Measles and Measles Risk in New Mexico

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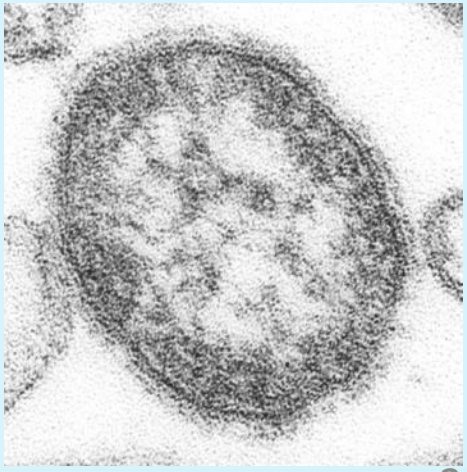
Objectives

- Describe measles
- Describe measles risk in the U.S.
- Describe measles risk in New Mexico
- Describe how DOH investigates and controls measles
- Provide recommendations

What is Measles

- Measles is a respiratory disease caused by a virus.
- Measles is one of the most contagious diseases.
- Millions of people worldwide get measles each year, and thousands die from the disease.



Measles Symptoms

- High fever
- Cough
- Runny nose
- Red, watery eyes
- Tiny white spots inside the mouth
- Rash from head to toe

- Three to five days after symptoms begin, a rash breaks out.
  - When the rash appears, a person's fever may spike to more than 104° Fahrenheit.
  - After a few days, the fever subsides and the rash fades.

Measles Can Be Serious

- **Children <5 years old and adults >20 years old are more likely to suffer from measles complications.**
- **Common complications**
  - Ear infections
  - Diarrhea
- **Severe complications**
  - Pneumonia
  - Encephalitis
- **Long-term complications**
  - Subacutesclerosingpanencephalitis (SSPE)
- **Can cause death**

Measles Spreads Easily

- Measles is so contagious that if one person has it, up to 90% of the people close to that person who are not protected will also become infected.

- Measles spreads when infected people cough or sneeze.

- Infected people can spread measles 4 days before they get the rash through 4 days after it appears.

Vaccination is the Best Protection Against Measles

- Two doses of MMR (measles-mumps-rubella) vaccine are 97% effective at protecting against measles. One dose is ~93% effective

- MMR vaccine protects you and people who are unable to be vaccinated because they are too young or have weakened immune systems.

U.S. Measles Burden: Before 1963 Vaccine Development

- **Each year, measles caused an estimated 3 to 4 million cases**
  - Close to 500,000 cases were reported annually to CDC, resulting in:
    - 48,000 hospitalizations
    - 1,000 cases with encephalitis (brain swelling)
    - 400 to 500 deaths

