

**UNIVERSITY OF BIRMINGHAM AND UNIVERSITY OF YORK  
HEALTH ECONOMICS CONSORTIUM  
(NICE EXTERNAL CONTRACTOR)**

**Health economic report on piloted indicator**

**QOF indicator area:** Rheumatoid Arthritis Cardiovascular Risk Assessment

**Potential output:** Recommendations for NICE Menu

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## **Introduction**

This briefing paper provides a summary of the economic evidence generated on the proposed pilot five rheumatoid arthritis (RA) CVD risk assessment indicator. The format of this paper is intended to provide the QOF Advisory Committee with sufficient information upon which to make a recommendation on whether the indicator is economically justifiable.

## **Piloted indicator**

The percentage of patients with rheumatoid arthritis aged 30-84 years who have had a cardiovascular risk assessment using a tool adjusted for RA in the preceding 15 months (with appropriate exclusions).

## **Economic rationale for the indicator**

It has been estimated that total cost of CVD to the NHS was £14.4bn in 2006 [1].

Patients with RA are reported to be at higher risk of CVD – possibly higher than those who have diabetes [2]. NICE has recommended that people with a high risk of CVD are identified and provided with treatment to reduce that risk, notably treatment with statins, should the risk over 10 years be estimated to be over 20%. All those with prior CVD should be offered statin therapy. [3]

## **Objective**

To evaluate whether the proposed indicator represents a cost effective use of NHS resources.

## **Type of health economic analysis**

An indicative net benefit approach is applied with a lifetime horizon at baseline.

## ***Delivery cost of indicator***

The delivery cost of the indicator can be split into two parts – the cost of undertaking risk assessment and then the cost of providing risk reducing therapy to appropriate patients.

We have assumed that the risk assessment would involve a blood test to assess lipid levels and going through a lifestyle and health tool to feed data into the QRISK2 tool. We have assumed that this will equate to the equivalent of a GP consultation that lasts 17.2 minutes at a cost of £53, extracted from the Unit Costs of Health and Social Care 2010 [4].

Consideration of treatment for patients at high risk has been limited to statin treatment for people with prior CVD or 10 year risk of CVD greater than 20%. The costs of this have been taken from a detailed economic model of the use of cholesterol lowering therapy in people with diabetes that was undertaken as part of the most recent NICE guidance on the treatment of diabetes [5]. The evidence is that patients with RA have at least a similar increased risk of CVD as those with

diabetes, so this seems a reasonable approach given there is an absence of evidence on therapy specifically for those with RA.

For simplicity we have assumed that therapy is targeted to reach a cholesterol goal of 4.0mmol/l and that all patients have prior CVD (which maximises the potential costs and so is a cautious estimate).

The NICE model looked at treatment of high cholesterol with statins using three different strategies: a fixed dose, a starting dose of simvastatin uptitrated if the target cholesterol was not reached (one step strategy) and a change to atorvastatin should uptitration fail to lower cholesterol to target (two step strategy). We have assumed that the indicator as it stands mirrors the two step strategy and that the same statins would be used in practice and no other cholesterol lowering drugs would be used.

The total (discounted) costs for a two step strategy were £14,987 per patient for those with CVD respectively. The £53 initial consultation and blood tests cost was added.

Costs from the NICE model above assume treatment and monitoring over a lifetime whereas the QOF points are awarded annually – potentially only for this year. If monitoring of cholesterol were to stop after year one and statin use not checked it is not clear what impact this would have on costs as there are two cost drivers that will work in opposing directions. The costs of CVD and CHD that are included in the model would increase if statin use stopped or was insufficient resulting in more patients developed these conditions. However, statin and monitoring costs would fall. Given this ambiguity and the lack of reporting of first year results produced by the model for simplicity we have assumed that lifetime costs in the model can be used in our model and explored the impact of less than 100% compliance with monitoring and statin use on the projected benefits. Sensitivity analysis explored a 50% increase/decrease in costs.

**The incremental discounted cost of assessing CVD risk in patients with RA and treating this risk with statins is £15,040 and £53 if no treatment is offered or required. The costs are based on a lifetime horizon which explains why they are higher than the cost of prescribing an ongoing course of statins, ie they include the cost of adverse events at whatever point they might occur in the future. Using our assumptions about the eligible population with RA who also have CVD (below) we used a weighted average of £5,298 in the net benefit analysis.**

### ***Effectiveness of indicator***

Effectiveness of the indicator can only be measured in QALYs where treatment is offered for patients deemed to be at high risk. The risk assessment itself is deemed to generate no QALYs or benefit.

The effectiveness of the use of statins was again derived from the NICE modelling on statins in diabetics with cholesterol >4.0mmol/l with a detailed description provided in that report. The only modification is that there is recently published evidence from a large Canadian study over 10 years that of patients with RA on statins 45% will not be fully compliant with therapy at some point over 4 years. As such we have assumed at baseline that 50% of the potential gain will be seen in patients with RA. For simplicity we also assumed that all patients considered at high risk of CVD have QALY gains and had prior CVD as no data could be found on

proportion of patients with RA that had CVD. This results in cautious estimates as the incremental cost effectiveness ratios (ICERs) are less favourable in the NICE model for those with prior CVD than those without.

**The incremental QALY gain of assessing risk of CVD in patients with RA and then treating people at high risk and cholesterol over 4.0mmol/l with statins is assumed to be 3.6. There are no QALY gains from the indicator from the risk assessment itself. Using the weighted average approach a value of 1.26 was used in the net benefit analysis.**

### ***Incremental cost-effectiveness ratio***

No previous cost effectiveness studies of CVD risk assessment and treatment of people with RA were identified.

### ***Eligible population***

The eligible population are all patients with RA. This has been estimated as 0.44% and 1.16% of males and females over the age of 16 respectively [10]. The data available only provides prevalence estimates in age bands starting 16-44 and as such we have assumed that the prevalence rate for 30-44 year olds is 50% higher than for the 16-44 group as a whole.

Applying the differential prevalence rates available on age and sex to the percentage of each gender in these age bands in the UK allows us to estimate the practice eligible population. This is shown in table 1 below.

**Table 1: Prevalence of RA in practice populations**

Age	Percentage of UK population <sup>1</sup>		Prevalence rate of RA [3]		Prevalence in practice population
	Male	Female	Male	Female	
30-44	9.9%	9.9%	0.03%	0.18%	0.02%
45-64	12.6%	12.9%	0.58%	1.67%	0.29%
65-74	4.4%	4.7%	1.14%	2.56%	0.17%
75+	3.5%	4.5%	2.18%	2.99%	0.21%
Total	-	-	-	-	0.69%

Whilst all those with RA are the eligible population for the indicator, an estimate of the number of patients at high risk of CVD and who go on to statin therapy is also required for our modelling. No data could be found on the proportion of people with RA that would be considered high risk. We have assumed that 35% of those with RA will also have CVD and only these are assumed at high enough risk for statin therapy. This is on the basis of the reported comparability of the risk of CVD between diabetics and people with RA. Almost all patients with diabetes who have cholesterol over 4.0mmol/l without treatment and 35% of diabetics over 35 in the

<sup>1</sup> See <http://www.neighbourhood.statistics.gov.uk/HTMLDocs/dvc1/UKPyramid.html>

USA also have CVD. Due to the uncertainty in this parameter, sensitivity analysis explored values between 15% and 55% of people with RA being suitable for statin therapy.

### ***Baseline level of achievement***

Data from the pilot sites suggested that this was new work so we have assumed that baseline achievement is 25%.

### ***Population***

In the base case, the threshold analysis of the proposed indicator was conducted based on the total practice population registered with practices in England, that is, 8,228 practices with a mean practice size of 6,297 [9].

**Table 1: Practice information for all UK members**

<b>Country</b>	<b>Number of practices</b>	<b>Number of patients</b>
England	8,228	6,297
Scotland	1,014	5,122
Wales	488	6,146
Northern Ireland	357	5,011

### ***QOF Payments***

Each QOF point is assumed to result in a payment of £133.76. This is the value per point in England during 2012/13 (source; Information Centre).

**Table 2: Value per point for all UK members (most recently available)**

<b>Country</b>	<b>Value per point</b>
England	£133.76
Scotland	£130.46
Wales	£133.72
Northern Ireland	£125.04

### ***Societal value of a QALY***

The expected increase in quality adjusted life year (QALY) will be costed at both £20,000 and £25,000 per QALY. This is based on the bottom and the middle of the range £20,000 - £30,000, below which NICE generally considers something to be cost effective.

