Developing an Immunization Program

and

“Sticking to it”

Rod Shafer, R.Ph.
Executive Director
Washington State Pharmacist Association

Reasons for Involvement

- Pneumococcal Disease
  - >40,000 deaths per year
  - 20% to 30% of high risk groups vaccinated
  - Prevent up to 60% of hospitalizations

- Influenza
  - Up to 20,000 deaths per year
  - 60% to 70% of high risk groups vaccinated
  - Prevent 70% of hospitalizations

Pneumonia & Influenza

- 6th cause of death in the United States
- 5th cause of death in the elderly
- >400,000 hospitalizations each year
- 50% to 70% of those who die were hospitalized in the previous five years
- 70% of those who die were seen by a physician the previous year
- Probably all of them seen by a pharmacist
The Burden of Influenza

Estimated Productivity Losses

- Lost work days = 2.8 to 3.4 days/episode\(^1,2\)
- Absenteeism = 75 million days (1995)
- Presenteeism* = 0.7 days per episode at 50%\(^2\)
  *Person is physically at work, but less than 100% productive due to illness, stress, life issues, etc.


The Burden of Influenza

Estimated Annual Economic Cost

- Direct Medical Costs (hospitalization, physician visits, medications, etc) = up to $3 billion\(^1\)
- Total Direct and Indirect Cost (work days lost, school days lost, etc) = $12 billion or greater\(^2\)


How Are We Doing Nationally?

*Influenza Vaccination Rates in United States by Age Group*

Quarterly Survey: Have you received a “flu shot” during the past 12 months?

*Source: Centers for Disease Control, National Influenza Vaccine Survey. Data shown as a 3-year average. Data for the most recent year 2019-2020.*
How Are We Doing With Health Care Workers?

**Health Care Worker Influenza Vaccination Rates in 2020**

*17-66% vaccination rate in sample of 14 AMCs*

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Influenza Attack Rates in School Age Children are Highest of Any Age Group

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Influenza-related Morbidity and Mortality

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Pharmacy’s Year Round Role

- Advocate...
  - Inform your patients about their risk
  - Motivate your patients to be vaccinated
- Facilitate...
  - Host those who vaccinate
- Immunize
  - Administer the vaccine

Vaccine Storage and Handling

- Rule #1 - Keep Your Refrigerator Cold!
- Use Safety Plug/Warning Signs
- Appropriate Temperatures
  - Refrigerator: 36 to 46 F or 2 to 8 C
  - Freezer: 32 or less F or 0 C
    - 5 F or -15 C for varicella
  - Do not store vaccine in door

- Rule #2 - Keep Vaccine Cold
- Store Immediately
- Inactive Vaccine (do not freeze)
  - DTP, DTaP, DTP/Hib, Td, DT, Hib, IPV, Hep B
  - Hep A, Pneumococcal, Influenza
- Live Vaccine (freeze)
  - OPV, Varicella
    - Exception - MMR usually just refrigerated
Vaccine Storage and Handling

Rule #3 - Keep MMR Cold and Protected from Light

Rule #4 - Keep OPV Frozen
- May be thawed and re-frozen 10 times
- Never exceed 46 F or 8 C
- If thawed for greater than 24 hours must use in 30 days

Rule #5 - Keep Varicella Frozen and Protected from Light
- Most Fragile Vaccine
  - Freezer temp 5 F or -15 C
  - Use immediately
  - Discard any unused after 30 minutes
  - Do not re-freeze

Rule #6 - Rotate Stock
- Check expiration dates
- Use short dated vaccine first
- Never use expired vaccine
- Order sensibly
Vaccine Storage and Handling

- Keep Refrigerator Cold
- Keep Vaccine Cold or Frozen
- Keep MMR Cold and Protected from Light
- Keep OPV Frozen
- Keep Varicella Frozen and Protected from Light
- Rotate Stock

Getting Started

- Legal Requirements
  - Scope of Practice
  - Protocol Development
- Supplies/Equipment
  - Sharps Container
  - Alcohol Swabs
  - Band-Aids
  - Syringes/needles
  - Disposable Gloves
  - Gauze Squares
  - Emergency Kit
  - Documentation Forms

