

# Important points about measles

17th Annual Michigan  
Communicable Disease Conference  
May 4, 2017

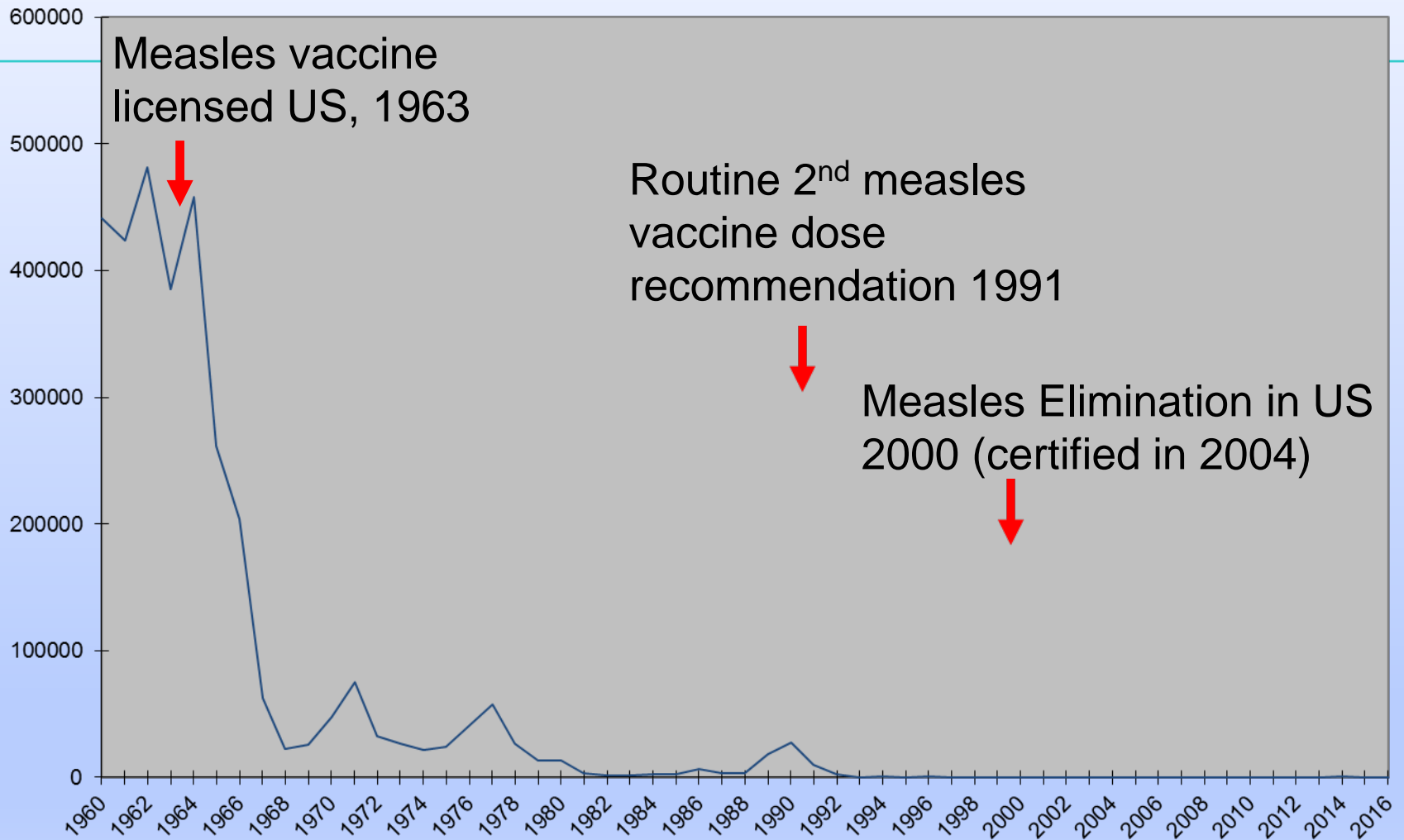
Joel Blostein, Immunization Division  
MDHHS

