Measles Response in Pinal County

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Pinal County Public Health Services District
Pinal County

3rd most populous county in AZ
Approximately 375,000 residents
One of the fastest growing counties in the nation over the last decade
Mixture of suburban, small town, and rural settings
Background on Kearny, AZ

- Small town in mountainous, rural Pinal County
- Population of 2,030
- Economically driven by mining activities
- One copper mine in town employs 800 people
In the Beginning…

- January 15th - School nurse from the Kearny called the Health Dept. asking for advice related to a family she was told had measles
- When asked for details nurse described family of unvaccinated children that had been told by a physician they may have measles
- Nurse also told us family had travel history to Disneyland
- First impression was that this was a routine measles rule out
First Bits of Information

• Contacted the family for further information including where diagnosis was made, symptoms, and confirmed travel history
• Family visited Disneyland from Dec 16-20th
• Mother confirmed that she was ill as well as three of her children
• Family had been to multiple medical providers in multiple towns to be evaluated
• Gathered information on each possible case at this time
Suspect #1

- 5 year old unvaccinated male
- Symptoms including cough, coryza, conjunctivitis, sore throat, vomiting began around 1/1/2015
- Had onset of generalized maculopapular rash beginning on 1/2/2015 with a recorded temp of 103.2F
- Visited family physician in Kearny on 1/2/2015 and told this could be Strep throat or possibly measles, prescribed antibiotics and sent home without any testing performed
Suspect #2

- 12 year old unvaccinated male
- Onset of cough, coryza, conjunctivitis, diarrhea, sore throat, vomiting, temp of 105F on 1/9/2015
- Rash onset on 1/11/2015
- Taken to an urgent care facility in the eastern Phoenix metro area on 1/11/2015 for evaluation (You are welcome Saskia)
  - Father transported the child from Kearny to the facility
Suspect #3

- 8 year old unvaccinated male
- Onset of 3C’s, fever of 103F, diarrhea, sore throat, vomiting on 1/8/2015
- Rash onset 1/10/2015
- No medical visits
Suspect #4

- Mother of the suspected cases began feeling ill on 1/9/15 with 103.4F, 3C’s, sore throat, vomiting and had rash onset 1/11/2015
- She sought medical care at a facility in Gila County on 1/14/2015 and told attending physician she feared that her family had measles
  - Called prior to arrival and given mask at facility to wear
  - Measles IgG and culture were ordered; NO IgM requested
Maybe this isn’t a routine rule out?

- At this point there was significant concern that these could be measles cases with multiple exposures that had already occurred
  - No positive tests, but consistent symptoms
  - Exposure with unvaccinated individuals to a place with known measles activity
  - Decision made to pull blood on symptomatic family members
    - Mother consented to blood for herself and one of the children, unable to collect other specimens
  - Notified ADHS, Maricopa, and Gila Counties of the situation on 1/20/2015
Confirmation

• On 1/22/2105 notified that Suspect #4 (mother) had a culture test positive for measles from the NP swab drawn at the Gila County facility
• All epi-linked suspects were called cases at this point and an outbreak was declared
  • eventually received IgM positive for cases #3 and #4
• Activated Incident Command System (ICS)
Contact Investigation

• It appeared that there were two generations of cases
  • Case #1- onset date around 1/1/2015
  • Case #2, 3, 4- all had onsets between 1/8-11/2015
• Contact investigation began once multiple consistent suspects identified
  • This was the only family at the school that was unvaccinated, cases had been attending while potentially infectious, letter sent home to parents
  • Contacted local physicians and asked to notify Health Dept. of any suspected cases
  • Case #2 had been at father’s house- dad had at least one dose of MMR, stepmother and one sibling fully vaccinated, additional sibling with one dose MMR
  • Case #2 and case #4 had both been at medical facilities while infectious
  • Planned to monitor for symptoms or suspect cases for 21 days after exposure
Not Done Quite Yet

- On 1/23/2015 received a call reporting that the father of case #2 had a faint rash on back and had been sick for a day the weekend prior, history of one dose of MMR and drove son to urgent care
- He had been working, running errands, and performing routine daily activities all week
- Staff dispatched to collect blood, urine, throat swab
- Began researching additional contact investigation
- Swab and urine both PCR positive for measles on 1/27/2015, IgM also positive
Confirmed Measles Cases By Date: Pinal County, 2015
Ok, so where did you go?

