

# NSW PUBLIC HEALTH BULLETIN

## Immunisation in NSW

### Controlling measles in NSW: how are we doing in the context of other countries in the Western Pacific?

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Global measles control over the past decade has been very successful. Estimated deaths have fallen by 74% from 535 300 in 2000 to 139 300 in 2010.<sup>1</sup> While the goal of eradicating global measles transmission has not yet been formally adopted, five of six World Health Organization (WHO) regions have set deadlines for elimination of endemic measles transmission\* (the exception being the South East Asian Region).<sup>2</sup> This was achieved in the Americas in 2002 and has been maintained since then.<sup>3</sup> However, after 8 years of decline, global case numbers have increased in the past 3 years due to substantial outbreaks in Africa and Europe.<sup>4</sup> In Europe in 2011 there were more than 30 000 cases of measles notified with at least eight deaths.<sup>5</sup> Significant outbreaks occurred in France (15 000 cases), Italy, Spain, Romania and Germany. More than 80% of cases occurred in unvaccinated persons – the main reason for these outbreaks is failure to vaccinate. It is likely that countries with major outbreaks will need to consider 'catch-up' programs, as well as improved primary vaccination coverage with two doses of measles-containing vaccine. In Africa large outbreaks have recently been experienced in 60% of countries.<sup>6</sup>

\*Endemic transmission is defined as ongoing transmission of the same strain of virus for  $\geq 12$  months (see Annex 4 of: [http://www.wpro.who.int/about/regional\\_committee/63/documents/RC63\\_07\\_Item\\_12\\_Measles\\_elimination\\_FINAL\\_COMPLETE.pdf](http://www.wpro.who.int/about/regional_committee/63/documents/RC63_07_Item_12_Measles_elimination_FINAL_COMPLETE.pdf))

In the WHO Western Pacific Region, major progress to control measles has been made in recent years. The Western Pacific Region focused on measles control during the 1990s before adopting the goal of elimination in 2003 and, in 2005, declaring the target year as 2012.<sup>7</sup> Control activities have accelerated in recent years: reported coverage with one dose of measles-containing vaccine increased from 85% in 2000 to 97% in 2011 (the highest of any WHO region), and coverage is 91% for the second routine dose of measles-containing vaccine. Supplemental immunisation activities, usually targeting children from the age of 9 months up to 14 years, have been conducted in 30 of 37 countries and areas in the region.<sup>7</sup> The largest supplemental immunisation activity in history was conducted in China in 2010, with over 103 million children vaccinated.<sup>4</sup> The fruits of these activities can be seen in a 91% reduction in reported measles cases between 2000 and 2011,<sup>8</sup> and an estimated 76% reduction in deaths between 2000 and 2010.<sup>1</sup> Although cessation of endemic measles virus circulation in every country in the region is unlikely to be achieved in 2012, elimination appears to have already been achieved in 25 of 37 countries and areas within the Western Pacific Region. These are: South Korea (the only Western Pacific Region country to formally announce elimination), all Pacific Island countries, Australia, Hong Kong and Macau.<sup>9</sup> Substantial progress has been made in recent years in the four countries with the largest populations – China, Japan, Philippines and Viet Nam.<sup>7</sup> This remarkable progress in the region has resulted in the Western Pacific Regional Director appointing a Regional Verification Commission to formally assess regional and individual country progress towards meeting the elimination goal.

Although not yet formally verified in Australia, measles elimination may have already been achieved, judging from our high two-dose coverage, limited transmission from imported cases, cessation of endemic genotype circulation, national serosurvey data and modelling studies.<sup>10</sup> Australia

has been requested to appoint a National Verification Committee to provide evidence supporting elimination.

Recent increases in measles cases in New South Wales (NSW) described by Rosewell et al.<sup>11</sup> were associated with outbreaks in Sydney high schools that have particular populations with low vaccination coverage and transmission in hospital emergency departments. Although outbreaks have not occurred in other Australian states and territories this year, outbreaks linked to imported cases occurred in all jurisdictions in 2011, and the numbers of cases nationally has increased in recent years.<sup>12,13</sup> The source countries for NSW-imported cases were predominantly from the Western Pacific, European and South East Asian regions, probably reflecting a combination of travel patterns and source country disease incidence. Unlike in Europe,<sup>14</sup> outbreaks in NSW have not yet resulted in the re-establishment of endemic transmission.<sup>11</sup> However, to ensure this, continued high levels of vaccination coverage throughout the community are essential, as is continued vigilance through sensitive case surveillance and meticulous outbreak investigation and control (including genotyping to exclude common circulating types). Serosurveillance studies help to determine whether and when a catch-up campaign may be needed. In addition, we must pay particular attention to the vaccination status of travellers not only to endemic areas but also to high profile mass gatherings.

Supporting strengthened elimination efforts internationally will also benefit NSW and Australia by limiting the potential for the importation of cases. One relatively minor step could be reporting discarded measles case numbers to WHO; a discarded measles case is one originally suspected as being measles but subsequently confirmed as not measles. Currently, suspected measles cases are deleted once measles has been excluded as the cause in NSW and other Australian jurisdictions. The benchmark of  $\geq 2$  discarded measles cases per 100 000 population is a key indicator that a country's measles surveillance is adequate for verifying elimination. Australia is one of only four countries not providing these data to the Western Pacific Regional Office,<sup>7</sup> but studies in northern NSW and Victoria have confirmed Australia's ability to collect the data to meet this benchmark.<sup>2,15</sup> This information would provide a valuable reassurance to other countries in the region about our surveillance quality and commitment to regional elimination efforts.

While much progress has been made in measles control over the past decade, NSW and Australia must maintain vigilance at home as well as supporting active partnership with elimination efforts in the Western Pacific.

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