Pediatric & Adult Immunizations

Indicator Definition: Percentage of children aged 19–35 months who are up to date with recommended immunizations. Percentage of adults who are up-to-date with influenza and pneumococcal vaccinations.

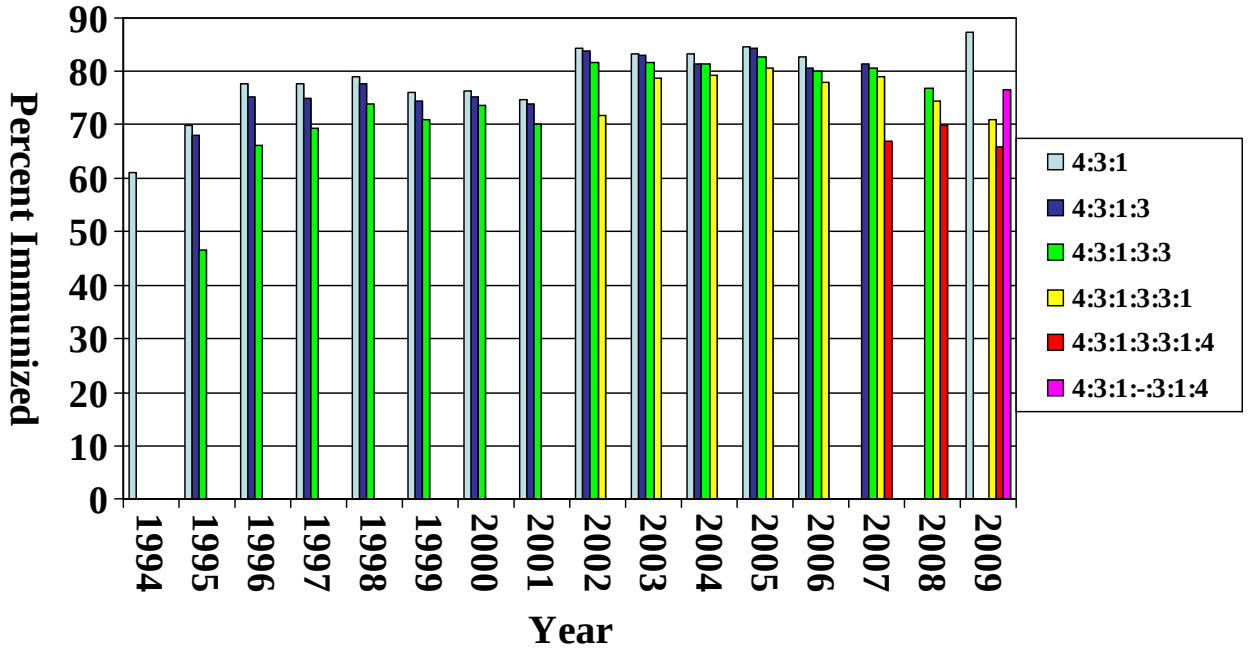
Indicator Overview:

- At the beginning of the 20th century, outbreaks of infectious diseases were frequent in the United States. The development of vaccines has resulted in a significant drop in incidence for many of these diseases. Because many vaccine-preventable diseases primarily affect young children and infants, immunizations are given early in life. Seventy-seven percent of U.S. children 19 to 35 months of age have received the Advisory Committee on Immunization Practices (ACIP) recommended series of childhood vaccines (CDC, 2009c). High rates of childhood immunization are important to protect not only individual children, but also outbreaks of disease among communities.
- Vaccination against influenza is another cost- and health-enhancing measure. The CDC notes, "Influenza vaccination is the most effective method for preventing influenza virus infection and its potentially severe complications" (CDC, 2009h). Rates of serious illness and death from the influenza virus infection are highest among children less than 2 years old, people 65 and older and those with serious medical conditions.