### ***QOF Points***

The economic analysis considers the cost-effectiveness of incentivising the proposed activity over a range of QOF points. The range of QOF points evaluated

was agreed by NICE, YHEC and the economic sub-group to justify the practice successfully completing the activity.

In the base case analysis, 5 points were allocated to the proposed indicator. Sensitivity analysis will be followed out between the agreed lower and upper bounds of 2 and 10 points (i.e. the range evaluated).

### ***Thresholds***

The minimum threshold is set to 40% and the incentivised payments increase linearly up to the maximum threshold of 90%.

### **Results (assuming a value per QALY of £25,000)**

The indicative net benefit analysis suggests that the indicator is highly cost effective, with QOF payments up to the upper bound of 10 points warranted on economic grounds (Appendix A). The increase in quality of life offered by cardiovascular risk assessment outweighs the additional healthcare costs in a net benefit analysis if the value per QALY is assumed to be £25,000.

Sensitivity analysis shows the findings are highly insensitive to a 100% increase in statin therapy costs, to the lower estimate for the eligible population and to a 50% reduction in QALY gains from statin therapy (Appendices B, C and D).

Due to the potential size of the eligible population and the relative cost of the intervention compared to potential quality of life gains, there is a strong economic case for the indicator at a baseline of 5 points. Provided conservative assumptions on quality of life hold, there are also economic grounds to award up to the maximum QOF points appropriate for this indicator, i.e. 10 points.

### **Results (assuming a value per QALY of £20,000)**

The indicative net benefit analysis suggests that the indicator is highly cost effective, with QOF payments up to the upper bound of 10 points warranted on economic grounds (Appendix E). The increase in quality of life offered by cardiovascular risk assessment outweighs the additional healthcare costs in a net benefit analysis if the value per QALY is assumed to be £20,000. At 5 points and 90% achievement the indicator fails to be justifiable on economic grounds should the value of a QALY fall to £4,228.

Sensitivity analysis shows the findings are highly insensitive to a 50% increase in statin therapy costs, to the lower estimate for the eligible population and to a 50% reduction in QALY gains from statin therapy (Appendices F, G and H).

Due to the potential size of the eligible population and the relative cost of the intervention compared to potential quality of life gains, there is a strong economic case for the indicator at a baseline of 5 points. Provided conservative assumptions on quality of life hold, there are also economic grounds to award up to the maximum QOF points appropriate for this indicator, i.e. 10 points.

## Discussion

The NICE guidance on RA stated an increase in risk from CVD for people with RA but did not produce any modelling of interventions to reduce this risk [8]. As such we have had to make assumptions to translate a model on the treatment of patients with diabetes at risk of CVD. In addition we have assumed that the direct costs and benefits of the proposed indicator are minimal (non-existent in terms of direct benefits) and the real costs and benefits are from statin therapy to reduce CVD risk in suitable patients. We have ignored costs that may arise from the use of other therapies to lower CVD risk but our findings were very insensitive to substantial increases in costs. Given the cautious approach to our analysis, provided the comparability of CVD risk and statin benefit is broadly similar for people with diabetes and RA – and the available evidence is that RA has at least the same risk impact as diabetes – the modelling work undertaken strongly suggests that the indicator is economically justifiable across the range of QOF points considered.

## References

- [1] Coronary Heart Disease 2010, British Heart Foundation
- [2] Cardiovascular risk in rheumatoid arthritis and diabetes: how does it compare and when does it start? Nurmohamed MT, Kitas G, Ann Rheum Dis 2011
- [3] Clinical Guidelines and Evidence Review for Lipid Modification: cardiovascular risk assessment and the primary and secondary prevention of cardiovascular disease 2008. Cooper A, Nherera L, Calvert N, O'Flynn N, Turnbull N, Robson J, Camosso-Stefinovic J, Rule C, Browne N, Ritchie G, Stokes T, Mannan R, Brindle P, Gill P, Gujral R, Hogg M, Marshall T, Minhas R, Pavitt L, Reckless J, Rutherford A, Thorogood M, Wood D(2008) London: National Collaborating Centre for Primary Care and Royal College of General Practitioners.
- [4] Unit Costs of Health & Social Care 2010. Personal Social Services Research Unit (PSSRU). Compiled by Lesley Curtis. University of Kent.
- [5] National Collaborating Centre for Chronic Conditions. Type 2 diabetes: national clinical guideline for management in primary and secondary care (update). London: Royal College of Physicians, 2008.
- [6] Impact of Statin Discontinuation on Mortality in Patients with Rheumatoid Arthritis – A Population-Based Study. Mary A. De Vera, Hyon Choi, Michal Abrahamowicz, Jacek Kopec and Diane Lacaille. Arthritis Care & Research; Published Online: March 28, 2012
- [7] Prevalence of Self-Reported Cardiovascular Disease Among Persons Aged  $\geq 35$  Years with Diabetes -- United States, 1997-2005 *MMWR*, Nov. 2
- [8] National Collaborating Centre for Chronic Conditions. Rheumatoid arthritis: national clinical guideline for management and treatment in adults. London: Royal College of Physicians, February 2009.
- [9] General Practice Trends in the UK. NHS Information Centre. Published 22 March 2011.

[10] The prevalence of rheumatoid arthritis in the United Kingdom: new estimates for a new century D. Symmons, G. Turner, R. Webb, P. Asten, E. Barrett M. Lunt, D. Scott ,A. Silman



# Appendix A: Net Benefit Base Case Analysis

## Pilot 5 - Rheumatoid Arthritis CVD Risk Assessment: Net Benefit Analysis

Value per point achieved	£133.76	Societal value of a QALY	£25,000								
Number of practices	8,228										
Mean practice population	6,297										
Minimum threshold	40%	Baseline achievement									
Maximum threshold	90%	Eligible population (mean % of practice population)	0.7%								
		Baseline achievement (mean % of eligible patients)	25.0%								
		Cost-effectiveness estimates									
		Incremental cost (£ per patient)	£5,298								
		Incremental effect (QALYs per patient)	1.260								
			0.266								
Points	2	3	4	5	6	7	8	9	10	11	12

National totals														
Expected Achievement	QOF payments (£000s)											Change in treatment cost (£)	Change in QALYs	
30%	£0	£0	£0	£0	£0	£0	£0	£0	£0	£0	£0	£0	£96,074,465	22849
35%	£0	£0	£0	£0	£0	£0	£0	£0	£0	£0	£0	£0	£192,148,930	45698
40%	£0	£0	£0	£0	£0	£0	£0	£0	£0	£0	£0	£0	£288,223,395	68547
45%	£220	£330	£440	£550	£660	£770	£880	£991	£1,101	£1,211	£1,321	£384,297,860	91396	
50%	£440	£660	£880	£1,101	£1,321	£1,541	£1,761	£1,981	£2,201	£2,421	£2,641	£480,372,325	114245	
55%	£660	£991	£1,321	£1,651	£1,981	£2,311	£2,641	£2,972	£3,302	£3,632	£3,962	£576,446,790	137094	
60%	£880	£1,321	£1,761	£2,201	£2,641	£3,082	£3,522	£3,962	£4,402	£4,843	£5,283	£672,521,255	159943	
65%	£1,101	£1,651	£2,201	£2,751	£3,302	£3,852	£4,402	£4,953	£5,503	£6,053	£6,603	£768,595,720	182792	
70%	£1,321	£1,981	£2,641	£3,302	£3,962	£4,622	£5,283	£5,943	£6,603	£7,264	£7,924	£864,670,185	205641	
75%	£1,541	£2,311	£3,082	£3,852	£4,622	£5,393	£6,163	£6,934	£7,704	£8,474	£9,245	£960,744,650	228490	
80%	£1,761	£2,641	£3,522	£4,402	£5,283	£6,163	£7,044	£7,924	£8,805	£9,685	£10,566	£1,056,819,115	251339	
85%	£1,981	£2,972	£3,962	£4,953	£5,943	£6,934	£7,924	£8,915	£9,905	£10,896	£11,886	£1,152,893,580	274188	
90%	£2,201	£3,302	£4,402	£5,503	£6,603	£7,704	£8,805	£9,905	£11,006	£12,106	£13,207	£1,248,968,045	297037	
95%	£2,201	£3,302	£4,402	£5,503	£6,603	£7,704	£8,805	£9,905	£11,006	£12,106	£13,207	£1,345,042,510	319886	
100%	£2,201	£3,302	£4,402	£5,503	£6,603	£7,704	£8,805	£9,905	£11,006	£12,106	£13,207	£1,441,116,975	342735	

