

Enterovirus D68 (EV-D68): COCA Call

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Enteroviruses (EVs)

- ❑ Very common viruses, > 100 types**
- ❑ ~10-15 million infections in US each year**
- ❑ Cause respiratory illness, febrile rash illness (HFMD), neurologic illness**
- ❑ Most infected people are asymptomatic or have mild symptoms**
- ❑ Infants and children more likely to become ill**
- ❑ Seasonality summer and fall**

Enteroviruses (EVs)

- ❑ **EVs are not nationally notifiable**
- ❑ **Nationally, there are 2 voluntary, passive laboratory surveillance systems that include information about EVs:**
 - NREVSS- National Respiratory and Enteric Virus Surveillance System
 - NESS- National Enterovirus Surveillance System

NREVSS

- ❑ Passive**
- ❑ Collects data on a number of viruses, but not type**
- ❑ Total number of tests performed and those that are positive (not patient level)**
- ❑ Proportion of positive tests are tracked**
- ❑ Seasonality for EVs has been consistent yearly: summer and fall**

NESS

- ❑ **Voluntary and passive**
- ❑ **Collects data on types of enteroviruses and parechoviruses**
- ❑ **Detections with:**
 - Age, gender, state, specimen collection date, specimen type, virus type

NESS Data

□ During 2009-2012:

- 15 labs (including CDC) reported to NESS
- Detections reported in 43 states and Puerto Rico
- Specimen types:
 - CSF, OP/NP swabs– stool/rectal swabs
- Mostly young children

NESS Data II

- ❑ **Type was reported for 1257 (68%) of 1859 detected EV and HPeV**
- ❑ **Considerable variation between years regarding EV and HPeV types**
 - EV-D68 has been detected along with parecho type 3, CA6, echoviruses....
- ❑ **Gives us a glimpse of what is circulating but influenced by attention received and investigations performed**

EV-D68

- ❑ Thought to occur less commonly**
- ❑ First identified in 1962**
- ❑ Known to cause respiratory illness**
- ❑ Known to infect children and adults**
- ❑ Similar to rhinoviruses**
- ❑ Clusters have previously been described in the US, Europe, and Asia**

EV-D68 Clusters

□ Since 2008 several small clusters of EV-D68 described:

- Largest in Japan, 120 cases reported
- Most clusters reported < 30 cases
- Most clusters without fatalities
 - 2 of 21 cases from Philippines cluster died
 - 1 of 11 known cases from Japan died

2014: First Signals Detected

- ❑ Increase in severe respiratory illnesses among children, PICU, hospitalizations as compared to same time frame previous years**
- ❑ Increase in rhinovirus/enterovirus detections from multiplex PCR assays, as compared to same time frame previous years**

EV-D68 Outbreak in the US

□ MMWR- Missouri and Illinois:

- 19 Kansas City (KC) in PICU; 10 of 11 in Chicago PICU
- Children (range 6wks-16yrs- median 4 and 5yrs)
- Most patients with history of asthma or reactive airway disease (68% KC and 73% Chicago)
- Minority of patients with fever (26% febrile in KC and 18% in Chicago)
- Oxygen requirement to mechanical ventilation

