



## ASEAN CENTER OF MILITARY MEDICINE

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**Date 15 January 2021**

### ACMM Featured: New Surgery Method Today, Keeps COVID-19 Away



Director-General of Medical Department revealed the Ministry of Public Health by Department of Medicine Service has opened new service as "New Way of Medicine" to improve negative pressure operating rooms for patients with coronavirus disease 2019 (COVID-19), ensuring the safety of patients and healthcare workers.

The Director General of the Medical Department, Somsak Akasin, said that the airborne transmission in healthcare facilities is a major medical and public health problems around the world during the COVID-19 epidemic situation. Infection prevention measures are required for patients and personnel, especially patients who require entering the hospital to perform surgery cases. To efficiently manage public health resources, the Department of Medicine has worked with a network of medical organizations from various public and private sectors to create a "Modify Negative Pressure Operating Room" for patients with coronavirus disease 2019 (COVID-19) during the emergency. It can provide surgery services for suspected of infected patients among pandemic situations. Department of Medicine has assigned its affiliated hospitals such as Rajavithi Hospital and Nopparat Rajathanee Hospital as the prototypes for such cases, in hope for extending the use cases to various hospitals in other region.

Director General of the Medical Department concluded that the development of a new model of medical service system aims at improving people's livelihoods and being able to adapt with the new lifestyle (New Normal) in the time of COVID-19 pandemic, as well as improving hospital services by implementing management systems. Providing medical services (Model Implementation) from screening queue for service providers reduce congestion for operating room and emergency room services by bringing technology systems to support the work, helping to achieve its maximum efficiency.

### *ACMM Perspective*

Negative or Positive pressure rooms are the necessary part of a wide range of medical and research environment as they help maintain clean condition in the smallest section to the largest hospital.

By Medical Engineering design, the rooms designed to prevent the spread of infectious contaminants and maintain sterile or restrict spaces, are referred as Positive Pressure rooms. It will maintain higher pressure inside the treated area than the outside environment and any airborne particles that originate in the room will be filtered out. Germs, particles, and other potential contaminants in the surrounding environment will not enter the room. In the opposite, Negative Pressure rooms will create the lower air pressure to allow outside air into the segregated environment. These traps and keeps potentially harmful particles Viruses, bacteria, fungi, yeasts, molds, pollens, gases, VOC's (Volatile Organic Compounds), small particles and chemicals within the negative pressure room by preventing internal air from leaving the space. Negative pressure rooms in medical facilities isolate patients with infectious conditions (AIIR) and protect people outside the room from exposure.

The basic consideration for constructing any positive or negative pressure room requires as follow:

- Minimum of 12 air-flow changes per hour to sustain the desired environment
- The air which going in or out should be filtered through HEPA filters to control the movement of airborne contaminant.
- Self-closing entryway with an adequate seal

- Thoroughly sealed floors, ceiling, walls, and windows
- Fans and ductwork to move air in the desired directions
- A monitoring system that allows users to adjust pressure when necessary
- Intermediate environment between the pressure room and outside environment for deliveries, observation, and protective gear storages

During COVID-19 pandemic, many fields of practice have been changed to the new normal, even the medical practice. The adaptation has made to limit the spread of virus, yet still achieve the purpose of the practice. As long as the pandemic still exist, the new normal of practice would be created to overcome the limitation.

#### Sources

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