

Measles 2015: Situational Update, Clinical Guidance, and Vaccination Recommendations

**Clinician Outreach and
Communication Activity (COCA)**

Webinar

February 19, 2015

Objectives

At the conclusion of this session, the participant will be able to:

- ❑ Describe the current measles situation in the United States**
- ❑ Discuss the clinical presentation of measles and the clinical guidelines for patient assessment and management**
- ❑ Identify CDC vaccination recommendations**
- ❑ Outline CDC measles resources available for clinicians**

TODAY'S PRESENTER



Jane Seward, MBBS, MPH

Deputy Director

Division of Viral Diseases

National Center for Immunization and Respiratory Diseases

Centers for Disease Control and Prevention

Measles 2015: Situational Update, Clinical Guidance, and Vaccination Recommendations

Jane Seward, MMBS, MPH

Deputy Director, Division of Viral Diseases
National Center for Immunization and Respiratory Diseases
Centers for Disease Control and Prevention (CDC)

COCA Call
February 19, 2015

Measles and Transmission

- ❑ **Febrile rash illness caused by measles virus**
- ❑ **Transmitted via respiratory droplets and aerosol**
 - ❑ spread by coughing and sneezing, close personal contact or direct contact with infected nasal or throat secretions
- ❑ **Contagious from 4 days before to 4 days after rash onset**
- ❑ **$R_0 = 12-16$ with secondary attack rates in susceptible household contacts ~ 90%**

Measles

❑ Prodrome (2-4 days)

- ❑ Fever (up to 105°F)
- ❑ Cough, Coryza, and/or Conjunctivitis (the three “C’s”)
- ❑ Enanthem (Koplik spots)

❑ Rash ~14 days after exposure (range 7-21 days)

- ❑ Maculopapular
- ❑ Spreads from head to trunk to extremities
- ❑ May become confluent
- ❑ Lasts 5-6 days and fades in order of appearance



Measles Complications

More common in children < 5 years and adults

Complication	Counts
Diarrhea	8%
Otitis media	7-9%
Pneumonia	1-6%
Encephalitis	1 per 1,000 cases
Death	1 -3 per 1,000 cases
Subacute Sclerosing Panencephalitis (SSPE)	1 per 100,000 cases 7-10 years after measles

Measles Annual Disease Burden U.S. Decade Prior to Vaccine (1950s)

- ❑ 3-4 million estimated and ~ 500,000 reported cases**
- ❑ 48,000 hospitalizations**
- ❑ 4,000 encephalitis cases**
- ❑ 450-500 deaths**

Global Burden of Measles

❑ Deaths

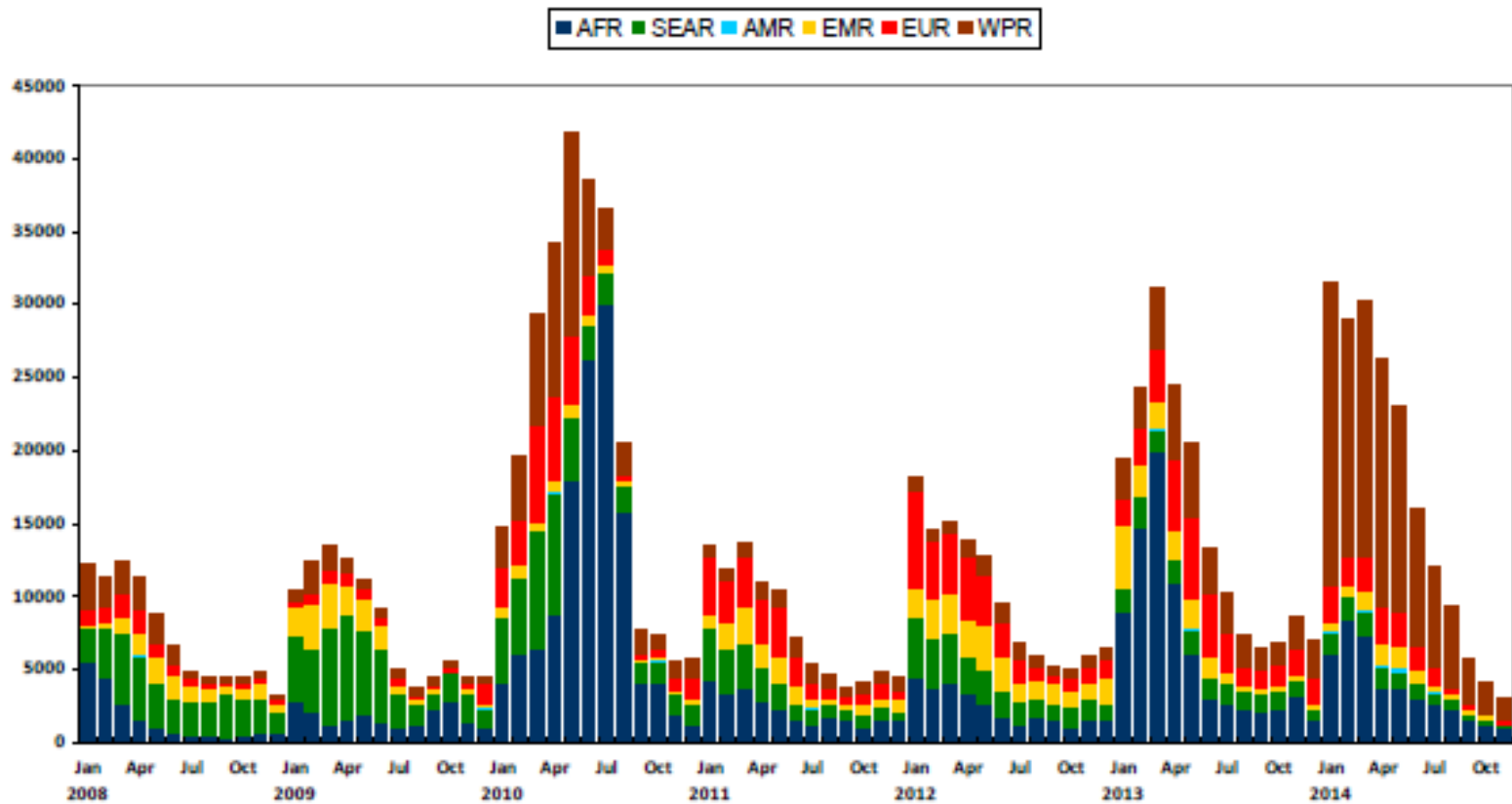
- ❑ Estimated 2.6 million deaths/year in 1980
- ❑ 75% decrease in estimated deaths from 2000 to 2013
 - ❑ 145,700 deaths in 2013 (~400 deaths/day)
- ❑ Remains a leading cause of vaccine preventable deaths in children < 5 years old

❑ Complications with sequelae include blindness

❑ Cases

- ❑ Estimated 20 million per year
- ❑ 72% decrease in reported measles incidence from 2000 to 2013

Measles Case Distribution by Month and WHO Regions, 2008-2014



Measles Outbreak, France, 2008-2011 (n>20,000, 10 deaths)

