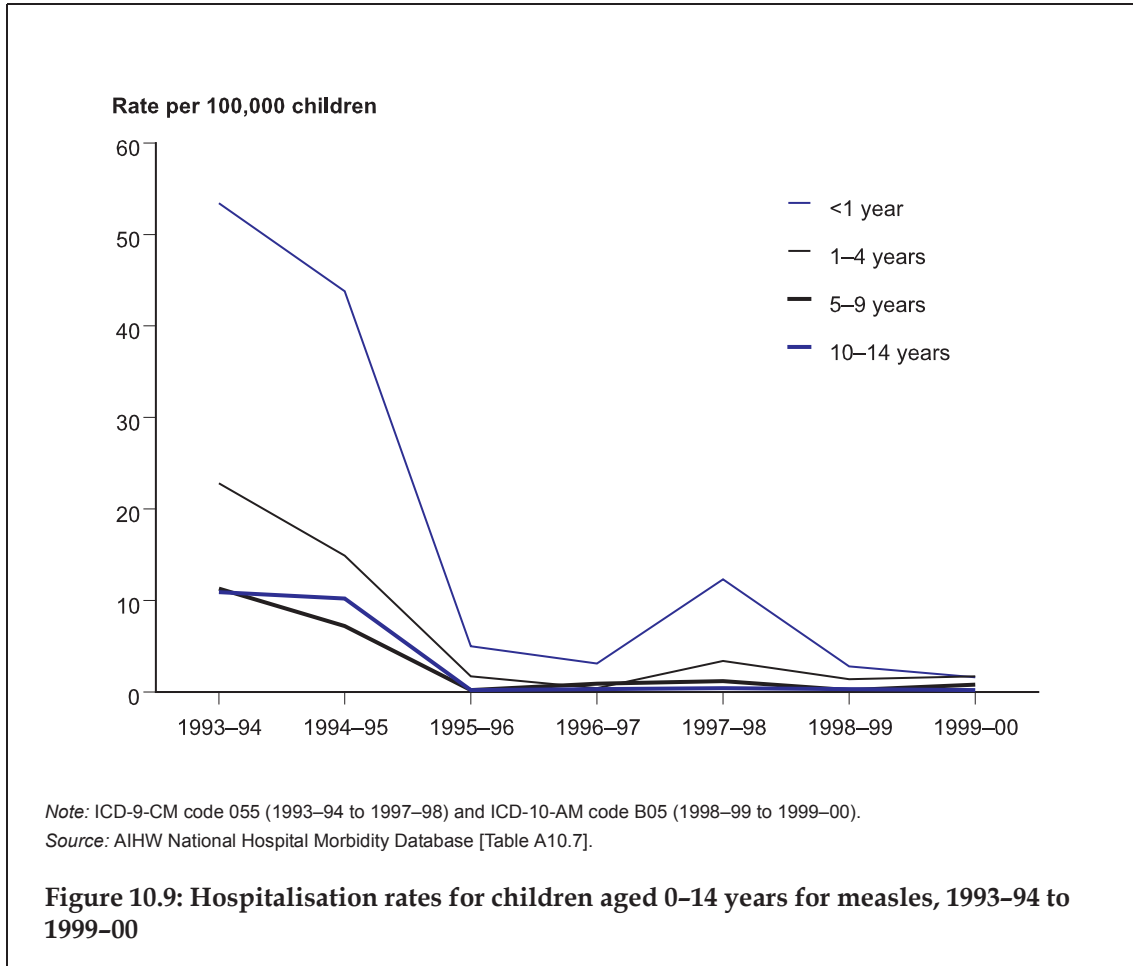


- Although in 2000 the notification rate for measles in children aged 0–14 years was low (1.2 per 100,000 children aged 0–14 years), notification rates were high for children in all age groups in 1993 and 1994, and particularly for younger children (0–4 years) in 1997. The highest rates, reported in 1993 and 1994, occurred during a major epidemic.
- Between 1993 and 2000, the highest rates were among infants. It has been suggested that delayed vaccination of children aged less than 2 years could contribute to the high rates of measles among young children (McIntyre et al. 2000).
- The decline in the overall incidence of measles may be a result of the introduction in 1994 of a second dose of MMR vaccine for children aged 10–16 years. There was a decrease in measles notifications for children aged 10–14 years, from 170 to less than 1.

