Immunization Updates and Best Practices: National and State Perspectives (Pennsylvania)
Wednesday, August 19, 2015 • 1:00PM-3:00PM EDT

Part 1: National Perspective
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Part 2: Pennsylvania Perspective
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Disclosures
Adam Welch, PharmD, MBA, BCACP, FAPhA, declares that he has received honoraria as a consultant for Pfizer.

Vincent Hartzell, PharmD, and APhA’s editorial staff declare no conflicts of interest, real or apparent, and no financial interests in any company, product, or service mentioned in this activity, including grants, employment, gifts, stock holdings, and honoraria.

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Question #1

What is the top contributing factor in influenza vaccine errors?

A. Gave vaccine to patient with contraindication/precaution
B. Administered vaccine at wrong injection site
C. Gave formulation that was outside of age range

Question #2

A 65-year-old man comes to the pharmacy for a flu shot. He has not had an immunization (besides annual influenza) since a Tdap shot at age 60 years. What else should he get today?

A. IIV only
B. IIV and HZV
C. IIV, PCV13, and HZV
D. IIV, PPSV23, and HZV
E. IIV, PCV13, PPSV23, and HZV

Question #3

Which of the following appropriately describes the two newly FDA-licensed, MenB vaccines?

A. Live vaccines FDA approved for patients aged 2-23 months
B. Live vaccines FDA approved for patients aged 10-25 years
C. Inactivated vaccines FDA approved for patients aged 2-23 months
D. Inactivated vaccines FDA approved for patients aged 10-25 years
Question #4
Which of the following best represent the practice standards for adult immunizations identified by the National Vaccine Advisory Committee (NVAC) all healthcare professionals?

A. Acquire, Recommend, Document, Adjust
B. Assess, Recommend, Administer, Document
C. Educate, Coordinate, Refer, Bill
D. Educate, Administer, Registry, Follow-up

Question #5
Which of the following vaccines are pharmacists in Pennsylvania permitted to administer?

I. Inactivated Influenza Vaccine, Quadrivalent (IIV4)
II. Measles, Mumps, and Rubella (MMR)
III. Yellow Fever (YF)

A. I and II
B. I and III
C. I only
D. II only
E. I, II, and III

Question #6
Which of the following is the most appropriate anatomical location and needle selection for administering an intramuscular injection to a 10 year old?

A. Deltoid, 1 inch 23 gauge needle
B. Anterolateral thigh muscle, 1 inch 23 gauge needle
C. Deltoid, 1/2 inch 22 gauge needle
D. Deltoid, 1 1/2 inch 23 gauge needle
E. Anterolateral thigh muscle, 1/2 inch 23 gauge needle
Question #7
Which of the following legislation in Pennsylvania expanded pharmacists’ scope of practice regarding immunizations?
A. HIPAA HITECH Act
B. Affordable Care Act
C. Act 8 of 2015
D. The Wiley Act
E. None of the above

Question #8
Pneumococcal disease is one area pharmacists can have a large impact. Adults aged 65 years and older are recommended to receive which pneumococcal vaccines?
A. PCV7
B. PCV13
C. PPSV23
D. PCV13 and PPSV23
E. None of the above

Part 1: National Perspective
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Learning Objectives – Part 1: National

1. Discuss the epidemiology of recent outbreaks of vaccine-preventable diseases in the United States.
2. Identify important recent changes to the immunization schedules for adults, adolescent, children, and special populations, including pregnant women.
3. Summarize information about the efficacy and possible adverse effects of recently licensed vaccines.
4. Discuss opportunities and best practices for pharmacist engagement within immunization neighborhoods and implementation of immunization standards.

A Reminder of the Continuous Need for Vaccines

Measles Outbreak

- 173 cases (January 1 – May 29, 2015)
- 21 states
- 5 outbreaks contributed to 87% of cases
- Traced back to December 2014 in California theme park
MMR Vaccine – Measles

- 2 doses, separated by 28 days for:
  - Students in post-secondary educational institutions
  - Healthcare facility workers
  - International travelers
  - Persons receiving the inactivated vaccine (or unknown type in 1963-1967)

New Pink Book

- Version 13 recently published online
- [www.cdc.gov/vaccines/pubs/pinkbook/index.html#chapters](http://www.cdc.gov/vaccines/pubs/pinkbook/index.html#chapters)