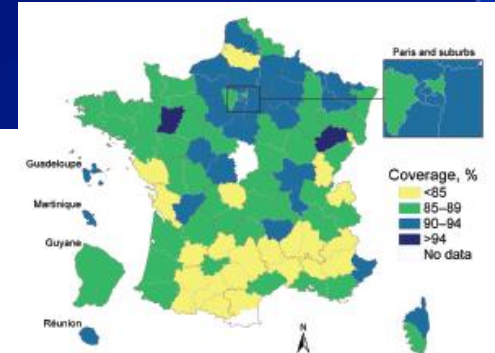
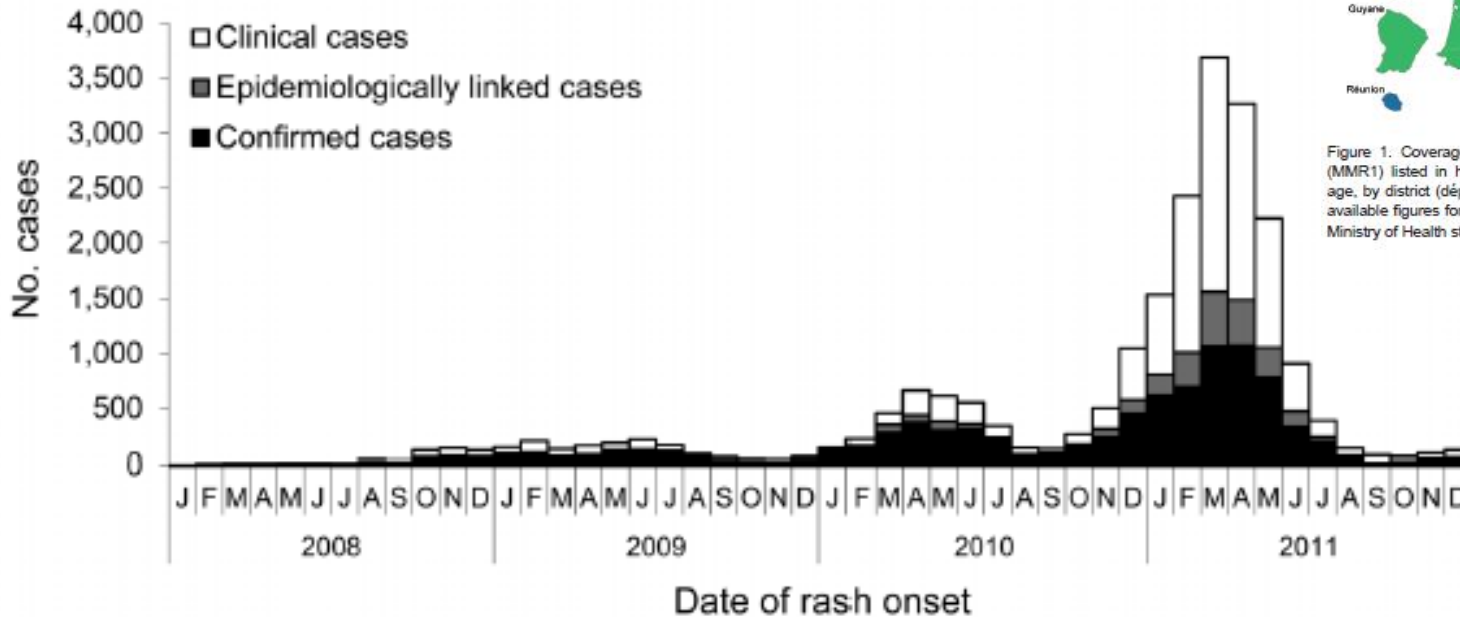
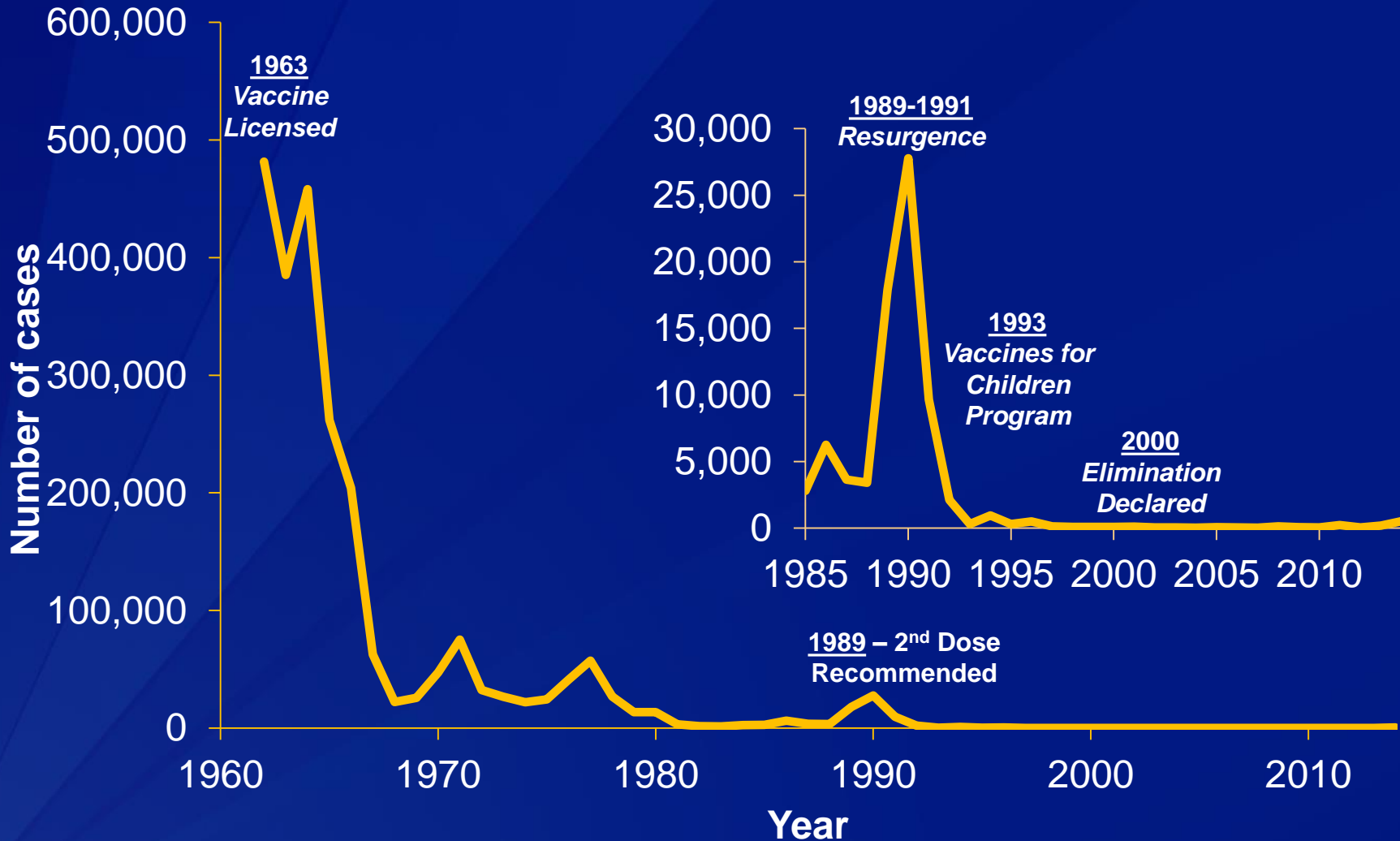


Figure 1. Coverage of initial measles-mumps-rubella vaccination (MMR1) listed in health certificates for children at 24 months of age, by district (département), France, 2003–2008. Data are latest available figures for the period. Sources: Institut de Veille Sanitaire, Ministry of Health statistical department.

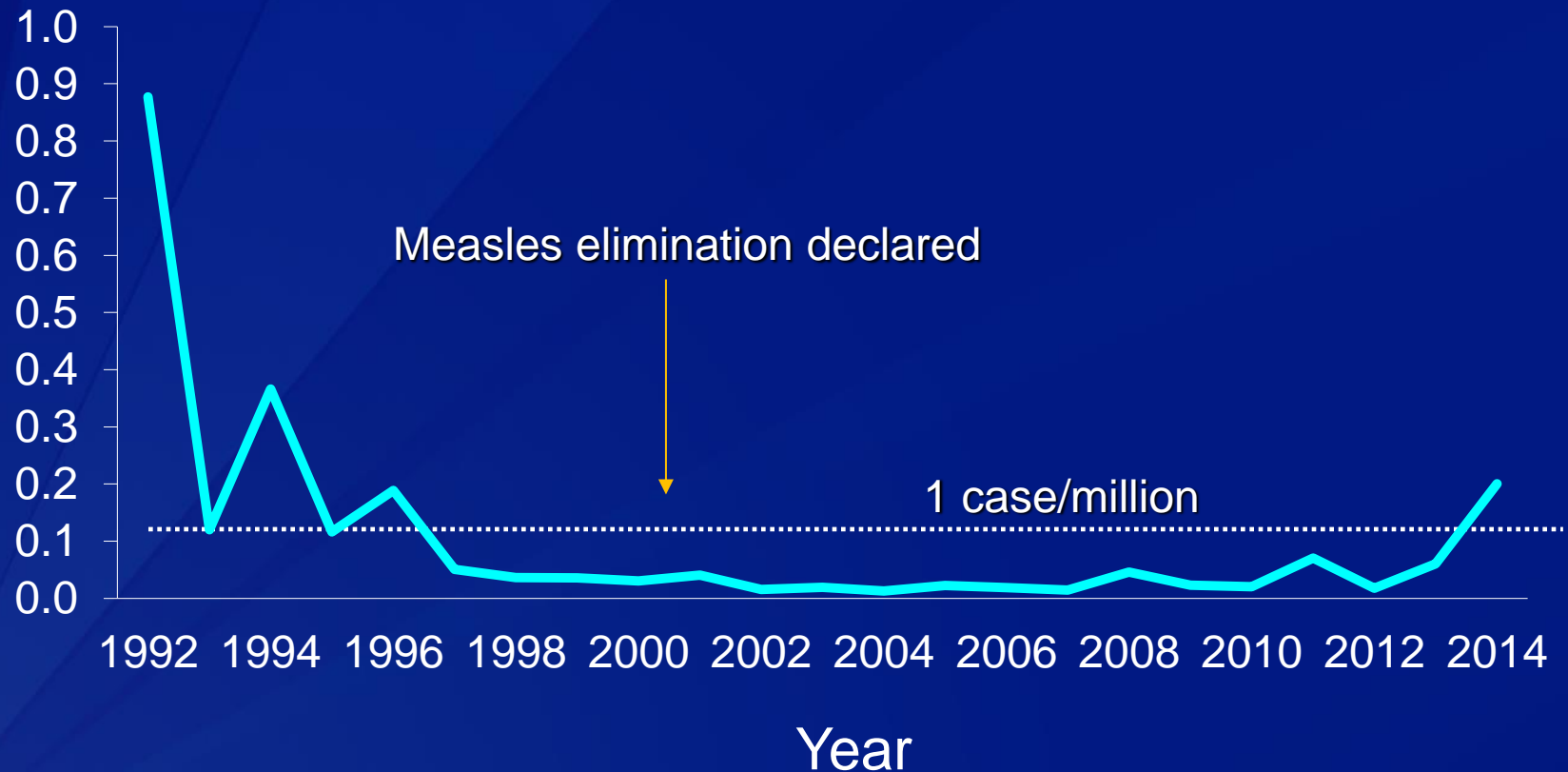
Measles Cases, United States, 1962-2014*



*2014 case count preliminary as of June 20

Reported Measles Incidence United States, 1992-2014*

Cases/
100,000



*2014 case count provisional as of Dec 31

Measles Elimination* in the U.S.

