

Adult Immunizations and February ACIP Update *Late Breaking: Mumps*

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Vaccines – Not Just For Kids

ADULT IMMUNIZATIONS



Adult Immunizations

Recommended Adult Immunization Schedule—United States—2016
Note: These recommendations must be read with the footnotes that follow containing number of doses, intervals between doses, and other important information.

Figure 1. Recommended immunization schedule for adults aged 19 years or older, by vaccine and age group^a

Vaccine ^b	AGE GROUP ^c	19-29 years	30-39 years	40-49 years	50-59 years	60-69 years	70 years	
Influenza ^d		1 dose annually						
Serum, typhoid, person (Typh) ^e		Substitute Typh for 1d once, then 1d booster every 10 yrs						
Tetanus ^f		2 doses						
Human papillomavirus (HPV) female ^g		3 doses						
Human papillomavirus (HPV) male ^g		3 doses						
Zoster ^h		1 dose						
Mumps, mumps, mumps (MM2) ⁱ		1 or 2 doses depending on indication						
Poliovirus (IPV) (IPV) ^j		3 doses						
Pneumococcal 13 adult polysaccharide (PPSV23) ^k		1 or 2 doses depending on indication						
Hepatitis A ^l		2 or 3 doses depending on vaccine						
Hepatitis B ^m		3 doses						
Meningococcal 4 adult conjugate (MenACWY) or polysaccharide (PPSV23) ⁿ		1 or more doses depending on indication						
Meningococcal 3 (MenB) ^o		2 or 3 doses depending on vaccine						
Respiratory influenza types 3 (RSV) ^p		1 or 2 doses depending on indication						

^aRecommendations for immunization schedules are based on the Advisory Committee on Immunization Practices (ACIP) Reporting Forms and instructions on filing a RASIS report are available at www.nd.gov/health or by telephone: 800-322-7262.

^bAdditional information on the 2016 ACIP Recommendations for Adult Immunization is available at www.cdc.gov/vaccines/imz/downloads/2016-03-22-16000.

^cAdditional information about the vaccine's efficacy, safety of available data, and contraindications for vaccination is also available at www.cdc.gov/vaccines/imz/downloads/2016-03-22-16000.

^dUse of trade names and commercial sources is for identification only and does not imply endorsement by the U.S. Department of Health and Human Services.

^eThe recommendations in this schedule were approved by the Centers for Disease Control and Prevention's (CDC) Advisory Committee on Immunization Practices (ACIP), the American Academy of Family Physicians (AAFP), the American College of Physicians (ACP), the American College of Obstetrics and Gynecology (ACOG), and the American College of Nurse-Midwives (ACNM).



Adult Vaccines – Think HALO!



H Health condition	A Age	L Lifestyle	O Occupational or Other
<ul style="list-style-type: none"> Immunosuppression Chronic disease Pregnancy 	<ul style="list-style-type: none"> 26 and younger 60 and older 65 and older 	<ul style="list-style-type: none"> High-risk behaviors International travel 	<ul style="list-style-type: none"> Healthcare workers Parent or caregiver of young children College students Lab workers

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Tdap

- Tdap should replace a single dose of Td for adults who have not received a dose of Tdap previously.**
 - Adults who received last dose of Td \geq 10 years earlier should receive a single dose of Tdap instead of Td.
 - Tdap should be used instead of Td for wound management.
 - Adults (parents, grandparents, caregivers, health care personnel) who will be in close contact with infants <12 months of age should be vaccinated.
 - Adults older than 65 should be vaccinated with Tdap.
- No minimum interval between doses of tetanus- and diphtheria-containing vaccines**

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Tdap and Pregnancy

- Updated recommendations from the ACIP for the use of Tdap in women during each pregnancy were released in October 2012.
 - All pregnant women should receive a dose of Tdap during each pregnancy regardless of immunization history.
 - Preferably during 2nd or 3rd trimester (27 – 36 weeks gestation)
 - If not during pregnancy then it should be administered immediately postpartum only after the first pregnancy.
- The expectation is that antibodies will be passed to the fetus and protect the baby for the first 6 – 8 weeks of life until able to be vaccinated with DTaP.

