

Using NHS Data to monitor trends in the occurrence of severe, food induced allergic reactions

Area of research interest: [Food hypersensitivity](#)

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Final reports

[Using NHS Data to Monitor Trends in the Occurrence of Severe, Food-Induced Allergic Reactions Work Package 1 \(https://doi.org/10.46756/sci.fsa.lvn457\)](https://doi.org/10.46756/sci.fsa.lvn457)

[Using NHS Data to Monitor Trends in the Occurrence of Severe, Food-Induced Allergic Reactions Work Package 2 \(https://doi.org/10.46756/sci.fsa.vji996\)](https://doi.org/10.46756/sci.fsa.vji996)

Background

People with food allergies may experience food allergic reactions due to accidental exposure. These reactions are commonly categorised as non-severe, fatal food anaphylaxis and near-fatal food anaphylaxis. Non-severe allergic reactions to food are common with an incidence of up to 1,000 times greater than fatal food-related anaphylaxis. However, obtaining accurate data relating to the circumstances under which these reactions occurred is challenging under the current diagnosis coding system used in the National Health Service (NHS).

This project addressed two key questions:

1. What are the trends in the occurrence of food hypersensitivity (FHS) reactions and their consequences in terms of healthcare encounters (both to hospital and primary care)?
2. What are the circumstances surrounding severe, life-threatening reactions to food?

Objective and Approach

This project was split into two work packages (WP).

WP1

To describe the incidence of healthcare encounters in the UK related to food hypersensitivity from 1998-2018, using NHS datasets

Approach:

- The researchers used existing NHS datasets (Hospital Admissions, Accident & Emergency visits, Critical Care admissions, Primary care visits via CPRD) to evaluate healthcare encounters due to food hypersensitivity over the study period. Patient pathways through the healthcare system were also assessed by linking these different datasets.

WP2

To establish a prospective UK anaphylaxis registry through the British Society for Allergy and Clinical Immunology (BSACI), fully integrated into the existing European Anaphylaxis Registry (NORA).

Approach:

- A UK arm of NORA was established using the same online platform as the existing European Registry.
- Participation of healthcare professionals and/or patients to enter relevant information was co-ordinated by BSACI in conjunction with the Paediatric Emergency Research in the United Kingdom & Ireland (PERUKI) network.
- Different versions of the questionnaire were developed to increase response rates: (1) a comprehensive form mapped to existing NORA data fields for completion by Healthcare Professionals in the non-acute setting; (2) a shorter form with key data fields to increase data reporting in more pressured, acute healthcare settings; and (3) a form for completion by patients or their parent/guardian.

Key Results

WP1

- Food-induced anaphylaxis represented 29.4% of reported anaphylaxis admissions, and increased significantly from 1.23 to 4.02 admissions per 100,000 population per annum over the study period.
- However, despite an annual increase of 5.7% in hospitalisation for food-induced anaphylaxis between 1998 and 2018, the case fatality rate (proportion of hospital admissions associated with a fatal outcome) more than halved, from 0.7% in 1998 to less than 0.3% in 2018.
- 152 deaths were identified during the study period where the cause was likely to have been food-induced anaphylaxis.
- At least 86 (46%) fatalities were triggered by peanut or tree nuts
- Cows' milk was reported to be the most common cause of fatal anaphylaxis in children aged under 16 years.
- Prescription of adrenaline auto-injector devices (AAI) are an important risk management intervention in people at risk of food-induced anaphylaxis. However, there is significant under-prescribing of AAI. Data showed that 40% of individuals with prior food-induced anaphylaxis were not prescribed AAI and at least 59% did not have AAI on repeat prescription.
- Most healthcare visits for food allergy occurred in general practice. Less than 3% of individuals with a diagnosis of food allergy attended Accident & Emergency during the study period, 2008-2018. Therefore, using hospital data in isolation to analyse patterns of health service utilisation with respect to FHS may not provide a comprehensive overview.

WP2

The launch of the UK Anaphylaxis Registry faced delays and was impacted by significant pressures on NHS services due to the COVID-19 pandemic. This led to a lower than anticipated

uptake of the Registry by clinics and Accident & Emergency departments. As a result, only a minority of accidental reactions (less than 5%) were captured in the Registry, almost all in children and young people under 18 years.

Further work would be needed to understand how to optimise reporting of data, for example by reducing the time burden for completion by clinicians and patients.

Publications

Baseggio Conrado A, Ierodiakonou D, Gowland MH, Boyle RJ, Turner PJ. [Food anaphylaxis in the United Kingdom: analysis of national data, 1998-2018](#). BMJ. 2021 Feb. 2021;372:n251