Measles Outbreak 2014
A Communication Perspective on Response
June 17, 2015
By: Melanie Amato
Melanie.amato@odh.ohio.gov
Measles Outbreak

Presentation Outline:
- Population background
- Initiation of Outbreak
- Case count
- Communication difficulties
- Lessons learned
## Measles Outbreak

<table>
<thead>
<tr>
<th>State</th>
<th>Estimated Population</th>
<th>Number of Settlements</th>
<th>Estimated Number of Church Districts</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ohio</td>
<td>67,230</td>
<td>55</td>
<td>498</td>
</tr>
<tr>
<td>Pennsylvania</td>
<td>67,045</td>
<td>54</td>
<td>453</td>
</tr>
<tr>
<td>Indiana</td>
<td>50,195</td>
<td>21</td>
<td>356</td>
</tr>
<tr>
<td>Wisconsin</td>
<td>17,025</td>
<td>47</td>
<td>133</td>
</tr>
<tr>
<td>New York</td>
<td>16,470</td>
<td>50</td>
<td>122</td>
</tr>
<tr>
<td>Michigan</td>
<td>13,330</td>
<td>40</td>
<td>101</td>
</tr>
<tr>
<td>Missouri</td>
<td>11,000</td>
<td>42</td>
<td>94</td>
</tr>
<tr>
<td>Kentucky</td>
<td>9,750</td>
<td>35</td>
<td>78</td>
</tr>
<tr>
<td>Iowa</td>
<td>8,320</td>
<td>23</td>
<td>59</td>
</tr>
<tr>
<td>Illinois</td>
<td>7,140</td>
<td>18</td>
<td>51</td>
</tr>
</tbody>
</table>
# Measles Outbreak

<table>
<thead>
<tr>
<th>Settlement</th>
<th>State</th>
<th>Estimated Number of Church Districts</th>
<th>Estimated Population</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lancaster County Area</td>
<td>Pennsylvania</td>
<td>197</td>
<td>32,900</td>
</tr>
<tr>
<td>Holmes County Area</td>
<td>Ohio</td>
<td>251</td>
<td>32,630</td>
</tr>
<tr>
<td>Elkhart/LaGrange Area</td>
<td>Indiana</td>
<td>163</td>
<td>22,820</td>
</tr>
<tr>
<td>Geauga County Area</td>
<td>Ohio</td>
<td>108</td>
<td>15,230</td>
</tr>
<tr>
<td>Adams County Area</td>
<td>Indiana</td>
<td>57</td>
<td>8,210</td>
</tr>
</tbody>
</table>
## Measles Outbreak

### Confirmed Cases By Last Name

<table>
<thead>
<tr>
<th>Last Name</th>
<th>Number of Cases</th>
<th>Percent of Cases</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yoder</td>
<td>42</td>
<td>21.5%</td>
</tr>
<tr>
<td>Miller</td>
<td>40</td>
<td>20.5%</td>
</tr>
<tr>
<td>Wengerd</td>
<td>35</td>
<td>17.9%</td>
</tr>
<tr>
<td>Raber</td>
<td>17</td>
<td>8.7%</td>
</tr>
<tr>
<td>Nisley</td>
<td>17</td>
<td>8.7%</td>
</tr>
<tr>
<td>Byler</td>
<td>12</td>
<td>6.2%</td>
</tr>
<tr>
<td></td>
<td>9</td>
<td>4.6%</td>
</tr>
<tr>
<td></td>
<td>7</td>
<td>3.6%</td>
</tr>
<tr>
<td></td>
<td>6</td>
<td>3.1%</td>
</tr>
<tr>
<td></td>
<td>4</td>
<td>2.1%</td>
</tr>
<tr>
<td></td>
<td>2</td>
<td>1.0%</td>
</tr>
<tr>
<td></td>
<td>1</td>
<td>0.5%</td>
</tr>
<tr>
<td></td>
<td>1</td>
<td>0.5%</td>
</tr>
<tr>
<td></td>
<td>1</td>
<td>0.5%</td>
</tr>
<tr>
<td></td>
<td>1</td>
<td>0.5%</td>
</tr>
<tr>
<td>TOTAL</td>
<td>195</td>
<td>100.0%</td>
</tr>
</tbody>
</table>
Measles Outbreak

Amish Populations:

- Mennonite (New Order)
  - Except technology and willing to fly

- Old Order
  - Will only travel by buggy
  - Largest affiliation in Ohio

- Swartzentruber
  - Most conservative Amish group
  - No indoor plumbing, some outhouses
  - Resist change
Measles Outbreak

