Strategic Plan: Covid-19

Strategy: Managing the new wave of the Covid-19 Epidemic

Ministry of Public Health, January 2021

(Translation for use in developing the C19RM Funding Request to the Global Fund)

Contents

Preface

The Ministry of Public Health (MOPH) has formulated a management strategy to control the new wave of spread of Covid-19 that began in December, 2020 with an emphasis on comprehensive and proactive containment based on sound technical principles. The MOPH has delegated authorities at the provincial and health zone level to develop plans and preparations so that they can respond efficiently whenever and wherever spread of Covid-19 is detected. These provincial entities are to maintain vigilance for any signs of an outbreak so that it can be contained at the earliest stage in order to minimize secondary transmission, illness and death.

The team who has prepared this plan has reviewed and analyzed technical documents, strategies, measures, and action plans in collaboration with the Scientific Response Team, the Department of Disease Control, the Department of Medical Services, the Department of Mental Health, the Department of Health, the Department of Medical Sciences, the Department of Health Service Support, the Public Health Emergency Division, the Public Health Administration Division, the Division for Strategy and Planning, and the Office of the Permanent Secretary of Health.

This strategic plan is comprehensive and applicable to address the new wave of spread of Covid-19 for the greatest benefit for all in Thailand. The team hopes that this strategic guidance will be most useful as a framework for epidemic management and as an important tool for the clinical and public health emergency response.

MOPH

January, 2021

Foreword

The Covid-19 pandemic is having a serious impact on nearly all societies around the world, and threatening the health security of billions of people. In Thailand, the Ministry of Public Health (MOPH) has the principal duty to lead the emergency response to prevent, contain, and control the spread of Covid-19. The MOPH has been actively responding to the emergence of Covid-19 since late 2019 up to the present.

As part of these efforts, the MOPH has prepared a strategic plan to assist with the response to the new wave of spread of Covid-19 in Thailand which has different characteristics compared to the initial wave of spread.

This plan is intended for use by regional health offices around the country and provincial authorities to implement a proactive response with the principal objective to reduce the level of transmission of Covid-19 to a level that is manageable by the routine public health system.

In order for Thailand's response to the Covid-19 epidemic to be successful, there has to be intensive implementation of effective and efficient mechanisms wherever an outbreak is likely to occur. Different parts of the country have different levels of vulnerability to a sustained outbreak of Covid-19, and the situation is evolving constantly.

The MOPH sincerely hopes that this strategic plan for the response to the new wave of spread of Covid-19 – which is the result of the contribution of many individuals and agencies – will be a useful set of guidelines for implementation at all levels of the country wherever Covid-19 might strike next.

Dr. Kiatiphum Wongsorajit

Permanent Secretary

Ministry of Public Health

Executive Summary

This strategic plan for the response to the new wave of Covid-19 spread in Thailand has the objective to reduce the level of infection so that it is manageable by the routine public health system. The plan has the following two performance indicator targets: (1) Reduction of incidence of infection so that every province can control and contain the spread of Covid-19 within 28 days after an outbreak is detected given the context of risk and degree of difficulty; and (2) Reduction of Covid-19 case mortality and morbidity to below 1.6%.

This strategic plan is tailored to different levels of vulnerability in locations around the country as follows:

1) Provinces with no cases of Covid-19: These provinces are color-coded (white) representing no evidence of spread of Covid-19, and no new cases of local transmission within at least the past 28 days. These provinces are to conduct active surveillance in all target areas;
2) Provinces with recorded cases of Covid-19 but no epidemic spread: These provinces are color-coded (green) which record less than 1 new case of Covid-19 per 100,000 population in a period of one week, and no new cases within the past seven days, and no cases of Covid-19 infection detected in all cases of pneumonia patients being monitored by hospitals in the province;
3) Provinces with a low level of epidemic spread of Covid-19: These provinces are color-coded (yellow) and have recorded 1 to 5 cases per 100,000 population in a period of one week, and have a case-detection rate of under 2% through community outreach and surveillance of risk populations;
4) Provinces with a moderate level of epidemic spread of Covid-19: These provinces are color-coded (orange), and have recorded 5 to 15 new cases per 100,000 population in a period of one week, or have recorded a super-spreading event involving more than six persons, or have a case-detection rate of under 5% through community outreach and surveillance of risk populations;
5) Provinces with a high level of epidemic spread of Covid-19: These provinces are color-coded (red), and have recorded more than 15 new cases per 100,000 population in a period of one week, or have recorded a super-spreading event involving more than 50 persons.

The strategic plan prioritizes the reduction of Covid-19 incidence and mortality in red-colored provinces and to reduce status or each province to lower-level or no epidemic spread. This strategic plan is tailored to the events and pattern surrounding the new wave of epidemic spread. The overall plan calls for the response to Covid-19 to cover public health, clinical, and social dimensions, and which is divided into the following sub-plans.

* Communication plan: To compile information and data for communicating to the public and providing timely guidance for those working in related agencies and the general public

* Plan for care for the mental health of the general population and implementing staff to maintain or rehabilitate mental capacity at three levels: individual, family, and community/organization;

* Plan for procurement and distribution of effective Covid-19 vaccine which holds the greatest promise to control and contain the epidemic.

* Business support plan to develop organizational preparedness to confront and respond to the Covid-19 epidemic, to prevent transmission, screen and detect new infection, and reduce the associated trauma and impact in the fight against Covid-19.

This strategy and proposed measures are specified in greater detail herein, and are to be used as appropriate in the different provinces of the country.

Chapter 1: Summary of the situation of the spread of Covid-19 in Thailand

1.1 Summary of the 1st Wave of the Covid-19 Epidemic in Thailand

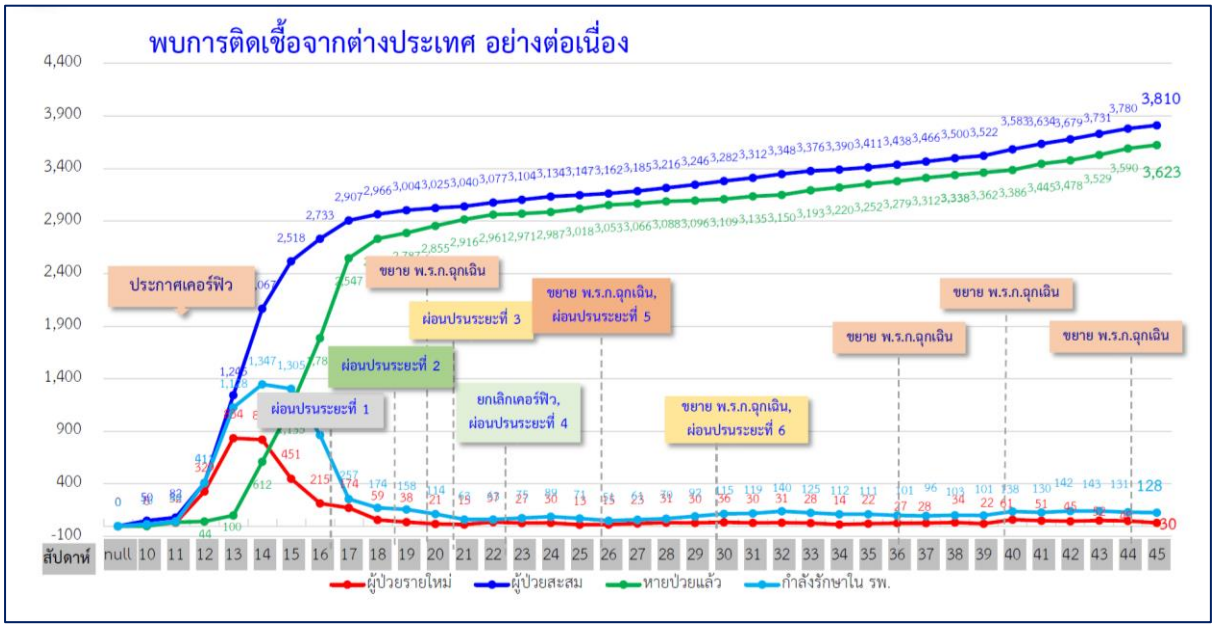
The origin of Covid-19 (SARS-CoV-2) is believed to be Wuhan City in Hubei Province in China. On December 30, 2019, there was a report of an outbreak of idiopathic respiratory disease in Wuhan which seemed to be traced to the busy seafood market in the center of the city. The most likely source of human-spread Covid-19 was the transfer of a virus from animal tissue to one or more persons in the market. Because of the large size of Wuhan (19 million people) and international airport connections to the world, the virus quickly jumped from China to other countries. On January 30, 2020 WHO declared a public health emergency due to the uncontrolled spread of Covid-19. It was also established that the virus could spread by aerosols (i.e., airborne transmission) in addition to contact with contaminated objects or surfaces. Since that first outbreak, Covid-19 has spread to virtually every country in the world. On March 11, 2020, the WHO declared the spread of Covid-19 as a "pandemic."

While the case-fatality rate (about 2%) is lower than some other killer epidemics, the ease of transmission means that Covid-19 deaths can reach very high numbers if spread goes unchecked. The spread of Covid-19 has been so sudden and widespread that many countries have struggled to contain the virus and manage caseloads of ill persons.

In Thailand, the first case of Covid-19 was diagnosed in January 2020 among a female tourist from China. On January 31, 2020, the first Thai case was diagnosed in a taxi driver who had no history of travel outside the country but who had recently had a number of passengers who were Chinese. From that time, the number of cases of Covid-19 in Thailand increased slowly but steadily, both from imported cases as well as local transmission. Thus, on March 1, 2020, the Thai MOPH officially announced that the novel coronavirus (Covid-19) was the 14th highly contagious communicable disease circulating in Thailand. Since that time, there have been clusters of outbreaks of Covid-19 that can be traced to super-spreader events in sports venues or indoor entertainment establishments. For example, there was an outbreak associated with customers at a boxing stadium in Bangkok sometime in March 2020, who then spread the virus to other provinces as they travelled home or on business. That outbreak spurred the government to implement urgent and forceful containment measures, and to establish the Center for Covid-19 Situation Administration (CCSA), also in March 2020. For its part, the MOPH declared the Covid-19 epidemic a public health emergency and called for the cooperation of all government agencies, the private sector, and the population to help prevent and contain the spread of Covid-19 in Thailand. The first two priority measures were as follows: (1) To prevent entry of the Covid-19 virus to Thailand, and (2) To reduce epidemic spread of Covid-19 in the country. After those measures were implemented, the number of cases of Covid-19 detected in country declined sharply. During May 2020 to nearly the end of the year, most of the new cases of Covid-19 were among persons who had caught the infection abroad and were repatriated to Thailand and put in state quarantine.

Figure 1: Cases of Covid-19 in the First Wave of the Epidemic in Thailand: Number of New Cases, Cumulative Cases, and Recovered Cases

Continuous detection of Covid-19 infection: National Total



Red line: New Cases **Blue Line: Cumulative Cases** **Green Line: Recovered Cases** **Light Blue Line: In Treatment**

Source: Department of Disease Control, MOPH, November 5, 2020

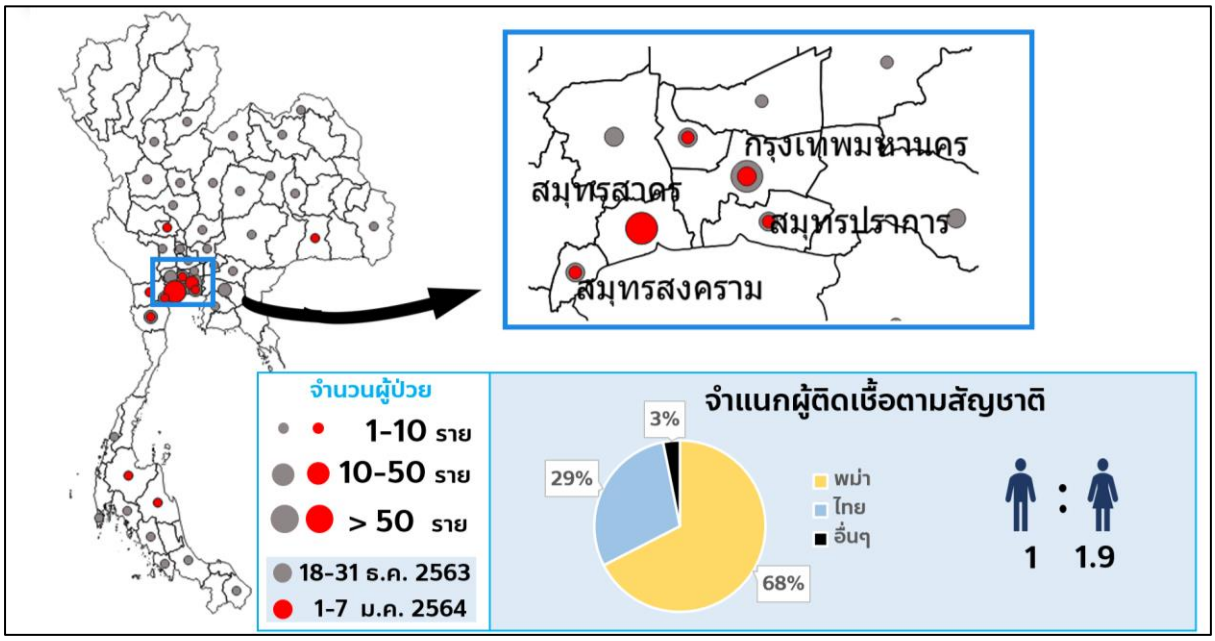
After the situation improved, the CCSA relaxed the control measures so as to lessen the impact on business and society, and the economy started to recover some momentum. However, during November 2020, a case of Covid-19 was detected in a 29-year-old Thai woman in Chiang Mai Province who returned to Thailand after working in Myanmar. She had re-entered Thailand via an unofficial border crossing in Chiang Rai Province. After returning to Thailand, she worked in an entertainment establishment, a shopping mall, and a movie theatre, thus exposing a wide range of individuals to Covid-19. This event exposed the fact that Thailand might have difficulty protecting the country from unofficial border crossing with its neighbors (DDC, MOPH, 2020).

1.2 Summary of the new Wave of the Covid-19 Epidemic in Thailand

The new wave of spread of Covid-19 in Thailand was another cluster event, but distributed over multiple locations. This event had the effect of distributing Covid-19 to a large number of provinces. The origin is traced to mid-December 2020 at a wholesale shrimp market in Samut Sakhon Province. Most of the initial infections were among Thai residents and non-Thai migrants who live and work in that locality. One of the factors behind the outbreak was the dense living conditions of the migrants in the surrounding community and the lack of personal precautions to prevent spread. Detection of cases of Covid-19 came from walk-in cases with symptoms, contact tracing, and outreach screening in the community. There was sample surveillance in all factories in the province. Many traders from around Thailand regularly visit the shrimp market to buy supplies to take back to fresh markets in their home province. Thus, the initial cluster of infections had the potential to spread widely, and led to smaller clusters of infection in various provinces in subsequent weeks. This event led to government action to re-impose containment measures, but in a more targeted way in Samut Sakhon Province. These measures included, for example, (1) Closure of the wholesale shrimp market in Samut Sakhon; (2) Lock-down of the Sri Muang Apartment Building adjacent to the shrimp market in Samut Sakhon; (3) Limiting hours of operation of other businesses; (4) Restrictions of movement in apartment

buildings at certain times of the day/night; and (5) Banning travel of non-Thai migrants to places outside Samut Sakhon Province.

