Point/Counterpoint

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It’s Influenza Season…

• A couple in their 40s comes to your clinic in early August and asks about influenza vaccine.
  • It is being offered at their local pharmacy starting this week – is it too soon to give?
• A 68yo man requests influenza vaccination, which vaccine do you give?
• A 56yo man declines influenza vaccine because “it didn’t even work last year.”
  • He contracted influenza and they “wouldn’t even give me Tamiflu.”
SUPPLEMENTARY FIGURE 1. Number* and percentage of respiratory specimens testing positive for influenza reported by clinical laboratories, by influenza virus type and surveillance week — United States, October 1, 2017–May 19, 2018†

* 224,113 (18.5%) of 1,210,053 tested were positive during October 1, 2017–May 19, 2018.
2018-2019 Vaccine

• Everyone >6mo should be vaccinated every year

• Trivalent vaccine:
  • Influenza A/Michigan/45/2015 (H1N1)
  • Influenza A/Singapore/INFIMH-16-0019/2016 (H3N2)
  • Influenza B/Colorado/06/2017

• Quadrivalent vaccine
  • Above + Influenza B/Phuket/3073/2013

• LAIV4 (FluMist) back on the market for 2018/2019
Clinical Scenario

• A 63yo man comes to your clinic after a 3 day inpatient stay at an out of state hospital for UTI
• He tells you, while he was there, they gave him a “pneumonia vaccine”
• Records are unavailable and he is not sure which vaccine he was given
• He thinks he also had a pneumonia vaccine when he turned 60yo but thought it was a good idea to get another one while in the hospital
# Pneumovax 23 vs. Prevnar 13

<table>
<thead>
<tr>
<th></th>
<th>Serotypes</th>
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</thead>
<tbody>
<tr>
<td><strong>Pneumovax</strong></td>
<td>1, 2, 3, 4, 5, 6B, 7F, 8, 9N, 9V, 10A, 11A, 12F, 14, 15B, 17F, 18C, 19A, 19F, 20, 22F, 23F, 33F</td>
</tr>
<tr>
<td><strong>Prevnar</strong></td>
<td>4, 6B, 9V, 14, 18C, 19F, 23F</td>
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<tr>
<td><strong>Prevnar-13</strong></td>
<td>1, 3, 4, 5, 6A, 6B, 7F, 9V, 14, 18C, 19A, 19F, 23F</td>
</tr>
</tbody>
</table>
Who needs Pneumovax 23?

- Adults 65 years of age and older
- Anyone 2 through 64 yo with a chronic medical problem
  - Heart disease, lung disease, sickle cell disease, diabetes, alcoholism, cirrhosis, CSF leaks, cochlear implants, smokers with COPD/asthma
- Immunosuppressed patients
  - Hodgkin’s disease, lymphoma or leukemia, ESRD, multiple myeloma, transplant patients, splenectomized patients, HIV/AIDS
- Patients on immunosuppressive agents
- LTAC/ECF patients
Who Needs Prevnar 13?

• Prevnar 13 was approved by the FDA and ACIP in 2010 for children aged 6 weeks through 71mo for prevention of invasive pneumococcal disease

• In June 2012 the ACIP approved Prevnar 13 for adults with immunocompromising conditions at higher risk for pneumococcal disease, including those who have already had Pneumovax 23.
Prevnar 13

• Should be given to adults 19yo and older with certain medical conditions who have not previously received Prevnar 13
  • CSF leaks
  • Cochlear implants
  • Sickle cell disease and other hemaglobinopathies
  • Asplenia
  • Congenital or acquired immunodeficiency
  • Nephrotic syndrome
  • Leukemia/lymphoma
  • Malignancy
  • Long term immunosuppressants
  • Multiple myeloma
  • Transplant patients
  • HIV/AIDS
Which do you give and when?

- Adults with any of the previous conditions or >65yo who have not received ANY pneumococcal vaccine
  - Administer a dose of Prevnar 13 first and a minimum of 8 weeks later (6-12mo preferred) administer the recommended dose of Pneumovax 23

- Adults who have previously received one or more doses of Pneumovax 23 and have any of the previous conditions
  - Administer a dose of Prevnar 13 at least 1 year after Pneumovax 23 and continue to administer the remaining recommended doses of Pneumovax 23 (every 5 years for most schedules)
  - Most immunocompetent individuals only will need a single Pneumovax 23
Workflow for pneumococcal vaccination

Does the patient have any of the following conditions?
HIV, chronic steroid use, nephrotic syndrome, splenectomy, on dialysis, leukemia, Hodgkin's disease, multiple myeloma, current radiation therapy, previous invasive pneumococcal disease, CSF leak or a cochlear implant

No

Is the patient either a smoker, CHF, COPD, asthma, diabetes, liver disease or living in a chronic care facility?

Yes

Was Pneumovax given in the past 5 years?

No

Has it been greater than 1 year since Pneumovax?