Emergency Kit

- Blood Pressure Cuff
- Stethoscope
- Epinephrine 1:1000
  - EpiPen
  - AnaKit
- Anti-histamine
- Tourniquet
### Adverse Reactions to Vaccines

<table>
<thead>
<tr>
<th>Fainting</th>
<th>Anaphylactic Reaction</th>
</tr>
</thead>
<tbody>
<tr>
<td>Immediate onset</td>
<td>Slow onset</td>
</tr>
<tr>
<td>Be observant of patient behavior</td>
<td>Symptoms</td>
</tr>
<tr>
<td>Place in recumbent position</td>
<td>tingling sensations</td>
</tr>
<tr>
<td>Elevate feet</td>
<td>hives, itching</td>
</tr>
<tr>
<td>Monitor vital signs</td>
<td>tearing or swelling eyes</td>
</tr>
<tr>
<td>Observe till functioning normally</td>
<td>sneezing, coughing</td>
</tr>
<tr>
<td></td>
<td>tightness in chest</td>
</tr>
<tr>
<td></td>
<td>rapid heart beat</td>
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<tr>
<td></td>
<td>swollen tongue</td>
</tr>
<tr>
<td></td>
<td>difficulty breathing</td>
</tr>
<tr>
<td></td>
<td>hypotension</td>
</tr>
</tbody>
</table>

### Management of Anaphylactic Reaction

- Call 911
- Lay patient flat
- Low BP elevate leg
- Difficulty breathing raise head
- Administer epinephrine 1:1000, IM or SQ
  - Infant/Child - 10mcg (0.01mg) per kg, max of 300mcg, repeat every 5 minutes if needed
  - Adult - .3ml (.5ml max. single dose), may repeat twice every 10-20 minutes

### Management of Anaphylactic Reaction

- Monitor vital signs
- Be prepared to administer CPR
- Notify primary care practitioner
- Complete a Vaccine Adverse Event Reporting System (VAERS) form
**Documentation Forms**

- Screening/Assessment
- Vaccine Information Sheets for Patients
- Consent Forms
- Patient Records - Lifetime IM Record
- Pharmacy Records
  - Hard copy/Computer
- Provider Communication

**Screening Questions**

- Are you sick today?
- Do you have allergies to medications, food, or any vaccine?
- Have you had a serious reaction after receiving a vaccine?
- Do you have cancer, leukemia, AIDS, or any other immune system problem?
- Do you take cortisone, prednisone, other steroids, or anticancer drugs?
- During the past year have you received a transfusion of blood or blood products, or been given a medicine called immune (gamma) globulin?
- For women: Are you pregnant or is there a chance you could become pregnant in the next month?
- Have you received any vaccinations in the past 4 weeks?
- Did you bring your immunization record card with you?
Work-Flow for Immunization Practice

This drugstore life

"Is this the crisis center? ... Yeah, you might say that...."

Work-Flow for Immunization

- Offer or Requested
- Screening
- Patient Information/Consent Form
- Prepare Patient/Vaccinate
- Collect the Money!
- Observe Patient (20 minutes)
Marketing - Strategies

- Letters/Postcards
  - Provider
  - Patients
- Advertising
  - Coalitions - ALA, AA, DOH
  - Employers
  - In-store
  - Word of Mouth

Marketing - Strategies

- Diphtheria/Tetanus
  - everyone
- Influenza
  - >50
  - high risk
  - pregnancy
- Pneumococcal
  - >65 everyone
  - < 65 at high risk
- Hep A & B
  - adolescents
  - high risk
- MMR
- Varicella
- Travel Vaccine
- Depo Provera
- TB screening

Reimbursement

Rod’s Rate Schedule

Answers-------------------------------------------$1.00

Answers Which Require Thought----$2.00

Correct Answers------------------------------$4.00

Dumb Looks Are Still Free!!
**Reimbursement**

- Patient - cash, check, credit card, etc
- Medicare
- Medicaid
- Private Third Party
  - Blue Cross
  - Regence

