Executive summary

Changes in hospital contacts during the COVID-19 pandemic among vulnerable children and young people

Background

The direct effects of COVID-19 have been relatively low on children and young people, in terms of infections and deaths, compared to the adult population (2,3). But, children have been indirectly affected by the pandemic through unprecedented disruptions to hospital health services, particularly during national lockdowns. Vulnerable children and young people are expected to have had greater reductions in their contacts with hospitals than their peers.

Aim

This study aims to assess changes in hospital contacts during the COVID-19 pandemic among vulnerable children and young people in England compared to their peers.

Research question

What were the changes in hospital contacts during the COVID-19 pandemic for vulnerable children compared with their peers, in terms of:

Rates of planned and unplanned contacts

Deficits in planned and unplanned contacts

Mode of outpatient attendances (in-person versus tele/virtual)

This study looked at hospital contacts that were planned (outpatient attendances and planned hospital admissions) and unplanned (unplanned hospital admissions) and is the first step in quantifying and understanding the deficit in hospital contacts that occurred among vulnerable children during the pandemic, compared to their peers. Further research looking at the types of planned care that were delayed or foregone during the pandemic (such as diagnostic assessments or treatments) is needed to understand the potential consequences for children in the longer term. For example, delays to surgery to repair a child's cleft lip and palate might affect their hearing, and in turn, speech and language development, wellbeing and education.

Methods

Data source

This study used the Education and Child Health Insights from Linked Data (ECHILD) Database (1) which links de-identified administrative health, education and social care records for 14.7 million children and young people in England.

Illustrative examples in this study

There are many different groups of vulnerable children (4). This study focused on two example groups who could be identified in the ECHILD Database and were likely to have been adversely affected by the disruption to health services during the pandemic:

- Children aged 0 to 4 years who had a chronic health condition or were born too early (preterm) or too small (low birth weight)
- Secondary school pupils aged 11 to 16 years who were received special educational needs (SEN) support in schools or children's social care (CSC) services.

Deficit in hospital contacts

We calculated the rates of hospital contacts per 1,000 child-years from 23rd March to 31st December 2015 to 2019. We used this pre-pandemic baseline information to predict the expected rates of hospital contact in 2020 had the pandemic not happened,

assuming any time trends would have continued. We then calculated the *difference between the predicted and observed rates* for 23rd March and 31st December 2020 for vulnerable groups and their peers (primary outcome). We also calculated the *difference between the predicted and observed numbers* of hospital contacts for 23rd March and 31st December 2020 for vulnerable groups and their peers (secondary outcome).

