

BUG BREAKFAST IN THE *BULLETIN* OUTBREAKS: THE PAST, PRESENT AND FUTURE

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Since its inception 15 years ago, Bug Breakfast has been an important venue for discussing outbreaks of communicable and, occasionally, non-communicable diseases. For its 15th anniversary celebration, the theme of Bug Breakfast was *Outbreaks of the Past, Present, and Future in New South Wales*.

THE PRESENT

Numerous outbreaks have been investigated by staff of the public health units and NSW Health over the past 15 years. To highlight the varying types of outbreaks that can occur, five representing different modes of transmission of infection were discussed.

Water borne outbreak

A statewide outbreak of cryptosporidiosis emerged during the summer of 1997/1998, when over 1,000 laboratory confirmed cases were notified to NSW Health.¹ Investigations, including a case control study and an environmental investigation, revealed a link to contaminated public swimming pools. In response, NSW Health developed new risk minimisation protocols for pools and spas², including the recommendation for regular super-chlorination of public swimming pools.

Food borne outbreak

A large outbreak of hepatitis A involving over 450 cases was identified in 1997.³ A case control study linked illness to consumption of oysters. Further investigation identified a single contaminated estuary as the source of the oysters. The results of this investigation led to a clean-up program of the estuary in which the oysters were grown, and promoted the importance of clean estuaries in general.

Blood borne outbreak

Patient-to-patient transmission of HIV was reported to the NSW Department of Health in 1993.⁴ Four patients were likely to have acquired HIV through inadequate infection control measures whilst having minor surgery. Infection control measures remain an important tool for controlling blood borne diseases.

Respiratory outbreak

A large outbreak of respiratory disease occurred among the passengers and crew of a cruise ship returning to Sydney in September 2000. Over 200 cases presented to the ship's medical clinic during the voyage.⁵ A public health team

met the ship off the coast of NSW to investigate. The cause was identified as an outbreak of influenza. In this outbreak, rapid test kits helped diagnosis. A history of prior influenza immunisation was not associated with a reduced risk of disease.

Zoonotic outbreak

An outbreak of psittacosis, including over 50 cases, was identified in the Blue Mountains in 2002.⁶ A case control study linked illness to direct contact with live or dead wild birds, as well as lawn mowing without a grass catcher. This outbreak could easily have been missed had it not been for alert clinicians and a careful investigation. The risk of psittacosis may be reduced by avoiding contact with dust from birds.

THE PAST

Examination of the history of epidemics in NSW is important for a number of reasons. First, while most epidemics were not demographic crises, their psycho-social impact on society was large. They captured public attention and were responsible for fear, panic and hysteria. Second, in many cases they became the stimulus for public health reform. In particular they focused public attention on living and working conditions in NSW towns and cities. Third, they tested how governments manage extreme crises.

Notable historic outbreaks

The scarlet fever epidemic of 1875–76 possibly killed more than 1,500 young children in NSW, including almost 600 in Sydney, and produced the first tentative moves towards an infectious disease policy. The smallpox epidemics of 1881–82 and 1913–17 in Sydney, and the plague epidemic of 1900, saw the emergence of formal policies of isolation, quarantine, fumigation and cleansing, as well as vaccination.

THE FUTURE

It is important to note that outbreaks that are occurring today are likely to be occurring in the future. However, there are factors that will affect the presentation of future outbreaks, such as the increasing population, population movements and climate change.

Six diseases of potential future significance were described:

- influenza: an outbreak is a certainty and only a question of when
- hospital-acquired infections, including infections due to multi-resistant organisms
- Nipah virus: the virus was originally described in Malaysia and has spread from bats to pigs to humans. It is important for Australia because bat colonies from Malaysia to Melbourne interact and therefore provide a route for the virus to travel

- West Nile virus and Japanese encephalitis virus: both viruses could be a danger for Australia, more so Japanese encephalitis virus. The latter has caused disease in the Torres Strait Islands and has the potential to spread further south
- variant Creutzfeldt-Jacob disease: this disease is still not fully understood and Australians who have lived in countries where bovine spongiform encephalitis has occurred may be at risk
- HIV infection: clusters are still a possibility in some populations.

In order to control future outbreaks of these diseases, it is important to maintain good surveillance, adequate laboratory capacity and the capability to initiate appropriate interventions.

CONCLUSIONS

Investigating outbreaks of disease provides a unique opportunity to learn about the characteristics of the disease, such as the biology, epidemiology, control and prevention measures. Dealing with current diseases and an

understanding of how we have managed in the past will help us to deal with unpredictable diseases of the future.

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The Bug Breakfast web pages can be accessed from the NSW Health Intranet site at the following web address: <http://internal.health.nsw.gov.au/public-health/bugbreakfast/index.html>. Links to the Bug Breakfast web page can also be found on the Communicable Diseases and the Public Health Training and Development Branch web pages.