NICE National Institute for Health and Care Excellence

Putting NICE guidance into practice

Resource impact report for May 2023 update: cardiovascular disease: risk assessment and reduction, including lipid modification (NG238)

Published: May 2023

Summary

This report focuses on the recommendations from NICE's guideline on cardiovascular disease that we think will have the greatest resource impact (cost or saving) nationally (for England), and will need the most additional resources to implement or potentially generate the biggest savings. They are:

- Do not rule out treatment with atorvastatin 20 mg for the primary prevention of CVD just because the person's 10-year QRISK3 score is less than 10% if they have an informed preference for taking a statin or there is concern that risk may be underestimated **(recommendation 1.6.8).**

The recommendation expands the use of statin therapy for primary prevention of CVD to include people without CVD irrespective of 10-year QRISK score. The eligible population will include some people with a QRISK score of less than 10%, and people in whom a risk assessment tool is not recommended to be used covered by **recommendation 1.1.9**. There may be an increase in opportunistic assessments if people without a QRISK score were to consult for statin treatment. Clinical experts suggest there may be capacity implications involving the potential increase in GP consultations for statins and the associated administration and clerical functions.

- Offer atorvastatin 20 mg for the primary prevention of CVD to people who have a 10-year QRISK3 score of 10% or more (**recommendation 1.6.7**).

The recommendation has not changed from the previous guideline. However, the British Heart Foundation report suggests that because of the covid pandemic impact on statin prescribing there is likely to be a modest increase in statin prescribing for people with QRISK 10% or more regardless of the NICE guideline update. Clinical experts also suggest that the guideline may encourage GPs to use more statins around the 10% threshold where they may have not done so before. Therefore, this resource impact assessment also considers the potential increase in statins use in people with QRISK 10% or more.

Financial impact

The estimated financial impact of implementing this guideline for England in the next 5 years is a cost of around £3.0 million in 2023/24 rising to a cost of around £5.6 million in 2027/28 as set out in table 1. Based on the assumptions used for England, this is equivalent to a cost of around £321,900 and £184,400 in 2027/28 for Wales and Northern Ireland, respectively. The resource impact results from:

- an increase in primary care prescribing budgets for statins
- an increase in GP consultations for statin treatment

- an increase in follow-up appointments for people receiving statins (at 3 months of starting treatment and annual reviews)
- a decrease in CVD events and the associated secondary and primary care costs.

The estimated financial impact of implementing this guideline for primary care for an average GP practice (assuming 10,000 people) is a cost of around £1,000 and for an average integrated care board population (assuming 1,300,000 people) is a cost around of £129,600.

The resource impact estimate does not include NHS and social care post event savings, but the template allows users to model these savings at a local level.

Because of the limited availability of data and the variability in the provision of services across the country a scenario analysis has been prepared and is shown in table 3 and 4. The resource impact uses the scenario with a 1% increase of statin use in people with QRISK 10% or more and a 5% increase of statin use for people with QRISK less than 10%. Clinical experts suggest this is the most likely scenario which reflects the potential guideline implementation across the country.

Table 1 Estimated annual cost of implementing the guideline for the population of England (Recommendations 1.6.7 and 1.6.8)

Cost area	2023/24 £000	2024/25 £000	2025/26 £000	2026/27 £000	2027/28 £000
Atorvastatin prescriptions	760	1,520	2,280	3,040	3,800
Primary care appointments					
Consultation for statins	1,720	1,720	1,720	1,720	1,720
Reviews at 3 months of stating treatment	101	101	101	101	101
Phlebotomy	301	301	301	301	301
Annual reviews	101	203	304	406	507
Total costs	**2,983**	**3,845**	**4,706**	**5,568**	**6,429**
Saving from CVD events avoided	-32	-130	-291	-514	-793
Net cost for population of England	**2,951**	**3,715**	**4,415**	**5,054**	**5,636**
Appointment costs are based on GP consultations with follow-up and reviews by healthcare assistants. Unit costs can be amended in the template.					