Current Status as of 9-16-14

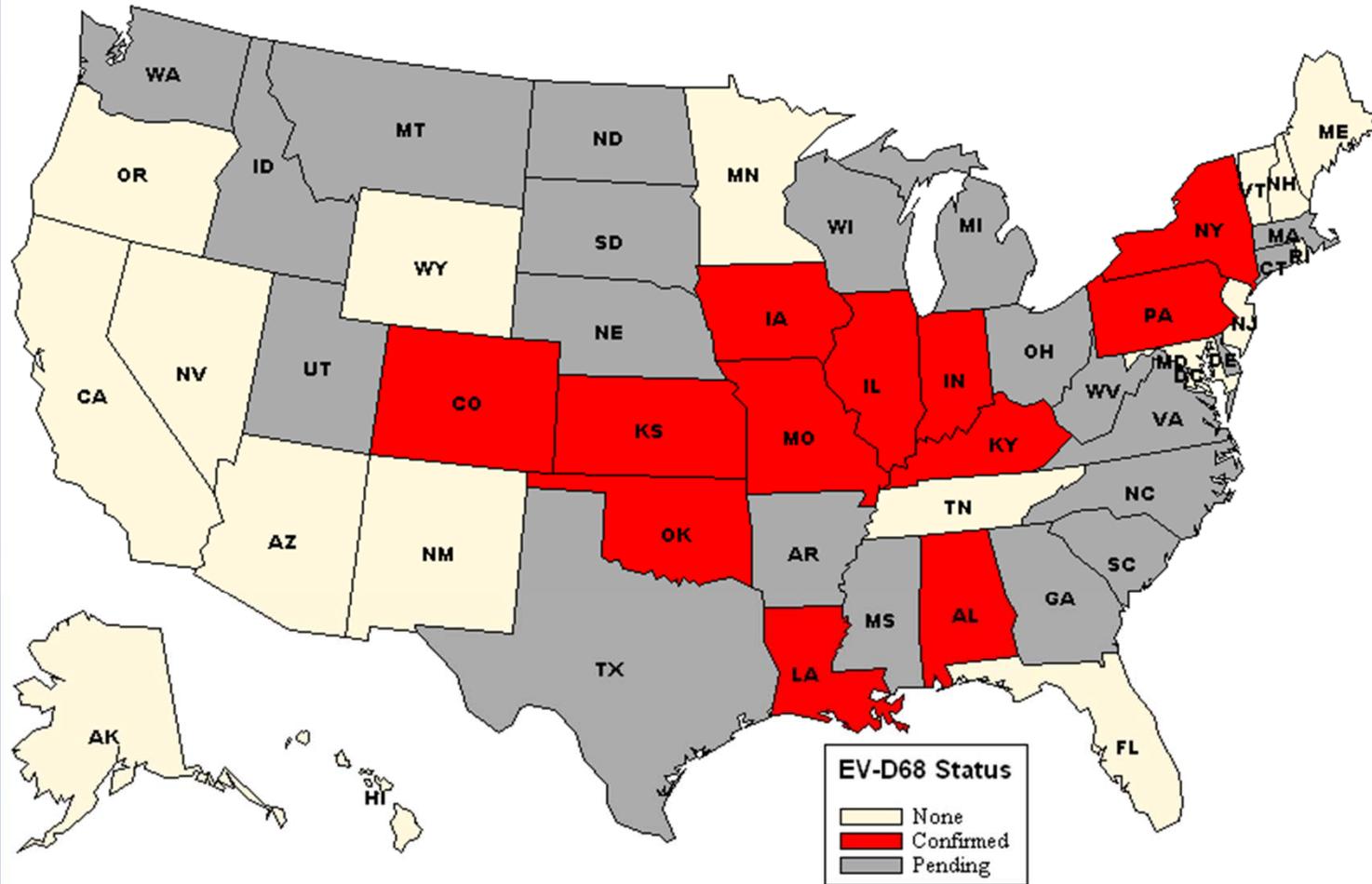
- ❑ 130 patient specimens where EV-D68 has been identified**
 - Of those, 117 of 219 (53%) specimens have been confirmed at the CDC lab
 - 13 specimens confirmed at NY State Public Health Laboratory
- ❑ 12 states affected**
- ❑ What is different is the magnitude or degree of identification of EV-D68**

States Where EV-D68 Confirmed: 9-16-14

- Missouri
- Colorado
- Illinois
- Iowa
- Kansas
- Kentucky
- Alabama
- Louisiana
- New York
- Indiana
- Oklahoma
- Pennsylvania

EV-D68 State of Residence

Enterovirus D68 by State of Residence*, Aug 19 - Sep 16, 2014



*If known

Other Respiratory Viruses Circulating

- ❑ Not all detections have been EV-D68**
- ❑ Rhinoviruses**
- ❑ Coxsackieviruses**
- ❑ Echoviruses**

Lab Testing

- ❑ Few states have the ability to identify EV-D68
- ❑ To determine EV-D68 requires sequencing of the VP1 region of the genome
- ❑ Need for a real time PCR assay.....

Infection control

- ❑ Standard and contact precautions as is recommended for all enteroviruses**
- ❑ As EV-D68 is a cause of clusters of respiratory illness, similar to rhinoviruses, droplet precautions also should be considered as an interim recommendation until there is more definitive information available on appropriate infection control.**

Environmental Disinfection

□ Environmental disinfection

- Bleach works
- Hospital grade disinfectant with an EPA label claim for any of the several non-enveloped viruses

Reporting

- ❑ **Not nationally notifiable**
- ❑ **Reporting of clusters**
- ❑ **Some states may have specific reporting requirements**
- ❑ **Clinicians should report to local and state health departments if suspected clusters of EV-D68**

Priorities for Testing

- ❑ **Severely ill patients**

- ❑ **New populations**

- Adults
- Group settings

- ❑ **New locations**

Conclusions

- ❑ **EV-D68 not new**
- ❑ **EV-D68 is being identified in more specimens than expected**
- ❑ **Increased respiratory illnesses not all EV-D68, though EV-D68 appears to be a predominant identification in some locations**
- ❑ **Spectrum of illness needs more investigation**

For more information please contact Centers for Disease Control and Prevention

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The findings and conclusions in this report are those of the authors and do not necessarily represent the official position of the Centers for Disease Control and Prevention.

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