Yes

Has the patient had Pneumovax in the past 5 years?

No

Give Pneumovax

Yes

Give Pneumovax

Wait for 5 years since the last Pneumovax for next dose

Do nothing

Has the patient over the age of 65?

No

Give Pneumovax

Yes

Is the patient over the age of 65?

No

Give Pneumovax

Yes

Give Pneumovax

Has the patient had Pneumovax since they turned 65?

No

Has the patient received previous Pevnlar?

Yes

Give Pneumovax

No

Has the patient ever had Pneumovax?

Yes

Give Pneumovax

No

Give Pneumovax

Wait till one year since Pneumovax has passed to give Pevnlar 13

Has it been greater than 1 year since Pneumovax?

No

Give Pneumovax

Yes

Give Pneumovax

No

Give Pneumovax

Yes

Give Pneumovax

No

Give Pneumovax

Yes

Give Pneumovax

No

Give Pneumovax

Yes

Give Pneumovax

No

Give Pneumovax
Clinical Scenarios

• A woman and her two daughters are seen in your practice for routine care
• Mom indicates that she had opted out of the HPV vaccine for her girls but now they are interested in receiving the vaccine
  • One daughter is 13yo, one daughter is 18yo
• Mom then reports she has recently divorced and is starting to date again
  • She is 42yo, has never had an abnormal PAP, and asks if she could also receive the vaccine
Gardasil-9

• Indicated in all girls/women from 9yo-26yo (recommended at 11-12yo)
  • Gardasil-9 is the new vaccine indicated against 9 (previously 4) serotypes of HPV that are implicated in cervical and other cancers as well as genital warts
  • Covers serotypes 6, 11, 16, 18, 31, 33, 45, 52, 58

• Indicated in all boys/men from 9yo-21yo, some 22-26yo (recommended at 11-12yo)
  • Especially men who have sex with men and HIV+ teens and young men

• Indicated in all transgender patients through age 26yo
HPV Schedule

• Young teens/preteens through age 14yo can receive a 2 vaccine series
  • First dose on day 0, second dose 6-12mo later
  • Still advised to start at ~11yo

• Teens and young adults age 15-26yo or immunocompromised
  • Will need the standard 3 vaccine series
  • First dose day 0, 2nd dose 1-2mo, 3rd dose 6mo later
Clinical Scenarios

• A 67yo woman who recently had shingles wonders if she can/should receive the shingles vaccine and when?

• A 70yo man who received Zostavax at age 60yo asks you if he should receive the new Shingrix vaccine?

• An HIV+ 52yo man asks if he is a candidate for the new Shingrix vaccine?
Zoster Vaccine

• What if your patient hasn’t had the chicken pox or cannot recall?
  • Check titers first if under 60yo, if not immune, give 2 vaccine varicella series

• Shingrix is the new zoster vaccine, replacing Zostavax
  • Antigen based, killed vaccine
  • Two vaccine series in adults >50yo
    • Day 0, 2-6mo later
  • Current recommendation is to REVACCINATE all adults who have received Zostavax in the past with Shingrix
# Shingrix Vaccine Stats

Table 2. Efficacy of SHINGRIX on Incidence of Herpes Zoster Compared with Placebo in Study 1\(^a\) (mTVC\(^b\))

<table>
<thead>
<tr>
<th>Age Group (Years)</th>
<th>SHINGRIX</th>
<th>Placebo</th>
<th>% Efficacy (95% CI)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Overall (≥50)(^c)</td>
<td>N: 7,344, n: 6, Incidence Rate of HZ per 1,000 Person-Years: 0.3</td>
<td>N: 7,415, n: 210, Incidence Rate of HZ per 1,000 Person-Years: 9.1</td>
<td>97.2 (93.7, 99.0)</td>
</tr>
<tr>
<td>50 - 59</td>
<td>N: 3,492, n: 3, Incidence Rate of HZ per 1,000 Person-Years: 0.3</td>
<td>N: 3,525, n: 87, Incidence Rate of HZ per 1,000 Person-Years: 7.8</td>
<td>96.6 (89.6, 99.3)</td>
</tr>
<tr>
<td>60 - 69</td>
<td>N: 2,141, n: 2, Incidence Rate of HZ per 1,000 Person-Years: 0.3</td>
<td>N: 2,166, n: 75, Incidence Rate of HZ per 1,000 Person-Years: 10.8</td>
<td>97.4 (90.1, 99.7)</td>
</tr>
<tr>
<td>≥70</td>
<td>N: 1,711, n: 1, Incidence Rate of HZ per 1,000 Person-Years: 0.2</td>
<td>N: 1,724, n: 48, Incidence Rate of HZ per 1,000 Person-Years: 9.4</td>
<td>97.9 (87.9, 100.0)</td>
</tr>
</tbody>
</table>

\(N = \) Number of subjects included in each group; \(n = \) Number of subjects having at least 1 confirmed HZ episode; HZ = Herpes zoster; CI = Confidence Interval.