

NHS allergy services in the UK: proposals to improve allergy care

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ABSTRACT – Allergy is common and its prevalence has increased substantially in the last 2–3 decades. There has been a particular increase in severe allergic disease, including anaphylaxis and food, drug and latex rubber allergy. Provision of allergy services in the NHS is poor and there is a huge unmet need. Allergy is a full specialty, but there are few consultants and few trainees: only six centres in the UK offer a full-time specialist service. Most allergy services are provided by doctors – general practitioners and consultants in other specialties – with little or no training in allergy. Whilst specialists in other areas of medicine have a role in the management of allergy, it is no longer adequate to devolve most allergy care to them. The lack of special care leads to morbidity, mortality and substantial cost to the NHS, much of it avoidable. To ensure that adequate standards of care are satisfactory, allergy care must be led by allergy specialists. More consultant posts and training posts in allergy are urgently needed; this requires recognition by trust managers, regional commissioners and the Department of Health. As a first step, we propose the setting up of appropriately staffed regional allergy centres. This could be achieved with a central directive and (relatively minor) pump-priming of funding.

KEY WORDS: allergy, allergy clinics, allergy practice, clinical practice, prevalence, NHS services

Increased incidence of allergic disease

Allergic disease is common and its prevalence increasing. The prevalence of the common allergic diseases, asthma, hay fever and eczema, has increased two- to three-fold in developed countries throughout the world. The highest prevalence rates are seen within the UK where about 20% of the population suffer from allergies which pose a major public health problem¹. There has been a particular increase in severe allergic disease including anaphylaxis. Severe reactions to food and drugs are now common.

In the UK in 1994, peanut allergy affected one in 200 four-year-olds, and the prevalence of sensitisation to peanut in children has risen from 1.3% to 3.2% over the last six years^{2,3}. In the USA, 7.8% of the general population are sensitised to peanut⁴. A study of anaphylaxis presenting to an accident and emergency department (A&E) (ie excluding anaphylaxis arising in hospital) in 1994 found that this occurred in one in 3,500 of the population each year⁵. Hospital admissions with anaphylaxis have increased two-fold between 1991 and 1995⁶.

Why has allergy become so common?

A western lifestyle is a factor in the increased prevalence of allergic disease. For example, following the reunification of Germany, the incidence of hay fever and asthma rose in East Germany, having previously been less common than in West Germany. The 'hygiene hypothesis' has been proposed to explain this. The lack of exposure to bacterial infection in early childhood, due to the relatively clean environment and widespread use of antibiotics, means that there is less stimulation of the T helper (TH) 1 component of the immune response which is 'allergy protective'. This allows a TH2 dominant response to environmental allergens, which leads to allergy.

Disorders dealt with by an allergist

The expertise of an allergist is unique, distinct from that of organ-based specialists and immunologists. An allergist deals with a wide range of disorders crossing the organ-based disciplines in medicine (Table 1). These disorders often coexist so that allergy presents with multisystem disease. Allergists also have an important role in excluding allergy as a cause of non-specific symptoms.

Lack of expertise in allergy

Despite the high and increasing prevalence of allergic disease, allergy services within the UK are grossly inadequate. Further, there is geographical inequality of provision of services, most being in London and the south-east of England.

Lack of training in allergy

The general practitioner (GP) is, quite rightly, the first port of call for patients presenting with allergic diseases. However, GPs receive little or no training in allergy (most medical students have no training in the clinical practice of allergy) and resources for training in allergic disease at postgraduate level are limited.

Hospital care: mostly provided by non-allergists

Much of allergy is therefore treated by organ-based specialists including chest physicians, ear, nose and throat specialists, dermatologists and, more recently, immunologists and paediatricians. Unfortunately, most of them have had no formal training in allergy. Also, their training tends to be in a restricted area which does not provide the multidisciplinary approach necessary to manage patients with allergies in view of the frequent overlap of allergic conditions. For example, a child with severe eczema frequently also has food allergy, which may be associated with life-threatening reactions and asthma. Referral to a series of organ-based specialists is inappropriate and the allergic aetiology is not usually addressed. In addition, many of the more severe allergic problems do not fall into the remit of an organ-based specialist with an 'interest in allergy'. Problems in this category include life-threatening reactions, for example:

- anaphylaxis during general anaesthesia
- venom allergy
- adverse reactions to drugs
- peanut, nut and other food allergies
- latex rubber allergy.

