Making Sense of Recent Immunization Recommendations

Late 2010 – Present
Know Your Recommendations

- ACIP updated recommendations:
  - Pneumococcal
  - Tdap
  - Meningococcal
  - Influenza
  - Hepatitis B
  - HPV
- New FDA approval:
  - PCV13
  - HPV
  - Zoster
- Other updates:
  - Vaccines for health-care workers
  - General recommendations

All except one of the following diseases and conditions may someday soon have a vaccine to prevent them:
- Acne
- Hair loss
- Norovirus
- HIV

Find out what may be coming soon!
ACIP Update: Pneumococcal

- Changes in epidemiology of pneumococcal disease after routine vaccination with PCV7 began in 2000
  - 99% decrease in disease caused by 7 vaccine serotypes and 6A
  - Increase in IPD caused by non-vaccine serotypes, in particular 19A

Proportion of cases of invasive pneumococcal disease (IPD) for 2008 among children aged <5 years, by vaccine serotype.
ACIP Update: Pneumococcal (cont)

• Why not just give PPV23?
  – Conjugate vaccines have several advantages over PPV23
    • Young children do not consistently respond to polysaccharide antigens, probably because of immature immune systems
    • Repeat doses of polysaccharide vaccines usually do not cause a booster response
ACIP Update: Pneumococcal (cont)

### Previously Unvaccinated Infants and Children

<table>
<thead>
<tr>
<th>Age at first dose (months)</th>
<th>Primary PCV13 series*</th>
<th>PCV13 booster dose†</th>
</tr>
</thead>
<tbody>
<tr>
<td>2 – 6</td>
<td>3 doses</td>
<td>1 dose at 12 – 15 months</td>
</tr>
<tr>
<td>7 – 11</td>
<td>2 doses</td>
<td>1 dose at 12 – 15 months</td>
</tr>
<tr>
<td>12 – 23</td>
<td>2 doses</td>
<td>NA</td>
</tr>
<tr>
<td>24 – 59 (healthy children)</td>
<td>1 dose</td>
<td>NA</td>
</tr>
<tr>
<td>24 – 71 (children with certain chronic diseases or immunocompromising conditions)</td>
<td>2 doses</td>
<td>NA</td>
</tr>
</tbody>
</table>

* Minimum interval between doses is 4 weeks for children <12 months and 8 weeks for children >12 months.
† Booster dose must be administered at least 8 weeks after the previous dose.

A chart summarizing the recommendations for children transitioning from PCV7 to PCV13 is available on our website: [www.ndhealth.gov/immunize/providers/forms.htm](http://www.ndhealth.gov/immunize/providers/forms.htm).
ACIP Update: Pneumococcal (cont)

• Children 6 – 18 years with certain high-risk conditions
  – A single dose for those at increased risk for IPD
• Administering PPV23 and PCV13
  – Children 2 years with underlying medical conditions should receive PPV23 after completing all recommended doses of PCV13
  – Children who have received PPV23 previously should also receive all recommended PCV13 doses
  – When elective splenectomy, immunocompromising therapy or cochlear implant placement is being planned, PCV13 and/or PPV23 vaccination should be completed at least 2 weeks before surgery or initiation of therapy
  – Minimum interval between doses is 8 weeks
FDA Update: PCV13

• PCV13 is now approved for use in adults ages 50 years and older
  – The ACIP recommendation has not changed
  – A clinical trial of 85,000 adults ages 65 years and older who have never received PPV23 is currently underway to confirm the clinic benefit of PCV13 in preventing pneumococcal pneumonia
ACIP Update: Tdap

- Individuals aged 11 – 64 years
  - Should receive a single dose of Tdap
- Adults aged 65 years and older
  - Those who have or anticipate having close contact with an infant <12 months should receive a single dose of Tdap
  - Other adults 65 and older may be given a dose of Tdap
- Children aged 7 – 10 years
  - Those not fully vaccinated against pertussis should receive a dose of Tdap
  - Those with no or unknown history of tetanus, diphtheria and pertussis vaccinations should receive 3 doses of tetanus and diphtheria-containing vaccine, the first of these should be Tdap
ACIP Update: Tdap (cont)

