

Putting NICE guidance into practice

Costing statement: Drug allergy: diagnosis and management of drug allergy in adults, children and young people

**Implementing the NICE guideline on Drug
allergy in adults, children and young people
(CG183)**

Published: September 2014

1 Introduction

- 1.1 This costing statement considers the cost implications of implementing the recommendations made in [Drug allergy: diagnosis and management of drug allergy in adults, children and young people](#) (NICE clinical guideline 183).
- 1.2 A costing statement of resource effects has been produced for this guideline as variation in clinical practice across the country means users should consider and assess the impact locally.
- 1.3 Services for people with a diagnosis of drug allergy are commissioned by Clinical Commissioning Groups, except if there is a need for highly specialised services or if people with a diagnosis need primary care services such as self-care information, in which case the commissioner is NHS England. Provider services are all NHS providers that prescribe medication, including hospitals and GP services.
- 1.4 The guideline might have resource implications at a local level as a result of variation in clinical practice nationally; however costs are not expected to be high. Therefore, we encourage organisations to evaluate their own practices against the recommendations in the NICE guideline and assess costs locally.
- 1.5 Implementation of this guidance may have some local cost implications for service providers such as additional referrals to specialist drug allergy services. Identification of drug allergy may also reduce costs by preventing further reactions, some of which could be severe or fatal. In addition, fewer people would be prescribed inappropriate treatments that are sometimes at higher cost due to a false recording of drug allergy. These cost reductions could be realised in the short term by implementing the recommendations in sections 1.1 and 1.2 of the guidance.

2 Background

- 2.1 The guideline covers the diagnosis and management of drug allergy in adults, children and young people. Key priorities for implementation are assessment of people presenting with possible drug allergy, documenting and sharing information with other healthcare professionals, non-specialist management and referral to specialist services and providing information and support to patients.
- 2.2 Approximately 500,000 people in England were admitted to NHS hospitals in 2012–13 with a recorded drug allergy in their hospital episode (The Health and Social Care Information Centre 2013). Data from the National Patient Safety Agency (2007) showed that, although reported incidents of allergy to treatment only accounted for 3.2% of all reported medication incidents occurring in a hospital, 30.9% of those resulted in some harm to patients such as awake paralysis, anaphylaxis and respiratory depression requiring intensive care treatment. Up to 15% of people admitted to hospital have their hospital stay prolonged as a result of an adverse drug reaction (which can be because of a wrong dose, drug or method of administration, or an allergic reaction). The National Patient Safety Agency (Fourth report 2007) assumes an avoidable harm rate of 5.04% of total admissions when calculating the total costs of avoidable harm from medicines given in hospital.
- 2.3 The possible resource impact for the NHS includes legal costs, increased hospital admissions and increased length of stay in hospital if the drug was administered during a hospital stay. In particular, known patient allergy is associated with more legal claims (10.1%) compared with other medication errors such as wrong quantity or route of administration (2.8%) and contraindicated medicine (6%) (NHS Litigation Authority 2013 - data from the clinical negligence scheme for trusts). This is because incidents often lead to patients experiencing severe harm. For example an anaphylactic reaction to anaesthetic causing a lack of oxygen to the brain could leave the patient with permanent disabilities such as poor memory and spatial awareness, loss of balance and permanent cardiac damage.

3 Recommendations with a potential resource impact

3.1 The guideline aims to identify those people with a suspected drug allergy who need to be referred for specialist review because of the management implications of having the allergy. This may increase the diagnostic costs associated with those people; however, there are future benefits and costs avoided, some in the short term that may offset this. The recommendations that may have a cost impact are split into 4 sections as set out in table 1.

Table 1 Guideline sections with potential resource impact

Recommendation section	Recommendation numbers	Potential national resource impact	Narrative
Assessment	1.1.1–1.1.7	X	Practice is variable but assessment should be quick and not need additional resources
Documenting and sharing information with other healthcare professionals	1.2.1–1.2.9	X	Practice is variable but this is anticipated to be low cost to implement
Providing information and support to patients	1.3.1–1.3.6	X	This is anticipated to be low cost to implement
Non-specialist management and referral to specialist services	1.4.1–1.4.11		See section 3.2 below

3.2 *Non-specialist management and referral to specialist services*

3.2.1 Recommendations 1.4.2, 1.4.6, 1.4.8, 1.4.9, 1.4.10 and 1.4.11 aim to ensure that people who have had a suspected anaphylactic or severe cutaneous reaction or with suspected allergy to non-selective non-steroidal anti-inflammatory drugs, beta-lactam antibiotics, local

anaesthetics or general anaesthesia are appropriately referred to a specialist drug allergy service.

