CLINICAL PATHWAY:
Evaluation and Management of Suspected Clostridium Difficile (C.difficile) Infection

THIS PATHWAY SERVES AS A GUIDE AND DOES NOT REPLACE CLINICAL JUDGMENT.

Inclusion Criteria:
Suspected C. difficile infection due to:
(1) prolonged or worsening diarrhea (at least 3 liquid stools in 24 hours; **Appendix A**, **Appendix B**) AND
(2) risk factors for C. difficile infection (antibiotics in prior 3 months, hospitalization in prior 3 months, immunocompromised patients due to chemotherapy/humoral immunodeficiency/solid organ transplant, chronic inflammatory bowel disease, G-tube or J-tube need, use of acid suppressive therapies – PPI or H2 blockers, or prior C difficile infection)
Exclusion Criteria:
Soft or formed stools (**Appendix A**), <3 liquid stools in 24 hours, no risk factors for C. difficile infection

Place on contact precautions and send C. difficile testing ONLY if appropriate (see below).

Considerations for testing for C. difficile:

- **<1 years of age:** Generally colonized
  - DO NOT test; Treating for C. difficile is not indicated
- **1-2 years of age:** High likelihood of colonization
  - Evaluate/empirically treat for other infectious/non-infectious causes before testing for C. difficile
    - Add fiber to the formula of tube-fed patients
    - Stop medications associated with diarrhea; Laxatives/stool softeners should be stopped at least 48 hours prior to testing
- **>2 years of age:**
  - Test ONLY if patient has not received laxatives or other medications associated with diarrhea (or diarrhea persists after 48 hours of stopping the medication) AND if no alternative reason for diarrhea exists.

Confirmed C. difficile disease:
Positive C. difficile PCR and positive C. difficile Ag/Toxin is consistent with infection, and treatment should be initiated/resumed.
Positive C. difficile PCR and negative C. difficile Ag/Toxin represents colonization (NOT infection) and should NOT be treated.

Repeat testing of the same episode is NOT recommended.

Initial Disease
(1st episode, or repeat episode >8 weeks from prior episode)

Non-Severe Disease:
[diarrhea may contain some blood, WBC and SCr normal for age]

- <18 yrs old: **Metronidazole PO**: 30 mg/kg/day div 3-4 doses (max 500 mg/dose) x10 days
  - If no improvement within 5-7 days, treat as "severe" disease below
- 18 yrs old: **Vancomycin PO**: 40 mg/kg/day div 4 doses (max 125 mg/dose) **OR** **Metronidazole PO** (if vancomycin PO not available): 30 mg/kg/day div 3-4 doses (max 500 mg/dose) x10 days
  - If no improvement within 5-7 days, considered treatment failure. Follow guidelines under "Recurrent Disease".

Severe Disease:
[ill-appearing, diarrhea usually bloody, elevated WBC likely due to C.diff]

- **Vancomycin PO**: 40 mg/kg/day div 4 doses (max 125 mg/dose) x10 days
- If no improvement within 5-7 days: consult GI

Fulminant Disease:
[hypotension/shock due to C. difficile, Ileus, Mega colon; adults with serum lactate ≥5 mmol/L and peripheral WBC ≥50,000 had higher rates of mortality]

- **Metronidazole IV**: 30 mg/kg/day div 3-4 doses (max 500 mg/dose) AND
- **Vancomycin PO** 40 mg/kg/day div 4 doses (max 500 mg/dose) OR **Vancomycin PR** 4x/day via retention enema (through foley catheter clamped for 30-60 min retention time)
  - Do not use PR vancomycin if neutropenic
  - 1-4 yrs old: 250 mg in 50 mL normal saline
  - 4-11 yrs old: 375 mg in 75 mL normal saline
  - 12 yrs old: 500 mg in 100 mL normal saline
- Duration of treatment: 10 days
- Consults:
  - GI
  - Consider Surgery

Recurrent Disease
(Repeat episode ≤8 weeks from prior episode)

Treatment options:
[See disease severity under "Initial Disease" for clarification.]

If failure with metronidazole:

- **Vancomycin PO** 40 mg/kg/day div 4 doses (max 125 mg/dose for non-severe disease and severe disease; max 500 mg/dose for fulminant disease) x10 days

If failure with vancomycin PO:

- Consult GI
- Begin **Vancomycin**:
  - Vancomycin PO 40 mg/kg/day div 4 doses (max 125 mg/dose for non-severe/severe disease, max 500 mg/dose for fulminant disease) x10 days *followed by taper:*
    - Vancomycin PO 10 mg/kg/dose (max 125 mg/dose) BID x7 days *followed by*
    - Vancomycin 10 mg/kg/dose (max 125 mg/dose) once daily for 7 days *followed by*
    - Vancomycin 10 mg/kg/dose (max 125 mg) every 2-3 days for 2-8 weeks as directed by GI

If failure with vancomycin taper:

- Consult GI
- **Vancomycin PO** 40 mg/kg/day div 4 doses (max 125 mg/dose for non-severe/severe disease, max 500 mg/dose for fulminant disease) x10 days AND
- **Rifaximin chaser** 10-15 mg/kg/dose (max 400 mg/dose) BID for 2 weeks (to begin right after last dose of vancomycin PO)

If failure with vancomycin taper AND failure with vancomycin PO/rifaximin:

- Consult GI
- Consider **Fidaxomicin** 8 mg/kg/dose BID (max 200 mg/dose) x10 days; if using Fidaxomicin, please contact Antimicrobial Stewardship Program for up-to-date dosing recommendations

Discharge Criteria: clinically stable, cleared by GI (and surgery, if involved), medication available prior to discharge
Discharge Instructions: Ensure insurance coverage/medication availability prior to discharge, follow up with PCP and/or GI (if involved in hospitalization)

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CLINICAL PATHWAY:
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Appendix A: Nursing Flowchart for Appropriate C. difficile testing

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Does the patient have diarrhea? (Diarrhea is defined as >3 **liquid** stools in 24 hours.)

