Measles Outbreak Response
National Perspective

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Reported Measles Incidence
United States, 1992-2014*

*As of August 29, 2014
668 cases reported from 28 states including 23 outbreaks
- 60 importations
  - 25 from the Philippines
  - 54 (91%) among U.S. residents
- 99% cases import-associated
- 86% cases outbreak-associated
- 77 cases (12%) hospitalized

Cases in U.S. residents (N=658)
- 76% unvaccinated
- 16% unknown vaccination status (70% of those were adults)
- 9% vaccinated (including 5% with 2 or more doses)
- Among unvaccinated:
  - 80% were personal belief exemptors
  - 2% were travelers with missed opportunities age 6 mos-4 yrs
  - 8% were too young to be vaccinated
  - 10% were unknown/other

* Provisional data
Epidemiology of 2015 Measles Cases
MMWR April 17, 2015

- 159 cases (through April 2)
- Majority of cases were adults:
  - <12 mos: 16%
  - 1-4 yrs: 12%
  - 5-19 yrs: 17%
  - >20 yrs: 54%
- 71 (45%) unvaccinated and 60 (38%) unk. vax;
- 28 (18%) had been vaccinated
Provisional data as of June 2, 2015
Percentage of U.S. residents with measles who were unvaccinated, by reason for not receiving measles vaccine – U.S., January 4-April 2, 2015 (n=68)

Source: MMWR April 17, 2015
† ineligible for measles vaccination, generally those aged <12 months and those with medical contradictions
Every Measles Case Requires Follow up: Reliance on Public Health Infrastructure

- Hospital
- Transportation
- Emergency dept's
- Family
- Childcare centers
- Widely attended gatherings
CDC’s Role in Measles Outbreak

- **State/local health departments lead the investigations**
  - Determine who may have been exposed & who’s at risk (unvaccinated or otherwise not immune)

- **CDC supports health departments**
  - Provides technical assistance
  - Evaluates & monitors data gathered by states on confirmed cases
  - Tests specimens for difficult diagnosis cases if requested
  - Uses Advanced Molecular Detection methods to determine virus genotypes and strains
  - Provides rapid assistance on the ground if requested
  - Informs healthcare professionals and facilities about current outbreaks, vaccine policy, and clinical guidance
  - Develops and disseminates tools and materials to clinicians and partners
  - Provides information to the public
Redesigned Measles Site

- Built in responsive design
- Slider element adds dynamic look; map with date indicates site is “current”
- Modules focus on primary audiences
Communicating with Audiences: Public Health Professionals

- **Call to action**
  - Coordinate efforts to inform clinicians, health facilities, schools and childcare centers, partners and consumers
    - Disease is serious; vaccination is best protection; unvaccinated at risk, especially when travelling internationally

- **Examples of outreach and products**
  - Weekly email updates
  - Health Alert Network (HAN) message
  - Immunization Works! newsletter article
  - “Have You Heard?” syndicated feed
  - Key messages disseminated with Dept of Ed
  - Business health executive conference call
General epidemiology of exemptions

Kindergarten exemptions and MMR coverage, 2013-14 school year

Data Source: MMWR, October 17, 2014 / 63(41);913-920
Very few toddlers have received no vaccines at all

HP2020 Goal: <1%

0.6 0.6 0.7 0.8 0.8 0.7

2008 2009 2010 2011 2012 2013

MMWR 63(34); 741-748, August 29, 2014
Children and Adolescents Unvaccinated Against Measles*

- Analyzed data from 2010-2013 NIS and NIS Teen
- Among unvaccinated children, 75% attributable to factors other than parents’ negative vaccine beliefs
- Among adolescents, MV vaccine-related beliefs not associated with being unvaccinated
- Lower SES associated with under vaccination

Communicating with Audiences: Healthcare Professionals

- **Call to action**
  - Ensure patients (including adults) are up to date on MMR vaccine
  - Consider measles in patients with febrile rash; ask about travel history

- **Examples of outreach and products**
  - Tweets from @DrFrieden and @CDCizLearn
  - Clinician Outreach and Communication Activity (COCA) call
  - Think Measles button
  - Updated clinical guidance
  - Medscape video with SME
Communicating with Audiences: Consumers

- **Call to action**
  - Parents, protect your children with measles vaccine
  - Travelers, measles is a health risk in many destinations; make sure you and your family are protected
  - Measles is highly contagious and can have serious complications

- **Examples of outreach and products**
  - Infographics and “sharable” images
  - Fact sheets for parents and for childcare providers
  - Weekly social media (Facebook, Google+ and Twitter) posts with prevention messages
  - Messaging on electronic airport monitors
Impact of Measles Outbreak in 2015 on immunization activity?

• MMR doses given in 2013-14 v. 2014-15 in WA state
  • Increase of 27%
  • Greatest increase in Feb. after local outbk

Source: Washington State Department of Health
Adapted from: Seattle Times, April 1, 2015
Public sector orders for MMR for adults increased ~3-fold in 2015.
Key Points from Measles 2015

- Eliminated in 2000 from US, still a plane ride away
- Astute clinician needed for ‘old’ diseases
- Public health infrastructure critical
- Improving immunization abroad will reduce risk here
- Clinicians play key role in parental vaccine acceptance
- State requirements keep vaccination the default option and protect communities
- Improved immunization histories for adults (eg IIS) can aid understanding the changing epidemiology of VPDs