- 3.2.2 There are 31 allergy centres in England and Wales (17 staffed by immunologists) and 19 paediatric centres (7 of which are staffed by paediatric immunology specialists and 12 by paediatric allergy specialists and some of which are co-located with the adult service) (Royal College of Physicians 2010). Expert clinical opinion suggests that currently some people are referred inappropriately and some people who need to be referred are not.
- 3.2.3 There is limited information on referrals. However, the level of referral is expected to vary locally, depending on factors such as the availability of allergy services and patient, GP, anaesthetists and emergency department awareness.
- 3.2.4 Depending on current local practice, implementing the recommendations in section 1.4 of the guideline may increase the number of referrals to a specialist allergy clinic for any given locality.
- 3.2.5 A number of different service codes may be used for outpatient appointments in a specialist service. These codes, along with the associated NHS reference costs, are summarised in table 2.

Table 2 Estimated cost of specialist allergy outpatient appointments

Service code	Outpatient appointment cost	
	Consultant led	Non-consultant led
316 Clinical immunology	£230	£134
317 Allergy	£142	£92
255 Paediatric clinical immunology and allergy	£237	£174
257 Paediatric dermatology	£133	£90
330 Dermatology	£104	£68
Source: National schedule of references costs 2012–13 for NHS trusts and NHS foundation trusts. For dermatology, 2014/15 tariff is used – First appointment (consultant) and follow up appointment (non-consultant).		

3.3 *Benefits and savings*

- 3.3.1 Implementing the recommendations may reduce the number of inappropriate referrals to specialist allergy services, ensuring that people are directed to the correct service first time and avoiding unnecessary appointments with other specialists such as immunologists, ear nose and throat specialists and gastroenterologists who may have an interest in allergy.
- 3.3.2 An incorrect diagnosis of drug allergy may result in more expensive treatments being used. For example suspected allergies to local anaesthetics could result in a general anaesthetic being used, which is more costly. For example, in carotid surgery, the cost per patient for local anaesthetic is around £7, for general anaesthetic this is around £23, plus extra theatre resources are needed for the administration and monitoring of people given general anaesthetic (British Journal of Surgery 2010). Implementing the recommendations could avoid these costs.
- 3.3.3 Implementing the recommendations on assessment and documenting and sharing information with other healthcare professionals may reduce recurrence of allergic reactions and anaphylaxis. Anaphylaxis needs emergency treatment and reducing recurrence would provide a resource saving to the NHS. Costs of emergency hospital treatment in A&E range

from £57 to £235 (National tariff 2014/15). Expert opinion suggests a suspected allergic reaction to a drug would be at the higher cost in this range. The cost of a non-elective hospital admission for shock and anaphylaxis without complications and comorbidities is £340; with complications and comorbidities the cost is £464 (Tariff 2014/15). The additional cost per day in hospital due to an allergic reaction to drugs given during a hospital stay is £236 (average excess bed day cost National Tariff 2014/15).

3.3.4 Implementing the recommendations is likely to reduce hospital costs such as admissions from allergic reactions to drugs and the cost of harm from allergic reactions to drugs during inpatient stay.

3.3.5 Litigation costs resulting from the occurrence of serious harm or death may also be avoided. Since the Clinical Negligence Scheme for Trusts (CNST) began in 1995, there have been 17,234 claims relating to medicine and anaesthesia. Applying the percentage relating to known patient allergy of 10.1% (see paragraph 2.3 above) this gives 1,750 claims relating to drug allergy from 1995 to March 2013. There are no published figures for the cost of claims relating to drug allergy, however as a proxy, figures from the NHS Litigation Authority show that an average cost for a claim involving people with a known allergy to drugs is around £6,500 (£130,794 / 20 claims from 1995 to 2007). This gives a cost estimate for litigation relating to drug allergy of £11.4 million (from 1995 to March 2013). There is uncertainty around this estimate due to the variable nature of each case; therefore this calculation has significant limitations.

