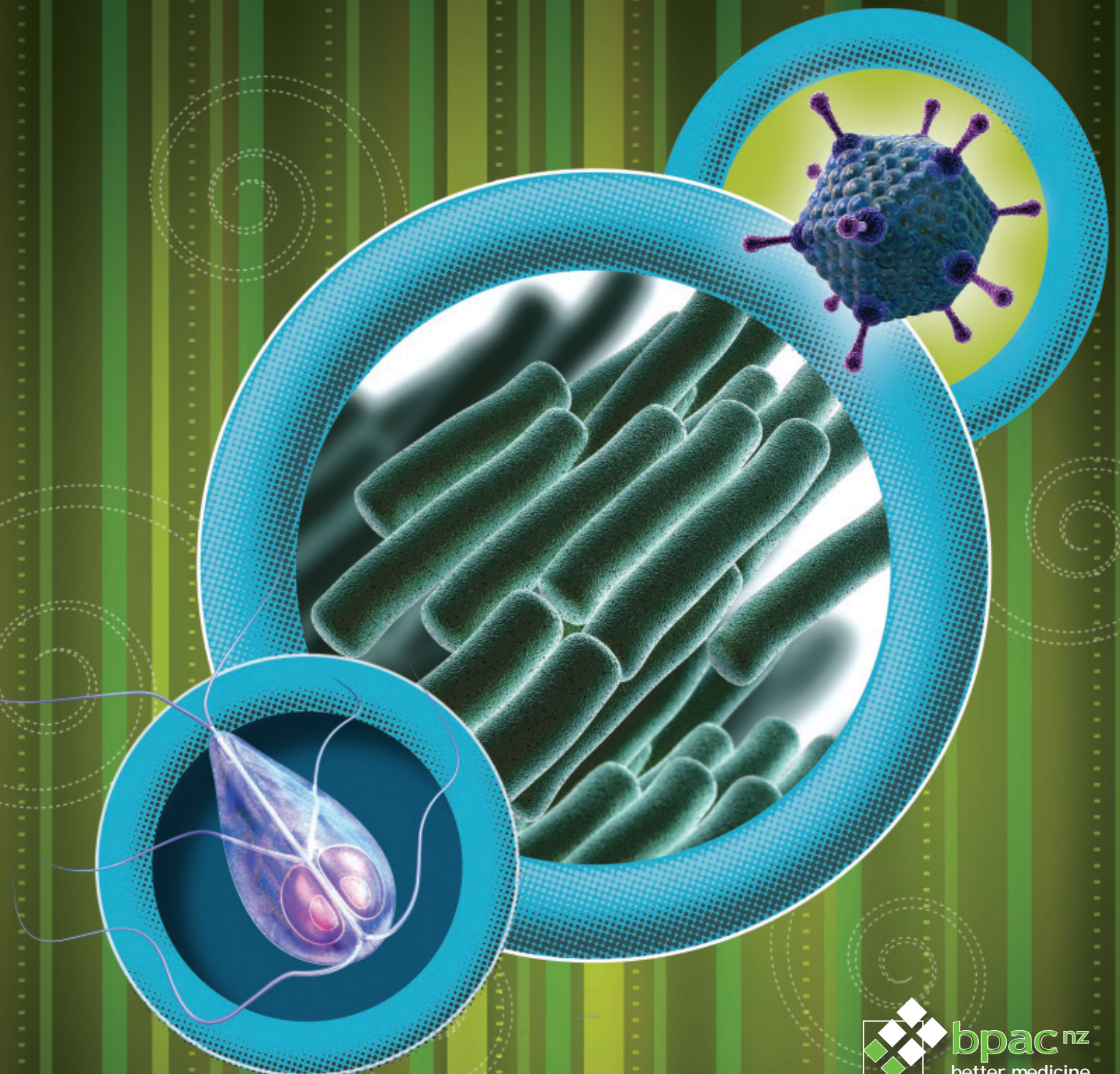


best tests

Making sense of testing for enteric pathogens

March 2008

SAMPLE GP REPORT



Dear Colleague

Making sense of testing for enteric pathogens

This 'best tests' provides a reminder of the key points to consider when requesting faecal tests for the investigation of enteric pathogens.

A comparison of your ordering of tests, compared to that of your peers, is provided in **Table 1 (removed from sample)**.

- **Laboratory investigations are not routinely required for most people with acute diarrhoea**

Each year in New Zealand it is estimated there are 6.5 million cases of vomiting and diarrhoea. Most of these illnesses are short-lived with half the people recovering by day two and 80% by day four. The vast majority of these cases are never seen in primary care.

Approximately 20% of people with an acute gastrointestinal illness will visit their GP. If the person has no risk factors, laboratory testing is not indicated. Management involves advising on adequate rest and maintaining hydration status.

