**BioFire Meningitis/Encephalitis (ME) Pathway**

The goal of rapid diagnostics is to swiftly and safely de-escalate empiric therapy.

Detects 14 pathogens (see bottom right), requiring 0.2mL of cerebrospinal fluid (CSF).

Optimal turnaround time = 1 hour

*Always prioritize CSF volume for traditional Gram stain and culture!*

---

**Does CSF from the patient with suspected meningitis/encephalitis have**

- > 10 nucleated cells/μL in cerebrospinal fluid (CSF)

---

**Approve but remain aware:**

- Only the 14 pathogens on the panel are detected!
- If HSV encephalitis suspected based on radiographic appearance - continue acyclovir IV even if panel negative
- Repeat test with specific HSV 1/2 PCR if suspicion is high
- Consult ID if concern for CNS infection despite negative testing

---

**Infectious Diseases or Emergency Department can override criteria for any 1 of the following**

- HIV infection
- Immunosuppressant medication (including steroid, rejection or recent chemotherapy)
- Aplastic anemia
- Primary immunodeficiency

---

**Considerations**

**Bacteria**

- 97.5% percent positive agreement (PPA)
- Does not detect non-encapsulated E. coli nor N. meningitidis
- Does not detect mycobacterium, syphilis, tick-borne disease, etc.

**Virus**

- 90.1% PPA
- Cannot differentiate active vs latent infection
- Does not detect West Nile virus (order WNV IgM on CSF if suspected)
- HHV6 detection requires clinical correlation
  - Detection can reflect chromosomally integrated virus

**Fungus (only Cryptococcus)**

- 92.3% PPA relative to cryptococcal smear/culture
- But only 52% PPA relative to cryptococcal antigen!
  - Should not supplant CSF cryptococcal Ag testing if suspected

---

**Pathogens Detected**

<table>
<thead>
<tr>
<th>Bacteria</th>
<th>Virus</th>
<th>Fungus</th>
</tr>
</thead>
<tbody>
<tr>
<td><em>Escherichia coli</em> K1</td>
<td><em>Cytomegalovirus</em> (CMV)</td>
<td><em>Cryptococcus neoformans/gattii</em></td>
</tr>
<tr>
<td><em>Haemophilus influenza</em></td>
<td><em>Enterovirus</em></td>
<td></td>
</tr>
<tr>
<td><em>Listeria monocytogenes</em></td>
<td><em>Herpes simplex virus 1</em> (HSV1)</td>
<td></td>
</tr>
<tr>
<td><em>Neisseria meningitidis</em></td>
<td><em>Herpes simplex virus 2</em> (HSV2)</td>
<td></td>
</tr>
<tr>
<td><em>Streptococcus agalactiae</em></td>
<td><em>Human herpesvirus 6</em> (HHV6)</td>
<td></td>
</tr>
<tr>
<td><em>Streptococcus pneumoniae</em></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td><em>Varicella zoster virus</em> (VZV)</td>
</tr>
</tbody>
</table>