Pharmacists’ Role Within The Immunization Neighborhood

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Disclosure

• Mitchel Rothholz declares that his wife is an employee of Merck and that he is an employee of the American Pharmacists Association.
Immunization Neighborhood

Collaboration, Coordination, and Communication among immunization stakeholders dedicated to meeting the immunization needs of the patient and protecting the community from vaccine-preventable diseases.

*Coined by APhA in 2012*

- Patient and community centric
- An entire community can invest in assessing, administering, and/or referring patients to receive appropriate vaccines.
- Supports the sharing and exchanging of immunization data
### Healthy People 2020 Coverage and Goals

<table>
<thead>
<tr>
<th>Vaccine</th>
<th>Age Stratification</th>
<th>Coverage Rate*</th>
<th>HP 2020 Goal**</th>
</tr>
</thead>
<tbody>
<tr>
<td>Influenza</td>
<td>≥65 years</td>
<td>66.7%</td>
<td>70%</td>
</tr>
<tr>
<td>Influenza</td>
<td>≥18 years</td>
<td>43.6%</td>
<td>70%</td>
</tr>
<tr>
<td>Tdap</td>
<td>≥65 years</td>
<td>61.3%</td>
<td>90%</td>
</tr>
<tr>
<td>Tdap</td>
<td>≥19 years</td>
<td>20.1%</td>
<td>Not Set</td>
</tr>
<tr>
<td>Hepatitis A</td>
<td>&gt;19 years</td>
<td>9%</td>
<td>Not Set</td>
</tr>
<tr>
<td>Hepatitis B</td>
<td>&gt;19 years</td>
<td>24.5%</td>
<td>Not Set</td>
</tr>
<tr>
<td>Herpes Zoster</td>
<td>&gt;60 years</td>
<td>27.9%</td>
<td>30%</td>
</tr>
<tr>
<td>HPV</td>
<td>Females 19-26 years</td>
<td>40.2%</td>
<td>80%</td>
</tr>
<tr>
<td>HPV</td>
<td>Males 19-26 years</td>
<td>8.2%</td>
<td>80%</td>
</tr>
</tbody>
</table>

*Source: MMWR Surveill Summ 2016;65(No. SS-1):1–36. DOI: [http://dx.doi.org/10.15585/mmwr.ss6501a1](http://dx.doi.org/10.15585/mmwr.ss6501a1)

**Healthy People 2020 Goals (presented where set by the United States Public Health Service)
Adults with Diabetes Who Received ≥3 doses Hepatitis B Vaccine by Age, National Health Interview Surveys, 2012–2015

Medicare Part B does not recognize pharmacists as one of the providers who can administer Hep B vaccine to patients with Diabetes.
Example: Impact of Vaccination – Influenza

- January 2018: Canadian study shows a six-fold increase in heart attacks shortly after people get the flu
- Acute respiratory illness or influenza-like illness increases acute MI risk 2x; 5x is those with history of MI
- Influenza vaccination effectiveness: Meta-analyses\(^1\)–\(^2\)
  - 29% (95%CI 9,44) against acute MI in persons with existing CVD
  - 36% (95%CI 14,53) against major cardiac events with existing CVD
- Vaccine effectiveness 29% in acute MI prevention
  - “On par or better than accepted preventive measures [as] statins (36%), anti-hypertensives (15–18%), and smoking cessation (26%)”
  - Influenza vaccination recommended as secondary prevention by American College of Cardiology and American Heart Association

Example: Impact of influenza on pregnant women

- Up to 4X increased risk of hospitalization, especially in third trimester, and for those with co-morbid conditions*
- Up to 8X increased risk for influenza-associated complications, including death, particularly for those with co-morbid conditions**
- Increased risk for influenza-associated complications among postpartum women
- Risk highest during the first postpartum week

* Chronic cardiac disease, chronic pulmonary disease, diabetes mellitus, chronic renal disease, malignancies, and immunosuppressive disorders
** Preexisting diabetes mellitus, pulmonary disease that included asthma, heart disease, renal disease, and anemia

It is estimated that approximately 1 in 3 people will develop Herpes Zoster (HZ, Shingles) during their lifetime, resulting in an estimated 1 million episodes in the United States annually.  

**The risk for Post Herpetic Neuralgia in patients with zoster is 10%--18%**. Postherpetic neuralgia is a debilitating complication of HZ. The risk of PHN after HZ increases with age. 

