

Measles and the Terrible, Horrible, No Good, Very Bad Days...Months

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Pinal county public health services district



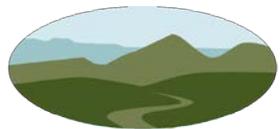
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Measles Background

- **Symptoms:**
 - Cough, red eyes, runny nose
 - Fever
 - Rash
- **1 in 4 cases will be hospitalized (CDC, 2015)**
- **1-2 out of 1,000 cases will be fatal (CDC,2015)**
- **2 doses of vaccine are 97% effective at preventing illness (CDC,2015)**



3 day old Measles Rash (CDC, 1958)



How it Started

- **Notified by Maricopa County**
 - Eloy Detainee hospitalized with Measles like symptoms
- **Hospital in Pinal**
 - Eloy correctional officer in ER with Measles like symptoms
- **Multiple rash illnesses reported by detention facility**
- **Famous last words**
 - “This is definitely not Measles.”



Eloy Background

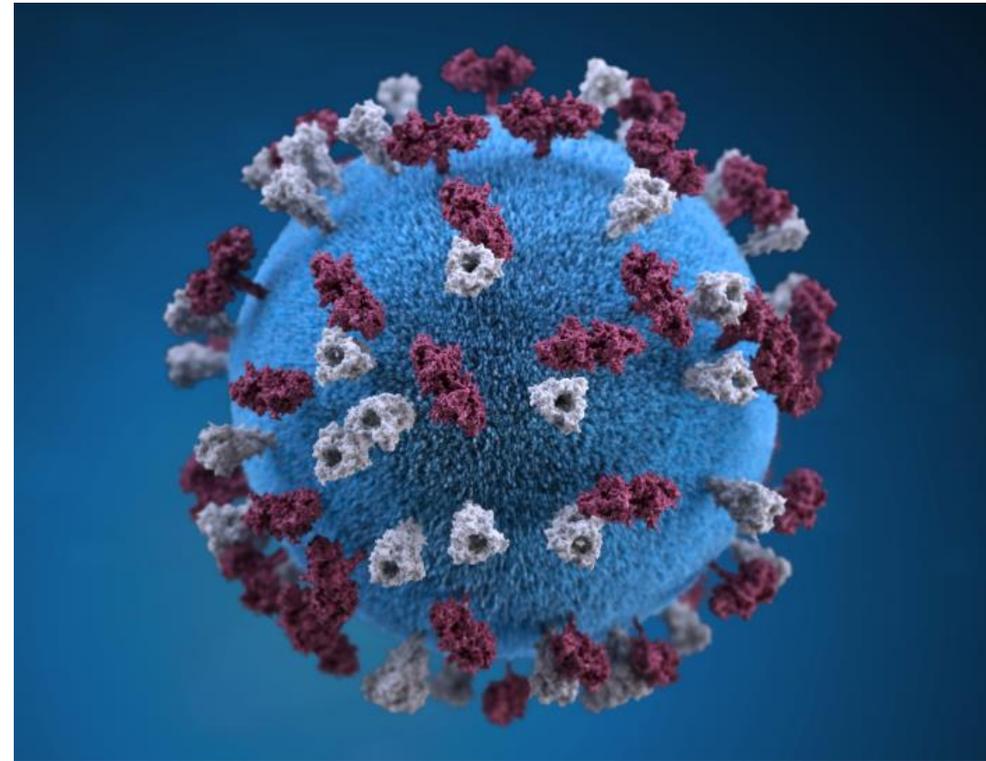
- Detention facility housing illegal immigrants
- Around 1300 detainees
 - 6 Pods with about 200 detainees each
- 539 Employees
 - At least 3 different employers
- Multiple shared spaces





Initial Response

- Identify susceptible population
 - Serology testing
- Case finding
- Isolation of symptomatic people
- Vaccination
- ICC Activated



3D representation of measles virus (CDC, 2016)

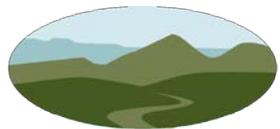


Investigation Components

- Epi-Aid
- Contact investigation
 - Fever watch
- Vaccination
- Lab collection
- **Suspect investigations**



Vial of measles vaccine (Raedle, 2014)



Contact Investigation

- Interviewed all cases
- Develop exposure list
- Contact known exposed people
- Contact facilities with exposures
- Added high risk to Fever Watch List

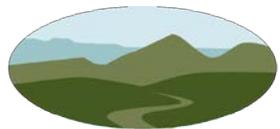


**Think it might be
Measles?**

Measles is in our County!

