

## EFFECTIVENESS OF PREVENTING INFANT PERTUSSIS BY 'COCOONING' STRATEGY: A NSW CASE-CONTROL STUDY

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**Background:** In April 2009, NSW implemented a publicly-funded initiative for preventing pertussis in young infants by vaccinating adult close household contacts, the 'cocoon strategy'. This study sought to assess the effectiveness of this strategy.

**Methods:** A case-control study was conducted of all pertussis notifications among NSW infants aged <4 months between April 2009 and March 2011. For each case, up to 4 controls were randomly sampled from a register of all NSW-born infants and individually matched to cases by date of birth and statistical subdivision of residence.

Vaccination status of the mothers of cases and controls was ascertained by telephone interview, in addition to information on demographic and socioeconomic factors, household composition, and vaccination status of household members.

**Results:** 217 cases and 585 matched controls were included. 133 of 217 (61%) cases were hospitalised and 28 (21%) of these required intensive care. 152 of 203 (75%) case mothers and 425 of 550 (77%) control mothers reported receipt of dTpa. 47 of 193 (24%) case mothers and 189 of 507 (37%) control mothers were vaccinated at least 4 weeks before the onset of pertussis in the index infant. The unadjusted odds ratio of maternal vaccination was 0.49 (95% CI: 0.32 to 0.76). Households of cases were more likely to contain other children (81% vs 62%,  $p < 0.001$ ).

**Conclusion:** Timely maternal vaccination is associated with a lower risk of pertussis in unimmunised infants. The predominance of siblings in case households suggests they have a significant role in infant pertussis transmission. These results are of key importance to local and international policy.

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