**Zoster vaccine** reduces the risk of developing Shingles and PHN. 

Consider **Zoster Vaccination** as one of the tools to reducing the need for opioid medication... 

**Opioids** are a part of the armament practitioners utilize to manage PHN pain. 

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1. MMWR, June 2008, https://www.cdc.gov/mmwr/preview/mmwrhtml/rr5705a1.htm
Access Barrier – Vaccine Abandonment

- **Study Highlights Coverage Policy Impact on Zoster Vaccine Abandonment**
- Impact of patient out of pocket expense (co-pays) on patient abandonment of receiving zoster vaccination.
- Overall abandonment rate was 38.9%.
  - Patient out-of-pocket cost (OOP) remained the most significant predictor of abandonment,
    - Patients with OOP in the $15-$34 range (1.6 time higher) compared with those with OOP ≤$14.99, and at 5.53 times higher for those with OOP in the $105-$174.99 range.
    - The study supports the value of recognizing pharmacists as in-network providers and modifying coverage policy regarding patient out of pocket expense.

2017-18 Influenza Season

• Breaking records in cases of influenza and deaths
  – Pharmacists are playing active role in administering vaccines, patient evaluation / guidance, and providing anti-viral medication

• 2017–2018 Recommendation: ACIP recommends annual influenza vaccination for everyone 6 months and older, including pregnant women, with an injectable influenza vaccine. The recommendation not to use live attenuated influenza vaccine (LAIV) extended for the 2017–2018 season.

• When to Vaccinate. CDC recommends vaccination by the end of October; however, try to avoid missed opportunities with patients whom you might see before then and continue to vaccinate your patients throughout the influenza season.

• Safe Vaccine Administration. Proper administration is key to ensuring safe vaccination. Help prevent one vaccine administration error—bursitis of the shoulder—generally caused when vaccines are injected high on the shoulder and the needle enters a shoulder bursa. CDC video: https://www.cdc.gov/vaccines/hcp/admin/resource-library.html.

• Vaccine Supply. Manufacturers plan to produce approximately 151–166 million doses of influenza vaccine for the 2017–2018 flu season. Based on these projections, the supply of injectable flu vaccine should be sufficient.
• Adults access medical care at multiple entry points.

• There are many types of immunization providers and sites. (including, but not limited to, physicians – generalists and specialists, pharmacists, nurses, physician assistants, nurse practitioners, retail stores and clinics, community immunizers, worksites, public health departments, hospitals, travel clinics)

• Many more adults have become aware of annual influenza vaccination, but fewer are aware of other recommended adult vaccines.
Many missed opportunities occur to assess patient vaccination needs

- Patients open to vaccination when recommended by their provider.

Differences in vaccines covered by Medicare B versus D creates challenges for some providers, but not others.

Vaccine providers are paid different rates by different payers. Not all providers vaccinate. Pay can differ based on in-network status.

Confusion regarding Affordable Care Act coverage.
Current Adult Immunization Environment

• There is no federal “Vaccines for Adults” program
• Manufacturers offer Patient Assistance Programs
• Challenges remain with adult immunization documentation among providers
  – Immunization registries and EHRs vary across states and provider networks, respectively
• MACRA/MIPS provide opportunities to improve documentation and communication about vaccination among different providers
• All this is happening in the context of, and in support of, the NVAC recommendations to improve adult immunization
Fundamental Paradigm Shift in Adult IZ

- Adult immunization standards should be applied to all providers of care to adults, those who do and do not vaccinate.
- New standards recognize the importance of the healthcare provider recommendation for patients to receive needed vaccines.
- Highlights the current low vaccination rates among U.S. adults.
- Reflects the changed environment within which adult vaccines are now given.
Fundamental Paradigm Shift in Adult IZ

ALL providers of health care to adults are to:

1. **ASSESS** patient’s status for all recommended vaccines at each clinical encounter;

2. Educate and counsel the patient on the recommended vaccines and strongly **RECOMMEND** needed vaccines; and,

3. **VACCINATE** at the same visit, **OR** for providers that do not stock the recommended vaccine, **REFER** the patient to a vaccinating provider.

4. **DOCUMENT** the receipt of vaccine by the patient

Even if you don’t vaccinate, you still need to recommend vaccines to your patients
### Challenge: Professionals and Patient Understanding.

