Adult and Pediatric Immunization Updates – May 2018

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Bureau of Immunization
Vaccine Preventable Disease Surveillance Officer

Finger Lakes Area Immunization Coalition Conference
Western New York Immunization Coalition Conference
Today’s Presentation

• 2018 Child and Adolescent Immunization Schedule Update
• 2018 Adult Immunization Schedule Update
• New York State Vaccine Preventable Disease (VPD) Updates
Disclosure/ Acknowledgement

• Kathryn Sen is a New York State employee and has no financial interest or conflict with the manufacturer of any product named in this presentation.

• I would like to acknowledge JoEllen Wolicki, RN, BSN from the CDC for information provided on the immunization update slides.
2018 Child and Adolescent Immunization Update

• 2018 Child and Adolescent Vaccine Schedule
• Vaccine Updates
Recommended Immunization Schedule for Children and Adolescents Aged 18 Years or Younger

The table below shows vaccine acronyms, and brand names for vaccines routinely recommended for children and adolescents. The use of trade names in this immunization schedule is for identification purposes only and does not imply endorsement by the ACIP or CDC.

<table>
<thead>
<tr>
<th>Vaccine/Combination Vaccine</th>
<th>Administration</th>
<th>Month(s)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Diphtheria, tetanus, and acellular pertussis vaccine (DTaP)</td>
<td>Diphtheria, tetanus, and acellular pertussis vaccine (DTaP)</td>
<td>Diphtheria, tetanus, and acellular pertussis vaccine (DTaP)</td>
</tr>
<tr>
<td>Hemophilus influenzae type b vaccine (Hib)</td>
<td>Hib (PRP-T)</td>
<td>Infant 1</td>
</tr>
<tr>
<td></td>
<td>Hib (PRP-OMP)</td>
<td>Infant 1</td>
</tr>
<tr>
<td>Hepatitis A vaccine</td>
<td>HepA</td>
<td>Month 1</td>
</tr>
<tr>
<td></td>
<td>HepB</td>
<td>Month 2</td>
</tr>
<tr>
<td></td>
<td>Hepatitis B vaccine</td>
<td>HepB</td>
</tr>
<tr>
<td></td>
<td>Hepatitis B vaccine</td>
<td>HepB</td>
</tr>
<tr>
<td>Human papillomavirus vaccine</td>
<td>HPV</td>
<td>Multiple</td>
</tr>
<tr>
<td>Influenza vaccine (inactivated)</td>
<td>IIV</td>
<td>Multiple</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Multiple</td>
</tr>
<tr>
<td>Meningococcal conjugate vaccine</td>
<td>MenACWY-CRM</td>
<td>MenACWY-CRM</td>
</tr>
<tr>
<td>Meningococcal conjugate vaccine</td>
<td>MenACWY-CRM</td>
<td>MenACWY-CRM</td>
</tr>
<tr>
<td>Pneumococcal 13-valent conjugate vaccine</td>
<td>PCV13</td>
<td>Preterm 13</td>
</tr>
<tr>
<td>Pneumococcal 23-valent polysaccharide vaccine (PPSV23)</td>
<td>PPSV23</td>
<td>Pneumococcus</td>
</tr>
<tr>
<td>Poliovirus vaccine (inactivated)</td>
<td>IPV</td>
<td>IPV</td>
</tr>
<tr>
<td>Rotavirus vaccines</td>
<td>RV1</td>
<td>Rotavirus Rotavirus</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Rotavirus Rotavirus</td>
</tr>
<tr>
<td>Tetanus, diphtheria, and acellular pertussis vaccine (Tdap)</td>
<td>Tdap</td>
<td>Adult 2038</td>
</tr>
<tr>
<td>Tetanus and diphtheria vaccine</td>
<td>Td</td>
<td>Td, No Trade Name</td>
</tr>
<tr>
<td>Varicella vaccine</td>
<td>VVA</td>
<td>Varicella</td>
</tr>
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</table>

