Immunization Update: Changes and Challenges

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Objectives

- Upon completion of this lecture, the participant will:
  1. Discuss the various changes to the 2008 – 2009 recommended immunization schedule
  2. Review indications for the various childhood and adult vaccines
  3. Discuss benefits and risks to the various vaccinations

What A Year!!!

- I have been in practice as a nurse practitioner since 1992 and have never seen such sweeping changes in the immunization schedule as I have over the past year
- Increasingly more difficult to stay current
  - Increasingly more difficult to make sure all of our children and adults are protected
- What do you think?
1970 Recommended US Childhood Immunization Schedule

<table>
<thead>
<tr>
<th>Vaccine</th>
<th>1 mo</th>
<th>2 mos</th>
<th>4 mos</th>
<th>6 mos</th>
<th>12 mos</th>
<th>18 mos</th>
<th>24 mos</th>
<th>4 yrs</th>
<th>6 yrs</th>
<th>11 yrs</th>
<th>12 yrs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Diphtheria, tetanus, pertussis</td>
<td>DTP</td>
<td>DTP</td>
<td>DTP</td>
<td>OPV</td>
<td>OPV</td>
<td>OPV</td>
<td>OPV</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Oral polio</td>
<td>OPV</td>
<td>OPV</td>
<td>OPV</td>
<td>OPV</td>
<td>OPV</td>
<td>OPV</td>
<td>OPV</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Measles</td>
<td></td>
<td></td>
<td></td>
<td></td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Adapted from CDC.

Immunizations: 0 – 6 years

Recommended Immunization Schedule for Persons Aged 0–6 Years – United States – 2008

Adapted from CDC.

Adolescent Schedule

Recommended Immunization Schedule for Persons Aged 11–18 Years – United States – 2008

Adapted from CDC.
Adult Immunization Schedule 2008

Recommended Adult Immunization Schedule

<table>
<thead>
<tr>
<th>Disease</th>
<th>Estimated Annual Cases</th>
<th>Average Annual Deaths</th>
</tr>
</thead>
<tbody>
<tr>
<td>Influenza</td>
<td>78,000</td>
<td>5000</td>
</tr>
<tr>
<td>Hepatitis B²,³</td>
<td>93,000</td>
<td>100</td>
</tr>
<tr>
<td>Varicella</td>
<td>87,400</td>
<td>54</td>
</tr>
<tr>
<td>Pneumococcal disease²</td>
<td>175,000</td>
<td>5500</td>
</tr>
<tr>
<td>Meningococcal disease²</td>
<td>2500,5000</td>
<td>150</td>
</tr>
<tr>
<td>Pertussis²</td>
<td>800,000-3,300,000</td>
<td>7</td>
</tr>
<tr>
<td>HPV⁴</td>
<td>6,200,000</td>
<td>4000*</td>
</tr>
</tbody>
</table>


*Estimated deaths from cervical cancer, for which HPV infection is a risk factor

New vaccines and updates make a focus on immunizations more important than ever

- Licensed vaccines
  - Hepatitis B
  - Influenza
  - Varicella
  - Td
  - MMR
  - Pneumococcal
  - Hepatitis A
  - IPV
  - Herpes Zoster
- Human Papillomavirus
Varicella Update

- CDC is now recommending a chickenpox vaccine booster
  - First immunization given at 1 year of age or beyond
- 2nd injection is now recommended for all children 4 – 6 years of age
- It will be on same schedule as MMR
- Immunity with booster will increase protection from 80% to 99%

What Are The Benefits of Varicella Vaccine?

- Less chicken pox
- Less varicella pneumonia and encephalitis
- Less herpes zoster
- Less post-herpetic neuralgia (PHN)
- Hopefully, lifelong immunity

What About Adults?

