



Adolescent Immunization Update

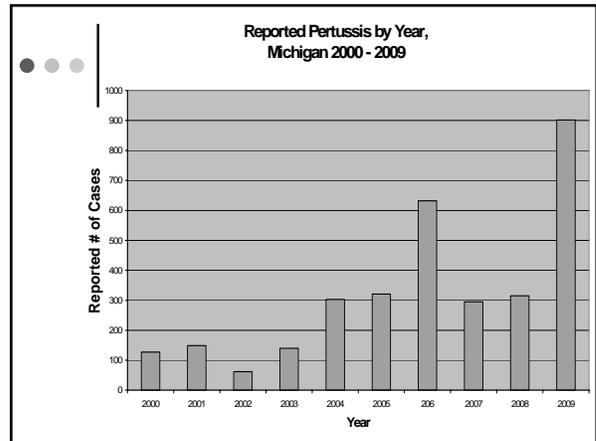
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JoEllen Wolicki BSN RN
Immunization Nurse Educator
Michigan Department of Community Health

Disclosure Statement

- o JoEllen Wolicki BSN, RN, does not have any financial interest or conflicts with the manufacturer of any products named in this presentation

Why Be Concerned About Adolescents?

- o Adolescents are:
 - frequently engaged in behaviors that increase their risk for disease
 - not aware of adolescent immunizations
 - exposed to and develop vaccine preventable diseases
 - vulnerable vectors- exposing others to these serious diseases



Comparing Immunization Rates

	19-35 months of age	Teens 13-17 yrs of age
Hepatitis B	93%	92%
MMR	88% (1 dose)	94% (2 doses)
Varicella	87% (1 dose)	86% (≥ 1 dose)
DTaP/Tdap	86% (≥ 4 doses)	33%
Td or Tdap	N/A	69%
HPV4	N/A	32% (≥ 1 dose)
HPV4	N/A	13% (≥ 4 dose)
MCV4	NA	39%

National Immunization Survey 19-35 months of age, Teens 13-17 yrs of age 2008
www.cdc.gov/vaccines

Recommended Immunization Schedule for Persons Aged 7 Through 18 Years—United States • 2010

For those who fall behind or start late, see the schedule below and the catch-up schedule

Vaccine	Age	7-10 years	11-12 years	13-18 years
Tetanus, Diphtheria, Pertussis ¹		see footnote 1	Tdap	Tdap
Human Papillomavirus ²		see footnote 2	HPV (3 doses)	HPV Series
Meningococcal ³		MCV	MCV	MCV
Influenza ⁴			Influenza (Yearly)	
Pneumococcal ³			PPSV	
Hepatitis A ⁵			HepA Series	
Hepatitis B ⁶			HepB Series	
Inactivated Poliovirus ⁷			IPV Series	
Measles, Mumps, Rubella ⁸			MMR Series	
Varicella ⁹			Varicella Series	

This schedule includes recommendations in effect as of December 15, 2009. Any dose not administered at the recommended age should be administered at a subsequent visit, when indicated and feasible. The use of a combination vaccine generally is preferred over separate injections of its equivalent component vaccines. Considerations should include provider assessment, patient preference, and the potential for adverse events. Providers should consult the relevant Advisory Committee on Immunization Practices statement for detailed recommendations. <http://www.cdc.gov/vaccines/pubs/kip-list.htm>. Clinically significant adverse events that follow immunization should be reported to the Vaccine Adverse Event Reporting System (VAERS) at <http://www.vaers.hhs.gov> or by telephone, 800-822-7967.

1. Tetanus and diphtheria toxoids and acellular pertussis vaccine (Tdap). (Minimum age: 10 years for BOOSTRIX[®] and 11 years for ADACEL[®])
 • Administer at age 11 or 12 years for those who have completed the recommended 4-dose DTPaP vaccination series and have not received
 • For healthy nonpregnant persons aged 7 through 18 years (i.e., those who do not have underlying medical conditions that predispose them to influenza complications).
 • Administer 2 doses (separated by at least 4 weeks) to children aged younger