These patients should see a consultant allergist in a centre with expertise in these difficult areas where there are facilities for specialist investigation. The allergic disorders where specialist commissioning and referral to a regional allergy centre is recommended have been defined⁷.

Help lines

The difficulty patients have in obtaining advice is evident from the demand for the help lines run by the British Allergy

Key Points

The prevalence of allergic disease, including the complex, severe and life-threatening disorders, is increasing.

There is substantial demand for the services of trained specialist allergists and a need for improved understanding of allergy by general practitioners.

Current NHS allergy services are poor, leading to morbidity, mortality and unnecessary cost to the NHS.

More consultant posts in allergy are needed, initially to provide properly staffed regional allergy centres throughout the UK. This cannot occur without an immediate expansion in SpR training posts in allergy.

Foundation (BAF) and the Anaphylaxis Campaign. These charities, together with the National Asthma Campaign and the National Eczema Society, provide advice and direct patients to the appropriate specialist. However, because of the lack of specialists, patients in large parts of the country cannot obtain expert help locally. The lack of NHS allergy services also means that patients turn to complementary and alternative practice which is readily available on the high street. This frequently relies on scientifically unproven 'allergy' tests performed by unqualified operators, at high prices and of no or doubtful benefit to the patient⁸.

Benefits of a specialist allergy service

There is a need for diagnostic challenge tests, day case services and allergen immunotherapy (desensitisation) – procedures which should be performed in a specialist setting⁹. Identifying the cause of the allergy allows avoidance and amelioration of disease, while effective treatment results in savings to the NHS by reducing A&E attendances and hospital admissions, and lessens the burden of illness in the allergic patient^{9,10}. A recent study reported such cost-benefit. A management strategy for nut allergy was developed and evaluated in 567 patients over 13,610 patient-months¹⁰. Not only was there a substantial reduction in the incidence of follow-up reactions, but where reactions did occur they were mostly mild. Hospital admission and A&E attendance were avoided.

The cost of failure to refer to an allergist is illustrated by a patient with severe uncontrollable hay fever¹¹. His GP resorted to annual injections of a depot steroid over 14 years. This led to bilateral avascular necrosis of the hip, with the result that by the time he was 39 years old he was crippled and facing (in the long term, multiple) bilateral hip replacements. He was subsequently desensitised (immunotherapy) and his disease was controlled. The efficacy of grass pollen immunotherapy is well established⁹.

There is a lack of information on the best way of diagnosing and managing many of the recently emerged severe disorders (eg peanut, drug and latex allergy). Production of evidence-based guidelines is an important role for specialists in academic centres (eg management plans for nut allergy¹⁰).

Table 1. The range of disorders with which an allergist deals.

• summer hay fever	• food allergy
• perennial rhinitis	• latex allergy
• allergic eye disease	• adverse reactions to drugs
• asthma	• allergy to stinging insects
• occupational asthma	• anaphylaxis
• certain skin disorders, including:	• hereditary angioedema
– angioedema	
– urticaria	
– atopic eczema	

The role and job description of an allergist have been defined¹².

NHS allergy clinics

The British Society of Allergy and Clinical Immunology (BSACI) and BAF have compiled a list of NHS allergy clinics which are NHS consultant-led and based at NHS hospitals throughout the UK. The BSACI allergy clinic handbook¹³ lists 86 such clinics and two nurse-led services run by BSACI members. An additional 15 part-time clinics run by NHS organ-based specialists (who are non-BSACI members, and therefore not listed in the handbook) were identified by BAF. However, only six of these 101 clinics offer a full-time NHS allergist consultant-led service (Table 2). These are based in London (Guy's, Royal Brompton, St Mary's), Cambridge, Southampton and Leicester. They have expertise in all types of allergic disease, including the complex problems, and provide a comprehensive high quality allergy service with a multidisciplinary approach.

Table 2. Allergy clinics in the UK.

Type of service	No. of clinics
Full-time (run by specialists)	6
Part-time (run by specialists)	9
Part-time – in restricted areas of allergy (offered by consultants in other specialties)	86

In addition, they have an international reputation for research in allergic disease. Five of them (the exception is Leicester) were developed as academic units with university funding – so the NHS has little tradition in supporting allergy. Nine of these 101 clinics are run by a part-time consultant NHS allergist, providing only one or two allergy clinic sessions per week. The remaining 86 clinics are run by organ-based NHS consultants (eg dermatology, asthma or paediatrics) who offer only a limited spectrum of diagnostic and treatment facilities for allergy.