- Declared in 2000 and achieved due to:
 - High two-dose vaccine coverage
 - High quality measles surveillance and response
 - Improved measles control in the World Health Organization Region of the Americas
- Elimination does not mean “gone forever” - imported cases and limited spread occur every year

* Defined as interruption of continuous measles transmission for lasting > 12 months

Measles Cases and Incidence by Age and Vaccination Status, U.S. 2001-2008

Age group	US residents			All	Incidence ^a
	Unvaccinated	Vaccinated	Unknown vaccination status		
<6 months	4 (100)	0	0	4 (1)	0.2
6–11 months	58 (98)	1 (2)	0	59 (13)	3.5
12–15 months	24 (80)	3 (10)	3 (10)	30 (7)	2.6
16 months to 4 years	30 (79)	6 (16)	2 (5)	38 (9)	0.3
5–9 years	35 (90)	3 (8)	1 (3)	39 (9)	0.3
10–19 years	71 (78)	18 (20)	2 (2)	91 (21)	0.3
20–39 years	35 (30)	43 (37)	38 (33)	116 (26)	0.13
40–59 years	26 (47)	6 (11)	23 (42)	55 (13)	0.08
≥60 years	4 (67)	0	2 (33)	6 (1)	0.01
Total	287 (66)	80 (18)	71 (16)	438	0.14

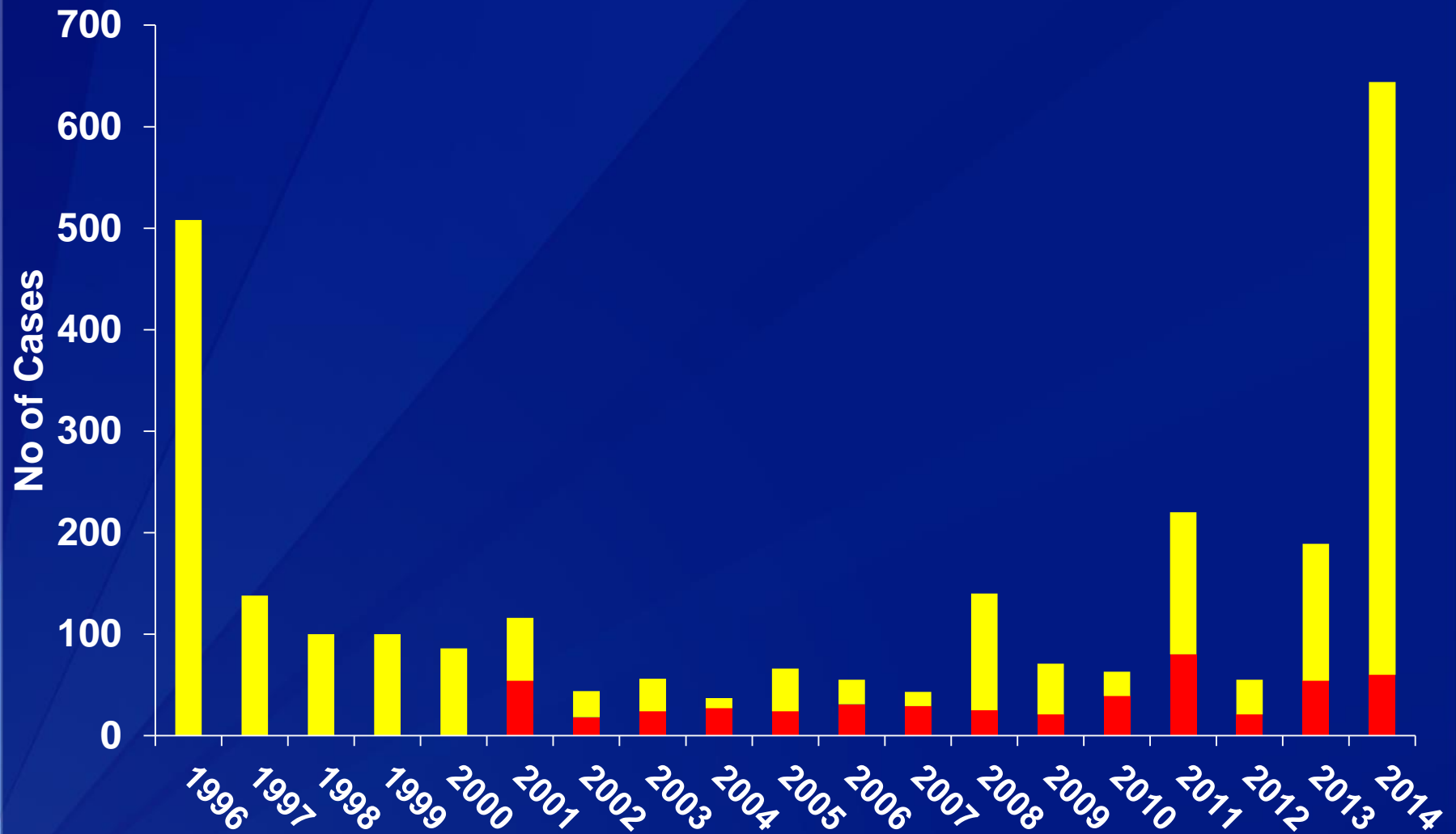
← 20/58

← 11/24

Unvaccinated and traveled abroad

Measles, United States, 1996-2014*

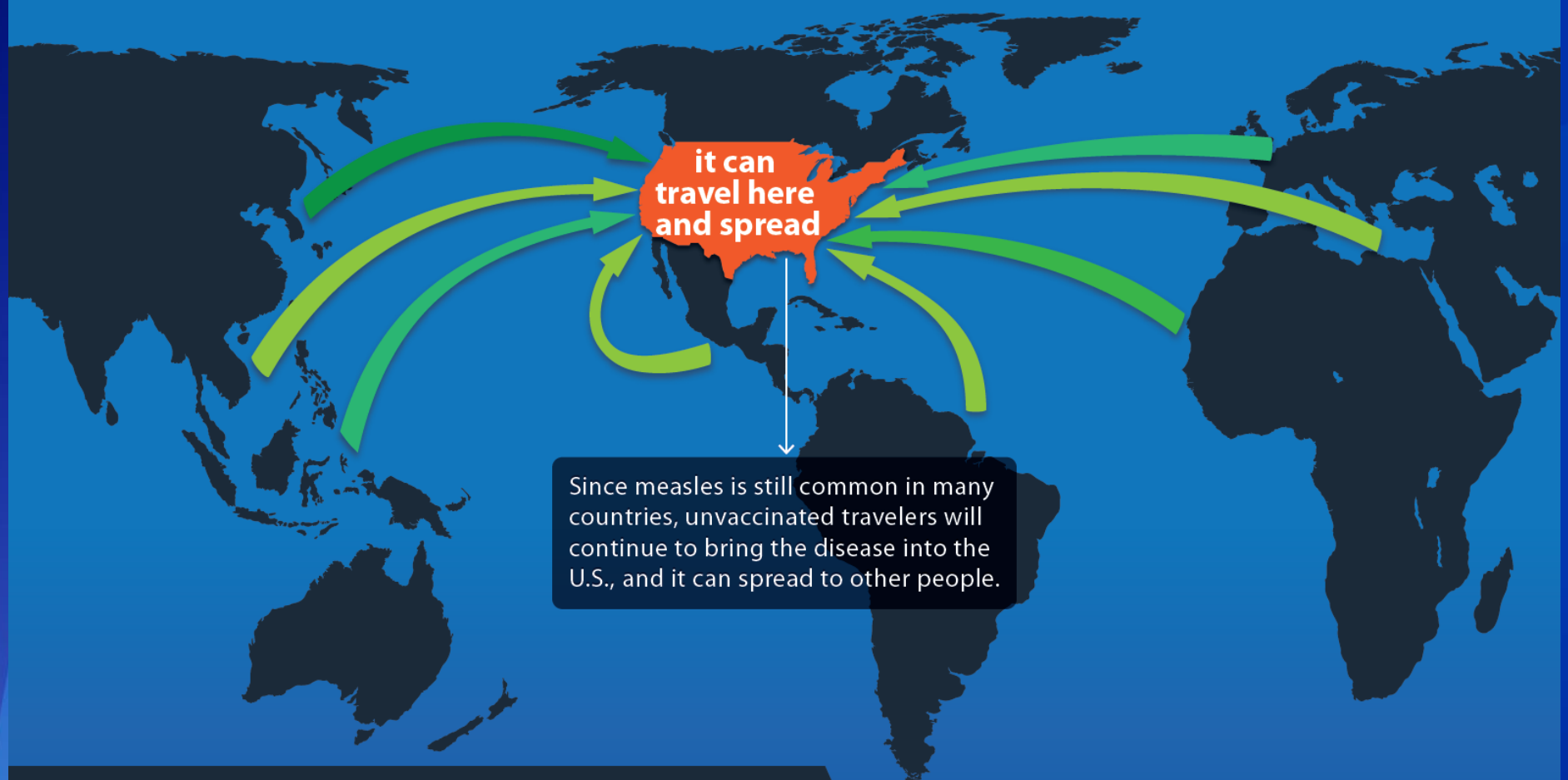
(Importations indicated by red bar, available since 2001)



*2014 case count preliminary as of June 20

Get Vaccinated: Prevent and Stop Measles Outbreaks

When measles happens anywhere in the world...