As with any vaccine-preventable disease, although notifications are declining, measles is not under control. An outbreak can occur when the number of non-immune individuals reaches a level that supports transmission. As vaccination coverage improves among children, older people are more likely to account for a higher proportion of notifications. Young adults aged 18–30 years are presently most at risk of measles (Lambert et al. 1999) and are being encouraged to make sure they are up-to-date with their MMR immunisations. The low notification rates for measles since July 1998 may be a result of the success of the Measles Control Campaign and increases in overall measles vaccination coverage.

Time series in hospitalisation rates for children aged 0–14 years for measles are shown in Figure 10.9.



- Between 1993–94 and 1999–00, peaks in the number of hospitalisations for measles have occurred at the same times as peaks in the numbers of notifications. The hospitalisation rate was highest in 1993–94 and lowest in 1996–97 and 1998–99.
- Of children aged 0–14 years, infants had the highest rates.
- In 1999–00, boys were hospitalised at a rate 3.5 times higher than for girls (1.4 compared with 0.4 per 100,000 children). This difference was due to higher hospitalisation rates for boys aged 1–9 years than for girls in the same age group.

Three children died from measles during the period 1993 to 2000.

Subacute sclerosing panencephalitis (SSPE)¹ is a rare, late complication of measles causing progressive brain damage and finally death, occurring in 1 in 25,000 cases of measles (NHMRC 2000). Because there is considerable delay between measles infection

1. ICD-9-CM code 046.2 and ICD-10-AM code A81.1.

and the onset of SSPE, some children affected by the measles epidemics (mid-1992, mid-1995 and 1997) may not present with the condition for several years.

According to the 1998 Australian Paediatric Surveillance Unit (APSU) Annual Report, there was a total of 5 cases of SSPE identified between 1995 and 1998 (APSU 1998).² All of the children with SSPE had an onset of symptoms before 16 years of age and none had a definite history of measles vaccination. The delay between measles infection and the onset of symptoms was between 13 and 15 years. On the basis of these cases, the annual incidence of SSPE for the period 1995–98 was estimated to be 0.02 per 100,000 children aged less than 16 years.

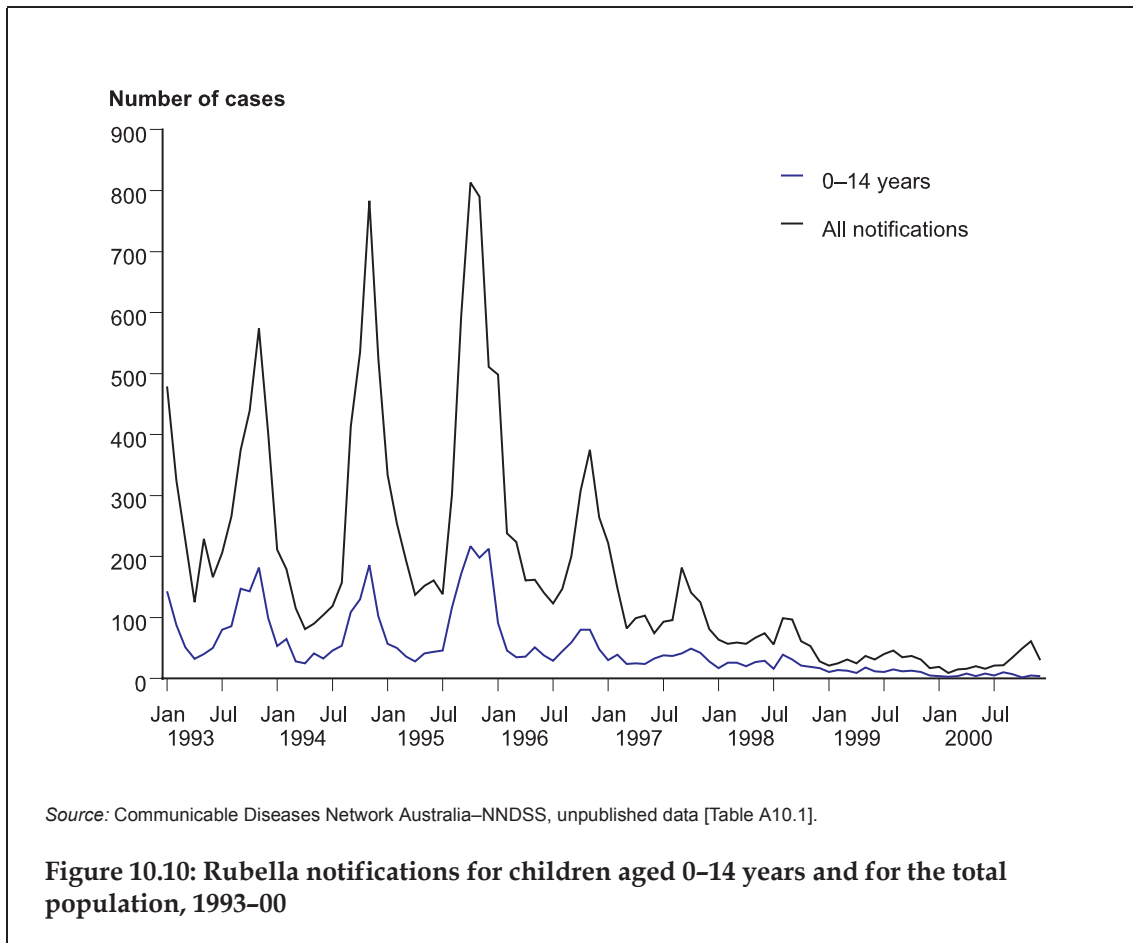
There were 27 hospitalisations of children aged 0–14 years for SSPE between 1993–94 and 1999–00; most of these admissions (89%) were of boys. It is likely that a number of these were series of admissions for a small number of individual children.

