International Journal of Current Science Research and Review
ISSN: 2581-8341
Volume 05 Issue 08 August 2022
DOI: 10.47191/ijcsrr/V5-i8-12, Impact Factor: 5.995
IJCSRR @ 2022
www.ijcsrr.org

Coronavirus Disease 2019 (COVID-19) Situation in Thailand

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ABSTRACT: Coronavirus in 2019, also known as COVID-19, is SARS-CoV-2, is spreading across the globe. Most of our work focuses on situation and statistics of coronavirus cases 2019 in Thailand. This article focuses on beginning of disease and spreading around the world and in Thailand. As many as 11 strains of the coronavirus 2019 mutation, causing the cumulative number of infections to increase and even with the invention and development of vaccines. To prevent disease comes out a variety of vaccines. But the number of infections and deaths continues to rise. Therefore, government disease prevention measures should be followed and self-protection should be appropriate. To prevent the number of infections and deaths from increasing again.

KEYWORDS: Coronavirus Disease 2019, COVID-19, COVID-19 Situation in Thailand

Coronavirus Disease 2019 (COVID-19) Situation

Coronavirus in 2019, also known as COVID-19, is SARS-CoV-2 (abbreviated as CO instead of Corona, VI instead of virus, D instead of disease and 19 instead of 2019) was first discovered in Wuhan, Hubei Province, China during December 2019. This virus is related to the SARS (Severe Acute Respiratory Syndrome – SARS) it is a serious acute respiratory disease, which has had an outbreak in the past. The coronavirus 2019 is a newly discovered coronavirus (which has never been found in humans before). If a person is infected with a coronavirus 2019 it will damage their respiratory system. Abnormal breathing, fever, cough, in severe cases, can lead to pneumonia, pneumonia, and death. **[1]** The virus can be spread from person to person through coughing, sneezing, or touching the secretions of an infected person.

Currently, the coronavirus 2019 has developed mutations according to the environment of each area. The World Health Organization (2022) says most of the virus has little change in its properties and then disappears over time. But sometimes the virus is strong, changing itself, causing mutations to increase survival rate and number. These symptoms range from mild to severe, including stuffy nose, sore throat, cough and fever. Some patients with severe symptoms will also have pneumonia or difficulty breathing. **[2]** Some may even be fatal, but are rare. If they are the elderly and those with congenital diseases such as diabetes and heart disease, they are at risk of severe illness if infected with the new corona virus.

The coronavirus is a single-stranded virus, containing RNA genes. The coronavirus is classified as the same strain as The Nidovirales Coronavirus Viride and is a secondary strain from the Ordo Coronaviride Virus. Viruses can be categorized as Alpha (α), Beta (β), Gamma (γ) and Delta (δ). In the coronavirus group the name of the virus was set. According to the nature of the virus when viewed from an electronic camera. **[3]** There are 11 strains of the coronavirus 2019 mutation, which the World Health Organization (WHO) **[2]** has renamed the coronavirus mutant. Originally called by the name of the country that was found in Greek letters as follows: Alpha, Beta, Gamma, Delta, Epsilon, Zeta, Eta, Theta, Iota, Kappa and Lambda. But the strain with the mutation that worries medical experts the most is Beta, first detected in South Africa, Alpha was first detected in United Kingdom, Gamma was first detected in Brazil and Delta was first detected in India. All four strains are classified by the World Health Organization as a potential threat to the public health system of all over the world.

According to the World Health Organization, The new name of the coronavirus 2019 mutation it's not a replacement for an existing scientific name. But it's a name for easier communication. Because scientific names can be difficult to communicate and may cause communication inaccuracies. It will also reduce the practice or stigmatization of countries where the COVID-19 mutated virus is found for the first time.

The latest discovery of the Omicron strain is the latest mutated coronavirus that the World Health Organization (WHO) **[2]** has declared a Variants of Concern (VOC) strain first discovered in South Africa at the end of 2021. Now it has spread to many countries. The epidemic rate is quite fast. This species has 32 mutations in spiny proteins, allowing it to evade more immunity, into

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the body more easily. This has resulted in a significant reduction in the effectiveness of existing vaccines and there is an increased risk of re-infection. But patients often get infected in the manner that is the upper respiratory tract, not the lungs, so the symptoms are not very serious. For details, see Table 1.