Figure 2: Distribution of Covid-19 among Cases with a History of Contact with the Outbreak in Samut Sakhon Province, from December 18, 2020 to January 8, 2021



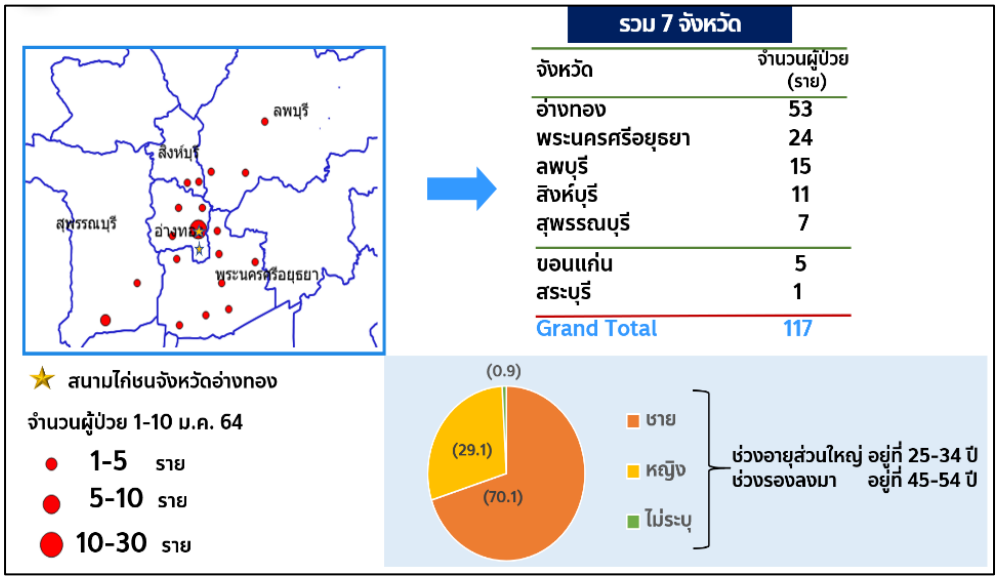
Number of cases
Grey dots: 18-31 Dec 20
Red dots: 1-7 Jan 21

Number of Cases of Infection by Nationality
Myanmar | Thai | Others

Source: Department of Disease Control, MOPH, January, 2021

Following those outbreaks, other super-spreading events were identified at entertainment establishments, pubs, bars, Karaoke lounges, and various types of gambling venues in different regions of the country. These led to an expansion of spread of Covid-19 to many provinces since the risk locations were sites that attracted crowding, extended interactions, and high turnover. Practice of personal prevention was lax in these locations. Furthermore, the same people tended to visit these different types of establishments, further seeding the super-spreading events. The response was decentralized so that provincial governors had the authority to take containment and control measures on their own. Thus, many of these types of establishments were closed, whether or not they had recorded outbreaks. There were appeals to the public not to arrange or attend large gatherings in which social distancing would not be possible. Screening and surveillance was expanded to try to detect potential outbreaks before they could ignite. There was more outreach testing for Covid-19, especially among the migrant worker population and their contacts.

Figure 3: Distribution of Covid-19 among Cases with a History of Attending a Cock Fighting Event in Angthong Province



Total number of cases in 7 provinces:117

Number of cases during 1-10 Jan 21

Male

Female

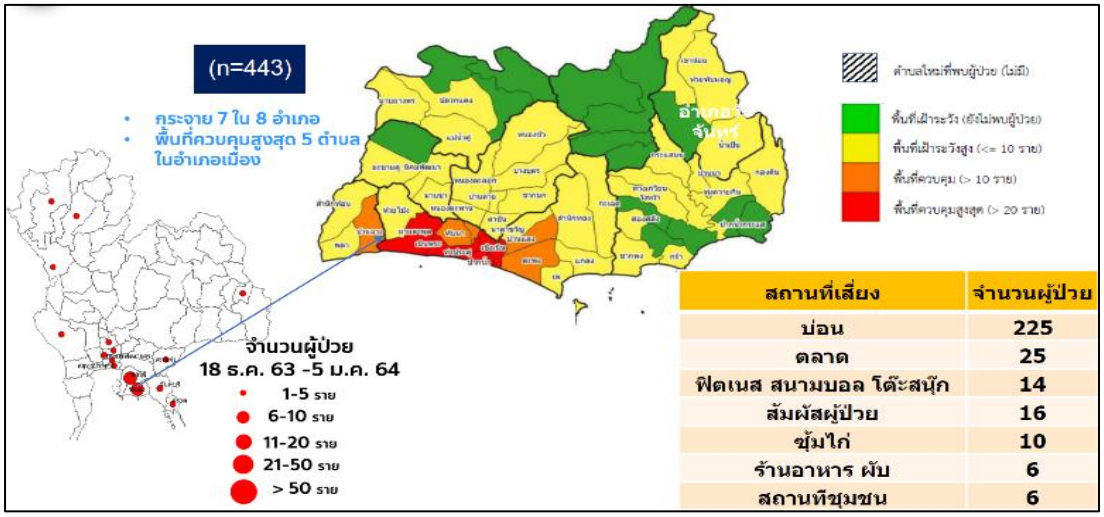
Most are age 25-34 yrs

Next most common age: 45-54

Source: Department of Disease Control, MOPH, January, 2021

Figure 4: Distribution of Covid-19 among Cases with a History of Contact with Risk Locations in Rayong Province

Subdistricts: Area of surveillance (no cases) High surveillance (≤ 10) Containment zone (>10) High containment zone (>20)



7 out of 8 districts

Highest containment level in 5 sub-districts of Muang District

Number of cases during 18 Dec 20-5 Jan21

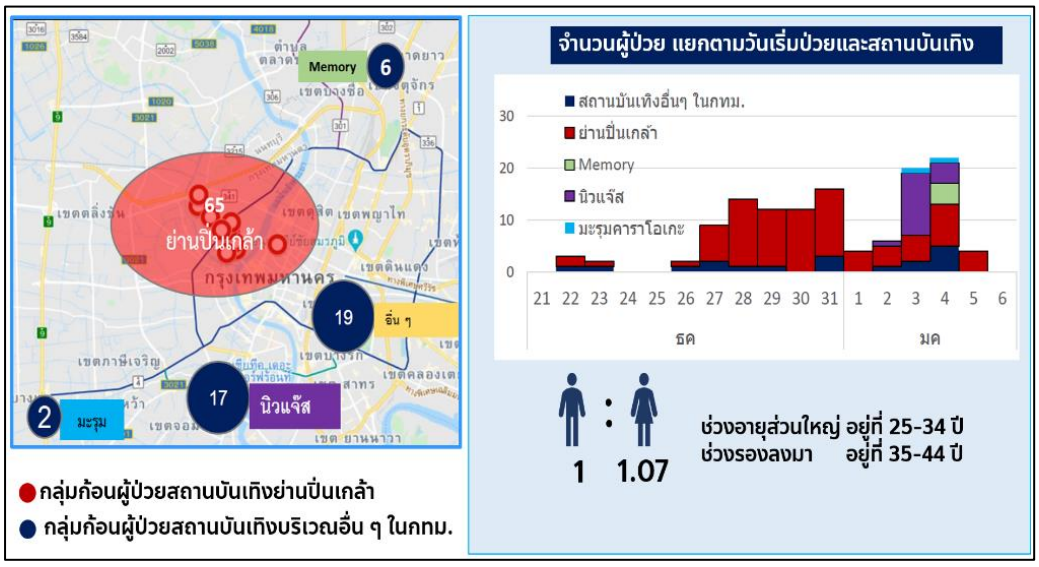
Type of risk areas

Den (gambling)
Market
Fitness, sports facility, snookers hall
Contact case
Cock fighting
Restaurant, pub
Community gathering place

Source: Department of Disease Control, MOPH, January, 2021

Figure 5: Distribution of Covid-19 among Cases with a History of Contact with Certain Entertainment Establishments in Bangkok

Number of cases by date of first symptoms by presumed source of infection
Blue: other entertainment establishment in Bangkok
Red: Pinklao Neighborhood
Green: Memory
Purple: New Jazz
Light Blue: Marum Karaoke Lounge



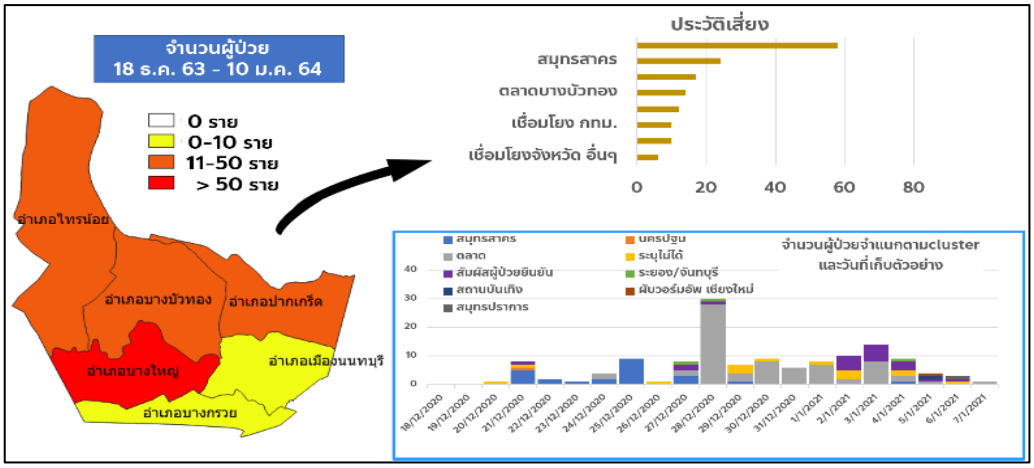
cluster of cases linked to Pinklao Neighborhood entertainment establishment
cluster of cases linked to other entertainment establishments in Bangkok

Most are age 25-34 years
Next most common age: 35-44

Source: Department of Disease Control, MOPH, January, 2021

Figure 6: Distribution of Covid-19 among Cases with a History of Contact with other Risk Locations

History of Risk by provinces (Samut Sakhon / Bang Bua Thong Market/Links to Bangkok/Links to other province(s)



Number of cases
Dec. 18, 2020 - Jan. 10, 2021

Number of cases by provinces / cluster of transmission /date of sample collection

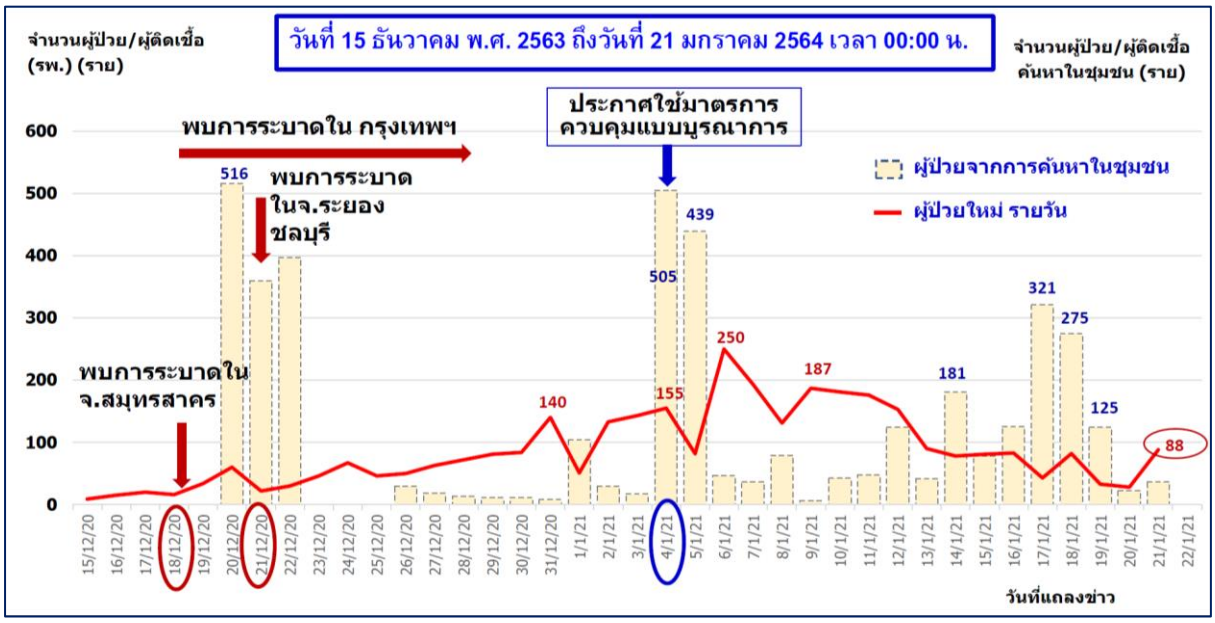
Source: Department of Disease Control, MOPH, January, 2021

At the same time, the Covid-19 epidemic started to worsen in some of Thailand's neighbors. This led many Thais who had been living or working in those countries to try to return to their homes in Thailand – often by unofficial means since Thailand's international borders were closed to all but essential travel, and a two-week quarantine was required for anyone entering the country. Thus, border provinces became a special focus of the surveillance and screening activity for Covid-19. Generally, around the country, control measures were tightened and people were strongly admonished to wear masks, practice hand hygiene, and socially distance when outside the home. There was a constant review of the situation by provinces.

As of the date of this report (January 21, 2021) the epidemic situation in the country and border provinces was stable, and the number of patients in hospitals was still not overwhelming the medical system. Still, outreach screening activities were still detecting cases of Covid-19 among persons who had unavoidable contact with strangers as part of their job or livelihood. Thus, Thailand has remained vigilant, especially in areas deemed to be at high risk, even though caseloads remain steady or declining in some provinces. Of particular concern is the emergence, in other countries, of new strains of Covid-19 which are more contagious and, perhaps, more lethal or partially resistant to vaccines.

Figure 7: Number of New Cases of Covid-19 from Surveillance, Service Units, and Community Outreach during December 15, 2020 to January 21, 2021

Reported Covid-19 cases by day during 15 Dec 20 – 21 Jan 21
Brown bar: Number of brown Covid-19 cases from active case finding in community
Red line: Number of new Covid-19 cases



18/12/20 Outbreak in Samut Sakhon
21/12/20 Outbreak in Rayong and Chonburi
Cross arrow – Outbreak in Bangkok

4/1/21 Announcement of integrated control

Source: Department of Disease Control, MOPH, January, 2021

Chapter 2: Strategic Response to the new Wave of the Covid-19 Epidemic in Thailand

Because of the different level of risk and context of the 77 provinces, the MOPH has classified provinces into groups by status of the epidemic and as a guideline for imposing control and containment measures of different intensity. Initially, there are four groups of provinces which are color-coded by level of control needed: Red (tightest control); Orange (control); Yellow (high surveillance); and Green (surveillance). This classification was proposed to the CCSA and is currently in use. On January 3, 2021, 28 provinces were coded Red. Of these, the top priority provinces by risk were Samut Sakhon, Rayong, Chonburi, Chanthaburi, and Trad, all in the east-central region of the country. In addition to the color-code classification, the guidelines for prevention and control differ based on level of risk. That enables each province to consider what interventions to implement that are most appropriate to local context and threat.

1) Objective of the strategy

To reduce new cases of Covid-19 to a level that is manageable by the routine health system (i.e., low level of transmission)

2) Indicators and targets

2.1) Reduction of incidence: Each province is able to control the spread of Covid-19 within 28 days of an outbreak

2.2) Reduce mortality associated with Covid-19 infection: The case fatality rate is less than 1.6%

3) Models of reducing Covid-19 incidence according to risk level and situation

3.1) Reduction of the severity of Covid-19

This step refers to reducing new infections of Covid-19 so that a province or area can return to normal activity. The intent is to minimize the impact of Covid-19 on the public health, economy, society, and livelihoods. Action should be taken that is appropriate to the context and severity of the threat of Covid-19. Provinces can consider a step-wise approach to reducing the color code of their area to progressively less need for control measures as the situation improves. Provinces need to consider the volume of testing and coverage, using the positivity rate (number of Covid-19 infections divided by the number of people tested) as a criteria for implementing various measures.