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Tdap and Pregnancy

- What if a patient is pregnant multiple times in a short time period, should a provider still give Tdap during each pregnancy?
 - YES
 - *JAMA*. 2015;314(15):1581-1587. doi:10.1001/jama.2015.12790.
 - There were no statistically significant differences in rates of medically attended acute adverse events or adverse birth outcomes related to timing since prior tetanus-containing vaccination.



Td

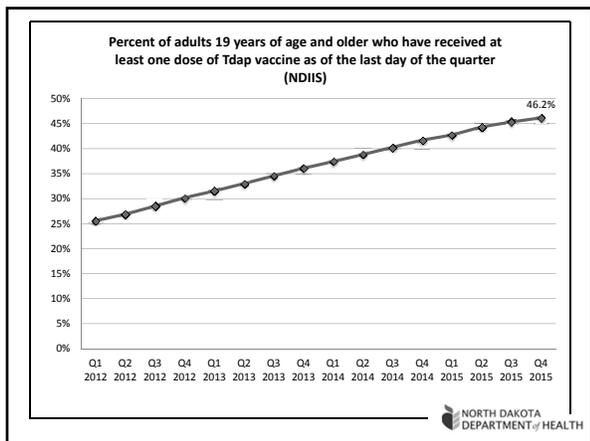
- Td should only be used for:
 - Wound prophylaxis for patients who have documentation of a previous dose of Tdap
 - If unknown, give Tdap
 - Those who are due for their tetanus immunization and have already received a Tdap
 - Individuals who are incompletely immunized against tetanus and diphtheria
 - Need three doses of tetanus- and diphtheria-containing vaccine, one dose should be Tdap
 - Minimum interval between first two doses is 4 weeks
 - Third dose should follow second dose by 6-12 months



Tdap Boosters?

- Other than for pregnant women, Tdap boosters are not recommended – not cost effective.
- *PEDIATRICS*: Among adolescents who received all acellular vaccines (450 cases, 1,246 controls), overall Tdap VE was **63.9%** (95% confidence interval [CI]: 50% to 74%). **VE within 1 year of vaccination was 73%** (95% CI: 60% to 82%). **At 2 to 4 years postvaccination, VE declined to 34%** (95% CI: -0.03% to 58%).
- Tdap protection wanes within 2 to 4 years, but is better than no vaccination at all.





Human Papillomavirus (HPV)

- **HPV4 (Gardasil) – types 6, 11, 16 and 18**
 - Recommended for prevention of cervical, vulvar, vaginal and anal cancers and precancers and genital warts
- **HPV2 (Cervarix) – types 16 and 18**
 - Recommended for prevention of cervical cancers and precancers
- **HPV9 (Gardasil) – types 6, 11, 16, 18, 31, 33, 45, 52 and 58**
 - Recommended for prevention of cervical, vulvar, vaginal and anal cancers and precancers and genital warts
 - Covers additional 15% of cervical cancers

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HPV

- **Recommended for adults, not previously vaccinated.**
 - Females 19 – 26
 - Males
 - All males 19 – 21
 - High-risk males (MSM, immunocompromised) 22 – 26
- **Routine schedule is 0, 2, 6 months**
- **Minimum intervals:**
 - 4 weeks between doses 1 and 2
 - 12 weeks between doses 2 and 3
 - Third dose should follow the first dose by at least 24 weeks

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HPV9

- Recommendations from the ACIP for the use of HPV9 were released on February 26, 2015.
- If providers do not know or do not have available the HPV vaccine product previously administered, or are in settings transitioning to HPV9, for protection against HPV 16 and 18, any HPV vaccine product may be used to continue or complete the series for females.
- HPV9 vaccination of persons who previously received 3 doses of HPV4 or HPV2 is not a routine recommendation at this time.