- You are seeing the adult who says….  
  - I have no recollection of ever having chicken pox
  - How do you respond?
Hepatitis A Vaccine

- This is now being recommended for all children
- Should begin to receive vaccine between 12 – 23 months
- 2 shots – separated 6 months apart
  - (day 0 and day 6 months)
- Most providers are initiating at the 1 year old visit
- Why the recommendation?

www.cdc.gov accessed 07-12-2008

Rotavirus Vaccine

- Developed to protect against Rotavirus in infants
- Rotateq
  - Administer first dosage at 6 – 12 weeks (2 months)
  - 2nd dosage: 4 months
  - 3rd dosage: 6 months
- Liquid vaccination

www.cdc.gov accessed 07-12-2008

New Competitor

- Rotarix
  - GSK’s vaccine
  - Two dose vaccination (oral formulation)
  - First dose: age 6 weeks – 8 weeks
  - Second dose: 4 months (minimum of 4 weeks between dosages)
  - May not be administered later than 24 weeks

www.cdc.gov accessed 07-12-2008
Herpes Zoster Vaccine

- Now approved to prevent shingles in individuals over the age of 60
- Varicella zoster virus
- Cuts risk of shingles by 50%
- If an individual does get shingles, reduces severity and lowers risk of PHN in individuals > 70
- Live virus vaccine

Zostavax package insert, 2008

Herpes Zoster Vaccine

- One time only for individuals 60 and older
- May administer even if they have a history of herpes zoster
- SC injection
- Avoid: individuals who are immunosuppressed which includes anyone taking 20 mg of prednisone or > daily
- $150.00 for injection

Zostavax package insert, 2008

Herpes Zoster Vaccine Update

- Immunization and the injection fee will need to be billed under Medicare Part D
- What does this mean for us:
  - Collect money from patients first; give them charges and they have to submit
  - Or…. Medicare has a new electronic billing system called eDispense Vaccine Manager
    - Lets offices bill many Part D plans for immunization and the injection fee
    - Will also verify coverage, calculate co-pay and bill insurance company for remainder
Human Papillomavirus (HPV): Disease Awareness

HPV
Nonenveloped double-stranded DNA virus

- >100 types identified
- 30–40 anogenital
  - 15–20 oncogenic types, including 16, 18, 31, 33, 35, 39, 45, 51, 52, 58
  - HPV 16 (54%) and HPV 18 (13%) account for the majority of worldwide cervical cancers.
- Nononcogenic types include: 6, 11, 40, 42, 43, 44, 54
  - HPV 6 and 11 are most often associated with external genital warts.


US HPV Statistics

- Lifetime risk for sexually active men and women is at least 50%.
  - By 50 years of age, at least 80% of women will have acquired genital HPV infection.
- Estimated incidence: 6.2 million per year.
- Estimated prevalence: 20 million.
- In sexually active individuals 15–24 years of age, ~9.2 million are currently infected.
  - An estimated 20% of new HPV infections occur in this age group.
  - In studies of women <25 years of age, prevalence rates ranged from 43% to 53%.

Estimated Annual Incidence of Select HPV-Related Disease in the United States

- 9,710 new cases of cervical cancer
- 330,000 new cases of high-grade cervical dysplasia (CIN 2/3)
- 1.4 million new cases of low-grade cervical dysplasia (CIN 1)
- 1 million new cases of genital warts


HPV Types 6, 11, 16, and 18 in Cervical Cancer and Other Anogenital Diseases

Prevalence of HPV Type


Colposcopic Appearance of the Normal Cervix

Photo courtesy of Dr. J. Monsonego
CIN as Seen in Colposcopy

Colposcopy findings confirmed by histology
- CIN 1: Mild dysplasia; includes condyloma (anogenital warts)
- CIN 2: Moderate dysplasia
- CIN 3: Severe dysplasia; cancer in situ (CIS); FIGO Stage 0

