

## RISK OF MEASLES TRANSMISSION ON AEROPLANES - AUSTRALIAN EXPERIENCE 2007-2011

Authors: Hoad VC<sup>1</sup>, O'Connor BA<sup>2</sup>, Langley AJ<sup>3</sup>, Dowse GK<sup>4</sup>

<sup>1</sup>North Metropolitan Health Service, Perth, Western Australia

<sup>2</sup>National Centre for Epidemiology and Population Health, ANU, Canberra, Australian Capital Territory

<sup>3</sup>Sunshine Coast Public Health Unit, Maroochydore, Queensland

<sup>4</sup>Communicable Disease Control Directorate, Department of Health, Perth, Western Australia

**Introduction:** There is little published information on the risk of transmission from infectious measles cases during aeroplane travel, or the effectiveness of contact tracing in this setting. This study aimed to quantify the risk of transmission associated with infectious measles cases who travelled on flights to or within Australia.

**Methods:** Information on all measles cases who were notified in Australia in the period January 2007 to June 2011, and who were likely to have been infectious or infected while travelling on aeroplanes, was obtained from state and territory health authorities

**Results:** Forty-five infectious cases travelled on aeroplanes. Twenty secondary cases occurred on 7 of 49 flights (14%, 95% CI 6.0-29%), including 7 of 36 (19%, 95% CI 8-40%) international flights and 0 (95% CI 0-28%) of 13 domestic flights. Nine (45%) secondary cases were seated within 2 rows of the index case and 11 (55%) were seated outside 2 rows. Secondary transmission was more likely to occur with younger index cases ( $p=0.025$ ) and where there were multiple infectious cases travelling ( $p=0.018$ ). Only 31% of flight manifests were available to health authorities within 5 days of travelling.

**Conclusion:** Despite secondary measles transmission occurring in 19% of international flights with infectious cases, risk was not clearly related to seating proximity and contact tracing was ineffective, especially given delays in diagnosis, notification and accessing flight manifests. We recommend that direct contact tracing to identify susceptible people exposed to measles cases on aeroplanes should not be undertaken routinely, and other strategies should be considered.