**Patient Survey:** Are any of the following vaccines recommended for you as an adult?

<table>
<thead>
<tr>
<th>Vaccine</th>
<th>Yes (%)</th>
<th>No (%)</th>
<th>Don’t Know (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Influenza</td>
<td>71.8</td>
<td>15.1</td>
<td>13.0</td>
</tr>
<tr>
<td>Hepatitis A</td>
<td>14.3</td>
<td>42.4</td>
<td>43.3</td>
</tr>
<tr>
<td>Hepatitis B</td>
<td>20.1</td>
<td>39.9</td>
<td>40.0</td>
</tr>
<tr>
<td>Pneumococcal</td>
<td>26.4</td>
<td>34.9</td>
<td>38.7</td>
</tr>
<tr>
<td>Tdap</td>
<td>11.9</td>
<td>39.0</td>
<td>49.0</td>
</tr>
</tbody>
</table>

FallStyles (September-October, 2012).
Assessing, Recommending, Administering, and/or Referring patients to receive appropriate vaccines.

Supports the sharing and exchanging of immunization data among providers

- can be focused on populations (pediatric, adolescent and adult), and/or
- preventable diseases (HPV, pertussis, etc.) to meet the needs of patients and the communities served

All providers, caregivers and community advocates have a role with everyone focused on meeting the needs of the patient.

Advocate, Facilitate, Immunize

Patient education, comfort level, trusted providers, and timely access all can influence vaccine uptake and are areas that stakeholders can impact.

Targeting Opportunities

Immunization messages

- General public
- Customers
- Patients (receive Rx)

Messing consistent throughout “immunization neighborhood”
Place of flu vaccination among children and adults, early 2014-15 flu season, National Immunization Survey and National Internet Flu Survey

** Pharmacy/Store includes pharmacy or drugstore and local supermarket or grocery store.
†† Other place includes military-related place, other school such as trade school, home, and other unspecified non-medical place.

1996 (Twenty-two years ago…)

- Developed certificate training program
  - Across the lifespan
  - Recognized pharmacist roles: educator, facilitator, administer of vaccines (1996 APhA HOD)
  - Guided by recognized standards, guidance and recommendations
    - Support pharmacist role on immunization team (2012: immunization neighborhood)
  - National faculty, Train-the-trainer model – Licensing opportunities
- Engrain importance of immunizations early in student pharmacist career
  - Carry with them into practice
- Not just a training program
  - Organization strategic commitment
Number of States Authorizing Pharmacists to Administer Influenza Vaccine & Number of Pharmacists Trained to Administer Vaccines

Note: NABP states there are 300,000 licensed US pharmacists practicing.

States and Territories

Number of States Authorized

Year

1978 & before
1979
1982
1987
1996
2002
2004
2007
2008
2009
2010
2011
2012
2013
2014
2015
2016
2017

Number Trained

0
50000
100000
150000
200000
250000
300000
350000

Updated: December 2017
• Launched in 1997
• National competition (national winner, 8 regional winners)
• More than 1 million individuals have been immunized

• The 2015-2016 campaign had the following results:
  – 92 chapters participated / 11,487 student pharmacists participated
  – 1,035 faculty participated / 1,945 pharmacy practitioners participated
  – 111,277 patients immunized
  – 211,283 patients received Health & Wellness/Clinical Services
  – 3,253,576 patients reached through public relations initiatives
Education and training

- Nationally recognized 20-hour certificate training program and continuing education programs (www.pharmacist.com/education)
  - High percentage of learners (43%) self-reported a change in performance following the program; 79% indicated that the number of immunizations delivered in their practice has increased following the program. (1)

- Immunization education integrated into student pharmacist curricula

- APhA provides a biweekly immunizing pharmacist listserv and an e-community for immunizing pharmacists

- APhA provides a webinar after each ACIP meeting to update pharmacists on changes in recommendations

- Website, periodicals, publications

(1) CE Meas. 2010;4:4-9. doi:10.1532/CEM08.09115
Three components to the certificate training program: (www.pharmacist.com/education)

- 12 hour (1.2 CEU) self-study modules with case studies and assessment exam
- 8.0 hour (0.80 CEU) live seminar with final exam
- Hands-on assessment of intramuscular and subcutaneous injection technique
- CPR/BCLS certification, as well as OSHA training expected
- Program updated as recommendations change; faculty expected to subscribe to APhA resources and maintain competency