Net Benefit (£000s)												
30%	£475,150	£475,150	£475,150	£475,150	£475,150	£475,150	£475,150	£475,150	£475,150	£475,150	£475,150	£475,150
35%	£950,299	£950,299	£950,299	£950,299	£950,299	£950,299	£950,299	£950,299	£950,299	£950,299	£950,299	£950,299
40%	£1,425,449	£1,425,449	£1,425,449	£1,425,449	£1,425,449	£1,425,449	£1,425,449	£1,425,449	£1,425,449	£1,425,449	£1,425,449	£1,425,449
45%	£1,900,379	£1,900,269	£1,900,159	£1,900,049	£1,899,938	£1,899,828	£1,899,718	£1,899,608	£1,899,498	£1,899,388	£1,899,278	£1,899,168
50%	£2,375,308	£2,375,088	£2,374,868	£2,374,648	£2,374,428	£2,374,208	£2,373,988	£2,373,767	£2,373,547	£2,373,327	£2,373,107	£2,372,887
55%	£2,850,238	£2,849,908	£2,849,578	£2,849,247	£2,848,917	£2,848,587	£2,848,257	£2,847,927	£2,847,596	£2,847,266	£2,846,936	£2,846,606
60%	£3,325,167	£3,324,727	£3,324,287	£3,323,847	£3,323,407	£3,322,966	£3,322,526	£3,322,086	£3,321,646	£3,321,205	£3,320,765	£3,320,325
65%	£3,800,097	£3,799,547	£3,798,996	£3,798,446	£3,797,896	£3,797,346	£3,796,795	£3,796,245	£3,795,695	£3,795,144	£3,794,594	£3,794,044
70%	£4,275,027	£4,274,366	£4,273,706	£4,273,046	£4,272,385	£4,271,725	£4,271,065	£4,270,404	£4,269,744	£4,269,084	£4,268,423	£4,267,763
75%	£4,749,956	£4,749,186	£4,748,415	£4,747,645	£4,746,875	£4,746,104	£4,745,334	£4,744,563	£4,743,793	£4,743,023	£4,742,252	£4,741,482
80%	£5,224,886	£5,224,005	£5,223,125	£5,222,244	£5,221,364	£5,220,484	£5,219,603	£5,218,723	£5,217,842	£5,216,962	£5,216,081	£5,215,201
85%	£5,699,815	£5,698,825	£5,697,834	£5,696,844	£5,695,853	£5,694,863	£5,693,872	£5,692,882	£5,691,891	£5,690,901	£5,689,910	£5,688,920
90%	£6,174,745	£6,173,644	£6,172,544	£6,171,443	£6,170,343	£6,169,242	£6,168,142	£6,167,041	£6,165,940	£6,164,840	£6,163,739	£6,162,639
95%	£6,649,675	£6,648,574	£6,647,474	£6,646,373	£6,645,272	£6,644,172	£6,643,071	£6,641,971	£6,640,870	£6,639,770	£6,638,669	£6,637,569
100%	£7,124,605	£7,123,504	£7,122,403	£7,121,303	£7,120,202	£7,119,102	£7,118,001	£7,116,901	£7,115,800	£7,114,700	£7,113,600	£7,112,500

Where the net benefit produces a non-negative outcome then it is **cost effective** for the NHS to adopt the indicator.

When this is the case, the cells are highlighted with a yellow background.

# Appendix B: Net Benefit Analysis Assuming A 100% Increase in Costs of Statin Therapy

## Pilot 5 - Rheumatoid Arthritis CVD Risk Assessment: Net Benefit Analysis

Value per point achieved	£133.76	Societal value of a QALY	£25,000								
Number of practices	8,228										
Mean practice population	6,297										
Minimum threshold	40%	Baseline achievement									
Maximum threshold	90%	Eligible population (mean % of practice population)	0.7%								
		Baseline achievement (mean % of eligible patients)	25.0%								
		Cost-effectiveness estimates									
		Incremental cost (£ per patient)	£10,596								
		Incremental effect (QALYs per patient)	1.260								
			0.266								
Points	2	3	4	5	6	7	8	9	10	11	12

National totals														
Expected Achievement	QOF payments (£000s)											Change in treatment cost (£)	Change in QALYs	
30%	£0	£0	£0	£0	£0	£0	£0	£0	£0	£0	£0	£0	£192,148,930	22849
35%	£0	£0	£0	£0	£0	£0	£0	£0	£0	£0	£0	£0	£384,297,860	45698
40%	£0	£0	£0	£0	£0	£0	£0	£0	£0	£0	£0	£0	£576,446,790	68547
45%	£220	£330	£440	£550	£660	£770	£880	£991	£1,101	£1,211	£1,321	£1,431	£768,595,720	91396
50%	£440	£660	£880	£1,101	£1,321	£1,541	£1,761	£1,981	£2,201	£2,421	£2,641	£2,861	£960,744,650	114245
55%	£660	£991	£1,321	£1,651	£1,981	£2,311	£2,641	£2,972	£3,302	£3,632	£3,962	£4,292	£1,152,893,580	137094
60%	£880	£1,321	£1,761	£2,201	£2,641	£3,082	£3,522	£3,962	£4,402	£4,843	£5,283	£5,723	£1,345,042,510	159943
65%	£1,101	£1,651	£2,201	£2,751	£3,302	£3,852	£4,402	£4,953	£5,503	£6,053	£6,603	£7,153	£1,537,191,440	182792
70%	£1,321	£1,981	£2,641	£3,302	£3,962	£4,622	£5,283	£5,943	£6,603	£7,264	£7,924	£8,584	£1,729,340,370	205641
75%	£1,541	£2,311	£3,082	£3,852	£4,622	£5,393	£6,163	£6,934	£7,704	£8,474	£9,245	£10,015	£1,921,489,300	228490
80%	£1,761	£2,641	£3,522	£4,402	£5,283	£6,163	£7,044	£7,924	£8,805	£9,685	£10,566	£11,446	£2,113,638,230	251339
85%	£1,981	£2,972	£3,962	£4,953	£5,943	£6,934	£7,924	£8,915	£9,905	£10,896	£11,886	£12,876	£2,305,787,159	274188
90%	£2,201	£3,302	£4,402	£5,503	£6,603	£7,704	£8,805	£9,905	£11,006	£12,106	£13,207	£14,307	£2,497,936,089	297037
95%	£2,201	£3,302	£4,402	£5,503	£6,603	£7,704	£8,805	£9,905	£11,006	£12,106	£13,207	£14,307	£2,690,085,019	319886
100%	£2,201	£3,302	£4,402	£5,503	£6,603	£7,704	£8,805	£9,905	£11,006	£12,106	£13,207	£14,307	£2,882,233,949	342735

Net Benefit (£000s)														
30%	£379,075	£379,075	£379,075	£379,075	£379,075	£379,075	£379,075	£379,075	£379,075	£379,075	£379,075	£379,075	£379,075	£379,075
35%	£758,150	£758,150	£758,150	£758,150	£758,150	£758,150	£758,150	£758,150	£758,150	£758,150	£758,150	£758,150	£758,150	£758,150
40%	£1,137,226	£1,137,226	£1,137,226	£1,137,226	£1,137,226	£1,137,226	£1,137,226	£1,137,226	£1,137,226	£1,137,226	£1,137,226	£1,137,226	£1,137,226	£1,137,226
45%	£1,516,081	£1,515,971	£1,515,861	£1,515,751	£1,515,641	£1,515,531	£1,515,420	£1,515,310	£1,515,200	£1,515,090	£1,514,980	£1,514,870	£1,514,760	£1,514,650
50%	£1,894,936	£1,894,716	£1,894,496	£1,894,276	£1,894,056	£1,893,835	£1,893,615	£1,893,395	£1,893,175	£1,892,955	£1,892,735	£1,892,515	£1,892,295	£1,892,075
55%	£2,273,791	£2,273,461	£2,273,131	£2,272,801	£2,272,470	£2,272,140	£2,271,810	£2,271,480	£2,271,150	£2,270,820	£2,270,490	£2,270,160	£2,269,830	£2,269,500
60%	£2,652,646	£2,652,206	£2,651,766	£2,651,326	£2,650,885	£2,650,445	£2,650,005	£2,649,565	£2,649,124	£2,648,684	£2,648,244	£2,647,804	£2,647,364	£2,646,924
65%	£3,031,501	£3,030,951	£3,030,401	£3,029,850	£3,029,300	£3,028,750	£3,028,200	£3,027,649	£3,027,099	£3,026,549	£3,025,998	£3,025,448	£3,024,898	£3,024,348
70%	£3,410,356	£3,409,696	£3,409,036	£3,408,375	£3,407,715	£3,407,055	£3,406,394	£3,405,734	£3,405,074	£3,404,413	£3,403,753	£3,403,093	£3,402,433	£3,401,773
75%	£3,789,212	£3,788,441	£3,787,671	£3,786,900	£3,786,130	£3,785,360	£3,784,589	£3,783,819	£3,783,048	£3,782,278	£3,781,508	£3,780,738	£3,779,968	£3,779,198
80%	£4,168,067	£4,167,186	£4,166,306	£4,165,425	£4,164,545	£4,163,664	£4,162,784	£4,161,903	£4,161,023	£4,160,143	£4,159,262	£4,158,382	£4,157,502	£4,156,622
85%	£4,546,922	£4,545,931	£4,544,941	£4,543,950	£4,542,960	£4,541,969	£4,540,979	£4,539,988	£4,538,998	£4,538,007	£4,537,017	£4,536,027	£4,535,037	£4,534,047
90%	£4,925,777	£4,924,676	£4,923,575	£4,922,475	£4,921,375	£4,920,274	£4,919,173	£4,918,073	£4,916,972	£4,915,872	£4,914,771	£4,913,671	£4,912,571	£4,911,471
95%	£5,304,632	£5,303,421	£5,302,210	£5,301,000	£5,299,790	£5,298,580	£5,297,370	£5,296,160	£5,294,950	£5,293,740	£5,292,530	£5,291,320	£5,290,110	£5,288,900
100%	£5,683,487	£5,682,176	£5,680,865	£5,679,555	£5,678,245	£5,676,935	£5,675,625	£5,674,315	£5,673,005	£5,671,695	£5,670,385	£5,669,075	£5,667,765	£5,666,455