Table 2 Estimated annual cost of implementing the guideline per 10,000 GP population (Recommendations 1.6.7 and 1.6.8)

Cost area	2023/24	2024/25	2025/26	2026/27	2027/28
Atorvastatin prescriptions	134	269	403	538	672
Primary care appointments					
Consultation for statins	304	304	304	304	304
Reviews at 3 months of stating treatment	18	18	18	18	18
Phlebotomy	53	53	53	53	53
Annual reviews	18	36	54	72	90
Total costs	**527**	**680**	**832**	**785**	**1,137**
Saving from CVD events avoided	-6	-23	-52	-91	-141
Net cost per 10,000 population	**521**	**657**	**780**	**894**	**997**
Appointment costs are based on GP consultations with follow-up and reviews by healthcare assistants. Unit costs can be amended in the template.					

This report is supported by a resource impact template which may be used to calculate the resource impact of implementing the guidance by amending the variables.

Cardiology services are commissioned by integrated care boards. Providers are NHS hospital trusts, and primary care including community providers.

Table 3 Scenario analysis: 1%, 5% and 10% increase in people receiving statins

People with GP recorded QRISK 10% or more	Current Practice	Increase of 1%	Increase of 5%	Increase of 10%	Cost from increase of 1%	Cost from increase of 5%	Cost from increase of 10%
Estimated number of people	6,949,160						
Proportion who receive statins	3,405,089	3,474,580	3,752,547	4,100,005			
Increase in year of people receiving statins		**69,492**	**347,458**	**694,916**	**£833,204**	**£4,166,022**	**£8,332,043**
Capacity impact - Increase in appointments							
Initial GP appointment to discuss use of statins		69,492	347,458	694,916	£1,885,451	£9,427,255	£18,854,509
Follow-up at 3 months after starting treatment		69,492	347,458	694,916	£111,138	£555,692	£1,111,383
Annual reviews		69,492	347,458	694,916	£111,138	£555,692	£1,111,383
Total primary care appointments in year 1		**208,475**	**1,042,374**	**2,084,748**			
Phlebotomy at 3 months		69,492	347,458	694,916	£330,085	£1,650,426	£3,300,851
Increase in costs					**£2,437,813**	**£12,189,063**	**£24,378,126**
Events avoided		-194	-972	494,953	-£352,633	-£1,763,165	-£3,526,330
Net increase in costs					**£2,918,384**	**£14,591,920**	**£29,183,840**

Table 4 Scenario analysis: 1%, 5% and 10% increase in people receiving statins

People with GP recorded QRISK less than 10%	Current Practice	Increase of 1%	Increase of 5%	Increase of 10%	Cost from increase of 1%	Cost from increase of 5%	Cost from increase of 10%
Estimated number of people	4,949,525						
Proportion who receive statins	74,243	123,738	321,719	569,195			
Increase in year of people receiving statins		**49,495**	**247,476**	**494,953**	**£593,448**	**£2,967,240**	**£5,934,481**
Capacity impact - Increase in appointments							
Initial GP appointment to discuss use of statins		49,495	247,476	494,953	£1,342,909	£6,714,543	£13,429,086
Follow-up at 3 months after starting treatment		49,495	247,476	494,953	£79,158	£395,790	£791,580
Annual reviews		49,495	247,476	494,953	£79,158	£395,790	£791,580
Total primary care appointments in year 1		**148,486**	**742,429**	**1,484,858**			
Phlebotomy at 3 months		49,495	247,476	494,953	£235,102	£1,175,512	£2,351,025
Increase in costs					**£1,736,327**	**£8,681,636**	**£17,363,271**
CVD events avoided		-44	-220	-439	-£88,344	-£441,718	-£883,437
Net increase in costs					**£2,241,432**	**£11,207,158**	**£22,414,315**

1 Introduction

1.1 This report discusses the resource impact of implementing our guideline on cardiovascular disease: risk assessment and reduction, including lipid modification in England. It aims to help organisations plan for the financial implications of implementing the NICE guideline.