Human Papillomavirus (HPV)

- 79 million Americans infected
- 14 million new HPV infections each year
  - Over 100 types of HPV
    - Low risk
    - High risk

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HPV Vaccines

- **9vHPV (Gardasil 5, Merck)**
  - Licensed December 2014
  - Covers types 6, 11, 16, 18, 31, 33, 45, 52, 58
- **2vHPV (Cervarix, GlaxoSmithKline)**
  - Licensed October 2009
  - Covers types 16, 18
- **4vHPV (Gardasil, Merck)**
  - Licensed June 2006
  - Covers types 6, 11, 16, 18

**Clinical Significance of 9vHPV**

- Types 31, 33, 45, 52, 58
- Contributes to approximately 18% of invasive cervical cancer

**9vHPV**

FDA approves Gardasil 9 in December 2014

**www.cdc.gov/mmwr/preview/mmwrhtml/mm6411a3.htm**

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HPV Recommendations

- 9vHPV, 4vHPV, 2vHPV
  - Routine for females 11-12 years of age
    - 9 years up to 26 years of age
  - 9vHPV, 4vHPV
    - Routine for males 11-12 years of age
    - 9 years up through 21 years of age
  - 9vHPV, 4vHPV
    - Males 22-26 years of age if:
      - Men who have sex with men
      - Immunocompromised men (including HIV)

www.cdc.gov/vaccines/schedules/hcp/adult.html

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Herpes Zoster (HZ) Vaccine

Recombinant subunit vaccine

Zoster Incidence

<table>
<thead>
<tr>
<th>Age Group</th>
<th>Relative Risk of Zoster in Medicare Patients (95% CI)</th>
</tr>
</thead>
<tbody>
<tr>
<td>66-69 years</td>
<td>1.00</td>
</tr>
<tr>
<td>70-74 years</td>
<td>1.17 (1.13-1.21)</td>
</tr>
<tr>
<td>75-79 years</td>
<td>1.33 (1.28-1.37)</td>
</tr>
<tr>
<td>80-84 years</td>
<td>1.45 (1.40-1.50)</td>
</tr>
<tr>
<td>≥85 years</td>
<td>1.42 (1.38-1.46)</td>
</tr>
</tbody>
</table>

- HZ incidence among Medicare beneficiaries older than 67 years, by age group, 1992-2014.
- HZ vaccination rates - 2013:
  - ≥60 years: 24.2% (95% CI: 22.9-25.6)
  - Increase of 4.1% from 2012

HZ Vaccine

- Phase III trial with more than 15,000 participants
- Two doses of vaccine administered intramuscularly
- Mean follow-up: 3.2 years
- Rates of herpes zoster:
  - 0.3 per 1000 person years in vaccine group
  - 9.1 per 1000 person years in placebo group
  - 97.2% efficacy (95% CI: [93.7-99.0]; P<0.001)
HZ Safety

- Symptoms within 7 days of vaccination
  - 84.4% in vaccine group
  - 37.8% in placebo group
- Adverse effects affecting normal everyday activities
  - 17.0% vaccine group
  - 3.2% placebo group
- Mostly injection site
  - Pain: 79.1% (11.2% placebo)
  - Redness: 38.0% (1.3% placebo)
  - Myalgia: 46.3% (12.3% placebo)
  - Headache: 39.2% (16.0% placebo)
  - Shivering: 28.2% (5.9% placebo)


FDA Versus ACIP

- Which guidelines are you following? Which one do payers follow? What does your protocol say in this regard?
- FDA licenses vaccines based on results of clinical studies and other data submitted by the vaccine manufacturer:
  - Generally does not consider non-manufacturer data
- ACIP looks at clinical trials from FDA licensure and other clinical studies:
  - Also considers disease burden, gaps in data, health impact, cost effectiveness
  - “Routinely reviewing patient’s vaccination needs and providing a strong recommendation and offer of needed vaccines will improve current vaccination rates”

    – Melinda Wharton, MD, MPH
    Director – Immunization Services Division
    National Center for Immunization and Respiratory Diseases
    Centers for Disease Control and Prevention

CDC letter to pharmacists on recommendations regarding adult immunizations.
www.pharmacist.com/sites/default/files/files/PharmacistLetter20150325ACIPvsFDAmcr.pdf