Figure 8: Target for Reducing the Severity of Covid-19

Severity of the epidemic		Phase 1		Phase 2
Major spread	28 days	Reduce the level of spread	28 days	Reduce the level of spread
Moderate spread	28 days	Reduce the level of spread	28 days	Reduce the level of spread
Slight spread	14 days	Reduce the level of spread	14 days	Reduce the level of spread
Isolated infection	14 days	Reduce the level of spread	14 days	Reduce the level of spread

3.2) Criteria for considering the threat level and status of vulnerability of an area

- White: There is no epidemic spread and no detection of new infections for at least 28 continuous days. The prescribed action in this situation is to conduct active surveillance with adequate coverage of the target areas and populations

- Green: There is detection of new infections within the past 28 days, but not at an epidemic level. The incidence of infection is under 1 per 100,000 population during a one-week period, with no new cases in the past 7 days, and no Covid-19 infections among all pneumonia in-patients in all hospitals of the province
- Yellow: There is a low level of epidemic spread, with incidence of 1 to 5 cases per 100,000 population during a one-week period. The positivity rate found during community outreach and risk-group surveillance is less than 2%
- Orange: There is a moderate level of epidemic spread, with incidence of 5 to 15 cases per 100,000 population during a one-week period, or there is a super-spreading event with more than 6 infections traced to a specific location, or there is a positivity rate of less than 5% in community outreach and risk-group surveillance
- Red: There is a high level of epidemic spread, with incidence over 15 cases per 100,000 population during a one-week period, or there is a super-spreading event with more than 50 infections traced to a specific location

Figure 9: Criteria for Classifying Risk Level and Severity of the Situation

Major spread (red)	Moderate spread (orange)	Slight spread (yellow)	Isolated cases (green)	No new cases (white)
>15 cases per 100,000 population in one week	5-15 cases per 100,000 population in one week	1-5 cases per 100,000 population in one week	<1 case per 100,000 population in one week	0 new cases in the province
or	**or**	**and**	**and**	**and**
Super-spreading event with >50 people	Super-spreading event with >6 people	Positivity rate <2% in community outreach	No new cases in 7 days	No new cases in 28 days
	Positivity rate <5% in community outreach		No Covid-19 infections among pneumonia patients	Active case surveillance as prescribed

4) Strategy for the response to the new wave of the Covid-19 epidemic in Thailand

The different levels of epidemic spread of Covid-19 in Thailand require different levels of response. Thus, this strategy document provides guidance on what interventions to implement given the situation in a province. This strategic guidance is provided to help with the response to the new wave of epidemic spread of Covid-19 in Thailand. Prescribed interventions can be classified into the following groups:

- There is detection of Covid-19 but not at epidemic level: The prescribed action is to conduct intensive prevention in risk locations and vicinity to prevent entry of the virus
- There is low level of epidemic spread: The prescribed action is to conduct active case finding and containment of spread so that it does not get out of control
- There is a moderate level of epidemic spread: The prescribed action is to conduct maximum containment of the hot spots and vicinity, with the best possible care for patients with symptoms

- There is a high level of epidemic spread: The prescribed action is intensive care for patients requiring hospitalization, and containment of spread by urging the population to avoid non-essential travel

5) Measures to combat Covid-19

5.1) Public health measures: These measures include preparedness in terms of resources and personnel capacity to implement appropriate public health interventions in response to Covid-19. These actions include active and passive surveillance, active case finding, contact tracing, preparing resources and lab capacity to diagnose Covid-19 infection, preparing village health volunteers (VHV) to conduct community-based action in the cases of an outbreak, and preparing quarantine facilities and services, etc. The emphasis is on efficient response with appropriate target populations, but especially the non-Thai migrant worker group and those entering Thailand through unofficial border crossings. There should be special prevention measures for vulnerable groups such as the elderly, those with pre-existing conditions, and marginalized populations. The general population should be instructed and urged to practice DMHT: Distancing, Mask wearing, Hand hygiene, and Testing for Covid-19.

5.2) Clinical measures and preparedness for a clinical response: These measures include preparation of clinical personnel so that they are ready to respond quickly to an outbreak of Covid-19. This includes ability to properly care for symptomatic Covid-19 patients and reduce impact on non-Covid-19 patients. This measure includes staff education, preparation of materials and supplies, including medications and clinical devices, especially personal protective equipment (PPE), beds, and other requirements for a crisis situation. There should be an efficient communication and information system to keep everyone informed, and guidelines for converting facilities into "hospitels" or field hospitals, with adoption of the "*New Normal of Medical Services,"* among other measures.

5.3) Social measures to reduce risk of exposure to Covid-19: This includes social distancing, refraining from non-essential travel, control of risk locations, and limiting the movement of migrant laborers.

5.4) Measures to care for mental health: These measures include maintenance and rehabilitation of mental health problems attributed to the Covid-19 epidemic and response. Some people may be frightened and stressed out from fear of infection or having a relative or friend who is infected with Covid-19. These people need mental health care to prevent their condition from worsening, as well as attending to their physical health needs. There need to be stress-reduction activities for the general population as well as front-line service providers. Everyone needs to know when and how to seek clinical care.

The classification of provinces into different response levels is to help localities respond appropriately and rationally to the threat of an outbreak or epidemic spread so that cost-effectiveness of the response is maximized. This strategy document presents a set of guidelines for action in a decentralized response to the 2nd wave of epidemic spread of Covid-19 in Thailand. These guidelines need to be considered in conjunction with the daily announcements and guidance from the CCSA.

6) Other key action plans

6.1) Communication plan

In the course of prevention and response to an emergency public health crisis, clear and transparent communication is imperative so that all persons and personnel can contribute in appropriate ways.

The communication needs to be conducted on a regular basis, and provide updates as the need arises. If people have regular, factual information on the situation, then this will prevent panic and prevent the spread of rumors or false information. Clear communication will also help motivate the population to join the prevention and control effort to the best of their ability. This also requires a continuous evaluation of the situation and the open dissemination of all relevant information through easily accessible channels. Effective communication requires that there be a plan and defined measures to implement the plan across all the relevant dimensions.

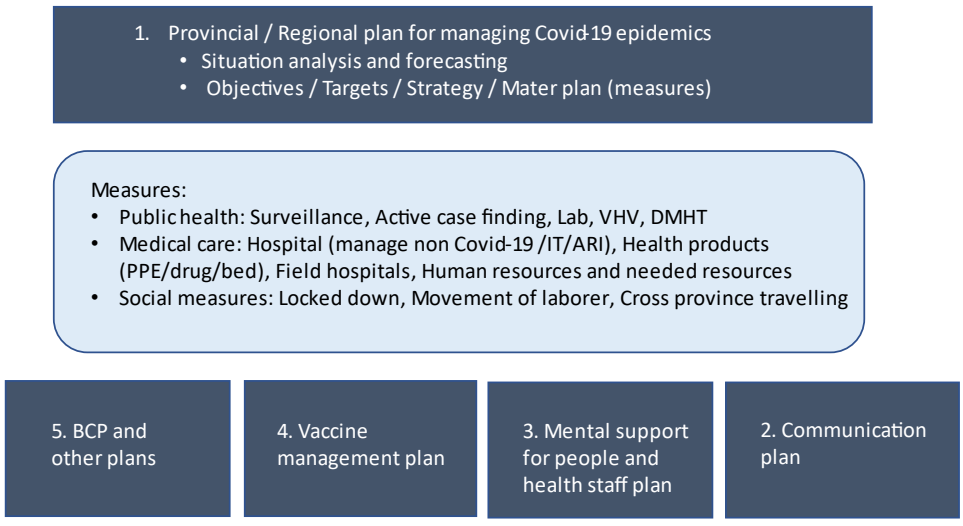
6.2) Vaccine management plan

Thailand has a policy to be most prepared to deliver effective Covid-19 vaccines as soon as they are procured and judged to be safe for the population. This involves collaboration between the clinical and public health arms of the government to ensure there is equitable and rational administration of a vaccine plan. Front-line workers and others at greatest risk of contracting/transmitting Covid-19 are obviously the top priority for vaccines to maintain a functioning health system. Eventually, the goal is to vaccinate enough of the population to cut off the chain of transmission of Covid-19 and, thus, eliminating the threat of an epidemic from recurring. Because of the scale of the threat of Covid-19, the vaccination program is a matter of national security. There will be two phases in the roll-out of Covid-19 vaccine. The first is the period when there is a limited supply of vaccine. The second is when there is greater availability of vaccine. To ensure an orderly roll-out of the vaccine, there needs to be a clear plan for vaccine management at the provincial level. There has to be orientation and preparation of the relevant clinicians and health staff. There needs to be efficient communication for documenting vaccine recipients, adverse effects, care, and follow-up.

6.3) Business Continuity Plan (BCP)

The potential for the adverse impact of Covid-19 on clinical and public health systems of the country is enormous. Thus, there needs to be a coherent and comprehensive business plan for organizations at all levels. This plan will help contribute to an orderly and cost-effective response to the public health crisis.

Figure 10: Action framework of Strategy on managing the new wave of the Covid-19 Epidemic



Chapter 3: Measures in the Response to the Covid-19 Epidemic in Thailand

Because of the different pattern and severity of spread of Covid-19 in the different provinces, it is important to have a menu of response measures for provinces to select from to suit their context and challenges. That also means that each province needs to accurately assess its situation and vulnerability in order to put together an appropriate package of response measures and make adjustments as needed. The measures listed in this strategy document are intended for use by provinces as they confront the threat of Covid-19. Provinces can implement a different set of measures in different parts of the province, depending on the threat of an outbreak. The measures may be area-specific or organization/establishment-specific. That said, provinces need to adhere to national guidance from the CCSA. In general, the response measures can be group into public health, clinical, and social measures, as described in the table below.

3.1 Public Health Measures

<table>
<tr><th></th><th>severe</th><th>moderate</th><th>mild</th><th>normal</th></tr>
<tr><td rowspan="9">public health measures</td><td colspan="4">State/ local quarantine for incoming travelers</td></tr>
<tr><td>Local quarantine/ home quarantine (individual) for high-risk contacts</td><td>Local quarantine/ home quarantine (individual) for high-risk contacts/ those traveling from RED zone</td><td colspan="2">Local quarantine/ home quarantine (individual) for high-risk contacts/ those traveling from RED or ORANGE zone</td></tr>
<tr><td colspan="4">Public – Private partnership with businesses/ companies/ factories, etc. to enhance disease control measures in the organization.
Preparation of migrant worker registration/roster system; and preparation of Factory/Organizational Quarantine.</td></tr>
<tr><td colspan="4">Mapping and Active Case Finding in at-risk places/at-risk groups/vulnerable groups.
Cluster sampling should cover all groups/at-risk places, and should focus on groups/places with higher risks as a priority.</td></tr>
<tr><td colspan="4">Prepare IPC program and a systematic approach in collecting specimen for testing.
Ensure a plan is in place, as well as provincial level officer in charge.</td></tr>
<tr><td colspan="4">Active Case Finding + Contact Tracing</td></tr>
<tr><td></td><td colspan="2">Case investigation + timeline to identify origin of transmission and contacts.
Timeline should be publicly announced</td><td>case investigation + detailed timeline</td></tr>
<tr><td>ACF in community and screen at-risk population (at least 500:100,000:week)</td><td>ACF in community and screen at-risk population (at least 300:100,000:week)</td><td>ACF in community and screen at-risk population (at least 200:100,000:week)</td><td></td></tr>
<tr><td colspan="4">Increase more stringent measures and follow CCSA announcements/measures</td></tr>
</table>

3.2 Medical care measures

<table>
<tr><th></th><th>severe</th><th>moderate</th><th>mild</th><th>normal</th></tr>
<tr><td rowspan="8">Medical care measures</td><td>Reserve beds using R_0 = 1.47
Bed capacity should cover next 3 days = no. of patients on day 1 x 3.63 beds
Bed capacity should cover next 14 days = no. of patients on day 1 x 4.63 beds</td><td>Reserve beds using R_0 = 1.0
Bed capacity should cover next 7 days = no. of patients on day 1 x 2 beds
Bed capacity should cover next 14 days = no. of patients on day 1 x 3 beds</td><td>Reserve beds using R_0 = 0.80
Bed capacity should cover next 7 days = no. of patients on day 1 x 2 beds
Bed capacity should cover next 14 days = no. of patients on day 1 x 2.5 beds</td><td>Reserve beds using R_0 = 0.60
Bed capacity should cover next 7 days = no. of patients on day 1 x 1.5 beds
Bed capacity should cover next 14 days = no. of patients on day 1 x 2 beds</td></tr>
<tr><td colspan="4">* This depends on the actual R_0 and the context of each area. It also does not include ACF conducted in large number of population where field hospitals should be set up accordingly.</td></tr>
<tr><td colspan="3">Prepare ventilators/ AIIR/ Modified AIIR ICU = 5% of confirmed patient beds (5% of all patients in every group of disease severity)</td><td>Prepare ventilators/ AIIR/ Modified AIIR ICU = 1 bed</td></tr>
<tr><td colspan="4">Coordinate with each Node at the Health Area to reserve Favipiravir at the Node for at least 30% of estimated number of patients x 70.
The number can be adjusted to follow the treatment guidelines (number of beds) Reservation and allocation of Favipiravir for each province will depend on the Health Area's context.</td></tr>
<tr><td colspan="4">Stockpiling PPE/ surgical mask
- For PUI care = 1 PUI = 1 set/ 1 piece of PPE/Surgical mask (1:1)
- For patient care = 1 patient = 100 set/ pieces of PPE/ surgical mask (1:100)</td></tr>
<tr><td>If the number of calculated beds exceeds provincial capacity (including existing field hospitals), activate additional field hospitals and set up referral system in the Health Area or between areas</td><td>If the number of calculated beds exceeds provincial capacity, set up field hospitals or hospitels to accommodate asymptomatic patients and step-down cases.</td><td>If the number of calculated beds exceeds provincial A,S hospital capacity, plan to refer mild/asymptomatic/step-down, PUI cases to community hospital.</td><td>Patient care and disease control at provincial level hospital; A,S, M1 hospitals, depending on disease severity and hospital capacity.</td></tr>
<tr><td colspan="4">Setting up field hospitals, resource preparation and operation should follow DMS, DMSS, and DOG guidelines.</td></tr>
<tr><td colspan="2">Implement hospital's BCP</td><td>Consider implementing hospital's BCP</td><td></td></tr>
<tr><td colspan="4">New Normal Medical Service</td></tr>
</table>

3.3 Social measures

<table>
<tr><th></th><th>severe</th><th>moderate</th><th>mild</th><th>normal</th></tr>
<tr><td rowspan="13">social measures</td><td colspan="2">No gathering of more than 5 people.</td><td colspan="2">No gathering of more than 50 people and no group activities.
Must strictly follow disease control measures.</td></tr>
<tr><td colspan="3">Closure of entertainment venues, pubs, bars, karaoke bars, gambling dens, massage parlors, game arcades, sports arenas, fitness centers.</td><td></td></tr>
<tr><td colspan="2">Restrict movement of migrant workers.
No movement of migrants from the areas.</td><td>Restrict movement of migrant workers.</td><td>Restrict movement of migrant workers.</td></tr>
<tr><td colspan="4">No recruitment of new migrant workers /daily workers who have not gone through health screening.</td></tr>
<tr><td colspan="2">WFH/online classes > 90%</td><td>WFH/online classes > 70%</td><td>WFH/online classes > 50%</td></tr>
<tr><td colspan="4">Strict adherence to worksite guidelines</td></tr>
<tr><td>No inter-provincial travel</td><td>Limit inter-provincial travel</td><td colspan="2">Allow inter-provincial travel</td></tr>
<tr><td>No entry into at-risk areas and closure of at-risk premises.</td><td>Only some activities are allowed, but participants must be screened and measures strictly followed.</td><td colspan="2">Activities are allowed, but participants must be screened and measures strictly followed.</td></tr>
<tr><td colspan="4">Register with the Thai Chana and Mor Chana applications, etc.</td></tr>
<tr><td>Close borders, with exception for some groups.
Curfew.</td><td></td><td></td><td></td></tr>
<tr><td colspan="4">Increase more stringent measures and follow CCSA announcements/measures</td></tr>
<tr><td colspan="4">-Markets can open as long as no cases of Covid are detected and there is regular sanitation of the market
-Register the market stalls/vendors and mobile vendors to enter/exit the market</td></tr>
<tr><td>-screen market stall owners and assistants
-enforce mask wearing and hand hygiene when entering a market
-limit the number of people in a shop/business at any one time
Conduct active case finding in risk groups and those who traveled to epidemic areas</td><td colspan="3">-Implement state-mandated prevention measures
-Follow provincial announcements</td></tr>
</table>

Chapter 4: Communication Plan

Communication and public information dissemination are crucially important in times of a public health emergency. Thus, there needs to be a clear and systematic plan for comprehensive communication about the Covid-19 epidemic for different target groups of the population. There has to be a designation of the coordination focal point for communication, and the necessary links with other related agencies or individuals. There needs to be a communication task force which looks after the various dimensions of the communication effort to ensure consistency of the message and efficiency of delivery. A surveillance team can assemble data and information on the status and trends of the epidemic. There can be other teams for public relations, database management, media production, evaluation, etc. Each target group for communication must have a clear and accurate understanding of the situation and needed action that is relevant to them. This is not easy to achieve since, at times, there can be too much information or too little. Most important, the communication and messaging must not instill panic or cause the spread of false rumors. The content needs to be tailored to the target population to ensure comprehension. There must be a combination of active and passive communication delivered through an optimal array of channels. The messages will need to change as the epidemic evolves and new information is gained.

