THE CASE FOR A CHILDREN’S MULTIDISCIPLINARY FOOD ALLERGY CLINIC

Sally-Ann Denton and colleagues explain how a one-stop service can provide benefits for patients, staff and health economies.

Abstract

In the UK, up to 6% of children are affected by food allergy. Accurate diagnosis, appropriate dietary management, family education, support and continuing follow up are essential to prevent further reactions and optimise the child’s nutritional intake and growth. Setting up an improved, one-stop service to achieve these goals, which includes the multidisciplinary team, is feasible and cost neutral. This audit and service evaluation involved questionnaires with parents and staff focus groups to examine provision in one area of England. The views of children were not included. Practitioners involved should consider further training if necessary.

Keywords
Anaphylaxis, child food allergy, diet, district general hospital, nurse clinics, one-stop clinic

THE TERM food hypersensitivity (FHS) can describe food allergy and non-allergic food hypersensitivity. Food allergy is an immune-mediated adverse reaction to a food; food intolerance, now reclassified as non-allergic food hypersensitivity (Johansson et al 2004), is non-immune mediated.

It affects up to 6% of children in the UK (Pereira et al 2005, Venter et al 2006a, 2006b, 2008). Reactions are immune-mediated by immunoglobulin E (IgE) and are further distinguished from those of food intolerance by their quick onset, requiring mainly smaller quantities of allergen to elicit a response. Manifestations include gastrointestinal, dermatological or respiratory symptoms, and anaphylaxis. Commonly implicated foods are cow’s milk, egg, peanut, tree nuts, soya, fish, shellfish and wheat (Sicherer and Sampson 2006).

Some children may outgrow their food allergies but for others they are lifelong (Fleischer 2007). An accurate diagnosis, appropriate dietary management, and education of food-allergic children and their parents or carers are all necessary to prevent further reactions, optimise the child’s nutritional intake and growth (Mofidi 2003), and avoid the use of unnecessarily restrictive or nutritionally inadequate diets (Venter et al 2006a).

Food allergy can have a negative effect on the health-related quality of life of children and their families (King et al 2009, Cummings et al 2010, Flokstra-de Blok et al 2010). This is associated with the clinical effects of food allergy, the psychosocial aspects of food avoidance (Munoz-Furlong 2003), and the restrictive influence that food allergy can have on daily activities (Bollinger et al 2006).

Food allergy places a substantial burden on the UK’s health economy and is associated with significant morbidity (Gupta et al 2004, Sladkevicius et al 2010). In the current economic climate, healthcare providers must deliver high quality, efficient, integrated clinical services that optimise the use of existing resources while improving outcomes and patient experience (Department of Health (DH) 2010).

Reviews of UK allergy services by the Royal College of Physicians (RCP) (2003) and the DH (2006) found variations in practice and referral criteria,
Commonly implicated foods are cow's milk, egg, peanut, tree nuts, soya, fish, shellfish and wheat.
and inadequate and inequitable service provision, leaving many children with unmet allergy needs. The RCP (2003) also identified a lack of skills and training among healthcare professionals about allergy, particularly in primary care. Lack of skills and training for primary care nurses was also highlighted in an online survey of 1,138 nurses (Linnane 2008), where only 13% had undertaken accredited allergy training. Twenty three per cent of all respondents described themselves as the allergy lead, but only 29% of these had participated in accredited allergy training. Of those who had no training, 53% considered themselves as unskilled to manage allergy.

The Royal College of Paediatrics and Child Health care pathway for food allergy in children (Fox et al 2011) was developed to define the competencies needed by healthcare practitioners, including nurses, to diagnose, treat and maintain optimal management of childhood food allergy in various settings. Close liaison between doctors, nurses and dietitians is needed to ensure best outcomes at all levels (Fox et al 2011). To improve quality and equity of care the pathway provides a guide for training and the development of services, with service delivery as close to the patient’s home as possible.

The National Institute for Health and Care Excellence (NICE) clinical guideline on the diagnosis and assessment of food allergy in children and young people in primary care and community settings (NICE 2011a) also follows a consistent and evidence-based approach. It is particularly relevant to community dietitians, GPs, health visitors, school and community nurses.

Certain risk factors for food allergy have been identified (Fox et al 2011), including moderate to severe infantile eczema (Godwin 2008, Hill et al 2008). NICE (2011a) recommends that food allergy should be considered in children and young people whose symptoms for other conditions do not respond adequately to treatment, for example atopic eczema, gastroesophageal reflux disease and chronic gastrointestinal symptoms including constipation.

