Public health for paediatricians: 15-minute guide to identify and address food insecurity

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ABSTRACT
Food insecurity is a major problem in the UK. It has been both highlighted and exacerbated by the COVID-19 pandemic, and particularly affects children and young people (CYP). The effects of inadequate nutrition manifest themselves in all stages of child development and adversely affect health and educational outcomes. Healthcare professionals working with CYP can address food insecurity at individual, local community, organisational and national levels. The government plays an important role in monitoring and responding to food insecurity, supporting CYP most in need. This paper summarises how food insecurity can be identified and approached by healthcare professionals in clinical consultations, including the use of screening tools and awareness of risk factors that signpost family food insecurity. Examples of services and clinician-assisted referrals to support vulnerable patients are provided, alongside suggested methods to implement further education for the multidisciplinary healthcare team.

INTRODUCTION
The United Nations (UN) Food and Agriculture Organisation defines food insecurity (FI) as a state whereby a person lacks ‘regular access to enough safe and nutritious food for normal growth and development and an active and healthy life’. FI can manifest in different ways, and often follows seasonal or cyclical patterns. People may reduce their food intake, follow unhealthy dietary patterns and consume nutritionally unbalanced meals to compensate.

The UN Convention on the Rights of the Child outlines that children have the right to adequately nutritious food, and where parents and caregivers cannot provide this, State Parties should provide assistance to families. In this article, we hope to raise awareness of FI among the families of children and young people (CYP), and the detrimental impacts it can have on health and development (box 1). We provide practical solutions for how child and young person FI can be prevented, identified, assessed and addressed by healthcare professionals (HCPs).

Defining the problem of child and young person food insecurity in the UK
CYP are particularly affected by FI in the UK. In 2016, 11.5% of households with children were estimated to have experienced FI and by September 2020, this figure was estimated to have risen to 14%. This equates to 4 million people, including 2.3 million children. Households were deemed food insecure if any household member had smaller meals, skipped meals, been hungry but not eaten, or gone a whole day without eating because they could not afford or access food. In 2019, 1.3 million CYP were eligible for free school meals (FSM), an indicator of FI. However, a further 1 million CYP experiencing FI were ineligible to receive FSM, suggesting the current eligibility criteria do not meet all CYP’s food requirements. The COVID-19 pandemic has contributed to increased financial insecurity and unemployment, not only highlighting but also exacerbating FI for families with CYP.

The impact of food insecurity on health and educational outcomes
Addressing food insecurity
During your clinical consultation
1. Growth should be assessed by recording and plotting weight, height and body mass index (BMI) on growth charts, comparing with previous measurements. This will enable the recognition of an abnormal BMI or faltering growth. Recognise that both a low and high BMI can be a sign of FI.
Public health

Box 1  The effects of food insecurity (FI) on different stages of child development

Since eating behaviours are formed during early life, the effects of poor nutrition are transient and manifest themselves in all stages of child development. As FI is inextricably linked to other social issues such as poverty, it is challenging to isolate the effects of hunger on physical and mental well-being. Below we describe the main effects on key developmental stages:

- **In utero and early years**: faltering growth; delayed cognitive and behavioural development, diminished immunocompetence, vitamin A deficiency and anaemia.
- **School years**: development of childhood asthma and iron deficiency, which is often associated with learning impairment and decreased productivity.
- **Adolescence**: mental health risks (depression, suicidal thoughts), substance abuse disorders, behavioural consequences (hyperkinesia, reduced academic performance).
- **Adulthood**: adult disease, including chronic obstructive pulmonary disease (COPD), cardiovascular disease and cancers, asthma, autoimmune disease.

Survivors of malnutrition also suffer from diminished intellectual performance and low work capacity in adulthood.

Studies controlling for variables such as educational attainment and income have established associations of FI with hypertension and hyperlipidaemia.

2. Patients should be assessed for associations or comorbidities of malnutrition such as iron deficiency anaemia, tooth decay and impaired cognitive or physical development.
3. Poor control of some long-term conditions such as asthma, diabetes and poor mental health could be related to FI.
4. A history should address education, home environment, family background, family finances and parental factors. Be aware of risk factors of FI (figure 1).
5. FI screening can aid in identification of FI (box 2).
6. If FI risk factors are presented or FI is suspected, take a more detailed dietary history for the household. It is important to understand nutritional value of food (eg, asking about fresh fruit and vegetable intake) and eating behaviours (eg, asking about daily meal frequency and how many meals are homemade, frozen or a fast food).

Box 2  Examples of screening tools

**Hunger-Vital Signs**

This is a two-item screening tool that identifies household food insecurity (FI) in a short and accurate manner. It can be adapted to capture FI in the past 30 days or 12 months.

1. Within the past 12 months, we worried whether our food would run out before we got money to buy more.
2. Within the past 12 months, the food we bought just didn’t last and we didn’t have money to get more.

**Household Food Security Survey**

An 18-item screen used to assess household FI with the use of a numerical scale. It can be shortened to six items if needed, as shown below, however, it will not capture the more severe levels of FI.

Q1. ‘The food that (I/we) bought just didn’t last, and (I/we) didn’t have money to get more.’ Was that often, sometimes or never true for (you/your household) in the last 12 months?

Q2. ‘(I/we) couldn’t afford to eat balanced meals.’ Was that often, sometimes or never true for (you/your household) in the last 12 months?

Q3. In the last 12 months, did you ever go hungry? (YES/NO)

Q4. In the last 12 months, did you ever eat less than you felt you should because there wasn’t enough money to buy food? (YES/NO)

Q5. In the last 12 months, were you ever hungry but didn’t eat because you couldn’t afford enough food? (YES/NO)

Q6. In the last 12 months, were you ever hungry but didn’t eat because you couldn’t afford enough food? (YES/NO)

Food security status level can be categorised as ‘food secure’, ‘food insecure without hunger’ or ‘food insecure with hunger’ according to the number of affirmative responses.