Influenza Vaccine

Which products are you providing?
Influenza Vaccines

<table>
<thead>
<tr>
<th>Age Indications</th>
<th>Trade Names</th>
</tr>
</thead>
<tbody>
<tr>
<td>≥6 months</td>
<td>Fluzone, Fluzone Quadrivalent</td>
</tr>
<tr>
<td>≥3 years</td>
<td>Fluarix, Fluarix Quadrivalent, FluLaval, FluLaval Quadrivalent</td>
</tr>
<tr>
<td>≥4 years</td>
<td>Fluvirin</td>
</tr>
<tr>
<td>≥9 years*</td>
<td>Afluria</td>
</tr>
<tr>
<td>≥18 years</td>
<td>Flucelvax, FluBlok</td>
</tr>
<tr>
<td>2-49 years</td>
<td>Flumist Quadrivalent</td>
</tr>
<tr>
<td>18-64 years</td>
<td>Fluzone Intradermal</td>
</tr>
<tr>
<td>≥65 years</td>
<td>Fluzone High-dose</td>
</tr>
</tbody>
</table>

*CDC preferred age range: Afluria 2015.

Source: ISMP 2014.

Choosing Influenza Vaccines

This doesn’t represent the view of ACIP...yet

- High-dose vs. standard-dose influenza vaccine in patients 65 years and older
  - 2012-13 (n ~2 million)
    - High-dose 22% (95% CI 15-29) more effective at preventing probable influenza infections
    - High-dose 22% (95% CI 16-27) more effective at preventing influenza hospital admissions


ACIP Immunization Schedules

What changed in 2015?

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Birth to 18 Years – What’s New

• Influenza recommendations clarified
  • IIV, LAIV, number of doses
• Added purple bar (high risk) for MMR
• Footnotes organized by routine, catch-up
• DTaP dose 4 could be given at 12 months
• Meningococcal clarifications

Meningococcal

• Routine
  • 11-12 years + 16 years
  • 11-18 years – 2 doses if HIV infection (8 weeks)
• High Risk
  • 2 – 23 months
    • Asplenia (including sickle cell)
    • Persistent complement component deficiency
    • Travel to epidemic areas
    • Community outbreak
Meningococcal High Risk

Asplenia (and sickle cell)
- MenACWY-CRM
  - 2, 4, 6, 12 months
- Hib-MenCY
  - 2, 4, 6, 12-15 months
- MenACWY-D
  - Not to be administered until 24 months
  - 2 doses, 8 weeks apart

Complement Component
- MenACWY-CRM
  - 2, 4, 6, 12 months
- Hib-MenCY
  - 2, 4, 6, 12-15 months
- MenACWY-D
  - 9-23 months
  - 2 doses, 12 weeks apart

Meningococcal High Risk

- Hib-MenCY not adequate for certain travel
- Any age-appropriate vaccine apply for other high-risk conditions
  - Hib-MenCY (MenHibrix) ≥6 months
  - MenACWY-D (Menactra) 26 months
  - MenACWY-CRM (Menveo) ≥2 months

Meningococcal Disease


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Serogroup B Meningococcal Disease (MenB)

- **Bexsero (Novartis)**
  - Approved January 23, 2015
  - 10-25 years of age, 2 dose series 0,1 months
  - 0.5 mL IM
  - Prevent invasive disease caused by *Neisseria meningitidis* serogroup B

- **Trumenba (Pfizer)**
  - Approved October 29, 2014
  - 10-25 years of age, 3 dose series 0,2,6 months
  - 0.5 mL IM
  - Prevent invasive disease caused by *Neisseria meningitidis* serogroup B

**Bexsero PI. Novartis 2015.**

**Trumenba PI. Pfizer 2014.**

MenB Efficacy – Adolescents

- Phase III trials looked at titers to various proteins associated with meningococcal disease
- Response rates exceeded 80% for most strains
- Composite response
  - **Bexsero 63% (95% CI 57-68)**
  - **Trumenba 84% (95% CI 81-86)**
- **Trumenba has an additional study concomitantly with HPV4**

MenB – Safety (Placebo)

**Bexsero (2-Dose)**
- 90% pain after dose 1 (27% placebo)
- 20% were severe
- 50% redness (13% placebo)
- 2% severe (>100 mm)
- 37% fatigue (22% placebo)
- 4% severe
- Fever (≥38°C)
- 1% (1% placebo)

