

UNIVERSITY OF BIRMINGHAM AND YORK HEALTH ECONOMICS CONSORTIUM

(National Collaborating Centre for Indicator Development)

Health economic report on piloted indicators

Pilot QOF indicator: The percentage of patients with a new diagnosis of depression in the preceding QOF year whose notes record an offer of referral for psychological treatment within three months of the diagnosis.

Potential output: Recommendations for NICE Menu

Contents

Introduction and economic rationale for the indicator.....	3
Evidence on Delivery Cost of Indicator.....	4
Evidence on the Benefits of the Indicator.....	7
Eligible Population.....	8
Baseline Level of Achievement	8
Population	9
QOF Payments	9
Value of a QALY	9
QOF Points	9
Thresholds	10
Results (assuming a value per QALY of £20,000)	10
Discussion.....	11
References.....	12
Appendix A: Net Benefit Base Case Analysis	13

CONFIDENTIAL

Appendix B: Net Benefit Analysis Assuming 50% increase in Incremental Costs per Patient	14
Appendix C: Net Benefit Analysis Assuming 50% decrease in Utility Gains Per Patient	15
Appendix D: Net Benefit Analysis Assuming lower Eligible Population (0.59%)	16
Appendix E: Net Benefit Analysis Worst case (50% increase in costs, 50% reduction in QALYs, lower population	17

Introduction and economic rationale for the indicator

This briefing paper presents a cost-effectiveness analysis for the following potential indicator from pilot 9 of the NICE Quality and Outcomes Framework (QOF) indicator development programme:

The percentage of patients with a new diagnosis of depression in the preceding QOF year whose notes record an offer of referral for psychological treatment within three months of the diagnosis

A very similar indicator has also been piloted in relation to anxiety. The cost-effectiveness evidence is being presented separately so that the NICE Advisory Committee on Indicator Development can consider each indicator at face value.

The economic analysis is based on evidence of delivery costs and evidence of benefits expressed as quality-adjusted life years (QALYs). Additionally, the economic analysis takes account of potential QOF payments based on a range of available QOF points and a range of levels of achievement.

The possible range of QOF points for this analysis was agreed with the economic subgroup of the NICE Advisory Committee on Indicator Development, prior to the analysis being undertaken.

A net benefit approach is used whereby an indicator is considered cost-effective when net benefit is greater than zero for any given level of achievement and available QOF points:

$$\text{Net benefit} = \text{monetised benefit} - \text{delivery cost} - \text{QOF payment}.$$

The benefits and costs are reported per patient and the QOF payments per practice in the report, but for analysis purposes, these are all aggregated to the national (England) level to ensure consistency.

For this indicator, the net benefit analysis is applied with an 18 month time horizon at baseline.

The objective is to evaluate whether the proposed indicator represents a cost-effective use of NHS resources. This report provides the Advisory Committee on Indicator Development with information on whether the indicator is economically justifiable, and will inform the Committee's decision making on recommendations about the indicator.

It has been estimated that by 2026 there will be 1.45 million people in England with depression, with an annual direct cost of services of £3 billion and annual cost of lost productivity and employment £12.2 billion. [1]

The NICE clinical guideline on depression [2] makes recommendations for the identification, assessment and treatment of depression with a range of psychological, psychosocial and pharmaceutical approaches that have evidence of cost-effectiveness.

This potential QOF indicator would incentivise referrals for psychological treatment within 3 months of depression being diagnosed. While psychological treatment is recommended by the NICE guideline (and therefore cost-effectiveness will have been taken into account), this report considers the cost-effectiveness of this intervention when QOF achievement payments are also taken into account.

The indicator would only incentivise the intervention if offered within three months of diagnosis. It has been assumed that there is no additional cost associated with offering the intervention within three months rather than later on.

Summary of assumptions:

- Three-quarters of patients newly diagnosed with depression will accept a referral for psychological treatment;
- Patients with non-severe depression will be referred to computerised CBT;
- A small number of patients first diagnosed with depression have severe depression. They will be prescribed antidepressants and referred to intensive CBT;
- The indicator is based on the intervention being offered within three months of diagnosis. No additional cost is associated with offering the intervention within three months rather than later on.

Evidence on Delivery Cost of Indicator

The delivery costs of the indicator are the GP costs of offering and then making a referral for psychological treatment and the costs of the psychological treatment.