*Source: www.cdc.gov/measles/about/history.html

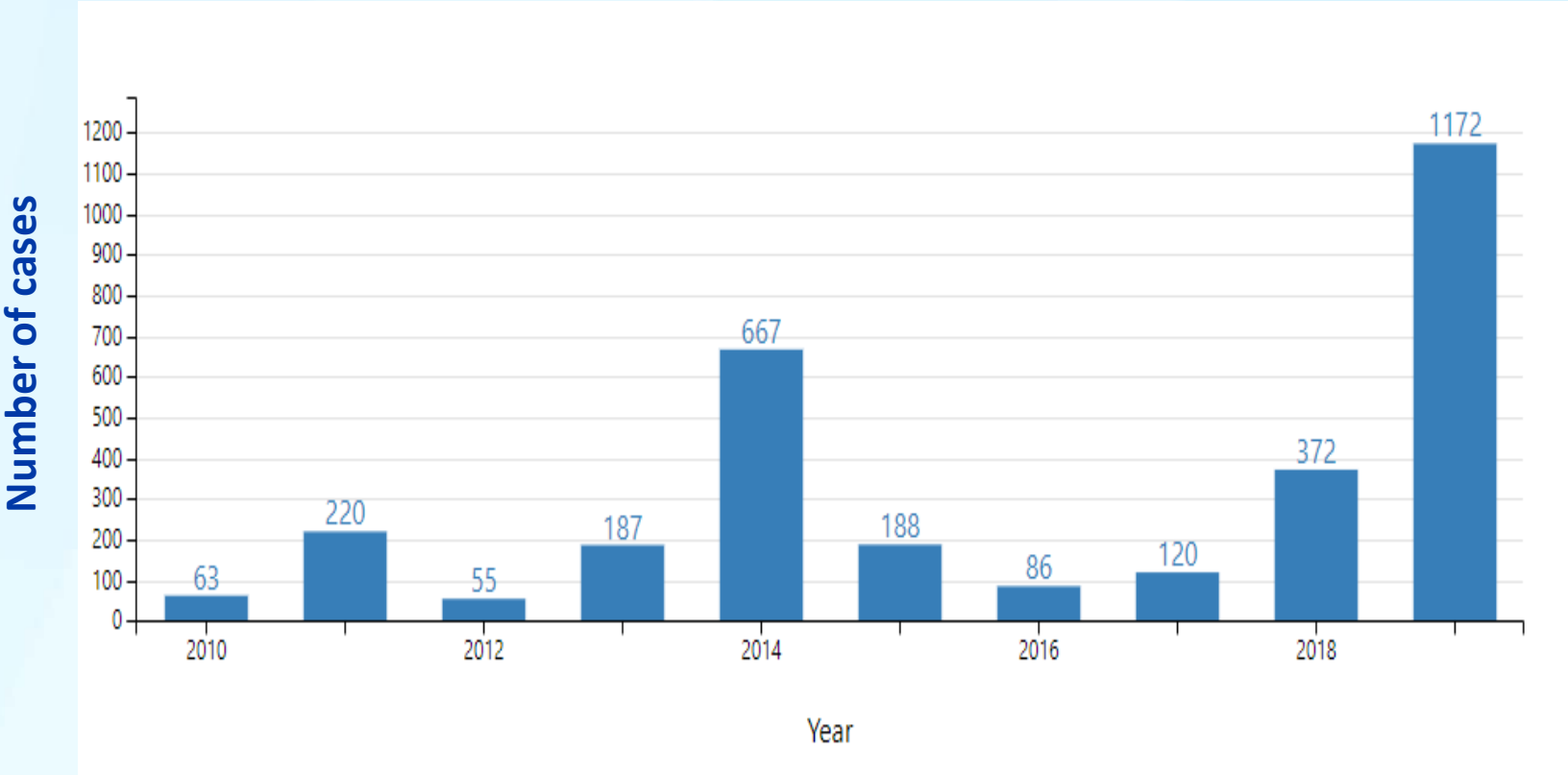
Rates of Measles Severity and Complications in the U.S.

Hospitalization	1 out of 4 cases
Encephalitis (inflammation of the brain)	1 per 1,000 cases
Death	1-2 per 1,000 cases

Complications are more common in children <5 years and adults >20 years old.