**Trumenba (3-Dose)**
- 92.8% pain after dose 1 (36.9% placebo)
- 8.2% were severe
- 20.4% redness (1.2% placebo)
- 2.2% severe
- 21.6% swelling (2.8% placebo)
- 0.5% severe
- Fever (≥38°C)
  - 8.3% MenB + HPV4
  - 6.4% MenB + saline
  - 0.8% saline + HPV4

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NEW – ACIP MenB Recommendations

- MenB-4C (Bexsero)
- MenB-FHbp (Trumenba)

- Persons ≥10 years of age who are increased risk for meningococcal disease should receive the MenB vaccine
  - Complement component deficiencies
  - Anatomic or functional asplenia
  - Microbiologists routinely exposed to isolates of Neisseria meningitidis
  - Increased risk because of serogroup B outbreak

2015 Adult Schedule – What’s New

- Influenza changes
  - RIV (FluBlok) now ≥18 years of age (was 18-49 years of age)
  - Switching of contraindications and precautions for LAIV

- Pneumococcal changes
  - Addition of PCV13 routine ≥65 years of age

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### Contraindications

- Antivirals within 48 hrs

### Precautions

- Asthma, chronic lung, cardiovascular, renal, hepatic disease, diabetes

### Pneumococcal Vaccines

**PPSV23 (Pneumovax)**
- Poly saccharide
- • 0.5 mL. IM or SC
- • 1, 2, 3, 4, 5, 6B, 7F, 8, 9N, 9V, 10A, 11A, 12F, 14, 15B, 17F, 18C, 19A, 19F, 20, 22F, 23F, 33F

**PCV13 (Prevnar 13)**
- Conjugate
- • 0.5 mL. IM
- • 1, 3, 4, 5, 6A, 6B, 7F, 9V, 14, 18C, 19A, 19F, 23F

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Pneumococcal Vaccination Rates

<table>
<thead>
<tr>
<th>Population</th>
<th>Percent Vaccinated - 2013 (95% CI)</th>
<th>Difference from 2012</th>
</tr>
</thead>
<tbody>
<tr>
<td>19-64 years, high risk</td>
<td>22.2% (21.2-23.2)</td>
<td>+1.2</td>
</tr>
<tr>
<td>≥65 years</td>
<td>58.7% (58.4-61.2)</td>
<td>-0.2</td>
</tr>
</tbody>
</table>

CMS and Pneumococcal Vaccine

- September 19, 2014
- Medicare will cover:
  - An initial pneumococcal vaccine to all Medicare beneficiaries who have never received the vaccine under Medicare Part B, and
  - A different, second pneumococcal vaccine 1 year after the first vaccine was administered
    - If 11 full months have passed following the month in which the last pneumococcal vaccine was administered
ISMP VERP errors

Recommendations to Reduce Errors

• Verify patient’s age by asking birthdate prior to administering vaccine

• Use auxiliary labels when vaccine shipment arrives to identify patient population (e.g., pediatric, adolescent, adult)

• Investigate stocking different age-specific formulations of same vaccine from different manufacturers

Opportunities to Engage Patients
Assess

- Stay informed
  - CDC recommendations and immunization standards
- Implement protocols and policies
  - Routinely review the patient’s vaccine needs

www.immunize.org/catg.d/p3070.pdf

Immunization Record Cards

- Available from many health departments
- Purchase from Immunization Action Coalition
  - www.immunize.org/shop/record-cards.asp

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Recommend

- Share specific reasons why the vaccination is appropriate for the patient
- Highlight positive experiences
- Address any patient concerns or questions
- Remind patients of the protection from vaccines for them and their loved ones
- Discuss the ramifications of getting sick

Administer or Refer

- Offer the vaccines that are in stock
- Refer patients to specific providers who offer vaccines that you do not stock
  - vaccine.healthmap.org
  - www.vaccines.gov/getting/where

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Document

- Participate in a state immunization information system (IIS)
  www.cdc.gov/vaccines/programs/iis/contacts-registry-staff.html

- Follow-up
  - Confirm receipt of a recommended vaccine if referred

Follow-up

- Most pharmacists administer one dose of vaccine
  - Annual influenza
  - Zoster
  - Pneumococcal
- At most, follow-up has been historically annually
- Are pharmacies ready for vaccine series?