The NICE guidelines on depression [2] state that for patients with mild to moderate depression then psychosocial therapy in the form of cognitive behaviour therapies (CBT) (either individual guided, computer based or group) or a structured group physical activity programme should be offered. The guideline refers to these interventions as 'low intensity psychosocial' interventions rather than 'psychological' interventions. The latter should only be offered for patients with severe depression or for patients with milder depression whose initial psychosocial therapies have failed.

Higher intensity interventions consist of individual CBT, typically in the range of 16 to 20 sessions over 3 to 4 months. Two sessions per week can be provided for the first 2 to 3 weeks of treatment for people with moderate or severe depression and follow-up sessions, typically consisting of three to four sessions over the following 3 to 6 months, can also be considered.

If the indicator is adopted consideration should be given to the language used, as CG90 recommends a stepped approach for mild to moderate depression, in which lower intensity interventions are tried before referral to high intensity psychotherapy. Additionally, a psychosocial intervention is not recommended for people with severe depression.

Costing the indicator is problematic because no evidence was reported on the incidence rates of different severities of depression and so the proportion of patients referred for low-level psychosocial interventions as opposed to high intensity psychological interventions is not known. In addition, cost effectiveness evidence is not present for all the interventions that can be offered.

As a working assumption, it has been assumed that at diagnosis 90% of patients have no worse than moderate depression and 10% of patients have severe depression. It has also been assumed that patients with moderate or lower forms of depression are referred for computerised CBT (CCBT), as this is the low intensity intervention where economic evidence is present in the NICE guideline, derived from a health technology assessment (HTA) [3]. For people with severe depression it is assumed that CBT (consisting of 16 weeks plus 6 months maintenance therapy and 6 months follow up) in combination with antidepressant treatment is used based on modelling used in the NICE guideline [2].

The total costs for CCBT vary by the provider. In the 2006 HTA on CCBT [3] costs were calculated for a range of providers and included costs for staff training and time spent screening patients by clinicians. The cost used in the analysis of this indicator relates to the licenced CCBT programme 'Beating the Blues' (BtB) as this has evidence to support effectiveness and also conservatively assumes that the costs of licence fees are paid for CCBT. The costs have not been updated from 2006 as the intervention costs and the costs of potential treatments avoided if the treatment is effective will both have risen so it is not possible to assess their effect on the net cost of the programme.

The incremental cost of BtB over treatment as usual, taking into account its effectiveness in stopping the progression of depression or reducing symptoms and hence the associated reduction in treatment costs, was £147 over an 18 month time horizon. [3]

For patients with severe depression, the model in the NICE guideline [2] estimated that the average cost of combination drug and CBT therapy, taking into account reductions in health and social care expenditure if therapy is effective would be £653 more than drug therapy alone, over an 18 month time horizon. As with CBBT costs, these costs have not been uprated to 2015 prices because the cost of the intervention and the costs saved will have changed and there is insufficient information on the extent of those changes.

It has been assumed that there is a one off cost for all patients of a 17.5 minute GP appointment at a cost of £67 [4]. The appointment is to discuss therapies available to patients and includes time to make the referral. With no actual evidence on the percentage of patients that accept a referral, it has been assumed in the base case that 75% of all patients accept a referral. The value of this parameter at which any conclusions drawn from the base case analysis would change (ie. cost effective to not cost effective and vice versa) was explored in threshold analysis.

The total cost of the indicator over 18 months per new diagnosis of depression was therefore calculated as £215.20. In summary, this is calculated by adding:

- £67 (the cost of a GP consultation for all patients);
- £99.23 (the net cost of CBBT *multiplied by* 75% of patients accepting treatment *multiplied by* 90% of patients with depression who have moderate or lower depression);
- £48.97 (the net cost of combination CBT and drug therapy compared with drug therapy alone, in patients with severe depression *multiplied by* 75% of patients accepting treatment *multiplied by* 10% of patients with depression who have severe depression).

Sensitivity analysis examined the impact of the costs of the indicator per patient being 50% higher and lower than those assumed at baseline.