Between 1993 and 2000, there was a total of 7 deaths from SSPE. Of these deaths, 3 (43%) were of children aged 0–14 years.

Rubella

Rubella is a mild infectious disease caused by a virus. However, a very high risk of foetal damage exists if a pregnant woman contracts rubella, particularly in the first 8–10 weeks of her pregnancy (NHMRC 2000). Birth defects, including multiple defects (congenital rubella syndrome), occur in up to 90% of such cases. Foetal defects include intellectual impairments, cataracts, deafness, cardiac abnormalities, intra-uterine growth retardation, failure to thrive and developmental delays. As long as rubella exists in the community, the risk remains that non-immune pregnant women will be infected and their babies will be born with severe impairments.

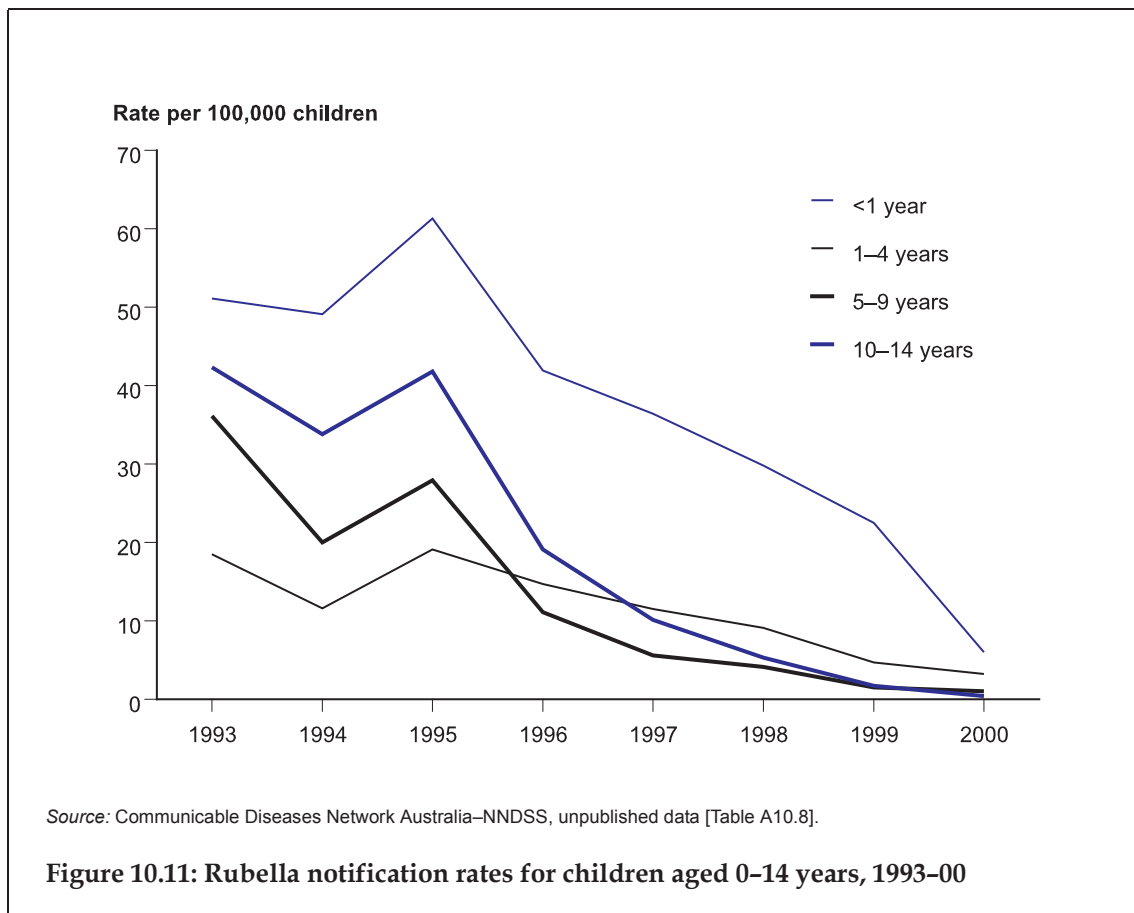
2. APSU collects data from paediatricians and other doctors who see children with the rare and serious conditions monitored by the APSU.