- Pregnant women
  - Implement a vaccination program for pregnant women who have not previously received Tdap
    - Administer Tdap during pregnancy, preferably during the late second (after 20 weeks gestation) or third trimester
    - If not administered during pregnancy, give Tdap immediately postpartum
ACIP Update: Tdap (cont)

• Pregnant women: special situations
  – Wound management
    • If indicated as part of standard wound management (i.e., more than 5 years since previous Td), give Tdap
  – Unknown or incomplete tetanus vaccination
    • Should receive 3 doses of tetanus- and diphtheria-containing vaccine
    • 0, 4 weeks and 6 – 12 months
    • One dose should be Tdap, preferably in late second or third trimester
ACIP Update: Tdap (cont)

- Both Tdap vaccines (Adacel and Boostrix) may be administered to patients 7 years and older
- No minimum interval between tetanus-containing vaccines
- After receiving a single dose of Tdap, adolescents and adults should continue to receive Td boosters every 10 years
ACIP Update: Meningococcal

- Goal of 2005 recommendations: reduce disease in patients aged 16 – 21 years
- Why was the vaccine recommended at 11 – 12 years and not 14 – 15 years?
  - More patients have preventive care visits at 11 – 12 years
  - Strengthen adolescent vaccination platform
  - It was speculated that protection would last through the entire at-risk period
- Two options:
  - Recommend vaccination at 14 – 15 years only
  - Add booster dose at age 16 years
ACIP Update: Meningococcal (cont)

Vaccinate at age 14 – 15 years
+ Would protect most adolescents through the higher risk period from ages 16 – 21 years
- Opportunities to vaccinate at age 14 – 15 years would be rare
- As adolescents grow older, they are less likely to visit a health-care provider for preventive care

Add booster dose at age 16 years
+ Provide more opportunities to increase vaccination coverage
+ Adolescents 11 – 13 years would remain protected
+ Estimated to prevent twice the number of cases and deaths
## ACIP Update: Meningococcal (cont)

<table>
<thead>
<tr>
<th>Risk Group</th>
<th>Primary Series</th>
<th>Booster Dose</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ages 11 – 18</td>
<td>1 dose, preferably at age 11 or 12</td>
<td>At age 16 if primary dose at 11 or 12</td>
</tr>
<tr>
<td>Ages 11 – 18 with HIV infection</td>
<td>2 doses, 2 months apart</td>
<td>At age 16 – 18 if primary dose at 13 – 15 or after age 16</td>
</tr>
<tr>
<td>People ages 2 – 55 with persistent complement component deficiency or functional/anatomical asplenia</td>
<td>2 doses, 2 months apart</td>
<td>Every 5 years or at the earliest opportunity if a 1-dose primary series administered, then every 5 years</td>
</tr>
<tr>
<td>People 2 – 55 with prolonged increased risk for exposure*</td>
<td>1 dose</td>
<td>Children ages 2 – 6 years: after 3 years or if the person remains at increased risk. People age 7 and older: after 5 years§</td>
</tr>
</tbody>
</table>

* Microbiologists routinely working with *N. meningitidis* and travelers to or residents of countries where meningococcal disease is hyperendemic or epidemic.

§ If the person remains at increased risk.
ACIP Update: Meningococcal (cont)

- Effective fall 2012, newly enrolled students residing in campus housing in North Dakota colleges/universities must have documentation of immunity:
  - Evidence of at least one dose of MCV4 in the five years prior to enrollment OR
  - Evidence of two doses of MCV4, at least eight weeks apart, administered at or after age 10 years
ACIP Update: Meningococcal (cont)

• New MCV4 recommendation for children ages 9 – 23 months with certain risk factors
  – Persistent complement component deficiencies (i.e., C5 – C9, properdin, factor H or factor D)
  – Traveling to or residents of countries where meningococcal disease is hyperendemic or epidemic
  – Defined risk group during a community or institutional meningococcal outbreak
ACIP Update: Meningococcal (cont)