Pediatric Immunizations

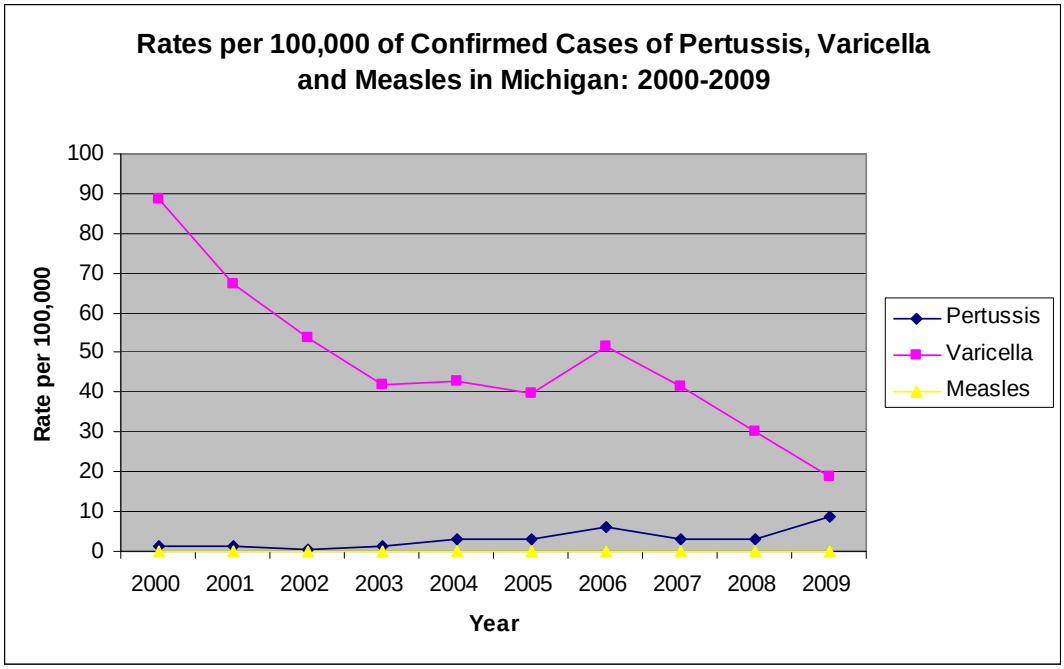
- The ultimate goal is to eliminate vaccine-preventable diseases or, at a minimum, reduce the number of serious vaccine-preventable diseases occurring in Michigan. Childhood immunizations provide protection against: Diphtheria, *Haemophilus influenzae* type B, Hepatitis A, Hepatitis B, Measles, Mumps, Pertussis (whooping cough), Pneumococcal disease, Polio, Rubella, Rotavirus, Tetanus, Varicella (chickenpox), Human Papillomavirus (HPV), Influenza (flu), and Meningococcal disease. Prior to 1995, immunization levels in Michigan were measured by the percentage of children who, at two years of age, had received 4 doses of a vaccine containing diphtheria, tetanus and pertussis components (DTP or DTaP), three doses of polio vaccine, and one dose of a vaccine containing measles, mumps and rubella components (4:3:1). In 1995, three doses of *Haemophilus influenzae* type B vaccine (Hib) and three doses of Hepatitis B vaccine (Hep B) were added to the list of vaccines used to assess the extent to which Michigan's children were appropriately immunized (4:3:1:3:3). One dose of varicella vaccine and four doses of pneumococcal conjugate vaccine are the most recent vaccines that have been added to the National Immunization Survey (NIS), creating a current standard of 4:3:1:3:3:1:4. The data below (4:3:1:-:3:1:4) excludes Hib, due to a vaccine shortage.
- From 2007-2008, the CDC did not measure the 4:3:1 vaccination series, and the CDC did not measure the 4:3:1:3 vaccination series from 2008-2009. These data are absent from the NIS Data for Michigan Chart.