MCV4

- All are protective against invasive meningococcal disease caused by *Neisseria meningitidis* types A, C, Y, and W-135.
 - Conjugate vaccines (MCV-4)
 - Menactra®, for ages 9 months – 55 years
 - Menveo®, for ages 2 months -55 years
 - Polysaccharide vaccine
 - Menomune®, for ages 2 and up
 - Not recommended for routine vaccination because of its relative ineffectiveness in infants and its relatively short duration of protection



MCV4

- Single dose of MCV-4 recommended for:
 - College freshmen living in dormitories
 - Microbiologists working with *N. meningitidis*
 - Military recruits
 - People who travel to or live in places where meningococcal disease is hyperendemic or epidemic (the “meningitis belt” of sub-Saharan Africa)



MCV4 Recommendations

Risk Group	Primary Series	Booster Dose
Ages 11 – 18	1 dose, preferably at age 11 or 12	At age 16 if primary dose at 11 or 12
Ages 11 – 18 with HIV infection	2 doses, 2 months apart	At age 16 – 18 if primary dose at 13 – 15 No booster needed if primary dose on or after age 16
People ages 2 – 55 with persistent complement component deficiency or functional/anatomical asplenia	2 doses, 2 months apart	Every 5 years At the earliest opportunity if a 1-dose primary series administered, then every 5 years
People 2 – 55 with prolonged increased risk for exposure*	1 dose	Children ages 2 – 6 years: after 3 years People age 7 and older: after 5 years [†]

* Microbiologists routinely working with *H. meningitidis* and travelers to or residents of countries where meningococcal disease is hyperendemic or epidemic.
[†] If the person remains at increased risk.

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MCV4 College Requirement

- MCV4 is required for ND college students ages 21 and younger who reside in on-campus housing.
 - Based on ACIP recommendations

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MenB

- Two vaccines available:
 - Trumenba® (Pfizer) - 3 dose series
 - Doses at 0, 2, and 6 months
 - Bexsero® (Novartis) - 2 dose series
 - Doses at 0 and 1 month
- Both vaccines are recommended for all high-risk people 10 and older
- Meningococcal B vaccine is available from the NDDoH.

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Men B

- No preference was stated for the use of either of the two currently licensed MenB vaccines.
- However, because the vaccines are antigenically different, the same product should be used to complete the series for each of the vaccines.

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Men B

- As of the June 2015 ACIP meeting the ACIP recommend that a meningococcal B vaccine series may be administered to persons 16 through 23 years of age with a preferred age of vaccination of 16 through 18 years.
- This Category B (permissive) recommendation allows for individual clinical decision-making, and will enable coverage of meningococcal B vaccines by the VFC program and most insurance plans.

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Why was Men B vaccine not routinely recommended?

- Low risk of disease
 - Risk of disease and risk of vaccine adverse event too similar due to low number of cases
 - Anaphylaxis
 - Autoimmune disorders
 - Cost-effectiveness
- Persistence of immunity unknown
- Impact on disease carriage and herd immunity unknown

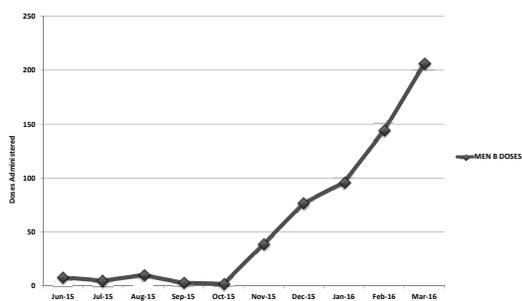
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High Risk MenB

- Meningococcal B vaccine is recommended for high-risk individuals ages 10 and older.
- Those that are considered high-risk:
 - Functional or anatomic asplenia
 - Persistent complement component deficiencies
 - Meningococcal B outbreak settings
 - Microbiologists working with bacteria



Men B Uptake in ND (NDIIS)



Shingles

- Transmission: Shingles is a reactivation of the varicella zoster virus and this condition is not spread through sneezing, coughing or casual contact.
 - Anyone who has recovered from chickenpox may develop shingles.
 - Shingles is more common in people 50 years old or older, people who have medical conditions that keep the immune system from working properly, or people who receive immunosuppressive drugs.

