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Short communication

Audit of nurse-led-training for epipen in a District General Hospital

Background: A community-based study in the London Borough of Hounslow, which included patients in our District General Hospital (DGH) Paediatric Department, found that most families who had been prescribed adrenaline auto-injectors could not use them properly. This prompted the establishment of a new protocol for doctors and an Allergy Clinic where one nurse was responsible for training all patients.
Aim: This audit was done to reassess this service 3 years after the changes were made.
Methods: 68 of the 81 (83%) patients followed up in our District General Hospital Nurse led Allergy Clinic agreed to participate. They were compared with the District General Hospital sub-group of the previous study.
Results: We found that most patients now reported they were trained to use the devise, had written instructions, were able to demonstrate competence on a dummy and would appropriately call an ambulance. This was significantly better than the previous situation.
Conclusion: The study shows that training can be improved in a DGH setting with the strategy of protocolised prescribing and a Nurse led Allergy Clinic.

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Adrenalin auto injectors (epipen) are often used incorrectly because families are poorly trained (1, 2). This situation is amenable to improvement: management plans delivered from specialist-allergy-clinics are effective (3) and considerable improvements in epipen use have been shown after a single visit to a tertiary level multidisciplinary allergy clinic, which included education by a clinical nurse specialist (4). However, access to specialist clinics is not universal: there are very few formally trained paediatric allergists in the UK (5).

A community-based study of 25 children in our area in the London Borough of Hounslow in 2001 showed that most families could not use their epipen properly (6). This included a subset of 12 children under the care of a paediatrician at a District General Hospital (DGH), five of whom attended our Department at West Middlesex. These findings prompted a review of our service. New guidelines were agreed: any of the team of Consultant General Paediatricians could prescribe epipen according to an agreed protocol; training in its use was to be given by a single nurse.

This audit was undertaken 3 years later to re-assess the service. Between 21 February 2005 and 6 April 2005, all families prescribed epipen were contacted. Sixty-eight of 81 families (83%) agreed to participate. The training received, including written instructions, was assessed by an interviewer-administered-questionnaire. The device was checked to see if it was in date and the dose was correct for weight. The ability of the carer to use the device was assessed by practical demonstration on a dummy and it was ascertained whether the carer would call an ambulance after administration. An enquiry was made into the actual number of uses and whether the procedure was followed at the time.

Statistical analysis was by Chi-squared with Yates' correction or Student's *t*-test.

As this was an audit for service evaluation, no ethical approval was required.

The data obtained was compared with the DGH subset in the previous study (see Table 1). Baseline characteristics of the two groups were similar. Training had been given in 100% of the new cohort compared with 67% previously ($P < 0.001$). A written management plan had been provided in 98.5% of the new cohort compared with 17% previously ($P < 0.001$). Demonstrated competence on dummy was significantly improved ($P < 0.05$). In the new cohort, 99% said they would subsequently call an ambulance (as advised in their management plan) compared with 42% previously ($P < 0.001$). Most epipens were the correct dose and in date, as had been the case previously.

The cohort had been prescribed epipen under the new protocol for a total of 1632 patient months. The drug was used five times. In one instance it was used inappropri-

Table 1. Comparison of the present findings with the previous study

	This study ($n = 68$)	Previous study DGH subset ($n = 12$)	
Male	39 (57%)	6 (50%)	$P > 0.5$ (chi square)
Average age	7.1 (SD 3.9)	8.5 (SD 3.0)	$P > 0.5$ (Student's *t*-test)
Nut allergy	62 (91%)	10 (83%)	$P > 0.5$ (chi square)
Associated asthma	34 (50%)	10 (83%)	$P > 0.05$ (chi square)
History of anaphylaxis	35 (51%)	5 (42%)	$P > 0.5$ (chi square)
Training given on epipen	68 (100%)	8 (67%)	$P < 0.001$
Written advice provided	67 (98.5%)	2 (17%)	$P < 0.001$
Epipen within expiry date	64 (94%)	12 (100%)	$P > 0.5$
Correct dose	60 (88%)	10 (83%)	$P > 0.5$
Demonstrated carer competence on dummy	42 (65%)	3 (25%)	$P < 0.05$
Number who said they would call ambulance	67 (99%)	5 (42%)	$P < 0.001$

DGH, District General Hospital.

ately for a mild reaction. In all cases the emergency services had been called immediately afterwards. On one occasion epipen was not available when required and the child was brought to hospital.

Our DGH covers a population of 300 000 persons. Our nurse saw one new and one old patient per week (40–60 and 20 min slots respectively). A similar amount of time was taken up by related activities, including correspondence to General Practitioners and School Nursing Services and periodic training of school staff. The strategy led to significant improvements in epipen training in our patients.

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