2009 National Immunization Survey Data for Michigan



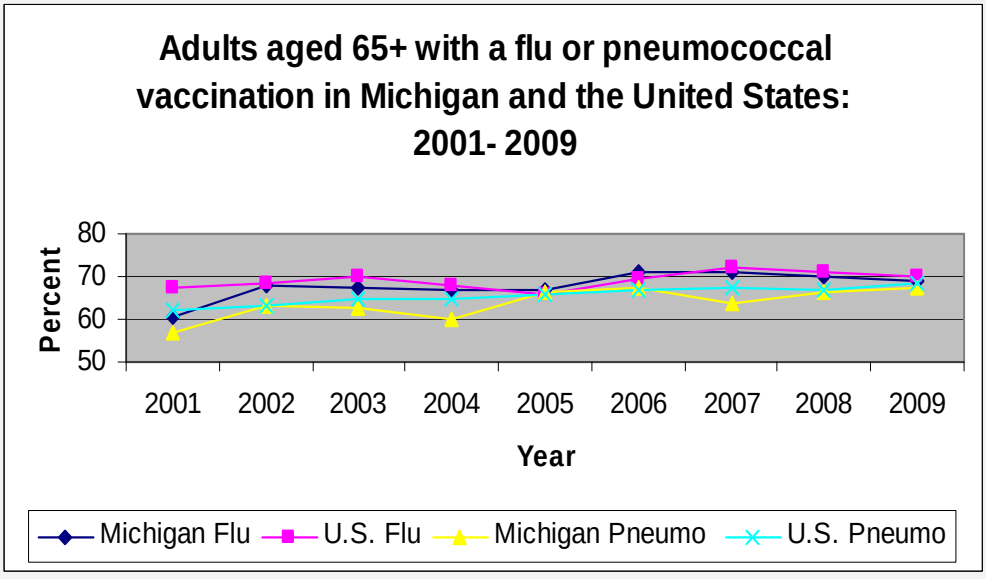
Trends: In 1994 when the first National Immunization Survey was completed by the CDC, Michigan had the lowest immunization rates in the country at 61% for 4:3:1 coverage. Michigan has now improved its immunization rates to 76.5% ±6.4 for the 4:3:1:0:3:1:4 series – the national rate is 70.5% ±1.2. This series measures 4:3:1 plus 3 or more doses of HepB, 1 or more doses of Varicella vaccine, and 4 or more doses of PCV. Hib vaccine is excluded due to the national Hib vaccine shortage. This ranks Michigan at 5th in the country. The Michigan Care Improvement Registry (MCIR) is a critical tool used by all clinics who administer vaccines to track immunizations.

→ Vaccine-Preventable Diseases:
From 2000 to 2009, the rate of pertussis disease in Michigan increased from 1.28 per 100,000 people (127 cases) to 8.91 per 100,000 people (902 cases) and continues to increase into 2010. Varicella disease incidence in Michigan dropped from a rate of 88.64 per 100,000 people (8,809 cases) in 2000 to a rate of 18.66 per 100,000 people (1,889 cases) in 2009. In 2009, there were 0 cases of measles in Michigan, however, there were 3 cases in 2007 and 4 cases in 2008. Nationally, there were 71 cases of measles in 2009.