HPV and Anogenital Warts
- HPV 6 and 11 most often associated with anogenital warts
  - Found in >90% in 1 study
  - Peak prevalence
    - Women 20–24 years of age (6.2/1,000 person years)
    - Men 25–29 years of age (5.0/1,000 person years)
  - Infectivity >75%
  - Up to 30% spontaneously remit after 4 months
  - After therapy there is recurrence within 3 months in 25% of the cases

HPV Vaccine
- Protects against 4 strains of HPV
  - 16 and 18 – cause 70% of all cervical cancer
  - 6 and 11 – cause 90% of genital warts
  - CDC just recommended administration as young as 9 but ideally to 11 – 12 year old girls only
  - Age limit: ≤ 26 years of age
HPV Vaccine

- Series of 3 injections
  - Day 0, day - 2 months and day - 6 months
- .5 ml injection IM injection into deltoid
- Approximately $120.00 – $130.00 per injection
- No approval yet for men
- NH was the first state to make available for all of our female children

Gardasil package insert, 2008

HPV Vaccine

- Caution: Breastfeeding and pregnant women
- Category: B
- Side effects: pain at injection site, low grade fever
- What questions have you been receiving?
  - Can I give it to my child who is already sexually active?
  - Can I give it to my son?
  - What if I already have warts – should I get immunization?

Gardasil package insert, 2008

New Competitor in 2008 - 2009

- Will likely be called Cervarix
- GSK’s answer to Gardasil
- Protects against strains 16 & 18
- Approved in Australia: 10 – 45 years of age

Gardasil package insert, 2008
Influenza

- 2008
  - All children, regardless of risk, should be immunized against influenza
  - 2/3's of children with asthma are not receiving influenza vaccine
  - Imperative that we increase the influenza immunization rates in children
  - Injection: 6 months and up
  - Flumist: 2 years of age and up
  - No contraindications such as asthma, pulmonary disease

www.cdc.gov accessed 08-02-2008

HIB Shortage

- Clinicians are being asked to defer the 12 – 15 month vaccine at this time due to a shortage
- Imperative that all clinicians/nurses be aware of this recommendation given widespread shortage
- Must put child on recall list so as to not miss this vaccination

Pertussis Awareness and Prevention

Acellular Pertussis Vaccines
What Is Pertussis?

- Acute respiratory tract infection
- *Bordetella pertussis* (gram-negative aerobic bacillus)
- Highly communicable
- Morbidity in all ages, particularly infants
- Causes prolonged coughing
- Difficult to diagnose

Reference:

Why Are the Number of Reported Pertussis Cases Increasing?

- Incomplete immunization of children
- Vaccine immunity is variable and wanes over time²,³
- Persistent human reservoir
- Better awareness of disease as a result of improved diagnostic testing
- Under- and misdiagnosis results in ongoing transmission
- Inadequate use of chemoprophylaxis in close contacts
- Adolescent/adult booster vaccine only recently licensed

References:
1. CDC. MMWR. 2002;51:73-76.

Reported Pertussis Cases Are the Tip of the Iceberg

- Nationwide, a small percentage of pertussis cases are actually reported
- Underreporting may be greatest among adolescents and adults

Reference:
Transmission of Pertussis

- Pertussis is transmitted to and from all age groups.
- Highly contagious, with 80% secondary attack rates among susceptible household contacts. Transmission of pertussis to household members has been documented.
- Young infants are at high risk of morbidity and mortality.
- Adolescents get pertussis from household contacts and schoolmates.
- Adults get pertussis from work and household contacts; parents (adult and adolescent) give pertussis to their infants.

