

## Taiwan-US Cooperation in Public Health and Pandemic Containment

By Prof. Chien-Jen Chen

**Chien-Jen Chen**, Epidemiologist, Distinguished Professor at Academia Sinica, and former Vice President of the Republic of China, explains that "Taiwan-US collaboration in public health and pandemic containment is a loyal partnership that has lasted for forty years."

The Taiwan-US collaboration in public health and pandemic containment is a loyal partnership that has lasted for forty years. I have personally experienced this friendship in 1982 when I had just returned to Taiwan from John Hopkins University. Back then, Taiwan had a major polio outbreak. The US Centers for Disease Control and Prevention (USCDC) sent a team of experts to Taiwan and found our polio vaccines were not as effective as expected due to unsatisfactory storage conditions.

In 1983, based on the model of the US CDC Epidemiological Intelligence Service training program, Taiwan's Department of Health established the Field Epidemiologist Training Program (FETP). I was involved in the program as a lecturer. Participants trained by FETP were able to conduct outbreak investigations, and this has in turn strengthened Taiwan's epidemiological intelligence capability. The program became a popular model in Southeast Asia and even led to the creation of the Training Programs in Epidemiology and Public Health Interventions Network (TEPHINET).

Later, in 2003, Taiwan had an outbreak of SARS. Mr. Tommy Thompson, who was then the US Secretary of Health and Human Services, and Dr. Julie Gerberding, who was the Director of US CDC, sent a delegation of 24 experts to help Taiwan fight the epidemic. We worked together hand in hand, shoulder to shoulder, from morning till night. This successful cooperation allowed Taiwan to prevent the threat of large-scale local transmissions. Secretary Thompson advised us to recruit a team of infectious disease physicians for epidemic control. I visited the US Department of Health and Human Services in late 2003, and Secretary Thompson showed me the Secretary Command Center. Shortly after returning from that trip, I established the Taiwan National Health Command Center, which becomes the Central Epidemic Command Center (CECC) when there is a pandemic.

After the SARS outbreak was completely contained in Taiwan, we amended the Communicable Disease Control Act, restructured both the Department of Health and Taiwan CDC, bolstered infection control capability of medical institutions, and established a communicable disease medical system. We also prepared an adequate stock of personal protective equipment (PPE), trained epidemic prevention personnel, strengthened surveillance on international epidemic events, and tightened border control measures. These efforts laid a great foundation for Taiwan's early response and prompt deployment of containment measures at the beginning of the COVID-19 pandemic on December 31, 2019.

In a vibrant democracy like Taiwan, successful containment of COVID-19 relies on transparent and open policies that build public trust in the CECC. A nation is only capable of controlling a pandemic when all members of the society are wholly engaged in epidemic containment through full compliance with the CECC's guidance and regulation on border quarantine, personal hygiene, social distancing, home quarantine, and immunization.

At the beginning of 2020, the production and equal rationing of face masks remained a challenge in Taiwan. A national mask team was organized to expand 92 production lines in 73 requisitioned manufacturing facilities. The new production lines implemented in the factories were procured by the government. The daily production

of face masks increased from 1.8 million in January to 21 million in May. In 2020, Taiwan donated over 50 million surgical masks and other PPE to the United States and more than 80 other countries.

The United States and Taiwan published the Joint Statement on a Partnership against Coronavirus on March 18, 2020. Under this agreement, both countries will build on their achievements to promote more efficient cooperation across multiple facets of pandemic response. Taiwanese research organizations—including Academia Sinica, National Health Research Institutes, research universities, and private industries—are collaborating with their American counterparts—the US National Institutes of Health (US NIH), other research institutions, and the US private sector. Several COVID-19 workshops and conferences have been held to share experiences and knowledge of COVID-19 containment and pharmaceutical development.

In mid-2020, Taiwan started the national COVID-19 immunization plan through the procurement of vaccines made by Moderna, AstraZeneca, and BioNTech/Pfizer, as well as the production of vaccines developed by domestic companies including Medigen. The Medigen's MVC COVID-19 is a protein subunit vaccine developed by Medigen Vaccine Biologics Corporation in Taiwan, American company Dynavax Technologies, and the US NIH.

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The single dose vaccination rate stood at a very low 0.8% on May 15, 2021, when a Level 3 Alert was announced due to an outbreak of alpha variant in Taiwan. The low initial coverage rate may have been a result of external interference in the procurement process, delayed delivery, and misinformation regarding adverse vaccine reactions. The immunization rates increased rapidly in early June 2021 after Japan, the United States, Lithuania, the Czech Republic, Poland, and the Slovak Republic started to donate a huge number of vaccines to Taiwan. By the end of 2021, vaccine coverage was nearly 80%.

The emergence of the omicron variant has changed the COVID-19 containment policy in almost all countries since December 2021. As approaches shifted from "zero COVID" to "live with the virus," vaccine booster doses, rapid COVID-19 diagnostic tests, and anti-virals were in urgent need. In early April of 2022, the inadequate supply of rapid COVID-19 tests and oral antivirals became a serious challenge for many communities in Taiwan. Fortunately, the omicron outbreak was under better control by June. It is essential to control the emergence and spread of new variants, like Omicron and its subvariants, and take urgent action to create the systems we need to end the acute phase of COVID-19, save lives, and build better and more resilient health security and health systems.

The United States, Taiwan, Japan, and Australia have co-hosted many public health related workshops under the Global Cooperation and Training Framework (GCTF) since 2015. The topics of the workshops included molecular diagnosis of MERS-CoV, Dengue prevention and control, laboratory diagnosis for Zika/Dengue/Chikungunya, programmatic management of drug-resistant tuberculosis, COVID-19: preparing for the second wave, COVID-19 vaccine rollout: experiences and challenges, and efforts and development on eliminating hepatitis C. More than 600 government officials, experts, and civil society representatives from more than 20 countries have participated in these events. This is a great demonstration of the fact that Taiwan can help, and Taiwan is helping. More comprehensive and intensive collaboration in public health and pandemic containment between the United States and Taiwan should be a prominent feature of relations in the post-COVID era.

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