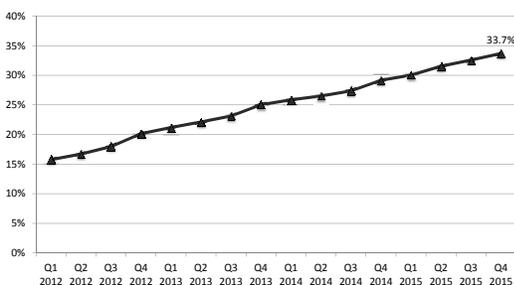


Zoster Vaccine

- A single dose of zoster vaccine is recommended for adults ages 60 and older regardless of whether they report a prior episode of herpes zoster.
 - Zoster vaccine is approved for use in adults 50 and older, but the ACIP has not yet changed their recommendation due to unknown length of immunity.
- Should be vaccinated, even if unknown history of chickenpox
- Medicare Part D Coverage



Percent of adults 60 years of age and older who have received at least one dose of zoster vaccine as of the last day of the quarter (NDIIS)



Pneumococcal Vaccines

- Two vaccines are recommended for all adults ages 65 and older (PCV13 and PPSV23).
 - PCV13 (Pneumovax®)
 - PPSV23 (Prevnar®)
- Both vaccines are also recommended for adults with certain high-risk or immunocompromising conditions.



PPSV23

- **Routine revaccination is not recommended**
- Adults 65 and older need to be revaccinated **once** if they received a dose prior to turning 65.
 - Second dose should be given at least 5 years after first.
- PCV13 should be given prior to PPSV23.

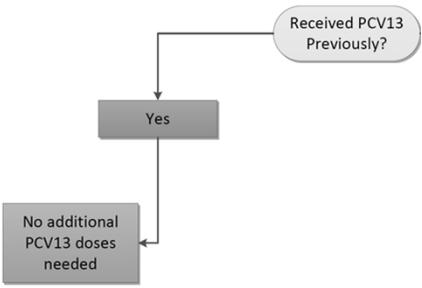


PCV13 Recommendations for Adults 65 and Older

- ACIP recommends one dose of PCV13 to every adult 65 and older who has not had one previously.
- Adults 65 and older who have not had a dose of PPSV23 or whose history is unknown should receive a dose of PCV13, followed 12 months later by a dose of PPSV23.
- Adults 65 and older who have not had a dose of PCV13, but have already received a dose of PPSV23 since turning 65 should receive a dose of PCV13 at least 12 months after the dose of PPSV23.
- Adults 65 and older who received a dose of PPSV23 before turning 65 should have a dose of PCV13 one year after the most recent dose of PPSV23, followed by a dose of PPSV23 12 months later, provided that the minimum interval between the 2 doses of PPSV23 is at least 5 years.

