

Putting NICE guidance into practice

Costing report

Implementing the NICE guideline on diabetic foot problems (NG19)

Published: August 2015

This costing report accompanies the NICE guideline on [diabetic foot problems](#).

Issue date: August 2015

This report is written in the following context

This report represents the view of NICE, which was arrived at after careful consideration of the available data and through consulting with healthcare professionals. It should be read in conjunction with the NICE guideline. The report and template are implementation tools and focus on the recommendations that were considered to have a significant impact on national resource utilisation.

The cost and activity assessments in the report are estimates based on a number of assumptions. They provide an indication of the likely impact and are not absolute figures. Assumptions used in the report are based on assessment of the national average. Local practice may be different from this, and the template can be amended to reflect local practice.

Implementation of the guidance is the responsibility of local commissioners and/or providers. Commissioners and providers are reminded that it is their responsibility to implement the guidance, in their local context, in light of their duties to have due regard to the need to eliminate unlawful discrimination, advance equality of opportunity and foster good relations. Nothing in this costing tool should be interpreted in a way that would be inconsistent with compliance with those duties.

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Executive summary

This costing report looks at the resource impact of implementing the NICE guideline on [diabetic foot problems](#) in England.

The costing method adopted is outlined in appendix A; it uses the most accurate data available, was produced in conjunction with key clinicians, and reviewed by clinical and financial professionals.

Significant¹ resource-impact recommendations

This report focuses on the recommendation that is considered to have the greatest resource impact nationally, and therefore requires the most additional resources to implement or can potentially generate the biggest savings. This is:

- For people at moderate or high risk of developing a diabetic foot problem, the foot protection service should:
 - Assess the feet.
 - Give advice about, and provide skin and nail care of the feet.
 - Assess the biomechanical status of the feet, including the need to provide specialist footwear and orthoses.
 - Assess the vascular status of the lower limbs.
 - Liaise with other healthcare professionals, for example, the person's GP, about the person's diabetes management and risk of cardiovascular disease. **[recommendation 1.3.10]**

Net resource impact

The annual change in resource use arising from implementing the recommendation considered in the costing analysis is estimated to be £5.4 million.

¹ The following impacts have been defined as significant:

- where the number of people affected by the guidance recommendations is estimated to be over 300 (equivalent to 1 patient per 170,000; in practice, smaller populations may have no patients or possibly more than one, particularly if it is a disease that runs in families and there is a cluster in one area)
- where initial costing work indicates that the national cost is more than £1 million (equivalent to £2000 per 100,000 population).

Costs

It is anticipated that there will be costs related to providing bespoke orthotic footwear to people at moderate and high risk of developing a diabetic foot ulcer.

Benefits and savings

Implementing the guideline may result in the following savings and benefits from:

- A reduction the number of diabetic foot ulcers from
 - regular assessments of people at risk of developing foot problems
 - Providing bespoke orthoses
- a reduction in the number of people having amputations and follow up care.
- increase in the quality of life for the patient.

Local costing template

The costing template produced to support this guideline enables organisations in England, Wales and Northern Ireland to estimate the impact locally and replace variables with ones that depict the current local position. A sample calculation using this template showed that additional costs of £10,100 could be incurred for a population of 100,000.

1 Introduction

1.1 *Supporting implementation*

1.1.1 The NICE guideline on [diabetic foot problems](#) is supported by the following implementation tools:

- costing tools
 - a costing report; this document
 - a local costing template; a spreadsheet that can be used to estimate the local cost of implementation

1.1.2 This report does not reproduce the NICE guideline on [diabetic foot problems](#) and should be read in conjunction with it.

1.2 *Epidemiology of diabetic foot problems*

1.2.1 Diabetes is one of the most common chronic diseases in the UK and its prevalence is increasing. In 2013, there were almost 2.9 million people in the UK diagnosed with diabetes. By 2025, it is estimated that more than 5 million people in the UK will have diabetes.