MCIR and Adolescent Vaccines General Information Screen

Series	Immunizations					Status
	Dose 1	Dose 2	Dose 3	Dose 4	Dose 5	
DTaP/DTaP/DTaP	04/09/1999 DTaP	06/07/1999 DTaP	07/21/1999 DTaP	03/06/2000 DTaP	03/19/2004 DTaP	Eligible Next Due 02/01/2010
Polio	04/09/1999 IPV	06/07/1999 IPV	07/21/1999 IPV	03/06/2000 OPV	02/05/2003 IPV	Series Complete
MMR	03/06/2000 MMR	02/05/2003 MMR	10/29/1999 MMR			Series Complete
Hepatitis B	02/02/1999 Hep B	04/09/1999 Hep B	07/21/1999 Hep B	03/06/2000 Hep B		Series Complete
Varicella	02/05/2003 Varicella	02/05/2003 Varicella	02/05/2003 Varicella	02/05/2003 Varicella		Varicella DUE NOW
HPV						Eligible Next Due 02/01/2010
Hepatitis A						Hepatitis A DUE NOW
Seasonal Influenza						DUE NOW
Meningococcal Conjugate						Eligible Next Due 02/01/2010
2009 H1N1 Influenza						2009 H1N1 DUE NOW
Other Administrations						
Series	04/09/1999	06/07/1999	07/21/1999	03/06/2000		Status
Hib	Hib (Distaval)	Hib (Distaval)	Hib (Distaval)	Hib (Distaval)		Not Available
Tuberculosis						

Female 11 years of age

Catch-up Immunization Schedule for Persons Aged 4 Months Through 18 Years Who Start Late or Who Are More Than 1 Month Behind—based States, 2011

The table below provides catch-up schedules and minimum intervals between doses for children whose vaccinations have been delayed. A vaccine series does not need to be restarted, regardless of the time that has elapsed between doses. Use the section appropriate for the child's age.

CATCH-UP SCHEDULE FOR PERSONS AGED 7 THROUGH 18 YEARS				
Tetanus, Diphtheria/ Tetanus, Diphtheria, Pertussis ¹⁰	7 yrs ¹⁰	4 weeks	4 weeks if first dose administered at younger than age 12 months 6 months if first dose administered at age 12 months or older	6 months if first dose administered at younger than age 12 months
Human Papillomavirus ¹¹	9 yrs	Routine dosing intervals are recommended ¹¹		
Hepatitis A ⁹	12 mos	6 months		
Hepatitis B ¹	Birth	4 weeks	8 weeks (and at least 16 weeks after first dose)	
Inactivated Poliovirus ⁴	6 wks	4 weeks	4 weeks	6 months
Measles, Mumps, Rubella ⁷	12 mos	4 weeks		
Varicella ⁸	12 mos	3 months if the person is younger than age 13 years 4 weeks if the person is aged 13 years or older		

1. Hepatitis B vaccine (HepB).
 * Administer the 3-dose series to those not previously vaccinated.
 * A 2-dose series (separated by at least 4 months of adult formulation Recombivax HB[®]) is acceptable.
 6. Inactivated poliovirus vaccine (IPV).
 * The final dose in the series should be administered on or after the 4th birthday and at least 6 months following the previous dose.

MCIR & Other Pediatric Immunizations

Series	Immunizations					Status
	Dose 1	Dose 2	Dose 3	Dose 4	Dose 5	
DTaP/DTaP/DTaP	04/09/1999 DTaP	06/07/1999 DTaP	07/21/1999 DTaP	03/06/2000 DTaP	03/19/2004 DTaP	Eligible Next Due 02/01/2010
Polio	04/09/1999 IPV	06/07/1999 IPV	07/21/1999 IPV	03/06/2000 OPV	02/05/2003 IPV	Series Complete
MMR	03/06/2000 MMR	02/05/2003 MMR	10/29/1999 MMR			Series Complete
Hepatitis B	02/02/1999 Hep B	04/09/1999 Hep B	07/21/1999 Hep B	03/06/2000 Hep B		Series Complete
Varicella	02/05/2003 Varicella	02/05/2003 Varicella	02/05/2003 Varicella	02/05/2003 Varicella		Varicella DUE NOW
HPV						Eligible Next Due 02/01/2010
Hepatitis A						Hepatitis A DUE NOW
Seasonal Influenza						DUE NOW
Meningococcal Conjugate						Eligible Next Due 02/01/2010
2009 H1N1 Influenza						2009 H1N1 DUE NOW
Other Administrations						
Series	04/09/1999	06/07/1999	07/21/1999	03/06/2000		Status
Hib	Hib (Distaval)	Hib (Distaval)	Hib (Distaval)	Hib (Distaval)		Not Available
Tuberculosis						

Pediatric vaccines that are not routinely recommended for teens

Look Closely at the Letters

Vaccines	Use for ages:
DTaP	6 weeks through 6 years of age
Td	7 years of age and older
Tdap	Boostrix [®] 10 through 64 years of age Adacel [®] 11 through 64 years of age

- Pay attention to upper and lower case letters
 - The upper case/capital letters "D" and "P" in DTaP mean there is more vaccine antigen in DTaP (it's stronger) than in Tdap
 - Order, give, and record the correct vaccine based on the person's age