Health visitors, primary care practitioners and community nurses should be aware of earlier NICE guidance (2007) about the possible trial of an appropriate hypoallergenic formula for bottle-fed infants with uncontrolled moderate or severe atopic eczema. Other foods may also be implicated, and nurse specialists play an important role in investigating and supporting children and their families (Godwin 2008). NICE (2011a) advises that children with severe symptoms or multiple food allergies should be referred to secondary or specialist care, and any child advised to follow a trial exclusion diet should receive advice from a registered dietitian.

**Background**

The RCP and Royal College of Pathologists (1994) and the British Society for Allergy and Clinical Immunology (BSACI) (2012) recommend that children with suspected food allergy see a paediatrician with relevant experience and expertise, in a dedicated clinic with access to specialist nurses and dietitians. Teamwork by doctors, nurses and dietitians is therefore an essential aspect of good allergy care (Alfaham 2008).

An allergy clinic nurse with appropriate competencies can take an allergy-focused history, conduct skin prick testing (SPT) (Figure 1) and spirometry, and offer education to parents, children, schools and nurseries including appropriate techniques for the administration of allergy medication. Dietitians can advise on nutritional adequacy, the practical management of exclusion diets and the safe reintroduction of previously excluded foods; those with appropriate competencies can take an allergy-focused diet history (Fox et al 2011).

At the south coast district general hospital (DGH) investigated in this audit and service evaluation, there is no dedicated children’s allergy clinic or specialist allergy nurse, and children are seen in general children’s clinics. Most are seen by paediatricians and dietitians separately, which necessitates multiple patient journeys and post-clinic communication between healthcare professionals. Primary care referrals to dietitians...
may occur without a corresponding referral to a paediatrician; therefore dietitians may supervise diets of food-allergic children without the support of a paediatrician.

One-stop multidisciplinary allergy clinics have been established in other DGHs, offering benefits to patients, staff and the local health economy (Rosenthal 2004, Hodges et al 2007, Alfaham 2008, Waring and Levy 2010). However, staff levels, funding and patient populations vary, so the method of service delivery may not be transferable between organisations. An audit and service review was therefore conducted to evaluate the feasibility of adopting a new service model for a one-stop multidisciplinary children’s food allergy clinic at the DGH in question.

Baseline audit
A baseline audit was conducted, including all children seen in general children’s clinics and children’s dietetic clinics in the DGH and in attached community outpatient clinics (DGH1), between May and August 2011. Data were collected prospectively by paediatricians and dietitians using a bespoke, pre-tested data-collection tool.

The project fell under the category of service evaluation and audit, and did not require ethical approval. However, ethical consideration was given about confidentiality, best practice and compliance with organisational policies and standards. All patient data were anonymised. Data were collected about FHS, associated conditions, allergy-related tests, allergy-related medication, dietary treatment, referral route and time taken from referral to appointment. During this period, 236 children with FHS, aged between 1.4 months and 16 years, were seen. Median age at referral was 0.55 years. All children were seen within 18 weeks of referral: 162 by dietitians and 74 by paediatricians. The dietitians conducted more subsequent review appointments than the paediatricians.

Milk was the most commonly diagnosed or suspected causal food, followed by egg, corresponding with evidence that these are commonly implicated in childhood food allergy (Sicherer 2002). Milk, egg, soya and gluten hypersensitivities were associated with younger children, whereas nuts and sesame allergies were more common in older children (Table 1). This would be expected, as studies indicate that milk, egg, wheat and soya allergies usually resolve by between three and five years of age (Bock 1987, Høst et al 2002, Sampson 2003, Venter et al 2008), whereas peanut and fish allergies tend to persist (Skolnik et al 2001, DeFrutos et al 2003).