# Measles

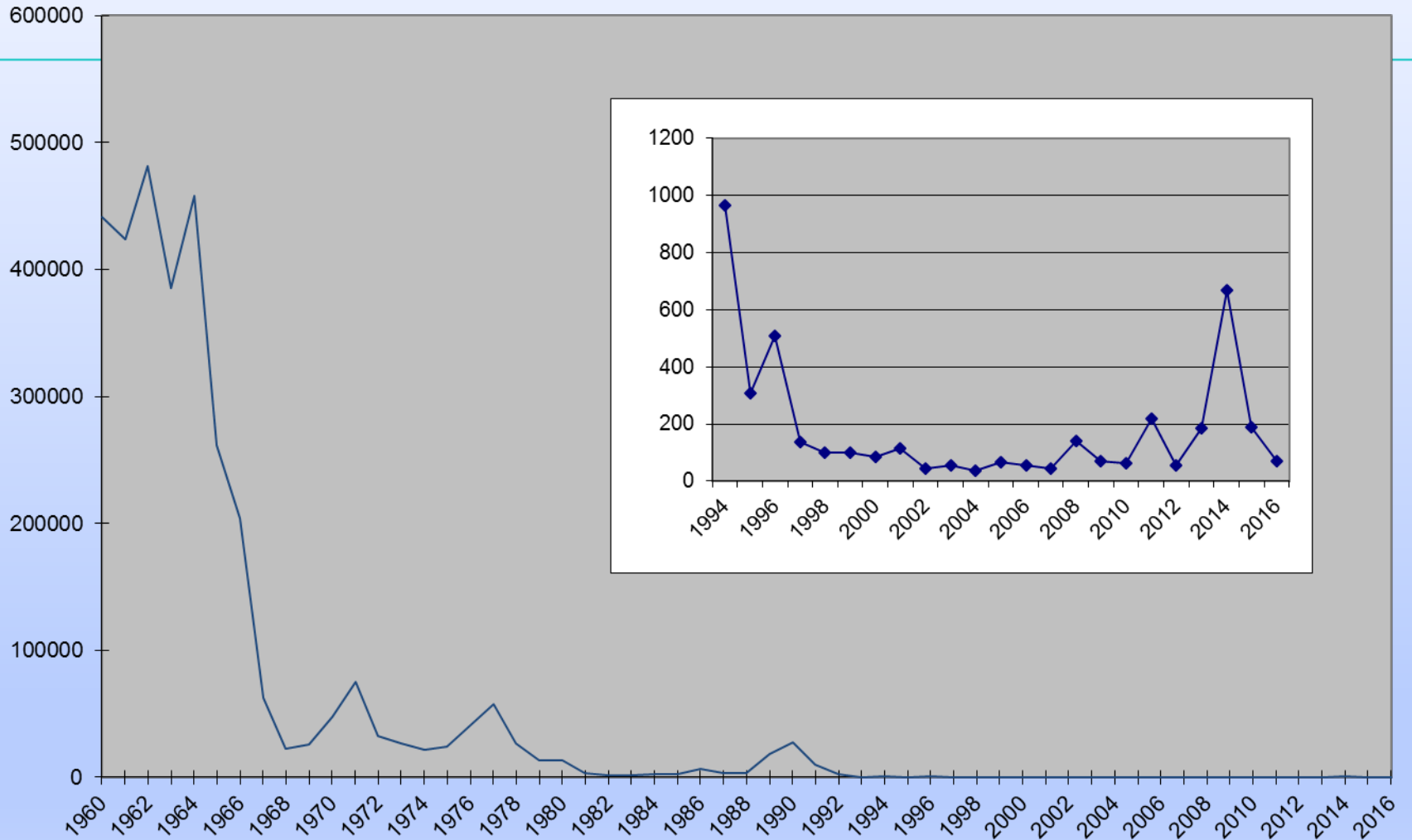
- Highly contagious viral infection
- Eliminated now in U.S.
- In pre-vaccine era U.S. (before 1963):
  - 3-4 million cases/year
  - 48,000 hospitalizations
  - 450-500 deaths;
- Eliminated but not Eradicated
  - Every year cases show up in US
    - 2010: 63                      2013: 187                      2016: 70\*
    - 2011: 220                      2014: 667
    - 2012: 55                      2015: 188