YES

In the last 48 hours, has the patient received any laxatives or other medications that could cause diarrhea?

NO

Contact the patient's provider. Have the following crucial information ready:

- ☐ number of liquid stools last 24 hours
- ☐ relevant symptoms (i.e. abdominal pain and/or cramps, fever, chills)

Obtain and send stool specimen as soon as possible if ordered.

Please Note:

- Vomiting is not characteristic of *C. difficile* and raises the question of other diagnoses, such as viral gastroenteritis.
- Studies have shown that there is no characteristic odor of stool from patients with *C. difficile.*

YES

Contact provider. Request that laxatives and stool softeners be held if possible. Inform provider of other meds that can cause diarrhea.

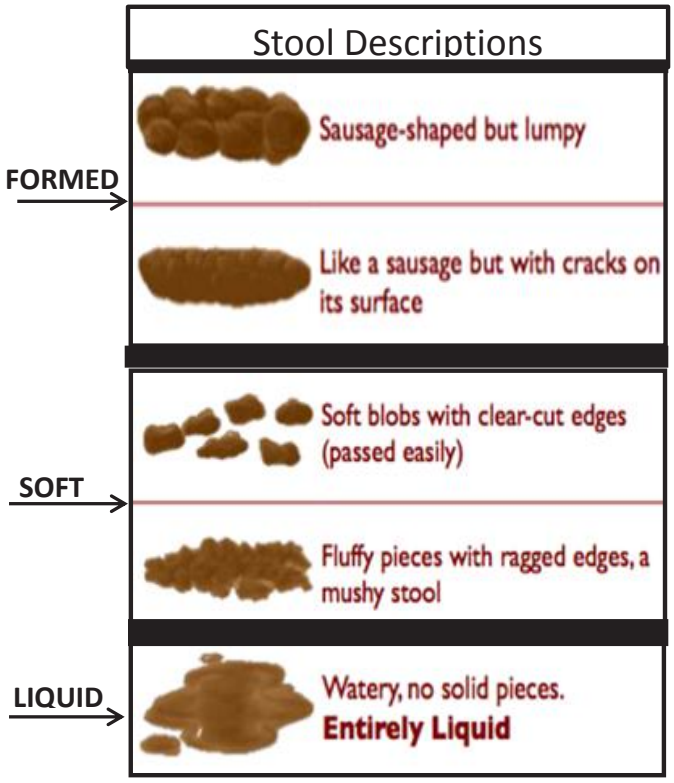
NO

Continue to monitor for signs and symptoms of infection and document consistency (**formed, soft or liquid**) of all bowel movements.

Testing for *C. difficile* is NOT recommended.
Continue to monitor for signs and symptoms of infection.

Some Medications That Can Cause Diarrhea

- Laxatives
  - lactulose, bisacodyl, mag citrate, docusate, Go-lytely, senna, polyethylene glycol and sorbitol to name a few
- Enemas
- Other Medications, including:
  - Kayexalate
  - Colchicine
  - Octreotide
  - Metformin and other diabetic medications
  - Antibiotics
  - Antineoplastics
  - Magnesium-containing antacids



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CLINICAL PATHWAY:
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Appendix B: Provider Flowchart for Appropriate C. difficile testing

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Does the patient have diarrhea? (Diarrhea is defined as ≥ 3 **liquid** stools in 24 hours.)

YES

In the last 48 hours, has the patient received any laxatives or other medications that could cause diarrhea?

NO

Providers should assess the following to determine if *C. difficile* testing is appropriate:

- Age
- Laxative/enema use in last 24 hours
- Number and consistency of stools (verify ≥ 3 liquid stools in 24 hours)
- Abdominal symptoms such as pain, distension
- Vital signs
- WBC
- Tube feedings
- Other medications that can cause diarrhea

Have a low threshold for seeing the patient in order to make an optimal decision about testing.

Vomiting is not characteristic of *C. difficile* and raises the question of other diagnoses, such as norovirus infection.

Acute care hospitals are required to report all *C. difficile* LabID events to CMS via NHSN.

- **Community-Onset (CO)**: LabID Event specimen collected in an outpatient location or an inpatient location **≤2 days** after admission to the facility (i.e., day 1 or 2). **TRY TO IDENTIFY ASAP AFTER ADMISSION**
- **Healthcare Facility-Onset (HO):** LabID Event specimen collected **>3 days** after admission to the facility.

YES

Nurse to call provider to ask about discontinuing laxatives, enemas, etc. and to review other meds.

NO

Nursing will continue to monitor for signs and symptoms of infection and document consistency (**formed, soft or liquid**) of all bowel movements.

Testing for *C. difficile* is NOT recommended unless other clinical indications present (refer to box on left).

Some Medications That Can Cause Diarrhea

- Laxatives
  - lactulose, bisacodyl, mag citrate, docusate, Go-lytely, senna, polyethylene glycol and sorbitol to name a few
- Enemas
- Other Medications, including:
  - Kayexalate
  - Colchicine
  - Octreotide
  - Metformin and other diabetic medications
  - Antibiotics
  - Antineoplastics
  - Magnesium-containing antacids

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