How many children are at risk of measles in the United States?

December 2 2015, by Lindsay Kobayashi

Despite the MMR vaccine controversy resulting from a series of now discredited studies linking the vaccine with autism, childhood vaccination rates remain high in the United States. In 2013, 92% of children aged 19 to 35 months had received one or more dose of the MMR vaccine. For the most part, this level of vaccination is sufficient to confer 'herd immunity' and stop the continuous transmission of measles within the country. However, small outbreaks and imported cases of measles are a concern for public health.

Quantifying the number of children and adolescents who may be at risk for measles is important for public health surveillance. The National Immunization Survey-Teen (NIS-Teen) is a nation-wide survey of the parents and guardians of adolescents aged 13 to 17 years. The survey collects and tracks immunization rates for vaccine-preventable diseases, such as HPV, tetanus, diphtheria, and pertussis, in addition to measles, mumps, and rubella.

A recent analysis of the NIS-Teen data found that 12.5% of children and adolescents aged less than 17 years, which is 8.7 million people, are at risk of measles in the United States. One-quarter of all children under 3 years of age (24.7%) were calculated to be at risk. These figures take into account variations in vaccine effectiveness, maternal antibodies in infants, and loss of immunity after a childhood cancer.

One thing that remains unclear about these figures is how the proportions apply to all children and adolescents aged less than 17 years,

when the NIS-Teen survey only covers those aged 13 to 17 years. The research was presented at a conference; there is no full peer-reviewed journal publication of the results yet. Consequently, news media and blogs that have picked up on the results have relied only the press release. And this research has been picked up in a major way, with the '8.7 million children' statistic being a news headline of the research.

The issue of whether these numbers apply to everyone under age 17, or everyone aged 13 to 17 is vital. It is likely that the press release has not got full clarification on the data sources or some of the methods used, rather than an error by the researchers. Either way, an important part of the press release should have been how the researchers calculated at-risk proportions for all children and adolescents aged less than 17 from a survey that only covers those aged 13 to 17. Only publication of the full methods and results will tell us now. In the meantime, this issue is another example of the need for better reporting of health research, starting with press releases.

More information: Centers for Disease Control and Prevention. FastStats: Immunization. www.cdc.gov/nchs/fastats/immunize.htm

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