**If you have ANY of these symptoms:
Cough, Runny Nose, Red eyes, or Fever OR
RASH!**

**PUT A MASK ON and tell the
receptionist right away.**



Public Exposures

- 277 Total known exposures
 - 204 contacted by phone
 - 70 high risk
- Potentially thousands exposed in Pinal and Maricopa Counties
 - Grocery Stores
 - Walmart
 - Gas Stations
 - Church
 - Hospitals
 - Urgent Cares
 - Primary Care Physicians
 - Sams Club
 - Casino
 - Movie Theater
 - School
 - Auto Shops
 - Pharmacies
 - Car Dealership
 - Car Rental Locations
 - Department Stores

ALL ABOUT MEASLES for Parents, Families, and the Community



MEASLES SYMPTOMS

Measles disease starts with a high fever followed by the “3 C’s” that include cough, runny nose (coryza), and/or red, watery eyes (conjunctivitis). A red, blotchy rash begins 2-4 days after onset. The rash begins at the hairline and spreads down to the face, body, and then to the hands and feet over the next 3 days. The rash then fades in the same order it appeared. The rash lasts 5-6 days.

Up to a third of measles cases become severe and may progress to pneumonia, seizures, encephalitis, brain damage, and death.



MEASLES PREVENTION:

The best way to prevent measles is through two doses of MMR (measles-mumps-rubella) vaccine given according to the recommended schedule:

- First dose of MMR—given on or after the first birthday
- Second dose of MMR—recommended to be given at age 4-6 years, may be given as soon as 1 month after the first dose.

Since MMR vaccine is not routinely given to children less than one year of age, it is especially important for family members of young children to make sure that everyone in their household is up to date on their vaccinations to protect the family from illness. Please contact the Pinal County Public Health Services District for further information about MMR vaccine.

HOW IS MEASLES SPREAD?

Measles is very contagious and can be spread when an infected person coughs or sneezes. The virus can live in the air and on surfaces for at least two hours. A person with measles is infectious four days before the start of the rash until 4 days after the rash begins.

WHAT TO DO IF YOU THINK YOU HAVE MEASLES

If you think you may have measles, **CALL YOUR HEALTH CARE PROVIDER FIRST** for instructions on what to do. Calling ahead will avoid exposing others. It is very important to stay home and away from others when sick.

MEASLES TREATMENT

There is no specific treatment for measles. Measures can be taken to possibly prevent measles in persons who have been exposed.

Questions?

Contact the Pinal County
Public Health Services
District
866-960-0633
Or
520-866-6300
www.pinalcountyz.gov

*Poster provided to
facilities

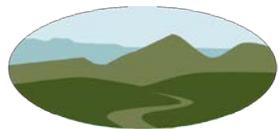


Current Numbers

Case Definition: Any resident of Pinal County or person linked to Eloy detention facility who was lab positive and had a febrile rash between May 1, 2016 and August 8, 2016.

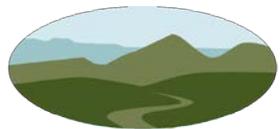
Pinal County	Detainees	Employees	Community	Total
Confirmed	12	9	0	21
Suspects	35	0	4	39
Rule Outs	30	11	32	73