Baseline costs

- The baseline cost of the indicator is £215.20, based on the cost of a GP consultation (£67) plus the net cost of CBBT for those people with moderate or less severe depression accepting a referral (£147 x 90% x 75%) plus the net cost of combination CBT and drug therapy compared with drug therapy alone for patients with severe depression accepting a referral (£653 x 10% x 75%);
- This is based on an assumption that 75% of patients accept a referral and that of those patients, 10% have severe depression (requiring combination CBT therapy) with 90% have moderate or less severe depression (requiring CCBT);
- This cost represents the cost of discussing therapy and making a referral and the net costs of CCBT and CBT therapies

Evidence on the Benefits of the Indicator

Evidence on BtB showed a QALY gain over treatment as usual of 0.08 [3].

For patients with severe depression, the QALY gain per patient over 18 months from combination CBT and drug therapy over drug therapy alone was estimated by the economic model in the NICE guideline to be 0.11 per patient [2]

The total QALY gain of the indicator over 18 months per new diagnosis of depression was therefore calculated as 0.0623. This is calculated by adding:

- 0.054 (the QALY gain from CCBT *multiplied by* 75% of patients accepting treatment *multiplied by* 90% of patients with depression who have moderate or lower depression);
- 0.0083 (the QALY gain from CBT and drug therapy in patients with severe depression *multiplied by* 75% of patients accepting treatment *multiplied by* 10% of patients with depression who have severe depression).

Sensitivity analysis examined QALY gains 50% higher and lower than those assumed in the base case.

Baseline benefits

- The baseline QALY gain from the indicator was 0.0623. This is based on a 0.054 gain for patients with moderate or lower depression plus a 0.0083 gain for patients with severe depression.
- These benefits arise from QALY gains from the effectiveness of CCBT and CBT in patients with depression.

Eligible Population

The eligible population (i.e. people who would make up the indicator denominator) are all patients aged 18 and over who have been diagnosed with depression, during the preceding QOF year.

Elsewhere in the QOF menu the denominator for people newly diagnosed with depression (DEP001 and DEP002) has been 1.06% of the population so for consistency, this value was used in the baseline analysis. Sensitivity analysis was used to examine a value 0.25% high and lower than this value i.e. 0.81% and 1.31%.

Baseline Level of Achievement

Pilot 9 data showed the indicator was achieved on average for 5.5% of eligible patients at the beginning of the pilot. Pilot achievement may not reflect a 12 month level of achievement as the pilot only examines activity over a short time period (three months).

Population

In the base case, the economic analysis was based on the total practice population registered with practices in England, that is, 7,962 practices with an average practice size of 7,034 [5].

Table 1: Practice information for UK countries, 2013

Country	Number of practices	Average list size
England	7,962	7,034
Scotland	988	5,622
Wales	470	6,762
Northern Ireland	351	5,467

QOF Payments

Each QOF point is assumed to result in a payment of £160.12. This is the value per point in England during 2015/16 (source: NHS Employers).

Value of a QALY

The expected QALY gain from implementing this indicator was costed at £20,000 per QALY. This is based on the bottom of the range £20,000 to £30,000, below which NICE generally considers an intervention to be cost-effective.

So if we assume a QALY gain of 0.0623 per new diagnosis over an 18 month period, the value of this QALY gain is £1,245 (0.0623 x £20,000).

QOF Points

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

In the base case analysis for the proposed indicator 5 points were allocated. There are no similar indicators in the QOF menu so 5 points is an assumption. This is in line with the similar pilot indicator for anxiety.

Sensitivity analysis explored the agreed lower and upper bounds of 2 and 10 points respectively, as agreed with the economic subgroup of the Advisory Committee on Indicator Development.

Thresholds

Although piloting indicated a low level of achievement at baseline, a threshold range of 45% to 80% was used, as this is consistent with other indicators in the QOF.

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

Under the baseline assumptions of incremental delivery cost (£215.20), incremental benefit (0.0623 QALYs with a value of £20,000 per QALY) and eligible population (1.06%), the net benefit analysis suggests that the indicator is highly cost-effective, with QOF payments at the base case of 5 points justifiable on economic grounds (Appendix A). Under the conservative modelling assumptions in the base case, the value of the increase in quality of life and reduction in healthcare use offered by referral for psychosocial or psychological treatment for people with depression outweighs the additional costs of referral and treatment.

This result is insensitive to 50% increases in cost (Appendix B), a 50% reduction in QALY gains per patient (Appendix C), a lower eligible population (Appendix D) or a worst case scenario of higher cost and lower QALY gains per patient and eligible population (Appendix E).