1) Objective

1.1) To develop a system/mechanism for communication that is efficient and timely, and appropriate for the intended audience to receive the message.
1.2) To educate and promote accurate understanding among the target audience.

2) Goal

To promote collaboration of all sectors in implementing action according to the guidelines and measures to efficiently and effectively prevent and control the spread of Covid-19 in the area.

3) Target

There needs to be a clear definition and understanding of the target audience for the communication effort. That information is to be used in designing the communication content and mode of delivery. For example, one set of messages may be tailored for the general population, while others may be directed toward people at greater risk of infection, people who may come in contact with the virus or an infected person, clinicians, public health personnel, business owners/managers, opinion leaders, and influencers.

4) Channels of communication

It is important to select the proper channels to deliver content and messaging. This requires some analysis of the target audience and the reach of various modes of communication. If there is a cost involved in delivering the message, then the most efficient channels need to be used to conserve communication resources. The target audience must be able to access the relevant information quickly and at their convenience.

- Air war: For example, mass media, radio, newspaper, TV, film, etc.
- Ground war: For example, campaigns, meetings, training events, public relations
- Social media: For example, the internet, web sites, Facebook, twitter, LINE, and other applications

The communication can be delivered through multiple channels simultaneously, such as the community public address system, VHV, health staff, or other outlet which can provide health information to the public at large or specific target groups.

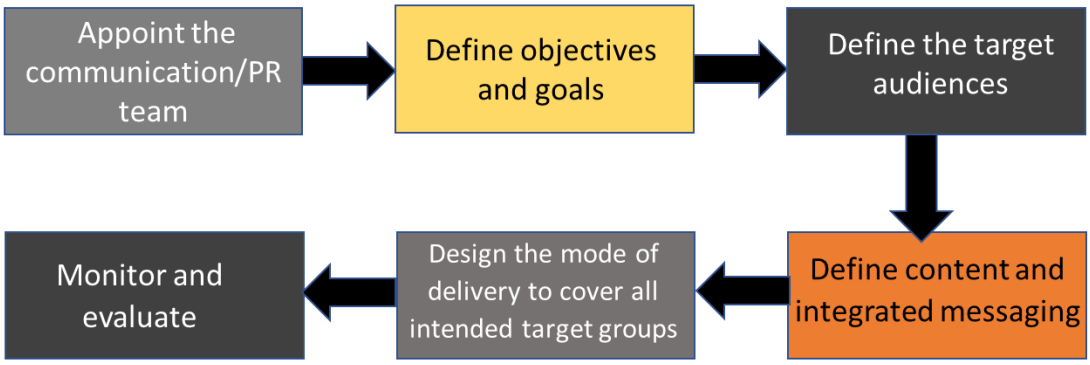
5) Content of messages and communication

In a public health emergency, it is imperative to have accurate and complete information. That information needs to be presented consistently across the various media and to the different target audiences. It is important to avoid mixed messages that can lead to inappropriate understanding or action. There has to be a unified message that leads to unified and appropriate action. Communication should not use fear arousal techniques. Instead, the messaging needs to be positive and build favorable attitudes toward prevention and control of spread of Covid-19. The communication also needs to build public trust in the agencies and institutions which are tasked with prevention and control of the epidemic. This requires understanding the need for information by the various target audiences. There also has to be constant vigilance to identify fake news or false rumors, and to counteract these so that people have accurate and factual information.

The following are some types of content in the communication activities:

- Basic knowledge about Covid-19
- The status and pattern of the spread of Covid-19, levels of risk, and situation in the locality
- Recommended practices for individual and group prevention of Covid-19
- DMHT: Distancing, Mask wearing, Hand hygiene, and Testing
- New Normal

Figure 11: Framework for Implementation of the Communication Plan



Chapter 5: Mental Health Plan

The Covid-19 epidemic is having an impact on virtually all aspect of society, including health, economic, and social effects. The pressures of fighting an invisible foe can cause stress, anxiety, fear, burn-out, and other manifestations of mental strain. Thus, while conducting all the routine measures for prevention, control, and containment of the virus, it is also important to tend to the mental health consequences of populations and personnel in the midst of a deadly pandemic. Measures need to be taken at the individual, group, and community level to ameliorate the negative mental health effects of living through a lethal epidemic threat such as Covid-19. It is especially stressful since the virus cannot be seen by the naked eye, and can spread in the air by asymptomatic carriers. Thus, people do not know where the virus is at any one time, and that makes it difficult to assess the threat. People who are vulnerable and prone to mental distress need to be able to access counseling and mental health care. This is especially important for persons who contract Covid-19, their relatives, and friends/acquaintances. People who are in quarantine need reassurance and moral support. Front-line health and clinical personnel who confront the threat of Covid-19 every day are in special need of mental health support. There needs to be preventive, treatment, and rehabilitative care for people whose mental health has suffered due to the Covid-19 epidemic. There are four groups of mental health disorder that could be attributable to the effects of Covid-19 and which provincial program managers need to be alert for and prepared to respond to. These include stress, burn-out, depression, and suicidal ideation. Programs need to implement forms of 'psychological vaccines' to prevent these manifestations of mental ill-health at the level of the individual, family, organization/worksite, community, and society at large. The goal is to prevent or soften the impact of these mental stressors. Since these sufferers may not be obviously apparent, it is important to conduct mental health screening for those at risk of mental distress so that sufferers can obtain rapid and effective treatment.

1) Objective

1.1) Reduce the impact of Covid-19 on mental health
1.2) Increase psychological resilience in the face of the epidemic threat at the individual, family, worksite, and community level

2) Target

2.1) General population and those with strong mental health
2.2) At-risk populations and need for access to mental health services
2.3) Reduction of the rate of suicides

3) Target group

3.1) Clinical and health personnel
3.2) Infected persons, those in quarantine
3.3) Vulnerable groups, those at risk of mental strain, mental health patients, persons in dire financial circumstances, and prisoners, etc.
3.4) Non-Thai migrant workers
3.5) General population, the community

4) Setting up a support and assistance system to address mental health impacts of Covid-19: MCATT: Mental Health Crisis Assessment and Treatment Team

MCATT refers to a multi-disciplinary team which address the mental health needs of people during a pandemic. MCATT members may include physicians, nurses, pharmacists, clinical psychologists,

psychiatrists, social workers, public health specialists, mental health officers, and other relevant personnel. The MCATT team can be formed at different levels as follows:

4.1) MCATT which are under the authority of the Department of Mental Health and may be located at mental health institutions, psychiatric hospitals, or mental health centers. This team has responsibility for educating members of the network in the regional health zones of the MOPH. The team also has the capacity to provide direct care to people whose mental health has been adversely affected by the Covid-19 epidemic.

4.2) MCATT at the provincial level. This team is located at the provincial hospital and has the responsibility for educating provincial members of the MCATT network, and has the capacity to provide direct care to people whose mental health has been adversely affected by the Covid-19 epidemic.

4.3) MCATT at the district level. This team is located at the district hospital and has the responsibility to educate members of the MCATT network at the Tambon (sub-district) level in how to screen and mitigate adverse impacts to mental health due to Covid-19.

4.4) MCATT at the Tambon level. This team is located at the Tambon Health Promotion Hospital, and its members include the local cadre of VHV. The team has responsibility for looking after the mental health of the population in the Tambon, and has the capacity to conduct preliminary screening of persons whose mental health has been or might be adversely affected by Covid-19. The team can provide primary mental health care, and counseling for individuals and families on how to cope or where to get more help.

5) Important activities of the plan

The mental health plan calls for rehabilitation of the mental health of those who have been adversely impacted by Covid-19. The mental health service is organized for three levels of care: The individual, the family, and the community, as follows:

5.1) Individual: Establish a system for support, prevention, treatment, and rehabilitation for persons whose mental health has been/might be adversely impacted by Covid-19.

5.1.1) Promote mental health literacy for different age groups, and use guidelines to help people adjust their behavior to the “New Normal” situation of living during a pandemic. Practice social distancing while still caring and connecting with each other.

5.1.2) Conduct surveillance and prevention of mental health problems in risk groups through the following activities:

- Conduct surveys to assess the extent of mental health problems using the S_t B S_u D tool which measures stress, burn-out, suicidal ideation, and depression;
- Conduct active screening by visiting households to identify persons at risk of or having mental health problems; alternatively, the contact visits and screening can be done by phone or online;
- Conduct active surveillance
- Provide active and in-house counseling, including de-stigmatization of Covid-19

5.1.3) Care and treat mental health problems related to the Covid-19 pandemic, covering the symptoms of stress, burn-out, depression and suicidal ideation. This involves interventions to reduce stress and burn-out, as well as following guidelines for managing cases who have clinical depression or thoughts of suicide.

5.1.4) Rehabilitate persons who have recovered from the primary effects of mental health disorders due to Covid-19, and help them re-integrate into normal society. Build resilience to prevent recurrence of the mental health problems.

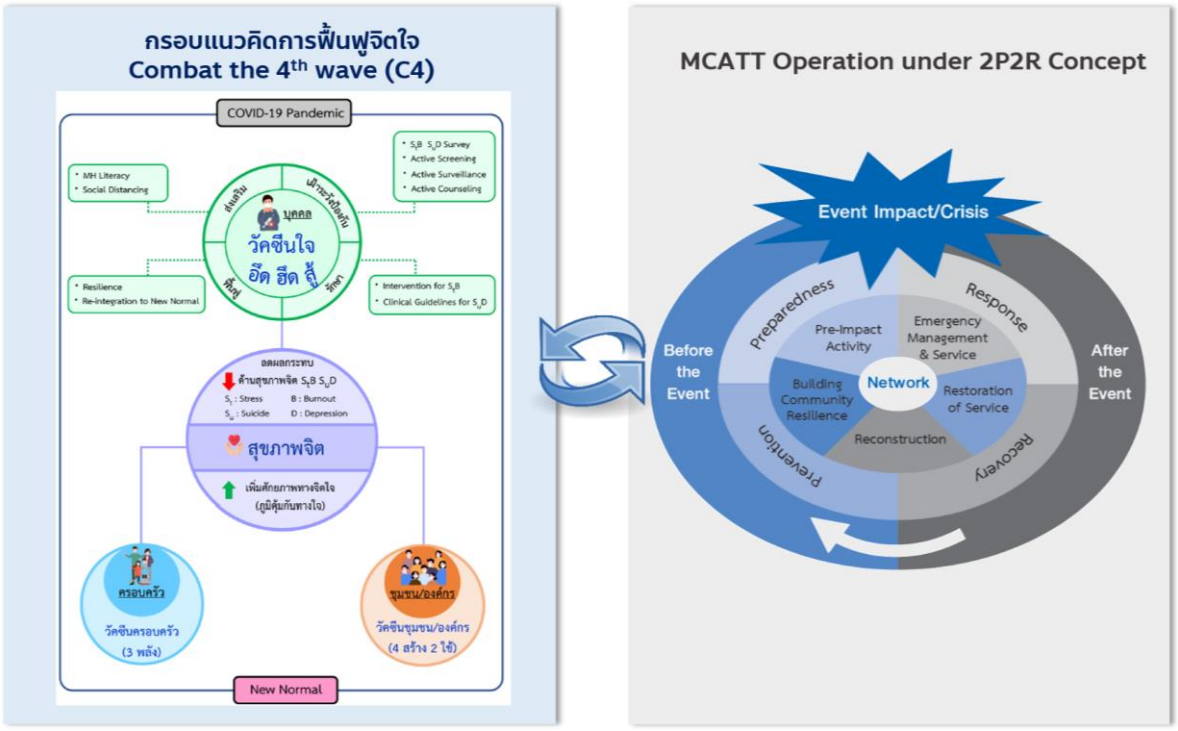
5.2) At the household level, establish a system of care for the mental health of members by promoting mental strength through positive energy, flexibility, and cooperation.

5.3) At the community/worksite level, establish a system for mental health promotion by implementing “group psychological vaccine” strategies that include the following elements:

5.3.1) Promoting a sense of safety
5.3.2) Promoting calm
5.3.3) Instilling hope
5.3.4) Promoting empathy, tolerance, and de-stigmatization of Covid-19

These measures should be accompanied by Public Health Emergency Management (PHEM) interventions which apply the disaster response principles of prevention and mitigation, preparedness, response, and recovery.

Figure 11: Framework for Implementation of the Mental Health Plan



Sources: 1. Guidelines for psychological rehabilitation from the adverse effects of Covid-19
2. Operational Handbook for the MCAT Team

6) **Measures to address the mental health dimensions of the Covid-19 pandemic should be tailored to the level of threat of spread of Covid-19 in the locality.**

This will promote the most cost-effective response to the situation. The Mental Health Department of the MOPH has developed tools to help in the preliminary assessment of mental health status, and screening for risk of mental health conditions that need treatment. One of the tools is the Mental Health Check List which can be administered by health personnel, VHV, mental health volunteers, and others. This tool helps to quickly scan a community for members who might need clinical help and professional mental health care. The tool has been proven to be effective in flagging symptoms of stress, burn-out, depression, and suicidal ideation. The results of administering the check-list are available immediately and informs users of places to go for counseling in person or online.