Table 1. The new name of the coronavirus 2019 mutation

Original Name	Scientific Name	New Name
	Variants of Concern	
British strain	B.1.1.7	Alpha
African strain	B.1.351	Beta
Brazil strain	P.1	Gamma
Indian strain	B.1.617.2	Delta
-	B.1.1.529	Omicron
	Variants of Interest	
California strain	B.1.427 / B.1.429	Epsilon
Brazilian strain	P.2	Zeta
-	B.1.525	Eta
Filipino strain	P.3	Theta
US species	B.1.526	Iota
Indian strain	B.1.617.1	Kappa
-	C.37	Lambda

Statistics of Coronavirus Cases 2019 Worldwide

The outbreak of the coronavirus 2019 or COVID-19 started at the end of 2019 and has spread all over the world causing fear and affecting health society and the economy of the population, and at the beginning of January 2020 there was a pandemic, which is a rapidly spreading infection around the world. According to statistics as of May 30, 2022, the global population has 544,495,277 cases and 6,330,572 deaths, with the top five countries with the highest number of infections, the United States of America (87,152,499 people) ranked first. With India (43,418,839 people), Brazil (32,130,316 people), France (29,823,387 people) and Germany (27,914,240 people). The top five countries with the most deaths are Brazil (3,113,740 people), United States of America (3,024,050 people), France (2,198,070 people), Germany (1,654,980 people) and India (376,470 people), respectively (Figure 1-3). **[4]**

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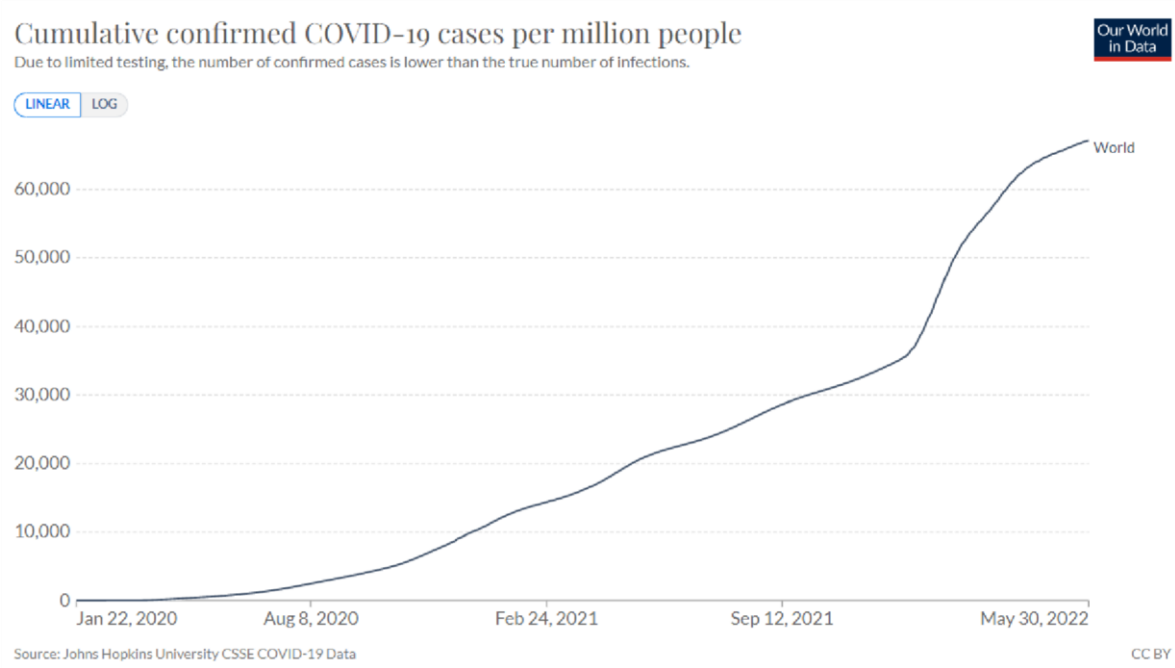

