

# Situation Report: The Operation of Bangkok Hospital Rayong Under the New Wave Outbreak of COVID-19 Between 21 December 2020 and 21 January 2021

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This situation report is about the operations of the medical staff working in Bangkok Hospital Rayong under the new outbreak of COVID-19, from 21 December 2020 to 21 January 2021. The objectives of the report are to report the empirical situation relating to hospital capability to manage the situation, which can be reflected from the amount of the screening cases, the diagnostic examination and the treatment of Covid-19 patients. This situation report draws a statistical summary from the data retrieved from 21 December 2020 to 21 January 2021 at Bangkok Hospital Rayong. The results presented in this report should be beneficial for relevant agencies and interested persons. The authors have included in this report the theories and relevant guidelines as categorized below:

1. Introduction, background and importance of the situation
2. Current coronavirus disease situation (as of January 21, 2021)
3. Situation of COVID-19 testing at Bangkok Hospital Rayong
4. Comprehensive symptoms and signs of the COVID-19 observed in the infected patients at Bangkok Hospital Rayong

## Introduction, Background and Importance of the Situation

At the end of 2019, the first mass epidemic of respiratory infection occurred in Wuhan, China. The outbreak was found to have spread worldwide in early 2020.<sup>1</sup> It was initially diagnosed as a disease that can potentially cause acute respiratory distress syndrome. World Health Organization (WHO) later named the new coronavirus as “Corona Virus Disease 2019” abbreviated as COVID-19.<sup>2</sup> The cumulative number of infected people has reached 97 million cases worldwide, as of 21 January, 2021.<sup>1</sup> In Thailand, there has been a total of 12,653 patients, divided into 9,621 cases of recovery, 71 cumulative deaths, and 2,961 cases are on the course of treatment, as of January 21, 2021.<sup>3</sup> It is evidenced that the contagious disease has been spread from having close contact with infected person and human interaction is a crucial means for the transmission of the disease both in Thailand and elsewhere around the world. The transport of infected persons to public-crowded places activates wider spread of COVID-19. Human transportation is the sole cause of the cross-national spreading of the disease.<sup>4</sup>

The outbreak of COVID-19 has inevitably affected the quality of life of Thai people and has hit hard on the economy of the country. It is estimated that people with lower incomes and those relying on daily wages will be affected the most because of the sudden termination of wages. The disease has caused a higher rate of unemployment. Families living in poverty can be traumatized from the situation if any of the family members are infected. The treatment can be costly while the infected person can no longer earn their living. In these instances, the outbreak of COVID-19 has widely affected the quality of life.

The symptoms of COVID-19 are various, ranging from asymptomatic to having minor or severe symptoms and heart failure. Severe symptoms are often seen in the elderly or people with medical conditions such as lung disease, heart disease, diabetes, hypertension, kidney disease, liver disease and other chronic medical conditions.<sup>5</sup> These include immunocompromised individuals who experienced higher rates of mortality compared to other age groups and individuals without the underlying disease (Department of Disease Control Ministry of Public Health, 2020).<sup>3</sup> It is also reported that more than half of the cases were asymptomatic<sup>6</sup> but still tested positive and were still able to transmit COVID-19.

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For the sake of preventive measures, it is necessary to screen for COVID-19 in people with a history of risk, such as those having fever or a history of fever, and in people who were having respiratory symptoms such as cough, runny nose, sore throat, breathlessness, and loss or change in the senses of smell and taste. The screening for COVID-19 needs to be conducted even among the asymptomatic groups at risk of infection, such as those arriving back from the risk areas,<sup>4</sup> having close contact with infected people, or being members of medical establishments providing care for the infected patients. These are important measures that need to be taken in order to prevent the spreading of the virus and to provide timely treatment for infected people while preventing infection of medical staff. It is important for the hospital to have a cohort section prepared especially for COVID-19 patients. Moreover, in order to delay the spread of the disease while reassuring the soonest possible treatment among the patients, it is crucial to consider the cost and the efficiency of the COVID-19 testing tool. The standardized screening system, called Realtime Reverse transcription – Polymerase chain reaction (RT-PCR),<sup>2,6</sup> has been used in Thailand. This technique is capable of testing the excretion derived from the nasal cavity and throat.