Reference:

Infant Pertussis Remains a Concern

- 1990-1993: 11 cases/year
- 1994-1996: 4000 cases/year
- 1997-2000: 5000 cases/year
- 2001-2004: 33 - 55 cases/year

- 8.3 fold increase
- 7.5 fold increase

Age Group: <1 yr, 1-4 yrs, 5-9 yrs, 10-19 yrs, 20+ yrs

Infant Pertussis: Who Is the Source?
- 616 infant cases from 4 states
- 264 cases had a known or suspected source
- Sources:
  - Other 25%
  - Mother 32%
  - Father 15%
  - Sibling 20%
  - Grandparent 8%

Reference:
CDC. MMWR. 2002;51:73-76.
CDC. MMWR. 2003;52:E10-16.
Health-care Professionals Involved in Transmission of Pertussis

- Physicians 1912 Schwenkenbecher
- Nurses 1972 Kurt et al
- Physicians 1992 Etkind et al
- Nurses 1995 Christie et al
- Nurses 1997 Matlow et al
- Nurses and Physicians 2005 CDC


When Is Pertussis Communicable?

- Persons with pertussis become highly infectious during the catarrhal period.
- Some individuals, especially infants, may be infectious for a period of time longer than shown above.

When Is Pertussis Communicable?

- Period of communicability
- Exposure
- Paroxysmal cough onset
- Catarrhal stage
- Paroxysmal stage
- Convalescent stage

Diagnostic Tests for Pertussis

- NP culture on special media (Regan-Lowe, Bordet-Gengou)
- PCR
- Serologic tests
- Increased WBC with an absolute lymphocytosis
- DFA—variable sensitivity/specificity
Treatment of Cases and Chemoprophylaxis of Close Contacts

- Erythromycin estolate or erythromycin ethylsuccinate (EES) 40-50 mg/kg/day (max 2 g/day) in 2-4 divided doses for 7-14 days

- Azithromycin 10-12 mg/kg/day (max 500mg/day) 1 dose/day for 5 days

- Clarithromycin 15-20 mg/kg/day (max 1 g/day) in 2 divided doses for 7 days

Reference:

* Use caution when using macrolides, especially erythromycin, in infants less than 2 weeks old.

† Azithromycin may be given as 10-12 mg/kg/day (max 500mg/day) on day 1 and 5 mg/kg/day (max 250 mg/day) on days 2-5.

For patients allergic to macrolides:
- Trimethoprim-sulfamethoxazole 8mg TMP/40mg SMX/kg/day (max 320mg TMP/1600mg/day) in 2 divided doses for 14 days

- All of these agents reduce transmission of B pertussis and ameliorate early symptoms

- No antibiotic lessens the severity or shortens the duration of cough in patients who are already experiencing paroxysmal episodes

- Penicillins/cephalosporins are not effective

References:

ACIP Recommendations

June, 2005: Adolescents
- Tdap should replace Td for all 11- and 12-year-olds
- Tdap should be administered to all 13-18-year-olds who did not receive Td
- 11-18-year-olds who have received Td should receive Tdap; a 5-year interval since Td is encouraged, but intervals as short as 2 years are acceptable in situations of increased pertussis risk

ACIP Recommendations (con’t)

- June, 2005: Adolescents
  - Tdap should be administered simultaneously with Menactra®; non-simultaneous administration is acceptable
  - Adolescents for whom Tdap is indicated and who are pregnant should receive the vaccine during the 2nd or 3rd trimester

ACIP Recommendations for Tdap Use in Adults

- October 26, 2005, meeting
  - Replacement of one decennial Td with Tdap vaccination
  - Key contacts of infants (parents, child caregivers, health-care providers)
  - Preferred in place of Td for wound care
  - Shorter intervals after Td acceptable

- Future ACIP meetings
  - Health-care workers
  - Pregnancy
  - Repeat dosing
  - Over 64 years of age

Tdap Vaccine

- Tdap
- IM injection
  - .5 cc IM into deltoid
- Ages: 11 – 64
- Contains:
  - diphtheria toxoid, tetanus toxoid and acellular pertussis antigens

Adacel package insert, 2008
Tdap Vaccine

- **Indications**
  - 11-64 years of age
  - > 5 years after last tetanus, diphtheria +/or pertussis
  - Not to be used as part of the primary series

- **Contraindications**
  - Encephalopathy from vaccine ingredients in past
  - Uncontrolled epilepsy
  - Progressive neurologic disorders
  - Latex allergy***

- **Side effects**
  - Local reactions, fever, headache, fatigue

Adacel package insert, 2008

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What About 65-year Old Individuals?