**Combination Vaccines**

<table>
<thead>
<tr>
<th>Combination Vaccine</th>
<th>Administration</th>
<th>Month(s)</th>
</tr>
</thead>
<tbody>
<tr>
<td>5 doses hepatitis B and inactivated poliovirus vaccine</td>
<td>5 doses hepatitis B and inactivated poliovirus vaccine</td>
<td>5 doses hepatitis B and inactivated poliovirus vaccine</td>
</tr>
<tr>
<td>5 doses inactivated poliovirus and Hemophilus influenzae type B vaccine</td>
<td>5 doses inactivated poliovirus and Hemophilus influenzae type B vaccine</td>
<td>5 doses inactivated poliovirus and Hemophilus influenzae type B vaccine</td>
</tr>
<tr>
<td>DTaP and inactivated poliovirus vaccine</td>
<td>DTaP and inactivated poliovirus vaccine</td>
<td>DTaP and inactivated poliovirus vaccine</td>
</tr>
<tr>
<td>Measles, mumps, and rubella vaccines</td>
<td>Measles, mumps, and rubella vaccines</td>
<td>Measles, mumps, and rubella vaccines</td>
</tr>
</tbody>
</table>

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Approved by the
Advisory Committee on Immunization Practices
American Academy of Pediatrics
American Academy of Family Physicians
American College of Obstetricians and Gynecologists

This schedule includes recommendations in effect as of January 1, 2018.
2018 Child and Adolescent Immunization Schedule
Update: Child and Adolescent Tdap

• Adolescents who received Tdap inadvertently or as part of the catch-up series between 7–10 years of age may receive the routine adolescent Tdap dose (11–12 years of age)

Footnote 13: Recommended Immunization Schedule for Children and Adolescents Aged 18 Years or Younger, 2018

Prevention of Pertussis, Tetanus, and Diphtheria with Vaccines in the United States: Recommendations of the Advisory Committee on Immunization Practices (ACIP), MMWR April 27, 2018
https://www.cdc.gov/mmwr/volumes/67/rr/pdfs/rr6702a1-H.pdf
Update: Childhood Schedule for Polio Vaccine

• Poliovirus vaccine footnote was revised to include updated guidance for persons who received inactivated (IPV) and live, attenuated (OPV) polio vaccine as part of their vaccination series

• Total number of doses needed to complete the series is the same as that recommended for the U.S. IPV schedule
Polio Vaccine Schedule

• For infants 6 months and younger, HCPs should not routinely vaccinate using the minimum interval (catch-up) schedule.

• HCPs should use the standard ACIP recommended guidance unless travel is imminent and there is risk for exposure to polio.  
  – Minimum interval between doses is 4 weeks

Polio Vaccine Schedule

• If 4 or more doses are administered before age 4 years, an additional dose should be administered at age 4 through 6 years and at least 6 months after the previous dose

• A fourth dose is not necessary if the third dose was administered at age 4 years or older and at least 6 months after the previous dose
Other Polio Vaccine Considerations

- Only IPV is available in the United States
- For a series with both OPV and IPV:
  - Only trivalent OPV (tOPV) counts toward the U.S. vaccination requirements
  - If a child completed a valid series of tOPV in another country, no supplemental doses of IPV are necessary
What Doses of OPV are Valid?

• OPV doses* administered:
  • Before April 2016
    – Count towards a completed series if OPV or tOPV
  • Between April 1, 2016 through April 30, 2016
    – Count towards a completed series if documented as tOPV
  • On or after May 1, 2016
    – OPV doses should not be counted

• If the dose documentation includes “campaign”, the dose does NOT count

*Must meet minimum age and intervals
Hepatitis A Vaccine ACIP Vote February 2018

- A single dose of Hepatitis A vaccine should be administered to infants age 6-11 months of age traveling outside the US when protection against hepatitis A is recommended.
- Infants should restart the 2-dose series of Hepatitis A vaccine at 12 months of age or older as recommended.
  - They will receive a total of three doses of Hepatitis A vaccine.