3.3.6 The fourth report from the Patient Safety Observatory (National Patient Safety Agency 2007) estimated annual costs of avoidable medication safety incidents during inpatient stay as up to £411 million, which includes all types of medication incidents. Acknowledging that this report was published some time ago, an estimate of the costs relating to one type of avoidable drug allergy cost can be made. Using their calculations and estimates (with updated Hospital Episode Statistics data and 2014/15 NHS national tariff figures) and applying these to estimates for drug

allergy incidents in hospitals of 3.2% (see section 2.2 above), implementing the guidance could avoid hospital costs of around £17 million annually. This is calculated as follows:

Fifteen million hospital admissions in 2012/13 x avoidable harm from adverse drug reactions in hospital 5.04% (see 2.2 above) = 756,000 x proportion related to drug allergy 3.2% = 24,200 x 3 additional days in hospital = 72,600 x average excess bed day tariff £236 = £17 million

Note: the 15% medication errors in paragraph 2.2 is not used here as it applies to all medication errors (whether these resulted in harm to the patient or not). The rate of avoidable harm from medication errors of 5.04% relates to all medication errors resulting in an adverse reaction and increased length of stay. This rate is based on the total number of hospital admissions, and is adjusted by the proportion relating to drug allergy to estimated avoidable costs specifically relating to drug allergy.

- 3.3.7 This relates to additional days spent in hospital as a result of an allergic reaction to a drug. Expert opinion suggests that these costs are still currently avoidable.

4 Other considerations

- 4.1 There may be capacity issues within regional specialist allergy services, so an increase in referrals may need the capacity within such services to be increased.
- 4.2 NICE has recently published guidance on [Safe staffing for nursing in adult inpatient wards in acute hospitals](#) (NICE safe staffing guideline 1). It sets out safe nursing indicators (see box 3 in section 1.5) that the evidence shows are sensitive to the number of available nursing staff and skill mix. These include an indicator for medication errors.

5 Conclusion

- 5.1 The guidance aims to help reduce variation in practice by providing recommendations that describe best practice for the diagnosis and

management of drug allergy. Expert opinion suggests there is wide variation in current practice nationally and therefore a national cost impact cannot be estimated with any degree of certainty. There may be increased costs associated with referrals which are low cost, these could be offset by improved quality of care to patients and substantial short-term and longer-term resource benefits to the NHS.

- 5.2 NHS organisations are advised to assess the resource implications of this guidance locally, and the level of costs or savings that may be expected in their area.

6 References

British Journal of Surgery Society Ltd (2010) Cost-effectiveness analysis of general anaesthesia versus local anaesthesia for carotid surgery (GALA Trial)

National Patient Safety Agency (2007) [The fourth report from the Patient Safety Observatory. Safety in doses: medication safety incidents in the NHS](#). National Patient Safety Agency, London

NHS National Tariff 2014/15. WA16Y – shock and anaphylaxis without CC, WA16W – shock and anaphylaxis with CC

Royal College of Physicians (2010) [Allergy services: still not meeting the unmet need](#). Royal College of Physicians, London

The NHS Litigation Authority 2013 - Factsheet 3 information on claims, July 2013

The Health and Social Care Information Centre (2013) [Hospital episode statistics, admitted patient care, England – 2012–13](#)

About this costing statement

This costing statement accompanies the clinical guideline: [Drug allergy: diagnosis and management of drug allergy in adults, children and young people](#) (NICE clinical guideline 183).

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This statement is written in the following context

This statement represents the view of NICE, which was arrived at after careful consideration of the available data and through consulting healthcare professionals. It should be read in conjunction with the NICE guideline. The statement is an implementation tool and focuses on those areas that were considered to have potential impact on resource utilisation.

The cost and activity assessments in the statement are estimates based on a number of assumptions. They provide an indication of the potential impact of the principal recommendations and are not absolute figures.

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