Be a good neighbor
Communicate, Collaborate, Coordinate

Coming Up Next – Part 2: State-Specific Issues
Part 2: Pennsylvania Perspective

Vincent A. Hartzell, PharmD
President
Hartzell’s Pharmacy, Inc
Catasauqua, Pennsylvania

Learning Objectives – Part 2: Pennsylvania

1. Identify state immunization needs including current vaccination rates, access, and immunization awareness.
2. Summarize state-specific immunization laws, regulations, and procedures that support the pharmacist’s role in immunizations.
3. Discuss recent state-level activities that support increased immunization awareness and delivery by pharmacists and other members of the immunization neighborhood.

Pharmacy Immunization Timeline

1996 - CDC recognizes APhA Immunization CTP
1998 - Mississippi recognizes pharmacists
1998 - CDC recognizes APhA Immunization CTP
2002 - Authority to Administer Injectable Medications, Biologicals and Immunizations added to Pharmacy Act
2002 - Authority to Administer Injectable Medications, Biologicals and Immunizations added to Pharmacy Act
2006 - Authority to Administer Injectable Medications, Biologicals, and Immunizations regulations adopted by the PA SBOP
2009 - A&BC Doses allow pharmacists to intracutaneously administer vaccines
2015 - Authority to Administer Injectable Medications, Biologicals, and Immunizations modified (Act 8 of 2015)

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The Law of the Land: Chapter 27

<table>
<thead>
<tr>
<th>Qualifications to administer</th>
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<tbody>
<tr>
<td>• Active Pennsylvania pharmacist license</td>
<td></td>
</tr>
<tr>
<td>• Complete board-approved training</td>
<td></td>
</tr>
<tr>
<td>• CPR certified</td>
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<table>
<thead>
<tr>
<th>CE requirements</th>
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<tbody>
<tr>
<td>2 hours of CE pertaining to immunizations per renewal period</td>
<td></td>
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</table>

<table>
<thead>
<tr>
<th>Current scope of practice</th>
<th></th>
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</thead>
<tbody>
<tr>
<td>• &gt;18 years of age (all other vaccines)***</td>
<td></td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Authorization to administer</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>• Prescriber’s order</td>
<td></td>
</tr>
<tr>
<td>• Written protocol</td>
<td></td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Limitations on vaccines</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>• None specifically listed in regulations</td>
<td></td>
</tr>
<tr>
<td>• Must follow CDC guidelines/age limitations as set forth by Chapter 27</td>
<td></td>
</tr>
<tr>
<td>• Yellow fever vaccine requires Board of Health designation to administer</td>
<td></td>
</tr>
</tbody>
</table>

Opportunities for the Pennsylvania Pharmacist

Types of Vaccines
• Pennsylvania is 1 of 46 states that allows pharmacists to administer any vaccine (no restriction)

Patient Age Limitations
• Pennsylvania is 1 of 8 states that mandates >18 years of age
• 27 states have no age restriction

Pharmacy Student Administration
• Pennsylvania is 1 of 8 states that currently restricts pharmacy students from administering vaccines

Authorization to Administer

Authorized pharmacist may administer injectables/immunizations only under a prescriber’s order or written protocol
• Orders must contain, at a minimum, the following:
  o Identity of the licensed prescriber
  o Identity of the patient to receive the injection
  o Identity of the injectable/immunization and dose to be administered
  o Date of the original order and the date or schedule, if any, of each subsequent administration
• Authorized pharmacist may enter into a written protocol with a physician; protocol may not exceed 2 years in length

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Pennsylvania Protocol Requirements

- Identify the participating pharmacist(s) and physician(s)
- List of injectable/immunization(s) which may be administered
- Identity of the patient or groups of patients to receive the authorized injectable/immunization(s)
- Authorized routes and sites of administration allowed
- Course of action the pharmacist shall follow to address emergency situations
- Length of time the pharmacist shall observe an individual following an injection
- Location at which the pharmacist may administer the authorized injectable/immunization(s)
- Record-keeping requirements and procedures for notification of administration
- A provision that allows for termination of the protocol at the request of any party to it at any time