Tdap Vaccine

- Give a single IM booster dose of Tdap to:
 - Children at ages 11-12 years who have completed the recommended childhood DTaP series and have not received a Td booster
 - Persons aged 13 thru 64 years who have not received one dose of Tdap
- A 5 year interval from the last DTaP or Td dose is encouraged when Tdap is used as a booster dose

Tdap Vaccine

- Shorter intervals of 2 years or less may be used if
 - A person will be in contact with an infant less than 12 months of age
 - There is a pertussis outbreak in a community
- Tdap may be given with other vaccines

Points About Human Papillomavirus (HPV) Vaccine

- It is important to vaccinate persons **before** they become sexually active for the full benefit of either vaccine
- Sexually active females should/males may also be vaccinated
 - Few will have been infected with all HPV vaccine types
 - Those already infected with 1 or more of the HPV vaccine types, can still be protect against disease from the other HPV vaccine types

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HPV Vaccines

Vaccine Type, Brand and Manufacturer	HPV4 (Gardasil, Merck)	HPV2 (Cervarix, GSK)
Serotypes contained in the vaccine:	6, 11, 16, 18	16, 18
Protects against:	Cervical, vaginal, vulvar cancers; Genital warts	Cervical cancer
Approved for use in:	Females and Males	Females
Recommended Schedule:	0, 1-2 and 6 months	
Routine age to begin series:	11-12 years	
Minimum age to begin series:	9 years	
Maximum age to begin series:	26 years	
Minimum interval between doses:	Dose 1 to 2: 4 wks; Dose 2 to 3: 12 weeks; Dose 1 to 3: 24 wks	

A Word on MCIR, HPV & Boys

- ACIP Recommendations: HPV4 vaccine **may** be administered in a 3 dose series to boys to reduce the likelihood of acquiring genital warts
- MCIR will not indicate boys need the first dose of HPV
- Planning for a “trigger” assessment
 - Once a dose is entered; MCIR will assess for doses 2 and 3

Meningococcal Conjugate Vaccine (MCV4)

- Routinely given IM, 1 dose at age 11-12 years
- Catch-up all adolescents 13 -18 years who have not been vaccinated
- Assure high risk persons, 2-55 yrs of age, are vaccinated
- Do not administer MCV4 to persons with a history of Guillain-Barré syndrome
- Give Tdap and MCV4 in different limbs
- Age indications differ based on brand:
 - Menactra® (sanofi) 2-55 years of age
 - Menveo® (Novartis) 11-55 years of age

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MCV4 Revaccination

- Re-vaccinate persons at increased risk of disease including those with:
 - Terminal complement component deficiency
 - Anatomic and functional asplenia
 - Frequent travelers to areas with high rate of disease

Interval Between Doses	
Age	Interval
2 thru 6 years	3 years
7 years & older	5 years

Flu Vaccine: Every One Every Year

- Seasonal Influenza Vaccine
 - Beginning in 2010-2011 flu season, flu vaccine is recommended for all persons ages 6 months & older
- 2010-11 Vaccine Strains
 - A/California/7/2009 (H1N1)-like virus
 - A/Perth/16/2009 (H3N2)-like virus
 - B/Brisbane/60/2008-like virus

FDA. Vaccines and Related Biological Products Advisory Committee
February 24, 2010

2 Types of Influenza Vaccines

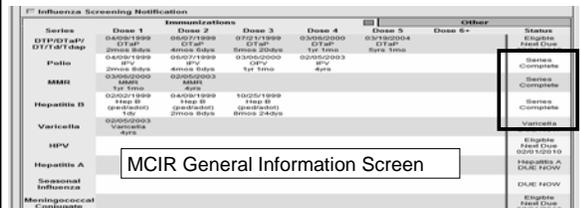
- o Live, Attenuated (nasal)
 - Given intranasally
 - Administer to healthy persons, who are not pregnant and are 2-49 years of age
 - Dosage: 0.2 mL divided between nostrils
 - Clip on the applicator divides the dose for appropriate administration
- o Inactivated (injectable)
 - Given IM
 - Administer to persons 6 months of age & older
 - Dosage: 0.5 mL for persons 3 years of age and older

Pneumococcal Vaccines

- o Some high risk teens may need pneumococcal vaccines
- o PCV13 (Prennar13)
 - 1 time only dose for high risk children ages 6-18 years
 - Including those previously vaccinated with PCV7 and/or PPSV23
- o PPSV23 (Pneumovax)
 - Administer to any person 2-64 years with a high-risk condition
 - Revaccination is recommended only once for adolescents at highest risk of infection
 - Immunocompromised persons if 5 yrs have elapsed since first dose
 - Only 2 lifetime doses are recommended
- o Ensure 8 weeks between doses of PCV13 & PPSV23
- o Visit www.michigan.gov/immunize for "Quick Look at PCV13" and other resources on using these vaccines