Figure 1. Total cumulative confirmed COVID-19 cases per million people

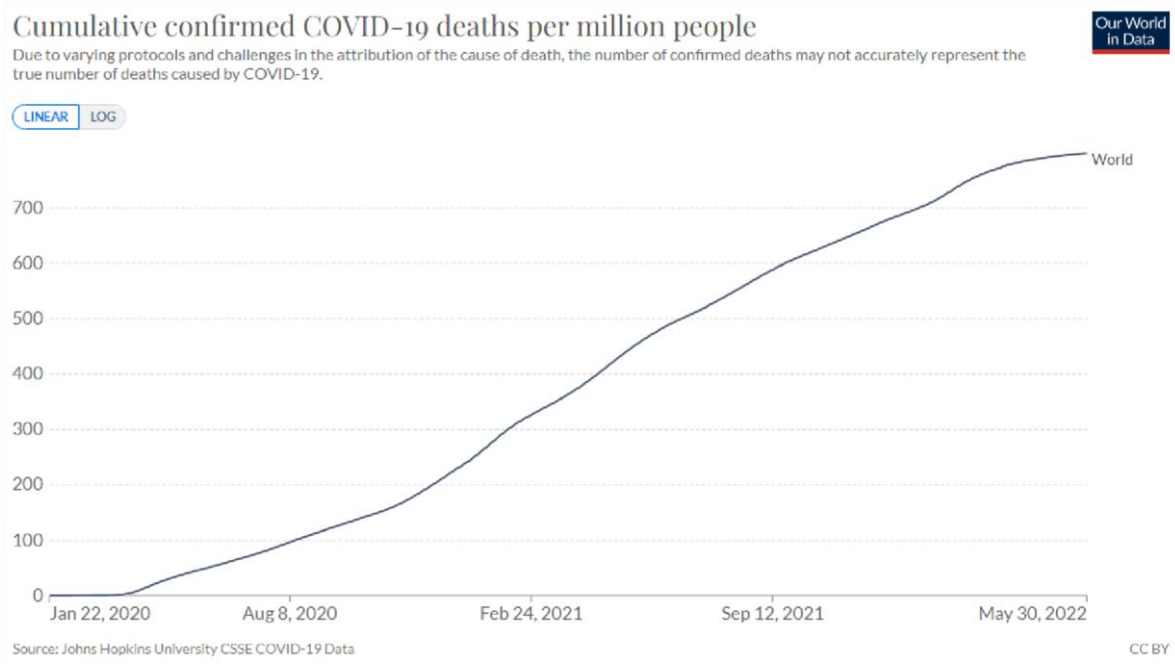

Figure 2. Total cumulative confirmed COVID-19 deaths per million people

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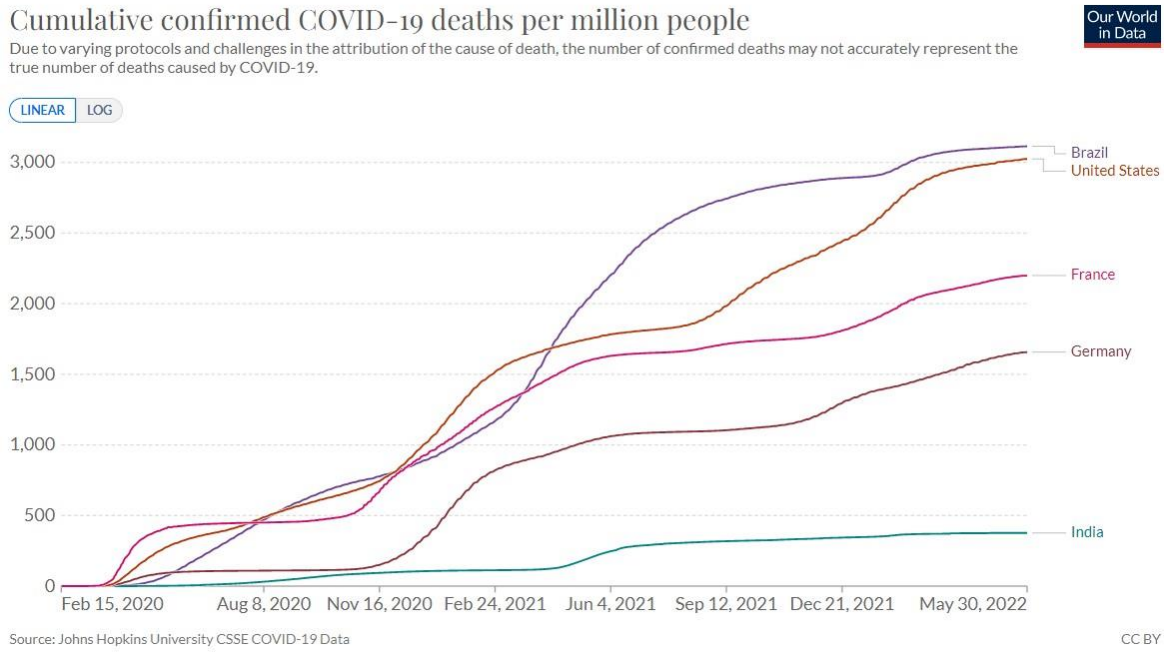

Figure 3. Total cumulative confirmed COVID-19 deaths per million people by Country

Situation and Statistics of Coronavirus Cases 2019 in Thailand

The outbreak of the coronavirus 2019 or COVID-19 first round in Thailand. The first suspected case was found on January 21, 2020, a 74 year old female Chinese tourist who arrived in Bangkok by flight from Wuhan capital city of Hubei Province People's Republic of China and as of April 8, 2020, there were 2,369 infections in Thailand, 30 deaths, 111 new cases, 1,250 in Bangkok and Nonthaburi, 101 in the northeastern region. Northern region 86 people, Central region 332 people and Southern region 409 people. And from the statistics, as of April 22, 2020, Thailand had an outbreak and there were 2,826 people infected with COVID-19, with a total of 2,352 healed people, representing 83.2 percent of the cured ones, respectively 2nd in the world after the People's Republic of China. **[1]**

The second outbreak in Thailand, beginning in late December 2020, a 67 year old Thai woman, trading at Klang Kung Market, Mahachai Sub-district, Mueang District, Samut Sakhon Province, was infected with no history of traveling outside the country. This is believed to be an infection from Myanmar workers in the shrimp market which is an area with a densely populated. Burmese migrant workers by public health officials in Samut Sakhon Province Visited the site for active case finding and found a new, asymptomatic case in the group. A large number of Myanmar workers. **[5]** This second wave of outbreaks is different from the first wave of outbreaks in many aspects, such as the number of infected people being more has spread to many provinces. It is estimated that the second round of outbreaks will not go away as quickly as the first round.

After more and more infected people were found causing the Department of Disease Control to issue measures and guidelines for surveillance, prevention and control of the Coronavirus Disease 2019 (Covid-19) (CDC), which is the National Executive Committee for COVID-19, has declared a state of emergency in Thailand. **[1]** By focusing on people to stay at home, Work from home (WFH), physical distancing, social distancing, wear masks and wash your hands often. The declaration of emergency forced people to change their lifestyle altogether.

Although Thailand's disease control system patients who are infected or at risk of infection are quickly isolated. Including tracking all those who have been exposed to the infection and the infection from the patient can be examined quickly. But the epidemic in Thailand is still ongoing and affect the lives of the people. Because it causes social, economic changes and the use of technology. All of these have an impact on the individual. From the current statistics, in 2022, there were 4,463,557 cumulative cases and 30,143 deaths (Figure 45). **[4]** Which is expected to find the number of infected people increasing steadily. But the death toll could rise slightly or remain constant and there will be an ongoing epidemic and may cover all provinces of the country. Causing the number

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of infected may be found more than 10,000, however. To prevent the amount of medical care that exceeds the acceptable amount. Therefore, people still have to prevent infection by strictly following the measures including receiving a booster vaccination in order for the population to be immune as soon as possible.