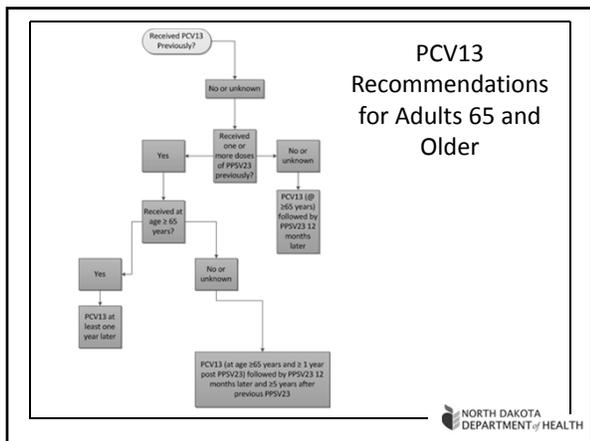


PCV13 Recommendations for Adults 65 and Older



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graph TD; A([Received PCV13 Previously?]) --> B[Yes]; B --> C[No additional PCV13 doses needed];
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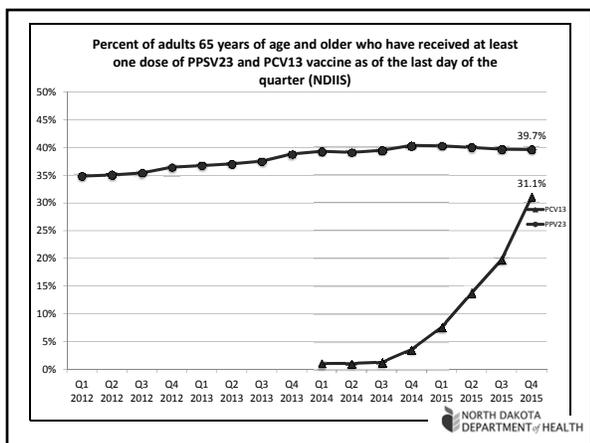




PCV13 Recommendations for Adults 65 and Older

- Medicare Part B has updated its coverage for pneumococcal vaccine to comply with the new Advisory Committee on Immunization Practices (ACIP) recommendations.
- Effective on or after September 19, 2014, Medicare Part B covers:
 - An initial pneumococcal vaccine to all Medicare beneficiaries who have never received the vaccine under Medicare Part B; **and**
 - A different, second pneumococcal vaccine one year after the first vaccine was administered (that is, 11 full months have passed following the month in which the last pneumococcal vaccine was administered).
- For more information and additional guidance, please see the attached documents or visit <http://www.cms.gov/Regulations-and-Guidance/Guidance/Transmittals/2014-Transmittals-Items/R3159CP.html>.

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High Risk Adult PCV13 Recommendations

- Expanded in June 2012, to include adults 19 years or older with specific immunocompromising conditions (see table).
- To be used in conjunction with PPSV23 to prevent severe or fatal pneumococcus infection.
 - These high risk patients can be more than 20 times more likely than healthy adults to be infected.



High Risk Adult Pneumococcal Recommendations

The CDC recommends the use of PCV13 in adults 19 years of age or older with specific immunocompromising conditions.

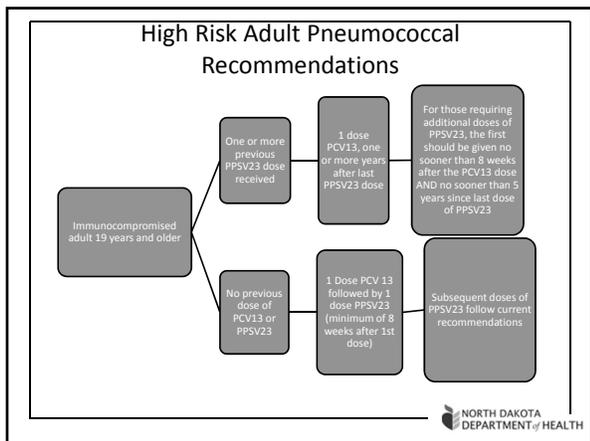
Risk Group	Underlying Medical Condition	PCV13		PPSV23*	Revaccination at 5 years after first dose
		Recommended	Recommended	Recommended	
Immunocompetent persons	Chronic heart disease ¹		✓		
	Chronic lung disease ⁵		✓		
	Diabetes mellitus		✓		
	CSF leaks	✓			
	Cochlear implants	✓	✓		
	Alcoholism		✓		
	Chronic liver disease		✓		
	Cigarette smoking		✓		



