

Are tourists bringing back more than souvenirs?

International travel as a risk factor for gastrointestinal illness in North East England

BACKGROUND

- International travel is thought to be a major risk factor for gastrointestinal illness in England.
- The burden of infection and possible risk factors are poorly understood as these are not well captured in UK surveillance data. Travel is only recorded in around 40% of laboratory referral forms sent to UKHSA reference laboratories.
- The North East has a unique surveillance system, EpiNorth3, which links exposure questionnaire data with laboratory (SGSS) and genomic (GDW) surveillance data allowing travel exposures from routine exposure questionnaires to be captured in a standardised way.

METHODS

Rates per 100,000 visits were calculated in R studio and mapped using the Plotly package.

Data on enteric cases (salmonella, cryptosporidium, giardia, STEC, shigella, hepatitis A, yersinia and cholera between 01/01/13 and 31/12/19 and 01/01/22 to 31/12/22 were extracted from EpiNorth3. Average annual cases per country (defined as travel during stated incubation period) were determined.

The annual mean number of visits to each country by North East residents (**Figure 1**) were determined using the 'Final weight' variable in ONS International Passenger Survey (IPS) Travelpac dataset (2013-2019). This is an annual survey performed collecting information on passengers entering and leaving the UK, with collected data used to produce estimates.

✖ 100,000

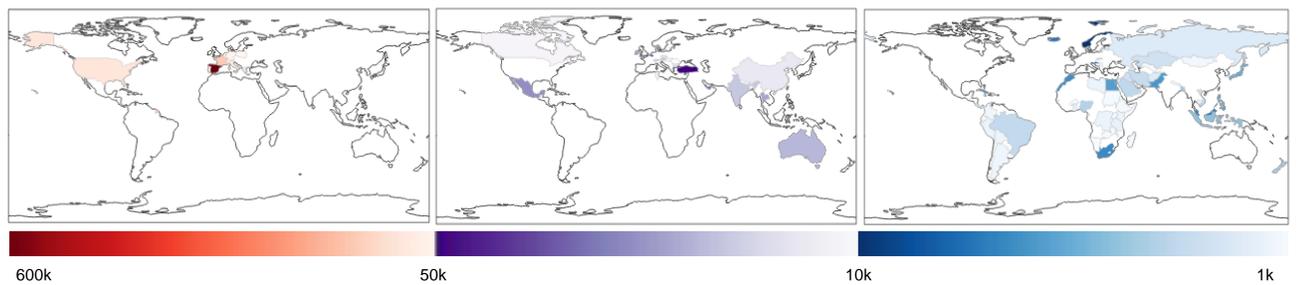
How big is the problem?

Between 2013-2019 and 2022:

-  8,224 GI infections were reported in North East residents.
-  7,026 individuals had an exposure questionnaire (85.4%)
-  2,660 reported international travel (37.9% with exposure; average of 333 cases per year)
-  The highest number of cases were reported from Spain (n=473), Turkey (n=400), India (n=153), Egypt (n=152), Mexico (n=117) and Pakistan (n=104).