Make sure you and your family members are up-to-date on your measles-mumps-rubella (MMR) vaccine, including before traveling internationally. Ask your doctor if everyone has received all recommended doses of MMR for best protection against measles.

www.cdc.gov/features/measles/



Measles Epidemiology US, 2001-2011

- ❑ Median 60 cases/year (range 37 to 220)
- ❑ Importations ~ 33/year, majority in US residents
- ❑ ~ 25 % cases hospitalized
- ❑ 2 deaths in approximately 1,000 cases
- ❑ Incidence < 1 case/million population
 - Highest age-specific incidence in infants, lowest in adults
- ❑ Vaccination status
 - 65% unvaccinated
 - 20% unknown vaccination status
 - 15% vaccinated
- ❑ 4 outbreaks/year (range 2-12)
 - Median size 6 cases (3-34 cases)



Measles 2011 - 2014

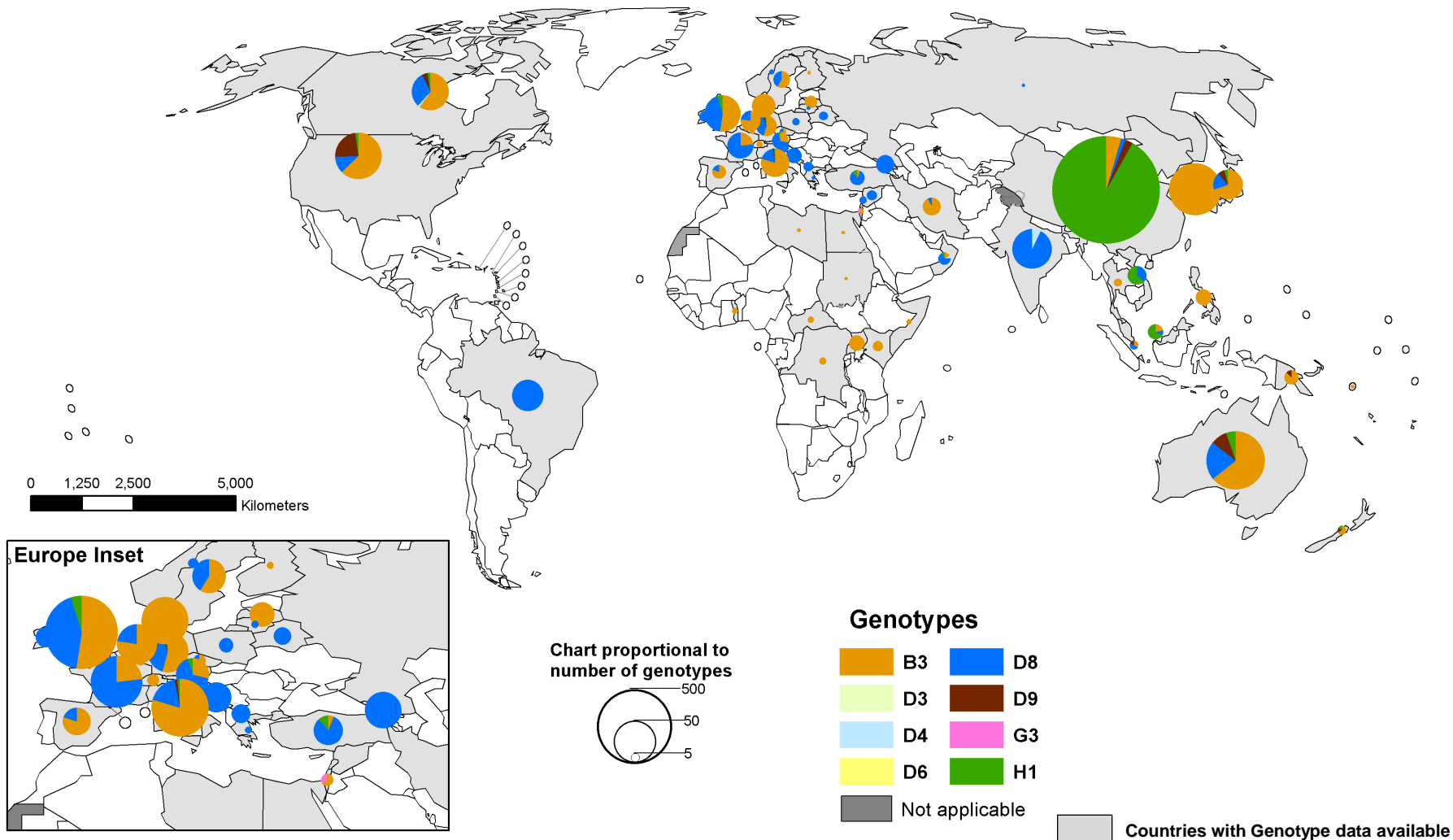
□ Reported cases 220, 55, 189, 644

- Median 205
- Mean 277

□ Importations and Outbreaks

- | | | | |
|--------|-----------------|--------------|---------------|
| ▪ 2011 | 80 importations | 14 outbreaks | 3 – 21 cases |
| ▪ 2012 | 21 importations | 4 outbreaks | 3 - 14 cases |
| ▪ 2013 | 54 importations | 11 outbreaks | 3 - 58 cases |
| ▪ 2014 | 60 importations | 23 outbreaks | 3 – 383 cases |

Distribution of measles genotypes from Dec-2013 to Nov-2014 (12M period)



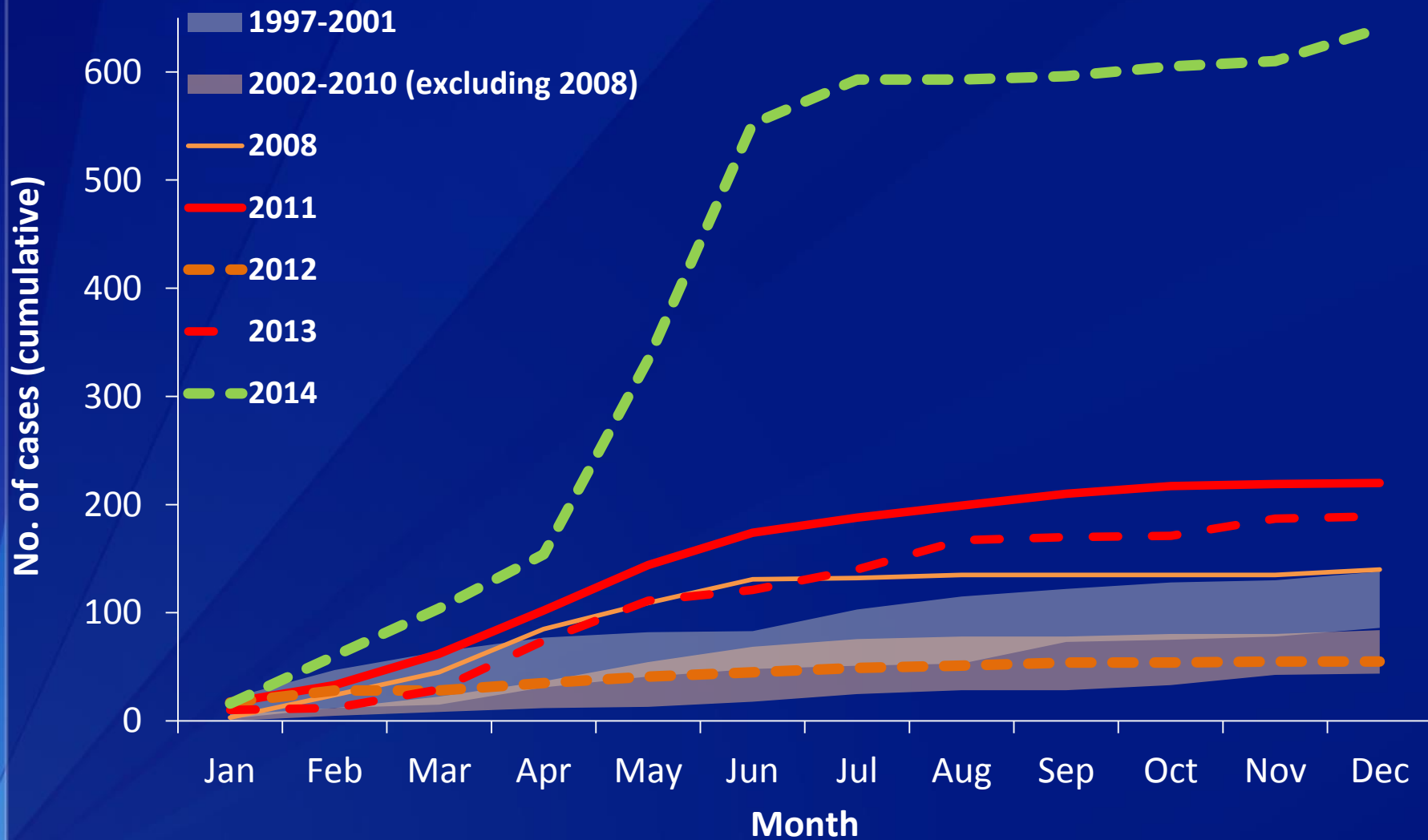
The boundaries and names shown and the designations used on this map do not imply the expression of any opinion whatsoever on the part of the World Health Organization concerning the legal status of any country, territory, city or area or of its authorities, or concerning the delimitation of its frontiers or boundaries. Dotted lines on maps represent approximate border lines for which there may not yet be full agreement. ©WHO 2014. All rights reserved.