Table: Measures under the Mental Health Plan by Level of Epidemic Threat in the Province

Target Group	Major spread (red)	Moderate spread (orange)	Slight spread (yellow)	Isolated or no new cases (green)
Public Health Personnel -Front line -Hospital -VHV	- Active assessment using the Mental health check list - Outreach counseling for those at risk of mental health disorders - Public relations about channels to seek help and hotline numbers to call -Measures for care of mental health after work (positive AAR)	- Build capacity of Migrant Health Volunteers (MHV) and community peer leaders to help people with mental health disorders -Create a system of support and referral to mental health care services for those at risk of disorders -Provide education on mental health care for those infected with Covid, and communicate through various media channels -Provide “psychological vaccination” for individuals, families, and the community		
Covid-19 patients/relatives/people in quarantine -hospital -field hospital -quarantine site	- Conduct active assessment using the Mental health check list -Arrange phone counseling service for persons at risk of mental health disorders- - Form MCAT teams to work with clinical care units in field hospitals and quarantine sites	- Conduct active assessment using the Mental health check list -Arrange phone counseling service for persons at risk of mental health disorders- - Form MCAT teams to work with clinical care units in field hospitals and quarantine sites		

Target Group	Major spread (red)	Moderate spread (orange)	Slight spread (yellow)	Isolated or no new cases (green)
Non-Thai migrant workers -Migrant worker volunteers -Field hospitals -Persons impacted by lock-downs	- Build capacity of MHV and community peer leaders to help people with mental health disorders - Create a system of support and referral to mental health care services for those at risk of disorders - Provide education on mental health care for those infected with Covid, and communicate through various media channels	- Build capacity of MHV and community peer leaders to help people with mental health disorders -Create a system of support and referral to mental health care services for those at risk of disorders -Provide education on mental health care for those infected with Covid, and communicate through various media channels -Provide “psychological vaccination” for individuals, families, and the community		
General population -Public relations	- Conduct public information dissemination on mental health self-assessment using the mental health check list -Communicate about mental health impacts of being infected with Covid, and communicate this through the public relations network -Deploy a mobile stress reduction unit in collaboration with the Dept. of Mental Health to reduce risk of mental health disorders	- Conduct public information dissemination on mental health self-assessment using the mental health check list -Communicate about mental health impacts of being infected with Covid, and communicate this through the public relations network -Implement mental health care measures based on the results of the rapid survey tool of the Department of Mental Health		

Chapter 6: Covid-19 Vaccine Management Plan

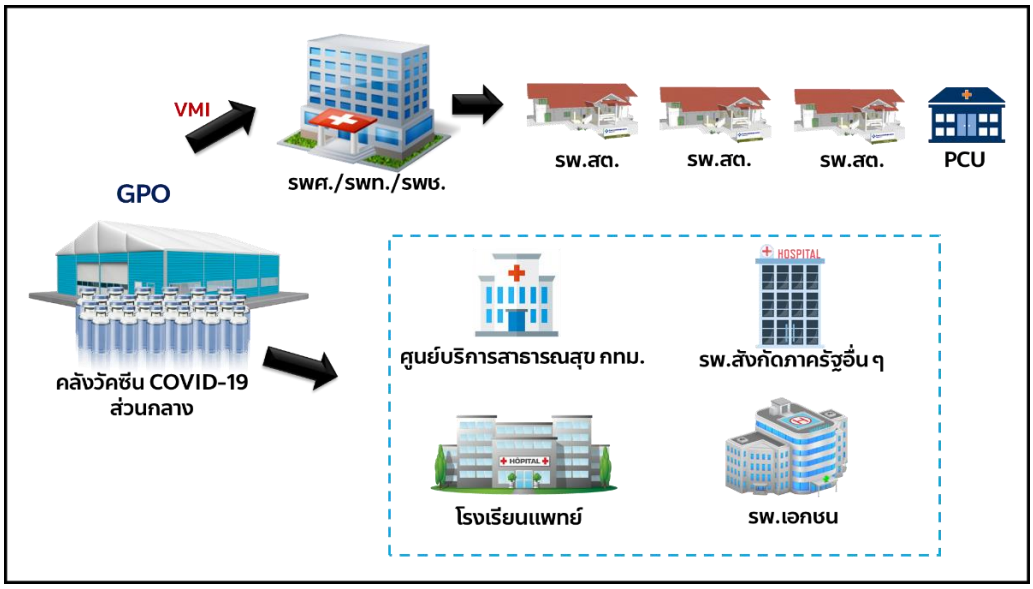
At the time of this report, Thailand was preparing to procure and administer enough Covid-19 vaccine for all Thai citizens and, ostensibly, all residents of the country. The MOPH is ensuring that only quality vaccines are to be used, and the roll-out is expected to occur in two stages:

Stage 1 is during the initial period of limited vaccine supply;
Stage 2 is when there is ample supply for all.

Since the vaccination will be provided nationwide, it is necessary for all provinces to conduct preparations to administer the vaccine, monitor side effects, and keep records of service. The MOPH has produced guidelines to help provinces prepare to receive, store, deliver, and administer the Covid-19 vaccine at every level in the system. The government has established a priority system of vaccine recipients for the initial stage when supply is limited. Registration for appointments to receive the vaccine was on-going at the time of this report. The guidelines may need to be adjusted as the supply of vaccine, nature of the strains of Covid-19 circulating in Thailand, side effects, health consequences of the vaccine, or partial resistance to the vaccine emerge.

Figure 13: Guidelines for Distribution of the Covid-19 Vaccine

Central Covid-19 vaccines stock at GPO
Distribute to MOPH-regional /provincial/district hospitals by VMI system
Distribute to Bangkok health centers. non-MOPH government hospitals, medical schools and private hospitals



Source: Task Force for Vaccine Service, Training and Control

1) Vision:

All persons in Thailand can access a quality vaccine that is safe and effective against Covid-19

2) Indicators of performance

2.1) Reduced Covid-19 incidence and mortality
2.2) Maintenance of the health/medical service delivery system
2.3) Stimulation of the society and economy of the country

3) Principles

Administration of the vaccine will be based on ethical principles, equal access, technical specifications, quantities of vaccine stocks, and ability to give the vaccine in the different contexts around the county.

4) Objective

4.1) To create a system for management and distribution of Covid-19 vaccine at the province level that is efficient and comprehensive for the target population.

4.2) To create a system of services, surveillance, and monitoring the safety of the vaccine.

5) Key mechanism and measures

5.1) Strategy for information dissemination to educate the public

- Prepare content that is factual and up-to-date
- Disseminate the information in an appropriate format and through appropriate channels
- Monitor and dispel myths or false information

5.2) Strategy for quality services which adequately cover the target population in an efficient manner

- Train personnel
- Create a cold chain system and prepare equipment and supplies
- Distribute the vaccine for full coverage of the population
- Mobilize collaboration of the government and private sector to administer the vaccine

5.3) Strategy for ensuring the quality of the vaccine and monitor adverse effects (AEFI)

- Certify the quality of the vaccine according to standard
- Prepare information packages for reporting and monitoring side effects
- Assist and ameliorate cases of side effects

5.4) Strategy for developing a vaccine management information system

- Establish a system for registering to receive the vaccine, follow-up and control using IT
- Prepare information packages for reporting and monitoring side effects
- Link databases through collaboration between the public and private sectors

5.5) Strategy for knowledge management to improve vaccine services

- Prepare technical information packages for health personnel and the population
- Prepare plans for research and evaluation of the quality of the vaccine and services
- Prepare policy recommendations

6) Target groups

6.1) Stage 1: There is limited supply of vaccine for epidemic areas. Vaccination is provided to reduce Covid-19 incidence and mortality, and to maintain the viability of the health service system. The priority recipients of the vaccine at this stage include the following:

- Clinical personnel, public health personnel, front-line workers in both the public and private sectors;

- Persons with underlying conditions which make them more vulnerable to adverse consequences of Covid-19, including persons with the following conditions:
    - Severe chronic respiratory disease such as COPD; poorly controlled asthma
    - Cardiovascular disease
    - Chronic kidney disease in stage 5 who received kidney replacement therapy
    - Cerebrovascular disease
    - All types of cancer during chemotherapy, radiotherapy and autoimmune therapy
    - Diabetes
    - Obesity, weighing more than 100 kilograms or BMI more than 35 kilograms per square meter.
- Persons age 60 years or older
- Health/clinical staff who are in regular contact with Covid-19 patients

6.2) Stage 2, when there is ample supply of vaccine for total coverage of the country. Vaccination is provided to stimulate the society and the economy, and as a national security measure to create herd immunity, and return the country to a new normal status. Target groups for the vaccine include the following:

- Persons identified in Stage 1
- Clinical personnel, public health personnel, front-line workers
- Persons working in the tourism sector, such as hotel workers, guides, staff of entertainment establishments
- Persons who have to travel internationally such as plane crew, boat/ship crew, international business people
- General population
- Embassy staff, staff of international organizations, long-term foreign residents of Thailand
- Laborers in the industrial sector

These specifications may be adjusted depending on the supply and properties of the vaccines.

7) Key steps in implementation

7.1) Preparation of services through orientation sessions, meetings, training, and needs assessments on the following issues:

- Cold chain and vaccine handling
- Vaccination service
- Survey of potential vaccine recipients
- Guidelines for administering the vaccine

7.2) Service units prepare plans which cover the following:

- Specify the areas and quotas for vaccine service
- Conduct preparedness and specify the team responsible for services, including
    - Registering and appointments
    - Vaccine providers in the hospital
    - Mobile vaccine team
    - Team for vaccine supply management and cold chain
    - Team to monitor and follow up adverse events related to the vaccine
- Specify a plan for vaccine service, and inform the population
- Develop a registration system (application, Web-based)

- Identify vaccination sites
- Define the day and time for vaccine service

7.3) Registering persons in the target group for vaccine appointments through one of the following:

- Set up a registration unit to make appointments for vaccination
- Have the target group register for vaccination and appointment for service themselves

7.4) Administer the vaccine to the target group, record service statistics, and observe for signs of post-vaccine side effects

7.5) Monitor and follow up vaccine recipients

Figure 14: Steps in Implementing the Covid-19 Vaccine Service

8) Support from the central authority

8.1) Shipping the vaccine using the routine system of the GPO

8.2) Prepare the vaccine, equipment, and related supplies such as needles, syringes, vaccine containers, etc., at least 1 to 2 weeks before providing the service

8.3) Increase the frequency of ordering vaccine and equipment/supplies as necessary and as supplies of these are available

8.4) Prepare a plan for refrigeration of back-up supplies of vaccine in the province (at least one refrigeration unit per province)

Figure 15: Steps in Receiving the Covid-19 Vaccine at the Hospital

It takes 5 to 7 minutes; then wait for 30 minutes to be sure there are no side effects

Pre-service screening: Temperature check, hand hygiene

Step 1: Register (get card), Step 2: Weight & BP measurement; Step 3: Screen/history; risk assessment; sign consent form; Step 4: Wait for the vaccine; Step 5: Receive the vaccine; Step 6: wait for 30 minutes and scan the LINE application official account “Mor Phrom”; Step 7: Physical check before leaving, and receive information on post-vaccine practices; Step 8: Dash Board for evaluation the outcomes and coverage of the vaccine service, and log of adverse events (LINE OA Mor Phrom)

Chapter 7: Business Continuity Plan (BCP)

The BCP is a preparedness document for organizations/worksites to adjust and adapt the new normal during the Covid-19 pandemic. The plan is to produce systematic action to prevent and respond to epidemic spread of Covid-19 or the threat of an epidemic.

1) Objective

1.1) To help organizations/worksites to adjust skillfully to the situation under the epidemic spread of Covid-19 and the containment efforts

1.2) To ensure the safety of the site, personnel, and resources

2) The conceptual framework is a 4-way unified model (ref: Wuhan Model) to implement control, treatment, and management of resources, both public and private, in a unified way (respond as one).

2.1) Unified approach to patients: This includes advocacy for a standard response to the epidemic in tandem with a system of care for Covid-19 patients as well as patients with other conditions in the same facility who require on-going treatment as appropriate for the location and context.

2.2) Unified expertise: This covers the recruitment and distribution of personnel in all related disciplines for the whole province or administrative area, as one.

2.3) Unified resources: This includes clinical facilities, equipment, medical supplies, medicines, procurement, and distribution by viewing the province as a single entity.

2.4) Unified treatment: This includes use of the latest clinical guidelines as a single standard for case management.

3) Role and key functions of the relevant agencies

3.1) The MOPH has the role and authority, as stipulated by the revised Public Health Act of 2002, to promote the health of the population through prevention, control, treatment, and rehabilitation, in collaboration with other government agencies as specified by law.

3.2) The MOPH has the mandate and obligation to perform the following key actions in response to the Covid-19 epidemic:

- Advocate for actions to respond to the epidemic including the care and service system for Covid-19 patients
- Care and services for non-Covid-19 patients who require on-going treatment and attention
- Advocacy for implementation of key bureaus and departments under the MOPH

3.3) Personnel and resources

1. Personnel in health facilities
    - Medical doctors

Health region	Physician (Chest)	Physician (Medical emergency)	Physician (Infectious)	Physicians (Anesthesio-logist	MD (Epidemio-logy)	MD (other specialty)	MD	Total doctors
Total	**87**	**285**	**42**	**534**	**59**	**9,571**	**11,624**	**22,202**
1	10	35	4	60	15	1,020	1,256	**2,400**
2	4	15	6	35	6	551	701	**1,318**
3	2	17	-	28	-	404	636	**1,087**

Health region	Physician (Chest)	Physician (Medical emergency)	Physician (Infectious)	Physicians (Anesthesio-logist	MD (Epidemio-logy)	MD (other specialty)	MD	Total doctors
4	8	19	1	46	4	850	1,034	**1,962**
5	11	25	3	62	4	981	964	**2,050**
6	8	19	3	45	5	834	1,244	**2,158**
7	3	25	3	36	6	661	877	**1,611**
8	5	17	-	36	2	643	863	**1,566**
9	11	30	4	43	5	863	1,254	**2,210**
10	8	16	5	34	3	620	780	**1,466**
11	2	17	2	32	2	657	1,002	**1,714**
12	6	31	6	34	4	808	926	**1,815**
13	9	19	5	43	3	679	87	**845**

- Nurses

Health region	Internal medicine	Anesthesia	Infection control	ICU	Other specialties	ER	Total
Total	9,878	3,659	1,480	8,376	86,923	10,467	120,783
1	873	373	157	944	8,628	1,052	12,027
2	718	278	82	657	5,213	673	7,621
3	399	162	75	280	3,704	522	5,142
4	970	275	143	678	7,026	878	9,970
5	1,186	407	151	1,103	8,008	990	11,845
6	1,176	351	118	945	7,498	1,074	11,162
7	603	326	100	476	6,632	824	8,961
8	712	374	163	574	7,387	918	10,128
9	1,012	348	124	693	8,315	961	11,453
10	578	249	96	735	6,101	649	8,408
11	790	273	128	575	6,473	895	9,134
12	852	243	143	716	8,262	1,031	11,247
13	9	-	-	-	3,676	-	3,685

2. Resources in health service units

- Number of beds in health service units

Health region	Number of beds	ICU surgery	ICU general medicine	ICU pediatrics	ICU Ob-GYN	ICU general	NICU	CCU	OR	OPD	Total
Total	90,889	884	1,073	412	10	1,169	1,055	362	1,932	8,004	105,790
1	9,129	88	127	64	-	155	118	34	230	955	10,900
2	5,788	66	80	51	-	54	79	22	106	479	6,725
3	4,339	26	32	-	-	56	37	5	93	341	4,929
4	7,041	97	103	26	-	113	87	8	156	630	8,261
5	9,079	106	102	38	-	196	110	45	192	790	10,658
6	8,965	80	90	59	-	100	107	49	184	726	10,360
7	7,028	59	62	18	2	66	68	28	155	639	8,125
8	7,885	58	70	24	-	97	85	16	181	653	9,069
9	10,248	74	116	32	-	103	82	44	196	946	11,841
10	6,729	110	145	38	-	77	81	50	140	555	7,925

Health region	Number of beds	ICU surgery	ICU general medicine	ICU pediatrics	ICU Ob-GYN	ICU general	NICU	CCU	OR	OPD	Total
11	7,322	59	76	28	-	97	82	35	162	657	8,518
12	7,336	61	70	34	8	55	119	26	137	633	8,479

- Summary of supplies needed for service units to respond to Covid-19

Health region	Resources		ห้องแยกโรคที่พร้อมใช้งาน					
			ARI Clinic		AIIR (rooms)	Modified AIIR (rooms)	Isolate Room (rooms)	Cohort Ward (beds)
	N 95	PPE (Set)	ASM-1 hospitals	Clinics				
Total	210,427	29,723	467	561	338	762	2,177	2,747
1	17,814	2,599	112	112	23	90	255	161
2	8,759	6,235	51	47	12	48	119	317
3	8,465	301	5	14	5	54	120	86
4	17,687	1,921	71	63	20	47	6	343
5	17,830	769	N/A	N/A	34	68	236	257
6	26,310	2,465	14	34	53	74	260	216
7	20,439	3,276	6	6	7	64	142	330
8	13,787	1,751	10	34	11	75	136	371
9	33,233	4,758	12	90	18	85	182	43
10	16,416	1,063	71	71	10	46	134	203
11	16,730	2,354	71	43	48	50	110	189
12	12,960	2,261	10	13	61	51	404	160
13	N/A	N/A	34	34	36	10	73	71

Source: Division for Public Health Emergency, March 22, 2020

4) Risk management by the organization/worksite

Agencies under the MOPH need to prepare to respond to the spread of Covid-19 and accurately assess risk of an outbreak. These entities need to cope with the situation while continuing to implement their core functions without uninterruption. That will mean special allocation of personnel and resources without seriously disrupting or stopping the routine tasks which these agencies perform. The following table itemizes organizational risk for staff, premises (facilities), operations, and assets, and the potential for adverse impact by type.