Table 3 lists NHS allergy clinics¹³ run by:

- (A): full-time allergists (>5 clinics per week)
- (B): part-time allergists (1–2 clinics per week, arbitrarily assigned a figure of a 0.3 whole-time equivalent (WTE) NHS allergist-led service)
- (C): clinics led by organ-based specialists with an interest in allergy offering a limited service (arbitrarily assigned a 0.1 WTE NHS allergist-led service).

The 15 additional part-time clinics run by organ-based specialists (non-BSACI) add up to 1.5 WTE clinics.

These figures are given for the NHS regions (as defined from 1 April 1999) with populations for comparison. Using the above arbitrary definitions, the WTE NHS allergy-led services are also given in the table.

This comprehensive survey shows that an equivalent of 17.3 whole-time NHS consultant allergist-led clinics is available for the UK population of 59.1 million. This represents one WTE allergist-led clinic per 3.4 million UK population, in contrast to

Table 3. NHS allergy clinics in the UK. Provision of services by region, population and specialist input¹³.

Region	Population (millions)	Full-time NHS consultant allergist-led clinics* (A)	Part-time NHS consultant allergist-led clinics* (B)	Part-time NHS organ-based consultant-led clinics** (C)	Total WTE-NHS allergist-led clinics*** (A+B+C)	Total WTE clinics led by allergy specialist (A+B)
Northern & Yorkshire	6.3	0	0	7	0.7	0
North West	6.6	0	3	10	1.9	0.9
Trent	5.1	1	0	6	1.6	1.0
West Midlands	5.3	0	0	5	0.5	0
Eastern	5.4	1	0	4	1.4	1.0
South West	4.9	0	0	3	0.3	0
South East	8.6	1	4	10	3.2	2.2
London	7.2	3	2	13	4.0	3.6
Scotland	5.1	0	0	7	0.7	0
Wales	2.9	0	0	4	0.4	0
Northern Ireland	1.7	0	0	2	0.2	0
Total UK	59.1	6	9	71	15.8	8.7

* clinics led by consultant allergists (specialists).

** clinics led by consultants in other specialties who have an 'interest' in allergy, usually without formal training in allergy. These are held weekly or less frequently, often offering a service in only a restricted area of allergy relating to their own specialty (eg asthma/rhinitis for a respiratory physician, dermatological allergy for a dermatologist). Many of these have been set up recently in response to patient demand. Problems arise as patients are referred who are not within the consultant's expertise.

*** calculated as follows: B counted as 0.3 whole-time equivalent (WTE) allergist, C counted as 0.1 WTE allergist.

one consultant per 100,000 UK population for cardiologists, chest physicians, gastroenterologists, etc. Even more important, only six allergy clinics in the UK offer a full-time comprehensive multidisciplinary service and with expertise in complex areas of allergy – a totally inadequate provision. The uneven geographical distribution of allergy clinics is shown in the UK map of NHS regions (Fig 1).

Demand for services

Demand is enormous and waiting lists are long. In Cambridge, the number of patients seen has increased by 440% between

1993 and 2000. In addition, there has been a change in case mix, so that patients with much more severe allergies are being seen, virtually all in the urgent category. Despite the increased workload, the referral rate rises inexorably and waiting lists remain unacceptably high for serious disease. This pattern is repeated in all six specialist centres.

Recommendations

1 Regional allergy centres

- (i) The BSACI recommendation is that each of the eight NHS regions in England (with populations of 5–7 million), as