Updated on 20 January 2015
Data source: MeaNS Database; 20 January 2015

Measles, U.S., 1997-2014*

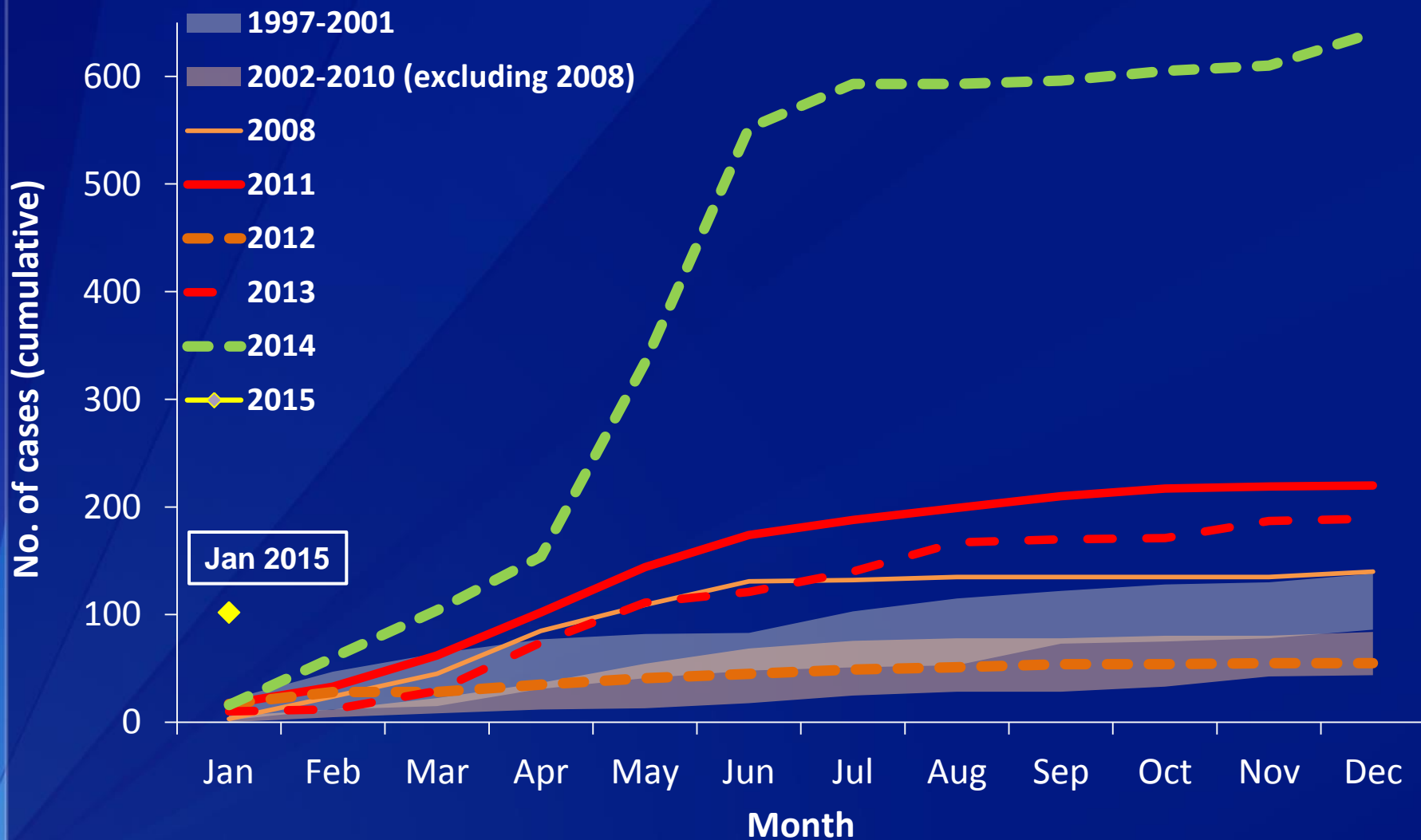
Cumulative Number by Month of Rash Onset



*Provisional total 2014

Measles, U.S., 1997-2015*

Cumulative Number by Month of Rash Onset



* Provisional total 2014

* 2015 data through Jan 30

Measles U.S. 2014*

❑ 644 cases reported from 27 states including 23 outbreaks

- ❑ 60 importations
 - ❑ 25 from the Philippines and 9 from India
 - ❑ 54 (91%) among US residents
- ❑ 98% cases import-associated
- ❑ 78 cases (12%) hospitalized

❑ Cases in US residents (N=635)

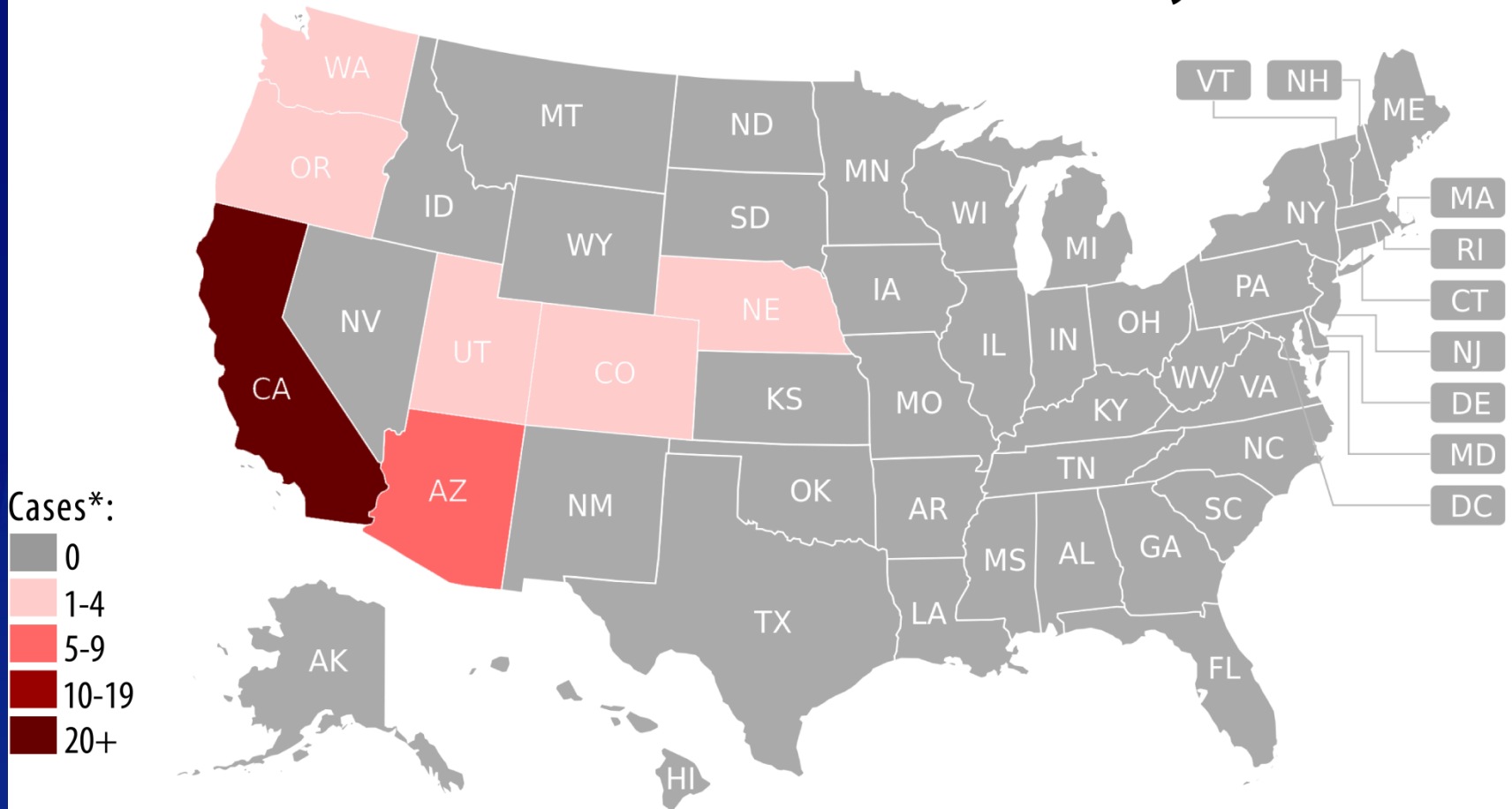
- ❑ 77% unvaccinated
- ❑ 15% unknown vaccination status (most are adults)
- ❑ 8% vaccinated
- ❑ Among unvaccinated
 - ❑ 79% were personal belief exemptors
 - ❑ 3% travelers age 6 months to 4 years
 - ❑ 8% were too young to be vaccinated
 - ❑ 10% unknown/misc

Measles, United States, 2014

Source of Importations (N=60)*

WHO Region	# of cases	Countries of travel
African	1	Ethiopia
Eastern Mediterranean	1	Pakistan
European	6	Dubai/Germany/London (1), Republic of Georgia (1), Netherlands (1), France/Belgium (1), Greece (1), Barcelona/Paris (1)
Americas	3	Brazil (1), Canada (1), Chile (1)
South-East Asia	15	India (9), Indonesia (4), Sri Lanka (1), Thailand/S Korea (1)
Western Pacific	34	China (4), Philippines (25), Singapore (1), Saipan (1), Vietnam (1), SE Asia/Philippines (1), FSM (1)
*provisional data		

