

K2. Keynote Lecture

Research in infectious disease: past, present and future



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Professor Joseph Sung is the Vice-Chancellor and President of The Chinese University of Hong Kong (CUHK). Professor Sung received his MBBS degree from the University of Hong Kong in 1983, and was conferred a PhD by the University of Calgary in 1992 and a MD by CUHK in 1997. Besides, he holds fellowships and memberships from many professional societies and associations. As a renowned scientist in gastroenterology, Professor Sung's research interests include intestinal bleeding, *Helicobacter pylori*, peptic ulcer, hepatitis B, and colorectal cancer. He has published over 680 full scientific articles in leading journals, edited or authored more than 15 books, and also refereed for more than 15 prestigious journals. His contributions to the advancement of medical sciences and academic development have been recognised with awards such as the Distinguished Award for Fighting SARS (RTHK and Ming Pao), Silver Bauhinia Star (HKSAR Government, 2004), Cheung Kong Achievement Award (Ministry of Education, The People's Republic of China (PRC) and Li Ka Shing Foundation, 2006), The Most Outstanding Contribution Award (Clinical Therapeutics) (Food and Health Bureau, HKSAR Government, 2007), and State Scientific and Technological Progress Award (Second-Class Award, National Office for Science and Technology Awards, PRC, 2007). In 2009, his seminal lectures on peptic ulcer bleeding won Professor Sung the Marshall and Warren Lecture Award. In the same year, he was also awarded the Endoscopy Award of the German Society of Gastroenterology.

The outbreak of SARS in 2003 has awakened the world that threat of infectious disease has not left us, but may be even more close to mankind. In fact, with the globalisation and frequent international travel, spreading of infectious disease is much faster and much more difficult to control. What has changed and what remains unchanged in the world of emerging and re-emerging infectious diseases?

As in the past, the identification of the causative organisms and its natural pool holds the key to ultimate control of infectious disease and its clinical management. Animals (ducks, rodents) and insects remain the most important reservoir of emerging and re-emerging infective agents. Tracing the source of infectious agents in animals, both in wild life and in domestic animals, by a joint effort of veterinarians, virologists and public health experts is often the first step in successful control of an infectious disease. Interaction between animals and humans often leads to outbreaks of infectious disease. In the past, however, infectious disease outbreak is confined by geographic barriers and even the most contagious infection such as influenza took time to become pandemic. Hospitals and sanatoria are havens for infection control and recovery.

Unlike the past, the study of epidemiology of an infectious disease is very much dependent on international collaboration. The World Health Organization has played an important role in coordinating these collaborations. Information and technology has been widely used in contact tracing, thanks to the development of super-computers. Molecular technology such as genome sequencing has expanded the tracing of microbial organisms to achieve molecular epidemiology. Different strains and subtypes of organisms tracing can lead to understanding of the source and origin of infectious diseases. Since SARS and H5N1 influenza, the study of infection control in hospitals and in markets has attracted new attention. In the midst of all these, the importance of input and support of government cannot be over-emphasised.