Table 1 Prevalence in study of diagnosed or suspected food hypersensitivity by food category

<table>
<thead>
<tr>
<th>Food</th>
<th>n</th>
<th>%</th>
<th>Median age (years)</th>
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<tbody>
<tr>
<td>Milk</td>
<td>200</td>
<td>84.8</td>
<td>1.41</td>
</tr>
<tr>
<td>Egg</td>
<td>41</td>
<td>17.4</td>
<td>2.43</td>
</tr>
<tr>
<td>Soya</td>
<td>23</td>
<td>9.7</td>
<td>2.25</td>
</tr>
<tr>
<td>Peanut</td>
<td>17</td>
<td>7.2</td>
<td>4.51</td>
</tr>
<tr>
<td>Wheat</td>
<td>16</td>
<td>6.8</td>
<td>4.73</td>
</tr>
<tr>
<td>Other nut</td>
<td>14</td>
<td>5.9</td>
<td>7.89</td>
</tr>
<tr>
<td>Fish</td>
<td>7</td>
<td>3.0</td>
<td>3.03</td>
</tr>
<tr>
<td>Kiwi fruit</td>
<td>4</td>
<td>1.7</td>
<td>3.55</td>
</tr>
<tr>
<td>Sesame</td>
<td>4</td>
<td>1.7</td>
<td>6.60</td>
</tr>
<tr>
<td>Gluten</td>
<td>3</td>
<td>1.3</td>
<td>2.50</td>
</tr>
<tr>
<td>Other</td>
<td>18</td>
<td>7.6</td>
<td>3.41</td>
</tr>
</tbody>
</table>

SPTs were performed for two individuals (0.8%) and specific IgE (sIgE) testing for 44 (18.6%). Eczema was the most prevalent atopic condition (34.7%) and was associated with younger children, a finding that was discovered by others (Bock 1987, Høst et al 2002, Hearn et al 2010) (Table 2).

Food allergy is often associated with other atopic conditions, including asthma, eczema and allergic rhinitis, and children may also be sensitised to...
other allergens including animal fur and house dust mite. In this audit, 14.8% of children received antihistamines, 8.1% adrenaline (epinephrine) auto-injectors, contrasting with 38.8% in the audit by Hearn et al (2010) and possibly reflecting differences in clinical practice, patient population or sample size.

The dietitians saw significantly more children with milk hypersensitivity compared with the paediatricians and proportionally fewer with hypersensitivities to egg, nut, fish, wheat or kiwi fruit. It is unlikely that children with an allergy to a single food such as kiwi fruit would be referred to the dietitian, as exclusion is relatively easy and without nutritional risk.

### Parent/carer views

The DH (2010) advocates the use of patient experience surveys and feedback to guide future developments. A questionnaire was therefore used to capture views of parents/carers of children with food allergy attending dietetic clinics in DGH1 about the current and proposed service delivery models. With the advent of local GP-led clinical commissioning groups in England, this methodology is a useful model for commissioners to adopt to ensure responsiveness to the needs of the local population when developing and shaping local health services.

A total of 35 questionnaires were completed (100% response rate). Milk was the most common reported causal food (88.6%), followed by egg (22.8%), soya (22.9%), wheat (8.6%), peanut (5.7%) and other nut (2.9%).

Of the respondents, 57.1% reported difficulties managing their child’s diet before they had had any dietetic consultation and 67.6% indicated that an earlier appointment would have been helpful. This is not surprising, as food allergy is known to place a psychological strain on the families of children with food allergy (King et al 2009, Cummings et al 2010). Furthermore, 42.9% of parents/carers thought that the wait before a dietetic referral was even instigated was too long, whereas 37.1% and 20% thought that the wait was about right or was quite a short time, respectively. Some respondents found GPs to be unsupportive, reflecting other studies where parents reported that their child’s symptoms were not taken seriously, causing delays in diagnosis and treatment (Gore et al 2005, Burton et al 2010). The need for GP education was also mentioned, echoing previous findings (RCP 2003).

A total of 82.9% of parents/carers indicated that they would find a one-stop clinic helpful, with 17.1% disagreeing. Table 3 shows reasons for and against a one-stop clinic. Reasons given in favour concurred with those recorded in another study (Kapoor et al 2004), which found that one visit to a multidisciplinary food allergy clinic significantly improved parental knowledge. The new service would be cheaper for attendees despite longer consultations, as they would require fewer appointments and associated journeys.

In a one-stop service, provision needs to be made for adequate review consultations. A previous study (Hu et al 2007) found that parents of food-allergic children wanted access to personalised advice between review appointments. This concords with an audit from a secondary care children’s allergy service in Wales, which showed that accessible education, support and continuing follow up for children with allergies are essential aspects of their nursing care (Hodges et al 2007).