Areas of special preparedness for the MOPH by level of risk

Risk Area	Potential impact for the organization	Low risk			Moderate risk
		low	Mid -dle	high	
Staff -safety -injury/illness -inability to work -skill set -spirit/motivation -increased workload	1.1 Staff have risk of Covid infection, both from their work and in the community. If a staff person is diagnosed with Covid, they must be treated, separated, and stop work, leading to staff shortages 1.2 Staff have to rotate to help others under an increased workload burden; this can disrupt the continuity of services 1.3 Staff who have exposure to Covid as part of their job may feel anxiety and lose motivation to stay on the job 1.4 Staff who live in areas that are locked down are not able to travel to work, causing staff shortages				
Premises (facilities)	2.1 The facilities tend to have crowding which increases risk of Covid transmission; this may require closing of the facilities temporarily 2.2 The volume of Covid-contaminated waste material is an environmental health threat				
Duties/tasks	3.1 The increased workload to deal with Covid means that there is less time and staff to carry out the routine functions				
Assets	4.1 The extra supplies needed to respond to Covid post a cost burden on the facility				

5) Measures to mitigate risk

Implementation in a situation of widespread community transmission of Covid-19:

Risk	Activities to manage risk	Duration of time required	Documents and material support	Responsibility of
Staff -safety -injury/illness -inability to work -skill set -spirit/motivation -increased workload	**Safety from Covid in the workplace and community:** 1.Educate on knowledge and methods for correct prevention 2.Procure medicines and supplies in adequate quantity 3.Have a system to help process treatment efficiently if Covid infection is confirmed **General illness/injury** 1. Help access services **Taking leave if the staff has risk or needs quarantine due to COVID-19** 1. Facilitate transportation during an epidemic 2. Work-from-home policy 3. Stagger work days to reduce crowding **Skill sets** 1. Produce a training plan for specific skills in coping with an epidemic 2.Conduct the training 3.Provide counseling during emergencies	1 week	Link with departments	-Ministry level: IC administrator - Department level: Deputy-DG - Regional level: Government inspector -Provincial level: PHO - District level: Hospital director at all levels

Risk	Activities to manage risk	Duration of time required	Documents and material support	Responsibility of
	Spirit/motivation 1. Arrange hazardous duty pay, health insurance, for staff at elevated risk 2. Create a system of empowerment of staff at elevated risk **Increased workload** 1.Assign primary and secondary responsibilities for key management tasks 2. Produce a plan for preparing alternate staff in a wide epidemic 3.Identify staff with special skills to be team leaders 4.Produce a registry of persons by area of responsibility and coordinators			
Premises (facilities)	Central and provincial 1. Conduct preparedness 2.Specify prevention measures, hygiene for the worksite 3. Specify measures for environmental health and sanitation inside and around the facility **Central and Provincial** 1. Maintain a system of care for non-COVID-19 patients 2.Create a system for care of Covid patients 3. Transfer non-Covid patients to secondary hospitals to reduce crowding 4.Apply the system of primary and secondary hospitals for care of Covid patients 5.Create a ARI cohort ward for separates types of disease 6.Define environmental sanitation measures in and around the facility	1 week	Draft guidelines from the Department of Medical Services	-Ministry level: Deputy administrator - Department level: IC of every department - Regional level: Government inspector -Provincial level: PHO - District level: Hospital director at all levels
Duties/tasks	**Central and Provincial** 1.Prioritize tasks and assign staff to those 2. Create an information system -Use central databases for staff, service units, epidemic data 3. Framework and guidelines for implementation during an epidemic and key role 4. Prepare a plan for emergency information 5. Use digital channels for communication, or phones for video conferencing, LINE group application, for decision-making and trouble-shooting among groups such as the logistics team, the ICU team, the mental health team, etc. 6. Create a counseling service	1 week	In accordance with guidelines for hospital management in the situation of a widespread epidemic of Covid-19 issued by the Department of Medical Services	-Ministry level: Deputy administrator - Department level: IC of every department - Regional level: Government inspector -Provincial level: PHO - District level: Hospital director at all levels

Risk	Activities to manage risk	Duration of time required	Documents and material support	Responsibility of
	7. Produce a handbook on procedures, and business support plan consistent with the MOPH guidelines			
Assets	1. Procure and distribute supplies in adequate quantities 2. Implement according to directives and procedures in procurement as defined by the MOPH 3.Prepare funding proposals for emergency aid 4.Prepare a plan for receiving donations	1 week		- Location: Health unit -Medicines, medical supplies: GPO Referral Vehicle: Health Management Division, National Institute for Emergency Medicine -Central Budget: Finance office of the Office of the Permanent Secretary
5) Management	1. Facilitate administration, controls, monitoring at the Ministerial level by the Office of the Permanent Secretary for Health 2.Manage activities at the zone level via the MOPH inspectors 3. Management at the provincial level is via the PHO	Throughout the period that the plan is active		Permanent Secretary of Health; Government inspectors; Provincial Health Officer

6) Preparation and implementation according to plan

Item	Activity
1	Assessment of risk and trend of the Covid-19 epidemic
2	Mission priority 2.1 Mission according to the incident command system 1) Situation awareness mission 2) Coordinating mission 3) Risk communication mission 4) Mission, strategy and plan 5) Operational mission (Public Health and Non-Public Health) 6) Mission, finance and law 7) Entry and exit control missions 8) Logistics mission 2.2 Mission in medicine and public health 1) Pre-hospital care 2) Intra-Hospital care 3) Disease Control and Environmental health 4) Psychological Care 5) Forensic 6) Laboratory and others

	2.3 Missions that can be reduced or work-from-home 1) Work according to the organization's mission 2) Other work such as administrative, finance and accounting
3	Human resources survey for medical personnel and support personnel from the public and private sectors
4	Survey of facility resources, drugs and medical supplies, from the public and private sectors
5	Order of reducing or shutting down clinical facilities in response to the spread of Covid-19
6	Prepare a map to identify the location of the service units, significant sites and resources in the provinces, zone, and country, along with a patient referral plan
7	Estimate personnel and resources when launching the plan. 1. Make a schedule of operations according to the mission 2. Schedule support or volunteering from other departments. Estimate the needed quantity of safety stock resources for 1 month and 3 months
8	Make agreements and collaborate with external parties in emergencies for such resources as: 8.1 Hospitals, both public and private sectors, Ministry of Defense College 8.2 Medicines and medical products, such as pharmaceutical companies, medical equipment companies, associations of pharmacies, nutritionists, drinking water 8.3 Lifeline support such as electricity, oxygen, PTT, generators Internet WIFI medical waste disposal company
9	Implement a plan to monitor problems and provide support as appropriate

Guidance for the team to assess the situation and risk

1. Conduct risk assessment by area in the province, and maintain measures and operations that are prescribed for an emergency situation
2. Adapt and adjust to the dynamic situation; analyze up-to-date data
3. Conduct surveillance and follow-up of the epidemic and other events in the community, such as festivals, or other gatherings that could lead to super-spreading of Covid-19
4. Assess/limit the movement population and non-Thai migrant workers, school children, and mass public events
5. Prioritize the importance of data sets for evidence-based decision-making
6. Communicate and share knowledge

Recommendations for special action in response to the 2nd wave of spread of the Covid-19 epidemic

1. Staff assigned to hot spots need to be rotated out after working for periods of up to 2 weeks
2. Provide life insurance and hazardous duty pay for all personnel who qualify
3. Increase staff in the work clusters of the hospital through in-service training for care of Covid-19 patients
4. Arrange personnel for the incident command system, and arrange shift rotation
5. Consider recruiting volunteers for tasks that do not require technical expertise
6. Create teams for risk assessment and situation analysis to keep pace with the changing circumstances of spread or adverse events that may impact staff or patients
7. Monitor the mental health of front-line staff on a regular basis

7) Communication Plan

Objective	Target Group	Key Content	Media Channel
Provide information to help preparation and implementation of the plan	Staff of the MOPH	1. Restrictions on implementation during an emergency 2. Guidelines for operating in an emergency 3. Guidelines for the rehabilitation of the organization after an emergency 4. Guidelines for home quarantine issued by Mental Health Department	-government information channels - channels of the MOPH -social media
Inform about changes required that are different from the normal situation	Agencies in the network and the general population	1. Guidelines for operating conditions in an emergency 2. Guidelines for receiving services in facilities / organizations under the MOPH 3. Guidelines for home quarantine issued by the Mental Health Department	-government information channels - channels of the MOPH -social media -influencers

8) Plan Review

8.1) Plan rehearsal

- Desk rehearsal
- Practice rehearsal

8.2) Review and modify the plan

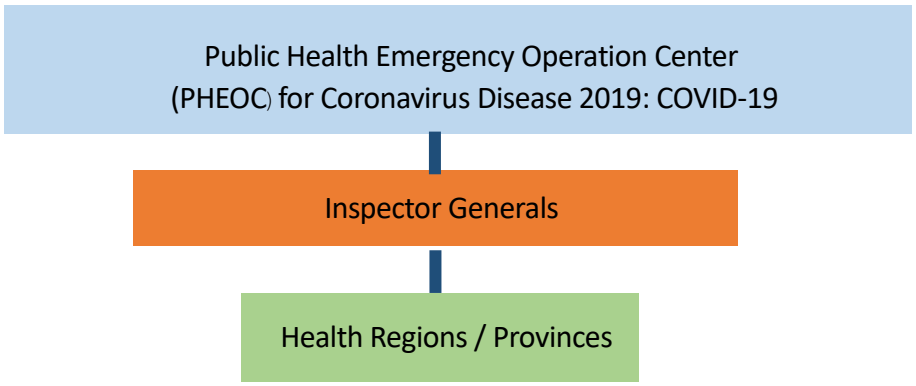
8.3) Checklist for plan review

No.	Questions	Yes	No
1	Is there a document to identify the performance of duties and services required by the organization?		
2	Is there a document indicating the potential for impact of the epidemic to the organization and the services?		
3	Is there is a list of personnel by roles and responsibility?		
4	Is there a document listing skill that will be required to continue operations and deliver critical services?		
5	Is there a document to disseminate the roles of the volunteers in the performance of their job?		
6	Is there a document specifying the management of meetings of the main personnel?		

No.	Questions	Yes	No
7	Is there relevant information, special information, technology and or equipment / tools used for implementation?		
8	Is there is a list of suppliers of goods / raw materials, and the contracted companies that are necessary for the continuation of the work?		
9	Based on Item 8, are there alternative options?		
10	Based on Item 8, have you seen the plan and are confident that those companies will provide support and services to the organization?		
11	Are personnel in your organization aware of their own duties to respond when an event occurs related to the epidemic?		
12	Does the organization have a policy on disease prevention by not using drugs or medical supplies?		
13	Are the managers of the organization giving priority to non-drug and medical preventive measures?		
14	Have personnel in the organization adopted prevention measures by non-drug use and medical interventions (for example, work-from-home)?		
15	Is there information containing contact details of workers, volunteers, service providers, contractors, couriers, raw material providers, health insurance companies, etc. in the event of an emergency?		
16	Is there a back-up list and addresses of service providers, volunteers, suppliers, vendors, shippers, health insurance company, etc. listed in Item 15?		
17	Are there nearby organizations or worksites which have a risk of Covid spread, e.g., by having large lobbies with heavy turnover of visitors?		
18	Is there is a system for supplying equipment to prevent infection, for example, sanitary masks, latex gloves, and hand gel, etc.?		
19	Is there a cash reserve?		

Chapter 8: Advocacy for the Strategic Response to the new wave of the Covid-19 Epidemic in Thailand

The response to the new wave of epidemic spread of Covid-19 (which began in December 2020) includes the following levels of action: (1) Public Health Emergency Operation Center (PHEOC) for Covid-19; (2) Government health inspectors; and (3) Health regions/provinces.



8.1 Advocacy process

- The PHEOC for Covid-19 is under the Office of the Permanent Secretary of Health and has the principal role of overseeing the administration of the strategy, issuing directives, controlling implementation, and evaluating obstacles and outcomes to the response to the 2nd wave of Covid-19 spread.
- The network of government health inspectors perform field monitoring, control, follow-up, and inspection of implementation according to the strategic response to Covid-19 by provinces in the various health zones of the country. The findings of the inspections are reported to the PHEOC.
- The health zones/provinces implement the strategic response at the provincial and sub-provincial levels. The provinces must have clear plans for the response which are integrated at the zonal level and with the regional Communicable Disease Committee plans for the province. The results of implementation are reported to their respective zonal health inspector.

8.2 Guidelines for managing a database of patients and resource management

Effective management of the response to the Covid-19 epidemic requires accurate and timely data. This includes data on care of patients and related resources, such as hospital bed capacity by type, ventilators, medicines, PPE, etc. This information system will ensure preparedness and adequate stocks of supplies when needed. Management information systems depend on quick and accurate data entry, data consolidation, and automatic report generation. There need to be internal data quality control mechanisms. The databases need to be connected electronically, for example at the Information and Communication Center of the Office of the Permanent Secretary of the MOPH, the Department of Medical Services, the Division of Public Health Emergency, and other related agencies. The MOPH is using a Co-Ward system which can be seen in detail at http://co-ward.moph.go.th/

1) Objective

1.1) To integrate data on Covid-19 patients using the Co-Lab and Co-Ward systems, and the data on prevention and control of disease. This system is efficient and fast, and reduces errors of data entry and data manipulation. This reduces the workload of staff, and the database can be linked across all dimensions. The data can be quickly summarized into ready-to-read reports for forwarding to the CCSA.

1.2) To use the data to help manage supplies (N95, PPE, medicines, Favipiravir, etc.) to prevent stock-outs, and efficient resupply to hospitals.

1.3) To manage inventory and process orders and dispensing between central hospitals and hospitals in the network.

