

The third study of infectious intestinal disease in the UK (IID3)

Area of research interest: [Foodborne pathogens](#)

Study duration: 2021-10-01

Planned completion: 1 October 2026

Project status: Ongoing

Project code: FS301058

Conducted by: Newcastle University

Background

Infectious Intestinal Disease (IID) usually presents as diarrhoea and vomiting. In the UK, IID usually has no long-term health effects, but has a high associated cost due to the numbers of people who fall ill, and the consequences of absence from work or treatment cost. However, in some cases, IID can lead to death for high-risk individuals.

IID is caused by a range of microorganisms, including bacteria (e.g. Salmonella, Campylobacter and Shiga toxin-producing Escherichia coli), viruses (e.g. norovirus and rotavirus) and parasites (e.g. Giardia or Cryptosporidium), and transmission can occur through a variety of pathways.

Two previous IID studies have been undertaken examining the rates of IID: In 1993-1996, the [Study of Infectious Intestinal Disease \(IID\) in England](#) (IID1 study) and in 2007-2009, the [Second Study of Infectious Intestinal Disease in the community](#) (IID2 study). Both previous IID studies indicated that the number of cases of IID in the UK is significantly underreported and cases are often not assigned to a pathogen, with under-reporting due to numerous factors, including the individual not seeking medical care, samples not being taken at point of contact with primary healthcare, and negative test results despite meeting the criteria for an IID diagnosis.

This third study will follow similar strategies to the previous IID studies, aiming to provide data that allows comparisons across the three, but will also utilise technologies unavailable at the time of previous studies, such as whole genome sequencing.

Research approach

The IID3 project will allow an assessment of the incidence of IID in the community, updating data from previous projects.

The main aims of this study will be to:

1. Assess the overall burden of IID in the UK and find out its key causes;
2. Work out what proportion of cases are not reported to healthcare providers;
3. Look at how many of these cases are likely caused by foodborne diseases

It will consist of three studies undertaken in parallel: a population-based prospective cohort; a GP presentation study that captures all patients that present to their GP with IID; and a GP enumeration study that monitors current practice.

Stool samples will be taken and assessed to look for the microbiological cause of the IID symptoms, including bacteria (e.g. Salmonella, Campylobacter and Shiga toxin-producing

Escherichia coli), viruses (e.g. norovirus and rotavirus) and parasites (e.g. Giardia or Cryptosporidium).

The IID studies allow the FSA to examine whether our interventions are working, target new areas of concern and understand the key risks to consumers. By using the previous studies as a baseline, we can monitor the changes in the likely risks.

Project Progress

A three-month pilot study was run from the end of March through June 2023 to test the electronic systems that will be used for sample requests and data sharing between GP practices and the IID3 researchers. The pilot demonstrated that the systems were working and the study will now proceed to the main data collection period, starting on Friday 1 September 2023.

For updates on the number of GP practices involved and stool samples analysed, please see the [IID3 Dashboard](#). For more information on the project, check out the [Food for Thought seminar](#) from Professor Sarah O'Brien, the lead researcher for IID3.