U.S. Multi-state Measles Outbreak December 28, 2014 - February 13, 2015

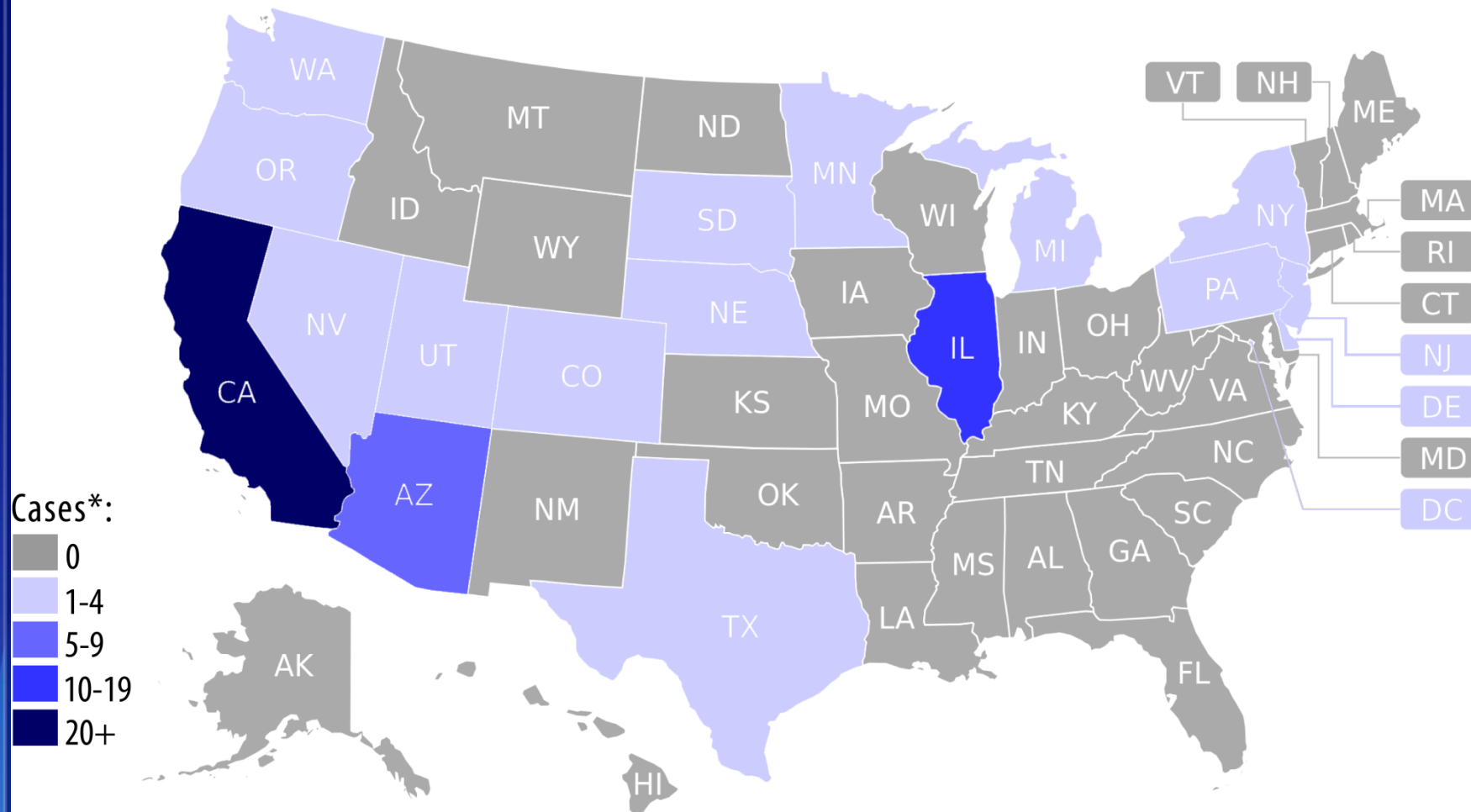


From December 28 to February 13, 2015, 125 people from 7 states [AZ (7), CA (110), CO (1), NE (1), OR (1), UT (3), WA (2)] were reported to have measles and are considered to be part of a large, ongoing outbreak linked to an amusement park in California*.

*Provisional data reported to CDC's National Center for Immunization and Respiratory Diseases

2015 Measles Cases in the U.S.

January 1 to February 13, 2015



From January 1 to February 13, 2015, 141 people from 17 states and Washington DC [AZ (7), CA (98), CO (1), DC (1), DE (1), IL (11), MI (1), MN (1), NE (2), NJ (1), NY (2), NV (4), OR (1), PA (1), SD (2) TX (1), UT (2), WA (4)] were reported to have measles*. Most of these cases are part of a large, ongoing, multi-state outbreak linked to an amusement park in California.

*Provisional data reported to CDC's National Center for Immunization and Respiratory Diseases

Measles 2015: Other highlights

- ❑ Most cases unvaccinated or with unknown vaccination status
- ❑ 6 importations from Azerbaijan, Indonesia, Qatar, Pakistan, Dubai/India, Singapore/Indonesia
- ❑ Adult and child cases
- ❑ Measles genotypes B3 , D8 and D9
- ❑ Child care center cases IL
 - 9 confirmed measles cases in babies < 12 months and one case in an adult
 - Investigation ongoing – source?



Measles Outbreaks (>20 cases) United States, 2001-2015*

Year	Outbreak Name	State	# of Cases	Iport Status	Genotype	Setting	1st & last rash onsets	Duration	Median Age	Age Range
2014	Knox County	OH	383	Imported (Philippines)	D9	Community	3/24/2014 – 7/23/2014	18 weeks	23 y (early) 13 y (late)	2 wks – 53 y
2014/15	Disneyland	CA + 6	125	Imported-virus	B3	Community	12/28/2014 -	Ongoing	19 y	6 mos – 70 y
2013	Brooklyn	NYC	58	Imported (UK)	D8	Household/ community	3/13/2013 – 6/9/2013	13 weeks	10 y (early) 19 mos (late)	0 mos – 32 y
2014	KC Metro	MO/KS (TX/NE)	43	Imported-virus	B3	Community	5/5/2014 – 7/18/2014	11 weeks	21 y	2 wks – 43 y
2005	Tippecanoe County	IN	34	Imported (Romania)	D4	Church/ household	5/16/2005 - 6/24/2005	6 weeks	12 y	9 mos - 49 y
2008	DuPage/Cook County	IL	30	Imported-virus	D4	Homeschool	5/17/2008 - 7/3/2008	7 weeks	10 y	8 mos - 43 y
2014	Manhattan	NYC	25	Imported-virus	B3	Community	2/11/2014 – 3/24/2014	6 weeks	22 y	3 mos – 63 y
2013	Stokes/Orange County	NC	23	Imported (India)	D8	Community	4/5/2013 – 5/7/2013	5 weeks	14 y	12 mos -59 y
2013	Tarrant/Denton County	TX	21	Imported (Indonesia)	D9	Church	7/21/2013 – 8/21/2013	5 weeks	11 y	4 mos – 44 y
2011	Hennepin County	MN	21	Imported (Kenya)	B3	Shelter	2/15/2011 - 4/24/2011	10 weeks	23 m	3 mos - 51 y
2008	Brooklyn/Kings County	NYC	21	Imported (Israel/Belgium)	D4	Community	2/17/2008 – 4/25/2008	10 weeks	15 m	5 mos – 11y

*as of February 13, 2015

Measles outbreak response has a high economic burden in the U.S.

Year	Location	Number of cases (outbreaks)	Estimated public health cost*
2011	US	107 (16)	\$2.7-5.3M
2011	Utah	13 (2)	>\$330,000
2008	California	12 (1)	\$125,000
2008	Arizona	14 (1)	\$800,000 (limited to cost for 2 hospitals to respond to 7 cases in their facilities)
2005	Indiana	34 (1)	\$168,000
2004	Iowa	1	\$142,000

*Public health and health care costs expended to control the spread of measles

Measles and MMR Vaccines

❑ Live, viral vaccines

- ❑ Measles vaccine licensed in 1963
- ❑ Combination MMR vaccine licensed in 1971
 - ❑ Only MMR vaccine is available now in the US

❑ Excellent safety profile with 50+ years use

- ❑ Low risk of febrile seizures in children 12-23 months (1 in 3,000 doses)
- ❑ Temporary pain/stiffness in joints, mostly in teenage or adult women
- ❑ Temporary low platelet count – ITP (~ 1 out of 30,000 doses)

❑ Vaccine Effectiveness

- ❑ 1-dose: ~93%
- ❑ 2-dose: ~97%

MMR Vaccine Routine Recommendations*

☐ Children and adolescents

- ☐ Two doses at 12-15 months and 4-6 years or at least 28 days after the first dose
- ☐ Catch up vaccination as needed

☐ Adults without evidence of measles immunity

- ☐ Two doses (healthcare personnel, post high school students, travelers)
- ☐ One dose (others)

MMR Vaccine Travel Recommendations

- ❑ **Persons aged ≥ 12 months without other evidence of immunity should receive 2 doses***
 - ❑ Includes providing a 2nd dose to children prior to age 4-6 yrs
 - ❑ Includes adults** who have only received one routine dose in the past
- ❑ **Children aged 6-11 months should receive 1 dose**
 - ❑ If vaccinated at age 6-11 months, still need 2 subsequent doses at age ≥ 12 months

