

# The National Child Mortality Database (NCMD) Thematic Report

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## A summary of key points from The National Child Mortality Database (NCMD) thematic report on child deaths due to asthma or anaphylaxis from 2019–2023 (1)

**This UK report aims to identify the common characteristics of children and young people who died due to asthma or anaphylaxis and to investigate modifiable factors associated with those deaths. (1)**

**It helps identify common themes to inform service providers to children and young people, commissioners, and policymakers. It also aims to contribute to the existing evidence base to inform ongoing and future research in this area. (1)**

Asthma is the most common disease among children (2). It is a long-term disease that requires ongoing management. Asthma symptoms are caused by inflammation and narrowing of the small airways in the lungs and can be any combination of cough, wheeze, shortness of breath and chest tightness.

Allergy is one of the most common chronic conditions in childhood and is an immune response to allergens such as food, pollen, dust mites, animal dander, insect venom and medicine. Anaphylaxis is a serious life-threatening allergic reaction. Deaths from anaphylaxis are rare, but it is crucial to review the circumstances behind these deaths to improve understanding and reduce the risk of future deaths.

The data on asthma is first in this article followed by the data on anaphylaxis.

### Asthma

- There were 54 child deaths due to asthma in the 4 years between 1 April 2019 and 31 March 2023; approximately 1 death every 4 weeks.
- Deaths occurred across all age groups (age range 2 to 17 years), but death rates were highest in 15 – 17-year-olds (2.07 per 1 million children), followed by 10 – 14-year-olds (1.61 per 1 million children).
- The death rate of boys (1.53 per 1 million children) was more than double that of girls (0.74 per 1 million children), which may reflect higher prevalence of asthma in boys than girls in the population.
- There were 18 (34%) deaths of children from Asian, black, mixed or other ethnic backgrounds (an estimated 1.39 per 1 million children) and 35 (66%) deaths of children from a white ethnic background (an estimated 1.02 per 1 million children).
- The death rate was higher for children living in cities (1.18 per 1 million children) than countryside (0.95 per 1 million children), and regional death rates ranged from 0.46 per 1 million children in the South West, to 1.93 per 1 million children in the West Midlands.

- The death rate was four times higher for children living in the most deprived neighbourhoods of England (2.66 per 1 million children) compared to the least deprived (0.68 per 1 million children). Poorer outcomes for children with asthma living in the most deprived areas have previously been shown, with children living in the poorest 10% of areas four times more likely to have an emergency hospital admission than those in the least deprived 10%. Asthma is one of the 5 clinical areas of focus in the NHS England CORE20Plus5 approach on reducing health inequalities for children and young people.
- There were 34 children who had attended the emergency department (ED) at least once in the year prior to their death (excluding the day the child died), with 7 attending more than 5 times. Similarly, 27 children had at least one emergency hospital inpatient admission in the year prior to their death (excluding the day the child died), with 15 having asthma coded as the primary reason for the admission.
- There were 3 children who had more than 5 admissions in the year prior to their death (excluding the day the child died). In total, 35 children attended ED or had an emergency admission to hospital in the year prior to their death.

Many children were over-reliant on short acting beta-2 agonists (SABA) inhalers, with 27 of the children using 12 or more. 47 used 3 or more. Using too many reliever (SABA) inhalers means that the child's asthma is not well controlled. It can also mean that there is a greater risk of an asthma attack and death due to asthma. Using a

corticosteroid (ICS) preventer inhaler regularly can help control asthma better. (New asthma guidelines will give up to date practice recommendations).

Smoking and cannabis use within the house as well as problems such as overcrowding, dust and mould were also highlighted as issues for some children in the report. There were a number who had different types of animals in the house – cats, dogs etc.

Pet hair, saliva or urine can all make asthma worse, as can house dust mites.