*Source: www.cdc.gov/measles/about/complications.html

Measles cases, United States, 2010-2019

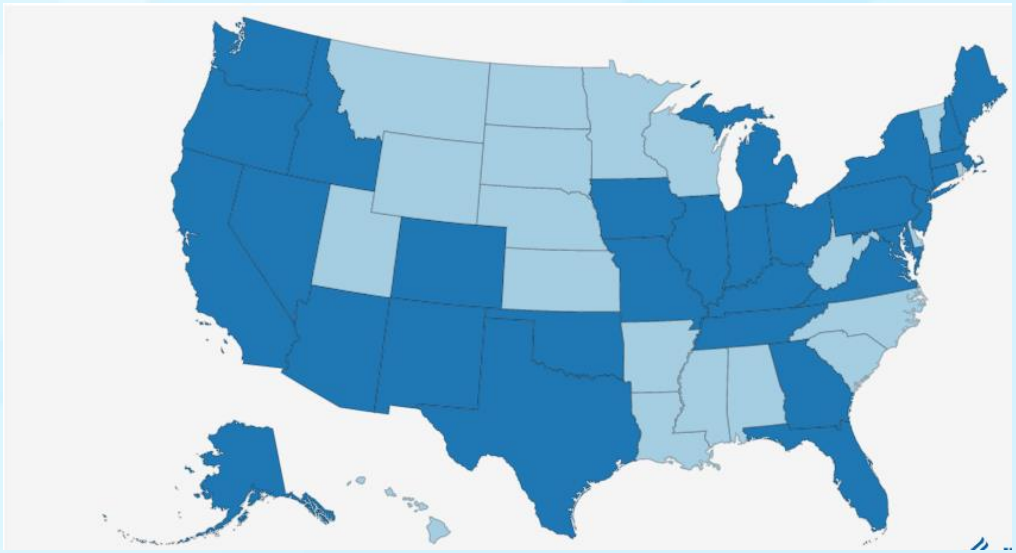


*Source: https://www.cdc.gov/measles/cases-outbreaks.html Accessed August 8, 2019

Measles in the United States, 2019

- **1,172 cases reported from 30 states**
  - 124 (11%) of the patients were hospitalized
    - 64 reported having complications
  - 75% were outbreak-related
- **Vaccination status**
  - **70% unvaccinated**
  - **19% unknown**
  - **11% vaccinated**

5 ongoing outbreaks in NY, NYC, WA, CA, TX



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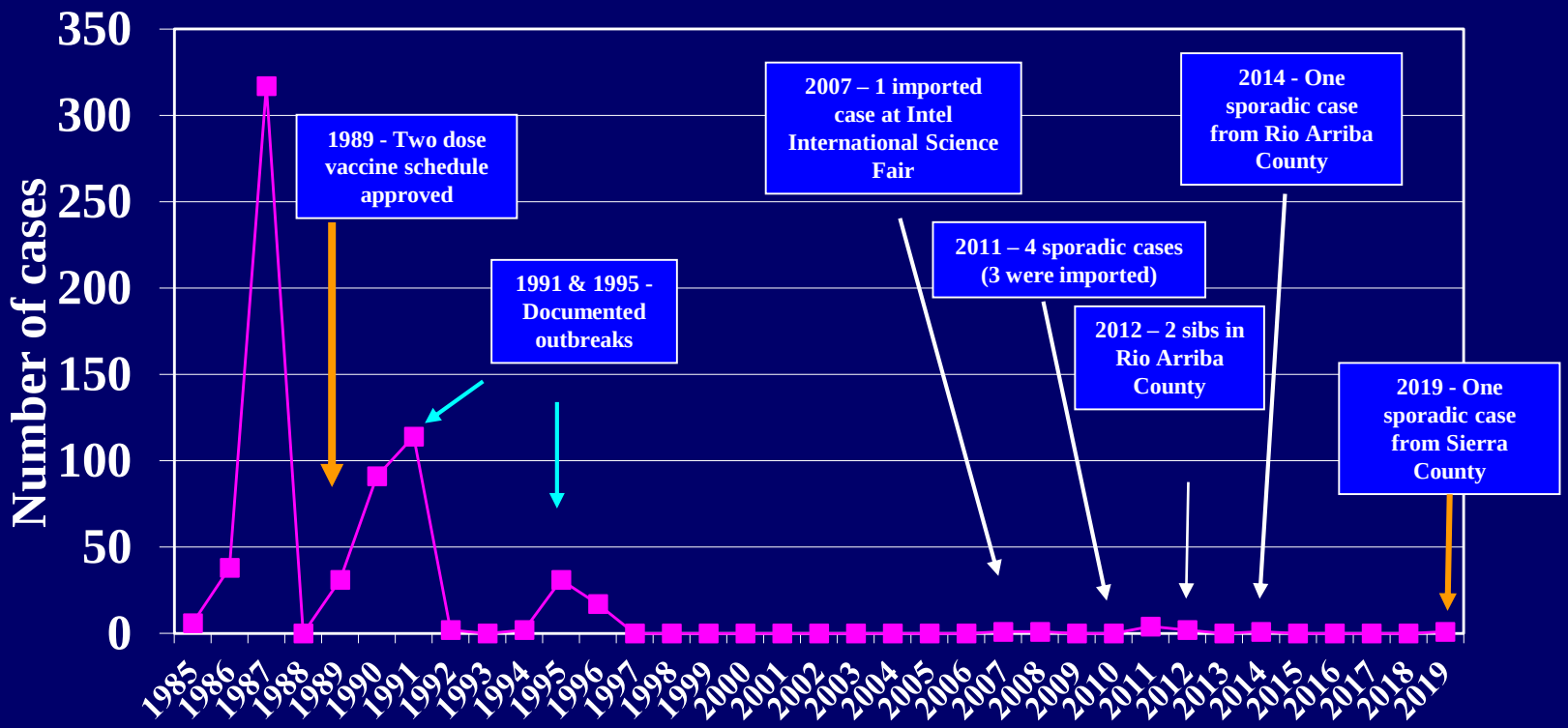
International Importations of Measles in 2019 (January-July 18, 2019)