1.4) To use the data to help hospitals cope with the caseload of Covid-19 patients and monitor assistance from central offices.

1.5) To use the data to re-order supplies when stocks are low due to surges of need when the pattern of Covid-19 spread changes abruptly.

2) Nodes

2.1) The hospitals in the network of the central (host) hospital are hospitals which provide examination, diagnosis, and treatment for Covid-19, and receive distribution of medicines and clinical supplies from the host hospital.

2.2) The central (or host) hospital has the responsibility to distribute medicines and clinical supplies to hospitals in the network. The provincial hospital is the host for distribution of medicines to the other hospitals in the province. The provincial health office (PHO) is the host for distributing N95 masks and other PPE to service units in the province.

2.3) Provincial Health Office (PHO)

Table: Mechanisms and Roles Based on Guidelines for Management of the Patient Database and Management of Data on Related Resources

Data users	Agencies	Roles	Frequency	Responsible persons
Node	All provincial health offices	• N95/PPE stocks for hospitals in the provinces • Receive products from GPO • Distribute to hospitals	Agreed in each province	Provincial health office
	All provincial hospitals	• Drug stock for hospitals in the provinces • Receive products from GPO • Distribute to hospitals	Agreed in each province	Pharmacists of provincial hospitals
Hospitals	All hospitals	1. Data input for Covid19 patients 2. Update status of Covid19 patients	1. Admission date 2. Daily until discharge	Ward nurses
		1. Data input for hospital resources; N95/PPE/Mask; Beds/respirators 2. Data input for mask distribution to subdistrict health promoting hospitals 3. Data input for resource needs	1. Daily 2. Data change 3. Data change	Responsible person for non-medical health products
		1. Data input for hospital name, address and receiver 2. Manage health benefits of patients	• Start the use of the program software	System administrators at hospitals

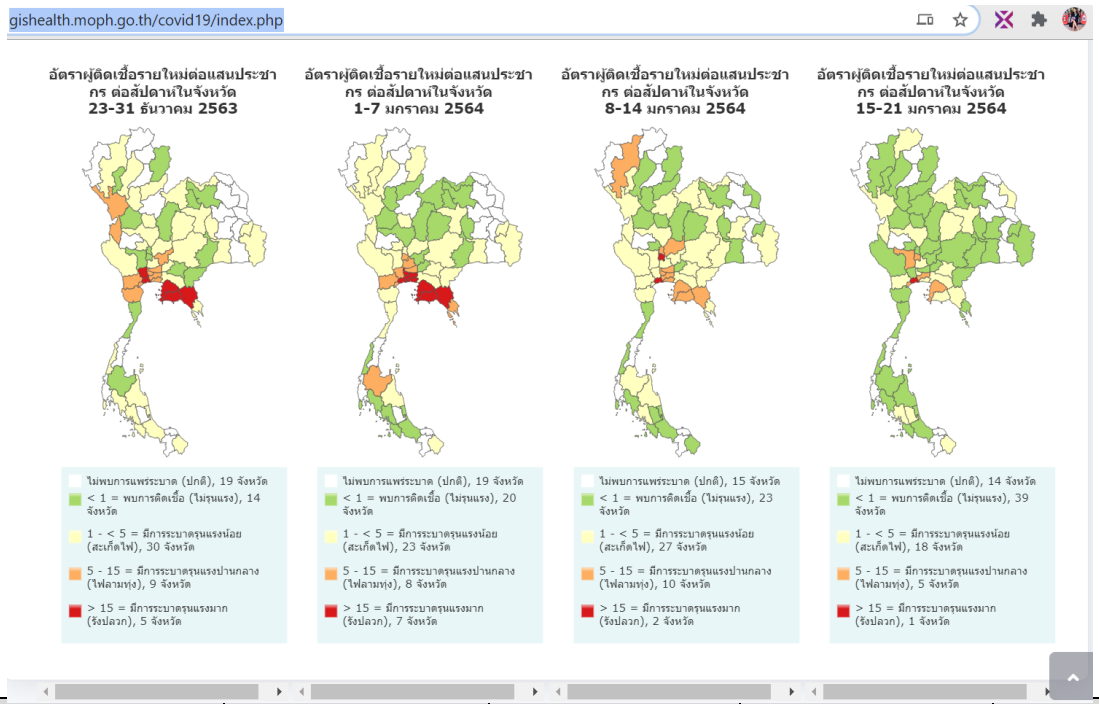
Data users	Agencies	Roles	Frequency	Responsible persons
Provincial health offices	All provincial health offices	1. Administer the system 2. Check users accounts 3. Monitor the use of resources		System administrators at provincial hospitals (previous EOC)
Regional health offices	All regional health offices	• Monitor the use of resources for the region		Representative at regional level

8.3 Control and monitoring of implementation of the strategic response to the 2nd wave of epidemic spread of Covid-19

The MOPH has the principal responsibility to keep track of progress in implementation of the strategic response to Covid-19 and to track achievement against the indicator targets. Those are measures of success and the basis for assessing cost-effectiveness of the response. The following are key offices/entities in the monitoring and evaluation process:

- PHEOC
- Government health inspectors
- Emergency Operation Center (EOC)
- GIS Health Covid-19 system (http://gishealth.moph.go.th/Covid-1919/)

Figure 16: Implementation of the Strategic Response to the 2nd wave of the Covid-19 Epidemic in Thailand: By Province and Criteria for Classification of Threat using GIS Health Covid-19 Technology



23-31 Dec 20	1-7 Jan 21	8-14 Jan 21	15-21 Jan 21	Rate/100 000 pop
19 provinces	19 provinces	15 provinces	14 provinces	White: 0
14 provinces	20 provinces	23 provinces	39 provinces	Green: <1
30 provinces	23 provinces	27 provinces	18 provinces	Yellow: 1-<5
9 provinces	8 provinces	10 provinces	5 provinces	Orange: 5-15
5 provinces	7 provinces	2 provinces	1 province	Red: >15 cases

APPENDIX

Appendix A: Terms

1. Covid-19
2. Quarantine
    - State Quarantine
    - Local Quarantine
    - Alternative State Quarantine
    - Home quarantine
    - Factory Isolation
3. Surgical Mask
4. N95 sanitary mask
5. Personal Protective Equipment (PPE)
6. Favipiravir anti-viral drug
7. Volume Ventilator
8. Center for Covid-19 Situation Administration (CCSA)
9. Patient Under Investigation (PUI)
10. Social Distancing
11. Super-spreading Event
12. Active surveillance
13. Cluster sampling
14. Active case finding
15. Contact tracing
16. Case investigation

Appendix B: Process of Developing the Strategic Response to the 2nd wave of the Covid-19 Epidemic in Thailand

Steps in the Strategic Response to the 2nd Wave of Covid-19 Epidemic in Thailand (2021)

Date	Meeting/Consultation	Recommendations
Jan. 5, 2021	Public Health Emergency Operation Center (PHEOC) meeting; Chairman of the meeting Dr. Kiattaphum Wongchit, Permanent Secretary, Ministry of Public Health: Proposed the strategic framework for the response to Covid-19	1. Agree and adjust the strategy framework to support the new coronavirus outbreak (COVID-19) to have five key components as follows: 1) Virus infection prevention control plan Corona 2019 (COVID-19) at the provincial level and health zone level 2) Mental health plan 3) Communication plan 4) Vaccine management plan 5) Business support plan (Business Continuity Plan (BCP) and other plans. 2. Assign provinces and health zones to establish a plan for COVID-19 response
Jan. 5	Consultation on formulating strategies for dealing with infectious disease outbreaks and the 2nd wave of coronavirus (COVID-19) with representatives of the Coordinating Mission Group and Secretary (Liaison) Chairman of the Dialogue: Dr. Supachok Vejpharm, Director of Strategy and Planning Division Office of the Permanent Secretary, Ministry of Public Health	1. Have the representatives of the Planning Team attend a meeting with the Scientific Response Team to discuss the definition of the situation at each level (severe, emerging, etc.) and the determination of important technical measures 2. Determine the time to implement a plan for the response to Coronavirus 2019 (COVID-19) at the provincial level, and zone level by January 8, 2021
Jan. 5	Meeting with the Scientific Response Team and the Strategy and Planning Division, Planning Working Group Chairman of the meeting: Dr. Taweesup Sirapraphasiri, Medical Specialist, Department of Disease Control Discuss details of the framework and guidelines for formulating strategies for dealing with the 2nd wave of the Covid-19 epidemic	1. Propose the objectives of the strategy formation as follows: 1) reduce new infections 2) lower mortality 2. Set strategies for disease control, divided into 2 groups: 1) Thai people 2) Non-Thai migrant workers 2.1) Who will cross the border 2.2) People already in the country 3. Make the working group plan. (Planning Team) studying the definition of color grading from 2 sources, namely 1) Definition according to the Department of Disease Control 2) Definition according to the CSAA, with notice that if considered according to the definition of the CSAA, red will not decline because they use the cumulative total of cases. 4. Targeting in the red area: The target will be issued in two periods: In the first 28 days, the goal is the prevent the number of cases from increasing; and in the next 28 days the goal is to reduce the number of cases. Other areas are to reduce their severity level within 28 days

Date	Meeting/Consultation	Recommendations
Jan. 7	The meeting discussed the issue of preparing a plan for the 2nd wave of Covid spread together with department representatives and the Strategy and Planning Division, Office of the Permanent Secretary of Health Meeting Chairman: Dr. Sura Wisetsak, Deputy Permanent Secretary, Ministry of Public Health Discuss details of measures based on the framework and guidelines for formulating strategies for dealing with the 2nd wave of Covid-19	1. Assign the person responsible for the main measures for the prevention of Covid-19 as follows: 1) Department of Disease Control has created a track for public health measures. 2) The Department of Medical Services has created a track for medical measures. 3) The Strategy and Planning Division, Office of the Permanent Secretary, Ministry of Public Health has created a track for social measures
Jan. 8	Consultation on the preparation of plans for the response to the 2nd wave of Covid-19 together with the consultant of the Department of Disease Control and the Strategy and Planning Division Chairman of the Dialogue: Dr. Chakrarat Pittayawongsanont, Director of Epidemiology Division, Department of Disease Control Discuss the details of the measures and guidelines for preparing strategies to respond to the 2nd wave of Covid-19	1. Additional details of criteria for determining the level of risk and problem conditions in the area are as follows: 1) Areas where outbreaks were not detected: Normal areas (white), situations where no outbreak was detected in the province, and no infected persons were found in the province for at least 28 days. Active case surveillance must be undertaken to completely cover the target; 2) The area where the infection was found though without epidemic spread: mild areas (Green). This is the situation where incidence is less than 1 per 100,000 population per week, with no infection detected in the last 7 days and no infection was found in all pneumonia patients in the surveillance system. The province is to remain vigilant. 3) Less severe epidemic areas (yellow) where incidence is 1-5 new infected cases per 100,000 population per week and positivity rate is less than 2 percent in community case finding and disease screening surveillance at risk groups. 4) Moderately severe epidemic areas (orange): Incidence is 5-15 cases per 100,000 population per week or have Super spreading event of more than 6 people in the area or positivity rate of at least 5% from active case-finding community and in surveillance screening at risk groups. 5) Extremely severe epidemic area: (red) where incidence is more than 15 cases per 100,000 population per week, or more a super spreading event with at least 50 people in the area 2. Measures to cope with the outbreak of Covid are as follows: 1) Public health measures 2) Medical measures 3) Social measures

Date	Meeting/Consultation	Recommendations
		3. Assigned Deputy Director of the Division of Vector-Borne Infectious Diseases, Department of Disease Control (Dr. Darinthorn Ariachokchai) to prepare guidelines for a response plan for the provincial public health response
Jan. 12	Public Health Emergency Operation Center (PHEOC) meeting Chairman of the meeting: Dr. Kiattaphum Wongchit, Permanent Secretary, Ministry of Public Health Propose strategies to support the response to the 2nd wave of Covid-19	1. Agree and propose the Strategy and Work Plan to the Office of the Permanent Secretary, Ministry of Public Health; consider the linkages of the measures under the strategy with measures of the Department of Disease Control. 2. Adjust the operational period according to the goal according to the strategy to support the response to the 2nd wave of Covid spread
Jan. 14	Meeting of the Advisory Panel to the Minister of Public Health on Medical and Public Health Emergencies in the Case of Coronavirus 2019. Chairman of the meeting Dr. M.L. Somchai Chakrapun, Chairman of the Advisory Board to the Minister of Public Health Propose strategies to support the response to the 2nd wave of Covid-19	1. Agree and propose the area to implement the strategy 2. Measures should be set to prepare for entertainment places, places or those which engage in massage, spas or other services that are currently closed 3. Extract lessons learned from Samut Sakhon Province In order to close gaps in other provinces
Jan. 19	Meeting with the Scientific Response Team and the Strategy and Planning Division Office of the Office of the Permanent Secretary of Health Chairman of the meeting: Dr. Taweesap Supsirapraphasiri, Medical Specialist, Department of Disease Control Propose strategies to cope with the 2nd wave of Covid-19	1. The chairman of the meeting assigned the relevant departments to add details of measures to cope with the outbreak of COVID-19 according to academic principles 2. The academic working group (Scientific Response Team) was instructed to provide specific definitions of terms to create confidence in interpretation
Jan. 20	Meeting of the Steering Committee for Medical and Emergency Operations Center Public Health: Case of Covid-19 Chairman of the meeting: Dr. Kiattaphum Wongsarajit, Chairman of the Board of Directors for the Medical and Public Health Emergency Operations Center: Case of COVID-19. Propose strategies to cope with the new wave of Covid-19	1. Agree and hand over the task to the Strategy and Planning Division. Office of the Permanent Secretary, Ministry of Public Health, to propose the strategy to the CSAA to consider direct all relevant agencies to implement the strategy

Appendix C: Guidelines for Preparing the Public Health Emergency Plan at the Provincial Level: Case of Covid-19 Epidemic

Objectives
1. Reduce new infections up to the potential supported by the public health system by: • Effectively manage the spread of infection among migrant workers and border-crossing people • Prevent and control super-spreading events 2. Reduce the mortality rate by: • Detecting Covid patients quickly. • Treatment of patients at high risk or rapid emergence of complications • Protect the elderly population, people with underlying conditions, and other vulnerable people.
Scope and Guidelines
The approach of this strategy to respond to the 2nd wave of Covid-19, the Ministry of Public Health announced on …… .. "The Action Plan and Emergency Response Plan for the Prevention and Control of Coronavirus 2019 (COVID 19) by level of severity and at a time when the Covid-19 vaccine is not yet available (9 September 2020)." This strategy guidance is application by provinces as follows: 1. Each province has different patterns of spread and COVID-19 outbreaks. Therefore, this guidance has built-in flexibility to allow adaptation by the level of severity of each province as follows: 1.1 Severe outbreaks in specific populations such as factory workers, non-Thai migrant laborers 1.2 Events where there is a large group of infected people or are linked (Super spreading event) by attending gambling dens, entertainment establishments, religious rituals, etc. 1.3 Sporadic cases 2. Each province can develop an emergency response plan which comprises of several characteristics of the outbreak by selecting and applying additional measures as appropriate for the situation in the area. 3. Basic measures to be implemented nationwide such as disease control surveillance, monitoring healthcare facilities, caring for the patient, managing quarantine centers, contact tracking, etc. are to proceed according to the original guidelines 4. This guideline recommends one cycle of disease control, which is 28 days. However, every province should assess the situation every day to adjust the action plan to suit the situation in the province. 5. Examples of measures are listed in this document. Provinces need to allocate responsible persons and choose to adjust, increase, reduce, modify as appropriate and working conditions. The province may add additional functions or persons involved in other sectors or in the community to expand the integration and achievement of disease control. 6. Measures can be adjusted in accordance with those prescribed by the Provincial Communicable Disease Committee and the CSAA.

