

Pediatric and Adult Immunizations

Indicator Definition: Percentage of children aged 19–35 months who are up to date with the 4:3:1:3:3:1 series. Percentage of adults who are up-to-date with influenza and pneumococcal vaccinations.

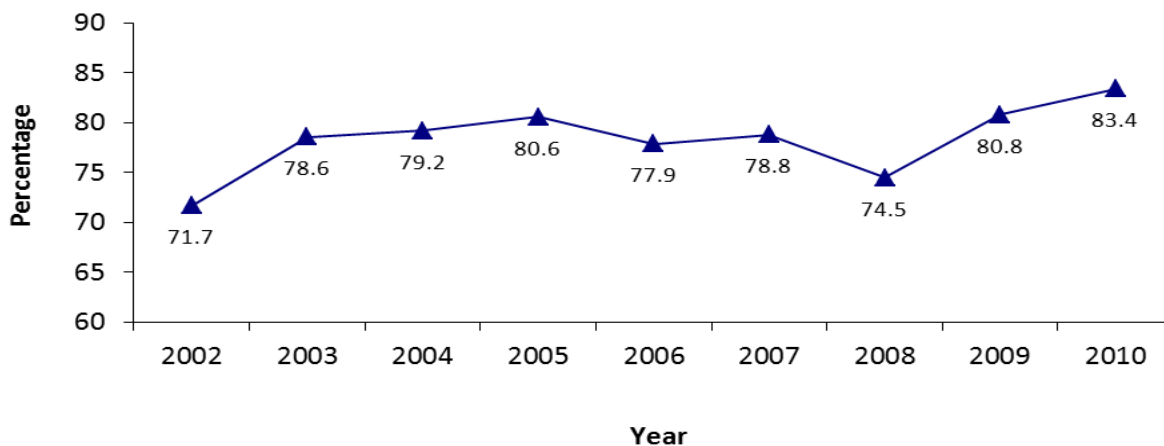
Indicator Overview:

- 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 historically many vaccine-preventable diseases primarily affected young children and infants, many immunizations are given early in life. High rates of immunization are important to protect individuals and prevent outbreaks of disease in 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”. 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 and adolescent immunizations provide protection against: Diphtheria, Tetanus, Pertussis (whooping cough), Polio, Measles, Mumps, Rubella, *Haemophilus influenzae* type B, Hepatitis B, Varicella (chickenpox), Pneumococcal disease, Hepatitis A, Rotavirus, 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 displays the 4:3:1:3:3:1 series as nine years of data exist for the series, as opposed to the 4:3:1:3:3:1:4 series which only has four years of data.

Percent of Michigan Children Aged 19-35 Months Immunized with the 4:3:1:3:3:1 Series, 2002-2010

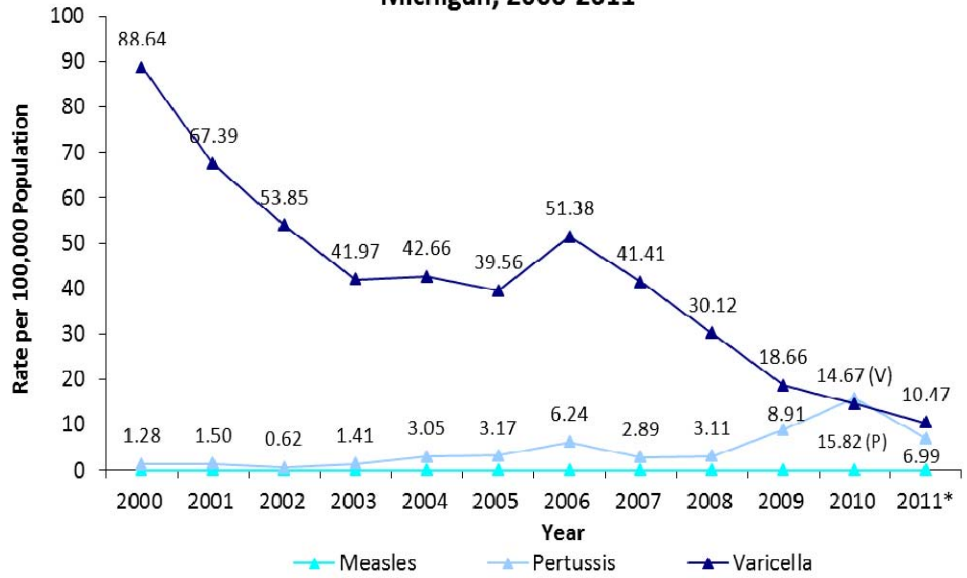


Trends: The percent of Michigan children immunized with the 4:3:1:3:3:1 series has increased from 71.7 percent in 2002 to 83.4 percent in 2010. There was a shortage of the Hib vaccination from 2007 to 2009, which likely accounts for the decrease observed in the 4:3:1:3:3:1 series in 2008.