1.2 A resource impact template accompanies this report to help with assessing the resource impact at a local level in England, Wales, or Northern Ireland.

1.3 We have considered direct costs and savings to the NHS. Any cost savings arising from a change in practice have been offset against the cost of implementing the change.

1.4 Cardiology services are commissioned by integrated care boards. Providers are NHS hospital trusts, and primary care including community providers.

2 Background

2.1 Cardiovascular disease (CVD) is the leading cause of death worldwide. It causes a third of all ischaemic heart disease and contributes to many other cases.

2.2 The Cardiovascular Disease Prevention Audit (CVDPREVENT) in England indicates that less than half of people with a QRISK score of 10% of more are on lipid-lowering therapy. It is unclear if people are not being offered statins or if they are choosing to decline or stop treatment.

2.3 The British Heart Foundation report on the impact of the covid pandemic on cardiovascular disease services indicates that covid has impacted on statin prescribing.

3 Significant resource impact recommendations

3.1 There are 2 guideline recommendations that are likely to lead to a significant resource impact when implemented. These are listed below.

- Do not rule out treatment with atorvastatin 20 mg for the primary prevention of CVD just because the person's 10-year QRISK3 score is less than 10% if they have an informed preference for taking a statin or there is concern that risk may be underestimated **(Recommendation 1.6.8).**
- Offer atorvastatin 20 mg for the primary prevention of CVD to people who have a 10-year QRISK3 score of 10% or more **(Recommendation 1.6.7). No change from previous guideline.**

Background

3.1.1 Recommendation 1.6.8 is a change to current practice and will increase the number of people without CVD who receive statins for primary prevention of CVD. This is because it includes adults with a QRISK score of less than 10% who are not covered by the previous guideline, and adults in whom a risk assessment tool is not recommended to be used and who may be high risk.

3.1.2 Clinical experts estimate that around 5 million adults in England already have GP recorded QRISK of less than 10%, with 1 to 2% of them on statin treatment.

3.1.3 The increase in adults who are prescribed statins may have an impact on primary care capacity (consultations for statins, follow-up, and annual review appointments). The impact could be more so in areas with significant health inequalities where more still needs to be done to reduce health inequalities associated with CVD.

3.1.4 Recommendation 1.6.7 has not changed from the previous guideline. However, the British Heart Foundation report suggests that because of the covid pandemic impact on statin prescribing, there is likely to be a modest increase in statin prescribing. Also, clinical experts suggest that the guideline may encourage GPs to use more statins around the 10% threshold where they may have not done so before.

3.1.5 Based on the Cardiovascular Disease Prevention Audit (CVDPREVENT) in England, around 7 million adults without CVD have a GP recorded QRISK of 10% or more and about 49% (3.4 million) of them currently receive statins.

4 Resource impact over time

4.1 The estimated annual cost of implementing this guideline for the population of England based on the uptake in the resource impact assumptions is shown in table 5.

4.2 The cost from year 2023/24 once steady state is reached is equivalent to £1,000 per 10,000 population (see table 6).

Table 5 Estimated annual cost of implementing the guideline for the population of England (recommendation 1.6.7 and 1.6.8)

Cost area	**2023/24 £000**	**2024/25 £000**	**2025/26 £000**	**2026/27 £000**	**2027/28 £000**
Atorvastatin prescriptions	760	1,520	2,280	3,040	3,800
Primary care appointments					
Consultation for statins	1,720	1,720	1,720	1,720	1,720
Reviews at 3 months of stating treatment	101	101	101	101	101
Phlebotomy	301	301	301	301	301
Annual reviews	101	203	304	406	507
Total costs	**2,983**	**3,845**	**4,706**	**5,568**	**6,429**
Saving from CVD events avoided	-32	-130	-291	-514	-793
Net cost for population of England	**2,951**	**3,715**	**4,415**	**5,054**	**5,636**
Appointment costs are based on GP consultations with follow-up and reviews by healthcare assistants. Unit costs can be amended in the template.					