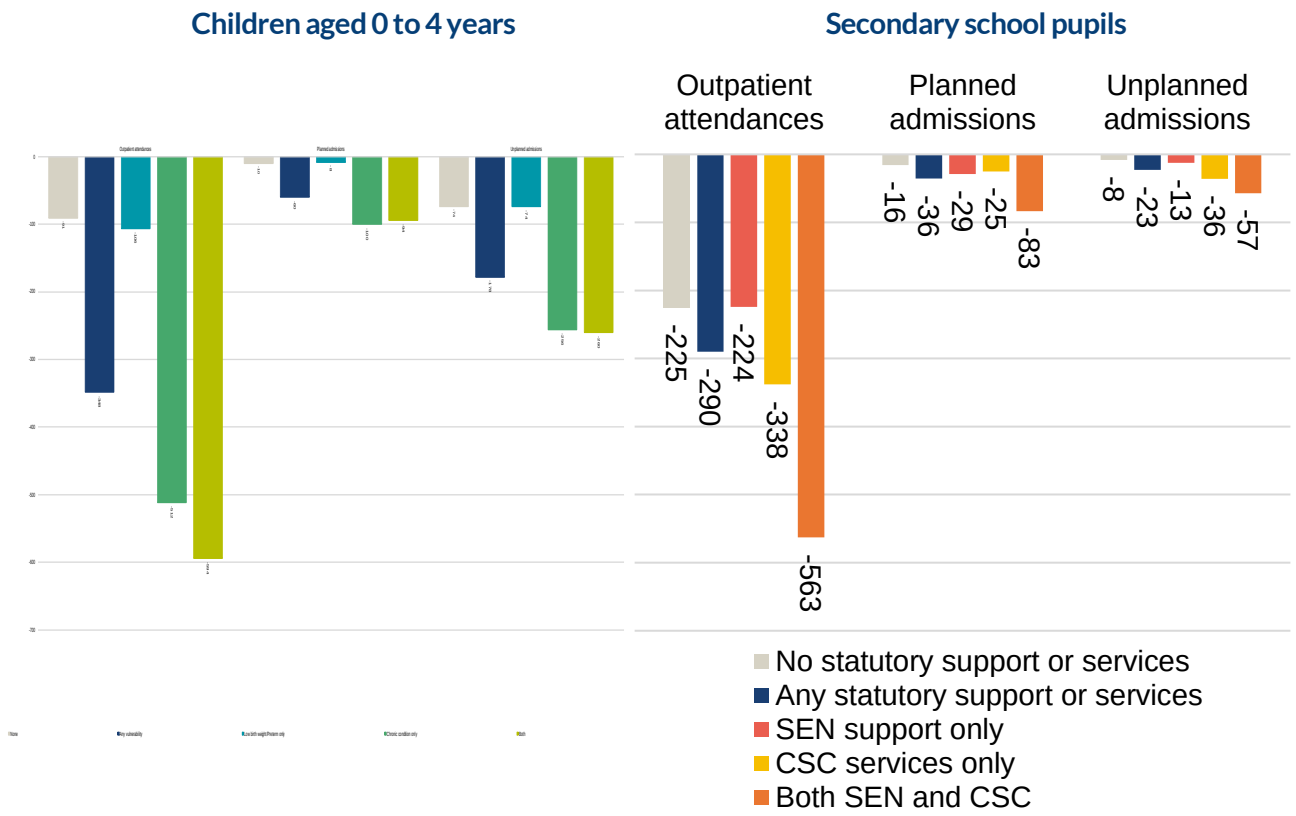
Mode of outpatient attendances

During the pandemic, hospitals adapted through increased use of tele/virtual outpatient appointments. However, the effectiveness and suitability of these appointments for vulnerable groups is unknown.We looked at differences in the mode of outpatient appointments between vulnerable children and their peers by calculating the percentage of attended appointments that were in-person or tele/virtual.

Results

During the pandemic, the rates of planned and unplanned hospital contacts decreased for all children, but these decreases were greatest for vulnerable children (Figure 1). Children who had multiple vulnerabilities had the largest overall decreases.

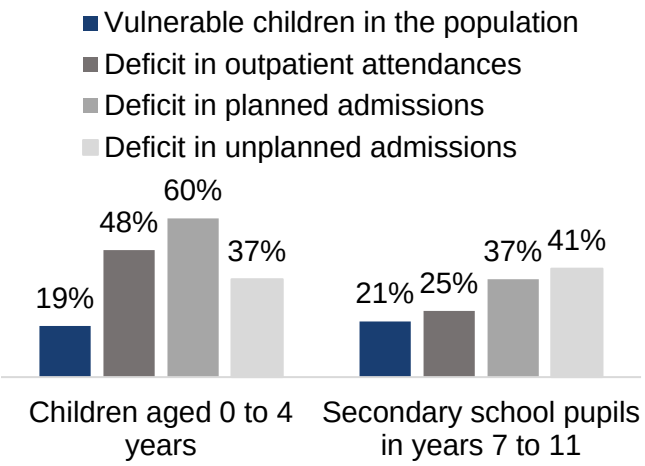
Figure 1: Difference in predicted versus observed rate of hospital contacts per 1,000 child-years among vulnerable children and their peers, by type of vulnerable group.



SEN = special educational needs; CSC = children's social care services.

Vulnerable children bore large and disproportionate deficits in hospital contacts during the pandemic (Figure 2). Deficits in unplanned hospital admissions among children aged 0 to 4 years were the most disproportionate.

Figure 2: Percentage of children who are vulnerable compared to the percentage of the deficit in hospital contacts they experienced.



Vulnerable children were less likely than their peers to have face-to-face outpatient care during the pandemic. For example, vulnerable secondary school pupils were less likely to have an in-person appointment scheduled and also less likely to attend an in-person appointment, with the lowest attendance rates among pupils receiving CSC services only. Without the increased use of tele/virtual appointments, the observed deficit in outpatient attendances during the pandemic would have undoubtedly been much greater. However, the effectiveness of tele/virtual appointments for vulnerable children, in comparison to in-person care, is unknown (5) and health professionals have reported some disadvantages, particularly in relation to safeguarding (for example, not being able to pick up on non-verbal cues or knowing who else is in the room (6)).

Implications of these findings

Our findings indicate a need for targeted 'catch-up' funding and resources for child health, particularly for vulnerable children who were affected disproportionately. For example, the ring-fenced resource for 'catch-up' of NHS care (Health and Social Care Levy) might be further targeted for the vulnerable groups that have disproportionally missed out on hospital contacts.

Secondary school pupils receiving special educational needs support or social care services may need to be prioritised for face-to-face outpatient care as it is unclear how effective remote care is for these children.

More research about how delays to treatments for childhood conditions impact children's outcomes is needed which will require close partnerships between researchers and clinicians providing paediatric services. The likely consequences of the deficits in hospital contacts that occurred among vulnerable children during the pandemic are difficult to predict, because little is currently known about this topic.

Limitations

This study used **simple classifications of vulnerability which do not capture the complexity of vulnerable groups.** Future work could explore the impact of the pandemic on specific sub-groups of vulnerable children to inform more targeted policy making.

This study only **looked at deficits in hospital contacts during the first nine months of the pandemic as experienced by children and young people in two age groups whose vulnerabilities could be defined from administrative health, education and social care data.** This means that the true extent of the deficits in hospital contacts that occurred among vulnerable children and young people in the population, throughout the course of the pandemic, will be much greater than this study shows.

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