• 2-dose series, separated by 3 months
  – Minimum interval is 8 weeks
• If second dose is not administered 3 months after the first, give at the first available opportunity
• Booster doses are recommended for children who remain at increased risk
# ACIP Update: Meningococcal (cont)

## Recommendations for children 9 – 23 months at high risk for meningococcal disease

<table>
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<tr>
<th>Risk Group</th>
<th>Primary Series</th>
<th>Booster Dose</th>
</tr>
</thead>
<tbody>
<tr>
<td>Children at high risk for invasive meningococcal disease*</td>
<td>2 doses, 3 months apart                                                        • Initial booster 3 years after completing the primary series†</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Catch-up if dose 2 is not received on schedule: at the earliest opportunity    • Continued boosters every 5 years after the initial booster†</td>
<td></td>
</tr>
<tr>
<td>Children at high risk for invasive meningococcal disease with functional or anatomic asplenia</td>
<td>2 doses, 2 months apart, beginning at age 2 years and at least 4 weeks after completion of PCV13 series</td>
<td>• Initial booster 3 years after completing the primary series†</td>
</tr>
</tbody>
</table>

* Children with persistent complement component deficiencies (i.e., C5—C9, properdin, factor H or factor D), children who are traveling to or residents of countries where meningococcal disease is hyperendemic or epidemic and children who are in a defined risk group during a community or institutional outbreak.

† If remain at increased risk

Menactra is the only meningococcal conjugate vaccine licensed for use and recommended for children 9 – 23 months.
ACIP Update: Meningococcal (cont)

- Children with functional or anatomic asplenia, because of their high risk for invasive pneumococcal disease, should be vaccinated with MCV4 at age 2 years to avoid interference with the immunologic response to PCV.
  - If these children have not received all recommended doses of PCV, the PCV series should be completed first, followed by the MCV4 series at least 4 weeks later.
ACIP Update: Meningococcal (cont)

• Meningitis belt
  – Periodic epidemics during the dry season (December – June)
ACIP Update: Influenza

• For 2011 – 2012 influenza season, children 6 months – 8 years only need two doses of influenza vaccine if they didn’t receive at least one dose last influenza season

• Unlike past recommendations, no need to look at any other influenza vaccination history other than the 2010 – 2011 season
ACIP update: Influenza (cont)

Can the person eat lightly cooked eggs (i.e., scrambled eggs) without reaction?
Yes: Administer vaccine per usual protocol
No: Continue

After eating eggs or egg-containing foods, does the person ONLY experience hives?
Yes: Administer TIV, observe for 30 minutes for reaction
No: Continue

Does the person experience other symptoms such as:
- Cardiovascular changes (i.e., hypotension)
- Respiratory distress (i.e., wheezing)
- Gastrointestinal (i.e., nausea/vomiting)
- Reaction requiring epinephrine
- Reaction requiring emergency medical attention
Yes: Refer to physician with expertise in management of allergic conditions for further evaluation

Updated recommendations for individuals with egg allergy
FDA Update: Influenza

• Fluzone Intradermal was approved for use in adults 18 – 64 years
  – Vaccine features an ultra-fine needle that is 90% shorter than typical needles used for intramuscular injections
  – The ACIP does not express preference for any presentation of influenza vaccine
ACIP Update: Hepatitis B

• All previously unvaccinated adults ages 19 – 59 years with diabetes (type I or type II) should be vaccinated as soon as possible following diagnosis
  – Usual schedule for hepatitis B vaccination is 0, 1 and 6 months (other schedules are available)
• Hepatitis B vaccine may be administered, at the discretion of the treating physician, to adults ages 60 years and older with diabetes
• Additional doses of vaccine are not recommended for anyone who has received a hepatitis B vaccine series previously
ACIP Update: HPV