Table 1: Summary of the Strategic Response by Level of Threat of Covid-19

Incident response plan cases of severe outbreaks in specific populations, such as the factories with non-Thai migrant labor:

Province.....Start date of the plan …….Date of the latest update of the plan

Severity of spread	Prevention	Detection	Response		Reducing impact
			Control	Care and treatment	
Extensive spread in migrant workers	-prevent entry to Thailand -prohibit non-family gatherings of >5 people -WFH > 90%	Monitoring proactively in factories / large markets (200 workers or more above) with a focus on the open factories/markets where there are large number of undocumented migrant workers - Screen residents of refugee centers	-Limit movement of migrant workers -organize quarantine	Organize off-site medical care, such as a field hospital	Provide mental health care for persons in quarantine
Super-spreading event	-close places/activities which might seed a super-spreading event -prohibit gatherings of >50 people -WFH > 70%	-conduct surveillance in places at risk where workers or people gather such as markets, factors, communities with migrant labor working in the fisheries (with 200 persons or more) - Monitor the conditions of people returning from an epidemic area	-follow up with at least 80% of highest-risk contacts -limit the movement of migrants -local quarantine	-manage stocks of supplies in the province or health zone to meet the needs of hospitals - prepare for the need to set up field hospitals	-provide compensation to those losing their job or having to close their workplace due to lock-down measures
Sporadic cases in the community, workplace, school	-prohibit gatherings of >100 people -WFH>50%	-conduct surveillance of ILI clusters in the community	-follow up with 100% of highest-risk contacts -limit the movement of migrants -local/home quarantine	-ARI clinic -separate ward -cohort ward	

Action plan: In case of severe epidemic or outbreaks in specific populations such as factory workers, migrant workers

Province…….. Date started using the plan……. Date adjusted the plan…….

Table 2: Objectives and Indicators

Objectives	Indicators at 28 days
1. Contain the area of the epidemic within 28 days	1.1 No establishment, setting, population group, such as worksite, school, hospital, eldercare facility, or people participating in a group activity which had severe epidemic (50 infections or more) has a new outbreak
2. Reduce spread to areas surrounding the epidemic hot zone	2.1 Incidence is <15 per 100,000 population per week 2.2 Positivity rate from active outreach <5%
3. Provide patient care	3.1 There are enough beds to accommodate caseloads (including field hospitals if necessary) 3.2 Covid mortality <0.8%

Table 3: Measures and Activities

Measure 1: Surveillance and Active Case-Finding

Activity	Resources Needed	Person responsible	Data to report	Date of implementation
1.Screen people in quarantine or refugee centers	- PPE …… .. sets - thermometer - swab collection sets - Saliva collection sets - VTM ..... tubes - Lab to test samples - Lab testing capacity Note: consider pooling saliva samples in ratio of 5:1		Number of cases screened and number testing positive	
2. Sample factories, markets, communities with 200+ migrants. The screening quota should not exceed 100 per site, but cover all sites with non-Thai migrant workers	- PPE …… .. sets - thermometer - swab collection sets - Saliva collection sets - VTM ..... tubes - Lab to test samples - Lab testing capacity Note: consider pooling saliva samples in ratio of 5:1		-Number of target sites -Number of sites screened -number of sites with positive tests -number of samples sent to the lab per day -number of positive samples per day	

Measure 2: Follow-up of contact cases and defining the hot zone

Activity	Resources Needed	Person responsible	Data to report	Date of implementation
1. Close worksites with Covid spread 1.1. If test positivity is under 30%, separate the risk contacts and collect specimens 1.2. If test positivity is over 30%, no need to collect more samples	- PPE …… .. sets - thermometer - swab collection sets - Saliva collection sets - VTM ..... tubes - Lab to test samples - Lab testing capacity Note: consider pooling saliva samples in ratio of 5:1	The local administrative organization closes the worksite/place of the outbreak, implements quarantine of close contacts, provide meals for people in quarantine - CDCU…teams - Patient screening teams	- places that are closed due to the outbreak -places linked to the primary source of the outbreak (e.g., residence of workers) -consider conducting more case finding or closures -number of close contacts -Number of samples sent to the lab per day -Number of positive samples per day	
2.Screen people with symptoms of Covid illness	- PPE …… .. sets - thermometer - swab collection sets - Saliva collection sets - VTM ..... tubes - Lab to test samples - Lab testing capacity Note: consider pooling saliva samples in ratio of 5:1	The local administrative organization closes the worksite/place of the outbreak, implements quarantine of close contacts, provide meals for people in quarantine - CDCU…teams - Patient screening teams	“”	
3.Conduct sample at other worksites or places with connections to the primary site of the outbreak	- PPE …… .. sets - thermometer - swab collection sets - Saliva collection sets - VTM ..... tubes - Lab to test samples - Lab testing capacity Note: consider pooling saliva samples in ratio of 5:1	The local administrative organization closes the worksite/place of the outbreak, implements quarantine of close contacts, provide meals for people in quarantine - CDCU…teams - Patient screening teams	“”	
4.Halt travel of the workers		Local administrative		

Activity	Resources Needed	Person responsible	Data to report	Date of implementation
		organization; law enforcement		

Measure 3: Care and Treatment

Activity	Resources Needed	Person responsible	Data to report	Date of implementation
Prepare a place for patient care outside the hospital, such as a field hospital, as per guidance of the Dept. of Medical Services	-patient beds -medicines, clinical supplies, and referral system for complicated cases -PPE	-nursing team -mental health team -security team -sanitation team -meals team -infection control team	- number of available beds -number of beds in use -number of patient referrals -balance of stocks of supplies (PPE, anti-virals)	

Action Plan to respond to a super-spreading event

Province.....Start date of the plan …….Date of the latest update of the plan

Table 4: Objectives and Indicators

Objectives	Indicators at 28 days
Control the event within 28 days	1.1 Screen 80% of close contacts 1.2 No cases found in connection with the event
Prevent another event from occurring	2.1 No setting where people gather (entertainment place, worksite, gambling den, etc) with an outbreak (more than 6 new infections)
Reduce spread of Covid in the population	3. Incidence <5 per 100,000 population per week
Provide patient care	4.1. There is a management system for supplies and patient care 4.2. There is preparation for off-site patient care, such as a field hospital, hospital, if there is a further outbreak 4.3. Covid mortality is <0.8%

Table 5: Measures and Activities

Measure 1: Surveillance and risk site sampling

Activity	Resources Needed	Person responsible	Data to report	Date of implementation
Conduct screening in risk sties. Not more than 100 people need to be screened in a site, but all risk sites should be visited	- swab collection sets - Saliva collection sets - VTM ..... tubes - Lab to test samples - Lab testing capacity Note: consider pooling saliva samples in ratio of 5:1		-Number of target sites -Number of sites screened -number of sites with positive tests -number of samples sent to the lab per day -number of positive samples per day	

Measure 2: Follow-up of contact cases and defining the hot zone

Activity	Resources Needed	Person responsible	Data to report	Date of implementation
Close the site of the outbreak	- thermometer -swab collection sets - Saliva collection sets - VTM ..... tubes - Lab to test samples - Lab testing capacity	CDCU team and the patient screening team	-Places closed -number of close contacts -number of positive tests of samples sent	
Conduct home contact tracing, consider quarantine and collect samples from all	- thermometer -swab collection sets - Saliva collection sets - VTM ..... tubes - Lab to test samples - Lab testing capacity	CDCU team and the patient screening team	-Places closed -number of close contacts -number of positive tests of samples sent	
Close sites at risk of a super-spreading event for at least 14 days		Communicable Disease Committee of the province; Local administrative organization	-sites closed -compensation for lost wages	

Measure 3: Patient care and treatment

Activity	Resources Needed	Person responsible	Data to report	Date of implementation
Care for patients in the clinical facility according to guidance of the Dept. of Medical Services	- patient beds - Cohort ward - medicines and clinical supplies - referral for complicated cases - PPE	-team of doctors and nurses	-number of vacant beds -number of beds in use -stock balances for PPE, medicine etc.	
Prepare off-site patient care facilities	-facility -patient beds	-Clinical care team -Local administrative organization -owner of the facility	-capacity to admit patients	

Remarks: If sporadic cases are found who are not linked to the super-spreading event, then proceed according to guidelines for sporadic spread of disease

Action Plan to respond to sporadic incidence of Covid-19

Province.....Start date of the plan ……..Date of the latest update of the plan

Table 6: Objectives and Targets

Objectives	Targets at 28 days
Control spread within 28 days	1.1 No more than 5 cases in a week (small provinces) 1.2 No more than 1 case per 100,000 population (large provinces)
Prevent on-going spread	2. Conduct contact tracing for all high-risk contacts
Prevent super-spreading event	3. No establishment or place where people gather has an outbreak (6 or more infections)
Treat patients	4.1 All patients receive standard treatment 4.2 Covid mortality <0.8%

Table 7: Measures and activities

Measure 1: Surveillance and Laboratory

Activity	Resources Needed	Person responsible	Data to report	Date of implementation
Conduct screening in risk sties. Not more than 100 people need to be screened in a site, but all risk sites should be visited	- swab collection sets - Saliva collection sets - VTM ..... tubes - Lab to test samples - Lab testing capacity		-Number of target sites -Number of sites screened -number of sites with positive tests -number of samples sent to the lab per day -number of positive samples per day	

Measure 2: Contact Tracing and Defining the Hot Spot

Activity	Resources Needed	Person responsible	Data to report	Date of implementation
Visit close contacts at home, consider quarantine and take samples from all	-thermometer swab collection sets - Saliva collection sets - VTM ..... tubes	CDCU team Patient screening team	-number of close contacts - number of samples taken -number of positive samples	
Conduct surveillance of persons returning to the area from a hot spot	-PPE for VHVs or other following up with people who traveled from a hot spot	Volunteers who follow up with returnees, Local administrative organization, local leader	-Number of returnees or PUI -number of lab tests	

Measure 3: Patient care and treatment

Activity	Resources Needed	Person responsible	Data to report	Date of implementation
Provide standard patient care according to Dept. of Medical Services	-patient beds -medicines and supplies -referral for complicated cases -PPE	Medical and nursing team	-number of beds -number of beds being used -stock balance of PPE, drugs, etc.	

Appendix D: Links to downloadable documents

Document	Details	Link	QR Code
Guidelines for screening, surveillance and investigation 2019 (COVID-19) (Coronavirus Disease2019: COVID-19) Issue 4 December 2020, Department of Disease Control	- Definition of a suspected infection with the coronavirus 2019 that meet the Patient Under Investigation (PUI) criteria - Operation of surveillance of COVID-19 2019 - Guidelines for an epidemiological investigation	https://ddc.moph.go.th/viralpneumonia/file/g_srrt/g_srrt_040164.pdf	
Guidelines for implementation with non-Thai migrant workers	SAT code issuance and payment reimbursement for lab tests in the foreign labor group		
Laboratory examination target group for screening, surveillance and investigation of the 2019 coronavirus disease (COVID-19)	- specimen types and laboratory methods - Source of budget - Operator - Reporting Classified by surveillance, investigation, screening and other purposes.		
Guidelines for the surveillance implementation of the coronavirus disease 2019 (COVID-19) in the migrant workforce	- Measures of surveillance operations in the migrant labor population detected in Thailand - Issuance of SAT Code in DDCCOVID 19 system - Sampling criteria - Budget disbursement - Operations coordinator - Method of collecting samples and equipment - data recording		
Clinical practice guidelines for diagnosing, treating and preventing Hospitalization of cases of coronavirus disease 2019 (COVID19) for doctors and public health personnel	- diagnosis - treatment - Recommended dose of medicine for COVID-19 for adults and children - Transfer of patients - Distribution of patients		

Document	Details	Link	QR Code
Revised guidelines by Department of Medical Services: Dec. 7, 2020	- Instructions for action for patients with COVID19 after discharge a doctor.		
Requirements and Recommendations Related to Lifestyles in the era of Coronavirus 2019 (COVID-19) Epidemic Situation, Thai Government	The New Normal Guidance consistent with the information from the CSAA		
User Manual for the CoWard System (COVID-19 Patient Information Integration System)	- recording of new and continuing patients - record of medical inventory - Bed settings Respirator settings - Personnel preferences		
GIS Health Covid system	- Dashboard showing the situation of the resource data. - Dashboard showing the performance of the strategy by province, according to the criteria for considering the level of risk and problem condition in the area		
Recommendations for markets	Controlling infectious disease in the market		
Communicable Disease Act 2015	-complete description of the law		

Advisors

Dr. Kiattaphum Wongsarajit, Permanent Secretary of MOPH
Dr. Sura Wisetsak, Deputy Permanent Secretary of MOPH
Dr. Supamit Chunhasuthiwatthana, Advisor to the Department of Disease Control
Dr. Taweesup Siraprapasiri, Medical Specialist, Department of Disease Control

Co-authors

Department of Medical Services
Department of Disease Control
Department of Medical Sciences
Department of Health
Department of Mental Health
Department of Health Service Support
Food and Drug Administration
Division of Public Health Emergency, Office of the Permanent Secretary, MOPH
- Dr. Nuttaphong Wongviwat, Deputy Director-General of the Department of Medical Services
- Dr. Pathomporn Sirapraphasiri, Advisor to the Department of Medical Services
- Dr. Sophon Iamsirithavorn, Deputy Director-General, Department of Disease Control
- Dr. Jakrath Pittayawongsanont, Director of Strategy and Planning Division
- Dr. Panithee Thammavijaya, Director of Innovation and Research Division
- Dr. Darin Aree Chokchai, Deputy Director of the Bureau of Vector-borne Infectious Diseases
- Dr. Surakamet Mahasirimongkol, Director of Division of Medical Ergonomics and Innovation
- Mrs. Pornthip Damrongpatama,

Department of Strategy and Planning, Department of Mental Health
- Dr. Witoon Yeonankul, Director of the Emergency Public Health Division
- Dr. Prakit Sarathep, Deputy Director of the Emergency Health Division
- Dr. Alisaya Nayasarn, Deputy Director of the Emergency Public Health Division
- Dr. Supachok Vejphappharm, Director of Strategy and Planning Division
- Dr. Manita Phanwadee, Deputy Director of Strategy and Planning Division
- Mrs. Thitipat Kuha, Division of Strategy and Planning
- Miss Natcharat Thanatheerawong, Division of Strategy and Planning
- Ms. Lalida Charoenwanying, Division of Strategy and Planning
- Ms. Narisara Senarintorn, Division of Strategy and Planning
- Ms. Thanyjira Phensirikul, Division of Strategy and Planning
- Ms. Natnaree Khinging, Division of Strategy and Planning
- Ms. Sasiyaphat Chaiyan, Division of Strategy and Planning

QR Code for E-book

Editors
Division of Strategy and Planning, Office of the Permanent Secretary, Ministry of Public Health

Editorial Division
Dr. Supachok Wetchapanpesat, Director of Division of Strategy and Planning
Mrs. Thitipat Kuha, Health Policy Development Group
Miss Lalida Charoenwannying, Health Policy Development Group
Ms. Narisara Senarin, Health Policy Development Group
Ms. Thanyjira Phensirikul, Health Policy Development Group
Ms. Natnaree Kingjaturat, Health Policy Development Group

Producer
Division of Strategy and Planning, Office of the Permanent Secretary, Ministry of Public Health

1st edition	2021
1st print run	500
Publisher	Division of Strategy and Planning, Office of the Permanent Secretary, Ministry of Public Health
Printing company	"Rabpim" Limited Company
Website	http://bps.moph.go.th
ISBN	978-616-11-4550-7