Recommendations of the ACIP are not final until approved by the CDC director and published in the MMWR.
Update: Influenza Vaccine

- Multiple influenza vaccine products for the 2018-19 season
- Indications vary by product including age, formulation and type
- More than one product may be appropriate for any given recipient
Update: Influenza Vaccine Vote

• Annual flu vaccination continues to be recommended for persons 6 months of age and older without contraindications
  – DRAFT: Providers may choose to administer any licensed, age appropriate flu vaccine including LAIV, IIV, RIV or ccIV

• 2018-19 ACIP recommendations for flu to be discussed and voted on at the June 2018 meeting

Recommendations of the ACIP are not final until approved by the CDC director and published in the MMWR Seasonal Influenza vote ACIP Meeting
2018 Adult Immunization Update

- 2018 Adult Vaccine Schedule
- Vaccine Updates
2018 Adult Immunization Schedule

Recommended Immunization Schedule for Adults Aged 19 Years or Older, United States, 2018

May 14, 2018

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Special Populations That Need Additional Considerations

Special populations that need additional considerations include:

- Pregnant women. Pregnant women should receive the tetanus, diphtheria, and acellular pertussis vaccine (Tdap) during pregnancy and the influenza vaccine during or before pregnancy. Live vaccines (e.g., measles, mumps, and rubella vaccine [MMR]) are contraindicated.
- Asplenia. Adults with asplenia have specific vaccination recommendations because of their increased risk for infection by encapsulated bacteria. Anatomical or functional asplenia includes congenital or acquired asplenia, splenic dysfunction, sickle cell disease and other hemoglobinopathies, and splenectomy.
- Immunocompromising conditions. Adults with immunosuppression should generally avoid live vaccines. Inactivated vaccines (e.g., pneumococcal vaccines) are generally acceptable. High-level immunosuppression includes HIV infection with a CD4 cell count <200 cells/µL, receipt of daily corticosteroid therapy with ≥20 mg of prednisone or equivalent for ≥14 days, primary immunodeficiency disorder (e.g., severe combined immunodeficiency or complement component deficiency), and receipt of cancer chemotherapy. Other immunocompromising conditions and immunosuppressive medications to consider when vaccinating adults can be found in IDSA Clinical Practice Guideline for Vaccination of the Immunocompromised Host. Additional information on vaccinating immunocompromised adults is in General Best Practice Guidelines for Immunization.
# Adult Immunization Schedule by Age Group

<table>
<thead>
<tr>
<th>Vaccine</th>
<th>19-21 years</th>
<th>22-26 years</th>
<th>27-49 years</th>
<th>50-64 years</th>
<th>≥65 years</th>
</tr>
</thead>
<tbody>
<tr>
<td>Influenza&lt;sup&gt;1&lt;/sup&gt;</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Tdap&lt;sup&gt;2&lt;/sup&gt; or Td&lt;sup&gt;3&lt;/sup&gt;</td>
<td></td>
<td></td>
<td>1 dose Tdap, then Td booster every 10 yrs</td>
<td></td>
<td></td>
</tr>
<tr>
<td>MMR&lt;sup&gt;3&lt;/sup&gt;</td>
<td></td>
<td>1 or 2 doses depending on indication (if born in 1957 or later)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>VAR&lt;sup&gt;4&lt;/sup&gt;</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>RZV&lt;sup&gt;5&lt;/sup&gt; (preferred) or ZVL&lt;sup&gt;5&lt;/sup&gt;</td>
<td></td>
<td></td>
<td></td>
<td>2 doses RZV (preferred) or 1 dose ZVL</td>
<td></td>
</tr>
<tr>
<td>HPV-Female&lt;sup&gt;6&lt;/sup&gt;</td>
<td>2 or 3 doses depending on age at series initiation</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>HPV-Male&lt;sup&gt;6&lt;/sup&gt;</td>
<td>2 or 3 doses depending on age at series initiation</td>
<td></td>
<td></td>
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<tr>
<td>PCV13&lt;sup&gt;7&lt;/sup&gt;</td>
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<td></td>
<td></td>
<td></td>
<td>1 dose</td>
</tr>
<tr>
<td>PPSV23&lt;sup&gt;2&lt;/sup&gt;</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1 dose</td>
</tr>
<tr>
<td>HepA&lt;sup&gt;3&lt;/sup&gt;</td>
<td></td>
<td></td>
<td></td>
<td>2 or 3 doses depending on vaccine</td>
<td></td>
</tr>
<tr>
<td>HepB&lt;sup&gt;3&lt;/sup&gt;</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>3 doses</td>
</tr>
<tr>
<td>MenACWY&lt;sup&gt;8&lt;/sup&gt;</td>
<td></td>
<td></td>
<td></td>
<td>1 or 2 doses depending on indication, then booster every 5 yrs if risk remains</td>
<td></td>
</tr>
<tr>
<td>MenB&lt;sup&gt;10&lt;/sup&gt;</td>
<td></td>
<td></td>
<td></td>
<td>2 or 3 doses depending on vaccine</td>
<td></td>
</tr>
<tr>
<td>Hib&lt;sup&gt;11&lt;/sup&gt;</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1 or 3 doses depending on indication</td>
</tr>
</tbody>
</table>
Update: Zoster Vaccines-
Shingrix and Zostavax