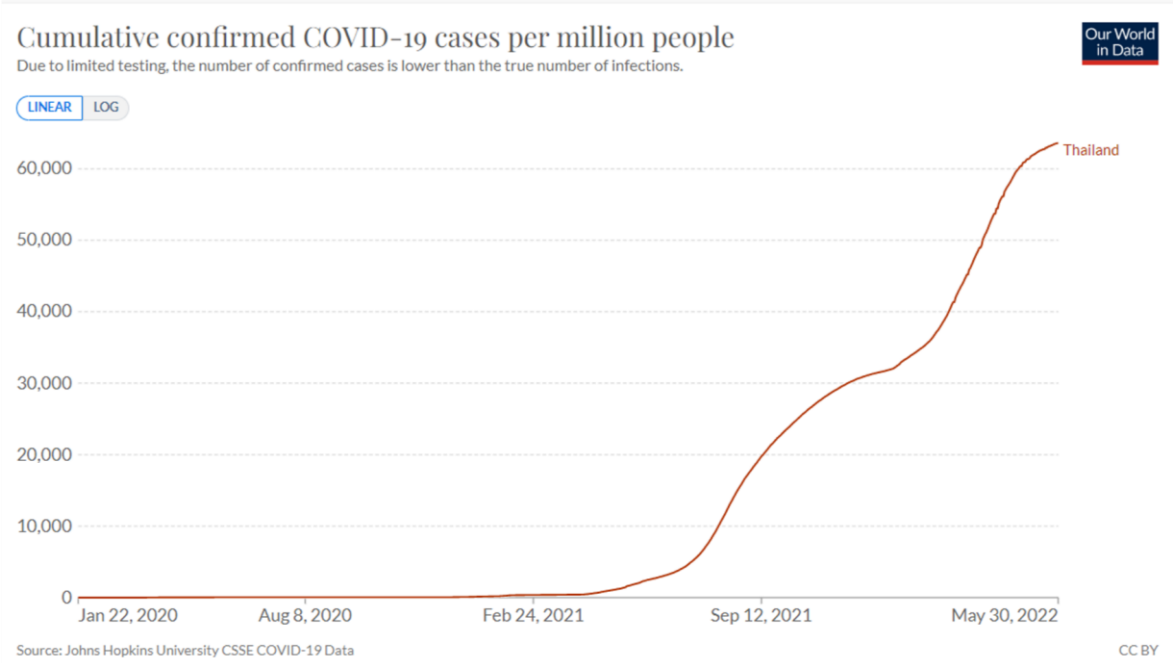

Figure 4. Total cumulative confirmed COVID-19 cases per million people in Thailand

