TITLE: LABORATORY TESTING OF FAECES SAMPLES FOR CLOSTRIDIUM DIFFICILE

Practitioner Information Leaflet
Laboratory Testing of Faeces Samples for *Clostridium difficile* – From October 2013

**Specimen acceptance**

*C. difficile* toxin testing service is available 7 days / week in the Microbiology Department.

It is essential to include appropriate patient ID, clinical details and medication information (antibiotics, PPIs, laxatives or aperients) on the request form.

Stool specimens should be sent for toxin testing on the first episode of Type 5 – 7 diarrhoea of unknown cause.

If patients are very unwell and there are concerns about severe *C difficile* disease please speak to one of the microbiologists and send faeces samples for urgent *C difficile* testing (NB urgent means telephone the lab or OOH the on-call BMS)

Only Registered Nurses or Doctors can approve stool sample requests.

Do not send stool samples if the patient is on or has had laxatives, aperients or bowel prep in the previous 24 hours, unless the patient is systemically unwell or there is a significant clinical indication to do so. There may be exceptions to this e.g. liver disease and those in critical care areas.

In suspected cases of ‘silent’ *C difficile* infection (CDI), such as ileus, toxic megacolon or pseudomembranous colitis without diarrhoea, other diagnostic procedures eg colonoscopy, white cell count (WCC), serum creatinine and abdominal CT scanning, may be required to diagnose CDI

If the patient is, for example symptomatic of malena, on the Liverpool Care Pathway, or if there is uncertainty on whether to send a sample for testing please discuss with one of the microbiologists.

Do not retest for *C. difficile* in patients who are carriers of toxigenic strains (PCR positive) or who are likely to have CDI (toxin positive) if patients are symptomatic and their symptoms have not changed but please discuss further management with one the microbiologists or antibiotic pharmacists.

More than one test per patient may be required if the first test is negative and there is a strong clinical suspicion of CDI. However no more than 2 specimens should be submitted in a 7 day period. If symptoms persist unchanged after 2 negative samples alternative diagnoses should be strongly considered rather than repeat testing.

Generally it is not advisable to test children under the age of 2 years in whom toxigenic strains of *C. difficile* and toxins A and B may be present in the absence of symptoms.
Explanation of *C. difficile* testing algorithm for medical and nursing staff

**Summary** *Clostridium difficile* infection (CDI) remains a major cause of morbidity and mortality. CDI is caused by *Clostridium difficile* (*C. difficile*) bacteria producing toxins that cause loose stools and may lead to inflammation of the bowel wall and in the most serious cases pseudomembranous colitis. There is no perfect single diagnostic test for CDI at present; therefore we use a combination of tests. The tests are only reliable when there is a clinical suspicion of CDI, therefore stool samples should only be sent under these circumstances and results interpreted in light of the clinical picture.

**Types of *C. difficile* tests conducted in the laboratory:**

1. **GDH (Glutamate Dehydrogenase) TEST:** GDH is an enzyme that is produced by ALL *C. difficile* species (as well as other bacteria). This test is used as a SCREENING test. If it is NEGATIVE it is unlikely that the patient has CDI. If it is positive, further tests (toxin testing and PCR) are carried out.

2. **TOXIN TESTING:** This test looks for the presence of *C. difficile* toxin A and B in the stool, this test has poor reliability. Positive GDH, PCR & toxin tests suggest the patient has *C. difficile* and its toxin in their stool.

3. **MOLECULAR PCR TESTING:** This test looks for the presence of the genes that encode for the production of the *C. difficile* toxin. If it is positive in the context of a positive GDH test it implies that the patient harbours *C. difficile* bacteria with the capability to produce *C. difficile* toxin.

*GDH testing will be done on all samples.*

*A negative report will be sent out on samples with a GDH negative result.*

*Samples with a GDH positive result will undergo both C difficile PCR and C difficile toxin testing*
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