1.2.2 Foot problems are common in people with diabetes. It is estimated that

- 10% of people with diabetes will have a diabetic foot ulcer at some point in their lives.
- diabetic foot ulcers precede more than 80% of amputations in people with diabetes
- after a first amputation, people with diabetes are twice as likely to have a subsequent amputation as people without diabetes
- Mortality rates after diabetic foot ulceration and amputation are high, with up to 70% of people dying within 5 years of having an amputation

1.3 *Current service provision*

- 1.3.1 The scope of the guideline indicates despite the publication of strategies on commissioning specialist services for preventing and managing diabetic foot problems, there is variation in practice in preventing and managing diabetic foot problems across different NHS settings and amputation rates still vary up to fourfold in the UK.
- 1.3.2 The scope further states this variation in practice results from a wide variety of factors. These include the varying levels of organisation of care for people with diabetes and diabetic foot problems. This variability depends on geography, individual trusts, individual specialties (such as the organisation of and access to diabetic foot care services) and the availability of healthcare professionals with expertise in the management of diabetic foot problems.
- 1.3.3 The scope also states the implementation of foot care surveillance programmes is still varied across the UK.

2 *Costing methodology*

2.1 *Scope of the cost-impact analysis*

- 2.1.1 We use a structured approach for costing NICE guidelines (see appendix A).
- 2.1.2 The guideline offers best practice advice on diabetic foot problems.
- 2.1.3 We worked with the GDG and other professionals to identify the recommendations that would have the most significant resource-impact (see table 1). Costing work has focused on this recommendation.

Table 1 Recommendations with a significant resource impact

Recommendation	Recommendation number	Guideline key priority?
<p>For people at moderate or high risk of developing a diabetic foot problem, the foot protection service should:</p> <ul style="list-style-type: none"> • Assess the feet. • Give advice about, and provide, skin and nail care of the feet. • Assess the biomechanical status of the feet, including the need to provide specialist footwear and orthoses. • Assess the vascular status of the lower limbs. • Liaise with other healthcare professionals, for example, the person's GP, about the person's diabetes management and risk of cardiovascular disease. 	<p>1.3.10</p>	<p>✘</p>

2.1.4 Ten of the recommendations in the guideline have been identified as key priorities for implementation but these are not considered to have significant resource impact.

2.2 Basis of unit costs

2.2.1 If a national tariff price or indicative price exists for an activity this has been used as the unit cost.

2.2.2 Unit costs are detailed in the costing template; the cost to commissioners for treating a diabetic foot ulcer was taken from the health economics. Using these prices ensures that the costs in the report are the cost to the clinical commissioning group (CCG) of commissioning predicted changes in activity at the tariff price, but may not represent the actual cost to individual trusts of delivering the activity.

3 Significant resource-impact recommendations

3.1 Recommendation 1.3.10

Background

3.1.1 The provision of orthotic footwear on the NHS includes a requirement to fit, repair or provide a new pair of bespoke orthotic inserts and shoes on an annual basis for the rest of a person's life and therefore has long-term recurrent costs.

Assumptions made

3.1.2 The prevalence of diabetes was taken from the [2013–14 quality and outcomes framework data](#), which recorded a prevalence of 6.74% equating to around 2.814 million people aged 18 years and over.

3.1.3 A study identified that out of the prevalent population 64% (1.8 million) are at low risk of developing a diabetic foot problem, 22% (619,000) are at moderate risk and 14% (394,000) are at high risk (Khanolkar et al. 2008).

3.1.4 Further detailed assumptions are set out in the table in Appendix C.

Cost summary

3.1.5 The cost of providing people at moderate or high risk of developing a diabetic foot problem with bespoke orthotic footwear is estimated at £5.4 million based on the national population as set out in Table 2 below.

