



CENSUS OF SCHOOL ENTRY IMMUNISATION CERTIFICATES, EASTERN SYDNEY, 1994

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This article reports on a census of immunisation status among kindergarten children attending Eastern Sydney schools using verified records in the form of the immunisation certificates presented by parents under the provision of the Public Health (Amendment) Act 1992.

The immunisation provisions of the Act, commonly known as the school entry legislation, came into force at the start of the 1994 school year. The legislation requires schools to collect the official immunisation certificate from every child enrolling in a kindergarten class. The certificate documents the child's immunisation status and is issued as complete only if the child has received every dose in the routine schedule up to and including the before-school diphtheria-tetanus booster. The certificates serve as reminders to parents of the need for their children to be fully immunised, as verified records of immunisation status and as a means of identifying children who might require urgent immunisation or exclusion during an outbreak of measles or other vaccine-preventable infection in the school.

Immunisation surveillance has been carried out in Eastern Sydney school kindergarten cohorts annually since 1989 as part of the health screening conducted by school health nurses^{1,2}. The major disadvantage of this form of surveillance has been the reliance on parental report.

METHODS

A mailing list of primary schools in Eastern Sydney was compiled from information provided by the Department of School Education, Catholic Education Service and Independent Schools Association. A questionnaire, seeking information on the kindergarten enrolment, number of children providing certificates and whether the certificates were complete, incomplete or uninterpretable, was posted early in May 1994 to principals of all 73 primary schools identified. Non-responders were sent a second letter and questionnaire in June, and if the questionnaire was still not returned, the school was contacted by a school health nurse. Questionnaire data were entered onto an EpiInfo database for analysis.

RESULTS

Questionnaires, pertaining to 2,664 kindergarten children, were received from 69 schools. Of these, 36 were government schools with 1,482 children, 19 were Catholic schools with 624 children and 14 were independent schools with 558 kindergarten children. Overall, 80.9 per cent of children had provided an immunisation certificate. Not unexpectedly, schools responding to the questionnaire in July had achieved a higher certificate return rate (89.1 per cent) than schools responding in June (84.4 per cent) or May (77.8 per cent) ($P < 0.0001$). Of certificates received, 89.9 per cent were marked as complete, 9.6 per cent as incomplete and 1.1 per cent were uninterpretable. The worst case figure for complete immunisation in the 69 schools which returned the survey, assuming that all children who did not provide certificates were incompletely immunised, was 72.7 per cent.

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School entry immunisation

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Important differences were found when school type was examined (see Table 1). Certificate return rate was significantly lower in Catholic schools than government schools or independent schools ($P < 0.0001$). Complete immunisation was slightly, but not significantly, lower in government schools compared to Catholic schools but significantly lower than in independent schools ($P < 0.0001$). There was great variability in the percentage of children with complete immunisation within each school type.

DISCUSSION

The census of school immunisation certificates described in this report represents a simple method of ascertaining verified immunisation status of kindergarten enrollees. It could be done annually as an indicator of childhood immunisation. As the census is carried out by mail, it provides an opportunity for the Public Health Unit to inform and educate primary schools about the Public Health (Amendment) Act 1992. Results of the survey could be fed back to the schools with an indication of their performance relative to other local schools, to provide an incentive for improved performance the following year.

The census, carried out in the first year of the legislation being in force, estimated that at best 89.9 per cent of the children enrolling in kindergarten had complete immunisation, with a worst case figure of 72.7 per cent. A Victorian survey based on mandatory immunisation certificates for children entering 19 primary schools found that 74 per cent of children (worst case figure) had complete certificates the second year after legislation was introduced and 89 per cent had complete certificates the following year³.

The main limitation of our census was that it did not provide information on actual vaccine doses missed by children with incomplete certificates. This information could be ascertained by a telephone survey of a random sample of schools⁴ or by adding a limited number of questions to the postal questionnaire used in the census.

The survey demonstrated significant differences in return rates and complete certificate rates between school types, with discrepant results for the two parameters. The differences are difficult to interpret because some schools responded later in the year than others, and these schools had higher return rates. This report does not analyse the potential confounding effects of this factor. In the light of previous research^{1,2}, it is suggested that discrepancies between return rate and complete immunisation rate may be partly explained by literacy and access to health care among families from non-English speaking backgrounds.

TABLE 1

RESULTS OF IMMUNISATION CERTIFICATES
CENSUS BY SCHOOL TYPE

	Govt	School type Cath	Indep	Total
Number of schools	36	19	14	69
Kindergarten enrolment	1,482	624	558	2,664
Certificates collected, %	81.6	71.0	90.0	80.9
Complete certificates, % *	87.4	89.4	96.4	89.9
Percentage range of complete certificates	61-100	22-100	68-100	22-100

* as percentage of certificates collected

The prevalence of non-English speaking families varies appreciably among the different school types in Eastern Sydney. Schools drawing children from communities with a high prevalence of non-English speaking families and less access to primary health care may have had a poor return rate but a better immunisation compliance among the self-selected population of children providing certificates. In contrast, schools in communities with high literacy rates but suboptimal access to primary health services had good return rates, but the certificates reflected suboptimal immunisation uptake. Schools used by families with both good literacy and good access to primary health care showed high return rates and high immunisation uptake.

The study has shown that annual immunisation surveillance of kindergarten enrollees through schools, using the provisions of the Public Health (Amendment) Act 1992, is a feasible method for obtaining indicator information on immunisation coverage. Because this method generates detailed small-area data, with each school representing its often unique local population, results of the surveillance can be used to target particular subgroups and improve immunisation coverage at the community level.

1. Ferson MJ, Christie D. Measles immunisation compliance: poor impact of biennial measles control campaigns on children under five. *Aust J Public Health* 1992; 16:31-34.

2. Ferson MJ, Fitzsimmons G, Christie D, Woollett H. School health nurse interventions to increase immunisation uptake in school entrants. *Public Health* 1995; 109:25-29.

3. Thompson SC, Cocotsi L, Goudey RE, Murphy A. An evaluation of school entry immunisation certificates in Victoria. *Aust J Public Health* 1994; 18:269-273.

4. Rixon G, Hort K, Liddle J. School entry certificate survey, Northern Sydney Area. *NSW Public Health Bulletin* 1994; 5:92.

EDITORIAL NOTE

In the last issue of the *NSW Public Health Bulletin*, Scholtz and Cavagnino¹ reported on the results of an investigation of an illness in 15 children. They suggested that the children's symptoms were the result of acute copper intoxication – induced by the consumption of drinking water containing elevated levels of copper. Following publication of the article, it was pointed out that the symptoms were likely to have been due to gastric irritation rather than systemic poisoning. Although soluble salts of copper are poisonous, systemic poisoning is likely to result only if larger quantities are ingested (e.g. gram quantities of copper sulphate). Gastrointestinal irritation can result from drinking carbonated water or citrus fruit juices which have been in contact with copper vessels or pipes². The findings of Scholtz and Cavagnino accord with this.

1. Scholtz A and Cavagnino P. Investigation of suspected copper intoxication in children from drinking water. *NSW Public Health Bulletin* 1995; 6(1):1-3.
2. Parmeggiani L (ed). *Encyclopaedia of Occupational Health and Safety*, 3rd (revised) edition. Geneva: International Labour Office, 1993.