

Control measures and the outcome of the measles epidemic of 1999 in the Eastern Highlands Province.

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Abstract

In the Eastern Highlands Province (EHP) of Papua New Guinea (PNG) measles outbreaks have occurred regularly every 3 to 4 years since 1980. The latest was between September 1998 and March 2000. Between July 1999 and March 2000 314 children with measles were reviewed at Goroka Base Hospital. The majority of these children were very young: 55% were under 1 year and 27% under 6 months. The median age of the measles cases was 11 months (range 10 days to 13 years). 40% of the children had a verifiable history of having received at least one dose of measles vaccine. The majority were vaccinated during the epidemic and included many children who either were below 6 months of age or who developed measles within 2 weeks of vaccination. Measles complications occurred in 82% of the children, the most common being pneumonia. Serious complications, particularly severe pneumonia, were more common among the unvaccinated children than in those who had received at least a single dose of the measles vaccine. No deaths occurred among 82 children who had received measles vaccine more than 2 weeks before the onset of clinical measles, compared with 10 deaths in 206 children who had never been vaccinated against measles or were vaccinated in the 2 weeks before presentation ($p=0.067$). The overall case fatality was 4%: 14% among the hospital-acquired and 2.5% in community-acquired measles. Improvement in the measles vaccination coverage and supplementary vaccination campaigns are required to prevent measles outbreaks in PNG. Intensified measles vaccination campaigns, such as the one conducted in EHP in 1999, are recommended during epidemics to minimize deaths due to measles and to rapidly control outbreaks. The efficacy of measles vaccination can only be measured in total mortality, not in the prevention of clinical measles.

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