→ Vaccine-Preventable

Diseases: From 2000 to 2011, the rate of pertussis disease in Michigan increased from 1.28 per 100,000 people (127 cases) to 6.99 per 100,000 people (691 cases). 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 10.5 per 100,000 people (1,035 cases) in 2011. In 2011, there were 2 cases of measles in Michigan; however, there were no cases in 2009 or 2010. Nationally, there were 63 cases of measles in 2010.

Reported Incidence of Pertussis, Varicella, and Measles, Michigan, 2000-2011

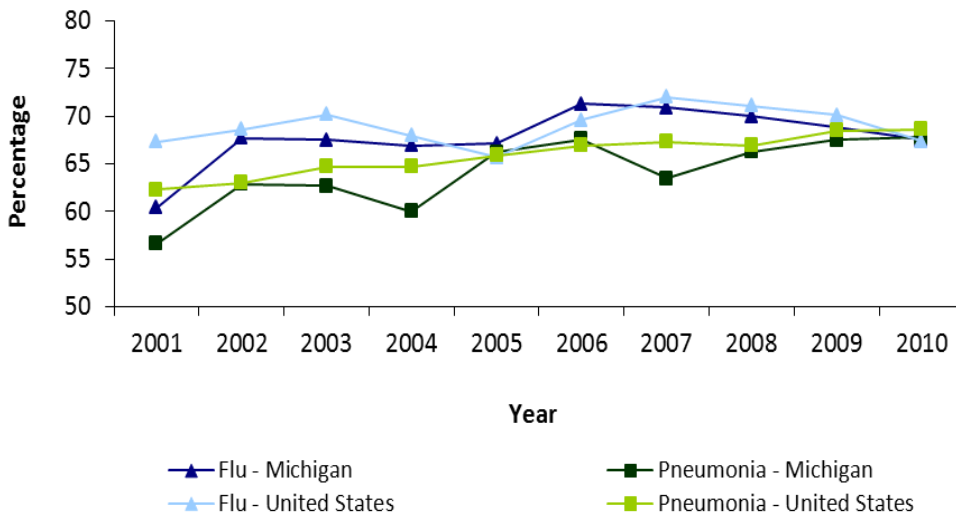


*Please note: 2011 data are provisional.

