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## **'Investigating the impact of local government environmental health services on gastrointestinal infections'**

### Background

Stomach bugs can spread by unclean water, food, and work surfaces. They can cause illness such as diarrhoea and vomiting, missed school and missed work. These illnesses do not affect everyone in the same way. People from poorer backgrounds and of different ethnic backgrounds have been affected more in different areas.

Local authorities in England run environmental health services. Environmental health carry out jobs that are good for the health and safety of the people and the environment of that area. An important job is making sure restaurants, bars, hotels, cafes, and canteens are clean and safe to eat from. They also make sure the food they provide is safe for eating. This is an important service, as a lot of people can get sick each year from eating unclean food from these places.

### Study

Since 2010, the amount of money given to these services has been cut. What we don't know is how these cuts have changed the way environmental health services are able to do their jobs. We would also like to find out if these service changes may be linked to the amount of stomach bugs reported. Using existing data for England and novel statistical method we will discover if these changes are different by area, over time and if poorer areas are affected more than those less poor.

### Methods

We will use information on local authority areas in England from 2010 – 2019. The data we will use will include the amount of money each area gets each year. We will use information about how services carry out jobs to make food and food places clean and safe for eating. We will see if this is linked to changes in stomach bug sickness. To do this we will use existing healthcare data on the number of people in hospital with stomach bugs and the number of NHS calls made by people with vomiting and diarrhoea. We will also look at information on the type and number of bugs reported from laboratories.

It will be important to find out if changes in the money given to local government effects how well services work, and how it effects the amount of people with stomach bugs. The knowledge gained from this study will give government important information to make funding and service decisions in the future. This will also give the government information they can use to protect public health.