<table>
<thead>
<tr>
<th>Self Study</th>
<th>Live Program</th>
</tr>
</thead>
<tbody>
<tr>
<td>Module 1. Pharmacists, Vaccines, and Public Health</td>
<td>The training seminar reinforces and expands on the self-study program and addresses areas such as immunization needs, legal and regulatory issues, and injection-technique training. Participants will be expected to practice giving intramuscular and subcutaneous injections on each other.</td>
</tr>
<tr>
<td>Module 2. Overview of Immunology and Vaccine Development</td>
<td></td>
</tr>
<tr>
<td>Module 3. Vaccine-Preventable Diseases</td>
<td></td>
</tr>
<tr>
<td>Module 4. Patient Care Considerations for Immunizing Pharmacists</td>
<td></td>
</tr>
<tr>
<td>Module 5. Operating a Pharmacy-Based Immunization Program</td>
<td></td>
</tr>
</tbody>
</table>

Program available for licensing by international partners
Public Health

Exploration of population health management strategies, national and community-based public health programs, and implementation of activities that advance public health and wellness, as well as provide an avenue through which students earn certificates in immunization delivery and other public health-focused skills.

EXAMPLE Performance competencies:

- Participate in activities that promote health and wellness and the use of preventive care measures
- Promote to patients the importance of health, wellness, disease prevention (e.g., immunizations, tobacco cessation), and management of their diseases and medication therapies to optimize outcomes
- Provide preventative health services (e.g., immunizations, tobacco cessation counseling)
- Public Health: Promote to patients the importance of health, wellness, disease prevention, and management of their diseases and medication therapies to optimize outcomes

Clinical Application of Public Health Policy:

- Collect, interpret, and make recommendations based on the results of health and wellness screenings and diagnostic tests
- Describe the role of a pharmacist in emergency management

Immunization:

- Be trained to administer immunizations (preferably early in curriculum to allow for practice and utilization during the professional program)
- Describe the Vaccine Information Statement (VIS), the Vaccine Adverse Events Reporting System (VAERS), and state vaccine registries
Driver for Moving Beyond Traditional Flu Vaccination

Flu vaccine patch seems as effective as flu shot

June 28, 2017
How many pharmacy vaccine recipients report having a PCP (CA + MI)?

Survey: July 2017

- Yes: 3163, 57%
- No: 2435, 43%
Pharmacists’ Patient Care Process: Providing consistency for patients and health care

- Applies to all patient care services delivered by pharmacists in any practice setting
- Example –
  - Immunizations: assessing, administering, and/or referring

Project IMPACT Immunizations Pilot Results: Distribution of Forecasted Unmet Vaccination Needs

There was an average of 1.45 additional vaccines forecast as being due for each patient who requested an influenza vaccination.

Population Health Management (available online; DOI: 10.1089/pop.2017.0049, June 2017)
Conclusion: Project IMPACT Immunizations – Pilot

With proper tools, pharmacists increase adult vaccination rates

- The Project IMPACT Immunizations innovative practice model enabled pharmacists to conduct comprehensive vaccination history reviews at the point-of-care, which allowed them to:
  - Identify a significant number of unmet vaccination needs
  - Educate patients about their vaccination needs
  - Increase the number of vaccines administered
  - Improve vaccination rates for routinely recommended adult vaccinations

- As a result of using the innovative process of care, the number of vaccines administered increased by 41.4%

- We need to continue exploring how to successfully integrate and sustain streamlined principle-centered processes of care that allow pharmacists and other health care providers to utilize actionable point-of-care data to effectively engage and educate patients to improve vaccination rates
Study: Patients more likely to get the influenza shot when it's available at community pharmacy

• Published in Clinical Therapeutics, conducted by Avalere and NACDS.  https://doi.org/10.1016/j.clinthera.2017.07.004

• Findings suggest:
  • pharmacies and other nontraditional settings may offer accessible venues for patients when implementing other public health initiatives.
  • state-level policy changes that permit pharmacists to administer influenza immunizations were connected with a nearly 8% rise in seasonal influenza immunization rates within 6 years after the policy changes between 2003 and 2013.
    • During this time, overall seasonal influenza immunization rates increased 25% among those surveyed.
    • Influenza immunization rates increased by age, while fewer individuals who reported access to care issues due to cost received influenza immunizations compared with those who reported no such issues (22% vs. 37%).
Referral Tools – examples

are there components within these you can use in your system?
Increase public understanding
Communication / Documentation engagement of providers and patients

