Indications for Testing

**Patients must be symptomatic to send testing**

- **<12 months:** Rarely indicated; high rate of asymptomatic carriage
- **Symptomatic infants if no alternative etiology** w/:
  - Risk factors for severe CDI
  - History of frequent antibiotic exposures
  - C. diff outbreaks in hospital unit
- **12-36 months:** Indicated if no alternative etiology for diarrhea

See “>36 months” section for indications.

- **>36 months:** Indicated if patient meets any of the following criteria:
  - Diarrhea (≥3 unformed stools within 24 hours w/o alternative explanation)
  - Unresolved symptoms after full treatment course
  - Colitis on imaging w/ accompanying symptoms
  - Leukocytosis (WBC >15K/mmc) & ileus
  - Abdominal pain w/ radiographic evidence of bowel thickening
  - Toxic megacolon
  - Pseudomembranes

Testing Results

- **Clostridium difficile by PCR** assay is the preferred test

<table>
<thead>
<tr>
<th>PCR Result</th>
<th>Toxic Result</th>
<th>Interpretation</th>
</tr>
</thead>
<tbody>
<tr>
<td>-</td>
<td>+</td>
<td>No toxigenic C. difficile present (~99% negative predictive value)</td>
</tr>
<tr>
<td>+</td>
<td>-</td>
<td>May represent colonization or active clinical infection (requires clinical correlation to determine if treatment is warranted)</td>
</tr>
<tr>
<td>+</td>
<td>+</td>
<td>Toxigenic C. difficile present.</td>
</tr>
</tbody>
</table>

GI Panel is for use in patients w/ community-acquired diarrhea (send in the first 3 days of hospitalization) OR Hospitalized patients at risk for etiologies other than C. difficile (e.g., norovirus outbreak)

**There is no role for performing both tests**

General Risk Factors
- Antibiotic use within 3 months
- Hospitalization within 30 days
- Acid suppressive therapy
- History of prematurity
- History of abdominal surgery

Risk Factors for SEVERE Disease
- Immunosuppressed state
- Severe comorbid disease(s)
- Hirschsprung’s disease
- Dysmotility disorder
- IBD

Classifications

- **Mild/moderate**
  - CDI and no criteria in the “severe” or “complicated” categories

- **Severe**
  - At least 2 abnormal lab values:
    - WBC ≥15K
    - SCR ≥1.5x baseline
    - ANC ≤500
    - ALB ≤2.5

- **Complicated**
  - ANY of the following:
    - Septic shock
    - Severe sepsis
    - Ileus or bowel obstruction

Follow-up

- Clear improvement should be seen after 3-5 days
- If failure to improve on PO metronidazole after 3-5 days, change to vancomycin PO
- If clinical deterioration occurs (worsening abdominal distention/pain, and/or peritonitis, worsening leukocytosis, end organ failure, intubation, vasopressor requirement, mental status changes, new or worsening acute kidney injury, or worsening lactate >5 mmol/L):
  - Consult Pediatric Infectious Diseases
  - Consult Pediatric Surgery
  - Change to triple therapy
  - Consider CT scan of abdomen/pelvis

Prophylaxis (can be considered for high risk patients)

- **3 or more episodes in the past year**
  - Vancomycin PO 10 mg/kg/dose PO BID (max: 125 mg/dose)
  - Continue for the duration of broad spectrum antibiotic exposure

Indications for broad spectrum antibiotics:

- Severe complicated CDI
- Recurrence*
- SOT/BMT <100 days
- Neutropenic from malignancy

Treating CDI

1. Choose therapy based on severity
2. **Mild/moderate**
   - Oral metronidazole 7.5 mg/kg/dose PO QID x10 days (max: 500 mg/dose)
   - Vancomycin 10 mg/kg/dose PO QID x10 days (max: 125 mg/dose)

3. If failure to improve on PO metronidazole after 3 days:
   - Change to triple therapy
   - Consult Pediatric Infectious Diseases

4. **Complicated**
   - Consult Pediatric Infectious Diseases & Pediatric Surgery
   - Vancomycin 10 mg/kg/dose PO QID x10 days (max: 500 mg/dose)
   - Metronidazole 7.5 mg/kg/dose IV q6h (max: 500 mg/dose)
   - Vancomycin retention enema 5-10 mL/kg/dose q6h (max: 500 mL/dose)

5. Postoperative diverting loop ileostomy regimen consists of antegrade vancomycin flushes (500 mg in 500 mL of Lactated Ringers; q8h for a duration of 10 days) via a 24 French Malecot catheter in the effenter limb of the ileostomy and intravenous (IV) metronidazole (500 mg q8h) for 10 days. See Reference Neal MD, et al. Ann Surg 2011;254:423-7.

6. Vancomycin induction therapy

- 10-20 mL/kg/dose, max: 500 mL, of a 500 mg/500 mL solution in NS q6h instilled by appropriately sized Foley catheter inserted into rectum with balloon inflated and Foley clamped for 1 hour
- Treatment naive patients should be started at 10 mL/kg/dose and escalated as tolerated up to 20 mL/kg/dose up to a max: 500 mL
- Suspected or known bowel perforation is a contraindication for rectal administration

Notes

*Possible alternative explanations of diarrhea:
- Laxative use within last 48 hours
- Oral contrast receipt in last 48 hours

Vancomycin taper (to be started after treatment course is completed) (max: 125 mg/dose):
- 10 mg/kg/dose PO POB 7 days
- 10 mg/kg/dose PO Daily x7 days
- 10 mg/kg/dose PO every other day x7 days
- 10 mg/kg/dose PO every 3 days x4 weeks

Vancomycin retention enema administration
- 10-20 mL/kg/dose, max: 500 mL, of a 500 mg/500 mL solution in NS q6h instilled by appropriately sized Foley catheter inserted into rectum with balloon inflated and Foley clamped for 1 hour
- Treatment naive patients should be started at 10 mL/kg/dose and escalated as tolerated up to 20 mL/kg/dose up to a max: 500 mL
- Suspected or known bowel perforation is a contraindication for rectal administration

Postoperative diverting loop ileostomy regimen consists of antegrade vancomycin flushes (500 mg in 500 mL of lactated Ringers; q8h for a duration of 10 days) via a 24 French Malecot catheter in the effenter limb of the ileostomy and intravenous (IV) metronidazole (500 mg q8h) for 10 days. See Reference Neal MD, et al. Ann Surg 2011;254:423-7.