Emerging infectious diseases

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^b Guest Editor, Issue 5, 2016

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Article history

Publication date: December 2016

Citation: McAnulty JM. Emerging infectious diseases. Public Health Res Pract.

2016;26(5):e2651653. doi: <http://dx.doi.org/10.17061/phrp2651653>

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You would think we would have sorted infectious diseases out by now, with so much research into their causes and treatment, and so many vaccines and antimicrobials available. But infectious diseases continue to challenge us – perhaps that's what makes them so interesting.

Known infectious diseases continue to cause a huge burden of preventable disease internationally, and new diseases emerge regularly as human behaviour, infectious agents and environments continue to change. Witness the recent unfolding of the Zika virus pandemic across the Pacific and South America, increasing antibiotic resistance internationally, Middle East respiratory syndrome (MERS) in the Arabian Peninsula and South Korea, and avian influenza in Asia and elsewhere.

It's not just poor countries that are at risk. Jurisdictions that invest in high-performing clinical and public health services also suffer. In New South Wales (NSW), Australia, in 2016, multiple outbreaks of infection due to legionella, influenza, norovirus and various strains of *Salmonella* appeared. And as Ebola and Zika have shown, even remote threats can have powerful effects beyond the point of outbreak, causing anxiety and panic in communities that are not directly affected by the disease.

All is not lost. As the ancient Chinese military strategist Sun Tzu advised, know your enemy. When we understand infectious diseases, we have a better chance to control and prevent them.

In this issue of *Public Health Research & Practice*, we highlight the threat of, and response to, emerging infectious diseases. Firman, Williams and Baggoley (former Australian Chief Medical Officer and chair of the World Health Organization International Health Regulations Emergency Committee concerning MERS) examine how emerging infectious diseases pose a risk to countries such as Australia, and why effective responses need to be well coordinated and flexible. Hill-Cawthorne and Sorrell discuss research needs, especially relating to genomics, digital epidemiology and pathogens jumping the species barrier.

In light of the international resurgence of various mosquito-borne infections, Webb and Doggett discuss the value of surveillance systems for arboviruses and mosquito monitoring in NSW, particularly in detecting incursions of exotic species. With Hess, Webb also cuts through the multitude of registered insect repellents available in Australia to find why some are more effective than others. And former Ebola 'tsar' Gilbert takes a fresh look at how Australia responded to the Ebola threat in West Africa.

Like many other national and international jurisdictions, NSW has multiple useful surveillance systems for tracking disease, including clinical, laboratory and syndromic surveillance. We have effective networks of public health,

diagnostic, clinical, research and other specialists who regularly collaborate on epidemiological investigations to identify and control the source of infections. We have excellent clinical services, and communication systems to alert clinicians and the public about prevention.

As this issue of our journal demonstrates, we can use evidence and data more effectively to drive decisions and review the outcomes of our responses so we can do even better in the future.

The non-themed papers in this issue have a strong focus on Indigenous health, including qualitative research by [Kohlhagen et al.](#) about the social sequelae of meningococcal disease in a regional area of NSW, a mixed-methods study by [Lucaszyk and colleagues](#) about the availability and acceptability of falls prevention services for older Aboriginal people, and an 'In practice' article by [Lee et al.](#) demonstrating a continuous quality improvement approach to Aboriginal tobacco resistance and control. Finally, [Carroll and Freeman](#) analyse online news and blog comments about an Australian celebrity who admitted smoking while pregnant, and suggest that more resources are needed to strengthen the public health response to online media.

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Competing interests

None declared

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