Management of suspected infectious diarrhoea by English GPs: are they right?

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and
Why we did the survey

Results – E.coli, Clostridium difficile, OCP

Implications for NHS, laboratories and GPs

Conflicts of interest:
No support from pharma or diagnostic companies
Member of ARHAI and EAAD Technical advisory committee
Develop UK primary care diagnostic antibiotic guidance and TARGET materials for GPs
Background

- There are 10 GP consultations for every case of infectious diarrhoea reported for surveillance.
- There has been little work exploring why GPs submit stool specimens in IID.
- 2010 Health Protection Notification Regulations now oblige clinicians to notify cases of
  - infectious bloody diarrhoea,
  - food poisoning
  - haemolytic uraemic syndrome (HUS).
Background

❖ PHE Primary Care unit and BIA produce guidance on when stool specimens should be submitted.

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

- Definition of acute diarrhoea: 3 or more episodes a day, <14d and people at higher risk of infection (see page 20-19)
- About 27% of the population develop infectious intestinal disease (IID) per year.7
- Most infectious diarrhoea is a self-limited, usually viral illness7. Nearly half of episodes last less than one day2,7
- If diarrhoea has stopped, culture is rarely indicated, as recovery of the pathogen is unlikely.
- Infectious diarrhoea should be viewed as a differential diagnosis4 with other potential causes of diarrhoea as about 30% of diarrhoeal illnesses are not of infective origin.

<table>
<thead>
<tr>
<th>WHEN TO SEND A FAECAL SPECIMEN</th>
<th>6,9, 10, 11, 12</th>
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<tbody>
<tr>
<td>FOR CLINICAL HISTORY OR SYMPTOMS</td>
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<tr>
<td>Patient immunosuppressed, systemically unwell, needs hospital admission and/or antibiotics.4</td>
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<td>Blood or pus in stool.4</td>
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<td>In children who have acute painful, or bloody diarrhoea to exclude <em>E. coli</em> O157 infection.6,12</td>
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<tr>
<td>Post antibiotics7, PPI or hospitalisation (C. difficile)13,19 Diarrhoea after foreign travel (state countries); you should request ova, cysts and parasites (OCP)1,2</td>
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<td>Specifically when <em>Amoeba, Giardia or cryptosporidium</em> are suspected,7,21 and in particular if there is recurrent or prolonged diarrhoea (over 14 days)</td>
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<tr>
<td>To exclude infectious diarrhoea in the differential diagnosis, e.g. when patients have severe abdominal pain, exacerbations of inflammatory bowel disease or irritible</td>
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<tr>
<td>WHEN ADVISED BY HEALTH PROTECTION UNIT FOR PUBLIC HEALTH REASON</td>
<td>9, 10, 11, 12 (STATE ON FORM)</td>
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<tr>
<td>Suspected food poisoning e.g. barbecue, restaurant, eggs, chicken, shellfish9</td>
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<td>Diarrhoea in high-risk situations for example: food handlers, healthcare workers, children at nurseries or afterfarm visits <em>E. coli O157</em>8 elderly residents in care homes or other.9, 10, 11, 12</td>
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<tr>
<td>Contact with other affected individual or outbreaks of diarrhoea in: care home (Norovirus), community, family, etc when isolating an organism may help pinpoint cause.9</td>
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<tr>
<td>Contacts of patients with certain organisms 9 e.g. <em>E. coli</em> O157, where there may be serious clinical</td>
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http://www.hpa.org.uk/Topics/InfectiousDiseases/InfectionsAZ/PrimaryCareGuidance/
Aims

- Determine if criteria used to send stool specimens are in line with PHE national guidance
- Determine whether GPs would prescribe an antibiotic before they receive a microbiology result
- Inform guidance review and educational needs
Methods:

The questionnaire included free text and tick boxes & covered:

- GP criteria used for stool sample submission
- Factors that made them consider public health implications,
- Use of empirical antibiotics,
- Advice given to patients
- Opinions on reporting

Mailing

- Gloucester, Taunton and Salisbury microbiology labs
- 974 GPs in 172 GP practices
- 2012, Hard copy A5 format, freepost, and CPD certificates
Results

Questionnaire returns

- At least one questionnaire from 90% (154/172) of practices
- 49%, 477 of eligible 968 GPs

When did GPs report sending specimens?