• There are now 2 Herpes Zoster Vaccines licensed in the US, Shingrix (RZV) and Zostavax (ZVL)

• Shingrix (RZV): Administer 2 doses to *immunocompetent* persons 50 years of age and older
  – Two to six months apart
  – Regardless of past receipt of Zostavax (ZVL)
Clinical Considerations

- Persons 60 years and older may receive either RZV or ZVL but **RZV is preferred**
- RZV is recommended for persons previously vaccinated with ZVL
- Wait at least 8 weeks (2 months) after ZVL before administering RZV
- Administer RZV regardless of previous history of varicella or varicella vaccination

Shingrix (RZV)

- Reactions:
  - Local reactions: 49%
  - Local reactions, *Grade 3: 9.4%
  - Systemic reactions (headache, malaise, fatigue): 45-78%
  - Systemic reactions (headache, malaise, fatigue) – *Grade 3: 11%

*Note: Grade 3 reactions are those that prevent normal activities following vaccination*
Shingrix (RZV)

- **IM Injection**- deltoid or thigh
  - Needle gauge: 22-25 gauge
  - Needle length: varies by age/weight
  - May administer during the same clinical visit as other vaccines
  - Administer in a separate limb from other vaccines, if possible
- Store vaccine AND diluent in the *refrigerator* between 2°C and 8°C (36°F and 46°F)
- Reconstitute the vaccine with the diluent supplied by the manufacturer just before administering

Vaccine Administration
https://www.cdc.gov/vaccines/pubs/pinkbook/vac-admin.html#route
Shingrix (RZV)

• Avoid Shingrix errors
  – Store the vaccine and diluent in the refrigerator
  – Use the correct diluent
  – Administer the vaccine by the IM route
  – Remember it is a two dose series – let the patient know this!
  – Schedule the 2nd dose 2-6 months after the first dose
Update: Hepatitis A Vaccine as PEP

- Hepatitis A vaccines should be administered for post-exposure prophylaxis (PEP) for all persons 12 months of age or older.
- In addition to hepatitis A vaccine, immune globulin may be administered to persons aged >40 years depending on the providers’ risk assessment.

Recommendations of the ACIP are not final until approved by the CDC director and published in the MMWR Seasonal Influenza vote ACIP Meeting.
Update: Hepatitis B Vaccine

- Heplisav-B is now included on list of recommended products for adult hepatitis B vaccination (18 years and older)
- **Two doses** (0.5 mL each) given one month apart
- Heplisav-B protects against all known subtypes of hepatitis B virus
- Head-to-head trials: two-dose series of Heplisav-B was more effective than Engerix-B

Recommendations of the ACIP are not final until approved by the CDC director and published in the MMWR Seasonal Influenza vote ACIP Meeting.
Update: MMR Vaccine

During a Mumps Outbreak

• Administer 1 dose of MMR to adults who previously received ≤2 doses of mumps-containing vaccine and are identified by a public health authority to be at increased risk during a mumps outbreak to improve protection against mumps disease and related complications

Recommended Immunization Schedule for Children and Adolescents Aged 18 Years or Younger, 2018

ACIP Recommended Immunization Schedule for Adults 19 Years of Age and Older, 2018
www.cdc.gov/vaccines/schedules/hcp/adult.html
New York State VPD Updates

Measles and Mumps and Bears...
Oh my!
Mumps
Syracuse University Mumps Outbreak Summary