- During 1993–2000, there were 17,251 notifications for rubella. Of these, 28% (4,775 cases) were for children aged 0–14 years. More than half of the notifications for children (66%) were for children aged 5–14 years, and 54% of these were for boys.
- This period is characterised by a number of rubella outbreaks, with the last major one in 1995. During that outbreak, there were 4,379 notifications, with 812 reported in October of that year. In 1995, 1,218 rubella notifications were for children aged 0–14 years.
- There is a marked seasonal pattern for rubella infections, with the highest numbers in the spring of each year.

The indicator for rubella notifications is the number of notifications for rubella in children aged 0–14 years in a given year as a rate per 100,000 children.

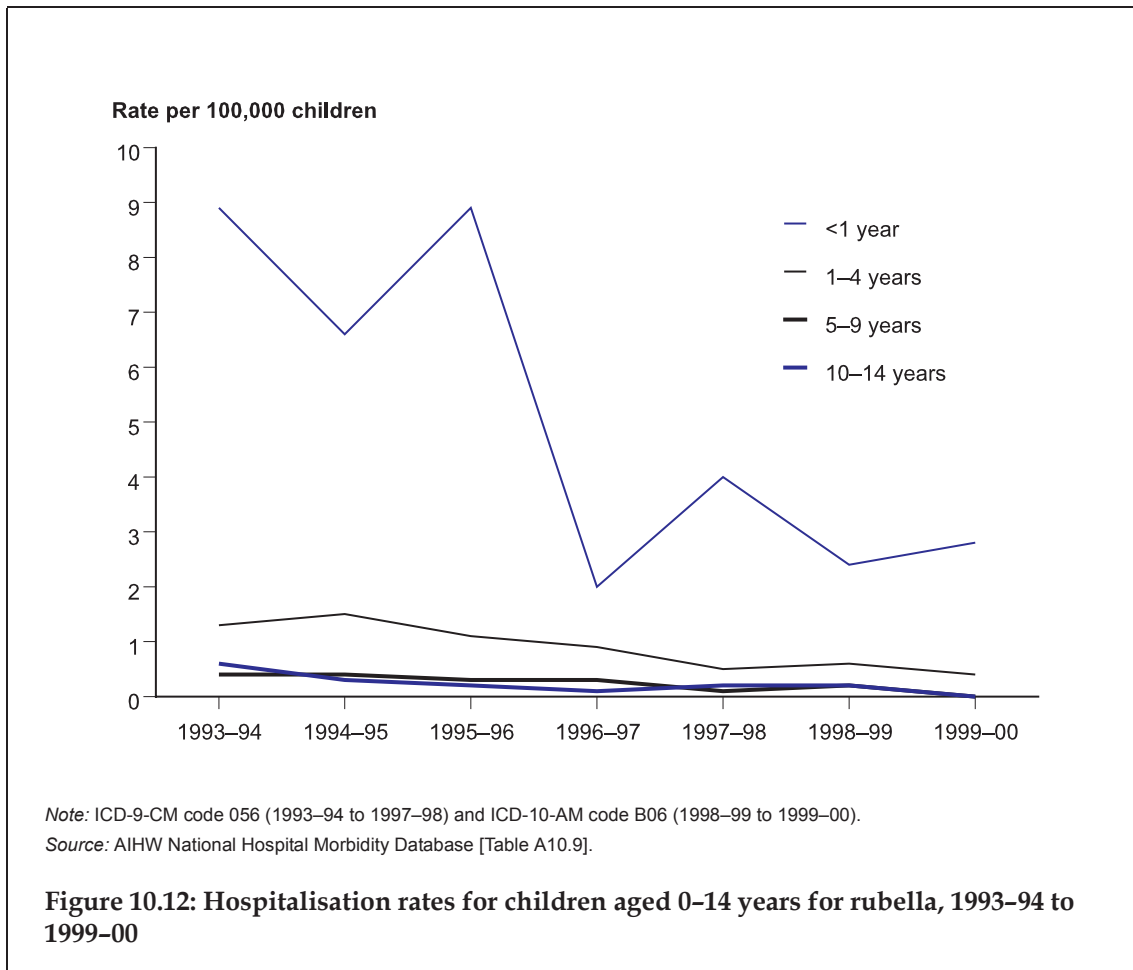
Time series in rubella notification rates for children aged 0–14 years are shown in Figure 10.11.