- 70 (6%) cases were internationally imported
  - 47 (67%) were U.S. residents

- Top 3 source countries
  - Philippines (15 importations)
  - Ukraine (12 importations)
  - Israel (9 importations)

Source: CDC National Center for Immunization & Respiratory Diseases, CSTE VPD Subcommittee Call, "2019 Measles Update" (July 23, 2019)

Measles in New Mexico, 1985-2019



Includes confirmed and probable cases, Source: NMDOH Infectious Disease Epidemiology Bureau.

El Paso Measles Outbreak

- July 10th the El Paso Department of Health confirmed 2 measles cases - a 47 year-old female and a 3 year-old male not in the same family, but may have had a common exposure
- To date El Paso has had 6 laboratory confirmed measles cases from at least two generations of spread without direct links between patients
- The source patient for the outbreak has not been identified
- Two suspected measles patients from New Mexico with exposures in El Paso have been investigated by NMDOH and ruled out

Approach to Investigating a Measles Case

- NMDOH on-call epidemiologist (24/7/365 hotline) is called or a positive measles laboratory result is received electronically or otherwise
- The case is investigated immediately to confirm the diagnosis
  - Medical records are obtained and clinical data are reviewed
  - Travel history and contact with those with measles are reviewed
- If NMDOH suspects measles, the epidemiologist coordinates with the hospital/clinic for specimen collection and transportation to the State Laboratory (SLD) for confirmatory testing

Approach to Investigating a Measles Case

- For cases suspicious for measles while confirmatory laboratory testing is in process, NMDOH begins collecting information regarding patient contacts.
  - Measles patients are contagious 4 days before to 4 days after the appearance of the rash

- All contacts during this time period are tracked
  - household contacts
  - school/daycare contacts
  - work contacts
  - healthcare contacts
    - including other patients seen at the same time and up to 2 hours after the measles patient leaves the healthcare facility

Approach to Measles Control after Case is Confirmed

- A Health Alert Network advisory is issued to alert health care providers in the region and request increased awareness and testing of individuals suspected of having measles.
- A press release is issued to notify the public regarding measles in the area
- Active tracking of possible cases occurs

Approach to Measles Control after Case is Confirmed

- Prophylaxis to prevent further spread of measles begins once a case is confirmed
  - Within 72 hours of exposure, vaccination or immunoglobulin therapy are offered to susceptible contacts
  - If more than 72 hours since exposure have passed, susceptible individuals are excluded from work/school until 21 days after their last exposure

- All individuals identified are followed for symptoms for 21 days. If symptoms consistent with measles develop, arrangements are made to have the individual evaluated in a secluded room with minimal exposure to others.

Conclusions

- The U.S. increasingly has measles importations which lead to outbreaks which are harder to control
- New Mexico has had occasional measles cases since the 1990s
- Because the risk of measles in increasing outside of NM, the risk of measles in NM is increasing
- The ability to investigate, test for and control measles is a critical function of a health department
- Optimal vaccination of the school age population is critical since schools are relatively easy places to transmit disease

Recommendations

- Assure measles cases are investigated urgently
- Assure State Laboratory at DOH receives adequate resources and staffing
- Assure all children attending school or daycare are up-to-date for measles vaccination or have an exemption