- Syracuse University (SU)
  - Onset of parotitis between 8/30 and 12/11
  - 151 confirmed and probable cases (57/94)
    - 2 staff, 17 grad students, 5 community
  - Multiple Points of Dispensing (PODs) held on campus beginning 10/24
  - More than 4,250 doses of MMR vaccine administered
  - Outbreak declared over on Feb 2, 2018
Reported Mumps Cases in New York State*
Confirmed and Probable Cases Reported between 01/01/2016 and 04/30/2018**

<table>
<thead>
<tr>
<th>Year</th>
<th>#Cases</th>
</tr>
</thead>
<tbody>
<tr>
<td>1997</td>
<td>16</td>
</tr>
<tr>
<td>1998</td>
<td>14</td>
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<tr>
<td>1999</td>
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<td>2016</td>
<td>204</td>
</tr>
<tr>
<td>2017</td>
<td>298</td>
</tr>
<tr>
<td>2018**</td>
<td>44</td>
</tr>
</tbody>
</table>

*Data represents New York State excluding New York City.
**Cases (Confirmed or Probable) as of 4/30/2018. 2018 Case counts are preliminary and subject to change.
### Age Distribution of Reported Mumps Cases, New York State*

<table>
<thead>
<tr>
<th>Age Group</th>
<th>#Cases</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>&lt;=1 Year</td>
<td>4</td>
<td>0.7%</td>
</tr>
<tr>
<td>2-10 Years</td>
<td>15</td>
<td>2.8%</td>
</tr>
<tr>
<td>11-17 Years</td>
<td>26</td>
<td>4.8%</td>
</tr>
<tr>
<td>18-24 Years</td>
<td>340</td>
<td>62.3%</td>
</tr>
<tr>
<td>25-30 Years</td>
<td>61</td>
<td>11.2%</td>
</tr>
<tr>
<td>31-40 Years</td>
<td>39</td>
<td>7.1%</td>
</tr>
<tr>
<td>41-50 Years</td>
<td>24</td>
<td>4.4%</td>
</tr>
<tr>
<td>51-60 Years</td>
<td>27</td>
<td>5.0%</td>
</tr>
<tr>
<td>60+ Years</td>
<td>10</td>
<td>1.8%</td>
</tr>
<tr>
<td><strong>Total Cases</strong></td>
<td><strong>546</strong></td>
<td></td>
</tr>
</tbody>
</table>

*Data represents New York State excluding New York City. Confirmed and Probable Cases Reported between 01/01/2016 and 04/30/2018*
## Number of Reported Mumps Cases in New York State* by Outbreak

Confirmed and Probable Cases Reported between 01/01/2016 and 04/30/2018**

<table>
<thead>
<tr>
<th>Outbreak</th>
<th>#Cases</th>
<th>% of Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sporadic Cases/Clusters</td>
<td>173</td>
<td>32%</td>
</tr>
<tr>
<td>Syracuse University (Fall 2017)</td>
<td>151</td>
<td>28%</td>
</tr>
<tr>
<td>SUNY New Paltz (Fall 2016)</td>
<td>88</td>
<td>16%</td>
</tr>
<tr>
<td>Nassau – Long Beach (Summer 2016)</td>
<td>51</td>
<td>9.4%</td>
</tr>
<tr>
<td>SUNY Geneseo (Fall 2016)</td>
<td>27</td>
<td>5%</td>
</tr>
<tr>
<td>SUNY Albany (Spring 2017)</td>
<td>25</td>
<td>4.6%</td>
</tr>
<tr>
<td>Albany Hockey (Winter 2017)</td>
<td>7</td>
<td>1.3%</td>
</tr>
<tr>
<td>Clifton Park Gym (Summer 2017)</td>
<td>6</td>
<td>1.1%</td>
</tr>
<tr>
<td>SUNY Buffalo (Winter 2016)</td>
<td>6</td>
<td>1.1%</td>
</tr>
<tr>
<td>Camp Timberlake (Summer 2017)</td>
<td>5</td>
<td>0.9%</td>
</tr>
<tr>
<td>Syracuse University (Spring 2017)</td>
<td>3</td>
<td>0.6%</td>
</tr>
<tr>
<td>NYC Office / Nassau Co. (Spring 2018)</td>
<td>3</td>
<td>0.6%</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>545</td>
<td></td>
</tr>
</tbody>
</table>

*Data represents New York State excluding New York City.