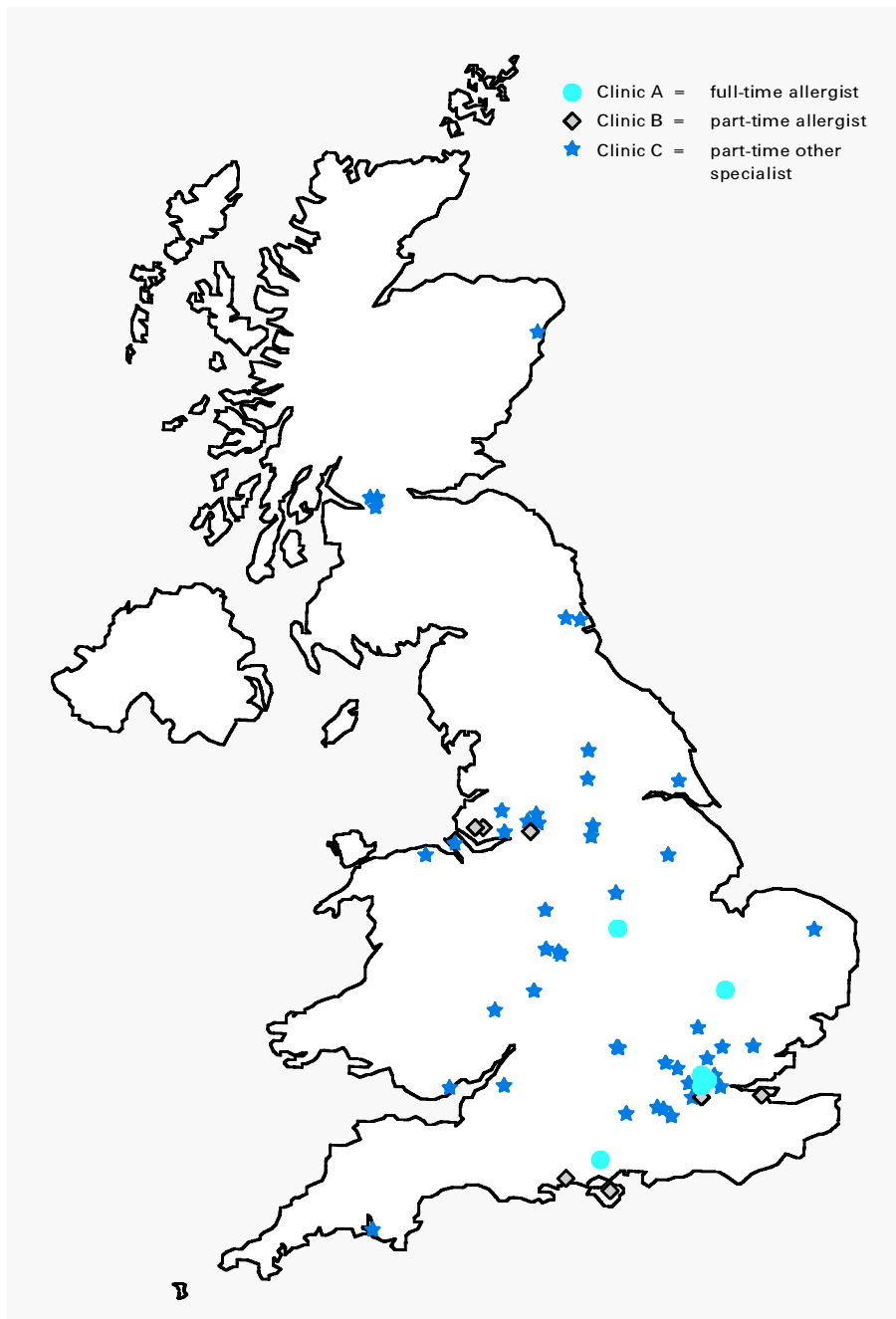


Fig 1. The distribution of NHS allergy clinics in the UK according to the nature of the service provided: (A) full-time service in all types of allergy provided by consultant allergists; (B) part-time services provided by consultant allergists; (C) part-time services usually in limited areas of allergic disease (eg eczema/urticaria for a dermatologist) provided by consultants in other specialties.

well as Scotland, Wales and Northern Ireland, should have an absolute minimum of one regional specialist allergy centre. Each region requires a minimum of two additional WTE allergists offering a multidisciplinary approach. Two allergists per regional centre are the minimum to provide critical cover for diagnostic procedures and specialist treatment. Such regional centres should have a minimum of two full-time allergy nurse specialists and one half-time dietitian with specialist training in food allergy. Some of these centres should also provide facilities for training for a minimum of one specialist registrar in allergy (or two specialist registrars seeking dual accreditation in allergy and respiratory medicine). Importantly, this would provide an *even* geographical distribution of specialist allergy services throughout the UK.

- (ii) Ideally, there should be consultant(s) in paediatric allergy. This would follow the development of (i).

Regional centres would:

- provide specialist expertise for difficult allergic disease throughout their region (tertiary care)⁷
- care for allergic disease in the local population which cannot be dealt with in general practice (secondary care)
- act as an educational resource for the region:
 - enable local training in allergy for organ-based specialists
 - provide training at local level for family practitioners and nurses in the management of common allergies in primary care.

Such a training programme would be complemented by allergy training courses, such as that offered by the National Asthma and Respiratory Training Centre.

