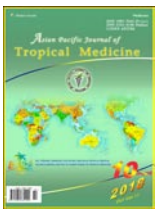

IF: 1.634

Asian Pacific Journal of Tropical Medicine

journal homepage: www.apjtm.org

doi: 10.4103/1995-7645.243069 

# The Belt and Road Initiative: Challenges and opportunities in tackling emerging infectious diseases

Kwok-Yung Yuen

[1]*State Key Laboratory of Emerging Infectious Diseases, Li Ka Shing Faculty of Medicine, The University of Hong Kong, Pokfulam, Hong Kong*
[2]*Department of Microbiology, Li Ka Shing Faculty of Medicine, The University of Hong Kong, Pokfulam, Hong Kong Special Administrative Region*
[3]*Hainan Medical University-The University of Hong Kong Joint Laboratory of Tropical Infectious Diseases, Hainan Medical University, Haikou Hainan, 571101, China*

**ABSTRACT** The majority of emerging infectious disease agents affecting human are RNA viruses that originate from animals. Globalization and climate changes continue to reshape the geographical distribution of humans, animals, vectors, and microbes, and allow their mixing to occur at an unprecedentedly high frequency. These have led to interspecies transmission of numerous emerging pathogens in the past decades, such as avian (H5N1 and H7N9) and pandemic (H1N1) influenza viruses, severe acute respiratory syndrome (SARS) and Middle East respiratory syndrome (MERS) coronaviruses. The increasing demand for food, sex, and drugs associated with the rising, mobile and ageing populations and the economic growth in the rapidly developing geographical regions involved in the Belt and Road Initiative may lead to outbreaks of zoonoses, sexually transmitted diseases, antimicrobial resistance, and infections associated with contaminated pharmaceutical products. These outbreaks often occur in the setting of marked lagging in hygiene, public health and regulatory measures and are accompanied by microbial genome adaptation to the changing microbiomes in human, animal and the ecosystem. The outbreak of SARS in 2003 has sparked an explosion of novel coronavirus discovery by virological surveillance in animals and human. The number of coronaviruses has increased from 10 before 2003 to over 40 with complete genomes within the past 14 years. Except for HCoV-HKU1 and HCoV-NL63 which are found in human, the majority of these newly discovered coronaviruses are found in bats and birds. In addition to enhancing our understanding in the phylogeny and evolution of coronaviruses, animal surveillance for novel viruses has strategic importance in the control of emerging infectious diseases through genomic analysis, study of pathogenesis, and development of rapid diagnostic tests, antimicrobials, vaccines and infection control strategies.

**Keywords:** Belt and Road Initiative; Emerging infectious diseases; Zoonoses; Interspecies transmission

*Article history:*
Received 28 September 2018
Received in revised form 30 September 2018
Accepted 30 September 2018
Available online 15 October 2018

✉First and corresponding author: Kwok-Yung Yuen, Academician of the Chinese Academy of Engineering, State Key Laboratory of Emerging Infectious Diseases, Li Ka Shing Faculty of Medicine, The University of Hong Kong, Pokfulam, Hong Kong; Department of Microbiology, Li Ka Shing Faculty of Medicine, The University of Hong Kong, Pokfulam, Hong Kong Special Administrative Region; Hainan Medical University-The University of Hong Kong Joint Laboratory of Tropical Infectious Diseases, Hainan Medical University, Haikou Hainan, 571101, China.
E-mail: kyyuen@hku.hk



**How to cite this article:** Yuen KY. The Belt and Road Initiative: Challenges and opportunities in tackling emerging infectious diseases. Asian Pac J Trop Med 2018; 11(10 suppl):13.