High Risk Adult Pneumococcal Recommendations

Risk Group	Underlying Medical Condition	PCV13		PPSV23*	Revaccination at 5 years after first dose
		Recommended	Recommended	Recommended	
Persons with functional or anatomic asplenia	Sickle cell disease/other hemoglobinopathies	✓	✓	✓	✓
	Congenital or acquired asplenia	✓	✓	✓	✓
Immunocompromised persons	Congenital or acquired immunodeficiencies ³	✓	✓	✓	✓
	HIV infection	✓	✓	✓	✓
	Chronic renal failure	✓	✓	✓	✓
	Nephrotic syndrome	✓	✓	✓	✓
	Leukemia	✓	✓	✓	✓
	Lymphoma	✓	✓	✓	✓
	Hodgkin disease	✓	✓	✓	✓
	Generalized malignancy	✓	✓	✓	✓
	Iatrogenic immunosuppression ⁴	✓	✓	✓	✓
	Solid organ transplant	✓	✓	✓	✓
	Multiple myeloma	✓	✓	✓	✓





Influenza

- A dose of influenza vaccine is recommended annually for all adults, but is especially important for:
 - People aged 50 years and older;
 - People with chronic pulmonary (including asthma), cardiovascular (except hypertension), renal, hepatic, neurologic, hematologic, or metabolic disorders (including diabetes mellitus);

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Influenza

- People who are immunosuppressed (including immunosuppression caused by medications or by human immunodeficiency virus);
- Women who are or will be pregnant during the influenza season;
- People who are aged 6 months through 18 years and receiving long-term aspirin therapy and who therefore might be at risk for experiencing Reye syndrome after influenza virus infection;

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Influenza

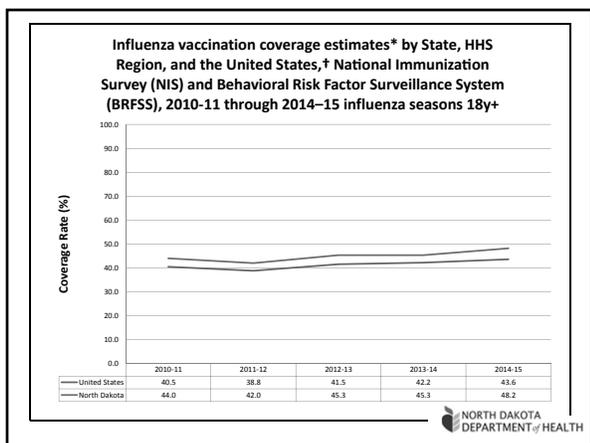
- People who are residents of nursing homes and other chronic-care facilities;
- American Indians/Alaska Natives;
- People who are morbidly obese (body-mass index is 40 or greater);
- Health-care personnel;

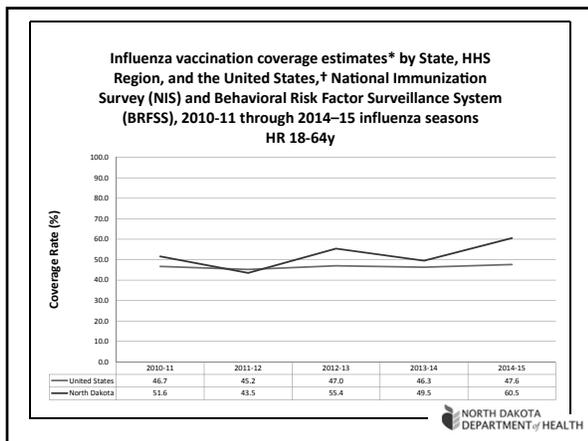


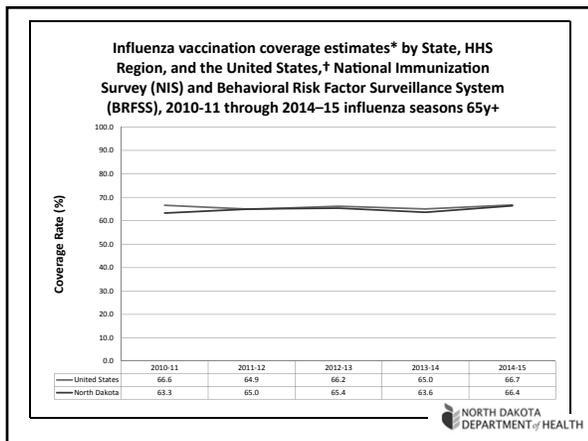
Influenza

- Household contacts and caregivers of children younger than 5 years and adults aged 50 years and older, with particular emphasis on vaccinating contacts of children aged younger than 6 months; and
- Household contacts and caregivers of people with medical conditions that put them at higher risk for severe complications from influenza.