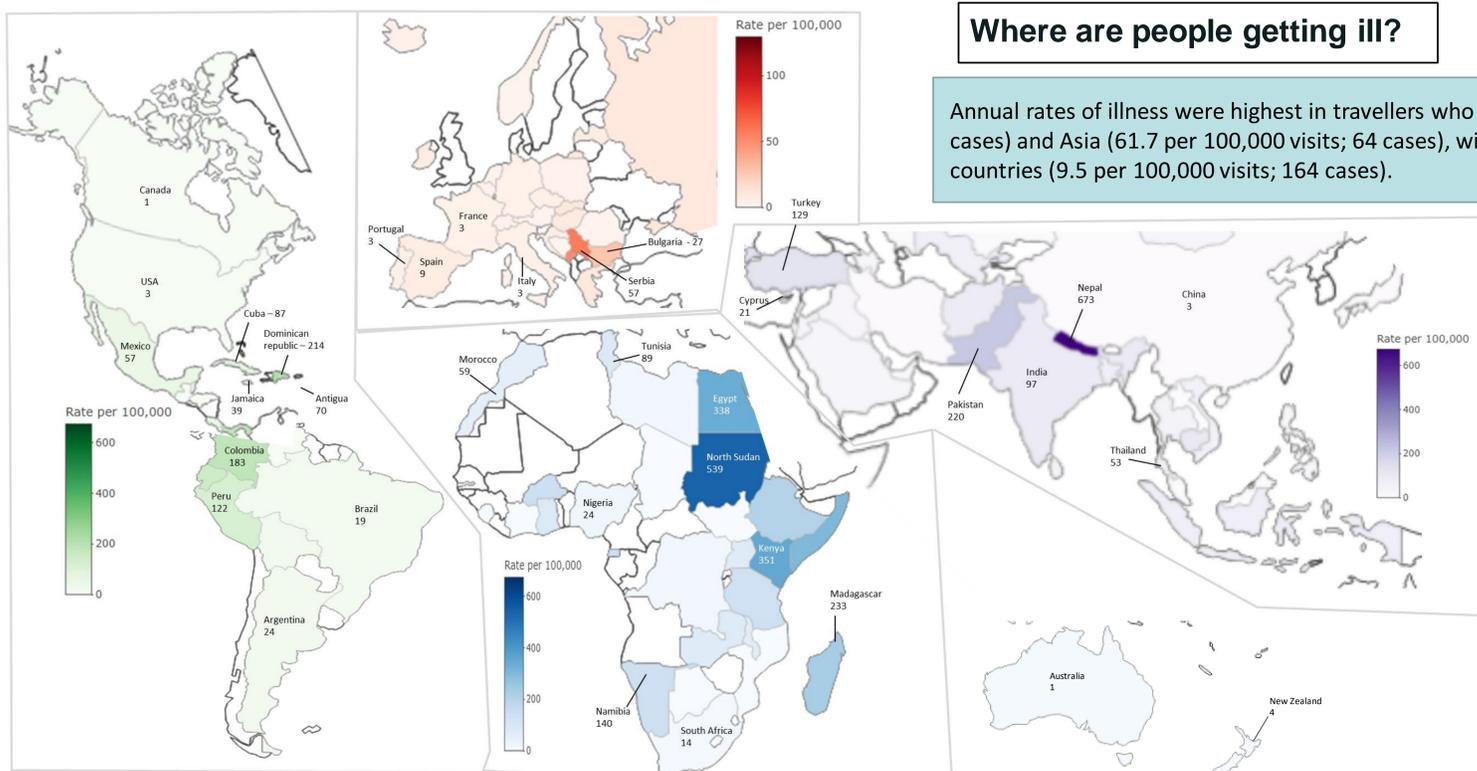
Where are North East residents travelling?

649,797 annual visits are made by North East residents to Spain each year. Other commonly visited countries include France (175,274), Canary Islands (158,582), USA (110,278) and Italy (96,560).



Where are people getting ill?

Annual rates of illness were highest in travellers who visited Africa (110.0 per 100,000 visits; 46 cases) and Asia (61.7 per 100,000 visits; 64 cases), with rates lowest in travellers to European countries (9.5 per 100,000 visits; 164 cases).



Rates were pathogen specific. Rates for all pathogens were highest for travellers returning from Africa with the exception of hepatitis A and typhoidal salmonella which were highest in travellers returning from Asia.

In addition to countries generally considered to be high risk, like Pakistan (220.5 per 100,000) and India (96.8 per 100,000). High rates were observed in common holiday destinations such as Turkey (129.4 cases per 100,000 visits), Egypt (338.1 per 100,000 visits) and the Dominican Republic (213.7 per 100,000 visits).

CONCLUSIONS AND FUTURE WORK

International travel is a major risk factor for the development of gastrointestinal infections in the North East of England, with infections acquired abroad contributing substantially to the burden of illness in the region. Rates per 100,000 visits showed that the risk of acquiring illness was not only associated with travel to locations currently seen as being 'high risk' including parts of Asia and Africa, but was also associated with common package holiday destinations including Turkey and Egypt. This work highlights the need to better capture exposure data in order to improve our understanding of the risks associated with international travel. Future work will focus on improving the capture of exposure data and expanding this work to cover individuals resident across England.