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

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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 $\sim 90\%$
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

<table>
<thead>
<tr>
<th>Complication</th>
<th>Counts</th>
</tr>
</thead>
<tbody>
<tr>
<td>Diarrhea</td>
<td>8%</td>
</tr>
<tr>
<td>Otitis media</td>
<td>7-9%</td>
</tr>
<tr>
<td>Pneumonia</td>
<td>1-6%</td>
</tr>
<tr>
<td>Encephalitis</td>
<td>1 per 1,000 cases</td>
</tr>
<tr>
<td>Death</td>
<td>1 -3 per 1,000 cases</td>
</tr>
<tr>
<td>Subacute Sclerosing Panencephalitis (SSPE)</td>
<td>1 per 100,000 cases 7-10 years after measles</td>
</tr>
</tbody>
</table>
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)

Measles Cases, United States, 1962-2014*

*2014 case count preliminary as of June 20
Reported Measles Incidence
United States, 1992-2014*

*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

<table>
<thead>
<tr>
<th>Age group</th>
<th>Unvaccinated</th>
<th>Vaccinated</th>
<th>Unknown vaccination status</th>
<th>All</th>
<th>Incidence³</th>
</tr>
</thead>
<tbody>
<tr>
<td>&lt;6 months</td>
<td>4 (100)</td>
<td>0</td>
<td>0</td>
<td>4 (1)</td>
<td>0.2</td>
</tr>
<tr>
<td>6–11 months</td>
<td>58 (98)</td>
<td>1 (2)</td>
<td>0</td>
<td>59 (13)</td>
<td>3.5</td>
</tr>
<tr>
<td>12–15 months</td>
<td>24 (80)</td>
<td>3 (10)</td>
<td>3 (10)</td>
<td>30 (7)</td>
<td>2.6</td>
</tr>
<tr>
<td>16 months to 4 years</td>
<td>30 (79)</td>
<td>6 (16)</td>
<td>2 (5)</td>
<td>38 (9)</td>
<td>0.3</td>
</tr>
<tr>
<td>5–9 years</td>
<td>35 (90)</td>
<td>3 (8)</td>
<td>1 (3)</td>
<td>39 (9)</td>
<td>0.3</td>
</tr>
<tr>
<td>10–19 years</td>
<td>71 (78)</td>
<td>18 (20)</td>
<td>2 (2)</td>
<td>91 (21)</td>
<td>0.3</td>
</tr>
<tr>
<td>20–39 years</td>
<td>35 (30)</td>
<td>43 (37)</td>
<td>38 (33)</td>
<td>116 (26)</td>
<td>0.13</td>
</tr>
<tr>
<td>40–59 years</td>
<td>26 (47)</td>
<td>6 (11)</td>
<td>23 (42)</td>
<td>55 (13)</td>
<td>0.08</td>
</tr>
<tr>
<td>≥60 years</td>
<td>4 (67)</td>
<td>0</td>
<td>2 (33)</td>
<td>6 (1)</td>
<td>0.01</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>287 (66)</strong></td>
<td><strong>80 (18)</strong></td>
<td><strong>71 (16)</strong></td>
<td><strong>438</strong></td>
<td><strong>0.14</strong></td>
</tr>
</tbody>
</table>

Parker Fiebelkorn et al, JID, 2010;202:1520-1528

Unvaccinated and traveled abroad

20/58
11/24
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...

it can travel here and spread

Since measles is still common in many countries, unvaccinated travelers will continue to bring the disease into the U.S., and it can spread to other people.

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/

U.S. Department of Health and Human Services
Centers for Disease Control and Prevention
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)

Countries with Genotype data available

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

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.
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

* Provisional reports to CDC through Dec 31 2014
# Measles, United States, 2014

Source of Importations (N=60)*

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

*provisional data
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
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*

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

*as of February 13, 2015
Measles outbreak response has a high economic burden in the U.S.

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

*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)


*ACIP, AAP/COID, AAFP, ACOG, ACP, ACNM available at [http://www.cdc.gov/vaccines/schedules/hcp/adult.html](http://www.cdc.gov/vaccines/schedules/hcp/adult.html)
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

Coverage (%)

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

Omer et al., NEJM, 2012
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](https://www.cdc.gov/vaccines/covid-19/clinicians/updates/index.html#measles)
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

AAP Red Book 2015 (available online)
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

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

<table>
<thead>
<tr>
<th>Routine</th>
<th>Students at post-high school educational institutions</th>
<th>Health-care personnel</th>
<th>International travelers</th>
</tr>
</thead>
<tbody>
<tr>
<td>(1) Documentation of age-appropriate vaccination with a live measles virus-containing vaccine:</td>
<td>(1) Documentation of vaccination with 2 doses of live measles virus-containing vaccine, or</td>
<td>(1) Documentation of vaccination with 2 doses of live measles virus-containing vaccine, or</td>
<td>(1) Documentation of age-appropriate vaccination with a live measles virus-containing vaccine:</td>
</tr>
<tr>
<td>– preschool-aged children: 1 dose</td>
<td>(2) Laboratory evidence of immunity, or</td>
<td>(2) Laboratory evidence of immunity, or</td>
<td>– infants aged 6–11 months: 1 dose</td>
</tr>
<tr>
<td>– school-aged children (grades K-12): 2 doses</td>
<td>(3) Laboratory confirmation of disease, or</td>
<td>(3) Laboratory confirmation of disease, or</td>
<td>– persons aged ≥12 months: 2 doses, or</td>
</tr>
<tr>
<td>– adults not at high risk: 1 dose, or</td>
<td>(4) Born before 1957</td>
<td>(4) Born before 1957</td>
<td>(2) Laboratory evidence of immunity, or</td>
</tr>
<tr>
<td>(2) Laboratory evidence of immunity, or</td>
<td></td>
<td></td>
<td>(3) Laboratory confirmation of disease, or</td>
</tr>
<tr>
<td>(3) Laboratory confirmation of disease, or</td>
<td></td>
<td></td>
<td>(4) Born before 1957</td>
</tr>
<tr>
<td>(4) Born before 1957</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
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)

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

- 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

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/](http://www.vicnetwork.org/)

- NetConference: Why Measles Matters

- Medscape video: Five minute measles overview

- Children with Measles Video
  - [http://www.cdc.gov/vaccines/ed/epivac/default.htm](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

- **Banners and Buttons Linking to CDC Clinician Site**

- **Put CDC’s Measles Content for Clinicians on Your Website**
  - Easy steps to syndicate CDC’s measles information
    - [http://www.cdc.gov/syndication](http://www.cdc.gov/syndication)
Resources for the Parents and Caregivers

- Fact sheets, Measles FAQ, Posters
- NEW Infographic and Videos
- Matte/drop-in articles for childcare providers to use in newsletters and e-mails
- Measles Feature
  - http://www.cdc.gov/features/measles/
- Put CDC’s Measles Content for the Public on Your Website
- Resources in Spanish
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Thank You

Questions?
To Ask a Question

- **Using the Webinar System**
  - “Click” the Q&A tab at the top left of the webinar tool bar
  - “Click” in the white space
  - “Type” your question
  - “Click” ask

- **On the Phone**
  - Press Star (*) 1 to enter in the queue to ask a question
  - State your name
  - Listen for the operator to call your name
Thank you for joining!
Please email us questions at coca@cdc.gov

Centers for Disease Control and Prevention
Atlanta, Georgia

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**What:** All call recordings (audio, webinar, and transcript)

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