MMR

- Protection against measles, mumps and rubella
 - College students are required to have documentation of 2 doses in North Dakota.
 - Healthcare workers must have proof of immunity.
 - General public is considered immune if born prior to 1957.
- Minimum interval is 4 weeks

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Other Adult Vaccines

- Varicella
 - Healthcare workers
- Hepatitis A
 - International travel
- Hepatitis B
 - Healthcare workers
 - High-risk lifestyle behaviors
 - HIV infection
 - Renal disease or those receiving dialysis



Adult Vaccines Available from NDDoH (As of August 2015)

- HPV for 19-26 year olds
 - If adult (19-21 years) has Medicaid they must receive private vaccine and Medicaid should be billed
 - Adults 22-26 years enrolled in Medicaid can be given state supplied vaccine(considered underinsured)
- Meningococcal Conjugate MCV-4 for 19-55 year olds that are un/underinsured
- MMR for 19 years and older that are un/underinsured
- TD/Tdap for 19 years and older
 - These vaccines are available for un/underinsured adults



Practice Standards for Adult Immunizations

- The National Vaccine Advisory Committee (NVAC) revised the Standards for Adult Immunization Practice in 2013.
- The new Standards call on **ALL** healthcare professionals – whether they provide vaccinations or not – to take steps to help ensure that their adult patients are fully immunized.
- <http://www.cdc.gov/vaccines/hcp/adults/for-practice/standards/index.html>



Practice Standards for Adult Immunizations

- **ASSESS** the immunization status of all your patients at every clinical encounter.
 - **Stay informed.** Get the latest CDC recommendations (<http://www.cdc.gov/vaccines/schedules/hcp/adult.html>) for immunization of adults.
 - **Implement protocols and policies.** Ensure that patients' vaccine needs are routinely reviewed and patients get reminders about vaccines they need.



Practice Standards for Adult Immunizations

- Strongly **RECOMMEND** vaccines that patients need.
 - Share tailored reasons why vaccination is right for the patient.
 - Highlight positive experiences with vaccination.
 - Address patient questions and concerns.
 - Remind patients that vaccines protect them and their loved ones against a number of common and serious diseases.
 - Explain the potential costs of getting sick.



Practice Standards for Adult Immunizations

- **ADMINISTER** needed vaccines or **REFER** your patients to a vaccination provider.
 - **Offer the vaccines** you stock.
 - **Refer patients** to providers in the area that offer vaccines that you don't stock.
 - Do you know where adult vaccines are available in your area?

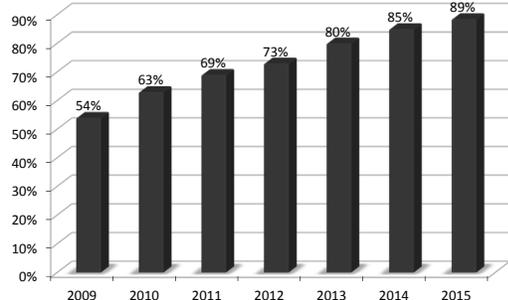


Practice Standards for Adult Immunizations

- **DOCUMENT** vaccines received by your patients.
 - **Participate in the North Dakota Immunization Information System (NDIIS).** Help your office, your patients, and your patients' other providers know which vaccines your patients have had.
 - **Follow up.** Confirm that patients received recommended vaccines that you referred them to get from other immunization providers.



Percent of adults 19 years of age and older with at least one adult administered dose of vaccine in the NDIIS



FEBRUARY ACIP MEETING



February ACIP Meeting

- Influenza
 - During its February 24 meeting, the ACIP voted to update the 2016-2017 influenza vaccine recommendations, including changes to the language on immunizing egg-allergic patients.
 - The new recommendations include the acceptable use of live attenuated influenza vaccine (LAIV; FluMist®) as an option for individuals with an egg allergy of any severity, including severe anaphylaxis.