Record-keeping Requirements

- All records for injectables (including immunizations) administered must contain:
  - Name, address, and date of birth of the patient
  - Date of the administration and site of the injection
  - Name, dose, manufacturer, lot number and expiration date of the injectable
  - Name and address of the patient’s primary health care provider, as identified by the patient
  - Name or identifiable initials of the administering pharmacist
  - Documentation of informed consent for administration of the injectable
  - Nature of an adverse reaction and who was notified
- All records for immunizations administered must also contain the following:
  - Vaccine Information Statement (VIS) that was provided, including date of publication
  - Date and to whom the VIS was provided

Best Practice: Immunization records should be part of a patient’s complete medical record and should never be purged!
Notification Requirements

- The pharmacist shall notify the ordering prescriber (prescription) or participating physician (written protocol) as soon as practicable, but no longer than 72 hours after administration, of the following:
  - Identity of the patient
  - Identity of the injectable and dose administered
  - Route and site of the injection
  - Date of the administration
- The pharmacist shall notify the patient’s physician as soon as is practicable of any adverse event or reaction, and in no event later than 24 hours after learning of the reaction.

Pharmacy Intern and Technician Involvement

- Student Pharmacists or Pharmacy Interns
  - Students must work under the direct supervision of an authorized pharmacist legally allowed to provide immunizations
  - Students may not administer, regardless of having completed a training course, but they may be involved in all other aspects of immunizations
  - Best Practice: Have students screen and counsel the patient prior to the pharmacist administering the vaccine
- Technicians
  - Not allowed to administer medications
  - RN, LPN, etc. would be regulated by their state board of licensing (not the SBOP) and must be working in that capacity (i.e., as a nurse not a technician)
  - Technicians can assist with administrative functions (paperwork, prescription processing, billing, etc.)

Changes in Pennsylvania: House Bill 182

- Numerous bills have been proposed in previous sessions of both the House and Senate (HB819, SB254, HB817, etc.) since 2011
- Signed into law June 26, 2015 by Governor Wolf
  - Now Act 8 of 2015
  - Amended the Pharmacy Act (P.L. 1700, No. 699) of September 27, 1961 providing further authority to administer injectable medications, biologicals, and immunizations
  - Law becomes effective on August 25, 2015 (60 days from signing)
- Regulations must be promulgated by the SBOP
  - Anticipate regulations to be in place for flu season 2016–17
Changes in Pennsylvania: House Bill 182

- Increased Scope of Practice
  - Permit pharmacists to administer influenza vaccines to children 9 years of age with parental consent
  - Does not change administration age for any other vaccine

- Change in Qualifications
  - Allows pharmacy interns under the direct supervision of a pharmacist to administer vaccine(s)

- Other Changes
  - Maintain professional liability insurance coverage of $1 million per occurrence at minimum
  - Notification to patient’s PCP in 48 hours (previously 72 hours)

Changes in Pennsylvania: House Bill 182

- The final impact of House Bill 182 will not be seen until the regulations are finalized by the SBOP
- New regulations will put Pennsylvania pharmacists in a unique position to further positively impact patient care
  - Pennsylvania will now be 1 of 19 states where pharmacists can immunize against influenza for patients 9 years of age and older
- Remember: changes will not take effect until the final regulations are approved by the SBOP

Administering Vaccines to Older Children

Administration

- Patients 3 years of age and older would receive IM injections in the deltoid – the same as an adult patient.
- In most cases, the needle selection will not change!
- 22-25 gauge, 1 inch needle
### Intramuscular Injection

<table>
<thead>
<tr>
<th>Weight</th>
<th>Needle Size</th>
</tr>
</thead>
<tbody>
<tr>
<td>Men and women &lt;60 kg (&lt;130 lb)</td>
<td>1 inch</td>
</tr>
<tr>
<td>Women 60–90 kg (130–200 lb)</td>
<td>1–1½ inches</td>
</tr>
<tr>
<td>Men 91–118 kg (200–260 lb)</td>
<td>1½ inches</td>
</tr>
<tr>
<td>Women &gt;90 kg (&gt;200 lb)</td>
<td>1½ inches</td>
</tr>
<tr>
<td>Men &gt;118 kg (&gt;260 lb)</td>
<td>1½ inches</td>
</tr>
<tr>
<td>Children (deltoid)</td>
<td>⅝–1¼ inches</td>
</tr>
</tbody>
</table>