Where the net benefit produces a non-negative outcome then it is **cost effective** for the NHS to adopt the indicator.

When this is the case, the cells are highlighted with a yellow background.

# Appendix C: Net Benefit Analysis Assuming 15% of People with RA are High Risk for CVD

## Pilot 5 - Rheumatoid Arthritis CVD Risk Assessment: Net Benefit Analysis

Value per point achieved	£133.76	Societal value of a QALY	£25,000								
Number of practices	8,228										
Mean practice population	6,297										
Minimum threshold	40%	Baseline achievement									
Maximum threshold	90%	Eligible population (mean % of practice population)	0.7%								
		Baseline achievement (mean % of eligible patients)	25.0%								
		Cost-effectiveness estimates									
		Incremental cost (£ per patient)	£2,310								
		Incremental effect (QALYs per patient)	0.540								
			0.266								
Points	2	3	4	5	6	7	8	9	10	11	12

National totals															
Expected Achievement	QOF payments (£000s)											Change in treatment cost (£)	Change in QALYs		
30%	£0	£0	£0	£0	£0	£0	£0	£0	£0	£0	£0	£0	£0	£41,889,772	9792
35%	£0	£0	£0	£0	£0	£0	£0	£0	£0	£0	£0	£0	£0	£83,779,545	19585
40%	£0	£0	£0	£0	£0	£0	£0	£0	£0	£0	£0	£0	£0	£125,669,317	29377
45%	£220	£330	£440	£550	£660	£770	£880	£991	£1,101	£1,211	£1,321	£1,431	£1,541	£167,559,090	39170
50%	£440	£660	£880	£1,101	£1,321	£1,541	£1,761	£1,981	£2,201	£2,421	£2,641	£2,861	£3,081	£209,448,862	48962
55%	£660	£991	£1,321	£1,651	£1,981	£2,311	£2,641	£2,972	£3,302	£3,632	£3,962	£4,292	£4,622	£251,338,634	58754
60%	£880	£1,321	£1,761	£2,201	£2,641	£3,082	£3,522	£3,962	£4,402	£4,843	£5,283	£5,723	£6,163	£293,228,407	68547
65%	£1,101	£1,651	£2,201	£2,751	£3,302	£3,852	£4,402	£4,953	£5,503	£6,053	£6,603	£7,153	£7,703	£335,118,179	78339
70%	£1,321	£1,981	£2,641	£3,302	£3,962	£4,622	£5,283	£5,943	£6,603	£7,264	£7,924	£8,584	£9,244	£377,007,951	88132
75%	£1,541	£2,311	£3,082	£3,852	£4,622	£5,393	£6,163	£6,934	£7,704	£8,474	£9,245	£10,015	£10,785	£418,897,724	97924
80%	£1,761	£2,641	£3,522	£4,402	£5,283	£6,163	£7,044	£7,924	£8,805	£9,685	£10,566	£11,446	£12,326	£460,787,496	107717
85%	£1,981	£2,972	£3,962	£4,953	£5,943	£6,934	£7,924	£8,915	£9,905	£10,896	£11,886	£12,876	£13,866	£502,677,269	117509
90%	£2,201	£3,302	£4,402	£5,503	£6,603	£7,704	£8,805	£9,905	£11,006	£12,106	£13,207	£14,307	£15,407	£544,567,041	127301
95%	£2,421	£3,632	£4,843	£6,053	£7,264	£8,474	£9,685	£10,896	£12,106	£13,317	£14,527	£15,737	£16,947	£586,456,813	137094
100%	£2,641	£4,022	£5,403	£6,783	£8,164	£9,544	£10,924	£12,304	£13,684	£15,064	£16,444	£17,824	£19,204	£628,346,586	146886

Net Benefit (£000s)													
30%	£202,921	£202,921	£202,921	£202,921	£202,921	£202,921	£202,921	£202,921	£202,921	£202,921	£202,921	£202,921	£202,921
35%	£405,841	£405,841	£405,841	£405,841	£405,841	£405,841	£405,841	£405,841	£405,841	£405,841	£405,841	£405,841	£405,841
40%	£608,762	£608,762	£608,762	£608,762	£608,762	£608,762	£608,762	£608,762	£608,762	£608,762	£608,762	£608,762	£608,762
45%	£811,462	£811,352	£811,242	£811,132	£811,022	£810,912	£810,802	£810,692	£810,582	£810,472	£810,362	£810,252	£810,142
50%	£1,014,163	£1,013,943	£1,013,722	£1,013,502	£1,013,282	£1,013,062	£1,012,842	£1,012,622	£1,012,402	£1,012,182	£1,011,962	£1,011,742	£1,011,522
55%	£1,216,863	£1,216,533	£1,216,203	£1,215,873	£1,215,542	£1,215,212	£1,214,882	£1,214,552	£1,214,222	£1,213,892	£1,213,561	£1,213,231	£1,212,901
60%	£1,419,564	£1,419,123	£1,418,683	£1,418,243	£1,417,803	£1,417,362	£1,416,922	£1,416,482	£1,416,042	£1,415,602	£1,415,161	£1,414,721	£1,414,281
65%	£1,622,264	£1,621,714	£1,621,164	£1,620,613	£1,620,063	£1,619,513	£1,618,962	£1,618,412	£1,617,862	£1,617,312	£1,616,761	£1,616,211	£1,615,661
70%	£1,824,965	£1,824,304	£1,823,644	£1,822,984	£1,822,323	£1,821,663	£1,821,003	£1,820,342	£1,819,682	£1,819,021	£1,818,361	£1,817,701	£1,817,041
75%	£2,027,665	£2,026,895	£2,026,124	£2,025,354	£2,024,583	£2,023,813	£2,023,043	£2,022,272	£2,021,502	£2,020,731	£2,019,961	£2,019,191	£2,018,421
80%	£2,230,366	£2,229,485	£2,228,605	£2,227,724	£2,226,844	£2,225,963	£2,225,083	£2,224,202	£2,223,322	£2,222,441	£2,221,561	£2,220,681	£2,219,801
85%	£2,433,066	£2,432,075	£2,431,085	£2,430,094	£2,429,104	£2,428,113	£2,427,123	£2,426,132	£2,425,142	£2,424,151	£2,423,161	£2,422,171	£2,421,181
90%	£2,635,766	£2,634,666	£2,633,565	£2,632,465	£2,631,364	£2,630,264	£2,629,163	£2,628,062	£2,626,962	£2,625,861	£2,624,761	£2,623,661	£2,622,561
95%	£2,838,467	£2,837,356	£2,836,245	£2,835,135	£2,834,024	£2,832,914	£2,831,804	£2,830,693	£2,829,582	£2,828,472	£2,827,361	£2,826,251	£2,825,141
100%	£3,041,168	£3,040,057	£3,038,946	£3,037,836	£3,036,725	£3,035,615	£3,034,504	£3,033,394	£3,032,283	£3,031,172	£3,030,062	£3,028,951	£3,027,841

Where the net benefit produces a non-negative outcome then it is **cost effective** for the NHS to adopt the indicator.