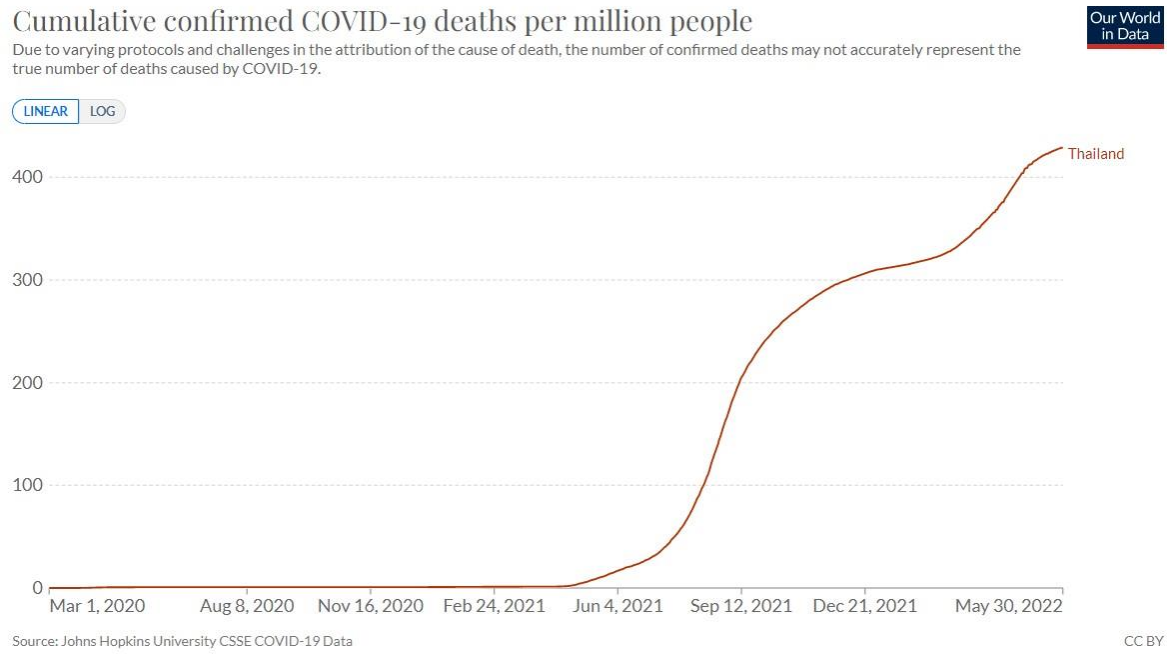

Figure 5. Total cumulative confirmed COVID-19 deaths per million people in Thailand

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Transmission and Symptoms of COVID-19

Coronavirus disease 2019 is a contagious disease that drugs or any vaccine can not be cured. Therefore, there are relevant agencies to supervise and tell about the symptoms of the infected person including protection As Natawan Khumsaen (2021) **[5]** study of Knowledge, Attitudes, and Preventive Behaviors of COVID-19 among People Living in Amphoe U-thong, Suphanburi Province states that one patient can infect approximately two to four others, depending on the population density and season at the time, thus requiring 14 day quarantine and a distance of 1-2 meters can help reduce the spread. The coronavirus can enter the body through droplets such as coughing, sneezing, saliva, and snot with an incubation period of 214 days and when the patient has symptoms. It will still be able to spread the disease again and again. The droplets are not only caused by inhalation. If a patient coughs or sneezes, put their hands and bring their hands to touch other things. Exposure has a chance of getting infected. Because the virus can live on surfaces such as wood, glass, plastic, metal for up to 5 days. In addition, the bacteria that are excreted through the feces can still be transmitted with an incubation period of 9-14 days.

The Department of disease control (2021) **[1]** states that symptoms when infected with the coronavirus 2019 can be divided into three stages: 1) green, which is a mild symptom or have no symptoms or mild symptoms such as fever, cough, runny nose, conjunctivitis, rash, no complications, 2) yellow, is a patient with mild symptoms but have shortness of breath, rapid breathing, and are at risk for severe symptoms or complications such as age over 60, chronic obstructive pulmonary disease. Other chronic lung disease, chronic kidney disease, cardiovascular disease congenital heart disease cerebrovascular disease. Uncontrolled diabetes, obesity, over 90 kg weight, cirrhosis, low immunity and white blood cells less than 1000, 3) red, patients with shortness of breath, dyspnea, X-ray revealed severe pneumonia, pneumonia, blood saturation less than 96%, or a decrease in oxygen of more than 3% after exertion of the measured values got it in the first time to exert.

Virus Testing and Vaccines

There are two methods of testing for coronavirus: Rapid Antigen Test and RT-PCR. The invention and development of the vaccine began with research in the laboratory of Sanofi Pasteur, headquartered in Leon, France, in collaboration with the Ministry of Health, The

United States is developing a DNA-based vaccine. The vaccine has not yet been named. The company has developed a SARS epidemic vaccine that is closely related to the coronavirus pandemic which is in the process of human vaccine trials During April 2020, lab-based coronavirus research also includes a BNT162 vaccine developed by a pharmaceutical company. Biopharmaceutical giant Pfizer in collaboration with the German pharmaceutical company (BioNTech) and the INO-4800 vaccine developed by Inovio and the DNA-based vaccine developed by the vaccine division of Sanofi Pasteur. More than 40 places have developed a COVID-19 vaccine. Only three companies are in Phase 1 trials in humans before the vaccine can be used **[6]**:

