Infectious Diarrhoea
The Role of Microbiological Examination of Faeces
Quick Reference Guide for Primary Care
For consultation and local adaptation

B-
- ❑ **Definition of acute diarrhoea: 3 or more episodes a day, <14d and sample takes shape of pot.**[1,2,3]
- ❑ **About 20% of the population develop infectious intestinal disease (IID) per year.** [4]
- ❑ **Most infectious diarrhoea is a self-limited, usually viral illness. Nearly half last less than one day.**[2,5]
- ❑ **If the diarrhoea has stopped, culture is rarely indicated, as recovery of the pathogen is unlikely.**
- ❑ **Infectious diarrhoea should be considered in parallel with other causes of diarrhoea.**

Pathogens routinely looked for (cases per 100,000 population 2005):

- ❑ Campylobacter (87 cases)
- ❑ Cryptosporidium (9 cases)
- ❑ *Escherichia coli 0157:H7* (2 cases)
- ❑ Salmonella (21 cases)
- ❑ Shigella (2 cases)

Other enteropathogens looked for (depending on history):

- ❑ Noroviruses
- ❑ Rotavirus
- ❑ *Giardia lamblia*
- ❑ *Entamoeba histolytica*
- ❑ *C. difficile*
- ❑ Vibrio
- ❑ *Yersinia enterocolitica*
- ❑ Cyclospora
- ❑ Toxin-producing *Clostridium perfringens*
- ❑ *Bacillus cereus*
- ❑ *Staphylococcus aureus* toxin

B- WHEN TO SEND A FAECAL SPECIMEN[2,3]

- ❑ Patient systemically unwell; needs hospital admission and/or antibiotics.
- ❑ Blood or pus in stool.
- ❑ Acute painful, or bloody diarrhoea in previously healthy children to exclude *E. coli* O157 infection[6]
- ❑ Post antibiotics and hospitalisation (*C. difficile*).
- ❑ Diarrhoea after foreign travel; you should request ova, cysts and parasites (OCP).
- ❑ Persistent diarrhoea when Giardia is suspected.[7]
- ❑ For reassurance, as diagnosis of infection may exclude other pathologies.

WHEN ADVISED BY HEALTH PROTECTION UNIT[2,8,9]

- ❑ Suspected public health hazard: e.g. diarrhoea in food handlers, healthcare workers, children after farm visits (*E. coli O157*), or at nurseries, elderly residents in care homes or other high-risk situations.
- ❑ Outbreaks of diarrhoea in family, community, etc when isolating the organism may help pinpoint outbreak source.
- ❑ Contacts of patients with certain organisms e.g. *E. coli* 0157, where there may be serious clinical sequelae.

WHAT TO SEND (see next page for how to collect)

C
B
- ❑ Single specimen (minimum needed for routine investigation only: 1 ml - size of pea).
- ❑ If recurrent, send 3 specimens (5 ml each) 2-3 days apart, as OCP are shed intermittently.[10]

HISTORY THAT SHOULD BE INCLUDED ON FORM TO HELP DETERMINE DIAGNOSTIC METHODS

C
- ❑ **Thorough clinical evaluation of a patient is needed to guide laboratory testing and therapy.**
- ❑ **Please state if submitted at request of HPU, CCDC or EHO.**

B

Clinical features:
- ❑ Systemic illness, fever, bloody stool
- ❑ Symptoms; duration, recurrent, chronic
- ❑ Severe abdominal pain (Campylobacter)
- ❑ Immunosuppression

Epidemiological setting:
- ❑ Food intake e.g. barbecue; restaurant; eggs; chicken; shellfish
- ❑ Recent foreign travel and to which country
- ❑ Recent antibiotic, PPI or hospitalisation (*C. difficile*)[11,12]
- ❑ Family or nursing home; (Norovirus)
- ❑ Exposure to untreated water (protozoa) or animals
- ❑ Contact with other affected individuals or outbreak

INTERPRETING THE LABORATORY REPORT

B
- ❑ A pathogen is found in only 2 – 5% of specimens submitted.[3]
- ❑ A negative report does not mean all pathogens are excluded; the pathogens sought will usually be listed. e.g. There are no routine methods for detecting enterotoxigenic *E. coli*, the commonest cause of traveller's diarrhoea.