- As it stands now, at 65 years and older, must go back to a Td
- Administer routinely every 10 years

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Websites with Vaccine Information

- [www.pertussis.com](http://www.pertussis.com)
- [www.cdc.gov/nip/vacsafe](http://www.cdc.gov/nip/vacsafe)
- [www.cispimmunize.org](http://www.cispimmunize.org)
- [www.vaccine.chop.edu](http://www.vaccine.chop.edu)
- [www.vaccineprotection.com](http://www.vaccineprotection.com)
Meningococcal Disease

- Often serious, this rapidly progressing infection leaves little time for diagnosis and treatment
- Early meningococcal disease can present with symptoms similar to common viral illnesses, making diagnosis difficult
- *Neisseria meningitidis* is now the most prevalent etiologic agent of bacterial meningitis among children and adolescents 2 to 18 years of age in the US

Mortality Figures for Adolescents Can Be Deceiving

Proportion of Deaths from Infectious Diseases in Adolescents

<table>
<thead>
<tr>
<th>Year</th>
<th>United States 1991–2000</th>
</tr>
</thead>
<tbody>
<tr>
<td>1991-1995</td>
<td>N=68</td>
</tr>
<tr>
<td>1996-2000</td>
<td>N=73</td>
</tr>
</tbody>
</table>

A Peak of Meningococcal Disease Incidence Occurs in 15- to 19-Year-Olds*

Age-Specific Fatalities From Meningococcal Disease in the US (1997-2002)

Clinical Snapshot: How Many Adolescents Visited Physicians’ Offices in 2003?
Of 32.8 million adolescents ages 11–18 years, approximately 26.6 million visited a physician in 20031,2
Few Adolescents Visit Physicians' Offices for Preventive Care

Only 8% of all reported physician visits by 11- to 18-year-old patients are coded as "preventive".

Surviving Meningococcal Disease

<table>
<thead>
<tr>
<th>Meningococcemia</th>
<th>Meningitis</th>
</tr>
</thead>
<tbody>
<tr>
<td>Skin scars from necrosis</td>
<td>Spastic quadriplegia</td>
</tr>
<tr>
<td>Limb loss from gangrene</td>
<td>Hearing loss</td>
</tr>
<tr>
<td>Renal failure</td>
<td>Cerebral infarction</td>
</tr>
<tr>
<td>Septic arthritis</td>
<td>Cortical venous thrombophlebitis</td>
</tr>
<tr>
<td>Pneumonia</td>
<td>Cerebral edema</td>
</tr>
<tr>
<td>Epiglottitis</td>
<td>Cranial nerve palsies</td>
</tr>
<tr>
<td>Pericarditis</td>
<td>Mental retardation</td>
</tr>
<tr>
<td></td>
<td>Hemiparesis</td>
</tr>
</tbody>
</table>

Up to 40% fatality rate

3% to 10% fatality rate

Severe Late-Stage Meningococcal Infection in a 15-Year-Old Boy

Meningococcal Disease Is Serious but Preventable in Adolescents and Young Adults

Maryland Residents Diagnosed With Invasive Meningococcal Disease, January 1, 1990 to December 31, 1999

<table>
<thead>
<tr>
<th>All Ages</th>
<th>&lt;15 Years</th>
<th>15–24 Years</th>
</tr>
</thead>
<tbody>
<tr>
<td>n/Total</td>
<td>n/Total</td>
<td>n/Total</td>
</tr>
<tr>
<td>Fatal Cases</td>
<td>40 / 294</td>
<td>5 / 109</td>
</tr>
<tr>
<td></td>
<td>(13.6%)</td>
<td>(4.6%)</td>
</tr>
<tr>
<td>Potentially Vaccine-Preventable</td>
<td>193 / 257*</td>
<td>64 / 94</td>
</tr>
<tr>
<td></td>
<td>(75.1%)</td>
<td>(68.1%)</td>
</tr>
</tbody>
</table>