**Getting Paid - Billing**

**Medicare**

- HCFA 1500
  - provider number
- ICD-9 Code
  - FLU: V04.8
  - PNU: V03.82
- CPT Code
  - 90724, 90732
- HCFA Procedure Code
  - G0008, G0009

**#1 Immunization Resource**

Immunization Action Coalition
1573 Selby Avenue, Suite 229
St. Paul, MN  55104
(612) 647-9009
(612) 647-9131 fax
www.immunize.org
#2 Immunization Resource

- Vaccine Adverse Event Reporting System
  - www.vaers.org
  - (800) 822-7967 or info@vaers.org

Resources

- Center for Disease Control and Prevention
  - Professional information: 800-332-2522
  - Consumer information: 800-332-0233
  - En espanol: 404-332-4555
  - Fax information service: 404-639-8828
  - International travel: 404-332-4559
  - Disease hotline: 404-332-4555
- American Lung Association: 800-LUNG-USA
- National Coalition for Adult Immunizations: 301-656-0003
- Vaccine Adverse Events Reporting System (VAERS): 800-822-7967

Internet Resources

- Center for Disease Control: www.cdc.gov/
- CDC Travel: www.cdc.gov/travel/travel.html
- Immunization Action Coalition: www.immunize.org
- Food & Drug Administration: www.fda.gov/fdahomepage.html
- Pharmacist Immunization Network: pi-net@listserv.oit.unc.edu
- Rod Shafer, Washington State: rshafer@wsparx.org
- Build your own Network: Fax and/or e-mail
FluMist™
Influenza Virus Vaccine Live, Intranasal

- Cold-adapted, temperature-sensitive, attenuated influenza virus vaccine
- Phenotypically and genotypically stable
- Annual vaccine strains derived from type A and type B Master Donor Viruses

FluMist™

- FluMist is indicated for active immunization for the prevention of disease caused by influenza A and B viruses in healthy children and adolescents 5 – 17 years of age and healthy adults 18 – 49 years of age

FluMist™ Storage and Handling

- Stored at -15°C (+5°F)
- Can be thawed and stored at 36° to 46° for 60 hours
- Once thawed never refreeze
- Shelf life 9 month after manufactured or through end of current flu season
FluMist™ Dosage & Administration

- FluMist is supplied in pre-filled single dose sprayers containing 0.5 ml
- Stored frozen and thawed before administration
- Dose = 0.5 ml (0.25 ml per nostril)
- Dose schedule

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<tr>
<th>Age Group</th>
<th>Vaccination Status</th>
<th>Dosage Schedule</th>
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<tbody>
<tr>
<td>Children age 5 years through 8 years</td>
<td>Not previously vaccinated with FluMist</td>
<td>2 doses (0.5 ml each, 60 ± 14 days apart) per initial season</td>
</tr>
<tr>
<td>Children age 5 years through 8 years</td>
<td>Previously vaccinated with FluMist</td>
<td>0.5 ml (1 dose) per season</td>
</tr>
<tr>
<td>Children and Adults age 9 through 49 years</td>
<td>Not applicable</td>
<td>0.5 ml (1 dose) per season</td>
</tr>
</tbody>
</table>

FluMist™ Should Not Be Used In

- Individuals with underlying medical conditions that may predispose them to severe complications following wild-type influenza infection
- Individuals with history of asthma or reactive airways disease
- Persons with known/suspected immune deficiency
- Specific diseases and conditions
- Associated with immunosuppressive treatment
- Persons unable to avoid close contact (e.g. household) with severe immunocompromised host for 7 days after vaccination
- No preference exists for inactivated vaccine use by health-care workers or other persons who have contact with persons with lesser degrees of immunosuppression.

Summary

- FluMist is a non-injectable influenza vaccine for healthy individuals 5 – 49 years of age
- May increase acceptance of flu vaccine in healthy populations
- FluMist provides a safe and effective addition to the health care armamentarium for prevention of influenza
- Complementing currently available vaccine
- FluMist permits earlier immunization of healthy individuals
- CDC Q&A web site: www.cdc.gov/ncidod/diseases/flu/laiv.htm