Table 2 Changes in the numbers of people at moderate or high risk of developing a diabetic foot problem provided with bespoke orthotic footwear

Description	Current practice		Future practice		Change	
	Patient numbers	Cost (£000)	Patient numbers	Cost (£000)	Patient numbers	Cost/ (saving) (£000)
Costs from increased Orthoses						
Providing bespoke orthoses	82,732	43,434	149,142	78,300	66,410	34,866
Savings from reduced foot ulcers						
Treating foot ulcers in hospital	25,627	160,142	23,714	148,190	-1,913	(11,952)
Treating foot ulcers in the community	36,514	117,611	35,571	114,575	-943	(3,036)
Savings from reduced amputations						
Major amputations	6,860	92,608	6,545	88,353	-315	(4,255)
Minor amputations	21,724	183,571	20,726	175,137	-998	(8,434)
Physiotherapy	28,585	15,230	27,271	14,530	-1,313	(700)
Transport	14,292	6,769	13,636	6,458	-657	(311)
Wheelchairs	3,430	628	3,273	599	-158	(29)
Prosthetics	5,900	16,986	5,629	16,205	-271	(780)
Net cost/(saving)						5,368

Other considerations

3.1.6 The cost of providing off the shelf orthotics could be paid for by CCGs, where this is the case the unit cost in the costing template for off-the-shelf orthotics can be updated locally by CCGs to quantify these costs.

Benefits and savings

3.1.7 Carrying out regular assessments of people at risk of developing foot problems can help reduce the number of diabetic foot ulcers.

- 3.1.8 Providing bespoke orthoses could help reduce the risks of developing diabetic foot ulcers. The risk of needing an amputation increases once a person has a diabetic foot ulcer, therefore savings can be made from reduced amputations rates.
- 3.1.9 Reducing the number of people having amputations leads to savings on follow on treatments such as physiotherapy, prosthetics services and wheelchairs.

4 Sensitivity analysis

4.1 Methodology

- 4.1.1 There are a number of assumptions in the model for which no empirical evidence exists; these are therefore subject to a degree of uncertainty.
- 4.1.2 Appropriate minimum and maximum values of variables were used in the sensitivity analysis to assess which variables have the biggest impact on the net cost or saving. This enables users to identify the significant cost drivers.
- 4.1.3 It is not possible to arrive at an overall range for total cost because the minimum or maximum of individual lines are unlikely to occur simultaneously. We undertook one-way simple sensitivity analysis, altering each variable independently to identify those that have greatest impact on the calculated total cost.
- 4.1.4 Appendix B contains a table detailing all variables modified, and the key conclusions drawn are discussed below.

4.2 Impact of sensitivity analysis on costs

Cost of bespoke orthotic footwear

- 4.2.1 The sensitivity analysis explored the effect of a £550 variance in the cost of bespoke orthotic footwear given to people at moderate or high risk of developing a diabetic foot problem. The results show

that costs would range from -£12.9 million to £23.6 million for the national population if the cost of a bespoke orthotic increased from £250 to £800.

Inpatient cost of treating a foot ulcer

- 4.2.2 The sensitivity analysis explored the effect of a £1,250 variance in the inpatient cost of treating a diabetic foot ulcer. The results show the costs would range from £6.6 million to £4.2 million for the national population leading to savings of £2.4 million, if the cost of treatment increased from £5,624 to £6,874 per person.

5 Impact of guidance for commissioners

- 5.1.1 This guideline could lead to an increase in costs for commissioners in providing bespoke orthotic footwear because this is not in the national tariff. However, there will be savings from treating fewer people who develop diabetic foot problems.
- 5.1.2 The costs associated with treating people with diabetes are likely to fall under programme budgeting category 4A Endocrine, Nutritional and Metabolic Problems – Diabetes.