The indicator continues to be cost effective at the base case at 80% achievement up to 361 points, or at 5 points if:

- The value per QALY is reduced 81.6% to £3,683;
- Intervention costs per patient increased by 472.4% to £1,232;
- The QALY gain per patient reduces by 81.6% to 0.0115;
- The eligible population reduces by 99.0% to 0.01%.

In addition, the indicator stopped being cost effective at 5 points if the percentage who accepted referral fell from 75% to 5.9%. Separate analysis revealed that changing the proportion of patients with severe depression from 10% to 0% and 100% did not alter findings with the indicator remaining cost effective up to at least the 10 points considered regardless of this value.

Discussion

Under the baseline assumptions in this analysis there is economic evidence that the 5 points suggested for the indicator are cost-effective.

This report sets out some issues for consideration by the Committee:

- It is possible that the true cost of the indicator has been under-estimated to an extent by not updating the costs of delivery of CCBT and CBT by inflation from 2006 and 2009 respectively. The costs may also be under-estimated if a greater number of GP appointments was assumed through shared care arrangements. However, this is unlikely to have had any impact given that costs could be almost six times higher than the base case for the indicator to no longer be cost effective at 5 points. In addition, if non-licensed CCBT was used then costs could be substantially lower.
- Assumed benefits were conservative. For example, it could be argued that there is a greater potential QALY gain arising from early interventions for people newly diagnosed with depression but these additional gains have not been factored in.
- Assumptions were made around the proportion of patients accepting treatment and the proportion of patients with severe depression. Varying the latter assumption between 0% and 100% makes no impact on the findings up to at least the 10 point upper bound considered. Testing of the former assumption showed that provided 5.9% of patients accepted referral the indicator would remain cost effective at 5 points. Whilst no evidence was found on the actual values for these parameters, it appears that the assumptions that were made do not impact on results.

- The indicator only incentivises the offer of a referral rather than the acceptance of a referral. There may be a question as to whether the indicator would incentivise the diagnosis of depression, or whether there would be a disincentive, if there is limited access to intensive CBT in particular areas.
- If the indicator is adopted, consideration should be given to the language used, as a psychological intervention is not recommended from diagnosis unless the depression is severe.

Given the conservative assumptions and the high level of cost-effectiveness at 5 points, even if costs were significantly higher and benefits significantly lower the indicator can be strongly recommended on economic grounds. Consideration needs to be given whether 5 points is sufficient to incentivise the indicator given the low baseline position. There is scope within the economic evidence to offer more than 5 points if the incentive at this points level is thought to be too low.

References

- [1] McCrone, P., Dhanasiri, S., Patel, A., et al. (2008) Paying the Price: The Cost of Mental Health Care in England to 2026. London: King's Fund.
- [2] National Institute for Health and Care Excellence. Clinical Guideline 90: The treatment and management of depression in adults. 2009
- [3] Kalenthaler E, Brazier J, De Nigris E, Tumur I, Ferriter M, Beverley C, et al. Computerised cognitive behaviour therapy for depression and anxiety update: a systematic review and economic evaluation. *Health Technol Assess* 2006;10(33).
- [4] PSSRU. Unit Costs of Health and Social Care. 2014
- [5] General practice trends in the UK. NHS Information Centre. Published 31 October 2014.

CONFIDENTIAL

Appendix A: Net benefit analysis - Base case analysis

Pilot Referral for psychological intervention (depression)