Adult Immunizations

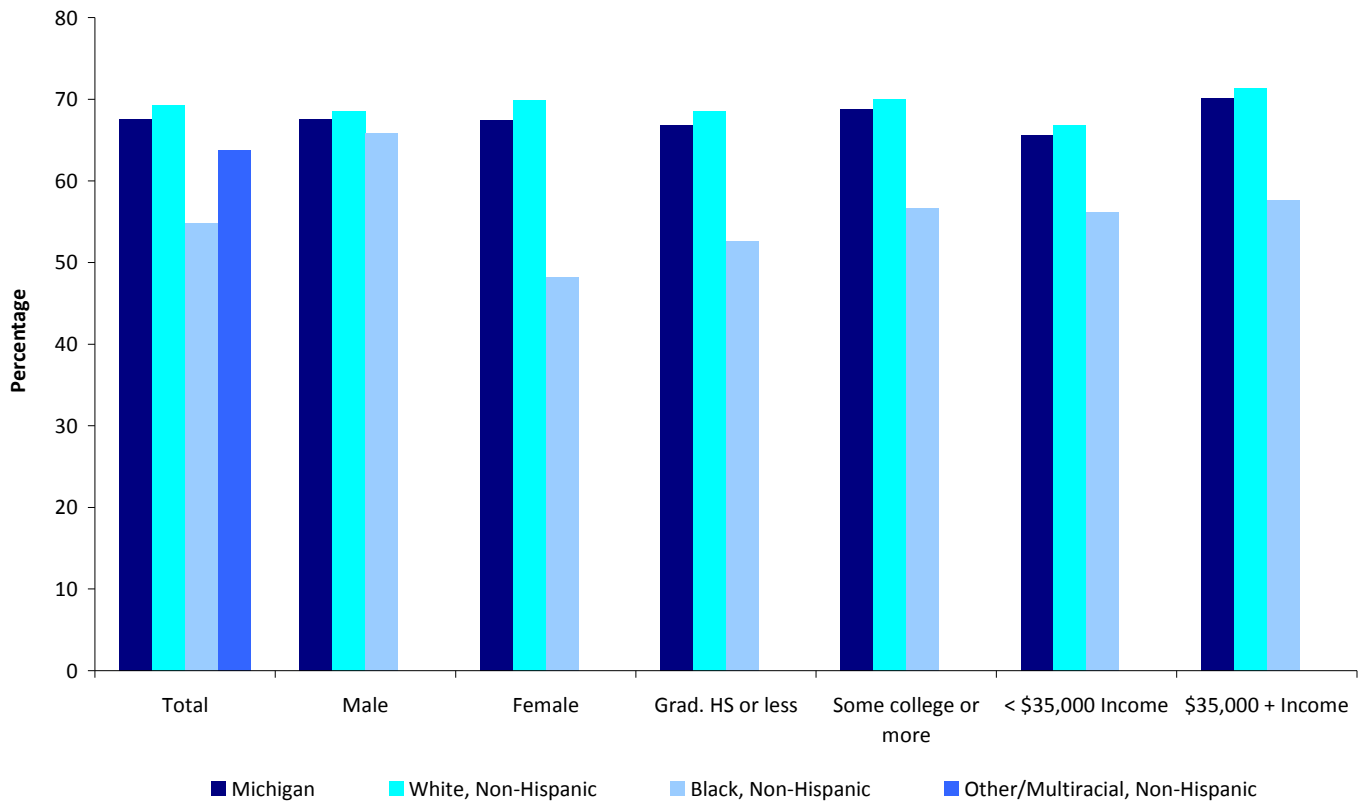
- Vaccination against influenza and pneumonia is a cost- and health-enhancing measure. Influenza vaccine is the single best way to prevent the flu. Rates of serious illness and death from the influenza virus are highest among children less than 2 years old, people 65 years and older, and those with serious 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.

Flu and Pneumonia Vaccination Among Adults Aged 65 and Older, Michigan and the United States, 2001-2010



←Trends: Among adults aged 65 years and older, the percentage receiving a flu vaccination has varied over the past ten years for both Michigan and the nation. In 2010, Michigan adults aged 65 years and older reported the same flu vaccination rate (67.5%) as the nation as a whole. Michigan adults aged 65 years and older reported a slightly lower pneumococcal vaccination rate (67.8%) than the United States (68.8%).

Had Flu Vaccine in Past Year Among Michigan Adults 65 Years and Older, By Race and Ethnicity, 2010



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 2010, 69.3 percent of white/non-Hispanic MI residents received their flu vaccine, while only 54.8% of black/non-Hispanic and 63.8 percent of other/multiracial/non-Hispanic Michigan residents 65 years and older received their flu vaccine. Further, flu vaccination rates are higher among white/non-Hispanic adults who graduated high school or less (68.5%) than black/non-Hispanic adults (52.6%) of the same educational background.

Links to Other Sources of Information:

- Centers for Disease Control and Prevention: <http://www.cdc.gov/vaccines>
- Michigan Behavioral Risk Factor Surveillance System: <http://www.michigan.gov/brfs>
- Behavioral Risk Factor Surveillance System Survey Data, CDC: <http://www.cdc.gov/brfss>
- Michigan Department of Community Health (MDCH), Division of Immunization: <http://www.michigan.gov/immunize>

Links to Related Public Health Programs:

- MDCH Adolescent Immunization Website: <http://www.michigan.gov/teenvaccines>
- MDCH Hepatitis B Website: <http://www.michigan.gov/hepatitisb>
- MDCH Flu Website: <http://www.michigan.gov/flu>
- Michigan Care Improvement Registry (MCIR): <http://www.mcir.org>