*Serogroup information was not available for all cases
†P = 0.001, <15 yrs vs 15-24 yrs
‡P = 0.04, <15 yrs vs 15-24 yrs

Maryland Residents Diagnosed With Invasive Meningococcal Disease, January 1, 1990 to December 31, 1999

Fatal Cases

<table>
<thead>
<tr>
<th>&lt;15 Years</th>
<th>15–24 Years</th>
</tr>
</thead>
<tbody>
<tr>
<td>5 / 109</td>
<td>16 / 71†</td>
</tr>
<tr>
<td>(4.6%)</td>
<td>(22.5%)</td>
</tr>
</tbody>
</table>

Potentially Vaccine-Preventable

<table>
<thead>
<tr>
<th>&lt;15 Years</th>
<th>15–24 Years</th>
</tr>
</thead>
<tbody>
<tr>
<td>64 / 94</td>
<td>53 / 64††</td>
</tr>
<tr>
<td>(68.1%)</td>
<td>(82.8%)</td>
</tr>
</tbody>
</table>

Serogroup C Disease Decreased Dramatically After C-Conjugate Immunization in the UK in 15- to 17-Year-Olds

Week Number (total from mid-year)

Vaccination was offered to all UK citizens ≤18 years of age.

Health Protection Agency Website. Available at: www.hpa.org.uk/infections/topics_az/meningo/graph_menicom additionally

Meningococcal Disease: Still a Major Health Concern

Meningococcal disease continues to cause significant morbidity and mortality in the US

Rates of meningococcal disease beyond infancy begin to rise in early adolescence, peaking at 17 years of age

Older adolescents have a 5-fold greater fatality rate than those <15 years old

Conjugate vaccines induce immunologic memory and herd immunity

The attributes of conjugate vaccines give them more widespread utility than polysaccharide vaccines
ACIP Recommendations for Use of Meningococcal Vaccine

- Routine vaccination of adolescents with MCV-4
  - Young adolescents 11 to 12 years (during the pre-adolescent visit), OR
  - Teens entering high school (15 years), OR
  - Incoming college freshmen (18 years) living in dormitories
- Routine vaccination of other populations at increased risk
  - Microbiologists who are routinely exposed to isolates of Neisseria meningitidis
  - Military recruits
  - Persons who travel to, or reside in, countries in which N meningitidis is hyperendemic or epidemic
  - Complement-deficient and asplenic patients

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Pneumococcal Polysaccharide Vaccination

**Medical Indications**

- COPD
- CAD
- Diabetes
- Chronic liver disease
- Chronic renal failure
- Alaska natives

**Medical Indications**

- Asplenia
- Immunosuppressive conditions
- Cochlear implants
- HIV positive individuals
- American Indian population
- Long-term care residents

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Revaccination with Pneumococcal Polysaccharide Vaccine

- One-time revaccination after 5 years for persons with the following conditions
  - Chronic renal failure or nephrotic syndrome
  - Asplenia
  - Immunosuppressive conditions
  - Persons aged > 65 years, one – time revaccination if vaccinated > 5 years ago and were < 65 years of age at the time of the initial vaccination

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Wright, 2008
New Vaccine

Diphtheria and Tetanus Toxoids and Acellular Pertussis Adsorbed, Inactivated Poliovirus Vaccine and Haemophilus b Conjugate (Tetanus Toxoid Conjugate) Vaccine

Vaccine Description

- **Indication:** Active immunization against disease caused by
  - Diphtheria
  - Tetanus
  - Pertussis
  - Poliomyelitis types 1-3
  - Haemophilus influenzae type b (Hib)
- **Dosing:** 4-dose series
  - Infant: 2, 4, and 6 months of age
  - Toddler: 15-18 months of age