6 Conclusion

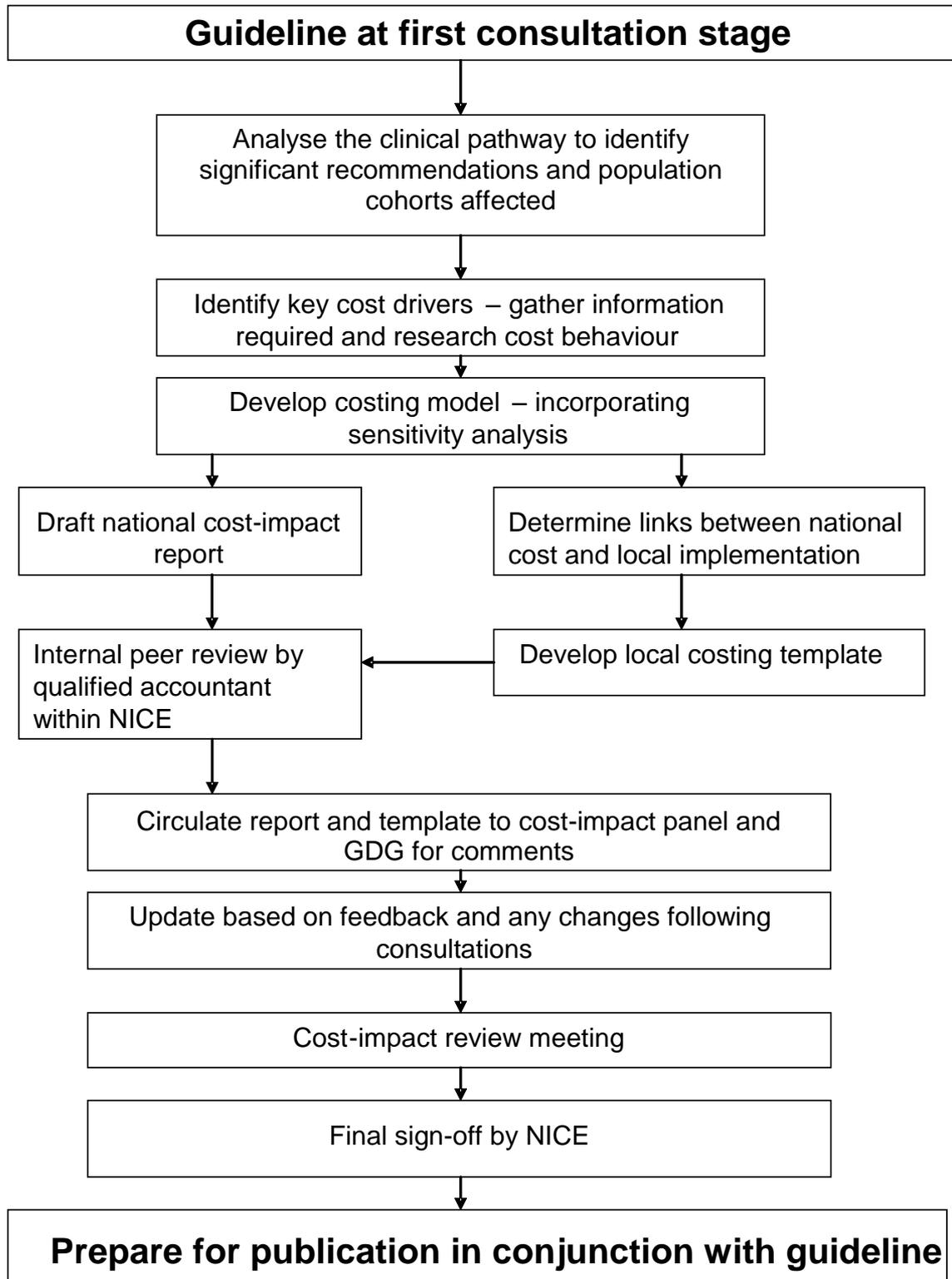
6.1 *Total cost for England*

- 6.1.1 Using the significant resource-impact recommendation shown in table 1 and assumptions specified in section 3, we have estimated the annual cost of implementation in England to be £5.4 million.
- 6.1.2 The costs presented are estimates and should not be taken as the full cost of implementing the guideline.

