Infectious Disease Diagnostics in the Geisinger Health System

SUMMARY

GHS has two methods that can detect EV-D68

- 1. CSF is tested by EVPCR (CSF)
- 2. Respiratory secretions (nasopharyngeal or throat swab, or BAL) are tested by RVPCR

For respiratory specimens, U.S. molecular assays may miscall EV-D68 as rhinovirus or enterovirus/rhinovirus.

Laboratory reports contain a disclaimer that rhinoviruses and enterovirus may cross react due to similarity in genetics.

US Laboratories are reporting large up-ticks in pediatric hospitalization and enterovirus or "rhinovirus" results

GMC saw a nearly 20% uptick in respiratory viruses, mostly rhinovirus, last week.

GMC is sending positive Samples for sequence confirmation for EV-D68 or rhinovirus C

Watch 10X Essentials for more information.

A Publication of Geisinger Medical Laboratories 2014 Vol. (13):1-2, Sept 8, 2014

10X Essentials: Local pediatric respiratory cases on the rise - GML is investigating to identify possible enterovirus-D68 or rhinovirus C

Recent reports of widespread pediatric hospitalizations caused by **enterovirus D-68 (EV-D68)** in the Midwest are being mirrored with an uptick of GMC pediatric in-patients with an 18% increase in respiratory virus identification last week, mostly rhinovirus. **Across the U.S., EV-**



D68 may be reported as "enterovirus", "rhinovirus" or enterovirus/ rhinovirus", due to cross reactivity of genetic target binding in almost all respiratory panel assays.

GHS System Microbiology has 2 methods that can detect EV-D68. Since GML experienced an uptick in pediatric in-patient rhinoviruses this past week. Microbiology is in the process of sending GML samples for nucleic acid sequencing to confirm or refute the presence of EV-D68 in our service area, as well as the presence of rhinovirus C, which is also known to cause severe infections.

GML Methods You Can Order for Suspected EV-D68 infections:

- 1. From CSF: The Enterovirus PCR, (EVPCR) test catalogue link = http://www.geisingermedicallabs.org/catalog/details.cfm?tid=1696 is performed at GMC and will identify EV-D68 as simply "enterovirus detected". EVPCR is specific for enterovirus. The package insert claims that EV-D68 is detected at a limit of detection (95%-LOD) of 200 TCID₅₀/mL, similar to other reverse transcriptase PCRs.
- 2. From Respiratory Secretions: Film Array Respiratory PCR panel (RVPCR), test catalogue = http://www.geisingermedicallabs.org/catalog/details.cfm?tid=1580 is currently performed at GMC, GWV, and GCMC and like other molecular assays in the US, it has a potential to misidentify EV-D68 as" rhinovirus" or "rhinovirus/enterovirus". Biofire's RVPCR technical service claims a 95% LOD of 30,000 TCID₅₀/mL. More info will follow as we get it.

U.S. Clinical Microbiology Network Reports Similar Outbreaks

There are reported enterovirus/rhinovirus outbreaks in Colorado, where the pediatric intensive care unit is overflowing with severe new onset asthmatics and otherwise healthy children with exacerbations and respiratory specimens that are enterovirus/rhinovirus positive. CDC is currently typing a large set of these specimens, and many are assumed to be EV-D68. Several of those patients had seizures as part of their symptoms. There is also what is believed to be a severe EV-D68 outbreak in St. Louis - the presence of the virus was verified in a small number of



specimens by sequencing. More sequence based identification is in progress. **EV-D68** is present in Ohio and Virginia — and GML is ready.

If you have any questions, please contact the Doctoral Directors, pager 8600, Technical Specialist, pager 8181.

For newsletter questions, contact Christy Attinger, (570) 271-6338.

"Make it the best." - A. Geisinger