1. Manufacturing of the mRNA-1273 vaccine by a US company. Developed by Moderna Therapeutics with support from the National Institute of Allergy and Infectious Diseases (NIAID), the mRNA-1273 vaccine's principle is to inject molecular genetics into the body for the body to produce protein vaccines to stimulate immunity. The trial was conducted with 45 volunteers in March 2020 at the Kaiser Permanente Washington Health Research Institute, with the vaccine expected by the end of 2020 and complete in the middle of 2021.
2. Manufacturing of Ad5-nCoV vaccine, a company in the People's Republic of China. By the Beijing Institute of Biotech and CanSino Biologics, the vaccine was tested on 108 healthy volunteers aged 18-60 years. They were divided into three groups of 36 people each to receive three doses of vaccine by intramuscular deltoid vaccination for post-vaccination follow-up at the Hubei Provincial Center for Disease Control and Prevention, which the company has experience with. Ebola (Ebola) Vaccine Production.
3. Manufacturing of the ChAdOx1 vaccine by a team of researchers at the University of Oxford, united kingdom and Novavax received government funding. Using the same technology as the company CanSino Biologics, People's Republic of China. The trial was conducted in 510 volunteers aged 18-55 years in both Phase I and Phase 2 studies at the Jenner Research Institute at the University of Oxford. And the Oxford Vaccine Group is expected to complete in May 2021.

Scientific and industrial research organizations of many countries. It has been interested in the development of vaccines for the treatment and prevention of the coronavirus 2019, with more than 20 species currently in development, a process that takes about 12-18 months to develop. Scientists examined epidemic-related research data and relevant to the study of epidemic medicines and vaccines from various research studies. The analysis of medicines and vaccines will help scientists to obtain useful information that

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can be used to develop knowledge and find a cure for a disease or produce a vaccine to prevent coronavirus infection. Companies working in research and development with research institutes and academic institutions are working together to find new vaccine developments and treatments caused by the COVID-19 virus.

Currently, The following the World Health Organization (WHO) approved coronavirus vaccines are: Pfizer-BioNTech vaccine, AstraZeneca vaccine, Covishield vaccine, Johnson & Johnson vaccine, Moderna vaccine, Sinopharm vaccine, and Sinovac vaccine. The CanSino vaccine, Sputnik-V vaccine, Covaxin vaccine and Novavax vaccine are pending approval. If people get the coronavirus disease 2019 in the treatment. Most doctors use antiviral drugs Remdesivir, Favipiravir, Merimepodib, etc. **[7]** Therefore, the coronavirus 2019 epidemic crisis has resulted in people in Thailand adjusting and changing in many aspects.

Self-Protection Instruction

Recommendations for the prevention of the coronavirus 2019: Patients should wear a mask being brought out the dark side and light color on the inside, covering the mouth - nose, covering the chin, squeezing the mask to fit the bridge of the nose and washing hands. For those who are not sick, they can wear a general cloth mask. To prevent transmission from secretions or breath, cough or sneeze should be put in the crook of the arm or shoulder, or into the collar of the shirt to avoid bringing your hand up to cover your mouth and nose eat healthy food cooked food. Do not eat raw, semi-cooked food, especially mammals such as beef or pork, and do not share utensils. Be sure to wash your hands often. And wipe your hands with at least 70% alcohol. Do not bring your hands up to rub your eyes, pick your nose, mouth or touch your face. Avoid going to crowded places. with a large group of people living together and social distancing should be at least 1 – 2 meters apart. Avoid close contact with patients who are coughing or sneezing. Refrain from traveling to places where there is an outbreak of disease at that time. Avoid sharing things with others. Even if it's someone in the family, such as a glass of water, a towel, etc. **[8]** Finally, when you have a cough, fever, and difficulty breathing, you should go to the hospital and see a doctor immediately.

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Cite this Article: Palida Khosabordee, Kajornyos Vijitpornkul, Wisanlaya Inkheaw (2022). Coronavirus Disease 2019 (COVID-19) Situation in Thailand. International Journal of Current Science Research and Review, 5(8), 2900-2906