When this is the case, the cells are highlighted with a yellow background.

# Appendix D: Net Benefit Analysis Assuming 50% Reduction in QALYs from Statin Therapy

## Pilot 5 - Rheumatoid Arthritis CVD Risk Assessment: Net Benefit Analysis

Value per point achieved	£133.76	Societal value of a QALY	£25,000
Number of practices	8,228		
Mean practice population	6,297		
Minimum threshold	40%	Baseline achievement	
Maximum threshold	90%	Eligible population (mean % of practice population)	0.7%
		Baseline achievement (mean % of eligible patients)	25.0%
		Cost-effectiveness estimates	
		Incremental cost (£ per patient)	£5,298
		Incremental effect (QALYs per patient)	0.630

Points: 2 3 4 5 6 7 8 9 10 11 12

### National totals

Expected Achievement	QOF payments (£000s)											Change in treatment cost (£)	Change in QALYs	
	2	3	4	5	6	7	8	9	10	11	12			
30%	£0	£0	£0	£0	£0	£0	£0	£0	£0	£0	£0	£0	£96,074,465	11424
35%	£0	£0	£0	£0	£0	£0	£0	£0	£0	£0	£0	£0	£192,148,930	22849
40%	£0	£0	£0	£0	£0	£0	£0	£0	£0	£0	£0	£0	£288,223,395	34273
45%	£220	£330	£440	£550	£660	£770	£880	£991	£1,101	£1,211	£1,321	£384,297,860	45698	
50%	£440	£660	£880	£1,101	£1,321	£1,541	£1,761	£1,981	£2,201	£2,421	£2,641	£480,372,325	57122	
55%	£660	£991	£1,321	£1,651	£1,981	£2,311	£2,641	£2,972	£3,302	£3,632	£3,962	£576,446,790	68547	
60%	£880	£1,321	£1,761	£2,201	£2,641	£3,082	£3,522	£3,962	£4,402	£4,843	£5,283	£672,521,255	79971	
65%	£1,101	£1,651	£2,201	£2,751	£3,302	£3,852	£4,402	£4,953	£5,503	£6,053	£6,603	£768,595,720	91396	
70%	£1,321	£1,981	£2,641	£3,302	£3,962	£4,622	£5,283	£5,943	£6,603	£7,264	£7,924	£864,670,185	102820	
75%	£1,541	£2,311	£3,082	£3,852	£4,622	£5,393	£6,163	£6,934	£7,704	£8,474	£9,245	£960,744,650	114245	
80%	£1,761	£2,641	£3,522	£4,402	£5,283	£6,163	£7,044	£7,924	£8,805	£9,685	£10,566	£1,056,819,115	125669	
85%	£1,981	£2,972	£3,962	£4,953	£5,943	£6,934	£7,924	£8,915	£9,905	£10,896	£11,886	£1,152,893,580	137094	
90%	£2,201	£3,302	£4,402	£5,503	£6,603	£7,704	£8,805	£9,905	£11,006	£12,106	£13,207	£1,248,968,045	148518	
95%	£2,201	£3,302	£4,402	£5,503	£6,603	£7,704	£8,805	£9,905	£11,006	£12,106	£13,207	£1,345,042,510	159943	
100%	£2,201	£3,302	£4,402	£5,503	£6,603	£7,704	£8,805	£9,905	£11,006	£12,106	£13,207	£1,441,116,975	171367	

### Net Benefit (£000s)

30%	£189,538	£189,538	£189,538	£189,538	£189,538	£189,538	£189,538	£189,538	£189,538	£189,538	£189,538	£189,538
35%	£379,075	£379,075	£379,075	£379,075	£379,075	£379,075	£379,075	£379,075	£379,075	£379,075	£379,075	£379,075
40%	£568,613	£568,613	£568,613	£568,613	£568,613	£568,613	£568,613	£568,613	£568,613	£568,613	£568,613	£568,613
45%	£757,930	£757,820	£757,710	£757,600	£757,490	£757,380	£757,270	£757,160	£757,050	£756,940	£756,830	£756,720
50%	£947,248	£947,028	£946,808	£946,588	£946,367	£946,147	£945,927	£945,707	£945,487	£945,267	£945,047	£944,827
55%	£1,136,565	£1,136,235	£1,135,905	£1,135,575	£1,135,245	£1,134,915	£1,134,584	£1,134,254	£1,133,924	£1,133,594	£1,133,264	£1,132,934
60%	£1,325,883	£1,325,443	£1,325,002	£1,324,562	£1,324,122	£1,323,682	£1,323,241	£1,322,801	£1,322,361	£1,321,921	£1,321,481	£1,321,041
65%	£1,515,200	£1,514,650	£1,514,100	£1,513,550	£1,512,999	£1,512,449	£1,511,899	£1,511,348	£1,510,798	£1,510,248	£1,509,697	£1,509,147
70%	£1,704,518	£1,703,858	£1,703,197	£1,702,537	£1,701,876	£1,701,216	£1,700,556	£1,699,895	£1,699,235	£1,698,575	£1,697,914	£1,697,254
75%	£1,893,835	£1,893,065	£1,892,295	£1,891,524	£1,890,754	£1,889,983	£1,889,213	£1,888,443	£1,887,672	£1,886,902	£1,886,131	£1,885,361
80%	£2,083,153	£2,082,272	£2,081,392	£2,080,512	£2,079,631	£2,078,751	£2,077,870	£2,076,990	£2,076,109	£2,075,229	£2,074,348	£2,073,468
85%	£2,272,470	£2,271,480	£2,270,489	£2,269,499	£2,268,508	£2,267,518	£2,266,527	£2,265,537	£2,264,546	£2,263,556	£2,262,565	£2,261,575
90%	£2,461,788	£2,460,687	£2,459,587	£2,458,486	£2,457,386	£2,456,285	£2,455,184	£2,454,084	£2,452,983	£2,451,883	£2,450,782	£2,449,682
95%	£2,651,326	£2,650,225	£2,649,124	£2,648,024	£2,646,923	£2,645,823	£2,644,722	£2,643,621	£2,642,521	£2,641,420	£2,640,320	£2,639,220
100%	£2,840,863	£2,839,763	£2,838,662	£2,837,561	£2,836,461	£2,835,360	£2,834,260	£2,833,159	£2,832,059	£2,830,958	£2,829,857	£2,828,757

Where the net benefit produces a non-negative outcome then it is cost effective for the NHS to adopt the indicator.

When this is the case, the cells are highlighted with a yellow background.

# Appendix E: Net Benefit Base Case Analysis

## Pilot 5 - Rheumatoid Arthritis CVD Risk Assessment: Net Benefit Analysis

Value per point achieved	£133.76	Societal value of a QALY	£20,000
Number of practices	8,228		
Mean practice population	6,297		
Minimum threshold	40%	Baseline achievement	
Maximum threshold	90%	Eligible population (mean % of practice population)	0.7%
		Baseline achievement (mean % of eligible patients)	25.0%
		Cost-effectiveness estimates	
		Incremental cost (£ per patient)	£5,298
		Incremental effect (QALYs per patient)	1.260

Points	2	3	4	5	6	7	8	9	10	11	12
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National totals														
Expected Achievement	QOF payments (£000s)											Change in treatment cost (£)	Change in QALYs	
30%	£0	£0	£0	£0	£0	£0	£0	£0	£0	£0	£0	£0	£96,074,465	22849
35%	£0	£0	£0	£0	£0	£0	£0	£0	£0	£0	£0	£0	£192,148,930	45698
40%	£0	£0	£0	£0	£0	£0	£0	£0	£0	£0	£0	£0	£288,223,395	68547
45%	£220	£330	£440	£550	£660	£770	£880	£991	£1,101	£1,211	£1,321	£1,431	£384,297,860	91396
50%	£440	£660	£880	£1,101	£1,321	£1,541	£1,761	£1,981	£2,201	£2,421	£2,641	£2,861	£480,372,325	114245
55%	£660	£991	£1,321	£1,651	£1,981	£2,311	£2,641	£2,972	£3,302	£3,632	£3,962	£4,292	£576,446,790	137094
60%	£880	£1,321	£1,761	£2,201	£2,641	£3,082	£3,522	£3,962	£4,402	£4,843	£5,283	£5,723	£672,521,255	159943
65%	£1,101	£1,651	£2,201	£2,751	£3,302	£3,852	£4,402	£4,953	£5,503	£6,053	£6,603	£7,153	£768,595,720	182792
70%	£1,321	£1,981	£2,641	£3,302	£3,962	£4,622	£5,283	£5,943	£6,603	£7,264	£7,924	£8,584	£864,670,185	205641
75%	£1,541	£2,311	£3,082	£3,852	£4,622	£5,393	£6,163	£6,934	£7,704	£8,474	£9,245	£10,015	£960,744,650	228490
80%	£1,761	£2,641	£3,522	£4,402	£5,283	£6,163	£7,044	£7,924	£8,805	£9,685	£10,566	£11,446	£1,056,819,115	251339
85%	£1,981	£2,972	£3,962	£4,953	£5,943	£6,934	£7,924	£8,915	£9,905	£10,896	£11,886	£12,876	£1,152,893,580	274188
90%	£2,201	£3,302	£4,402	£5,503	£6,603	£7,704	£8,805	£9,905	£11,006	£12,106	£13,207	£14,307	£1,248,968,045	297037
95%	£2,201	£3,302	£4,402	£5,503	£6,603	£7,704	£8,805	£9,905	£11,006	£12,106	£13,207	£14,307	£1,345,042,510	319886
100%	£2,201	£3,302	£4,402	£5,503	£6,603	£7,704	£8,805	£9,905	£11,006	£12,106	£13,207	£14,307	£1,441,116,975	342735