Between December 2020 and January 2021, the rate of the COVID-19 outbreak in Thailand was found to be rising. The main causes of the new wave of the epidemic outbreak were found to be associated with illegal immigration workers from neighboring countries and the gambling hubs. The outbreak was more common in 5 Thai provinces marked in red on Thailand's COVID-19 map, namely; Samut Sakhon, Rayong, Chanthaburi, Chonburi and Trat.<sup>3</sup>

Bangkok Hospital Rayong is located in Muang District, Rayong Province, an area marked in red on Thailand's COVID-19 outbreak map (the highest controlled area). It is a 200-bed private hospital with tertiary care potential and is the private hospital in Rayong with the largest cohort ward (quarantine ward for inpatients). Bangkok Hospital Rayong has taken measures in the management of the new wave of COVID-19 outbreak. In order to help battle against the spreading of COVID-19, many measures have been taken, including conducting proactive and passive screenings, reporting of diagnostic results and the laboratory examination results, admitting inpatients, caring for infected patients, providing quarantine services, and following-up of patients after treatment (return to work and life).

Bangkok Hospital Rayong has allocated a service area for patients who wish to test for COVID-19. The restricted area is made available also for the COVID-19 suspected and patients with respiratory symptoms during the period of the outbreak. This area is securely separated from the service areas for normal patients. Moreover, temperature check is performed to all hospital guests and working staff prior to entering the hospital.

The hospital has provided respiratory clinic services as follows:

1. **Acute Respiratory Infection (ARI) Clinic** is a clinic for patients with respiratory disease, located at Building B. It is a clinic for patients who need to attend initial screening to show that they do not meet the PUI requirements set by the Ministry of Health. Despite being built in the main building, the air circulation system of this clinic is separated from the ventilation of other rooms from the same building. Moreover, the building entry points are provided separately for the staff and the health service receivers to minimize the risk of transmission.
2. **Patient Under Investigation (PUI) Clinic** is ARI Clinic that is separated from Building B. It is located in an indoor courtyard area beside the hospital, next to the emergency room, in order to ensure a higher rate of ventilation. The social distancing policy is endorsed, and the area is regularly cleaned according to the standards set by the Ministry of Public Health. A negative pressure chamber has been prepared for the PUI case.
3. **Check-up/walk-in Service** is a service for those who want to get RT-PCR for COVID-19 even though they do not have a fever, respiratory infection, and high-risk record. A hospital staff is assigned to work at the check-up point to take the patients' temperature and undergo a preliminary history check with the patients before directing them to the doctors. The check-up/walk-in service point is located in front of the hospital at the fountain yard. It is a well-ventilated area. Different pre-entry checkpoints are provided separately for the working staff and the hospital guests. There is also a drive-thru checkpoint in this area.
4. **Mobile Unit** is a department that screens RT-PCR for COVID-19. It is obliged to provide COVID-19 testing outside of the hospital. This mobile service is especially convenient for factories and companies that have a large number of employees and this makes it inconvenient to transport their employees to be examined in the hospital.
5. **In Patient department (IPD) Screening Service** is COVID-19 testing provided for the inpatients under the the hospital's admission. The target of the screening is suspected inpatients. This IPD screening service is located in Building B.

#### **Current situation of Coronavirus 2019 (COVID 19)**

According to information derived on January 21, 2021, the current number of the COVID-19 infections in Thailand (during the new wave infection only) is 12,653 cases. Among this number, 2,806 people are from the eastern region (22.18% of the country's total patients). The number of cumulative patients in Rayong is 568 cases, which is equivalent to 20.24% and 4.49% of the Eastern region and of the country's total patients, respectively.

Bangkok Hospital Rayong has a cumulative total of 83 patients. At present, all patients have fully recovered and have been discharged from the hospital since January 21, 2021, with no patients dying from COVID-19 during treatment as shown in Table 1.