*Slide adapted from the APhA Immunization Certification Training Program*

### Healthy People 2020

- Launched by the U.S. Department of Health and Human Services in December 2010
- Approximately 1,200 objectives organized into 42 topic areas
- Primarily tracks national data:
  - State and county data will be included as they become available
  - State- and community-based data are provided for selected indicators
- Goals:
  - Achieve health equity, eliminate disparities, and improve the health of all groups
  - Create social and physical environments that promote good health for all
  - Promote quality of life, healthy development, and healthy behaviors across all life stages
  - Attain high-quality, longer lives free of preventable disease, disability, injury, and premature death

### Immunization and Infectious Disease

- 83 related objectives
- State data is available for certain immunizations, mostly for children and adolescents
- Sample objective listing:
  - ID-1 Reduce, eliminate, or maintain elimination of cases of vaccine-preventable diseases
  - ID-7 Achieve and maintain effective vaccination coverage levels for universally recommended vaccines among young children
  - ID-12 Increase routine vaccination coverage levels for adolescents
  - ID-12 Increase the percentage of children and adults who are vaccinated annually against seasonal influenza
  - ID-13 Increase the percentage of adults who are vaccinated against pneumococcal disease
  - ID-14 Increase the percentage of adults who are vaccinated against zoster (shingles)
Healthy People 2020: Opportunities for Improvement

<table>
<thead>
<tr>
<th>Objective</th>
<th>Description</th>
<th>Baseline</th>
<th>Recent Data</th>
<th>Goal 2020</th>
</tr>
</thead>
<tbody>
<tr>
<td>IID-12.11</td>
<td>Children vaccinated against seasonal influenza (6 months–17 years)</td>
<td>46.9% (2010-11)</td>
<td>47.1% (2011/12)</td>
<td>70.0%</td>
</tr>
<tr>
<td>IID-12.12</td>
<td>Adults vaccinated against seasonal influenza (18+ years)</td>
<td>18.1% (2010-11)</td>
<td>39.2% (2011/12)</td>
<td>70.0%</td>
</tr>
<tr>
<td>IID-12.13</td>
<td>Healthcare personnel vaccinated against seasonal influenza</td>
<td>15.8% (2010/11)</td>
<td>63.0% (2011/12)</td>
<td>90.0%</td>
</tr>
<tr>
<td>IID-13.1</td>
<td>Noninstitutionalized adults vaccinated against pneumococcal disease (65+ years)</td>
<td>40.0% (2008)</td>
<td>59.9% (2012)</td>
<td>90.0%</td>
</tr>
<tr>
<td>IID-14</td>
<td>Adults vaccinated against zoster (shingles) (60+ years)</td>
<td>6.7% (2008)</td>
<td>20.1% (2012)</td>
<td>30.0%</td>
</tr>
</tbody>
</table>

The BIG Opportunities

- **Pneumococcal vaccine**
  - PCV13 and PPV23 both recommended for routine use in adults aged ≥65 years

- **Influenza vaccine**
  - Vaccination rates below target goals for adults and healthcare providers
  - Continue recommending and vaccinating
  - Opportunity to positively impact influenza immunization rates for older children once regulations are promulgated

- **Zoster vaccine**
  - Vaccination rates improving, however still below goal
  - Continue recommending and vaccinating

- **Remember to assess your patients! Are they missing any immunizations?**
  - Great opportunity for identifying an at-risk patient
Pneumococcal Vaccine Opportunities

• Recommendations from ACIP (MMWR, September 19, 2014) to vaccinate adults 65 years of age and older with both PCV13 and PPSV23

• Opportunity for pharmacist involvement to educate, advocate, and administer recommended vaccinations

Opportunities for the Pennsylvania Pharmacist

• Immunization coalitions
  o Organization of volunteers consisting of individuals and organizations that have an interest in advancing the mission of timely and effective immunizations for all
  o State coalition: Pennsylvania Immunization Coalition (PAIC)
  o Local coalitions can be found at www.immunizepa.org

• Join the state and local coalition
  o Exposure to other health care professionals
  o Become a part of an overall community initiative
  o Receive recognition from immunization community
  o Discover best practices in our state and your area

Pennsylvania Statewide Immunization Information System (PA SIIS)