Table 6 Estimated annual cost of implementing the guideline per 10,000 population (recommendation 1.6.7 and 1.6.8)

Cost area	**2023/24**	**2024/25**	**2025/26**	**2026/27**	**2027/28**
Atorvastatin prescriptions	134	269	403	538	672
Primary care appointments					
Consultation for statins	304	304	304	304	304
Reviews at 3 months of stating treatment	18	18	18	18	18
Phlebotomy	53	53	53	53	53
Annual reviews	18	36	54	72	90
Total costs	**527**	**680**	**832**	**785**	**1,137**
Saving from CVD events avoided	-6	-23	-52	-91	-141
Net cost per 10,000 population	**521**	**657**	**780**	**894**	**997**
Appointment costs are based on GP consultations with follow-up and reviews by healthcare assistants. Unit costs can be amended in the template.					

Table 7 Estimated number of people affected per 10,000 population for recommendation 1.6.7 and 1.6.8

Area costed	**Current number of people**	**Future number of people (year 5)**	**Change in number of people**
Adults receiving statins (QRISK <10%)	74,200	321,700	247,500
Adults receiving statins (QRISK ≥10%)	3,405,100	3,474,600	69,500
Capacity impact - appointments			
Consultations to discuss statins	0	63,400	63,400
Follow-up at 3 months after starting	0	63,400	63,400
Annual reviews	3,479,300	3,796,300	317,000
Appointments per practice of 10,000			
Consultations to discuss statins	0	11	11
Follow-up at 3 months after starting	0	11	11
Annual reviews	615	671	56

a. This includes all adults irrespective of the 10-year QRISK score where there is patient preference to take a statin or clinical judgement suggests that the person may be high risk

Other considerations

4.2.1 Clinical experts suggest that where a QRISK tool is not integrated with GP IT systems, manual input of a patient's data will be needed and will increase workload for healthcare professionals. It may involve an appointment with a nurse or healthcare assistant for bloods, or phlebotomy, then with a GP to discuss the results and statin prescribing if needed. Any potential resource needs and costs should be assessed at a local level.

4.2.2 Medical examination costs such as for lipid profile, liver function, renal function that may be needed before starting statin treatment, at 3-month after starting treatment and at annual reviews have not been included in the resource impact assessment. Also, costs for abnormal blood test results that may prompt further investigations and appointments have not been included. These should be

assessed at a local level. The template can be amended at a local level.

4.2.3 The resource impact assessment estimates savings associated with acute care of CVD events avoided. The savings could be much greater if the non-acute and social care costs of the CVD events were included, therefore reducing the overall impact of the recommendations. The template allows users to input the relevant unit costs and estimate the associated cost savings.

5 Implications for commissioners and providers

5.1 Cardiovascular disease falls under programme budgeting category 10A coronary heart disease.

5.2 There will be an increase in the number of adults without CVD who are prescribed statins, and this will increase spending on prescribing budgets. However, there are benefits as evidence indicates that use of statins to prevent CVD contributes to the reduction in CVD events and the associated healthcare and social care costs.

5.3 No increase in the volume of QRISK assessments is anticipated apart from the formal assessments undertaken in line with the guidance recommendations on identifying and assessing cardiovascular risk. However, there could be some increase in opportunistic assessments from those who would not normally have had a QRISK assessment.

5.4 There may be an impact on primary care capacity (increased consultations for statins, follow-up, and annual review appointments).

6 Assumptions made

6.1 The resource impact template makes the following assumptions:

- Based on the Cardiovascular Disease Prevention Audit (CVDPREVENT 2022) in England for the time period to September 2022, around 6.55% (2.9 million) people have CVD in England and around 41.5 million do not. See table 8.