- 0-100% of suspected infectious diarrhoea!
- median 50%, inter quartile range 10-90%,
Factors reported in free text answers that would prompt GPs to send a stool sample for microbiological investigation (n=477)

- Persistent diarrhoea
- Recent foreign travel
- Blood or pus in stools
- Patient systemically unwell
- Post antibiotics & hospitalisation

McNulty, Lasseter, Verlander, Yoxall, Moore, O’Brien, Evans. BJGP 2013
History, Symptom or sign that would prompt GPs to consider public health issues (open question with free text)

- Patient is a health care worker
- Difficulty washing hands/disability
- Exposure to untreated water
- Prolonged diarrhoea
- Contact with farm or animals
- Query C.diff
- Recent hospitalisation
- Overseas travel
- Child/adult working in/attending nursery...
- Lives or works in care home
- Occupation or occupational risk
- Food handler/worker
- Contact with known positive patient
- Others ill/outbreak
- Query Food poisoning
Advice to stay at home with diarrhoea until asymptomatic

- 94% healthcare workers
- 99% food handlers
- 87% nursery or school workers or children

But:
22% advised <48 hours, 10% > 48 hours after asymptomatic.
When GPs requested Ova, Cysts & Parasites

- Don’t request
- Food poisoning
- Immunosuppressed
- Child attending nursery
- Exposure to untreated water
- Contact with animals or farm
- Job-food/farmer/sewage/carer
- Suspect severe illness
- Friends/family/colleagues also ill
- Prolonged diarrhoea
- Recent travel abroad

Has requested
(Tick boxes)

Would consider OCP
(Open question free text)
Results: Ova, Cysts & parasites

- Only 23% sent the recommended 3 samples
- Only half specifically requested OCP
Results: patient advice

- 89% gave some verbal advice on stool specimen collection
- only 2% of GPs gave patients any written instructions

Step 1
Remove contents from package. Put on the plastic gloves.

Step 2
To prevent the poo sample from falling into the toilet either
- Option A: Place a wide mouth container (clean empty plastic food container e.g., margarine tub) in the toilet bowl
- or Option B: Place clean newspaper over the toilet seat opening under the lid (this might not be suitable for a rainy sample)

Step 3
Pass the poo sample either into the container or onto the newspaper.

Step 4
Using the spoon built into the cap of the collection tube, collect small scoops of stool from each end and the middle. Half fill the tube. Replace cap and make sure it is tightly closed.

Disposal: Dispose of remaining stool down the toilet. Wrap the container or newspaper and gloves in clean newspaper and dispose of in a plastic bag.

Step 5
Wash hands with soap and warm water.

Step 6
Place the collection tube with the poo sample into the hard protective casing. Place this with the completed questionnaire in the plastic freepost envelope provided.

Step 7
Place the sealed envelope in a cool place until you are able to get to a post office or post box. The sample must be posted to us within 24 hrs of collection.
Empirical use of antibiotics

0 - 100%

- Never treat without result
- Suspect Norovirus
- Suspect antibiotic-associated diarrhoea
- Suspect Clostridium difficile infection
- Suspect Giardiasis
- Suspect Campylobacter infection
- Suspected E. coli 0157 or contact
- Patient systemically unwell
- Severe abdominal pain
- Acute severe symptoms in healthy child
- Contact in outbreak

Graph showing percentage of doctors who have prescribed or would consider prescribing antibiotics for various symptoms and conditions.
Where GPs sought advice

- 85% used clinical staff in the microbiology laboratory,
- 55% their GP colleagues,
- 33% local hospital guidance/intranet,
- only 6% used HPA Diarrhoea Quick Reference Guide

GPs would value more advice on
- Management of results (58%)
- Which tests to request in the future (48%)
- Explanation of the result (38%)
- Only 13% requested faster turnaround of results
Implications

- We need to address gaps in GPs’ knowledge about IID
  - *C. difficile* post antibiotics
  - *E. coli* O157 and
  - OCPs.

- We need to educate GPs about when to consider public health implications in patients with diarrhoea.

- Emphasise need for at-risk patients to stay at home until 48 hours after asymptomatic

- Consider affect of GP submission rate on reliability of surveillance of *Clostridium difficile*
We should use some of the techniques suggested by GPs to address this educational need, including:

- more advice on reports,
- providing tick boxes on GP electronic request forms,
- Sign post GPs to web based guidance from
  - test requests
  - results to appropriate guidance.
GPs for providing their time and opinions

Taunton, Gloucester and Salisbury laboratories

Administration: Kim Turner, Jill Whiting, Jill Morgan, W Thornton

K Newby, P Joshi, & K Kumaran for qualitative work

Alex Hale for data entry.