### Healthcare professionals’ views

Two separate focus groups were conducted to elicit the views of dietitians and paediatricians about the current and proposed service models in DGH1. For comparison, a third group captured the views of allergy nurses, dietitians and paediatricians from an existing one-stop service elsewhere (DGH2).

The two focus groups from DGH1 described the current service as having several limitations. Particular issues highlighted included patient journeys, interprofessional and clinician-patient communication, and delays between paediatrician and dietitian appointments (Box 1).

In DGH1, SPTs are not routinely performed. Specific IgE tests are more commonly used, although

### Table 3  
Suggestions by respondents (a) for and (b) against a one-stop children’s food allergy clinic

<table>
<thead>
<tr>
<th>Suggestion</th>
<th>n</th>
<th>%</th>
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<tbody>
<tr>
<td><em>(a) For</em></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Reduced number of appointments</td>
<td>12</td>
<td>34.3</td>
</tr>
<tr>
<td>Better information</td>
<td>11</td>
<td>31.4</td>
</tr>
<tr>
<td>Reduced travel time</td>
<td>4</td>
<td>11.4</td>
</tr>
<tr>
<td>Reduced time taken off work</td>
<td>3</td>
<td>8.6</td>
</tr>
<tr>
<td>Patients do not mind where seen</td>
<td>4</td>
<td>11.4</td>
</tr>
<tr>
<td>Already seen paediatricist at hospital</td>
<td>2</td>
<td>5.7</td>
</tr>
<tr>
<td>Hospital easy to get to</td>
<td>1</td>
<td>2.9</td>
</tr>
<tr>
<td><em>(b) Against</em></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Child does not see a paediatricist, so no need</td>
<td>2</td>
<td>5.7</td>
</tr>
<tr>
<td>Too much information to take in at once</td>
<td>1</td>
<td>2.9</td>
</tr>
<tr>
<td>Prefer local clinic</td>
<td>1</td>
<td>2.9</td>
</tr>
<tr>
<td>Too far to travel to hospital</td>
<td>2</td>
<td>5.7</td>
</tr>
</tbody>
</table>
this limits the number of allergens tested – due to funding restrictions – and the results take a few weeks. The consultants highlighted a number of issues exacerbated by such delays (Box 1). Conversely, the comparator group (DGH2) thought that their multidisciplinary one-stop clinic enabled them to provide an efficient, timely service, without reducing capacity (Box 1). The comparator service also emphasised the role of the allergy nurse in conducting SPTs, spirometry and patient education regarding the use of adrenalin autoinjectors.

In contrast to the comparator service DGH2, where all patients were under consultant care, the DGH1 dietitians reported seeing large numbers of GP-referred children (mainly non-IgE allergies, not seen by paediatricians) and of children discharged by the paediatricians back into GP and dietetic care. On the whole, the DGH1 dietitians were confident working in this way but expressed anxiety about the management of some patients, particularly about when to safely reintroduce foods, and they were not always sure if and when they should ask GPs to refer children on to the paediatricians (Box 1).

There was some disparity between the DGH1 dietitians’ and consultants’ views about the benefits of a one-stop service. The consultants were unanimous that it would lead to improvements, whereas the dietitians saw advantages and disadvantages. Although initially concerned that a one-stop service would not necessarily be an improvement, the dietitians later stated that the service would benefit children with IgE-mediated allergies, which, although small in number, were of most concern to them, and may also have advantages for them as dietitians (Box 1).

Although extended appointment times, parking charges and parent/child information overload concerned both DGH1 focus groups, only one parent cited the latter as a reason against a one-stop clinic. The comparator focus group (DGH2) acknowledged information overload could occur. However, they stressed the importance of flexibility about review appointments to reinforce information, agreeing with previous research (Hu et al 2007).

Previous service reviews (Rosenthal 2004, Pastacaldi and Sullivan 2010) have reported that DGH food allergy clinics can soon become overwhelmed with referrals. Both DGH1 focus groups expressed uncertainty about the inclusion of non-IgE mediated FHS patients in a one-stop clinic, and agreed that referral criteria would need to be clarified before establishment of the service, to ensure that children were seen in a timely manner in an appropriate clinic. Unacceptable waiting times might deter GPs from referring to the service and immediate income would be lost. This is important, given that 57.1% of the parents/carers surveyed reported difficulties in managing their child’s diet before receiving dietetic advice, and that 42.9% thought they had to wait too long for a dietetic referral.