**Table 1:** Situation of the new wave outbreak of COVID-19 (as of 21 January, 2021)

Data	Nationwide (people)	Eastern region (% of the country's total )	Rayong (people)	Bangkok Hospital Rayong (% of Rayong's total)
Cumulated patients	12,653	2,806 (22.18)	572	83 (14.5)
On course of treatment	2,961	619 (20.90)	71	0 (0)
Discharged	9,621	2,187 (22.73)	501	67 (13.37)
Dead	71	3 (4.22)	1	0 (0)
Mortality rate (%)	0.56	0.11	0.18	0 (0)
Number of bed	12,584	3,103 (24.65)	731	85 (11.62)
Bed available	14,254	No information	658	85 (12.91)

**Note:** All of the severe COVID-19 patients are transferred for further treatment at Rayong Hospital, all actions are prompted by the guidance of the Ministry of Public Health.

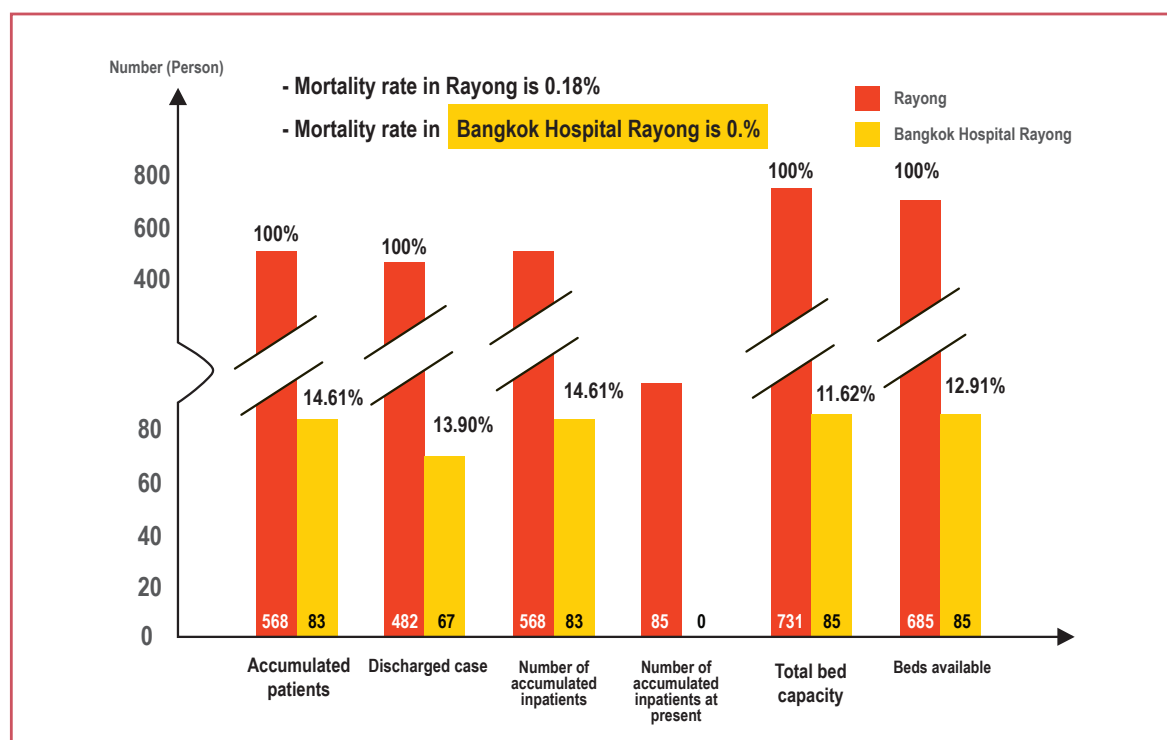
At present, Rayong province has accumulated 568 COVID-19 patient cases, divided into 482 recovered cases and 1 death (0.08%). Rayong province has the potential (number of beds) to accept a total of 731 patients, divided into 380 field beds, and 351 others are beds in the regular hospitals. Bangkok Hospital Rayong is capable of catering for 85 of COVID-19 patients (11.63% of the total bed capacity in Rayong, the number rises to 24.22% when the field beds are excluded) as shown in Figure 1.