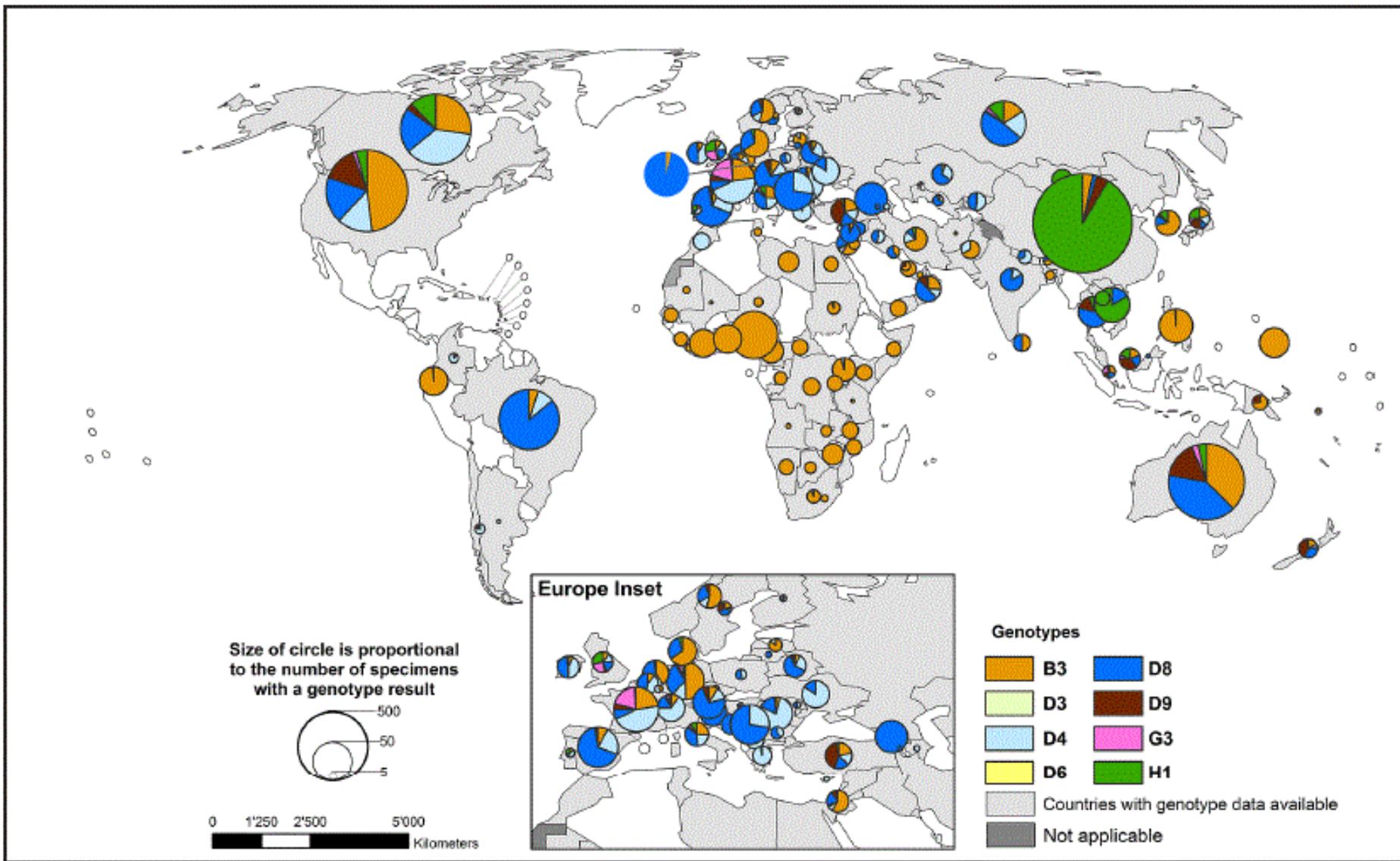
- Arizona is reporting 22 confirmed cases
 - The 1 additional case is a resident of Maricopa County
 - All cases associated with Eloy Detention Center



Serology Gold Mine

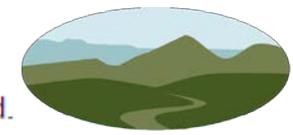
- Single Pod tested
 - 205 detainees
- 186 or 91% IgG positive
- 45 IgM positive or indeterminate at private lab
- CDC Confirmed 25 IgM positive
- Who do we count as a case?