**Comparative costings**

Basic costings for the current and proposed services were explored and compared using local and national tariff data (DH 2013a).

Children are referred via: primary care directly to the dietitian without a corresponding referral to the paediatrician (route one); GP referral to the dietitian with separate referral to the paediatrician (route two); or GP referral to the paediatrician with subsequent referral from the paediatrician to the dietitian (route three). As this article was published this was still the system.

The model of a one-stop multidisciplinary children’s food allergy clinic would necessitate a change in referral pathway. Paediatricians’ consultations are billed using the national tariff, and separate tariffs exist for new and follow-up appointments. No national tariffs exist for dietetic consultations, so local tariffs have been constructed.

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**Box 1 Quotes from focus group participants**

- ‘Most children with food allergy will see a dietitian, but they would rarely see one at the same time as they see us, so it necessitates at least two appointments’ (consultant).
- ‘I think again that probably for parents it’s a bit... disappointing that you go for a diagnosis and you have to wait... maybe two or three weeks for the result and then you don’t get the letter telling you what the answer is until another two days down the line’ (consultant).
- ‘It’s... in a letter [results] as opposed to someone explaining it to you’ (consultant).
- ‘If I’ve prescribed EpiPens [adrenaline (epinephrine) auto-injectors], then the community nurses don’t see them. You’ve given them a prescription and they don’t know how to use it for a while. That’s not so good really’ (consultant).
- ‘They’ve come to see the consultant; they’ve come through to the nurses’ room... so it’s skin-prick testing, perhaps spirometry... so if there are positives on the skin prick test... if they’re foods we then pass them on to... the dietitian to talk about a restrictive diet, or a change of milk. If they are very sensitised to a food and we’re thinking along the lines of anaphylaxis, we’ll then do some EpiPen training as well’ (allergy nurse).
- ‘I think what I’m always a little vague about, if they’re GP referrals and they’ve got no specific IgEs on the system, is knowing when to reintroduce, and when is it safe to do stuff at home and when it isn’t. So I tend to keep out of it rather than take any risks. I think that’s what I find most difficult. Also they don’t all have specific IgEs. Some of them will be avoiding egg because they had a reaction and, you know, they’ve never had a specific IgE... they just avoid egg and they ask you when they can have egg again’ (dietitian).
- ‘At the moment, we’re making decisions as to what the child needs to go on... the diet. I think in an allergy clinic you would be told to advise on this’ (dietitian).
Table 4  Paediatrician and dietetic direct access tariffs (2011/12)

<table>
<thead>
<tr>
<th>Appointment</th>
<th>Paediatric</th>
<th>Dietitian</th>
<th>Children’s multidisciplinary team</th>
</tr>
</thead>
<tbody>
<tr>
<td>New</td>
<td>£215</td>
<td>£53.21</td>
<td>£215</td>
</tr>
<tr>
<td>Follow up</td>
<td>£125</td>
<td>£53.21</td>
<td>£162</td>
</tr>
</tbody>
</table>

Table 5  Costs comparison between current direct access and multidisciplinary services

<table>
<thead>
<tr>
<th>Appointment</th>
<th>Current direct access referral (route 2)</th>
<th>Multidisciplinary clinic</th>
</tr>
</thead>
<tbody>
<tr>
<td>New</td>
<td>£268.21</td>
<td>£215</td>
</tr>
<tr>
<td>Follow up</td>
<td>£178.21</td>
<td>£162</td>
</tr>
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Based on reference costs (DH 2012, 2013b), and the DGH in question applies a flat-rate tariff irrespective of whether the consultation is new or a follow up.

Table 4 shows the current tariffs for direct access referrals to paediatricians, dietitians and multidisciplinary team (MDT) clinics.

Table 5 shows the current service costings for a referral using route two compared with the costs for a multidisciplinary clinic. The multidisciplinary service is substantially cheaper for new and review appointments compared with separate referrals to dietetics and paediatric consultant. A new multidisciplinary appointment costs the same as a new appointment with a paediatric consultant only (route 3), whereas a multidisciplinary review appointment costs more than a consultant-only review, but service quality would improve and BSACI standards (2012) would be met.