February ACIP Meeting

- Influenza
 - Also, the ACIP removed the requirement to observe egg-allergic patients for 30 minutes post-vaccination, noting that 15 minutes of observation is recommended for all patients receiving vaccines, particularly adolescents for syncope.
 - The ACIP also voted to remove the algorithm that previously directed physicians in what vaccination route to take with egg-allergic patients because evidence from numerous studies supported the idea of all patients being vaccinated in the same manner.



February ACIP Meeting

- HPV
 - ACIP members also were presented data on immunogenicity of the two-dose versus three-dose schedule for Merck's nine-valent HPV vaccine (HPV9; Gardasil 9®).
 - Merck reported planning to submit data to the FDA to get the two-dose schedule for Gardasil 9® approved.
 - Even if a two-dose schedule is recommended by the ACIP in the future or approved by the FDA, it is anticipated that three doses will still be recommended for people 15 and older.



February ACIP Meeting

- Meningococcal
 - ACIP members also discussed the use of the quadrivalent meningococcal conjugate vaccine (MenACWY-D; Menactra®; Menveo®), which protects against serotypes A, C, W and Y, in HIV-infected patients.
 - The meningococcal workgroup proposed that HIV-infected patients be included in the list of "persons at increased risk" for this vaccine, but it wasn't put to vote.



MUMPS



Mumps in North Dakota

- Since 02/24/2016, the NDDoH has received 25 reports of mumps cases.

CASE STATUS		AGE	
Confirmed		<10	1
	5	10-17	1
		18-24	4
Probable	2	25-39	8
		40-59	5
Suspect	18	>60	6



Mumps in North Dakota

COUNTY	
Ward County	15
Sargent County	1
Grand Forks County	2
McHenry County	1
Cass County	1
Stark County	2
Burleigh County	3

VACCINATION STATUS	
2 MMRS	6
1 MMR	2
Not Vaccinated	7
Unknown	10



Mumps in North Dakota

- A Health Alert was sent to providers on March 16, 2016.
 - https://healthalert.nd.gov/public/Email/2139-MUMPS_Health%20Alert%20Network.pdf
- The most recognizable symptom of mumps is parotitis (acute onset of unilateral or bilateral tender, self-limited swelling of the parotid or other salivary glands).
 - Other symptoms include fever, headache, earache, muscle or joint pain, painful swelling of the testicles in men and swelling of the ovaries in women, causing abdominal pain.



Mumps in North Dakota

- Health care providers should consider mumps in patients presenting with the above symptoms, but should also test for influenza
- The NDDoH recommends providers collect a buccal swab for RT-PCR testing if a provider suspects mumps. According to the CDC, PCR is the preferred test for mumps.



Mumps in North Dakota

- Patients infected with mumps are infectious from 2 days before onset of symptoms to 5 days after and should be excluded from activities (i.e., work, school, child care) during this time period.
- If a patient is clinically diagnosed with mumps, regardless of laboratory testing, the case must be reported to NDDoH.
 - Cases should be reported by calling 800.472.2180 or online at www.ndhealth.gov/Disease/Disease%20Reporting/Report.htm.



ND Immunization Conference

- August 3 and 4 in Bismarck, ND at the Ramkota Hotel.
- Registration was available starting April 4, with early bird pricing through July 4.
 - For more information or to register, please visit <http://und.edu/academics/extended-learning/conference-services/immunization/>



Type your question to the right in the chat window

After the presentation, questions may be sent to:

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Immunization Program : 701.328.3386 or toll-free 800.472.2180



Post-Test Information

- Post-test
 - Nurses interested in continuing education credit, visit: <http://www.ndhealth.gov/disease/post/default.aspx?PostID=122>
 - Successfully complete the five-question post-test to receive your certificate.
- Credit for this session is available until May 10th.
- This presentation will be posted to our website: www.ndhealth.gov/immunize.