



MEMORANDUM

TO: All OSF HealthCare System Laboratory Ordering Providers

FROM: Galen Kessler, MD; Medical Director, OSF HealthCare Saint Francis Medical Center Laboratory

DATE: May 14, 2019

RE: **Laboratory Diagnosis of Gastrointestinal Pathogens**

On June 4, 2019, the OSF HealthCare System Laboratory will begin offering a molecular test that detects multiple gastrointestinal pathogens from a single stool sample. Currently, when this test is ordered it is sent out to Mayo Clinic Laboratories and we are transitioning it into the OSF HealthCare Laboratory system. If the Mayo GIP test is ordered after June 4th and sent to OSF, the Mayo code will be changed, and the OSF test will be performed on all shifts, 7 days a week.

Unlike traditional stool culture and enzyme immunoassay (EIA) testing for stool pathogens, the BioFire FilmArray[®] (Salt Lake City, UT, USA) Gastrointestinal Panel (GIP) can detect multiple viral, bacterial, and parasitic infectious pathogens that can potentially be missed with our current test methodology. The GIP is an FDA-cleared, multiplexed PCR assay that can simultaneously detect and identify up to 22 pathogens (see Table 1) from stool samples in Cary–Blair transport media; details on this assay can be found online at: <https://osflabmanual.osfhealthcare.org/osflm/SearchPublic.aspx>. The GIP has the added benefit of simplifying and streamlining ordering for providers. With one order in EPIC (**LAB5003**), a single stool sample can be tested for rapid diagnosis of infectious diarrhea, as recommended by CDC.^{1,2}

The GIP will detect:

Campylobacter, *E. coli* O157, enterotoxigenic *E. coli* (ETEC), shiga-toxin producing *E. coli* (STEC), *Salmonella*, *Shigella*, *Giardia*, *Cryptosporidium*, sapovirus, rotavirus, adenovirus and norovirus (see Table 1).

Test ordering:

Stool is the only acceptable specimen type for **LAB5003**, and samples **MUST BE** transported to the OSF System Lab within **2 hours** of sample collection. For outpatient offices and remote locations, please put stool in **Cary-Blair transport medium** (orange capped vial containing red liquid); once in the Cary-Blair transport media, patient specimen is stable for testing for 96 hours (4 days) from collection time. Do not collect stool after administration of barium, bismuth or oil. Rectal swabs, vomitus, and other stool transport devices will be rejected. Due to the increased sensitivity of the GIP assay over traditional methods, one specimen per patient is adequate (testing of more than one specimen per patient requires director approval). Two weeks must have elapsed before a 2nd sample is accepted in the lab.

****This test will NOT be performed on in-patients after hospital day 3 without microbiology director authorization; and susceptibility testing is NOT available when pathogens are detected.**

<i>E. coli</i> & <i>Shigella</i>	Bacterial GI pathogens	Parasites & Toxins	Viruses
<i>Enteroaggregative E. coli</i>	<i>Campylobacter</i>	<i>Cryptosporidium</i>	<i>Adenovirus F40/41</i>
<i>Enteropathogenic E. coli</i>	<i>Plesiomonas shigelloides</i>	<i>Cyclospora cayetanensis</i>	<i>Astrovirus</i>
<i>Enterotoxigenic E. coli</i>	<i>Salmonella</i>	<i>Entamoeba histolytica</i>	<i>Norovirus GI/GII</i>
<i>Shiga toxin-positive E. coli</i>	<i>Yersinia enterocolitica</i>	<i>Giardia lamblia</i>	<i>Rotavirus A</i>
<i>Shigella/Enteroinvasive E. coli</i>	<i>Vibrio cholera</i> and other Vibrio pathogens	<i>Clostridium difficile</i> : Toxins A & B	<i>Sapovirus (I, II, IV & V)</i>

Table 1. BioFire FilmArray[®] (Salt Lake City, UT, USA) Gastrointestinal Panel (GIP).

References:

- Rand KH, Tremblay EE, Hoidal M, Fisher LB, Grau KR, Karst SM. Multiplex gastrointestinal pathogen panels: implications for infection control. *Diagn Microbiol Infect Dis*. 2015; 82(2):154-7.
- Miller JM, et al. Infectious Diseases Society of America: A Guide to Utilization of the Microbiology Laboratory for Diagnosis of Infectious Diseases. *CID* 2018; 67(6):e1-e94.
- OSF System Lab Test Catalog:
<https://osflabmanual.osfhealthcare.org/osflm/SearchPublic.aspx>

Any questions or concerns may be addressed to:

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