Dietetic service income must also be considered. For a multidisciplinary clinic, income would be the same as for children normally referred via route three. However, if any route one service users were instead allocated to the multidisciplinary clinic, the dietetic service would potentially lose direct access income for those service users. To ascertain whether a move to a one-stop service would lose the dietetic service essential revenue, the number of dietetic direct access patients, who would meet referral criteria for the one-stop service, would need to be calculated; these would transfer from the dietetic direct access income stream to the multidisciplinary income stream. As referral criteria have not been established it has not been possible to ascertain this from the audit.

Further investigation would be needed once referral criteria are established. However, the dietitians’ focus group showed that many direct access patients represent milk allergies only, without other atopic conditions, potentially excluding them from a multidisciplinary clinic. If economically feasible, such children should, ideally, be seen in an allergy clinic to ensure a reliable diagnosis and avoid unsubstantiated milk exclusion.

Administration, clinical tests and staff costs must be factored into the costings. Multidisciplinary clinic administration would take place centrally, reducing costs. The audit and consultants’ focus group showed that sIgE tests are used more frequently based on reference costs (DH 2012, 2013b), and the DGH in question applies a flat-rate tariff irrespective of whether the consultation is new or a follow up.

Table 4 shows the current tariffs for direct access referrals to paediatricians, dietitians and multidisciplinary team (MDT) clinics.

Table 5 shows the current service costings for a referral using route two compared with the costs for a multidisciplinary clinic. The multidisciplinary service is substantially cheaper for new and review appointments compared with separate referrals to dietetics and paediatric consultant. A new multidisciplinary appointment costs the same as a new appointment with a paediatric consultant only (route 3), whereas a multidisciplinary review

References


British Society for Allergy and Clinical Immunology (2012) Standards for Paediatric Allergy Services in Secondary Care. The BSACI Paediatric Committee, London.


Flokstra-de Blok BM et al (2010) Health-related quality of life of food allergic patients: comparison with the general population and other diseases. Allergy. 65, 2, 238-244.


than SPTs, although costs estimated by NICE (2011b) indicate that sIgE tests cost more than SPTs. An SPT costs £47.27 and an sIgE test costs £126.97, based on average costs of eight allergens per person.

Furthermore, sIgE tests have a turnaround time of a few weeks compared with SPTs, which provide results in 10-15 minutes. Multidisciplinary clinics would ease the use of SPTs as the clinic structure would allow more time. SPTs could be performed by the consultants or by dietitians with appropriate competencies as part of an extended role, and would be cheaper, potentially generating a cost saving. Currently there is no dedicated allergy nurse; however, if trained nurse-led SPTs were considered, this could potentially generate an additional cost and also ensure that the clinic complied with BSACI standards (BSACI 2012).

**Allergy nurse** The incorporation of an allergy nurse in the multidisciplinary team would allow a more co-ordinated approach to patient care and education, leading to cost savings for the wider health economy (Williams 2002). A multidisciplinary clinic requires longer patient visits compared with a conventional clinic, but the comparator focus group showed that in practice clinic capacity would equal that of a standard clinic. Therefore staff time costs would be neutral. There would be potential time-cost savings from improved communication between clinicians.

Staff would need to move from current clinics to the multidisciplinary clinic, but this should not increase overall clinic time, as patients would be moved from current clinics to the new clinic. Dietetic and children’s clinics can be adjusted to accommodate this without the need for staff backfill. Others (Alfhahm 2008) have shown that a secondary care allergy service can be established without extra funding for nursing, dietitian or paediatrician time.

Establishing a one-stop multidisciplinary children’s food allergy clinic is feasible. However, issues were raised that will be addressed to ensure that the service improves the outpatient experience for patients, carers and staff, without increasing costs. The findings from this service evaluation are currently being used to develop a business case for a one-stop children’s food allergy clinic. Such a clinic could also be used for the further education of GPs and other primary care workers, including school nurses, which would lead to more co-ordinated care across acute and community settings.

**Conclusion**
Adoption of the proposed model should strengthen working relationships between paediatricians, nurses and dietitians by fostering a team approach. Establishing a one-stop children’s food allergy clinic should be economically feasible and would be supported by clinicians and parents or carers, provided careful planning about referral criteria, clinic frequency and clinic composition is carried out. However, these findings, although pertinent to the local situation, may not necessarily be generalisable to other establishments where staff and patient populations may differ.

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**Acknowledgement**
Thanks to Heather Mackenzie for advice about conduct of focus groups and Isolde Sommer for validating the focus group themes.

**Conflict of interest**
None declared