\*provisional data

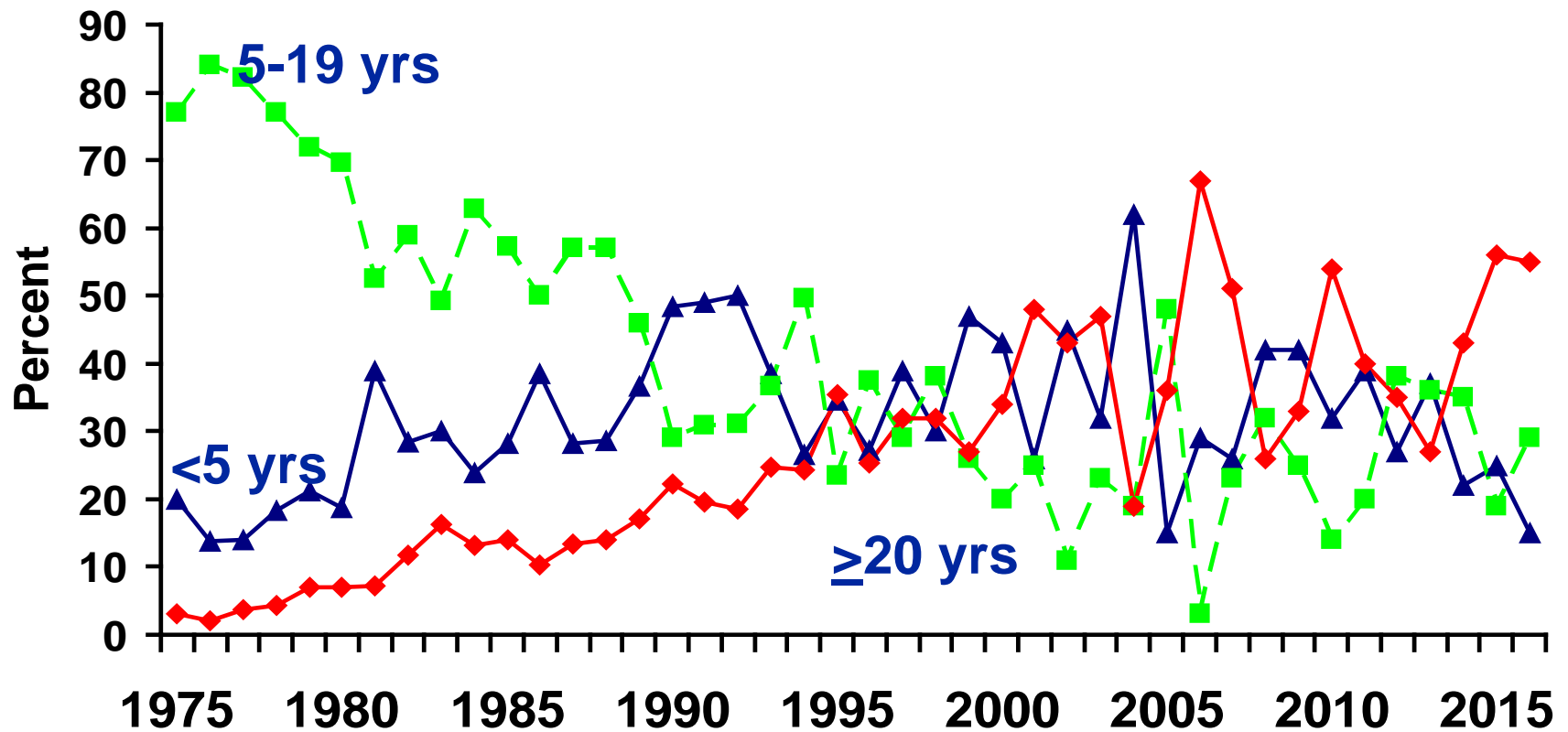
## Reported Cases of Measles, United States