Ensure Teens are Protected

- o Assess immunization records for vaccines routinely completed in early childhood including
 - Polio
 - Hep B
 - MMR Measles Mumps Rubella
 - Varicella
 - Hepatitis A



Special Considerations for Adolescents Receiving Vaccines

- o Syncope or fainting after vaccination occurs most often in adolescents and young adults
 - It can result in serious injury- usually from falling
 - Most often occurs within 15 minutes of vaccination
- o When administering vaccines to adolescents:
 - Have the patient sit down while you are giving vaccine(s)
 - Have a 15-20 minute observation period after vaccination

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ACIP Recommendations & School Requirements

- o ACIP immunization recommendations give the most comprehensive protection
- o School requirements are state mandates for day care & school entry
- o Requirements for school and childcare attendance in Michigan may differ from the ACIP Recommended Immunization Schedule
- o MDCH recommends providers vaccinate based on current ACIP recommendations
 - In doing so, Michigan's school immunization requirements will be met
 - More importantly, patients will receive the maximum protection from vaccine preventable diseases

New School Communicable Disease Rules

- o Beginning January 1, 2010
- o New requirements for all children 11 years of age and older enrolled in 6th grade or changing school districts
- o Additional vaccine requirements:
 - Tdap vaccine (if 5 years have passed since last dose of tetanus/diphtheria vaccine)
 - Meningococcal vaccine
 - 2nd dose varicella vaccine or evidence of immunity

The table is titled "Required Childhood Immunizations for Michigan School Settings" and is divided into two main sections: "Entry Requirements for All Public & Non-Public Schools" and "Entry Requirements for All Public Schools". It lists various vaccines and their requirements based on age groups.

Age	Entry Requirements for All Public & Non-Public Schools	Entry Requirements for All Public Schools
4 years through 6 years	4 doses DTP or DTaP	4 doses DTP or DTaP
7 years through 12 years	1 dose Tdap	1 dose Tdap
13 years through 18 years	1 dose Tdap	1 dose Tdap
19 years through 24 years	1 dose Tdap	1 dose Tdap
25 years through 34 years	1 dose Tdap	1 dose Tdap
35 years through 44 years	1 dose Tdap	1 dose Tdap
45 years through 54 years	1 dose Tdap	1 dose Tdap
55 years through 64 years	1 dose Tdap	1 dose Tdap
65 years and older	1 dose Tdap	1 dose Tdap
11 years and older	1 dose Meningococcal	1 dose Meningococcal
11 years and older	1 dose Varicella	1 dose Varicella
11 years and older	1 dose Hepatitis A	1 dose Hepatitis A

www.michigan.gov/teenvaccines



Protecting Teens!

- o Maintain an adequate supply of VFC & private stock vaccines
 - Tdap, MCV, varicella and HPV
 - Consider storage capacity (flu vaccine could be there, too!)
- o Use MCIR!
 - Assess for needed vaccines at every visit
 - Tell parents when shots are due- Send out reminders!
 - Know who are missing doses- Send out recall letters!
- o Adapt to increased demand for clinic appointments
 - Use standing orders
 - Weekend hours, after-school and vaccine-only appointments, etc
- o Recommend ALL needed vaccines – not just school requirements
- o Keep your immunization knowledge "Up to Date"
 - Use the 2010 AIM Provider Tool Kit www.aimtoolkit.org
 - Attend LHD provider meeting
 - Schedule an imm education session as needed throughout the year



Immunization Education Opportunities

- o INE Education Sessions: Free office based immunization education programs
- o PPEPI Free "Grand Rounds" sessions
 - Continuing Education Credits available for both programs
 - Want to arrange a session? Contact your local health department or Carlene Lockwood-lockwoodc@michigan.gov
- o MDCH Fall Regional Conferences
 - CDC Key Note Speakers
 - Vaccine Safety and other Hot Topics
 - More info www.michigan.gov/immunize



Resources

- o MCDH
 - Quick Looks for MCV4, Flu, HPV, Tdap www.michigan.gov/immunize
 - Influenza www.michigan.gov/flu
 - Adolescent website www.michigan.gov/teenvaccines
- o CDC www.cdc.gov/vaccines
 - National Immunization Survey
 - Immunization Schedules
- o 2010 AIM Tool Kit www.aimtoolkit.org
- o Meningitis Angels www.meningitis-angels.org
- o Indiana AAP Tdap Vac video www.tdapvac.com