

Guizhen Wu, China CDC's Chief Expert of Biosafety

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Guizhen Wu, China CDC's Chief Expert of Biosafety, has been working for nearly four decades in the field of public health emergencies and laboratory biosafety. Wu is the major planner and promoter of the laboratory biosafety management system in China. In 2018 as the Chairwoman, Wu hosted the 13th Asia-Pacific Biosafety Association (A-PBA) Biosafety Conference held in Beijing, which was the first international biosafety conference held in China. She was elected as the President of A-PBA on September 19, 2019.

Wu completed her undergraduate study at School of Public Health of Beijing Medical University in 1983. After graduation, she was engaged in the prevention and control of infectious diseases and the disposal of public health emergencies. Wu also studied from 1999 to 2000 as a senior visiting scholar at the Harvard School of Public Health (now the Harvard T.H. Chan School of Public Health). Wu obtained her Master of Laws at China University of Political Science and Law in 2003.

Wu is one of the pioneer planners and promoters in the establishment of a laboratory biosafety management system in China. After an incident of laboratory exposure of severe acute respiratory syndrome coronavirus (SARS-CoV) in 2004, she was selected to set up the first Office of Laboratory Management of China CDC and the first professional management team in the field of laboratory biosafety (LB) in China. With her pioneering efforts, a comprehensive, centralized, standardized, and scientific LB management system was established in China CDC and followed by establishment at all levels of CDCs. Since the promulgation and implementation of the Management Regulations on LB of Pathogenic Microorganisms by the State Council of China (Order No. 424 of the State Council), Wu and her team participated in drafting and revising more than 10 relevant laws, regulations, and standards and, as Editor-in-Chief, published more than 10 biosafety-related monographs including the recently published *Laboratory Biosafety Guide*.

Wu proposed a "pyramid-type" multilayer management structure of LB, by which a six-level LB management framework was built including biosafety laboratories, institutions with biosafety laboratories, relevant authorities, and regional, provincial, and national-level health administrative agencies. A laboratory information management system, including quality management and information storage, was integrated into laboratory biosafety for the first time. With her effort, the management, conservation, and utilization of biological resources have also been promoted to a national priority and the Preservation Centre for Bacteria (Virus) Species of China CDC was approved in 2017. Wu led the training and development of the first LB professional teams in China, and Wu has also been involved in guiding the construction and certification of the first batch of and subsequent BSL-3 laboratories at different levels of CDCs in China.

Wu took part in the emergency disposal of emerging infectious diseases, including the SARS epidemic, human infections of swine streptococcus, pandemic H1N1 influenza, the H7N9 avian influenza epidemic, and imported cases of Middle East respiratory syndrome (MERS), Zika virus disease, yellow fever, and Rift Valley fever, etc. During the Ebola outbreak in West Africa in 2014, Wu organized support for the mobile BSL-3 laboratory and the subsequent first fixed BSL-3 laboratory aided by the National Institute for Viral Disease Control and Prevention (IVDC) of China CDC in Sierra Leone, Africa, and tested tens of thousands of clinical samples, which advanced the infectious disease surveillance system of Sierra Leone.

To respond promptly to the initial outbreak of coronavirus disease 2019 (COVID-19) in late December, 2019, Wu led the specialists in IVDC to develop diagnostic reagents for the first time, sequence the virus genome within 24 hours, and successfully isolate the virus in 5 days. Wu successfully led the development of a safe and effective COVID-19 vaccine (still in Phase 3 clinical trials), with an estimated annual output of more than 220 million doses/year. These four major achievements have been recognized as China's major contributions to the global efforts against the COVID-19 pandemic. At the critical moment of the epidemic, she was always in the front lines of the

response as she led the national team to the field of Wuhan first, to Suifenhe, Harbin, and Shulan, and then back to Beijing's Xinfadi Wholesale Market. With her outstanding performance in response to COVID-19, Wu was recently recognized and awarded by the State Council of China.

As a consultant, Wu provides an expert's perspectives for the Chinese national government. She is the key expert group leader of the National Key R&D Program of China "Biosafety key technology research and development"; Deputy Director of the Biosafety Assessment Expert Committee of Pathogenic Microorganism Laboratory of the National Health Commission (NHC); the Chairwoman of the Public Health Committee of China Women Medical Doctor Association; the Chairwoman of the Management and Utilization of Biological Resources of the Chinese Preventive Medicine Association; a national "March 8 Red-Banner Holders"; etc.

Wu was rewarded the Special Government Allowance from the State Council of China and awarded the Outstanding Young and Middle-Aged Expert by the Ministry of Health (now the NHC) of China. She has also won the National Prize for Scientific and Technological Progress (Special Class and First-Class) and the First-Class Award of Science and Technology in Chinese Medicine.

As China CDC's Chief Expert of Biosafety, Wu collaborates with the World Health Organization (WHO), European Biosafety Association (EBSA), and American Biological Safety Association International (ABSA). She continues to play a crucial role in guiding China's biosafety development and safeguarding the country in response to emerging and reemerging infectious diseases. As the first Editor-in-Chief, Wu initiated a scientific journal in English, namely *Biosafety and Health* in 2019, which periodically published the academic findings in the field of biosafety.

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