• Overseen by the Pennsylvania Department of Health

• Provides a system for the electronic capture, secure storage, and confidential management of demographic and vaccine information of all Pennsylvania residents

• Report the vaccines you administer
  o Create a complete and current immunization record for all patients
  o Records are only as accurate as the data entered into the system
  o Vaccination that is not documented is the same as a vaccine that was never administered

• Contact the Bureau of Health Statistics and Research to enroll
  o Phone: (717) 783-2548
  o Fax: (717) 772-3258
  o E-mail: pasiis@pa.gov
Questions

Question #1
What is the top contributing factor in influenza vaccine errors?
A. Gave vaccine to patient with contraindication/precaution
B. Administered vaccine at wrong injection site
C. Gave formulation that was outside of age range

Question #2
A 65-year-old man comes to the pharmacy for a flu shot. He has not had an immunization (besides annual influenza) since a Tdap shot at age 60 years. What else should he get today?
A. IIV only
B. IIV and HZV
C. IIV, PCV13, and HZV
D. IIV, PPSV23, and HZV
E. IIV, PCV13, PPV23, and HZV

References
- Act 8 of 2015
  www.legis.state.pa.us/cfdocs/legis/lj/userCheck.cfm?yr=2015&_sessInd=0&act=8
- Pennsylvania Pharmacy Act
  www.dos.pa.gov/ProfessionalLearning/BoardsCommissions/Pharmacy/Documents/Applicati
ons%20and%20Forms/Non-Application%20Documents/PharmM%20-%20ACT_114.pdf
- Chapter 27, State Board of Pharmacy
  www.pacode.com/secure/data/049/chapter27/chap27toc.html
- Healthy People 2020
  www.healthypeople.gov/2020/topics-objectives/topic/immunization-and-infectious-diseases
Question #3
Which of the following appropriately describes the two, newly FDA licensed, MenB vaccines?

A. Live vaccines FDA approved for patients 2-23 months
B. Live vaccines FDA approved for patients 10-25 years
C. Inactivated vaccines FDA approved for patients 2-23 months
D. Inactivated vaccines FDA approved for patients 10-25 years

Question #4
Which of the following best represent the practice standards for all healthcare professionals for adult immunizations identified by the National Vaccine Advisory Committee (NVAC)?

A. Acquire, Recommend, Document, Adjust
B. Assess, Recommend, Administer, Document
C. Educate, Coordinate, Refer, Bill
D. Educate, Administer, Registry, Follow-up

Question #5
Which of the following vaccines are pharmacists in Pennsylvania permitted to administer?

I. Inactivated Influenza Vaccine, Quadrivalent (IIV4)
II. Measles, Mumps, and Rubella (MMR)
III. Yellow Fever (VF)

A. I and II
B. I and III
C. I only
D. II only
E. I, II, and III
Question #6

Which of the following is the most appropriate anatomical location and needle selection for administering an intramuscular injection to a 10 year old?

A. Deltoid, 1 inch 23 gauge needle  
B. Anterolateral thigh muscle, 1 inch 23 gauge needle  
C. Deltoid, 1/2 inch 22 gauge needle  
D. Deltoid, 1 1/2 inch 23 gauge needle  
E. Anterolateral thigh muscle, 1/2 inch 23 gauge needle

Question #7

Which of the following legislation in Pennsylvania expanded pharmacists’ scope of practice regarding immunizations?

A. HIPAA HITECH Act  
B. Affordable Care Act  
C. Act 8 of 2015  
D. The Wiley Act  
E. None of the above

Question #8

Pneumococcal disease is one area pharmacists can have a large impact. Adults aged 65 years and older are recommended to receive which pneumococcal vaccines?

A. PCV7  
B. PCV13  
C. PPSV23  
D. PCV13 and PPSV23  
E. None of the above
Questions?

Immunization Updates and Best Practices: National and State Perspectives (Pennsylvania)

Part 1: National Perspective
Adam Welch, PharmD, MBA, BACP, FAPhA
Bill Gatton College of Pharmacy
East Tennessee State University

Part 2: Pennsylvania Perspective
Vincent Hartzell, PharmD
President
Hartzell's Pharmacy, Inc

Attendance Code

PA2

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• Click "claim credit" link
• "Enroll" in the activity
• Complete the ASSESSMENT and EVALUATION (links provided)

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