Net Benefit (£000s)														
30%	£360,905	£360,905	£360,905	£360,905	£360,905	£360,905	£360,905	£360,905	£360,905	£360,905	£360,905	£360,905	£360,905	£360,905
35%	£721,810	£721,810	£721,810	£721,810	£721,810	£721,810	£721,810	£721,810	£721,810	£721,810	£721,810	£721,810	£721,810	£721,810
40%	£1,082,715	£1,082,715	£1,082,715	£1,082,715	£1,082,715	£1,082,715	£1,082,715	£1,082,715	£1,082,715	£1,082,715	£1,082,715	£1,082,715	£1,082,715	£1,082,715
45%	£1,443,399	£1,443,289	£1,443,179	£1,443,069	£1,442,959	£1,442,849	£1,442,739	£1,442,629	£1,442,519	£1,442,409	£1,442,299	£1,442,189	£1,442,079	£1,441,969
50%	£1,804,084	£1,803,864	£1,803,644	£1,803,424	£1,803,204	£1,802,984	£1,802,763	£1,802,543	£1,802,323	£1,802,103	£1,801,883	£1,801,663	£1,801,443	£1,801,223
55%	£2,164,769	£2,164,439	£2,164,109	£2,163,778	£2,163,448	£2,163,118	£2,162,788	£2,162,458	£2,162,127	£2,161,797	£2,161,467	£2,161,137	£2,160,807	£2,160,477
60%	£2,525,454	£2,525,013	£2,524,573	£2,524,133	£2,523,693	£2,523,252	£2,522,812	£2,522,372	£2,521,932	£2,521,492	£2,521,051	£2,520,611	£2,520,171	£2,519,731
65%	£2,886,138	£2,885,588	£2,885,038	£2,884,488	£2,883,937	£2,883,387	£2,882,837	£2,882,286	£2,881,736	£2,881,186	£2,880,635	£2,880,085	£2,879,535	£2,878,985
70%	£3,246,823	£3,246,163	£3,245,502	£3,244,842	£3,244,182	£3,243,521	£3,242,861	£3,242,201	£3,241,540	£3,240,880	£3,240,220	£3,239,560	£3,238,900	£3,238,240
75%	£3,607,508	£3,606,737	£3,605,967	£3,605,197	£3,604,426	£3,603,656	£3,602,885	£3,602,115	£3,601,345	£3,600,574	£3,599,804	£3,599,034	£3,598,264	£3,597,494
80%	£3,968,193	£3,967,312	£3,966,432	£3,965,551	£3,964,671	£3,963,790	£3,962,910	£3,962,029	£3,961,149	£3,960,268	£3,959,388	£3,958,507	£3,957,627	£3,956,747
85%	£4,328,877	£4,327,887	£4,326,896	£4,325,906	£4,324,915	£4,323,925	£4,322,934	£4,321,944	£4,320,953	£4,319,963	£4,318,972	£4,317,982	£4,316,991	£4,316,001
90%	£4,689,562	£4,688,462	£4,687,361	£4,686,260	£4,685,160	£4,684,059	£4,682,959	£4,681,858	£4,680,758	£4,679,657	£4,678,556	£4,677,456	£4,676,355	£4,675,255
95%	£5,050,247	£5,049,047	£5,047,847	£5,046,647	£5,045,447	£5,044,247	£5,043,047	£5,041,847	£5,040,647	£5,039,447	£5,038,247	£5,037,047	£5,035,847	£5,034,647
100%	£5,410,932	£5,409,732	£5,408,532	£5,407,332	£5,406,132	£5,404,932	£5,403,732	£5,402,532	£5,401,332	£5,400,132	£5,398,932	£5,397,732	£5,396,532	£5,395,332

Where the net benefit produces a non-negative outcome then it is **cost effective** for the NHS to adopt the indicator.

When this is the case, the cells are highlighted with a yellow background.

# Appendix F: Net Benefit Analysis Assuming A 100% Increase in Costs of Statin Therapy

## Pilot 5 - Rheumatoid Arthritis CVD Risk Assessment: Net Benefit Analysis

Value per point achieved	£133.76	Societal value of a QALY	£20,000
Number of practices	8,228		
Mean practice population	6,297		
Minimum threshold	40%	Baseline achievement	
Maximum threshold	90%	Eligible population (mean % of practice population)	0.7%
		Baseline achievement (mean % of eligible patients)	25.0%
		Cost-effectiveness estimates	
		Incremental cost (£ per patient)	£10,596
		Incremental effect (QALYs per patient)	1.260

Points: 2 3 4 5 6 7 8 9 10 11 12

National totals													
Expected Achievement	QOF payments (£000s)											Change in treatment cost (£)	Change in QALYs
	2	3	4	5	6	7	8	9	10	11	12		
30%	£0	£0	£0	£0	£0	£0	£0	£0	£0	£0	£0	£192,148,930	22849
35%	£0	£0	£0	£0	£0	£0	£0	£0	£0	£0	£0	£384,297,860	45698
40%	£0	£0	£0	£0	£0	£0	£0	£0	£0	£0	£0	£576,446,790	68547
45%	£220	£330	£440	£550	£660	£770	£880	£991	£1,101	£1,211	£1,321	£768,595,720	91396
50%	£440	£660	£880	£1,101	£1,321	£1,541	£1,761	£1,981	£2,201	£2,421	£2,641	£960,744,650	114245
55%	£660	£991	£1,321	£1,651	£1,981	£2,311	£2,641	£2,972	£3,302	£3,632	£3,962	£1,152,893,580	137094
60%	£880	£1,321	£1,761	£2,201	£2,641	£3,082	£3,522	£3,962	£4,402	£4,843	£5,283	£1,345,042,510	159943
65%	£1,101	£1,651	£2,201	£2,751	£3,302	£3,852	£4,402	£4,953	£5,503	£6,053	£6,603	£1,537,191,440	182792
70%	£1,321	£1,981	£2,641	£3,302	£3,962	£4,622	£5,283	£5,943	£6,603	£7,264	£7,924	£1,729,340,370	205641
75%	£1,541	£2,311	£3,082	£3,852	£4,622	£5,393	£6,163	£6,934	£7,704	£8,474	£9,245	£1,921,489,300	228490
80%	£1,761	£2,641	£3,522	£4,402	£5,283	£6,163	£7,044	£7,924	£8,805	£9,685	£10,566	£2,113,638,230	251339
85%	£1,981	£2,972	£3,962	£4,953	£5,943	£6,934	£7,924	£8,915	£9,905	£10,896	£11,886	£2,305,787,159	274188
90%	£2,201	£3,302	£4,402	£5,503	£6,603	£7,704	£8,805	£9,905	£11,006	£12,106	£13,207	£2,497,936,089	297037
95%	£2,201	£3,302	£4,402	£5,503	£6,603	£7,704	£8,805	£9,905	£11,006	£12,106	£13,207	£2,690,085,019	319886
100%	£2,201	£3,302	£4,402	£5,503	£6,603	£7,704	£8,805	£9,905	£11,006	£12,106	£13,207	£2,882,233,949	342735