Outbreak Statistics
Measles Outbreak

- Onset of symptoms began 3/24/14
  - Two Amish travelers got sick in the Philippines
    - First diagnosed at Dengue Fever
    - Part of a mission group
  - Group and community were unvaccinated
- ODH notified 4/21 with second generation cases
- Outbreak ended 9/4/14 with 383 cases
Measles Outbreak

- Contact was made with Christian Aid Ministries (CAM).
  - Travel roster was made with contact information.
  - Two other groups were currently over in the Philippines and planning to return.
- Individuals listed on the travel rosters were interviewed to determine health and exposure status.
- In order to manage resources efficiently, staff identified the jurisdictions for each traveler and notified the appropriate health departments.
Measles Outbreak

• Contact with some of the Amish were done by phone and visits to homes.
• Individual that was one of the first confirmed cases served as point of contact.
• Daily communication took place with this gentleman and the information he was able to gather accounted for more than 35 confirmed cases.
Measles Outbreak

Outbreak Counties:

- Knox
- Holmes
- Ashland
- Coshocton
- Richland
- Stark
- Wayne
- Highland
Measles Outbreak

2014 Measles Outbreak, Ohio, Confirmed Cases by Date of Rash Onset, N=377

Data as of 10/2/2014
Source: Ohio Disease Reporting System
Measles Outbreak

Measles Outbreak by Age, Ohio, 2014

<table>
<thead>
<tr>
<th>Age (Years)</th>
<th># of Cases</th>
</tr>
</thead>
<tbody>
<tr>
<td>&lt;1</td>
<td>19</td>
</tr>
<tr>
<td>1-4</td>
<td>50</td>
</tr>
<tr>
<td>5-9</td>
<td>54</td>
</tr>
<tr>
<td>10-14</td>
<td>66</td>
</tr>
<tr>
<td>15-19</td>
<td>54</td>
</tr>
<tr>
<td>20-29</td>
<td>79</td>
</tr>
<tr>
<td>30-39</td>
<td>36</td>
</tr>
<tr>
<td>40-49</td>
<td>12</td>
</tr>
<tr>
<td>50-59</td>
<td>13</td>
</tr>
</tbody>
</table>
Measles Outbreak

Complications

- 11 cases (3 percent) hospitalized
  - Days hospitalized ranged from 1-6
- 212 cases (55 percent) had diarrhea
- 92 cases (24 percent) had otitis media
- 3 cases (2 percent) thrombocytopenia
- Less than 1 percent developed pneumonia
- No deaths
Measles Outbreak

Communication Plan
Measles Outbreak

- Conference calls with CDC and local health depts.
- Press Releases
- Flyers
- Radio
- Newspaper Ads
- Posters
- Developed Fact Sheets
- Social Media
- Door to Door
Measles Outbreak

MMR Vaccination Rates:
• First clinics held 4/24/14
  • All closed clinics held in the Amish community
• Several LHD’s did combined clinics
  • One local clinic vaccinated 998 people
• Whole Outbreak: 12,372 doses administered
Measles Outbreak

- 18.3% of all measles cases (including all counties) received one dose of MMR.
- 29.3% of the cases who had a dose of MMR received their vaccination ≥ 2 weeks before the onset of measles symptoms.
- 70.7% did not receive their MMR in time for it to provide full protection.
- 77.6% of the group who received one dose of MMR but not in enough time to provide full protection were confirmed cases.
Measles Outbreak
Measles Outbreak

Door to Door Campaign:

- Person had to understand Amish beliefs
- Appropriately dressed
- No Subdivisions
- No Neighborhoods
- Traveling miles between families
Measles Outbreak

- CDC Public Health Advisors (PHA) also helped assist with the Measles investigation.
- Each morning, the assigned PHA would report to a LHD and travel out in the community.
- Attempts were made to ask questions about Measles and determine if any one had been sick or were currently sick.
- A PHA could only spend two weeks working on an investigation.
- Were all cases reported? Probably not.
Measles Outbreak

Facts about Measles

- Measles is a highly infectious disease that enters the body through the nose and mouth when a person breathes, coughs, or sneezes near an infected person.
- Symptoms of measles usually appear 10 to 12 days after exposure to the virus and include fever, cough, runny nose, red eyes, sore throat, and a rash that starts on the head and spreads down the body.
- Measles can be prevented by getting vaccinated.

Best of Ohio's AMISH COUNTRY

Measles-Mumps-Rubella FAQ

How can I protect my child and myself against measles?
The best protection against measles for individuals and the community is through routine immunization with MMR vaccine. This is a combined vaccine that protects against measles, mumps, and rubella. Measles is a highly infectious disease that is spread through coughing or sneezing. It is common to get infected if you come into contact with an infected person.