• Vaccination with HPV4 (Gardasil) is now routinely recommended for all males at 11 – 12 years of age
• Catch-up vaccination is recommended for males 13 – 21 years who have not completed the series or are previously unvaccinated
• Males 22 – 26 years may be vaccinated
ACIP Update: HPV (cont)

- HPV4 vaccination is recommended for immunocompromised males and MSM through age 26 years for those who did not finish the 3-dose series or who are unvaccinated.
- Because HPV4 is prophylactic, it is most effective when given before exposure to HPV through sexual contact.
FDA Update: HPV

• HPV4 was approved for additional indications:
  – Prevention of anal precancers and cancers caused by HPV types 16 and 18

• Updated package insert for HPV4 contains information for women 27 – 45 years of age
  – “GARDASIL has not been demonstrated to prevent HPV-related CIN 2/3 or worse in women older than 26 years of age.”
FDA Update: Zoster

- Zoster vaccine is now approved for use in adults ages 50 years and older
- The ACIP recommendation has not changed
  - ACIP recommendation: vaccinate adults 60 years and older, regardless of whether they report a previous episode of varicella or zoster
- Zostavax is in better supply than previous months
  - Patients and providers may locate nearby locations who carry the vaccine by visiting www.zostavax.com
Vaccines for Health-Care Workers

• Hepatitis B
  – HCP and trainees in certain populations at high risk for chronic hepatitis B (i.e., those born in countries with intermediate or high endemicity) should be tested for HBsAg and anti-HBc/anti-HBs to determine infection status

• Influenza
  – Emphasis that all HCP, not just those with direct patient contact, should be vaccinated annually
  – Comprehensive programs to increase influenza vaccination coverage is needed; facilities should measure and report influenza vaccination rates regularly
Vaccines for HCP (cont)

• MMR
  – History of disease is no longer considered adequate presumptive evidence of immunity for measles or mumps
  – Laboratory confirmation of disease was added as presumptive evidence of immunity
  – Recommendations updated for individuals born before 1957 in routine and outbreak contexts
    • 2 doses for protection from measles and mumps, 1 dose for protection from rubella
Vaccines for HCP (cont)

• Pertussis
  – HCP, regardless of age, should receive a single dose of Tdap as soon as feasible if they have not previously received Tdap
  – No minimum interval between doses of tetanus- and diphtheria-containing vaccines
  – Hospitals and ambulatory-care settings should provide Tdap for HCP and use approaches that maximize Tdap vaccination coverage
Vaccines for HCP (cont)

• Varicella

  – Criteria for evidence of immunity for HCP:
    • Written documentation of 2 doses of varicella vaccine
    • Laboratory evidence of immunity or confirmation of disease
    • Diagnosis of history of varicella disease by a health-care provider or diagnosis of history of herpes zoster by a health-care provider
Vaccines for HCP (cont)

• Meningococcal
  – HCP with anatomic or functional asplenia or persistent complement component deficiencies should receive a 2-dose series
  – HCP with HIV infection who are indicated for vaccination should also receive a 2-dose series
  – HCP who remain at risk should be revaccinated every 5 years
General Recommendations

• Noteworthy revisions:
  – Revisions to the table of contraindications and precautions
  – Separate table of conditions that are commonly misperceived as contraindications or precautions
  – Stricter criteria for selecting an appropriate storage unit for vaccines
  – Guidance for maintaining the cold chain in the event of unavoidable temperature deviations
  – Updated recommendations for patients who have received a hematopoietic cell transplant
Looking Forward

• Acne
  – Prevention and treatment targeting the specific neutralization of *Propionibacterium acnes* factors in inflammation

• Human immunodeficiency virus (HIV)
  – Canadian scientists have been given approval by the FDA to begin human clinical trials of their HIV vaccine that triggered strong immune responses in lab animals

• Norovirus
  – Vaccine currently being studied
Questions

Type your question into either of the chat windows at your right.

After the presentation, questions may be sent to:
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Slides from this presentation will be posted to our website:  www.ndhealth.gov/immunize