#### Situation of COVID-19 testing at Bangkok Hospital Rayong

Nowadays, the detection of COVID-19 is based on a standardized method called Real-time Polymerase chain reaction (RT-PCR)(3, 5, 7), which is system rated at a Gold Standard level. It is the most accurate and specific method. Based on this method, Bangkok Hospital Rayong is capable of 900

COVID-19 tests per day. The average daily test is 250 samples. Since the emergence of the new wave outbreak starting from 21 December 2020 to 21 January 2021, the hospital has used the RT-PCR with a total of 7,751 samples, from which 51 positive cases (0.66%) were detected as shown in Figure 2.

As classified by different departments, the highest level of COVID-19 testing service was done at the checkup / walk-in department, with a total of 3,422 people (44.15%) received the testing in this unit. The number for the Mobile Unit is 2,078 people (26.8 %), as shown in Figure 2. In a daily analysis, the daily RT-PCR testing conducted at ARI Clinic, Walk-in, IPD, and Mobile Units were 88 times, 314 times, 25 times, and 401 times, respectively. The highest average daily services across all departments were 566 times, as shown in Figure 3 (Information date 23 December 2020 - 21 January 2021).

**Figure 1:** Comparative data of COVID-19 Situation in Rayong province and in Bangkok Hospital Rayong.

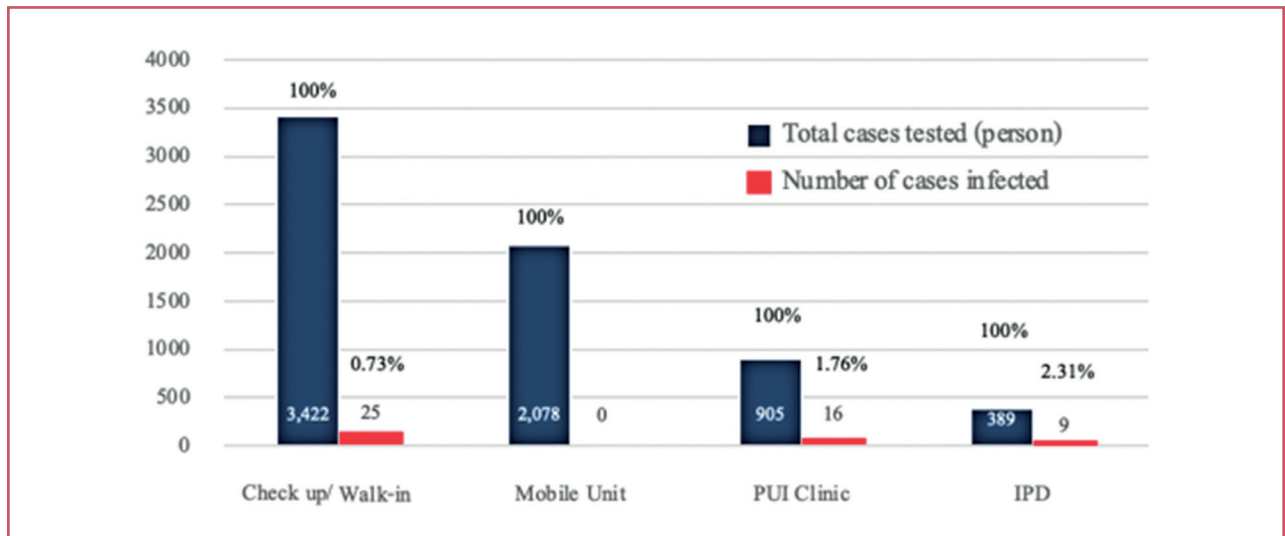


Figure 2: Number of cases received COVID-19 testing service at different departments of Bangkok Hospital Rayong.