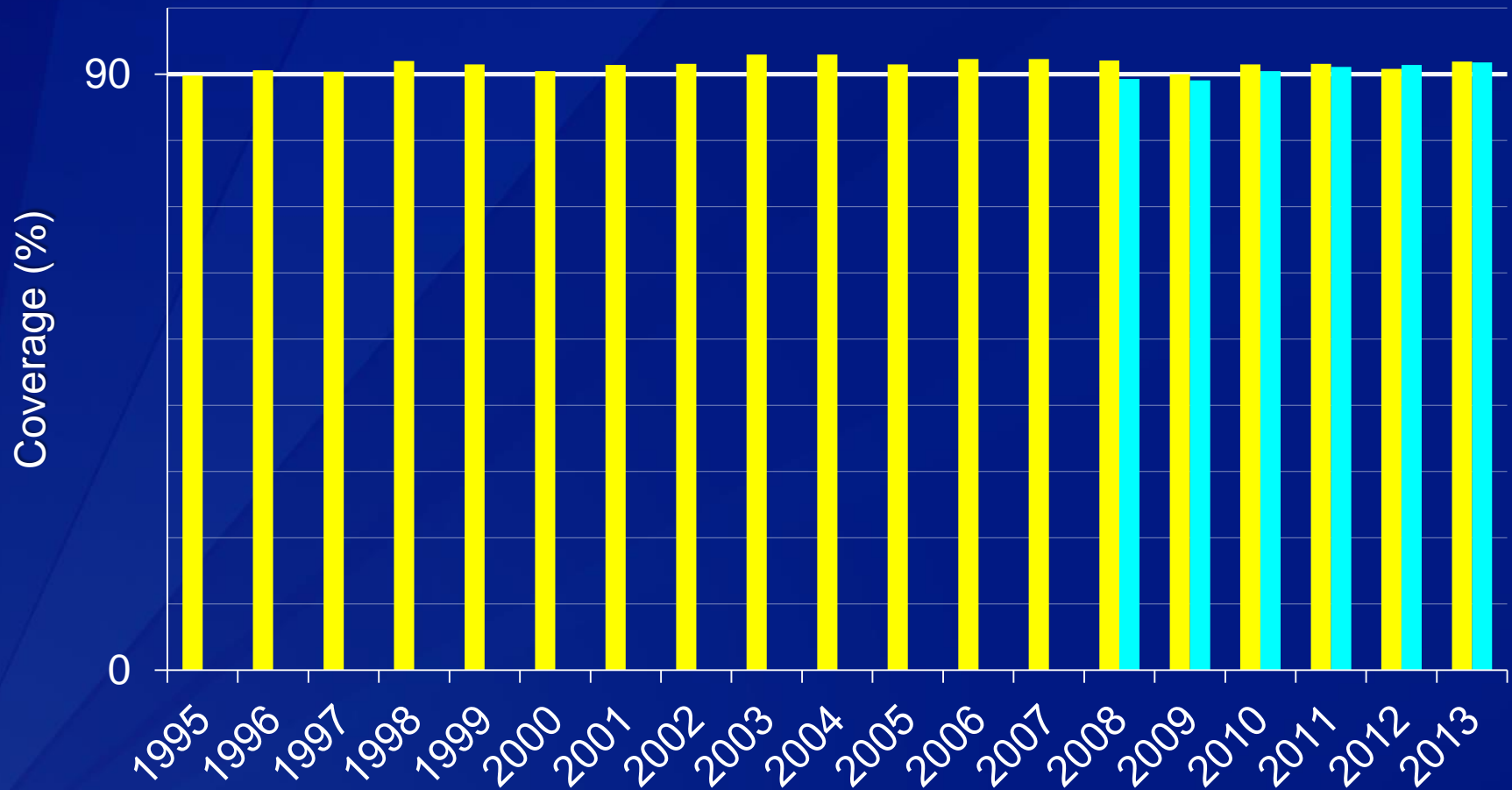
* 2nd dose of MMR vaccine should be administered at least 28 days after the 1st dose

** Born in 1957 or later

MMR Vaccination Coverage

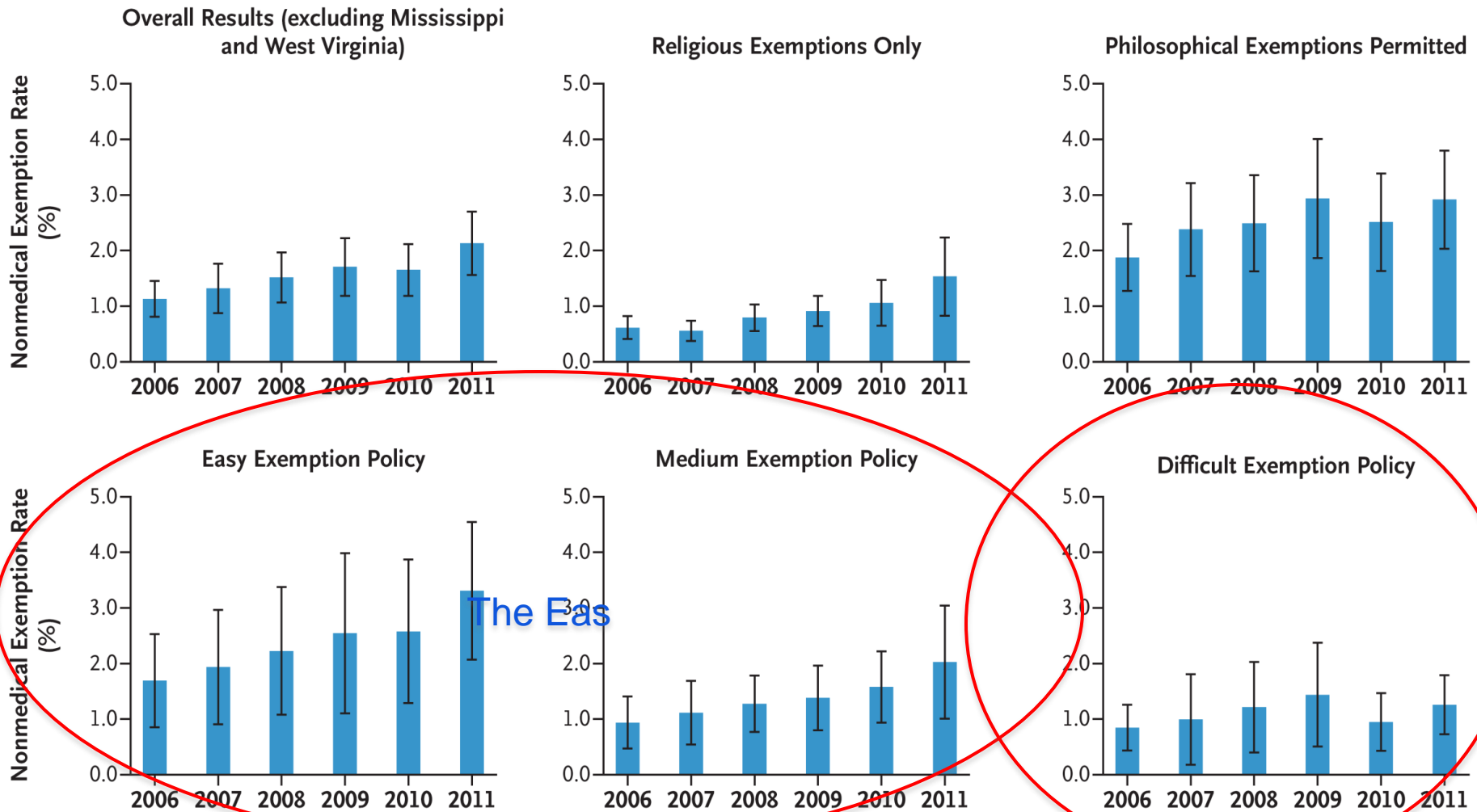
National Immunization Survey, U.S., 1995-2013

■ MMR 1+ (19-35 mo) ■ MMR 2+ (13-17 yr)



NIS data available at <http://www.cdc.gov/vaccines/imz-managers/coverage/imz-coverage.html>

Mean (95% CI) Rates of Nonmedical Exemptions by Type & Ease of Exemption, 2006–2011, US



Suspected Measles: Diagnosis and Response

- ❑ Many U.S healthcare professionals have never seen a case of measles
- ❑ Delay in diagnosis contributes to transmission
- ❑ Consider measles in differential diagnosis of febrile rash illness
 - ❑ e.g. Kawasaki's, Scarlet fever, Dengue
 - ❑ Travel History or Exposure to Recent Travelers or measles in the local community
 - ❑ Especially in an unvaccinated person

Suspected Measles: Diagnosis, Response and Treatment

❑ Lab testing

- ❑ Serology for IgM
- ❑ Viral specimen (nasopharyngeal, oropharyngeal, or nasal swab) for PCR (and genotyping)
- ❑ Acute and convalescent specimens for IgG may be useful, especially in vaccinated cases

❑ Report immediately to local health department

❑ Offer vaccine or immune globulin immediately to household members without evidence of immunity

CDC guidance available at [CDC Measles Vaccine Guidance](#)

Suspected Measles: Diagnosis, Response and Treatment

- ❑ **Treat children with severe measles (e.g. hospitalized) with vitamin A**
 - ❑ **Administer vitamin A immediately on diagnosis and repeat the next day. The recommended age-specific daily doses are**
 - ❑ **50 000 IU for infants aged <6 months**
 - ❑ **100 000 IU for infants aged 6–11 months**
 - ❑ **200 000 IU for children aged ≥12 months**

Public Health Response (for confirmed and suspect cases)

❑ Isolation of cases

- ❑ Infectious period 4 days prior through 4 days after date of rash onset

❑ Notification and Surveillance

- ❑ Immediately notifiable to CDC (within 24 hours)
- ❑ Contact CDC Quarantine Station if relevant travel
- ❑ Alert physicians statewide
- ❑ Enhanced measles surveillance

❑ Contact investigations and response efforts

Measles Isolation Guidance

- ❑ If measles is suspected in a clinic, ER or hospital setting, isolate immediately
- ❑ Airborne isolation room or private room with the door closed, mask patient if feasible
- ❑ Ensure healthcare personnel have evidence of immunity
- ❑ In hospital setting, respiratory precautions including N95 masks or PAPR, even for those with evidence of immunity

ACIP and CDC guidance available at <http://www.cdc.gov/mmwr/pdf/rr/rr6007.pdf> and <http://www.cdc.gov/hicpac/pdf/isolation/Isolation2007.pdf>

Contact Investigation for Exposure to Measles

- ❑ **Persons exposed during cases infectious period**
 - ❑ Includes exposure to area 2 hours after case left
- ❑ **Establish presumptive evidence of immunity for contacts**
- ❑ **Quarantine of contacts without presumptive evidence of immunity (through 21 days after exposure)**
- ❑ **Postexposure prophylaxis (PEP)**
 - ❑ Vaccine or Immune globulin (IG)