2 Trainees in allergy

Before creating new consultant posts the number of trainees in the specialty needs to increase. Unfortunately, there has been a decrease (on the introduction of the new Calman training system, due to change in name of the specialty and delay in addition to the new specialist list) and is at an all time low with only four trainees nationally. Training numbers are controlled centrally by the Department of Health (Medical Workforce Specialty Review), according to a mathematical formula linked to consultant numbers and growth. The rules need to be relaxed for a small specialty in which rapid expansion (and hence an increase in trainees) is needed.

3 Other consultant posts in allergy

In addition to regional allergy centres, further consultant allergist posts need to be created in other hospitals (other teaching hospitals and district general hospitals) in each region to deal with local needs. One model might be for a shared appointment between two trusts. This should follow the establishment of regional centres.

How can we expand?

The devolvement of finance and purchasing of services to primary care organisations and health authorities means that new initiatives are difficult, in fierce competition for resources with established specialties. In regions with a non-existent service, allergy is without a voice. A central directive and pump-priming of funding is required to develop allergy services. To set up regional centres with two new consultants and support staff would cost approximately £300,000 per annum per region (£350,000 with 1 trainee) or £3.3 million per annum (£3.8 million with trainees) for the UK. The cost for the eight regions in England would be £2.8 million. Since not enough trainees are available, the development would be gradual, at lower annual cost. There would be substantial savings through fewer admissions to hospital and A&E attendances, lower drug costs, and less morbidity and mortality.

Further reading

- 1 Ewan PW. Provision of allergy care for optimal outcome in the UK. In: Kay AB (ed). *Allergy and allergic diseases: with a view to the future*. *Br Med Bull* 2000;**56**:1087–01.
- 2 *Immunology and Allergy Services in Scotland*. Edinburgh: Scottish Medical and Scientific Advisory Committee, Scottish Executive, 2000.
- 3 Good allergy practice – standards of care for providers and purchasers of allergy services within the National Health Service. Royal College of Physicians and Royal College of Pathologists. *Clin Exp Allergy* 1995;**25**:586–95.

References

- 1 Worldwide variation in prevalence of symptoms of asthma, allergic rhinoconjunctivitis, and atopic eczema. The International Study of Asthma and Allergies in Childhood (ISAAC) Steering Committee. *Lancet* 1998;**351**:1225–32.
- 2 Tariq SM, Stevens M, Matthews S, Ridout S, *et al*. Cohort study of peanut and tree nut sensitisation by age of 4 years. *Br Med J* 1996;**313**: 514–7.
- 3 Grundy J, Bateman BJ, Gant C, *et al*. Peanut allergy in 3 year old children – a population based study. *J Allergy Clin Immunol* 2001; **107**:S231 (abstract).
- 4 Chiu L, Sampson HA, Sicherer SH. Estimation of the sensitisation rate to peanut by skin prick test in the general population: results from the National Health and Nutrition Examination Survey 1988–94 (NHANES III) *J Allergy Clin Immunol* 2001;**107**:S192 (abstract).
- 5 Stewart AG, Ewan PW. The incidence, aetiology and management of anaphylaxis presenting to an accident and emergency department. *QJM* 1996;**89**:859–64.
- 6 Sheikh A, Alves B. Hospital admissions for acute anaphylaxis: time trend study. *Br Med J* 2000;**320**:1441.
- 7 Department of Health. *National specialised services definitions set. Specialised services for allergy, definition no. 17 (all ages)*. London: Regional Specialised Commissioning Group, 2001. www.doh.gov.uk/specialisedservicesdefinitions
- 8 Allergy: conventional and alternative concepts. In: Kay AB, Lessof MH (eds). *A report of the Royal College of Physicians Committee on Clinical Immunology and Allergy*. London: RCP, 1992.
- 9 Durham SR, Walker SM, Varga E-M, Jacobson MR, *et al*. Long term clinical efficacy of grass-pollen immunotherapy. *N Engl J Med* 1999;**341**:468–75.
- 10 Ewan PW, Clark AT. Long-term prospective observational study of

patients with peanut and nut allergy after participation in a management plan. *Lancet* 2001;**357**:111–5.

- 11 Nasser SMS, Ewan PW. Lesson of the week: depot corticosteroid treatment for hay fever causing avascular necrosis of both hips. *BMJ* 2001;**322**:1589–91.
- 12 Allergy: specialty specific standards. *Consultant physicians working for patients: the duties, responsibilities and practice of physicians* (2nd edn). London: RCP, 2002: 45–53.
- 13 *National Health Service Allergy Clinics*, 3rd edn (2001–2002). London: British Society for Allergy and Clinical Immunology, 2001.