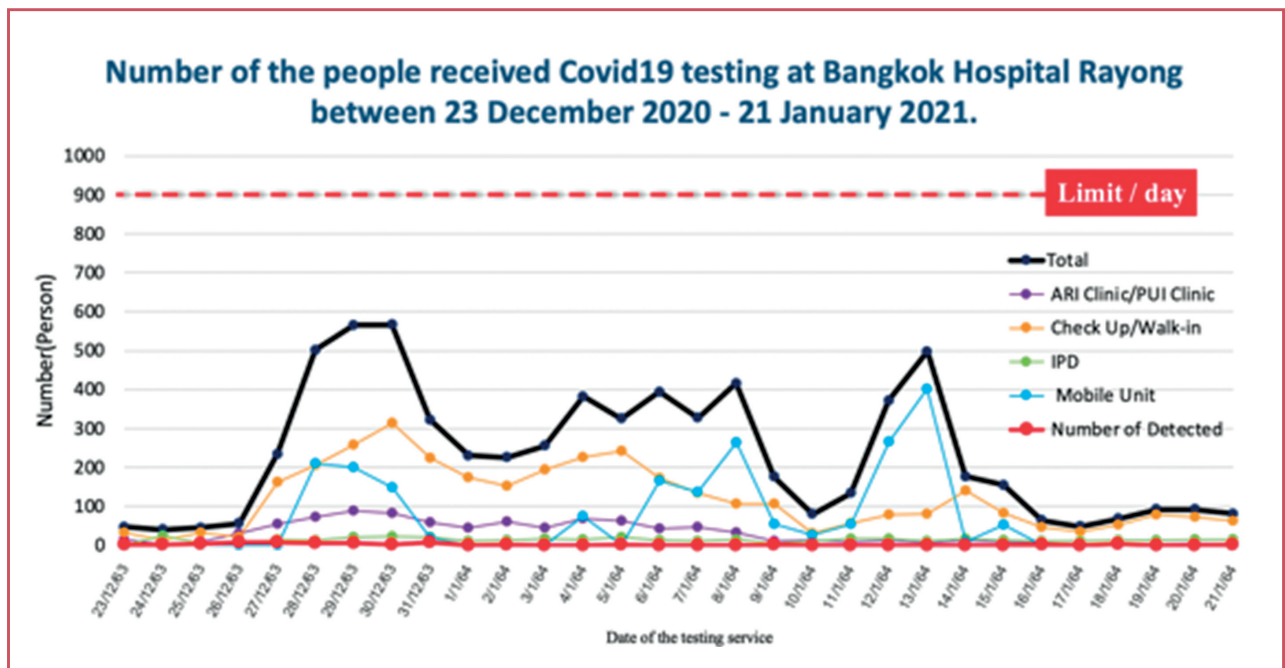


Figure 3: Number of the people received COVID-19 testing at Bangkok Hospital Rayong between 23 December 2020 - 21 January 2021.

Of the total of 7,751 examinations, there were 51 cases of COVID-19 infection. The infected patients were admitted, leading to an accumulated number of 83 inpatients. Among this number, 16 cases were transferred for further treatment at other hospitals, and 67 others have recovered and have been discharged. There was no fatal case in Bangkok Hospital Rayong.

The data showing the first symptoms of the 70 infected patients (84.33% of a total of 83 patients) attending COVID-19 treatment at Bangkok Hospital Rayong is detailed in Figure 4. It was found that most patients (27 people or 38.6%) underwent

the disease without any symptoms; fever was detected in 10 people (14.3%), 22 people with coughing (31.4%), 11 people with sore throat (15.7 %) and 13 persons with running nose (18.6%), reported to have had lost smelling sensation. Other symptoms (15.7%) observed in the test but are not associated to the development of COVID-19 were stinging, stuffy nose, mucus, body aches, dizziness and diarrhea.

Currently, there have been no COVID-19 patients receiving treatment at Bangkok Hospital Rayong. The cohort ward situated at a separate hospital building has 85 beds available as shown in Figure 5.



