

# Introduction

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Viral respiratory tract infections are important and common causes of morbidity and mortality worldwide. Over the past two decades, several novel viral respiratory infections with epidemic potential that threaten global health security have emerged. Human cases of the highly pathogenic avian influenza A(H5N1) were initially detected in Hong Kong in 1997, before spreading to other parts of Asia, the Middle East, Europe and Africa, with a case fatality rate close to 60%. Influenza A(H1N1)pdm09 virus first emerged in 2009 as a novel swine-origin strain, which rapidly led to a pandemic and has remained a common circulating strain in many parts of the world. Human infections with the novel avian influenza A(H7N9) virus were first reported in mainland China in March 2013 and the infection has since spread to Hong Kong and Taiwan. Avian influenza A(H5N1) and A(H7N9) viruses have continued to circulate widely in some poultry populations and infect humans sporadically; sporadic human cases of avian A(H5N6), A(H10N8) and A(H6N1) have also emerged.

In March 2003, the World Health Organization (WHO) issued a global alert about an emerging SARS caused by a novel CoV, which rapidly spread from mainland China *via* Hong Kong to at least 29 countries/regions and finally ended in July 2003, with 8096 probable cases and 774 deaths. Since its first discovery in a patient who died of severe pneumonia in Saudi Arabia in 2012, MERS-CoV has spread to 26 countries. The mortality rates of MERS-CoV infection are high, especially in those with comorbid disease.

In addition to the threat of novel CoV and avian influenza viruses, the burden of the common respiratory viruses, such as seasonal influenza, RSV and human rhinoviruses (HRV), on healthcare utilisation remains high, and yet is also a largely unmet medical need. This highlights the urgent need for developing more effective therapies in order to reduce the morbidity and mortality associated with novel threats, as well as the regular offenders.

The Platform for European Preparedness Against (Re-)emerging Epidemics (PREPARE) (<http://www.prepare-europe.eu/>) is an European Union funded network aiming to harmonise large-scale clinical research studies on infectious diseases, and provide real-time evidence for clinical management of patients and for informing public health responses. To advance our understanding of the clinical, epidemiological and scientific aspects of important respiratory viruses and facilitate planning of research studies on emerging

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infectious diseases, this *ERS Monograph* aims to provide an up-to-date and comprehensive overview of SARS, MERS and other viral respiratory infections, including seasonal influenza, avian influenza, RSV and HRV through six chapters written by authoritative experts from around the globe. We are most grateful to all the authors for their enormous contribution to this excellent book. We believe the selected topics will be of immense interest to all clinicians and scientists in the field.

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