

10X Essentials ALERT

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.

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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.

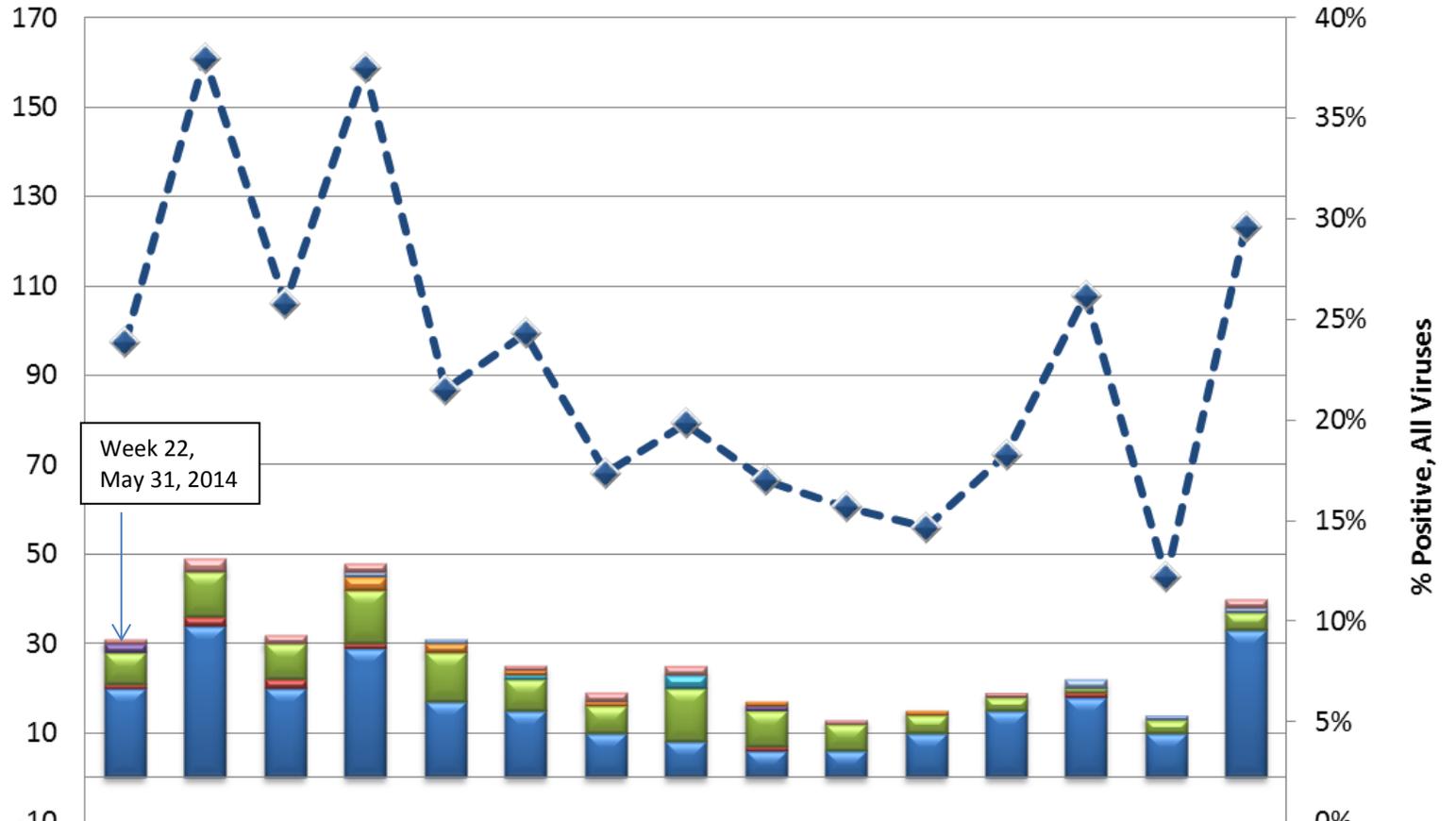
If you have any questions, please contact the Doctoral Directors, pager 8600, Technical Specialist, pager 8181. For newsletter questions, contact Christy Attinger, (570) 271-6338.

"Make it the best." - A. Geisinger

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GML RespVIEW 2013-2014

Respiratory Viruses



CDC Respiratory Week, 2013-2014

	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36
adenovirus	1	3	2	2	0	1	2	2	0	1	0	1	0	0	2
coronavirus	0	0	0	1	1	0	0	0	0	0	0	0	2	1	1
hum. metapneumovirus	0	0	0	3	2	1	1	0	1	0	1	0	0	0	0
influenza A	0	0	0	0	0	1	0	3	0	0	0	0	0	0	0
influenza B	2	0	0	0	0	0	0	0	1	0	0	0	0	0	0
parainfluenza	7	10	8	12	11	7	6	12	8	6	4	3	1	3	4
respiratory syncytial virus	1	2	2	1	0	0	0	0	1	0	0	0	1	0	0
rhinovirus	20	34	20	29	17	15	10	8	6	6	10	15	18	10	33
◆ % Positive Rollup (right axis)	24%	38%	26%	38%	22%	24%	17%	20%	17%	16%	15%	18%	26%	12%	30%