Table 8 Estimated number of people without CVD, and their associated QRISK scores

Description	%	Number of people
Adult population in England		44,456,850
Less adults with GP recorded CVD (a)	6.55%	2,913,920
Total adults without CVD		41,542,630
Adults estimated to have QRISK≥10% (b)	22.41%	9,308,060
Adults estimated to have QRISK <10% (b)	77.59%	32,234,870

a. Based on the Cardiovascular Disease Prevention Audit in England for time period September 2022. Available from (CVDPREVENT)
b. Predicting the 10-year risk of cardiovascular disease in the UK: independent and external validation of an updated version of QRISK2". G S Collins and Douglas G Altman. 2012. https://www.bmj.com/content/344/bmj.e4181

- The QRISK 2011 model data was used to estimate number of adults who fall int a specific QRISK score range (table 8). The model was restricted to age groups 30 to 85 years old. Adults aged 18 to 29 years and over 85 years who were not covered by the model were considered to have QRISK less than 10% and QRISK 10% or more respectively. Clinical experts suggest older people have QRISK more than 10%.
- Of the adults estimated to have QRISK less than 10%, and based on Samuel Finnikin et al, 2021 and clinical experts, around 5 million have a GP recorded QRISK score. Clinical experts estimate that around 1 to 2% currently receive statins, and that the number may increase from an average of 1.5% to 6.5% over the next 5 years.
- Of the adults estimated to have QRISK 10% or more around 7.4 million have a GP recorded QRISK score of whom 3.4 million

currently receive statins. Clinical experts suggest this may slightly increase to 3.5 million. This is because of better guideline implementation and the levelling up of the lower uptake during COVID.

- The expansion in the QRISK categories of adults without CVD who are prescribed statins may have capacity impact in primary care (increase in consultation for statins, 3-months after starting treatment and at annual reviews). The impact will depend on factors such health inequalities which vary across the country and are still a major issue as per the NHS long term plan.
- Unit cost of atorvastatin is £11.99 (NHS electronic drug tariff).
- The unit costs for primary care appointments are listed in table 9 below. The template used the cost of a GP for consultation for statins, and for a healthcare assistant (AfC band 4 top of scale) for follow-up at 3 months after starting statins and for annual reviews. Clinical experts suggest statin prescribing could be undertaken by nurse prescribers, and reviews at 3 months and annually, by practice nurses or healthcare assistants. Also, that the contact time may vary depending on factors such as comorbidities, age, socio economic status, ethnicity health literacy, language, and the need for translators and more. The template allows users to amend to reflect local practice.

Table 9 estimated appointment unit cost and patient contact associated time

Cost element	Time per slot (minutes)	Unit cost
Consultation for statin prescribing	15	£27.13
Follow-up appointment and annual review	4	£1.60
Phlebotomy service	n/a	£4.75
Unit Costs of Health and Social Care 2021. See resource impact template (unit costs worksheet)		

- Events avoided were estimated based on the economic model developed to investigate the cost effectiveness of low, medium, and high-intensity statin treatments against no treatment for the

primary and secondary prevention of CVD for NICE clinical guideline CG181 which has been updated by this guideline.

- Events rates for adults without CVD with QRISK 10% or more was based on average QRISK 15% which was mid-point of QRISK 10% and 20%. This was for the recommendation to offer atorvastatin 20 mg for the primary prevention of CVD to people including those with QRISK 10% to just under 20% who would not have had statins previously. There was no data on the average QRISK score that would been representative for all adults with QRISK 10% or more. Because clinical experts suggest that the guideline might lead to more statin prescriptions for adults with QRISK around the threshold of 10%, it was considered appropriate to use events rates based on QRISK 15%.
- Events rates for adults without CVD with QRISK less than 10% were estimated based on average QRISK 5%.
- Table 10 below shows secondary care unit costs for events avoided.