Presumptive Evidence of Immunity for Measles

Routine	Students at post-high school educational institutions	Health-care personnel	International travelers
<p>(1) Documentation of age-appropriate vaccination with a live measles virus-containing vaccine:</p> <ul style="list-style-type: none"> –preschool-aged children: 1 dose –school-aged children (grades K-12): 2 doses –adults not at high risk: 1 dose, or <p>(2) Laboratory evidence of immunity, or</p> <p>(3) Laboratory confirmation of disease, or</p> <p>(4) Born before 1957</p>	<p>(1) Documentation of vaccination with 2 doses of live measles virus-containing vaccine, or</p> <p>(2) Laboratory evidence of immunity, or</p> <p>(3) Laboratory confirmation of disease, or</p> <p>(4) Born before 1957</p>	<p>(1) Documentation of vaccination with 2 doses of live measles virus-containing vaccine, or</p> <p>(2) Laboratory evidence of immunity, or</p> <p>(3) Laboratory confirmation of disease, or</p> <p>(4) Born before 1957</p> <ul style="list-style-type: none"> - should consider 2 doses - must provide 2 doses during outbreak response unless serologic evidence of immunity 	<p>(1) Documentation of age-appropriate vaccination with a live measles virus-containing vaccine:</p> <ul style="list-style-type: none"> –infants aged 6–11 months: 1 dose –persons aged ≥12 months: 2 doses, or <p>(2) Laboratory evidence of immunity, or</p> <p>(3) Laboratory confirmation of disease, or</p> <p>(4) Born before 1957</p>

Postexposure Prophylaxis (PEP) MMR Vaccine

- ❑ **Administer within 72 hours of exposure**
 - ❑ May return to normal activities (except health care settings)
 - ❑ Still monitor for symptoms
 - ❑ Can be given down to age 6 months
 - ❑ Be aware of possibility of vaccine rash

Postexposure Prophylaxis (PEP) Immune Globulin

- ❑ **Administer within 6 days of exposure**

- ❑ **Recommended Dose**
 - ❑ Intramuscular (IGIM): 0.5 mL/kg (max = 15 mL)
 - ❑ Intravenous (IGIV): 400 mg/kg

- ❑ **Recommended for the following groups (risk of severe disease and complications)**
 - ❑ Infants aged <12 months (IGIM)
 - ❑ Pregnant women without evidence of immunity (IGIV)
 - ❑ Severely immunocompromised patients (IGIV)

CDC guidance available at <http://www.cdc.gov/vaccines/pubs/surv-manual/chpt07-measles.html>
and 2013 ACIP Recommendations at <http://www.cdc.gov/mmwr/pdf/rr/rr6204.pdf>

Measles In the Postelimination Era

- ❑ Measles is due to **Failure to Vaccinate**
- ❑ **Measles Elimination is a Global Problem**
 - ❑ Continued threat of importations
- ❑ **Measles occurs in the U.S.**
- ❑ **Maintenance of Elimination is Resource Intensive**
 - ❑ Maintaining vaccine coverage
 - ❑ Intensive case/contact investigations
 - ❑ Healthcare workers diagnostic skills
 - ❑ Advanced laboratory techniques

Up-To-Date Outbreak and Case Information

The screenshot shows the CDC website page for Measles (Rubeola). The page features a search bar at the top, a navigation menu on the left, and a main content area. The main content area includes a section for Measles Cases and Outbreaks, a bar chart showing U.S. Measles Cases by Year, and a section for Measles Outbreaks. The page is updated weekly on Mondays.

Measles (Rubeola)

Measles Cases and Outbreaks

From January 1 to February 6, 2015, 121 people from 17 states and Washington DC were reported to have measles (AZ (7), CA (88), CO (1), DC (1), DE (1), IL (3), MI (1), MN (1), NE (2), NJ (1), NY (2), NV (2), OR (1), PA (1), SD (2), TX (1), UT (2), WA (4)). Most of these cases (85%) are part of a large, ongoing multi-state outbreak linked to an amusement park in California.

Measles Cases and Outbreaks
January 1 to February 6, 2015*

121 Cases
1 Outbreak representing 85% of reported cases this year

U.S. Measles Cases by Year

Year	Cases
2003	10
2004	10
2005	10
2006	10
2007	10
2008	10
2009	10
2010	10
2011	10
2012	10
2013	10
2014	10
2015	121

Measles Outbreaks

Outbreaks in countries to which Americans often travel can contribute to an increase in measles cases in the U.S.

Reasons for an increase in cases some years:

- 2015: The United States is currently experiencing a large, multi-state measles outbreak linked to an amusement park in California.
- 2014: The U.S. experienced 23 measles outbreaks in 2014, including one large outbreak of 363 cases, occurring primarily among unvaccinated Amish communities in Ohio. Many of the cases in the U.S. in 2014 were associated with cases brought in from the Philippines, which experienced a large measles outbreak. For more information see the [Measles in the Philippines Travellers' Health Notice](#).
- 2013: The U.S. experienced 15 outbreaks in 2013, three of which had more than 20 cases, including an outbreak with 58 cases. For more information see [Measles - United States January 6, January 26, 2013](#).
- 2011: In 2011, more than 30 countries in the WHO European Region reported an increase in measles, and France was experiencing a large outbreak. Most of the cases that were brought to the U.S. in 2011 came from France. For more information see [Measles - United States, January-May 20, 2011](#).
- 2008: The increase in cases in 2008 was the result of spread in communities with groups of unvaccinated people. The U.S. experienced several outbreaks in 2008 including three large outbreaks. For more information see [Update: Measles - United States, January-July 2008](#).

See also: [The Surveillance Manual](#) chapter on measles that describes case investigation, outbreak investigation, and outbreak control for additional information.

Updated weekly (on Mondays)

Map shows measles cases linked to California amusement park outbreak

<http://www.cdc.gov/measles/cases-outbreaks.html>

Resources for Healthcare Professionals

❑ Clinical Information

❑ Complications

❑ Transmission

❑ Practice Guidelines

- Diagnosis
- Lab testing
- Isolation & Treatment

❑ Vaccination Recs

- Children & Adults
- International Travelers

❑ Measles Images

The screenshot shows the CDC website page for Measles (Rubeola) resources for healthcare professionals. The page is titled "Measles (Rubeola)" and is part of the "CDC A-Z INDEX". The main heading is "For Healthcare Professionals". The page contains several sections:

- Measles Home:** About Measles, Measles Vaccination, Cases and Outbreaks, For Healthcare Professionals, For Travelers, Lab Tests, Status and Surveillance, Resources.
- Related Links:** Measles and Rubella Initiative #, World Health Organization #, Pan American Health Organization #.
- Measles Clinical Features:** Includes an image of a child's face and a link to "See images of 3 children with measles infection".
- For Healthcare Professionals:** A large section with a "More >" button. It contains text about a multi-state outbreak in California and a link to a video by Dr. Jane Seward.
- Clinical Features:** Describes the prodrome of fever (≥101°F) and rash, and lists clinical features like cough, coryza, and conjunctivitis.
- The Virus:** States that Measles is caused by a single-stranded, enveloped RNA virus with 1 serotype.
- Background:** Discusses the decline in cases since 1963 and the impact of the measles vaccine.
- Advice for Travelers:** Includes a "More >" button and a link to "Travel Notice: Watch Level 1: Measles in the Philippines".
- Complications:** Lists common complications like otitis media, bronchopneumonia, and diarrhea, and mentions severe complications like encephalitis and subacute sclerosing panencephalitis (SSPE).
- People at High Risk for Complications:** Lists infants and children aged $1-5$ years, adults aged >20 years, pregnant women, and people with compromised immune systems.

<http://www.cdc.gov/measles/hcp/>

Resources for Healthcare Professionals

- ❑ **Webinar: Measles 2014 Update-Clinical Presentation, Outbreaks, Vaccination Recommendations, & Patient Management**
 - <http://www.vicnetwork.org/> -

- ❑ **NetConference: Why Measles Matters**
 - <http://www.cdc.gov/vaccines/ed/ciinc/2014-05-22.html> -

- ❑ **Medscape video: Five minute measles overview**
 - <http://www.medscape.com/viewarticle/828508> -

- ❑ **Children with Measles Video**
 - <http://www.cdc.gov/vaccines/ed/epivac/default.htm> - (Session 6)

Resources for Healthcare Professionals (cont.)

❑ CDC Fact Sheets and Resources

- Fact sheets on measles and MMR vaccine safety to guide discussions with patients and parents
- <http://www.cdc.gov/vaccines/hcp/patient-ed/conversations/index.html> -

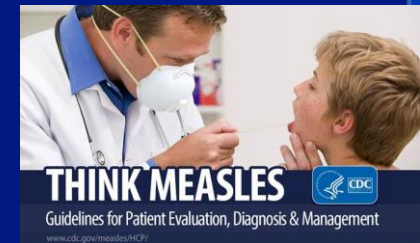


❑ Banners and Buttons Linking to CDC Clinician Site

- <http://www.cdc.gov/measles/resources/web-buttons.html>

❑ Put CDC's Measles Content for Clinicians on Your Website

- Easy steps to syndicate CDC's measles information <https://tools.cdc.gov/syndication/pages.aspx?topicId=28032> -
- <http://www.cdc.gov/syndication>



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Thank You
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- “Click” the Q&A tab at the top left of the webinar tool bar
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- “Type” your question
- “Click” ask

□ On the Phone

- Press Star (*) 1 to enter in the queue to ask a question
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- Listen for the operator to call your name

Thank you for joining!
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