Net Benefit (£000s)													
30%	£264,830	£264,830	£264,830	£264,830	£264,830	£264,830	£264,830	£264,830	£264,830	£264,830	£264,830	£264,830	£264,830
35%	£529,661	£529,661	£529,661	£529,661	£529,661	£529,661	£529,661	£529,661	£529,661	£529,661	£529,661	£529,661	£529,661
40%	£794,491	£794,491	£794,491	£794,491	£794,491	£794,491	£794,491	£794,491	£794,491	£794,491	£794,491	£794,491	£794,491
45%	£1,059,102	£1,058,991	£1,058,881	£1,058,771	£1,058,661	£1,058,551	£1,058,441	£1,058,331	£1,058,221	£1,058,111	£1,058,001	£1,058,111	£1,058,001
50%	£1,323,712	£1,323,492	£1,323,272	£1,323,051	£1,322,831	£1,322,611	£1,322,391	£1,322,171	£1,321,951	£1,321,731	£1,321,511	£1,321,731	£1,321,511
55%	£1,588,322	£1,587,992	£1,587,662	£1,587,332	£1,587,001	£1,586,671	£1,586,341	£1,586,011	£1,585,681	£1,585,351	£1,585,020	£1,585,351	£1,585,020
60%	£1,852,932	£1,852,492	£1,852,052	£1,851,612	£1,851,171	£1,850,731	£1,850,291	£1,849,851	£1,849,411	£1,848,970	£1,848,530	£1,849,411	£1,848,530
65%	£2,117,543	£2,116,992	£2,116,442	£2,115,892	£2,115,342	£2,114,791	£2,114,241	£2,113,691	£2,113,140	£2,112,590	£2,112,040	£2,113,140	£2,112,040
70%	£2,382,153	£2,381,493	£2,380,832	£2,380,172	£2,379,512	£2,378,851	£2,378,191	£2,377,531	£2,376,870	£2,376,210	£2,375,549	£2,377,531	£2,375,549
75%	£2,646,763	£2,645,993	£2,645,222	£2,644,452	£2,643,682	£2,642,911	£2,642,141	£2,641,370	£2,640,600	£2,639,830	£2,639,059	£2,641,370	£2,639,059
80%	£2,911,374	£2,910,493	£2,909,613	£2,908,732	£2,907,852	£2,906,971	£2,906,091	£2,905,210	£2,904,330	£2,903,449	£2,902,569	£2,905,210	£2,902,569
85%	£3,175,984	£3,174,993	£3,174,003	£3,173,012	£3,172,022	£3,171,031	£3,170,041	£3,169,050	£3,168,060	£3,167,069	£3,166,079	£3,170,041	£3,166,079
90%	£3,440,594	£3,439,494	£3,438,393	£3,437,292	£3,436,192	£3,435,091	£3,433,991	£3,432,890	£3,431,789	£3,430,689	£3,429,588	£3,433,991	£3,429,588
95%	£3,705,425	£3,704,324	£3,703,223	£3,702,123	£3,701,022	£3,699,922	£3,698,821	£3,697,720	£3,696,620	£3,695,519	£3,694,419	£3,701,022	£3,694,419
100%	£3,970,255	£3,969,154	£3,968,054	£3,966,953	£3,965,853	£3,964,752	£3,963,651	£3,962,551	£3,961,450	£3,960,350	£3,959,249	£3,964,752	£3,959,249

Where the net benefit produces a non-negative outcome then it is **cost effective** for the NHS to adopt the indicator.

When this is the case, the cells are highlighted with a yellow background.

# Appendix G: Net Benefit Analysis Assuming 15% of People with RA are High Risk for CVD

## Pilot 5 - Rheumatoid Arthritis CVD Risk Assessment: Net Benefit Analysis

Value per point achieved	£133.76	Societal value of a QALY	£20,000
Number of practices	8,228		
Mean practice population	6,297		
Minimum threshold	40%	Baseline achievement	
Maximum threshold	90%	Eligible population (mean % of practice population)	0.7%
		Baseline achievement (mean % of eligible patients)	25.0%
		Cost-effectiveness estimates	
		Incremental cost (£ per patient)	£2,310
		Incremental effect (QALYs per patient)	0.540

Points: 2 3 4 5 6 7 8 9 10 11 12

National totals															
Expected Achievement	QOF payments (£000s)											Change in treatment cost (£)	Change in QALYs		
	2	3	4	5	6	7	8	9	10	11	12				
30%	£0	£0	£0	£0	£0	£0	£0	£0	£0	£0	£0	£0	£0	£41,889,772	9792
35%	£0	£0	£0	£0	£0	£0	£0	£0	£0	£0	£0	£0	£0	£83,779,545	19585
40%	£0	£0	£0	£0	£0	£0	£0	£0	£0	£0	£0	£0	£0	£125,669,317	29377
45%	£220	£330	£440	£550	£660	£770	£880	£991	£1,101	£1,211	£1,321	£1,431	£1,541	£167,559,090	39170
50%	£440	£660	£880	£1,101	£1,321	£1,541	£1,761	£1,981	£2,201	£2,421	£2,641	£2,861	£3,081	£209,448,862	48962
55%	£660	£991	£1,321	£1,651	£1,981	£2,311	£2,641	£2,972	£3,302	£3,632	£3,962	£4,292	£4,622	£251,338,634	58754
60%	£880	£1,321	£1,761	£2,201	£2,641	£3,082	£3,522	£3,962	£4,402	£4,843	£5,283	£5,723	£6,163	£293,228,407	68547
65%	£1,101	£1,651	£2,201	£2,751	£3,302	£3,852	£4,402	£4,953	£5,503	£6,053	£6,603	£7,153	£7,703	£335,118,179	78339
70%	£1,321	£1,981	£2,641	£3,302	£3,962	£4,622	£5,283	£5,943	£6,603	£7,264	£7,924	£8,584	£9,244	£377,007,951	88132
75%	£1,541	£2,311	£3,082	£3,852	£4,622	£5,393	£6,163	£6,934	£7,704	£8,474	£9,245	£10,015	£10,785	£418,897,724	97924
80%	£1,761	£2,641	£3,522	£4,402	£5,283	£6,163	£7,044	£7,924	£8,805	£9,685	£10,566	£11,446	£12,326	£460,787,496	107717
85%	£1,981	£2,972	£3,962	£4,953	£5,943	£6,934	£7,924	£8,915	£9,905	£10,896	£11,886	£12,876	£13,866	£502,677,269	117509
90%	£2,201	£3,302	£4,402	£5,503	£6,603	£7,704	£8,805	£9,905	£11,006	£12,106	£13,207	£14,307	£15,407	£544,567,041	127301
95%	£2,201	£3,302	£4,402	£5,503	£6,603	£7,704	£8,805	£9,905	£11,006	£12,106	£13,207	£14,307	£15,407	£586,456,813	137094
100%	£2,201	£3,302	£4,402	£5,503	£6,603	£7,704	£8,805	£9,905	£11,006	£12,106	£13,207	£14,307	£15,407	£628,346,586	146886

Net Benefit (£000s)															
30%	£153,959	£153,959	£153,959	£153,959	£153,959	£153,959	£153,959	£153,959	£153,959	£153,959	£153,959	£153,959	£153,959	£153,959	£153,959
35%	£307,917	£307,917	£307,917	£307,917	£307,917	£307,917	£307,917	£307,917	£307,917	£307,917	£307,917	£307,917	£307,917	£307,917	£307,917
40%	£461,876	£461,876	£461,876	£461,876	£461,876	£461,876	£461,876	£461,876	£461,876	£461,876	£461,876	£461,876	£461,876	£461,876	£461,876
45%	£615,834	£615,504	£615,394	£615,284	£615,174	£615,064	£614,954	£614,844	£614,733	£614,623	£614,513	£614,403	£614,293	£614,183	£614,073
50%	£769,792	£769,132	£768,912	£768,692	£768,472	£768,252	£768,032	£767,812	£767,591	£767,371	£767,151	£766,931	£766,711	£766,491	£766,271
55%	£923,750	£922,761	£922,430	£922,100	£921,770	£921,440	£921,110	£920,780	£920,449	£920,119	£919,789	£919,459	£919,129	£918,799	£918,469
60%	£1,077,708	£1,076,389	£1,075,949	£1,075,508	£1,075,068	£1,074,628	£1,074,188	£1,073,748	£1,073,307	£1,072,867	£1,072,427	£1,071,987	£1,071,547	£1,071,107	£1,070,667
65%	£1,231,666	£1,230,017	£1,229,467	£1,228,917	£1,228,366	£1,227,816	£1,227,266	£1,226,716	£1,226,165	£1,225,615	£1,225,065	£1,224,515	£1,223,965	£1,223,415	£1,222,865
70%	£1,385,582	£1,383,646	£1,382,985	£1,382,325	£1,381,665	£1,381,004	£1,380,344	£1,379,684	£1,379,023	£1,378,363	£1,377,702	£1,377,042	£1,376,381	£1,375,721	£1,375,061
75%	£1,539,500	£1,537,274	£1,536,504	£1,535,733	£1,534,963	£1,534,192	£1,533,422	£1,532,652	£1,531,881	£1,531,111	£1,530,340	£1,529,570	£1,528,800	£1,528,030	£1,527,260
80%	£1,693,416	£1,690,902	£1,690,022	£1,689,141	£1,688,261	£1,687,380	£1,686,500	£1,685,619	£1,684,739	£1,683,859	£1,682,978	£1,682,098	£1,681,218	£1,680,338	£1,679,458
85%	£1,847,332	£1,844,531	£1,843,540	£1,842,550	£1,841,559	£1,840,569	£1,839,578	£1,838,587	£1,837,597	£1,836,606	£1,835,616	£1,834,625	£1,833,635	£1,832,645	£1,831,655
90%	£1,999,248	£1,998,159	£1,997,078	£1,995,998	£1,994,917	£1,993,837	£1,992,756	£1,991,675	£1,990,595	£1,989,514	£1,988,434	£1,987,353	£1,986,273	£1,985,192	£1,984,112
95%	£2,153,164	£2,152,117	£2,151,017	£2,149,916	£2,148,816	£2,147,715	£2,146,615	£2,145,514	£2,144,413	£2,143,313	£2,142,212	£2,141,111	£2,140,011	£2,138,910	£2,137,810
100%	£2,307,080	£2,306,076	£2,304,975	£2,303,875	£2,302,774	£2,301,674	£2,300,573	£2,299,473	£2,298,372	£2,297,271	£2,296,171	£2,295,070	£2,293,970	£2,292,869	£2,291,769

