

Utilisation and accuracy of the emergency care data set in children with food allergy and anaphylaxis

Dear Editor

In 2017, the NHS in England introduced the Emergency Care Data Set (ECDS) to standardise approaches to ED digital data collection in order to be able to meaningfully compare practice and improve quality of care. It contains 108 data fields including patient demographics, episode information (ie, arrival time and date) and clinical information. SNOMED CT¹, an internationally validated structured clinical vocabulary for use in an electronic health record, was used to derive a limited number of subgrouped conditions as part of the diagnosis field. In the subgroup 'allergy', we noted the ECDS contained only eight possible diagnoses (*Hayfever, Anaphylaxis, ACE Inhibitor Related Angioedema, Angio-oedema: hereditary C1 esterase inhibitor deficiency, Angio-oedema: acquired C1 esterase inhibitor deficiency, Scombroid toxin, Drug reaction and other allergic reaction*). In a retrospective evaluation, for those children referred to an allergy clinic, we compared the ECDS discharge diagnosis coded on our electronic health record (Nervecentre V5.0.1 2018 Nervecentre Software) by the treating clinician with their written ED record in the clinical notes and the final diagnosis from clinic. All children 0–15 years old who presented to our children's ED in the period January–December 2018 were included and the project was registered as service evaluation project (local identifier 9773). We identified 1145 patients with an ECDS allergy diagnosis code of whom 89 were referred to the paediatric allergy clinic. Of these 76.40% (68/89) had an ECDS diagnosis of 'other allergic' reaction and 18% (16/89) as 'anaphylaxis'. Table 1 demonstrates the relationship between the ECDS code recorded in the electronic health record and that written in the ED clinical notes. Only 10/16 (62.5%) patients with anaphylaxis ECDS code had the same ED written diagnosis in the clinical notes.

The most common diagnosis at the allergy clinic was food allergy with 29.2% (26/89), followed by urticaria (13/89, 14.6%), cow's milk protein allergy (13/89, 14.6%), and food/skin allergy (12/89, 13.5%).

Our evaluation highlights that the ECDS coding system may be too limited and does not accurately describe the spectrum of allergic conditions in children presenting to ED. The clinical and organisational impact of this is unclear, but the learning from this is relevant to any health-care system looking at a unified, nationally endorsed coding mandate. It may be argued that more granular diagnoses are not needed as the treatments available are not different (ie, anaphylaxis is treated as anaphylaxis regardless of precipitant). However, many reactions to food are non-immunologically mediated, such as toxicities. Previous studies have showed that these reactions are frequently coded as allergic in the electronic health records.^{2,3} In our audit, 13 patients who were coded in the ED as allergic disposition were diagnosed as urticaria/angioedema in the allergy clinic, which is a condition that in the majority of cases is not allergy associated. Conversely, the ECDS allergy coding subgroup includes scombroid food poisoning and it seems unusual that this particular diagnosis has been used at the expense of others. It might then be argued whether there should be the option to add additional diagnoses to electronic records in conjunction with the ECDS or expand the ECDS to promote clinician cognition on pathological processes. In our population, food allergy was the most common diagnosis; hence, it would be a candidate for addition to the ECDS. We acknowledge that focusing specifically on patients referred to clinic is a limitation as this may be a group with more complex or subtle symptoms. However, the fact there is dissonance, even between digital diagnostic coding and written records, demonstrates that variability and imprecision exists.

It will be debated whether the purpose of limiting diagnosis coding in the ED is one of prompting clinical accuracy but the reduced diagnosis dictionary may well be promoting a regression towards

a simplest available option. Undoubtedly in order for a coding system to be effective, it requires understanding of the clinical coding importance and terminologies by the doctors who are using it.⁴ There are particular challenges for new-starting staff needing a system which is both responsive and intuitive. This is an issue for electronic patient record providers rather than the coding data sets themselves.

A consistent coding system will allow the use of information for public health reporting and national and international benchmarking. It can also provide accurate audit results than classifications, by distinguishing between distinct concepts (eg, clinical findings or procedures). However, it is important to involve both the ED and specialist teams to support the system, identify any weaknesses and through coproduction ensure that the codes used are truly reflecting the underlying conditions.

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Table 1 Diagnosis of patients based on ED Coding system (ECDS) and emergency department notes (EDN)

EDN ECDS	Allergic reaction	CMPA	Anaphylaxis	Non-IgE allergy	Other	N/A
Other allergic reaction	43	10	1	2	11	1
Anaphylaxis	4	0	10	0	1	1

CMPA, cow's milk protein allergy; N/A, not available.



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