

- lack of staff to assist in contacting the exposed mothers by phone over the four-day Christmas holiday period;
- inadequate, incorrect, or out-of-date contact information for many mothers;
- overload of the Emergency Department with anxious parents during a busy holiday period;
- exhaustion of the hospital's stock of erythromycin and difficulty obtaining extra stock over the holiday period.

To avoid such problems in future, the Western Sydney Area Public Health Unit has developed a protocol for dealing with outbreaks of infectious disease. This protocol emphasises early recognition of the potential for large

numbers of contacts, and identification of alternative options for implementing public health interventions, such as providing special facilities within the outpatients department or at community health centres.

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PERTUSSIS: A COMMENT

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The article by Vella et al. highlights the practical difficulties of managing exposure to pertussis in the health care setting. It is likely that other instances of exposure of newborn infants to pertussis in the health care setting have occurred in New South Wales during the period of highest pertussis activity in 1996–97. The method of diagnosis of the index case is not stated—a positive culture would have been of greater concern than positive serology alone. No data were presented describing compliance with the recommended course of erythromycin. Few of those who obtained erythromycin are likely to have completed a full 10-day course for themselves or their infants. However, erythromycin prophylaxis has been shown to be effective in the more intense exposure situation of mother to infant,¹ and appears to have been effective in the present hospital outbreak. As pointed out by the authors, this incident prompted a public health response and raises at least two

questions. Is the transmission of pertussis to patients (including but not limited to neonates) by health care workers a significant problem? What role is there for pertussis boosters for health care workers or adults in general?

The first report to draw attention to the then barely recognised problem of adult pertussis was from Sydney in 1978.² Australia currently has one of the highest notification rates for pertussis in persons over 20 years of age among countries with established pertussis immunisation programs.³ Adults are estimated to have been responsible for introducing infection into the household in approximately 15 per cent of cases.⁴ Although whole cell pertussis vaccine has been used successfully to terminate outbreaks in an institutional setting, it has generally been considered unsuitable for use in adults.⁵ Current infant/child acellular pertussis vaccines must also be modified for use in adults by reducing the amount of pertussis antigens as well as the diphtheria and tetanus content.

A trial of such a vaccine in 550 adults was recently carried out by the Centre for Immunisation Research at the New

Children's Hospital, with a preliminary report at the recent National Immunisation Conference in Melbourne.⁶ The vaccine was well tolerated, with good immune responses; efficacy was not examined. A randomised controlled trial of acellular pertussis vaccine in adults, with endpoints of clinical or serologic pertussis, is currently under way in the United States. The evidence from these and other trials on efficacy and tolerability will provide a good basis for decisions on the use of pertussis vaccines in adolescents and adults.

Given the difficulty of immunising adults at a community level, implementation of additional pertussis boosters after the age of five years is most likely to be feasible as part of a secondary school-based program. However, health care workers are an identifiable and accessible target group for immunisation. A review of management of patients and health care workers exposed to pertussis recommends wearing of a mask until five days of erythromycin prophylaxis have been completed or restriction from work if pertussis develops.⁷ This is clearly a big ask! Health care workers generally have levels of antibody to pertussis antigens that are no higher than those in the general population, so they would be expected to be no less susceptible to infection.⁸ The expense and potentially high morbidity associated with pertussis exposure in hospitals, particularly with those exposed to infants, will make use of acellular pertussis vaccine in at least some subgroups of health care workers an attractive option in the hospital environment.⁹

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