

Hepatitis A: Wallis Lake revisited

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In 1997, Wallis Lake, a major oyster-growing estuary on the mid-north coast of New South Wales (NSW), was the source of a large hepatitis A outbreak caused by contaminated oysters. Ten years on, we revisited the epidemiology and clinical presentation of hepatitis A, appraised the environmental controls on oyster leases since the Wallis Lake outbreak, and placed shellfish quality management in an historic, cultural and economic context.

The hepatitis A virus is transmitted via the faecal-oral route and can cause a range of symptoms including malaise and diarrhoea, acute hepatitis with jaundice, and sudden and severe liver failure. Patients usually recover completely without sequelae or recurrences, and develop lifelong immunity.¹ Hepatitis A is a disease often associated with poor environmental sanitation, with water and food as the principle vehicles of transmission. In Australia, the quality of water and sanitation is generally good and not an important cause of hepatitis A virus transmission. In NSW, 50% of people notified with hepatitis A between 2002 and 2006 reportedly acquired the infection during travel to endemic areas.² Travellers born in endemic countries returning to their country of origin to visit friends and relatives were at highest risk of infection.²

However, the outbreak in 1997 that resulted in 422 cases of hepatitis A in NSW was traced to oysters from Wallis Lake.³ An environmental investigation by NSW Health found the lake contaminated with human faecal and nutrient pollution from unsewered townships, agricultural areas, waterway users and run-off from a large urbanised area. In response to the outbreak, a range of local and state government agencies collaborated in estuary and catchment remediation works. Public toilets were built for the boating public, devices were installed to improve stormwater management, sewerage was provided to several townships, litter baskets were added in stormwater drains, and eight wetlands were constructed to serve as a filter for the water reaching the estuary. The remediation works greatly improved the quality of the Wallis Lake water and in 2004 the local council was awarded the Thiess Riverprize for best practice in river and catchment management and environmental repair in Australia.⁴

To help protect the public from consuming contaminated shellfish, the NSW Food Authority runs the NSW Shellfish Program.⁵ The program aims to prevent the harvest of contaminated shellfish by determining the classification of specific harvest areas as either 'approved' for harvest and direct sale; 'restricted' until shellfish are depurated (i.e. placed in clean water so that they can release accumulated micro-organisms into the surrounding water) or relayed to an approved harvest area prior to sale; or 'prohibited' from harvest at any time. The classifications are determined by continuous risk assessment through surveys of potential pollution sources (such as sewage treatment plants, boats and construction sites), and sanitary surveys of the shoreline, water quality and shellfish. In addition, harvest areas can be closed immediately if thresholds (for example, rainfall or salinity thresholds) are exceeded.

The Wallis Lake hepatitis A outbreak demonstrated the close relationship between coastal development, sewage management, infectious diseases and human health. During this outbreak, the financial journalist Max Walsh drew attention to a book, *The French, the English and the Oyster* written by the British economist, Robert Neild.⁶ An oyster lover, the author examined why, in the face of similar threats, the French oyster industry had survived and thrived while the English industry had not. He concluded that the French mercantilist, economic and centralist political traditions enabled successive French governments to exercise effective power over such things as the distribution and location of oyster leases, the prohibition of harvesting at certain times and the management of human waste. In England on the other hand, the *laissez faire* economic ideology permitted the oyster industry to wither as the inevitable effects of human development and oyster-related foodborne outbreaks became manifest.

The Wallis Lake outbreak was a stark reminder of the inherent conflict between urban and rural development and oyster growing. The combination of environmental measures and the NSW Shellfish Program has been a successful public health and commercial response to the hepatitis A outbreak. In 2008, more than 10 years after the outbreak, the Wallis Lake oyster industry is thriving, producing 30% of Sydney rock oysters in 2007 worth an estimated \$14 million, and winning the Sydney Rock Oyster People's Choice Award for tastiest oysters.⁷

References

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