- **If laboratory testing is indicated, faecal culture is the usual first line test**

When testing is indicated, in most cases a step-wise approach should be taken. Faecal culture should be the first initial test.

Nationally, faecal culture is requested as the sole initial test on 35 % of occasions.

- **A single stool specimen is required for faecal culture**

Historically, GPs were encouraged to request a series of faecal cultures ie: 'faecal culture x 3'. This practice is no longer recommended. Analysis of laboratory testing has shown the vast majority of positive tests are identified on the first specimen. Therefore, a single sample is required initially, with further specimens if symptoms persist and the initial specimen is negative.

Nationally, 56 % of all faecal cultures requested occur as part of a series* of faecal tests.

Notes:

*series is defined as a group of tests for the same patient and same doctor, which occur within 14 days of the first test in the group. Data for this section has been excluded where the NHI number was not recorded.

Data is assigned to you based on the recorded NZMC number for requested tests. Data has been excluded where the NZMC number was not recorded.

PHO = is based on X PHO_NAME GPs.

DHB = is based on X DHB_NAME GPs.

National is based on 3,508 GPs linked to the bpacnz database.

● Tests for giardia and cryptosporidium should only be requested if there are risk factors

Testing is indicated when a person has diarrhoea:

- For longer than 7 days
- Following recent overseas travel, tramping trip or drinking from springs/ivers
- Following attendance at childcare centre
- Is immunocompromised

Cryptosporidium is also associated with lambs and calves, and there are occasionally outbreaks in swimming pools.

The appropriate request for these is the giardia and cryptosporidium direct antigen test. The direct antigen test supersedes the traditional ova and cysts examination.

● Testing for ova and cysts is rarely indicated

The most common causes of parasitic diarrhoea in New Zealand, for people who have not travelled, are giardia and cryptosporidium. Diarrhoea caused by other parasites is uncommon and the test is rarely indicated.

Ova and cysts is appropriate for people with diarrhoea who have:

- Recently travelled to countries with poor food or water sources
- Recently immigrated
- Persistent diarrhoea with eosinophilia
- Immunocompromised

● Patterns of testing

When investigating infectious diarrhoea, current recommendations suggest faecal culture would be the most frequently requested test. A smaller subset of patients would be expected to have testing for giardia and cryptosporidium, and a smaller subset again would be expected to be tested for ova and cysts.

Situations in which culture, giardia/cryptosporidium and ova/cysts are indicated on one request are uncommon, however New Zealand data shows testing for ova and cysts is occurring at almost the same rate as giardia and cryptosporidium testing. This probably represents an inappropriate pattern of testing.

Laboratory testing for acute gastrointestinal illness

In December 2007 the New Zealand Food Safety Authority released a report conducted by ESR on the practices of investigating acute gastrointestinal illness. The study revealed the nature of acute gastrointestinal illness in New Zealand and was widely reported in the media.

In addition to the clinical impact of acute gastrointestinal illness, the study provided insight into the role of the laboratory for the investigation of acute gastrointestinal illness. The study took place in June 2006, and involved 35 laboratories.

Pathogen type

Bacterial testing: The study revealed the bacteria most frequently tested for in the laboratory are *Campylobacter*, *Salmonella*, *Yersinia* and *Shigella*.

Decisions to tests for *E. coli* 0157, *Vibrio*, rotavirus and *C. difficile* toxin were more likely to be performed based on the clinical symptoms and age of the patient. This underlines the importance of supplying clinical details when requesting the test. Additional testing for *E. coli* 0157 and *Vibrio* sp. are particularly dependent on relevant clinical details.

Enteric viruses: In the study only a small proportion of faecal samples were tested for enteric viruses. Ten percent of samples were tested for rotavirus, largely based on the age of the patient.

Parasites: One quarter of all faecal samples in the study period were tested for ova and parasites, and one third were tested for giardia and cryptosporidium.

In most cases parasite examinations were only performed when specifically requested. Some laboratories will test for parasites if there are relevant clinical details or a history of overseas travel.

C. difficile toxin: Testing for *C. difficile* toxin was performed on 7% of faecal samples from the study, most frequently on previously hospitalised patients.

Discarded specimens

It is reassuring that very few faeces specimens were discarded by the laboratory. The most common reasons for discarding specimens were:

- Specimen too old, leaking or mislabelled
- Multiple specimens from same allocation time (for example: several in one day)

Positivity rate

Of the 150 000 samples analysed from non-hospitalised patients, 20% were reported as having pathogens detected. This rate is consistent with overseas results. A UK study reported the positivity rate as 24% and a Canadian study reported a rate of 29%.

For further reading, and final report visit:

<http://www.nzfsa.govt.nz/science/research-projects/index.htm>