- The notification rates for rubella fell between 1993 and 2000, from 34.2 to 1.6 per 100,000 children aged 0–14 years. The decline was greater for boys than for girls.
- Notification rates were highest among infants.

Boys had consistently higher notification rates than girls in all age groups. The largest difference was between boys and girls aged 10–14 years. For example, in 1995 the rate for boys in that age group was 46.1 per 100,000, compared with 36.9 per 100,000 for girls. This higher incidence may be related to a lack of immunity among boys in this age group. Until 1994, only girls received a dose of rubella at age 10–16 years (NHMRC 1997a). The decline in the rate of notifications for boys aged 0–14 years since 1996 is mainly due to the fall in notifications for boys aged 10–14. This is the outcome of the introduction of adolescent vaccination for boys in 1994–95.

Time series in hospitalisation rates for children aged 0–14 years for rubella are shown in Figure 10.12.



- Hospitalisations for rubella peaked at the same time as the number of notifications. The highest hospitalisation rate for children aged 0-14 years was 1.3 per 100,000 in 1993-94, declining to 0.3 in 1999-00.
- Infants had the highest rates among all children aged 0-14 years.
- In all years and in most age groups, rates for boys were higher than for girls.

There were no recorded deaths from rubella between 1993 and 2000. Rubella is a more serious threat to unborn children whose mothers contract the disease during pregnancy (see next section).

Congenital rubella syndrome³

The major impact of rubella on the community is from children born with congenital abnormalities due to maternal rubella during pregnancy. According to the APSU Annual Report 2000 (APSU 2001), there were 42 cases of congenital rubella identified through the APSU between 1993 and 2000, with 27 of these children born in Australia. Of these 27 cases, 21 (78%) had defects attributable to congenital rubella, with more than half (17 cases) having multiple defects. Based on these 27 cases, the estimated

3. ICD-9-CM code 771.0 and ICD-10-AM code P35.0.

incidence of congenital rubella in liveborn children was 1.3 per 100,000 live births for 1993–00 and the incidence of congenital rubella with defects was 1.1 per 100,000 live births (APSU 2001).

Data are also available on the number of registered cases of congenital rubella notified to each State and Territory health authority. Over the period 1981–97, there were 27 cases notified to the registers (AIHW NPSU: Hurst et al. 2001). The rate for congenital rubella over that period was estimated from these cases to be 0.1 per 10,000.

Between 1993–94 and 1999–00, there were 38 hospital admissions for children aged 0–14 years for congenital rubella. Most of the hospitalisations (70%) were of children aged 0–4 years.

Between 1993 and 2000, there were 6 recorded deaths due to congenital rubella, 3 males and 3 females. All deaths except one (an infant) were of adults older than 20 years.

Mumps

Mumps is a disease caused by viral infection. It is characterised by swelling of the salivary glands in the neck, but some infections can be without clinical symptoms. Mumps is usually a relatively mild disease in childhood. However, in about 15% of adult cases, other glands including those in the groin and the testicles can be affected and the disease can be severe. Although some complications may occur with mumps, permanent damage is rare. Loss of hearing is the most serious of the rare complications (NHMRC 2000).