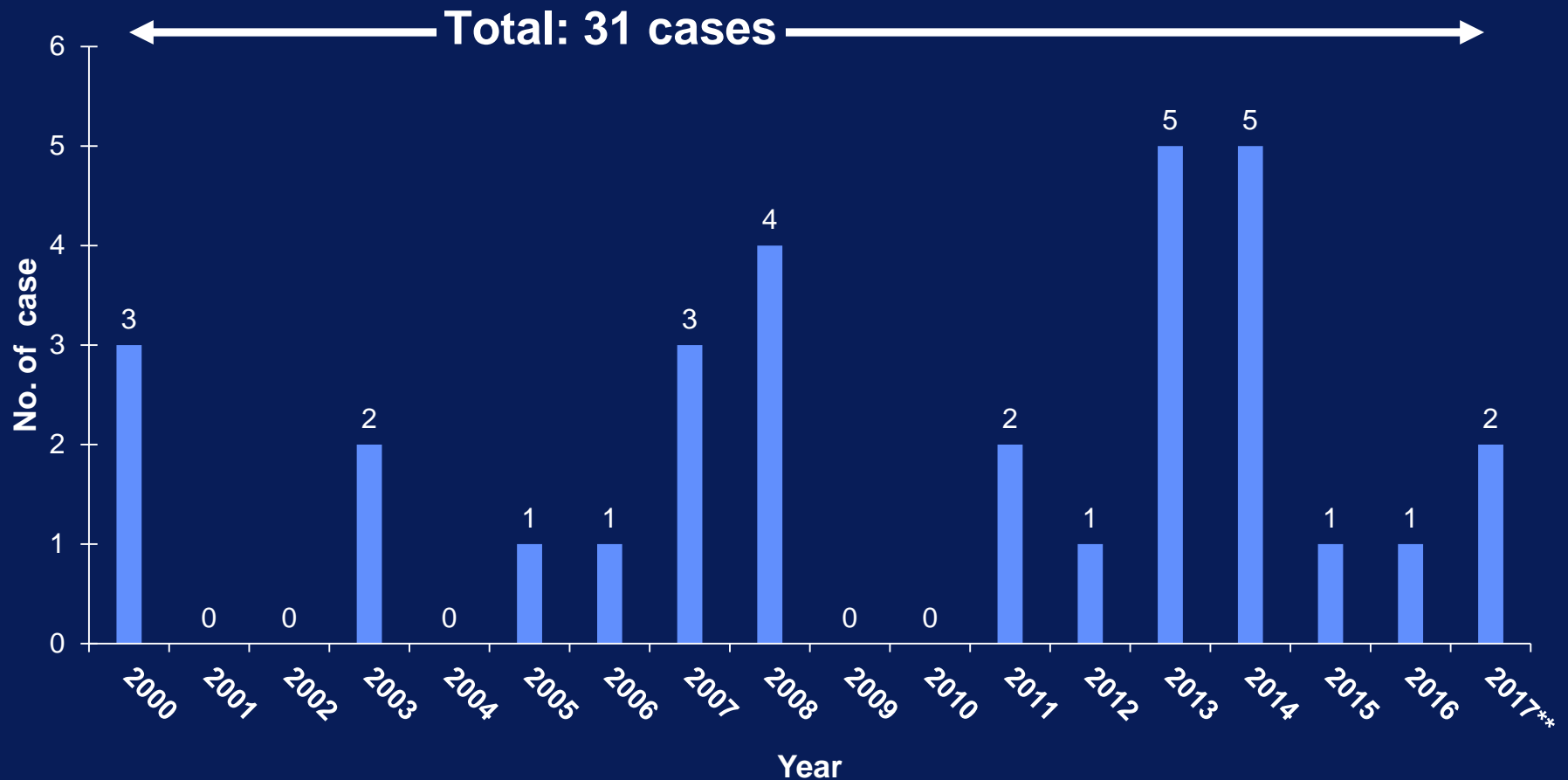
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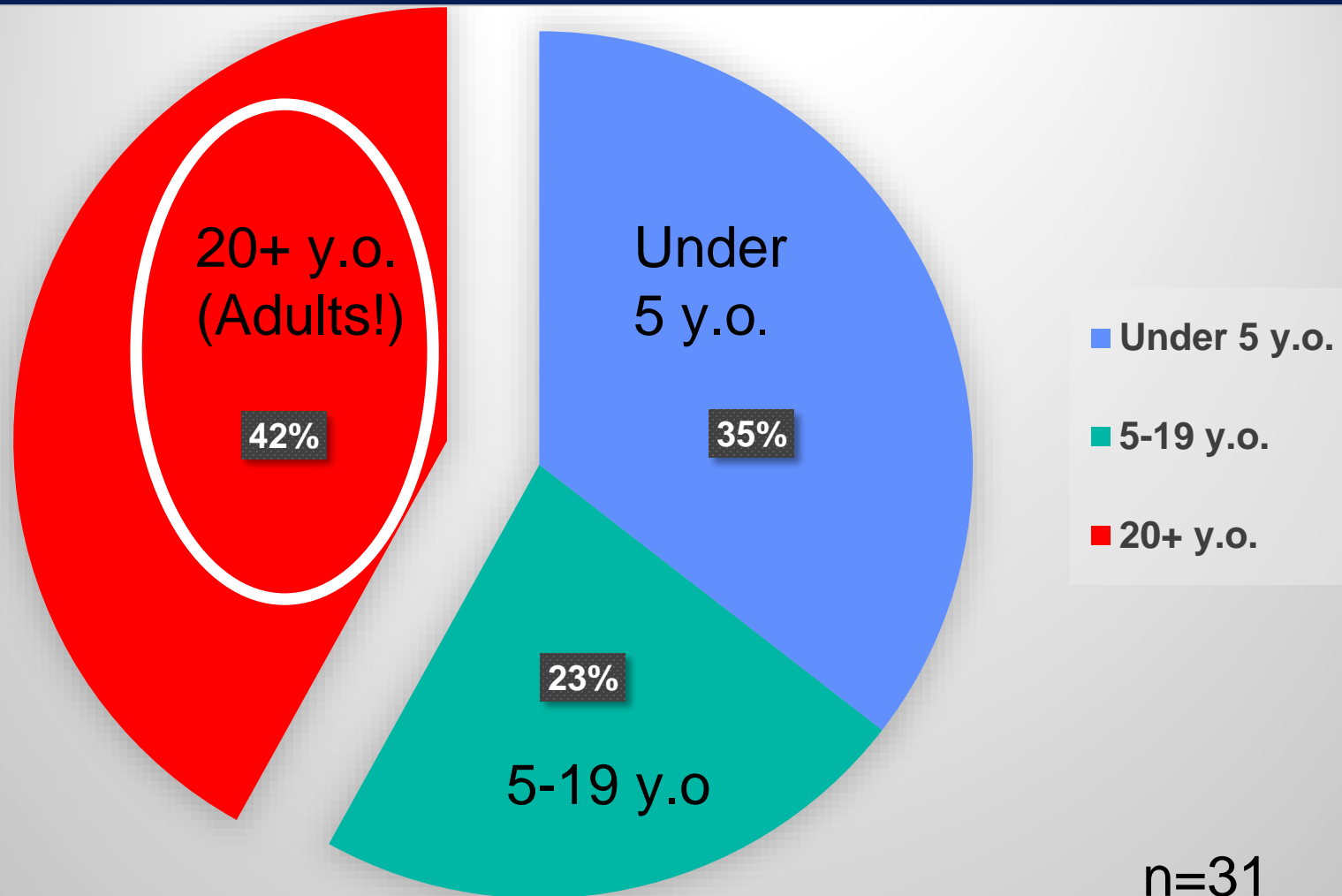
# Age Distribution of Reported Measles, US, 1975 - 2015