**Cases (Confirmed or Probable) as of 4/30/2018. Case counts are preliminary and subject to change.
Reported Pertussis Cases in New York State*
Confirmed and Probable Cases Reported between 01/01/2016 and 04/30/2018**

<table>
<thead>
<tr>
<th>Year</th>
<th>#Cases</th>
</tr>
</thead>
<tbody>
<tr>
<td>1997</td>
<td>200</td>
</tr>
<tr>
<td>1998</td>
<td>357</td>
</tr>
<tr>
<td>1999</td>
<td>818</td>
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<td>2000</td>
<td>571</td>
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<td>2001</td>
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<tr>
<td>2017</td>
<td>546</td>
</tr>
<tr>
<td>2018*</td>
<td>103</td>
</tr>
</tbody>
</table>

*Data represents New York State excluding New York City.
**Cases (Confirmed or Probable) as of 4/30/2018. 2018 Case counts are preliminary and subject to change.
Measles 2018: A Tale of Three Twelve Cases
Measles – International Traveler

• Tale #1:
  – Traveler arrived in NYC on 2/15 from Australia
  – Stayed in two NYC hotels 2/16- 2/19
  – Toured at MET Museum, Hop On Hop Off NYC tour, Watchtower Educational Center – Putnam County
  – 2/20 (evening) rash onset and stayed in an Orange County hotel overnight
Measles – International Traveler

- 2/21 presented to urgent care and was sent on to Orange Regional Medical Center (ORMC) without prior notification
- 2/22 PCR positive, IgM positive
- Thought they had been immunized as a child
Measles – International Traveler

• NYCDOHMH, LHDs in Orange and Putnam counties, ORMC, Watchtower and the NYSDOH collaborated to:
  – Identify exposed individuals and groups, including ORMC
  – Determine susceptibility/immunity to measles
  – Make recommendations for follow-up
  – Provide post-exposure prophylaxis
  – Conduct surveillance
  – Quarantine of one NYS resident without evidence of immunity through 21 days after exposure
Measles – International Traveler

• Joint press release with NYCDOHMH
• Measles health advisory to all NYS providers
• Epi-X issued
  – CDC’s secure web-based communication network to inform other state and local health departments and other public health professionals
Measles – International Traveler

• Other collaboration with:
  – CDC and the Division of Global Migration and Quarantine (DGMQ)
  – Australian National Focal Point, National Incident Room Office of Health Protection
  – Department of Health, Nunavut Territory of Canada
  – Other state health departments
Measles Secondary Case to International Traveler

- Tale #2: Exposed 2/19 but had not been identified as a contact
  - 2/27 developed malaise, then fever (up to 102.6ºF), cough, coryza, conjunctivitis – self-isolated at home
  - 3/4 (evening) onset of descending rash
  - Tested on 3/5
  - IgM positive, PCR positive
  - Believed they were immunized
  - Spouse immune to measles
  - Limited exposures
Measles – International Traveler

• Tale #3:
  – 3/9 notified of a NYC business person who arrived in US from India on 2/19; suspected to have measles
  – Hospitalized in Nassau County
    • ED and facility was protected because the rash and fever protocol was immediately implemented
  – Rash onset 3/4 with Nassau County family contacts
    • Two adults and two children exposed
    • Children up-to-date in NYSIIS with 2 MMRs
    • Parents subsequently found to have measles immunity
Unvaccinated Toddler

• Tale #4
  – Traveled to Australia 3/3 – 3/15
  – Rash onset 3/20 after a prodrome of cough, coryza, conjunctivitis, fever up to 103.8°F
  – HCP suspected measles - sent child to hospital lab for IgM testing
    • Hospital staff noted that child had a “funny rash” on face
  – No notification to LHD, no viral specimens collected
  – 3/28 IgM reported on ECLRS
    • County consulted and repeat serology and viral specimens collected
    • 3/29 PCR positive and IgM positive
  – While infectious, attended a bar mitzvah, had an unvaccinated cousin visit, exposed the hospital lab, etc.
  – Miraculously there were no secondary cases
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Measles – European Travelers