- Case exposed up to 800 people at work, the facility had no ability to determine who had higher risk since employee worked in a very common area, letters sent home to all employees; another 60 contract workers were at the facility
- Grocery store- sign posted at door
- Bank- all staff and visitors identified and contacted
- Post office- sign posted at door
- Two gas stations- signs posted
- 4H meeting- all attendees notified
- Family friends visited house- all notified
Fifth Measles Case Identified in Pinal County

FLORENCE – The Pinal County Public Health Services District has confirmed a fifth case of measles in an adult male, who is now recovering. This individual was exposed to the family of four other cases identified last week residing in the Kearny area. This new case raises the possibility that some Pinal County residents or others in the area may have been exposed to measles since the patient visited public locations while infectious. This case was born after 1957 and reported only having one dose of MMR (measles, mumps, and rubella) vaccine. Two doses of MMR vaccine are recommended in persons born after 1957.

Pinal County Public Health Services District has identified several public locations this patient visited while infectious. If a person is unvaccinated or unsure of their vaccination status and visited any of the following businesses during these specific dates and timeframes, contact the Pinal County Public Health Department at 520-509-3555 or toll free at 1-888-431-1311.

On Thursday, Jan. 22, 2015, this patient visited four public locations in Kearny:

- Big D’s, 1113 Tillbury, Kearny -- 5:30am-8:30am
- Gordon’s IGA, 352 Alden Rd, Kearny -- 3:00pm-8:00pm
- Kearny Health Mart, 338 Alden Rd, Kearny -- 4:30pm-7:00pm
- Kearny Post Office, 388 Alden Rd, Kearny -- 3:00pm-8:00pm

On Friday, Jan. 23, 2015, this patient visited this location in Kearny:

- Cactus Mini-Mart, 352 Alden Rd, Kearny -- 5:30am-8:30am

“We have already contacted these places of business this patient visited. These businesses are assisting the health department by placing signs at their entrances to inform customers and employees that they could have been exposed if they were in these locations during specific timeframes” said Public Health Acting Director Kore Redden.

People who were in the above locations at the times listed should:
Remember NIMS Training?

- At least 1,000 people believed to be exposed at this point
- Infectious Diseases and Epi Section requested additional interviewing and field collection resources through ICS structure
- School Health Liaisons pulled from routine work and assigned to assist in contacting exposed individuals
- Over 800 letters sent to exposed; signs posted at numerous Kearny establishments, attempted to call 127 with identifying information
2/2/2015

To whom it may concern-

The Pinal County Public Health Services District is attempting to contact you due to the possibility that you may have been exposed to measles. You or one of your family members was reported to be at the Ray Credit Union on 1/23/2015 at the same time or shortly after another person with measles. You are receiving this letter because we have tried unsuccessfully to reach you by phone or were not provided a phone number for contact. We would like to provide you with information on measles, assess any risk your family might have and ensure that any questions you might have are answered. Please call us at (520) 866-7325 at your earliest convenience.

Here are the signs and symptoms:
Measles begins with fever (101 degrees F or higher), red, watery eyes, cough and coryza (runny nose). This is followed by a maculopapular rash (red, raised, and blotchy). The rash begins on the head at the hairline and moves down the trunk to the lower extremities. The rash may last for 5-6 days and turn brownish. Symptoms typically appear 7-12 days after exposure to measles but may take up to 21 days. A person with measles is considered to be contagious 4 days before rash onset (generally one day prior to fever) through the fourth day after rash onset.

If you have any of these symptoms you should stay home away from others and immediately contact Pinal County Public Health at (520) 866-7325. If you need to visit a healthcare facility please notify the facility before your arrival so they can make sure other patients are not potentially exposed.

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(520) 866-7325
Interviews

• Able to speak with 115/127 exposures that were called, the others got letters
• Phone call provided notification of exposure, education about the disease
• Asked about symptoms, vaccination status, attendance at large events and advised to contact Health Dept. if symptoms developed
• Identified seven high risk individuals- unvaccinated, under-vaccinated or symptomatic exposures
High Risk List

- Seven people identified that were monitored daily for 21 days after exposure
  - 2 unvaccinated
  - 3 with one dose of MMR
  - 2 immuno-compromised/chronic health conditions
- Instructed to stay home and avoid exposure to others
- Called every morning and recorded temperature
- Two high risk exposures developed mild symptoms, instructed to stay home and monitored for progression, eventually ruled out
Additional Suspect Cases

Investigated Measles Suspects by Date of Onset:
Pinal County, 2015
## Final Numbers

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<td>Total Investigated</td>
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Interesting Tidbits

• At least 934 measles related phone calls were made and received at the Health Dept. during the outbreak
• Estimated cost to the County during the outbreak was approximately $80,000 counting salary, ERE, vaccine, materials, and supplies
• Vaccination at Pinal County Clinics spiked during the outbreak
MMR Vaccination at Pinal County Clinics

2014-2015 MMR Vaccine Comparison

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Doses of MMR Distributed

2014

2015
Acknowledgments

- Jabette Franco, PCPHSD
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