# Measles, number of cases by year Michigan 2000-2017



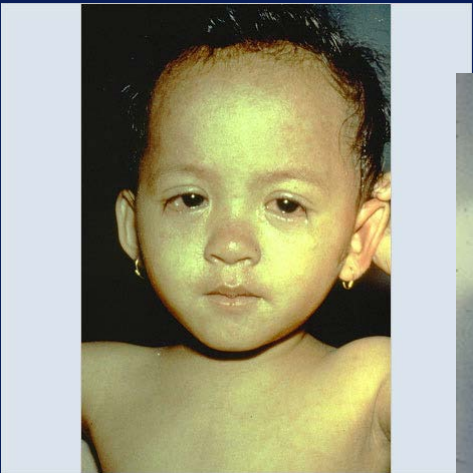
# Measles cases by age group, Michigan 2000-2017 (31 cases)



# Recent measles activity

- U.S. 2017 as of 4/22/2017: 61 cases, 10 states
- Includes 2 Michigan cases
  - 13 m.o., unvaccinated, onset during return travel to US from extended trip to Bangladesh
  - 60 y.o. – exposed to above case on commercial aircraft
- Index 13 month old case should have been vaccinated prior to international travel (vaccine indicated as young as 6 months of age for international travel)





For reproduction of slides, acknowledgement of the editors and their clinical departments is appreciated.