At what age should children get the MMR vaccine?
Children should receive the first dose of MMR vaccine at 12-15 months of age and the second dose at 4-6 years of age (or no earlier than 24 days after the first dose). Children who have not been vaccinated should receive two doses of MMR vaccine at least 26 days apart. The recommended age for receiving MMR vaccine might change if there is a measles outbreak in your community, or if you will be traveling to a foreign country. In such cases, check with your child's health care provider to ensure that your child is properly vaccinated to protect against measles.

Do adults need to be vaccinated against measles?
All U.S. adults born during or after 1957 should also get at least one dose of MMR vaccine unless they can show they have had the measles vaccine or had a blood test that showed they were immune to measles. Healthcare workers should have two doses of MMR vaccine.

Travel FAQ

Can I travel to the areas that are affected with measles?
If you have never been vaccinated against measles, you should not travel to an area with an ongoing outbreak of measles until you have received the measles vaccine.

Is it possible to get the measles vaccine during pregnancy?Measles vaccine is not recommended for pregnant women who have not been vaccinated against measles. Pregnant women should discuss the benefits and risks of getting vaccinated with their healthcare provider.

How many vaccinations are recommended for adults?Measles is a disease that is not common in the U.S., and children born after 1993 are unlikely to be exposed to measles. However, if you have not been vaccinated against measles, you should discuss the benefits and risks of getting vaccinated with your healthcare provider.

Is the measles vaccine safe?Measles vaccine has been shown to be safe and effective. However, like all vaccines, it may cause side effects. These side effects are usually mild and include fever, rash, and a sore throat.

The information provided is for educational purposes only and should not be considered medical advice. Please consult with your healthcare provider for personalized advice.
Measles Outbreak

Have you been exposed to measles?

Several unvaccinated people from the Danville Amish community recently returned from the Philippines where they were exposed to measles. If you come in contact with these individuals or their family members and have not been vaccinated for measles (MMR vaccine), you could get measles. It is highly contagious!!

Measles Symptoms Include:
Fever, runny nose, cough, pink eye and a distinctive, blotchy red rash all over the body. Symptoms generally begin about 7-21 days after a person is infected

To Avoid the Measles, Get Vaccinated!

For more information, contact the Knox County Health Department at 399-8009

Traveling in Ohio to
SUMMER EVENTS?
Are you protected from measles?

Ohio is currently experiencing a Measles Outbreak concentrated mostly in the North Central Area including Ashland, Coshocton, Holmes, Knox, Richland, Stark and Wayne Counties.

Measles is highly contagious and can cause serious health problems. If you or your family members have not been vaccinated for measles (MMR vaccine) you could get measles.

Measles symptoms include:
Fever, runny nose, cough, pink eye and a distinctive red rash all over the body. Symptoms generally begin about 7 to 21 days after a person is infected.

To Avoid the Measles, Get Vaccinated!
Measles Outbreak

Barriers to Self Quarantine:

- Wedding Season
- Summer Auction
- High Tourism
- Easter
Measles Outbreak

Barriers for communication and vaccination:
- Cost of travel
- Concerns about vaccine safety
- Disapproval by Bishops
- Church every other Sunday
  - Shoulder to shoulder
  - Lasted all day
Measles Outbreak

Understanding Church Districts:

• A church typically has a set of two or three ministers, a deacon, and a bishop whom they might share with another district.

• The ministers and the bishop do the preaching on Sundays, and the bishop acts as the head of the congregation and final level of authority.

• The deacon usually does not preach, but helps with discipline issues and is a bit of a social go-between.

• Deacon will also act as the bishop’s ‘right-hand’ before he himself would get involved.
Measles Outbreak

What We Learned
Measles Outbreak

- Verifying the accuracy of disease reports. There were several cases with the same first and last name.
- In some situations only certain Amish family members would talk.
- Conflicting reports.
- As outbreak grew, the investigation shifted and act tracing became harder.
- Understanding the dynamics of the Amish. This ranged from work habits, church gatherings, and family interactions. Working around some of the customs in order to get information.
Measles Outbreak

- Outbreaks can happen anywhere
- Educate staff on the community and outbreak
- Communicate with all stakeholders
- Be proactive in messaging instead of defend
Measles Outbreak

Educate Key Leaders in the Community:

- Reach out to different populations
- Know the key people
- Establish relationships
- Educate those who work with those populations
- Be respectful of beliefs
Measles Outbreak