6.2 *Next steps*

- 6.2.1 A sample calculation using this template showed that a population of 100,000 could expect to incur additional costs of £10,100. Use this template to calculate the cost of implementing this guidance in your area.

Appendix A. Approach to costing guidelines



Appendix B. Results of sensitivity analysis

<u>Individual variable sensitivity</u>	Recurrent costs						
	Baseline value	Minimum value	Maximum value	Baseline costs (£000s)	Minimum costs (£000s)	Maximum costs (£000s)	Change (£000s)
Cost of bespoke orthotic footwear	£525	£250	£800	5,368	-12,895	23,631	36,526
Inpatient cost of treating a foot ulcer	£6,249	£5,624	£6,874	5,368	6,564	4,173	-2,391
Cost of treating a foot ulcer in the community	£3,221	£2,899	£3,543	5,368	5,672	5,065	-607

Appendix C. Detailed assumptions

Description	Current practice				Future practice			
	Moderate Risk of a diabetic foot problem		High Risk of a diabetic foot problem		Moderate Risk of a diabetic foot problem		High Risk of a diabetic foot problem	
	Proportion	People	Proportion	People	Proportion	People	Proportion	People
People with Diabetes-2,814,000	22%	619,080	14%	393,960	22%	619,080	14%	393,960
Probability of a diabetic foot ulcer								
Those people who do not wear any type of orthotic footwear	100%	619,080	58%	228,497	90%	557,172	49%	193,040
Probability of a foot ulcer with no footwear	1.33%	8,234	18.48%	42,226	1.33%	7,410	18.48%	35,674
Those people who purchase off-the-shelf orthotic footwear themselves	0%	-	21%	82,732	5%	30,954	21%	82,732
Probability of a foot ulcer with off-the-shelf orthotic footwear	0.74%	-	10.16%	8,406	0.74%	229	10.16%	8,406
Those people who are provided with bespoke orthotic footwear	0%	-	21%	82,732	5%	30,954	30%	118,188
Probability of a foot ulcer with bespoke orthotic footwear	0.46%	-	6.28%	5,196	0.46%	142	6.28%	7,422
Probability of requiring treatment								
Estimated number of foot ulcers		8,234		55,827		7,782		51,502
Probability of requiring hospital treatment	40%	3,294	40%	22,331	40%	3,113	40%	20,601
Probability of requiring treatment in the community	60%	4,940	60%	33,496	60%	4,669	60%	30,901
Probability of requiring amputation								
Estimated number of foot ulcers		8,234		55,827		7,782		51,502
Probability of requiring amputations	46%	3,788	46%	25,681	46%	3,580	46%	23,691
Probability of major amputations	24%	909	24%	6,163	24%	859	24%	5,686
Probability of minor amputations	76%	2,879	76%	19,517	76%	2,721	76%	18,005
Requiring Physiotherapy	100%	3,788	100%	25,681	100%	3,580	100%	23,691
Requiring hospital transport to Physiotherapy	50%	1,894	50%	12,840	50%	1,790	50%	11,845
Requiring wheel chair after major amputation	50%	455	50%	3,082	50%	430	50%	2,843
Requiring prosthetic services after major amputation	86%	782	86%	5,300	86%	739	86%	4,890

Appendix D. References

Health and Social Care Information Centre (2014) [Quality and outcomes framework 2013–2014](#)

Kerr M (2011) [Inpatient care for people with diabetes: the economic case for change](#)

Kerr M (2014) [Inpatient care for people with diabetes: the economic case for change](#)

Leese GP, Reid F, Green V et al. (2006) Stratification of foot ulcer risk in patients with diabetes: a population-based study. *International Journal of Clinical Practice* 60: 541–5

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