# Measles - key investigation points

- Have high index of suspicion in cases of febrile ( $>101^{\circ}\text{F}$  /  $38.3^{\circ}\text{C}$ ) rash illness with 1 or more of “3 C’s” (cough, coryza, conjunctivitis)
  - Photos of rash helpful in establishing likelihood of measles
- Avoid exposure, mask patient, isolate neg. pressure
- Query patient about travel, exposures
- Obtain serum, throat swab, (& consider urine)
  - Throat swab: use synthetic swab, place in viral trans. media
- Contact LHD > MDHHS

# Lab confirmation is important

- *Collection of virologic and serologic specimens is recommended for every case.*
- Laboratory confirmation is essential for all outbreaks and all sporadic measles cases.
- Methods for lab confirmation:
  - Serology - measles IgM
  - Virus detection – measles RNA: real time rtPCR
- Both should be done
- Collect serum & throat swab at 1<sup>st</sup> opportunity
- Caveat: may take 72 h after rash to detect IgM; may need to repeat if negative

# MDHHS Key Facts about Measles - available at [www.Michigan.gov/immunize](http://www.Michigan.gov/immunize)

MDHHS – Measles Key Facts  
March 28, 2017

## Key Facts about Measles



Images courtesy of Public Health Image Library and Department of Paediatrics and Adolescent Medicine, Princess Margaret Hospital, Hong Kong

Although measles has been eliminated from the United States, it remains endemic and poorly controlled elsewhere in the world. Cases are imported every year, sometimes resulting in further spread and outbreaks domestically. For most of the past 15 years there was an average of about 60 cases annually in this country. But in recent years there have been more, which is of great concern to public health authorities. In 2014, there were 644 cases in the U.S. In 2015 the U.S. experienced a large, multi-state measles outbreak linked to an amusement park in California. In 2016, 70 people from 16 states were reported to have measles.

## Measles: eliminated in U.S., *but*

- Still endemic in most of world
- Annually imported into US
- 2014 - more cases than any year since 1996
- **Measles prevention requires high herd immunity**
  - > 95% immunity to prevent outbreaks**
- Vaccine exemptions/refusals are cause for concern



## Travel Health Notices

### Watch Level 1, Practice Usual Precautions

**New** [Measles in Belgium](#)

April 17, 2017

266 cases  
(as of 3/31)

**New** [Measles in Italy](#)

April 17, 2017

1333 cases  
(as of 4/4)

**New** [Measles in Germany](#)

April 17, 2017

272 cases  
(as of 3/12)

# SSPE – *subacute sclerosing panencephalitis* – a fatal complication of measles infection

- Fatal degenerative brain disease; complication of measles infection
- On average occurs 8 years after infection
- Previous estimates: ~ 1 in 100,000 measles cases
- CA researchers presented at ID week, Oct. 2016
- Reviewed CA measles cases 1998-2016
- **Findings: much higher risk of SSPE than previously thought:**
  - 1 in 1367 for those who had measles when < 5 y.o.
  - 1 in 600 for those who had measles when < 12 m.o.

# Americas Region Declared Free of Endemic Measles – *Sept. 2016*



Pan American  
Health  
Organization



World Health  
Organization

REGIONAL OFFICE FOR THE Americas

<https://www.youtube.com/watch?v=fw6kUlk36co>

## Region of the Americas is declared free of measles

Washington, D.C., 27 September 2016 (PAHO/WHO) – The Region of the Americas is the first in the world to have eliminated measles, a viral disease that can cause severe health problems, including pneumonia, brain swelling and even death. This achievement culminates a 22-year effort involving mass vaccination against measles, mumps and rubella throughout the Americas.