Table 10 Event costs

CVD event	Unit cost
Angina	£1,053
Myocardial Infarction	£2,042
Transient Ischaemic Attack	£1,406
Stroke	£4,453
Hear failure	£2,790
Activity data and unit costs were based on the 2020/21 National Schedule of NHS Costs. Available from: Available from: https://www.england.nhs.uk/publication/2020-21-national-cost-collection-data-publication/	

6.2 If a national tariff price or indicative price exists for an activity, this has been used as the unit cost. The resource impact template can be used to amend unit costs to account for any local market forces factor.

6.3 Using these prices ensures that the costs in the report are the cost to integrated care systems of commissioning predicted changes in activity at the tariff price but may not represent the actual cost to individual trusts of delivering the activity.

7 Scenario analysis

7.1 There are some assumptions in the model for which no empirical evidence exists, so we cannot be as certain about them. Appropriate minimum and maximum values of uptake were used in the scenario analysis to estimate the likely resource impact.

7.2 Three scenarios were modelled, a 1%, 5% and 10% increase in people receiving statins. Clinical experts suggest the most likely scenario is 1% increase for people with QRISK 10% or more and 5% for people with QRISK less than 10%, with a cost of £14.1 million for England (table 11 and 12).

Table 11 Scenario analysis: 1%, 5% and 10% increase in people receiving statins

People with GP recorded QRISK 10% or more	Current Practice	Increase of 1%	Increase of 5%	Increase of 10%	Cost from increase of 1%	Cost from increase of 5%	Cost from increase of 10%
Estimated number of people	6,949,160						
Proportion who receive statins	3,405,089	3,474,580	3,752,547	4,100,005			
Increase in year of people receiving statins		**69,492**	**347,458**	**694,916**	**£833,204**	**£4,166,022**	**£8,332,043**
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Initial GP appointment to discuss use of statins		69,492	347,458	694,916	£1,885,451	£9,427,255	£18,854,509
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Total primary care appointments in year 1		**208,475**	**1,042,374**	**2,084,748**			
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Increase in costs					**£2,437,813**	**£12,189,063**	**£24,378,126**
Events avoided		-194	-972	494,953	-£352,633	-£1,763,165	-£3,526,330
Net increase in costs					**£2,918,384**	**£14,591,920**	**£29,183,840**

Table 12 Scenario analysis: 1%, 5% and 10% increase in people receiving statins

People with GP recorded QRISK less than 10%	Current Practice	Increase of 1%	Increase of 5%	Increase of 10%	Cost from increase of 1%	Cost from increase of 5%	Cost from increase of 10%
Estimated number of people	4,949,525						
Proportion who receive statins	74,243	123,738	321,719	569,195			
Increase in year of people receiving statins		**49,495**	**247,476**	**494,953**	**£593,448**	**£2,967,240**	**£5,934,481**
Capacity impact - Increase in appointments							
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Annual reviews		49,495	247,476	494,953	£79,158	£395,790	£791,580
Total primary care appointments in year 1		**148,486**	**742,429**	**1,484,858**			
Phlebotomy at 3 months		49,495	247,476	494,953	£235,102	£1,175,512	£2,351,025
Increase in costs					**£1,736,327**	**£8,681,636**	**£17,363,271**
CVD events avoided		-44	-220	-439	-£88,344	-£441,718	-£883,437
Net increase in costs					**£2,241,432**	**£11,207,158**	**£22,414,315**

8 References

Finnikin, S., Willis, B.H., Ryan, R., Evans, T. and Marshall, T., 2021. Factors predicting statin prescribing for primary prevention: a historical cohort study. British Journal of General Practice, 71(704), pp. e219-e225.

Collins G S, Altman D G. Predicting the 10-year risk of cardiovascular disease in the United Kingdom: independent and external validation of an updated version of QRISK2 BMJ 2012; 344: e4181 doi:10.1136/bmj.e4181.

About this resource impact report

This resource impact report accompanies the NICE guideline on cardiovascular disease: risk assessment and reduction, including lipid modification and should be read in conjunction with it. Please visit the NICE website to view the terms and conditions.