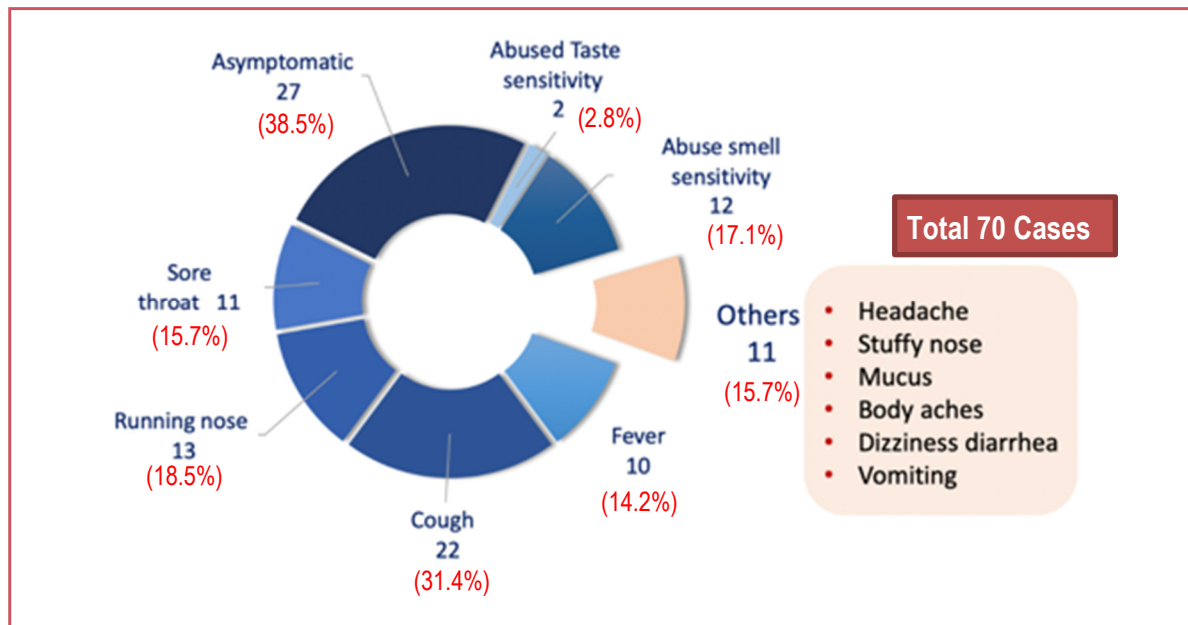


Figure 4: Signs and Symptoms of the COVID-19 Patients in Bangkok Hospital Rayong

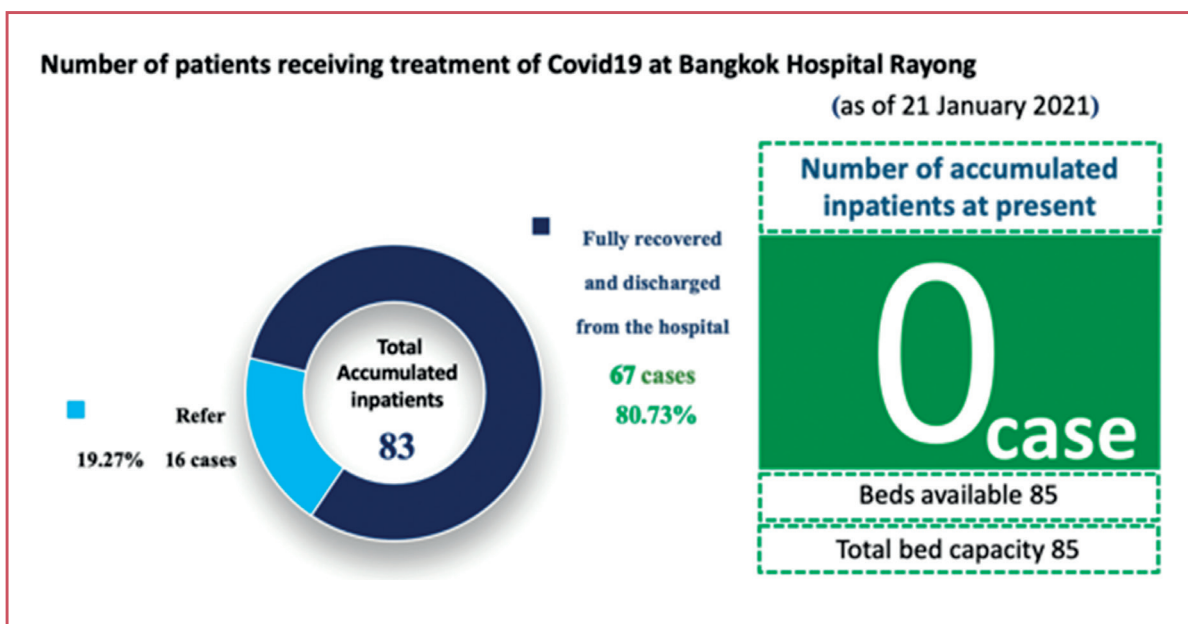


Figure 5: Number of patients receiving treatment of COVID-19 at Bangkok Hospital Rayong (as of 21 January 2021).

### Learning from Crisis for Future Development (Issue Learning)

Rayong province was the most regulated area (red zone) where Bangkok Hospital Rayong is located, and most of its personnel work and live in Mueang district, which was the center of the outbreak.

What the hospital learned from this incident:

**1. Efficient management** in various fields to cope with a large number of patients from pandemic (Mass Patient) with a variety of preparations as follows:

- Human resource preparation by education to prevent the infectious disease.
- Provision of a place to accommodate patients with COVID-19-like symptoms apart from the general patients by separating and dividing service areas.
- Arrangements for communication between both internal and external personnel with accurate, verified, and up-to-date data set.
- Managing supply chain in accordance with the needs and getting partners and stakeholders (partnership) who are participating in driving various sectors, especially with the government.

2. **Learning the capability and efficiency** in the care of patients with the pandemic disease during the crisis, the opening of a cohort ward (isolated ward) in a timely manner by maintaining the standard as required by the government regulations as well as patient monitoring system after being discharged from the hospital together with the care of hospital personnel. From a review of all post-crisis action reports, no COVID-19 infection was identified among hospital personnel in-patient care system, even in the red zone provinces which is considered vulnerable to infection during the crisis. This shows the attention of management and corporate departments for disease prevention in personnel and effective communication on the wearing of protective equipment, washing hands and wearing face masks including strictly maintaining social distance.
