

## IMMUNIZATIONS: EARLY CHILDHOOD

Vaccination is one of the greatest public health achievements of the 20th century, resulting in dramatic declines in morbidity and mortality for many infectious diseases.<sup>1</sup> Childhood vaccination in particular is considered among the most cost-effective preventive services available, as it averts a potential lifetime lost to death and disability.<sup>2</sup> *Healthy People 2020* has set a target of 80 percent coverage for a full vaccine series to be received by young children aged 19–35 months: four doses of diphtheria, tetanus, and acellular pertussis vaccine (DTaP/DT/DTP); three doses of poliovirus vaccine; one dose of measles-containing vaccine (MMR); three (or four, depending on vaccine type) doses of *Haemophilus influenzae* type b (Hib); three doses of the hepatitis B vaccine (HepB); one dose of the varicella (chicken pox) vaccine; and four doses of the pneumococcal conjugate vaccine (PCV).<sup>3</sup>

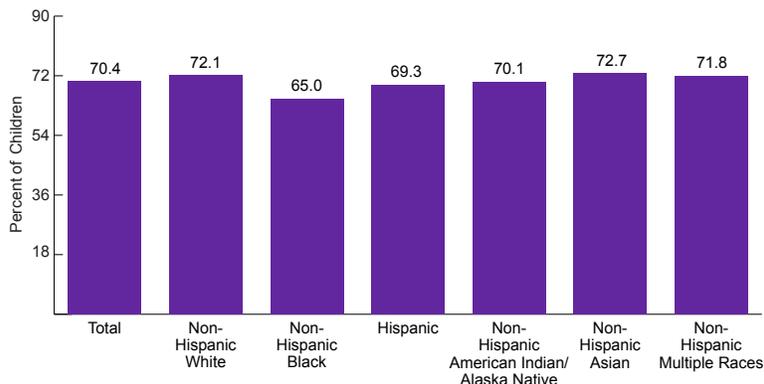
In 2013, 70.4 percent of children aged 19–35 months received the full recommended series, which was similar to the 2012 rate of 68.4 percent. Non-Hispanic Black 19- to 35-month-olds were less likely than non-Hispanic White children to receive the full recommended series (65.0 and 72.1 percent, respectively; figure 1). Similarly, the vaccination rate was lower for those with household incomes below 100 percent of poverty compared to their counterparts living at or above the poverty level (64.4 versus 73.8 percent, respectively). Differences in vaccination rates by race and ethnicity vary within categorical poverty levels. Among children in households with incomes below

100 percent of poverty, Hispanic children were more likely to be fully vaccinated than non-Hispanic White children (68.6 versus 61.3 percent, respectively), however, within this income category there was no difference between rates of vaccination between non-Hispanic White and non-Hispanic Black children (61.3 and 60.4 percent, respectively). Among children with household incomes of 100 percent or more of poverty, Hispanic and non-Hispanic Black children had lower rates of vaccination than non-Hispanic White children (70.2 and 69.1 versus 74.9 percent, respectively).

The proportion of children receiving the full series of recommended vaccinations also varied by provider facility type (figure 2). Compared to private provider facilities (e.g., private clinics, health maintenance organizations, group practices), lower rates of full series coverage were reported by public provider facilities (e.g., public health clinics, community health centers) and other (e.g., hospitals, military facilities) types of provider facilities (72.2, 63.3, and 67.4 percent, respectively). The vaccination rate at mixed provider facilities (76.0 percent) was similar to the private provider facility rate.

Children who never participated in WIC, but were eligible, had the lowest vaccination coverage. Current WIC participants had vaccination coverage comparable to more affluent children, and higher coverage than previous WIC participants.<sup>6</sup> Finally, the vaccination rate among 19- to 35-month-olds living in metropolitan statistical area