• Update
• Report
• Carry
• Share
The following information had a **100%** reported capture rate:

<table>
<thead>
<tr>
<th>Information Captured</th>
</tr>
</thead>
<tbody>
<tr>
<td>Patient ID (previously listed as “Medicaid Number”)</td>
</tr>
<tr>
<td>Patient Name: First</td>
</tr>
<tr>
<td>Patient Name: Last</td>
</tr>
<tr>
<td>Patient Date of Birth</td>
</tr>
<tr>
<td>Patient Gender</td>
</tr>
<tr>
<td>Patient Address: Street</td>
</tr>
<tr>
<td>Patient Address: City</td>
</tr>
<tr>
<td>Patient Address: State</td>
</tr>
<tr>
<td>Patient Address: Zipcode</td>
</tr>
<tr>
<td>Patient Telephone Number</td>
</tr>
<tr>
<td>Patient Telephone Number Type (e.g., home, cell)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Vaccine Product Type Administered</th>
</tr>
</thead>
</table>

**Green** = identified as required field by AIRA;  **Red** = identified as required field but may be empty

Survey represents **13 pharmacy computer systems** and **more than 10,000 pharmacy practices**.
**Pharmacy Computer System & IIS Survey**

**The following information had a \( \geq 50\% \) reported capture rate:**

<table>
<thead>
<tr>
<th>Information Captured</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Patient Name: Middle</td>
<td>58%</td>
</tr>
<tr>
<td>Patient Address: Country</td>
<td>67%</td>
</tr>
<tr>
<td>Patient E-mail Address</td>
<td>83%</td>
</tr>
<tr>
<td>Vaccination Administration Date</td>
<td>67%</td>
</tr>
<tr>
<td>Vaccine Manufacture Name</td>
<td>83%</td>
</tr>
<tr>
<td>Vaccine Lot Number</td>
<td>58%</td>
</tr>
<tr>
<td>Vaccine Expiration Date</td>
<td>50%*</td>
</tr>
<tr>
<td>Vaccine dose volume and unit</td>
<td>75%*</td>
</tr>
<tr>
<td>Vaccine Ordering Provider Name</td>
<td>83%*</td>
</tr>
</tbody>
</table>

* Additional exploration and education needed as info is collected by providers on consent/intake forms and filed or scanned but not placed in data fields.

Green = identified as required field by AIRA;  
Red = identified as required field but may be empty

Survey represents **13 pharmacy computer systems** and **more than 10,000 pharmacy practices**.
Continuous Learning
Additional education needs

* understanding of the strains that cause hospitalization and death.
* knowledge of the impact of influenza on myocardial infarction risk.
* difference between high dose influenza vaccine and adjuvanted vaccine.
* CDC recommendation for the timing of influenza vaccination.
+ 90% of the respondents knew what Should Injury Related to Vaccine Administration (SIRVA) was.
+ 75% of participants knew what immunosenescence was in regards to older adults.

* order and to whom to administer pneumococcal vaccines.
* groups who should not receive pneumococcal vaccination.
Considerations to achieve the 3 C’s
Coordination, Collaboration, Communication

- Recommendations from recent CDC Cooperative Agreement
  - Enhance support, through onboarding programs, from State Public Health Departments.
  - Pharmacies need to connect into the registry and work with pharmacy administration, information technology staff, and other pharmacy personnel.
  - Enhance procedures for IISs to remove duplicate entries and streamline access.
  - Pharmacists need to continue to provide information to primary care providers via fax while work continues to seamlessly integrate pharmacy data systems into the EHR and IIS.
  - Pharmacists should proactively assess a patient’s immunization history. Requirements for reporting of vaccination data should be consistently applied across all immunization providers.
  - Continue educating patients about the importance of tracking their vaccine history.
  - Further development and testing of a referral sheet for other healthcare providers to refer patients to a pharmacy for necessary immunizations.
For ALL Immunization Providers

What You Should Know…Zoster Vaccines

New VIS Sheet Released: https://www.cdc.gov/vaccines/hcp/vis/vis-statements/shingles-recombinant.pdf

• Preventing Shoulder Injury Related to Vaccine Administration (SIRVA)

* Infographic: You Call The Shots
* Proper Vaccine Technique: Pharmacy Today Article
* CDC resources: new online vaccination resources library that has links to videos, job tools, reference materials, and web-based training courses.
Rx to our nation’s immunization initiative
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