Some of the children did not have a clear personalised asthma action plan (PAAP) and were not followed up after emergency hospital admission. The action plan is a key recommendation of this report as it informs what to do to manage the child's asthma and should be an up-to-date document that is shared with the child's school and carers etc. as well as the GP and Asthma Nurse, so they can review it with the parent/carer.

In some cases, appointments were missed or the child was not taken to them. The different professionals looking after their asthma did not share information about the child's asthma. These were also some highlights from the report for us to reflect on to make changes.

Some children did not have a diagnosis of asthma which meant their parents did not know how to manage or treat the asthma symptoms.

The report also found that children with asthma also had other health problems such as allergies, eczema or infections. Some also had food and/or non-food allergies as well as eczema.

### Asthma key figures: Between 1 April 2019 and 31 March 2023

**1 death every 4 weeks**

Death rates were **highest** in **15 – 17-year-olds**

Death rates were **higher** for **children living in cities** than countryside

**34%** of deaths from Asian, black, mixed or other ethnic backgrounds and **66%** deaths of children from a white ethnic background

The death rate of boys was **more than double** that of girls

**63%** children attended the **emergency department** at least once in the year prior to their death.

The death rate was **four times higher** for children living in the **most deprived neighbourhoods** of England

## Anaphylaxis key figures: Between 1 April 2019 and 31 March 2023

19 children died of anaphylaxis

18 had allergies and also asthma

9 children had to go to A&E one or more times in the year before they died

Most of the children died because of their allergy to cow's milk.

10 died at home or another private place.

Not all the children had an adrenaline auto-injector, some had expired while others were not carrying them.

### Anaphylaxis

The report shows that:

- 19 children died of Anaphylaxis. 2 were under 10 years, 7 were 10-14, and 10 were 15-17 years old.
- 18 of the children had allergies and they also had asthma.
- 9 children were Asian, black, mixed or other ethnic background and 9 children were white.
- 10 children died at home or another private place. 5 children died in a public place such as a restaurant. 4 children died in places such as a school, a hospital or abroad.
- 9 children had to go to A&E one or more times in the year before they died.
- 4 of the children were admitted to hospital for a stay and 3 had stayed due to their asthma, in the year before they died.
- Most of the children with food allergy were allergic to either nuts, cow's milk, egg or seafood.
- Most of the children died because of their allergy to cow's milk.

- The children who had non-food allergies were mainly allergic to house dust mite, followed by grass pollen or animal allergy.
- Children who had asthma that was not well controlled were at much higher risk of poorer outcomes of their food allergy.
- Not all the children had an adrenaline auto injector: for some, it had expired while others were not carrying them at the time of reaction.
- Ingredients in foods bought but not clearly labelled and consumed by food allergic children were also highlighted in this report.

There were many factors that are being looked at as modifiable and could have made a difference to the outcomes of these children. These will now be looked at so that we can continue to work towards prevention of future deaths from both anaphylaxis and asthma. Every one of them was one too many.

We will all have a part to play in working to reduce this. I hope that you have found this summary article of the report thought-provoking and interesting, with some key 'take home' insights.

### References

1. National Child Mortality Database (2023) Child Death Review Data Release: Year ending 31 March 2023. Available at: <https://www.ncmd.info/publications/child-death-data-2023/>
2. WHO (2024) Asthma. Available at: <https://www.who.int/news-room/fact-sheets/detail/asthma>
3. NICE (2024) What are the risk factors for asthma? Available at: <https://cks.nice.org.uk/topics/asthma/background-information/risk-factors/>  
A study of time trends in the epidemiology of food allergy in England: An observational analysis of Clinical Practice Research Datalink data. Published in Lancet Public health 2024 by P. Turner et al. Funded by Food Standard agency and The UK medical research council, shows that:
  - IgE-mediated food allergy is the most common cause of anaphylaxis in children and adults, and can be life-threatening.
  - Data suggest that in many regions, food allergy is becoming more common. Estimates indicate an important and increasing burden of food allergy in England.

