



FACT SHEET

INTEGRATE MICROBIOLOGY REPORTS

Why might the laboratory reports be more complex than the reports from local diagnostic laboratories?

Around 500 different species of micro-organism (bacteria, viruses, fungi, protozoa) have been detected in the human intestinal tract. Most of these have no known harmful effects and, on the contrary, help to keep the gut lining healthy. A small minority of species are known to be present in cases of infectious intestinal disease (IID). Usually, these micro-organisms are present in very large numbers in the gut when they are associated with illness.

In this study we are trying to detect the majority of micro-organisms known to cause IID, and toxins produced by some of the harmful micro-organisms. This range of tests is more extensive than the traditional tests carried out in hospital laboratories for the routine investigation of gastroenteritis. So we expect to find a wide range of “suspect” micro-organisms. We are also carrying out some very sensitive molecular tests which will detect small numbers of suspect micro-organisms when present among the many millions of harmless ones.

In routine investigation of cases or outbreaks of IID only one micro-organism is identified as the “cause” of the illness in most cases. Occasionally we find more than one suspected cause is present in the stool specimen. In this study, because of the wide range of tests and the use of very sensitive molecular tests we expect to find a lot of cases with more than one potentially causative micro-organism.

Interpretation of laboratory tests

So how can we interpret the results of a case when we find more than one potentially harmful micro-organism present in the specimen? There are a number of different interpretations.

1. The person with IID ate food or drank water contaminated with, or was otherwise exposed to a wide range of micro-organisms and more than one is producing harmful effects in the body causing the symptoms.
2. One (or more) of the micro-organisms is causing the disease and the others, although detected, are not causing harm on this occasion:
 - because they are similar to but missing some key properties of the disease-causing species.
 - because they are in very low numbers and greater numbers are needed to give a harmful effect.
 - because they caused illness some weeks or months previously, and the person is now immune to their effects, but they are still present in small numbers of the intestinal tract.

Most cases of IID will only require supportive therapy such as fluids. Few cases of IID require specific antimicrobial therapy. If micro-organisms are detected that are of particular clinical or significance requiring specific therapy these will be reported by telephone to the practice concerned. There will also be urgent reporting of organisms that are of a serious public health concern. So, important results will be highlighted by the laboratory. However there will be many cases where it will not be possible or necessary to differentiate the disease producing micro-organisms from those present but not producing the symptoms in the patient.