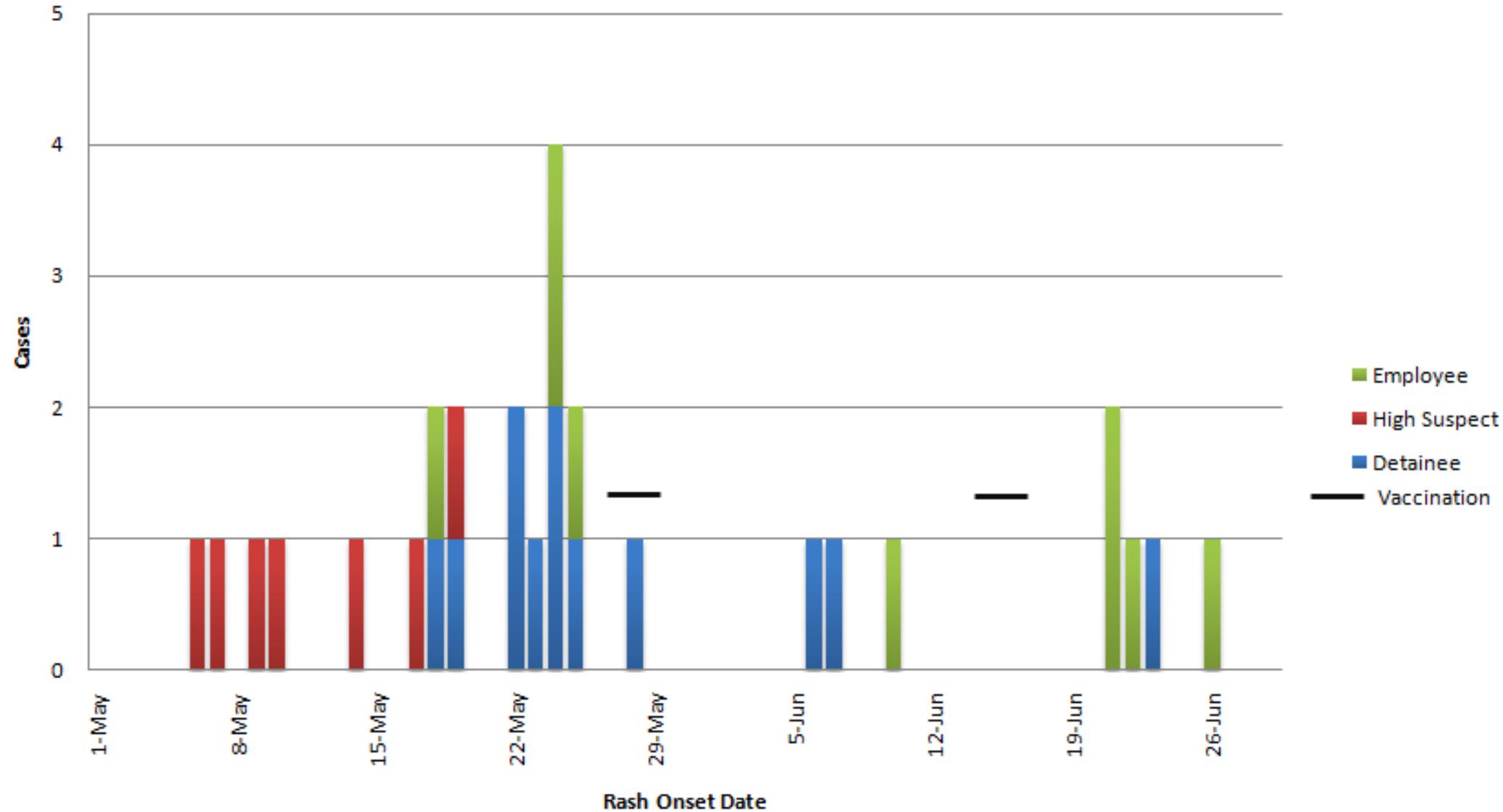


Genetic Type: D8

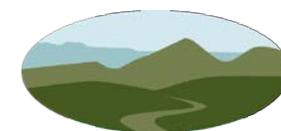
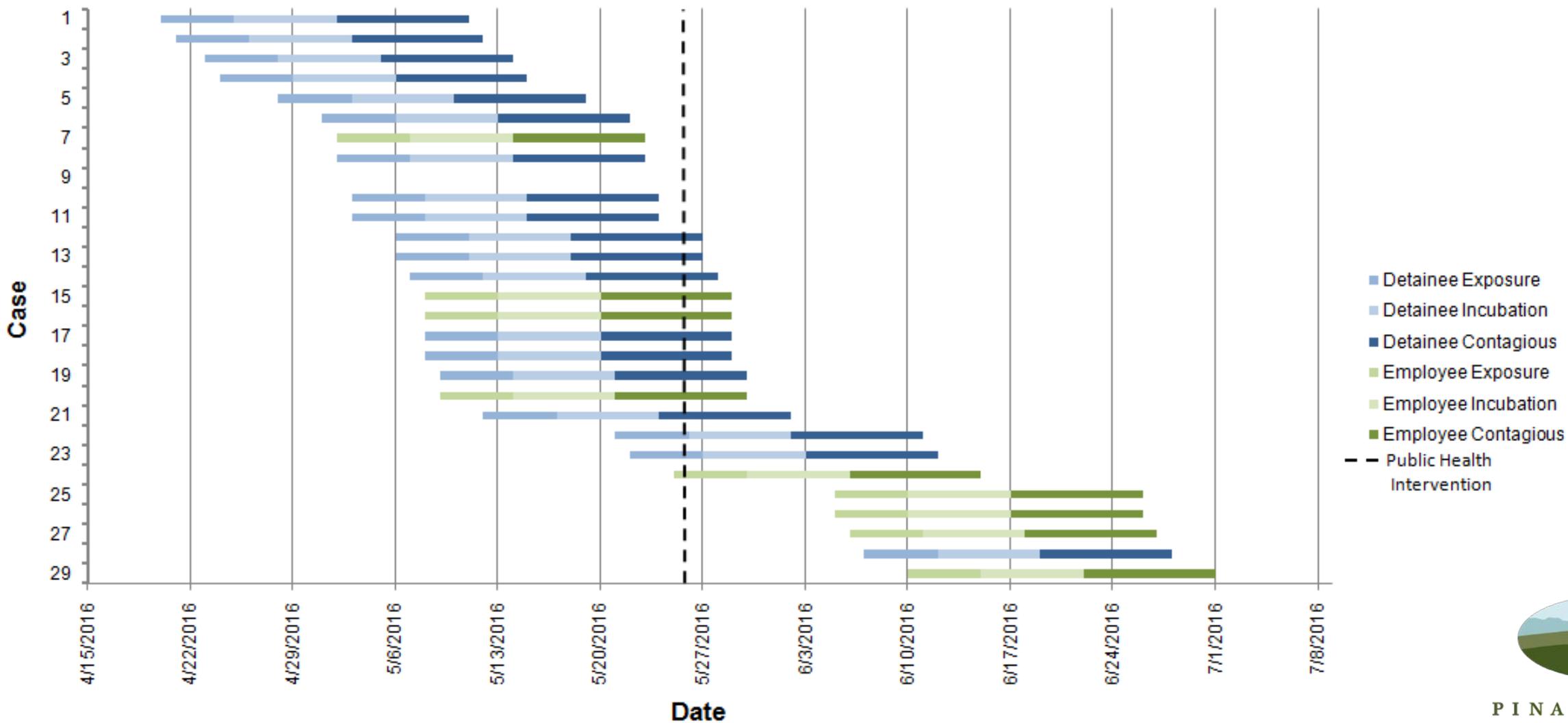
* The size of the pie chart is proportional to the number of sequences reported by the country during 2010–2015, except for China, where the size is reduced tenfold.



Epi Curve Base on Rash Onset



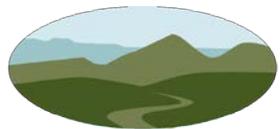
Incubation and Contagious Periods for Confirmed Cases by Category



Epi Results

- Age Range: 19-49
- 16 Males or 76%

Symptoms	Total With Symptoms	Percent with Symptoms
Cough	10	48
Coryza	7	33
Conjunctivitis	8	38
Rash	21	100
Fever	18	86
Atypical Rash	3	14
Hospital Admits	3	14



Next Steps

- Finalize the data
- Outbreak can officially close 8/8/2016
 - (If no new cases)
- Look into interesting aspects
 - IgG positive cases
 - IgM positives at CDC
 - Atypical presentations



(Jackson , 2016)



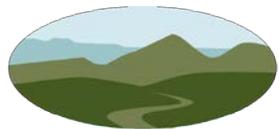
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Complications and Lessons Learned

- Large number of stakeholders
 - Multiple policies
 - Different backgrounds/goals
- Implementation of recommendations
- Communication
- Vaccine break through



(Losito, 2013)



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Lessons Learned

- Atypical presentation can occur
- Effectiveness of increasing herd immunity
- Vaccinations may muddy test results
 - Still worth it
- Outbreak investigations are messy
 - There are successes and failures with each investigation

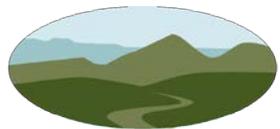


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Acknowledgements- Thank You!

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