**Figure 1. Receipt of Recommended Vaccinations\* Among Children Aged 19–35 Months, by Race/Ethnicity,† 2013**



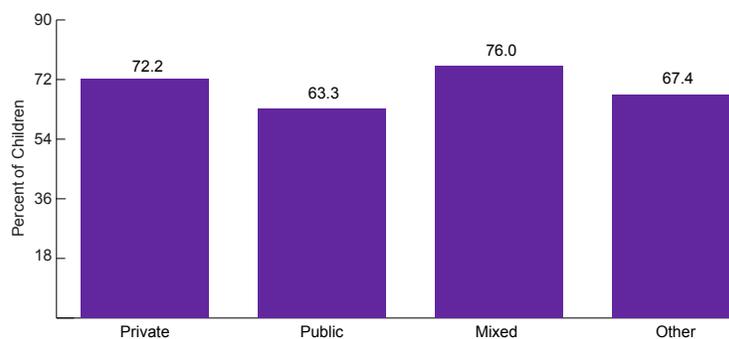
\*Recommended Full Series:  $\geq 4$  DTaP,  $\geq 3$  Polio,  $\geq 1$  MMR, 3 (4) Hib,  $\geq 3$  HepB,  $\geq 1$  Varicella,  $\geq 4$  PCV. †Estimates for Native Hawaiian/other Pacific Islander children were not available.

(MSA) noncentral cities (72.5 percent) was greater than for those living in MSA central cities (68.8 percent) and non-MSA central cities (69.1 percent).

Immunization levels for the recommended full series of vaccinations for 19- to 35-month-olds in the United States remained at similar levels from 2012 to 2013, and disparities in vulnerable populations continue to exist. A variety of strategies can be used to help address coverage gaps. These include the Vaccine for Children (VFC) program, an important and effective way to help increase immunization rates

in children who might otherwise have difficulty in paying for vaccines by providing vaccines at no cost to qualifying children.<sup>7</sup> Some proven strategies (e.g., reducing costs, linking immunization to WIC services, home visiting) are well suited to increasing rates among specific populations, such as infants living in low-income families and families with limited access to immunization services.<sup>4</sup> State and local health department use of Immunization Information Systems can aid in identifying pockets of undervaccinated children to ensure that they are adequately protected.<sup>5</sup>

**Figure 2. Receipt of Recommended Vaccinations\* Among Children Aged 19–35 Months, by Provider Facility Type,\*\* 2013**



\*Recommended Full Series:  $\geq 4$  DTaP,  $\geq 3$  Polio,  $\geq 1$  MMR, 3 (4) Hib,  $\geq 3$  HepB,  $\geq 1$  Varicella,  $\geq 4$  PCV.  
 \*\*Self-reported by provider. Public provider includes public health clinics and community health centers. Private provider includes private clinics, HMOs, and group practices. Mixed provider includes more than one type of provider. Other provider includes all other types of providers such as hospitals, military facilities, and unknown responses.

#### Data Sources

Figure 1 and 2. U.S. Department of Health and Human Services, Centers for Disease Control and Prevention, National Immunization Survey. Retrieved from: <http://www.cdc.gov/vaccines/imz-managers/coverage/nis/child/data/tables-2013.html>. Accessed September 4, 2014.

#### Endnotes

- Centers for Disease Control and Prevention (CDC). Achievements in public health, 1900–1999: Control of infectious diseases. *Morbidity and Mortality Weekly Report*. 1999 Jul 30;48(29):621-9.
- Maciosek MV, Coffield AB, Edwards NM, Flottesmesch TJ, Goodman MJ, Solberg LI. Priorities among effective clinical preventive services: results of a systematic review and analysis. *Am J Prev Med*. 2006 Jul;31(1):52-61.
- U.S. Department of Health and Human Services, Centers for Disease Control and Prevention. Immunization Schedules. Available at: <http://www.cdc.gov/vaccines/schedules/index.html>. Accessed August 2, 2013.
- U.S. Department of Health and Human Services, Centers for Disease Control and Prevention. The Guide to Community Preventive Services. Universally Recommended Vaccinations: Enhancing Access to Vaccination Services. Available at: <http://www.thecommunityguide.org/about/conclusionreport.html>. Accessed September 22, 2014.
- Elam-Evans LD, Yankey D, Singleton JA, Kolasa M. National, State, and selected local area vaccination coverage among children aged 19–35 months—United States, 2013. *Morbidity and Mortality Weekly Report*. 2014;63:741–748.
- Thomas, TN, Kolasa, MS, Zhang, F, & Shefer, AM. Assessing Immunization Interventions in the Women, Infants, and Children (WIC) Program. *American Journal of Preventive Medicine*. 2014 Nov;47(5):624-628.
- Centers for Disease Control and Prevention. Vaccines for Children Program. Available at: <http://www.cdc.gov/vaccines/programs/vfc/index.html>. Accessed February 16, 2015.

#### Suggested Citation

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