classification of people infected with SARS-CoV-2, leading to high-risk and very high-risk people being treated at home.

12. Need for cohesive leadership and coordination:

Despite the strong leadership from the government, working with a diverse group of stakeholders was at times difficult and complex. The coordination between the central and local government was challenging at times when roles and responsibilities were unclear.

13. Health care system: COVID-19 revealed existing weaknesses in the health care system in Vietnam. The level of spending on health per capita and the number of physicians are still low in Vietnam, which contributed to shortages during the peak of the outbreaks. In some provinces, maintaining the cold chain for the vaccines was challenging as the available equipment is old and could not meet the requirements.

14. Dependency on importing drugs and medical equipment: Vietnam depends on importing medicinal equipment, drugs, biological products, and vaccines, which also contributed to the economic burden on the country.

15. Lack of timely relief packages: The disbursement of social security packages was at times slow, due to complicated administrative procedures.

ANNEXES

ANNEX 1. SELECTED LOCKDOWN PLACES IN VIETNAM FOR COVID-19 CONTROL AND PREVENTION

| Region | Date | Population affected | Details |
|--|---------------------------|---------------------|---|
| Son Loi commune (Vinh Phuc province) | Feb. 13 to March 4, 2020 | 10,000 people | At the time, there were 16 cases of COVID-19 in the country, with six in Son Loi (MOH 2020b). |
| Truc Bach Street (Hanoi) | March 6 to March 20, 2020 | 190 people | The area where patient no. 17 (the first confirmed case of the second wave) lived was put under lockdown. Sixty-six households were subjected to the lockdown (Vu and Tran 2020). |
| Phan Thiet City, Binh Thuan Province | Mar 1 to April 3, 2020 | 150 people | Twenty-nine households on two streets, Hoang Van Thu and Ngo Sy Lien, where the house of patient no. 38 is located, were locked down (Tien 2020). |
| Van Lam: 3 villages (Phuoc Nam commune, Thuan Nam district, Ninh Thuan province) | March 1 to April 14, 2020 | 5,000 people | Confirmation of the two COVID-19 cases, patients no. 61 and no. 67, led to total lockdown, including movement restrictions for all residents, and all 16 entrances to the village were barricaded (Cuong 2020). |
| Thua Loi village (Ben Tre province) | March 2 to April 20, 2020 | 1,600 people | Isolation measures were imposed on 480 households after a resident, 17-year-old patient no. 123, was infected with the virus. |
| Ha Loi village (Me Linh district, Hanoi province) | April 6 to May 6, 2020 | 10,000 people | Village was sealed off during lockdown, with the last detected community cases (apart from the Ha Giang patient no. 268). |
| Dong Van district (Ha Giang province) | April 2 to April 23, 2020 | 7,600 people | Lockdown was imposed before the suspected cases' test results came back. It was then lifted the next day, after the test results came out negative, illustrating how quickly the authorities reacted. |

ANNEX 2. DETAILS OF COMMUNICATION VIA SOCIAL MEDIA USED IN VIETNAM

1. Vietnam Health Page on Facebook: For the period from April 27 to November 9, 2021, there are 577 posts, including 86 videos. The total number of page followers is 163,777, an increase of 69,136 compared to the previous time. Facebook users accessed articles 518,351,115 times, and the articles on the page were displayed to users 627,751,043 times. The number of views of videos on the page is 38,590,501, and the number of Facebook users interacting with page posts is 12,126,985.

2. Communication on YouTube of the Ministry of Health: Total views for the period from April 27, 2021, to November 9, 2021, is 17,309,341 views. Total number of subscribers to the channel is 118,604. Total number of videos uploaded is 445 (up by 228 videos). The number of video impressions with users is 5,782,348,542, and the number of interactions (likes, comments, and shares) is 116,125.

3. Communication on Zalo by the MOH: The number of people interested, or who follow the channel, is 9,397,556 people. Zalo users read articles a total of 21,701,641 times. Average number of views, or the number of clicks on each news item/article for viewing, is 5 million clicks. The posts received a total number of 14,663 likes and shares. On average, five messages/posts are sent to 60 million Zalo users each day.

4. Media on TikTok: The total number of people who like the channel is 1,315,060 people, the total number of people interested in the channel is 265,452, and the total number of videos posted in the past week is 6 videos. The total number of video views is 3,775,186.



Children in middle school get vaccinated against COVID-19 at school, Phin Ngan commune, Bat Xat, Lao Cai, 2021

5. Communication on Lotus: The total number of page likes is 12,958, and the total number of tokens (views) is 13,149,412 tokens. User reach through Lotus with articles via Noti announcements is 2,750,000 users. Active views of videos on the page total 145,000. The number of Lotus users interacting with posts on the page (including likes, comments, shares or clicks) is 1,358,000 tokens.

6. Communication on telecommunications networks: For the period from April 27, 2021, to now, the MOH has proposed deploying 21 texting sessions for mobile subscribers, with a total of more than 10 billion SMS messages to all electricity subscribers' phones.

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