3. During the first wave of the pandemic in Thailand, only 6 infected cases were reported in Rayong province, so it was not affected much by the outbreak. However, the management was not complacent about the incident, and set up a COVID-19 Infectious Disease Committee to collaborate with relevant departments, for example the Infectious Disease Prevention and Management Unit, Inpatient Department, Outpatient department, and quality center, for risk management and other matters such as medical equipment, personal protective equipment (PPE), disease and infection prevention training for hospital personnel. Those working in association with patients and not associated with patients (back office) regularly conducted pandemic program drills to prevent and carry out surveillance of the second wave outbreak closely. Bangkok Hospital Rayong and its personnel are therefore ready for the management of the outbreak according to the plan that has been established and respond quickly to the incident.
4. Personnel of Bangkok Hospital Rayong have **confidence in administrators** because of their high-level leadership and precise decisions. Incidents and practices are examined from various sources as a basis for decision-making and planning for the crisis. In addition, there is a policy that administrators will communicate with personnel on a regular basis, which contributes to the hospital recovery in various areas after the end of the first wave outbreak. Therefore, when the organization encounters a crisis in the second wave of outbreaks, personnel are therefore ready to follow management policies with unity throughout the organization. Trust in the management team and policies of hospital are key factors for the hospital to be able to pass through the second wave crisis.

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