TREATMENT FOLLOWING REPORT

B
- ❑ Most patients in whom pathogens are detected will NOT require specific treatment unless systemically unwell or treatment is advised by a microbiologist or consultant in communicable disease control.

A
- ❑ Urgently refer all previously healthy children with acute painful, bloody diarrhoea or confirmed *E. coli* O157.

C
- ❑ *C. difficile:* Stop unnecessary antibiotics and/or PPIs to re-establish normal flora. Prescribe metronidazole 400 or 500 mg oral tds. 70% of patients respond after 5 days; 94% in 14 days. Monitor >85 year olds as mortality double.[13,14] If severe (characterised by T >38.5; WCC >15; rising creatinine or signs/symptoms of severe colitis) or 3rd episode, prescribe vancomycin 125mg oral qds for 10-14 days.
- ❑ Campylobacter: Antibiotic therapy has little effect on duration of symptoms unless given very early in illness course.[15]
- ❑ *G. lamblia* and *E. histolytica* should be treated.[7]
- ❑ Unless symptoms persist, Blastocystis & *Dientamoeba fragilis* do not usually require treatment in otherwise healthy.[16,17]

WHEN TO SEND A REPEAT SPECIMEN

- ❑ Usually unnecessary unless advised by a microbiologist or consultant in communicable disease control.

KEY A B C D Indicates grade of recommendation

This evidence-based guidance was developed by the HPA Primary Care Unit and GP Microbiology Laboratory Use Group, in collaboration with GPs, the AMM and other experts. It is in line with HPA SOPs, Clinical Knowledge Summaries & SIGN.

Produced December 2007 Amended July 2010 following the Griffin Report For Review May 2011

Collecting a stool specimen for microbiological examination

1. DO NOT mix urine with the stool sample. If you need to pass water, do so first.

2. Place a wide mouth container (potty, empty plastic food container e.g. 1 litre ice cream carton) in the bowl, or put clean newspaper or plastic wrap over the toilet seat opening (this prevents the faecal/stool specimen from falling into the toilet bowl. (Collection container does not have to be sterile, but must be clean).

3. Pass stool onto the potty, plastic container, newspaper or plastic wrap.

4. Using the spoon built into the lid of the collection tube (or the wooden sticks, if supplied), place small scoopfuls of stool from areas which appear bloody, slimy or watery into the tube. DO NOT OVERFILL. Try not to spill stool on the outside of the tube.

5. Replace the collection tube lid and screw on tightly.

6. Dispose of remaining stool in your potty, plastic container or newspaper down the toilet. Clean potty with hot soapy water. Wrap plastic container, newspaper or plastic wrap in newspaper and dispose of in normal refuse in a plastic bag.

7. Label the collection tube with your name, date of birth and the date of collection

8. Place the container in the plastic bag attached to the specimen request form.

9. Wash your hands thoroughly in hot running water with soap.

10. Deliver to the surgery/laboratory as soon as possible.

11. If specimen cannot be delivered immediately, refrigerate in surgery fridge until delivery.

Grading of guidance recommendations

Study Design	Recommendation Grade
Good recent systematic review of studies	A+
One or more rigorous studies, not combined	A-
One or more prospective studies	B+
One or more retrospective studies	B-
Formal combination of expert opinion	C
Information opinion, other information	D

This guidance was updated in July 2010 following the Griffin Report into the investigation of an outbreak of Escherichia coli O157 led to severe illness in a number of visitors to Godstone Farm in Surrey.[7]

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