• Tale #5:
  – 4/20 NYC notified NYS of unvaccinated European travelers who arrived in US on 4/13 - both confirmed with measles on Friday at 4 pm
    • Onsets of rash 4/18 and 4/19
  – Staying at an Airbnb with parents and sibling in NYC
  – Both hospitalized in NYC
    • Younger sibling previously diagnosed with measles in Europe on 4/6
  – Exposed two large facilities in Orange and Putnam Counties
    • 4/16 Orange County – Watchtower International Headquarters
    • 4/17 Putnam County – Watchtower Educational Center
Measles – European Travelers

As usual the amazing LHDs rallied to minimize secondary spread
Measles – European Travelers

• Fallout:
  – Six secondary cases of measles
  – 3 Putnam County residents
  – 3 Out of state residents
    • 2 California
    • 1 Connecticut (CT)
  – Onsets of rash between 4/30 and 5/4
Measles Vaccination Status

• Six secondary cases:
  – One out of state case was unvaccinated
  – Five cases had evidence of vaccine
    • Two with 2, valid documented doses of MMR vaccine
    • One with 1 valid MMR dose
    • One with 1 invalid dose given at 11 months of age
    • One verbally stated they had 2 doses
NYS Measles Case Presentations

• Case with 2 valid MMRs, 47 years old
  – Afebrile, slight runny nose, fatigue, very mild maculopapular rash
  – PCR specimen results
    • Nasopharyngeal (NP) swab negative
    • Urine positive
  – By day 2 after rash onset patient was already feeling much better – but still had a rash
  – Public exposures, crossed state lines
Measles Secondary Immune Response
NYS Measles Case Presentations

• Case with one invalid MMR at 11 months, 49 years old
  – Temp 100.7° F, cough, malaise
  – Mac-pap rash onset 5/1
  – Negative IgM and Positive IgG
  – Urine with more strongly positive than NP swab
  – Took flights 4/28 and 5/1 while infectious
  – Public exposures in and outside of NYS
Secondary Immune Response
NYS Measles Case Presentations

- Case with reported history of 2 MMRs
  - Foreign born, 34 years old, arrived in US on 4/12
  - Exposed to measles on day 5 in US
  - Temp 101.7° F, chills, fatigue, malaise, cough
  - Rash onset 5/4
  - Was not off of the Watchtower campus while infectious
Measles Activities

• Press releases
• Health advisories
• Epi-X notifications
• Cross state collaboration
• Endless phone and conference calls plus meetings
• Updates for administration
• Contact tracing
• Searching for vaccination records
• MMR vaccination, IG administration, titers
• Isolation and quarantine
• Daily surveillance
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Measles Activities

• Education to the Watchtower health and administrative staff

• Strategizing with the LHDs
  – Evolving recommendations as epidemiology of the contact tracing of a single case becomes an outbreak

• Teamwork
What Else Can You Do?

• You are an expert and patients trust you
• Ensure that your pediatric and adult patients are up-to-date
• Engage your colleagues, friends and family in vaccine promotion
• Ensure that your adult patients are up-to-date with ALL recommended vaccines
  – This means that they have valid, age-appropriate documented vaccines
• Use NYSIIS
  – It is an invaluable tool to document adult vaccination
  – Used extensively during our measles investigations to look for immune status on those exposed
CDC Adult Immunization Resources

Find resources on adult immunization.

DON'T WAIT. VACCINATE!

www.cdc.gov/vaccines/hcp/adults
Vaccinating Adults: A Step-by-Step Guide

“How-to” activities:

- Setting up for vaccination services
- Storing and handling vaccines
- Deciding which people should receive which vaccines
- Administering vaccines
- Documenting vaccinations (including legal issues)
- Understanding financial considerations and billing information
- References
Resources

- CDC Immunization Schedules
  - https://www.cdc.gov/vaccines/schedules/index.html
- CDC Pink Book
- CDC VPD Surveillance Manual
- NYSDOH VPD Outbreak Control Manual
- Immunization Action Coalition
  - http://www.immunize.org/
- Pediatric Red Book, 2015
Thank-you!

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