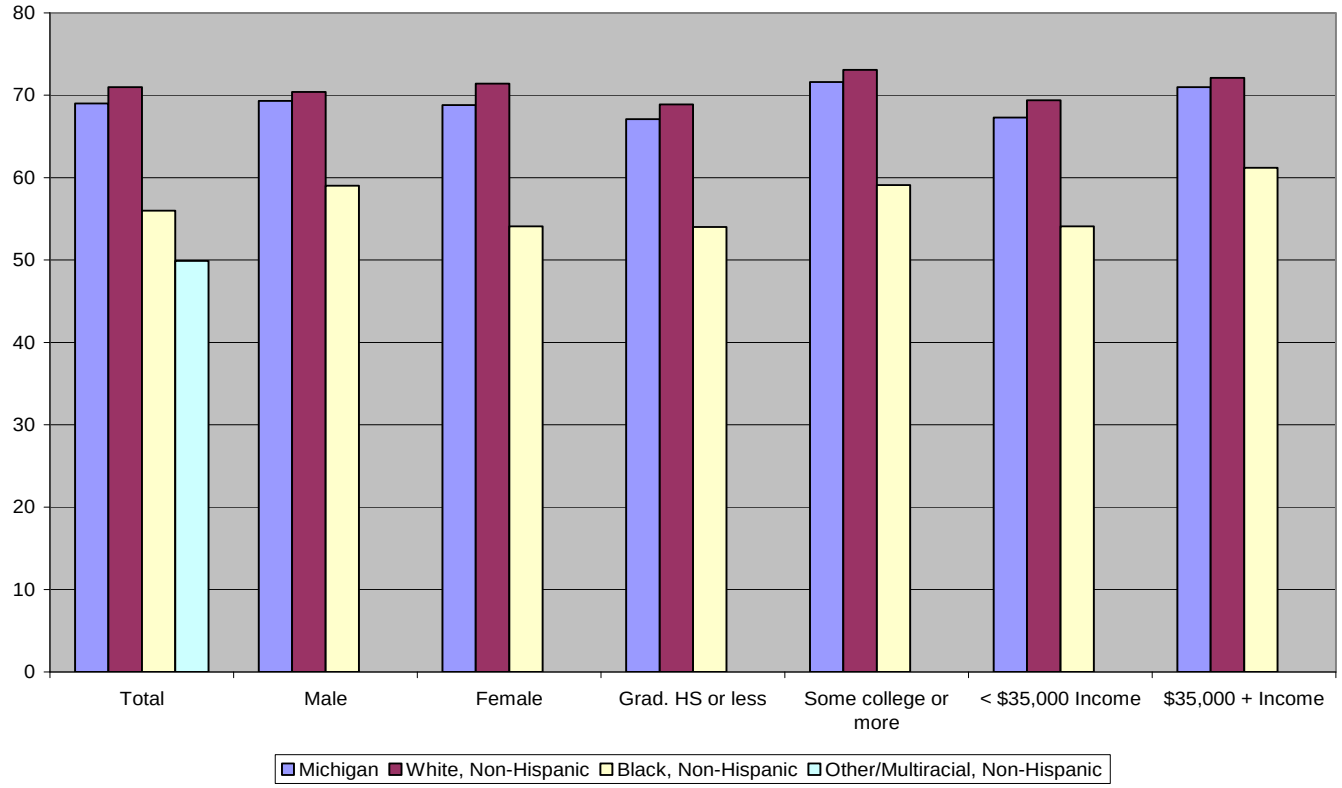
Adult Immunizations

- Vaccination against influenza and pneumonia is a cost- and health-enhancing measure. Influenza vaccine is the single best way to prevent the flu. Rates of serious illness and death from the influenza virus are highest among children less than 2 years old, people 65 years and older, and those with serious medical conditions. Flu seasons are unpredictable and can be severe. Over a period of 30 years, between 1976 and 2006, national estimates of annual flu-associated deaths range from a low of about 3,000 to a high of 49,000 people. Similarly, pneumococcal disease can be fatal. In some cases, it can result in long-term problems, such as brain damage, hearing loss, and limb loss.



←Trends: Among adults aged 65 years and older, the percentage receiving a flu vaccination has varied over the past nine years for both Michigan and the nation. In 2009, Michigan adults aged 65 years and older reported a slightly lower flu vaccination rate (68.9%) than the nation as a whole (70.1%). Similarly, in 2009, Michigan adults aged 65 years and older reported a slightly lower pneumococcal vaccination rate (67.5%) than the United States (68.5%). It is imperative that adults are made aware of the vaccines available.

Had Flu Vaccine in Past Year among Adults 65 Years and Older by Race-Ethnicity



Health Disparities:

There are some significant health disparities that exist among adults 65 years and older who have received the flu vaccine in the past year. In 2009, 71% of white/non-Hispanic MI residents received their flu vaccine, while only 56% of black/non-Hispanic and 49.9% of other/multiracial/non-Hispanic Michigan residents 65 years and old received their flu vaccine. Further, flu vaccination rates are higher among white/non-Hispanic adults who graduated high school or less (68.9%) than black/non-Hispanic adults (54%) of the same educational background.

Immunization Resources and Websites:

Centers for Disease Control and Prevention: www.cdc.gov/vaccines
Michigan Department of Community Health. Michigan Behavioral Risk Factor Surveillance System, 2000-2009. (www.michigan.gov/brfs)
Centers for Disease Control and Prevention (CDC). *Behavioral Risk Factor Surveillance System Survey Data.* Atlanta, Georgia: U.S. Department of Health and Human Services, Centers for Disease Control and Prevention, 2000-2009. (www.cdc.gov/brfss)
Michigan Department of Community Health (MDCH), Division of Immunization: www.michigan.gov/immunize
MDCH Adolescent Immunization Website: www.michigan.gov/teenvaccines
MDCH Hepatitis B Website: www.michigan.gov/hepatitisb
MDCH Flu Website: www.michigan.gov/flu
Michigan Care Improvement Registry (MCIR): www.mcir.org