Where the net benefit produces a non-negative outcome then it is **cost effective** for the NHS to adopt the indicator.

When this is the case, the cells are highlighted with a yellow background.

# Appendix H: Net Benefit Analysis Assuming 50% Reduction in QALYs from Statin Therapy

## Pilot 5 - Rheumatoid Arthritis CVD Risk Assessment: Net Benefit Analysis

Value per point achieved	£133.76	Societal value of a QALY	£20,000
Number of practices	8,228		
Mean practice population	6,297		
Minimum threshold	40%	Baseline achievement	
Maximum threshold	90%	Eligible population (mean % of practice population)	0.7%
		Baseline achievement (mean % of eligible patients)	25.0%
		Cost-effectiveness estimates	
		Incremental cost (£ per patient)	£5,298
		Incremental effect (QALYs per patient)	0.630

Points: 2 3 4 5 6 7 8 9 10 11 12

National totals														
Expected Achievement	QOF payments (£000s)											Change in treatment cost (£)	Change in QALYs	
30%	£0	£0	£0	£0	£0	£0	£0	£0	£0	£0	£0	£0	£96,074,465	11424
35%	£0	£0	£0	£0	£0	£0	£0	£0	£0	£0	£0	£0	£192,148,930	22849
40%	£0	£0	£0	£0	£0	£0	£0	£0	£0	£0	£0	£0	£288,223,395	34273
45%	£220	£330	£440	£550	£660	£770	£880	£991	£1,101	£1,211	£1,321	£384,297,860	45698	
50%	£440	£660	£880	£1,101	£1,321	£1,541	£1,761	£1,981	£2,201	£2,421	£2,641	£480,372,325	57122	
55%	£660	£991	£1,321	£1,651	£1,981	£2,311	£2,641	£2,972	£3,302	£3,632	£3,962	£576,446,790	68547	
60%	£880	£1,321	£1,761	£2,201	£2,641	£3,082	£3,522	£3,962	£4,402	£4,843	£5,283	£672,521,255	79971	
65%	£1,101	£1,651	£2,201	£2,751	£3,302	£3,852	£4,402	£4,953	£5,503	£6,053	£6,603	£768,595,720	91396	
70%	£1,321	£1,981	£2,641	£3,302	£3,962	£4,622	£5,283	£5,943	£6,603	£7,264	£7,924	£864,670,185	102820	
75%	£1,541	£2,311	£3,082	£3,852	£4,622	£5,393	£6,163	£6,934	£7,704	£8,474	£9,245	£960,744,650	114245	
80%	£1,761	£2,641	£3,522	£4,402	£5,283	£6,163	£7,044	£7,924	£8,805	£9,685	£10,566	£1,056,819,115	125669	
85%	£1,981	£2,972	£3,962	£4,953	£5,943	£6,934	£7,924	£8,915	£9,905	£10,896	£11,886	£1,152,893,580	137094	
90%	£2,201	£3,302	£4,402	£5,503	£6,603	£7,704	£8,805	£9,905	£11,006	£12,106	£13,207	£1,248,968,045	148518	
95%	£2,201	£3,302	£4,402	£5,503	£6,603	£7,704	£8,805	£9,905	£11,006	£12,106	£13,207	£1,345,042,510	159943	
100%	£2,201	£3,302	£4,402	£5,503	£6,603	£7,704	£8,805	£9,905	£11,006	£12,106	£13,207	£1,441,116,975	171367	
Net Benefit (£000s)														
30%	£132,415	£132,415	£132,415	£132,415	£132,415	£132,415	£132,415	£132,415	£132,415	£132,415	£132,415	£132,415	£132,415	£132,415
35%	£264,830	£264,830	£264,830	£264,830	£264,830	£264,830	£264,830	£264,830	£264,830	£264,830	£264,830	£264,830	£264,830	£264,830
40%	£397,246	£397,246	£397,246	£397,246	£397,246	£397,246	£397,246	£397,246	£397,246	£397,246	£397,246	£397,246	£397,246	£397,246
45%	£529,441	£529,331	£529,221	£529,111	£529,000	£528,890	£528,780	£528,670	£528,560	£528,450	£528,340	£528,230	£528,120	£528,010
50%	£661,636	£661,416	£661,196	£660,975	£660,755	£660,535	£660,315	£660,095	£659,875	£659,655	£659,435	£659,215	£659,000	£658,785
55%	£793,831	£793,501	£793,171	£792,840	£792,510	£792,180	£791,850	£791,520	£791,190	£790,860	£790,530	£790,200	£789,870	£789,540
60%	£926,026	£925,586	£925,145	£924,705	£924,265	£923,825	£923,385	£922,944	£922,504	£922,064	£921,624	£921,184	£920,744	£920,304
65%	£1,058,221	£1,057,671	£1,057,120	£1,056,570	£1,056,020	£1,055,470	£1,054,919	£1,054,369	£1,053,819	£1,053,268	£1,052,718	£1,052,168	£1,051,618	£1,051,068
70%	£1,190,416	£1,189,756	£1,189,095	£1,188,435	£1,187,775	£1,187,114	£1,186,454	£1,185,794	£1,185,133	£1,184,473	£1,183,813	£1,183,153	£1,182,493	£1,181,833
75%	£1,322,611	£1,321,841	£1,321,070	£1,320,300	£1,319,530	£1,318,759	£1,317,989	£1,317,218	£1,316,448	£1,315,678	£1,314,907	£1,314,137	£1,313,367	£1,312,597
80%	£1,454,806	£1,453,926	£1,453,045	£1,452,165	£1,451,284	£1,450,404	£1,449,524	£1,448,643	£1,447,763	£1,446,882	£1,446,002	£1,445,122	£1,444,242	£1,443,362
85%	£1,587,001	£1,586,011	£1,585,020	£1,584,030	£1,583,039	£1,582,049	£1,581,058	£1,580,068	£1,579,077	£1,578,087	£1,577,096	£1,576,106	£1,575,116	£1,574,126
90%	£1,719,196	£1,718,096	£1,716,995	£1,715,895	£1,714,794	£1,713,694	£1,712,593	£1,711,492	£1,710,392	£1,709,291	£1,708,191	£1,707,091	£1,706,000	£1,704,900
95%	£1,851,612	£1,850,511	£1,849,411	£1,848,310	£1,847,209	£1,846,109	£1,845,008	£1,843,908	£1,842,807	£1,841,706	£1,840,606	£1,839,506	£1,838,406	£1,837,306
100%	£1,984,027	£1,982,926	£1,981,826	£1,980,725	£1,979,625	£1,978,524	£1,977,423	£1,976,323	£1,975,222	£1,974,122	£1,973,021	£1,971,921	£1,970,821	£1,969,721

Where the net benefit produces a non-negative outcome then it is cost effective for the NHS to adopt the indicator.

When this is the case, the cells are highlighted with a yellow background.