

## Contextualising SARS Coronavirus 2 and COVID-19



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It is timely to assess where we are in the current SARS Coronavirus-2 pandemic. This edition of *Microbiology Australia* has national, and international, authorities authoring a series of papers on SARS Coronavirus 2 and related subjects. We are extremely fortunate to have papers on the overarching issues of zoonotic spread (Gartner, Selleck) and how this relates to the practicalities of our responses via public health (Bennett), vaccination (Macintyre), antivirals (De Clercq), and immunotherapies (Kelleher). Diagnosis and transmission control have been at the centre of public health responses (Blackall, Speers), as has been research informing our understanding of the virus (Dhakal, Zaunders, Eden). A focus on basic research, translated into outcomes in real time, has been a very successful feature of the COVID-19 pandemic. We are privileged to be able to feature some of this research, in these papers, although this is only part of the extensive and excellent Australian work in reducing the impact of SARS CoV2 infection, and COVID-19 disease.

It is salient to reflect on where we are now, but also the background to the current pandemic. In early 2003, following outbreaks in the Hong Kong Special Administrative Region (SAR), and Guangdong province in China, the WHO issued a 'global alert about cases of atypical pneumonia' (WHO press release, 12 March 2003). This led to a global response with identification of the causative organism, and postulates about transmission from bats via civet cats in 'wet markets'. More recent research has suggested this may be an oversimplification, and some of the complexities are explored in this edition of *Microbiology Australia*. Reviews of different approaches previously to SARS control are interesting to read, in the context of the current outbreak. Particularly thought provoking are the processes in China for notification in the initial SARS outbreak, as many of the limitations present in 2003<sup>1</sup> reappear in initial approaches in 2020. Further, the issues around laboratory acquired SARS after the 2003 outbreak ended, remain a concern for the future<sup>2</sup>.

Fast forward to January 2020, a 17-year gap from the last case of SARS CoV, and despite a monitoring process for atypical pneumonia of unknown origin existing in China, an outbreak occurs, with early deaths in those linked to an open food market in Wuhan, and later deaths in healthcare workers in the same city<sup>3</sup>. The pandemic then spreads globally, and we are all now engaged in responding to this at all levels of science, and medicine. What we do now will define the next stage of the pandemic, hopefully with control through continued public health measures, vaccination, vigilance, and cooperation.

I want to acknowledge the tremendous basic science done in Australia to assist with the global response to SARS CoV2. It is these people, working alongside frontline workers, sometimes researching areas previously regarded as abstruse, who have laid the basis for much of our success in reducing the severity of COVID-19 in this country. Not all research has successfully come to a translatable outcome, but we should acknowledge that the willingness to try, is just as important in these efforts. We learn from what is unsuccessful just as much, often without those doing this work being as appreciated – they should be. It is being a student of science, that drives so much research that informs our later diagnostic and therapeutic efforts, and we should be mindful of this comment from Fred Sanger, who won two Nobel prizes for sequencing. He said in 1980, 'Through art and science in their broadest senses it is possible to make a permanent contribution towards the improvement and enrichment of human life and it is these pursuits that we students are engaged in'. We are all students, and striving for the truth is such an important part of all research.

With the emerging lineages of SARS CoV2 Variants of Concern (VOC), research will continue to be crucial to reducing the impact of these more transmissible, and possibly more clinically severe lineages<sup>4</sup>. It is these types of research we students will need to undertake in the coming years.

## References

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