To approach food insecurity sensitively

HCPs have reported difficulty in initiating FI conversations. Some suggested approaches are outlined:

1. Reassure that surveillance questions are asked routinely so that patients do not feel singled out.
2. Open-ended questions should be used to explore patient concerns. This could include: ‘Please let me know if either you or someone from your family has been feeling hungry in the past few weeks’.
3. Written/electronic surveillance is preferred over verbal FI surveillance. This increases FI disclosure as patients may feel less comfortable when sharing FI experiences verbally.
4. Resources such as posters can inform patients of the high prevalence of FI and normalise discussions.

Screening tools

Screening tools could be implemented routinely for all CYP engaging with primary or secondary care services.
and can be administered by multidisciplinary team members. To facilitate routine questioning, screening tool prompts can be added to electronic health records or documentation pro formas. Alternatively, screening might be targeted at CYP presenting with conditions associated with, or risk factors for FI (figure 1). Screening tools are especially significant given that CYP may not have physical signs, abnormal weight or BMI or abnormal investigations. We provide examples of the Hunger-Vital Signs and Household Food Insecurity Survey, which are screening tools for FI in box 2.

It is important for those delivering the screening tool to recognise its disadvantages. The screening tools do not acknowledge different household members may experience varying levels of FI and ignore non-economic reasons, such as availability of transportation to access food, neglect due to parental health problems, and the nature or schedule of parental occupation. Furthermore, frequency of FI experiences is used as a measure of severity, thus, one may be less likely to identify newly developed, seasonal or marginal FI.

**How can HCPs address food insecurity among CYP?**

**Individual level**

The consultation is a valuable interaction for HCPs to initiate conversations about FI in a non-judgemental manner and offer solutions for support. Facilitation of enrolment to relevant services is beneficial. HCPs in primary and secondary care can refer CYP to social prescribing link workers or services. These are valuable in signposting to programmes focusing on financial support, provision of meals, education and community initiatives. An example of a local initiative which aims to increase food security is provided in box 3.

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Some practical ways to educate HCPs about FI could include:

- Allocate a member of the multidisciplinary team to be responsible for FI. This includes having awareness of policy and programmes, introducing, and updating surveillance processes and organisation of education for staff.
- Multidisciplinary case-based discussions to raise awareness among staff and provide resources to support children and their families.
- Create or distribute a poster or infographic of the local available resources that HCPs can use when referring patients.

**Organisational level**

Studies have shown HCPs show varied levels of FI knowledge and many perceive there is little in their power that can be done. An example of an organisation that has recognised this and implemented strategies to mitigate this can be found in box 4.

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**National level**

Although food banks across the UK hugely benefit food insecure households, there is a growing need for more support to be made available through the development of national policies addressing FI. Some examples of advocacy initiatives and evidenced-based policies that HCPs working with CYP can support are outlined below.

**Universal**

One approach to tackling paediatric FI could be to introduce universal FSM, whereby meals would be provided at no cost to all children wanting to participate. One systematic review analysing universal FSM found there to be significant evidence supporting its introduction, as below.

- Greater school meal participation among students both previously qualifying and non-qualifying for FSM, suggesting universal FSM may reduce stigma and reach children in need from non-qualifying families.
- Associated with improved diet quality, BMI and academic performance, indicating this policy could reduce diet-based disparities among schoolchildren.
- Schools reported spending less time processing applications for FSM, instead diverting time to nutritional education.

Although the evidence is promising, more research examining the total cost of universal FSM is needed to establish (a) if such a policy would alleviate the societal costs associated with FI and (b) if this policy would be feasible in the UK. In 2017, the Institute
for Fiscal Studies estimated providing universal FSM to all primary schoolchildren in the UK would cost £950 million each year, with potential upfront costs calculated as £270 million. As the pandemic continues to exert funding pressures on governments worldwide, the cost-effectiveness of a universal scheme should be evaluated before large-scale spending. The effectiveness of cheaper alternatives, such as universal breakfast clubs, should also be considered.

Advocacy
HCPs working with CYP can also use their voice, through social media and through national organisations, to advocate for a change in local and national policy, to improve the lives of CYP experiencing FI. An example of a successful advocacy campaign that was supported by paediatricians in the UK is provided in box 5.

Government policies
As FI is largely driven by financial insecurity, government policies should follow principles supporting those most at risk of financial burden. These principles include increasing wages to all workers receiving minimum wage to a real living wage, providing those out of work with adequate benefit allowances and supporting jobseekers with skills and employability programmes.

Examples of how these principles could be implemented into UK policy could be removing the two-child limit benefit cap and extending the Universal Credit uplift.

The impact of global determinants on FI demonstrates the need for intersectoral working at a national level. Food security is put under direct risk from climate change as well as non-climate factors such as population growth, the meat industry and food wastage.

CONCLUSION
FI is a national crisis which has been exacerbated by the COVID-19 pandemic and particularly affects CYP. This must be addressed on individual, organisational and national levels to support those experiencing the detrimental effects of FI. We recommend the following points as next steps to prevent, identify, assess and address paediatric FI. First, communities should explore interventions to address FI at a local population level. Second, adequate and accessible education on FI should be available to HCPs to increase awareness of paediatric FI. Third, a screening tool specific to the UK population and CYP and one which can be completed within the time restraints of clinical practice, should be developed. We hope this article serves as a prompt to initiate conversations around paediatric FI as an important step to de-stigmatisate and appropriately address this issue.

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REFERENCES