2008 Recommended Childhood Immunization Schedule: Birth–18 Months of Age

## Simplifying the Infant-Toddler Immunization Schedule With Pentacel Vaccine (DTaP-IPV/Hib)

### Range of recommended ages

<table>
<thead>
<tr>
<th>Age</th>
<th>Vaccine</th>
</tr>
</thead>
<tbody>
<tr>
<td>Birth</td>
<td>HepB</td>
</tr>
<tr>
<td>1 month</td>
<td>HepB</td>
</tr>
<tr>
<td>2 months</td>
<td>DTP</td>
</tr>
<tr>
<td>4 months</td>
<td>Inactivated Poliovirus</td>
</tr>
<tr>
<td>6 months</td>
<td>Haemophilus influenzae type b</td>
</tr>
<tr>
<td>12 months</td>
<td>Influenza</td>
</tr>
<tr>
<td>15 months</td>
<td>Measles, Mumps, Rubella</td>
</tr>
<tr>
<td>18 months</td>
<td>Varicella</td>
</tr>
</tbody>
</table>

### Reference

## Reconstitution

1. Gently shake the vial of DTaP-IPV component.
2. Withdraw the entire liquid content.
3. Insert the syringe needle through the stopper of the vial of lyophilized ActHIB vaccine component and inject the liquid into the vial.
4. Shake vial thoroughly.
5. After reconstitution, immediately withdraw 0.5mL of Pentacel vaccine and administer intramuscularly. Pentacel vaccine should be used immediately after reconstitution.

### Reference

## Insurance Coverage of Combination Vaccine

- **CPT® 90698**
  - Code description - Diphtheria, tetanus toxoids, and acellular pertussis vaccine, Haemophilus influenzae Type b conjugate, and poliovirus vaccine, inactivated (DTaP-Hib-IPV), for intramuscular use
  - Reimbursement Support Services telephone number
    - 1-800-VACCINE (1-800-822-2463)

*CPT is a registered trademark of the American Medical Association.
Overcoming barriers: Strategies for success

- Increase demand for immunizations¹
  - Educate parents and adolescents about the need for immunization with new and existing vaccines
  - Support recommendations by professional organizations
  - Remind families of school-based immunization requirements in states that have them

- Enhance access to immunization services¹
  - Develop schedule of regular well visits throughout adolescent years (11-12 yr, 14-15 yr, 17-18 yr)²
  - Partner with local communities and institutions
  - Become a Vaccines for Children (VFC) provider
  - Offer extra services to reach underserved populations (e.g., taxi vouchers, home visits)


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Overcoming barriers: Strategies for success (cont’d)

- Increase provider-based interventions
  - Reduce missed opportunities to vaccinate
  - Use standing orders
  - Review and update office immunization practices; evaluate your immunization rates
  - Motivate staff to become vaccine advocates

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Methods for reducing missed opportunities

- Regard every visit as a potential vaccination opportunity
  - Check immunization status at each contact and immunize if needed and not contraindicated

- Use chart reminders
- Give all needed vaccines at a single visit
- Be familiar with special vaccination needs of patients with medical problems
Review and update office immunization practices

- Post and follow appropriate immunization schedules, including the CDC catch-up schedule
- Establish one way to record all immunizations; ensure that record is available at all visits
- Participate in immunization registries across all ages
- Recognize valid contraindications to immunization
  - www.cdc.gov/nip/recs/contraindications_vacc.htm
- Use reminders (eg, mail, phone) to get patients to make and keep appointments

Your recommendation makes a BIG difference!

Influenza immunization rate...

27% when patient attitude toward vaccination was negative and provider made no vaccine recommendation

82% when patient attitude was negative and provider recommended influenza vaccine

Thank You!

I Would Be Happy To Entertain Any Questions