Value per point achieved	£160.12	Societal value of a QALY	£20,000								
Number of practices	7,962										
Mean practice population	7,034										
Minimum threshold	45%	Baseline achievement	Cost-effectiveness estimates								
Maximum threshold	80%	Eligible population (mean % of practice population)	1.06% Incremental cost (£ per patient)								
		Baseline achievement (mean % of eligible patients)	5.5% Incremental effect (QALYs per patient)								
Points	2	3	4	5	6	7	8	9	10		
National totals											
Expected Achievement	QOF payments (£000s)									Change in treatment cost (£)	Change in QALYs
30%	£0	£0	£0	£0	£0	£0	£0	£0	£0	£31,299,598	9061
35%	£0	£0	£0	£0	£0	£0	£0	£0	£0	£37,687,271	10910
40%	£0	£0	£0	£0	£0	£0	£0	£0	£0	£44,074,944	12760
45%	£0	£0	£0	£0	£0	£0	£0	£0	£0	£50,462,617	14609
50%	£364	£546	£729	£911	£1,093	£1,275	£1,457	£1,639	£1,821	£56,850,289	16458
55%	£729	£1,093	£1,457	£1,821	£2,186	£2,550	£2,914	£3,278	£3,643	£63,237,962	18307
60%	£1,093	£1,639	£2,186	£2,732	£3,278	£3,825	£4,371	£4,917	£5,464	£69,625,635	20156
65%	£1,457	£2,186	£2,914	£3,643	£4,371	£5,100	£5,828	£6,557	£7,285	£76,013,308	22006
70%	£1,821	£2,732	£3,643	£4,553	£5,464	£6,374	£7,285	£8,196	£9,106	£82,400,981	23855
75%	£2,186	£3,278	£4,371	£5,464	£6,557	£7,649	£8,742	£9,835	£10,928	£88,788,654	25704
80%	£2,550	£3,825	£5,100	£6,374	£7,649	£8,924	£10,199	£11,474	£12,749	£95,176,327	27553
85%	£2,550	£3,825	£5,100	£6,374	£7,649	£8,924	£10,199	£11,474	£12,749	£101,564,000	29403
90%	£2,550	£3,825	£5,100	£6,374	£7,649	£8,924	£10,199	£11,474	£12,749	£107,951,673	31252
95%	£2,550	£3,825	£5,100	£6,374	£7,649	£8,924	£10,199	£11,474	£12,749	£114,339,346	33101
100%	£2,550	£3,825	£5,100	£6,374	£7,649	£8,924	£10,199	£11,474	£12,749	£120,727,019	34950
Net Benefit (£000s)											
30%	£149,924	£149,924	£149,924	£149,924	£149,924	£149,924	£149,924	£149,924	£149,924	Where the net benefit produces a non-negative outcome then it is <u>cost effective</u> for the NHS to adopt the indicator.	
35%	£180,521	£180,521	£180,521	£180,521	£180,521	£180,521	£180,521	£180,521	£180,521		
40%	£211,117	£211,117	£211,117	£211,117	£211,117	£211,117	£211,117	£211,117	£211,117		
45%	£241,714	£241,714	£241,714	£241,714	£241,714	£241,714	£241,714	£241,714	£241,714		
50%	£271,947	£271,764	£271,582	£271,400	£271,218	£271,036	£270,854	£270,672	£270,490		
55%	£302,179	£301,815	£301,450	£301,086	£300,722	£300,358	£299,993	£299,629	£299,265		
60%	£332,411	£331,865	£331,319	£330,772	£330,226	£329,680	£329,133	£328,587	£328,040		
65%	£362,644	£361,915	£361,187	£360,458	£359,730	£359,001	£358,273	£357,544	£356,816		
70%	£392,876	£391,966	£391,055	£390,145	£389,234	£388,323	£387,413	£386,502	£385,591		
75%	£423,109	£422,016	£420,923	£419,831	£418,738	£417,645	£416,552	£415,460	£414,367		
80%	£453,341	£452,066	£450,792	£449,517	£448,242	£446,967	£445,692	£444,417	£443,142		
85%	£483,938	£482,663	£481,388	£480,113	£478,839	£477,564	£476,289	£475,014	£473,739		
90%	£514,535	£513,260	£511,985	£510,710	£509,435	£508,160	£506,885	£505,611	£504,336		
95%	£545,131	£543,857	£542,582	£541,307	£540,032	£538,757	£537,482	£536,207	£534,932		
100%	£575,728	£574,453	£573,178	£571,904	£570,629	£569,354	£568,079	£566,804	£565,529		

CONFIDENTIAL

Appendix B: Net benefit analysis - Costs increased by 50%

Pilot Referral for psychological intervention (depression)

Value per point achieved	£160.12	Societal value of a QALY	£20,000						
Number of practices	7,962								
Mean practice population	7,034								
Minimum threshold	45%	Baseline achievement	Cost-effectiveness estimates						
Maximum threshold	80%	Eligible population (mean % of practice population)	1.06% Incremental cost (£ per patient)						
		Baseline achievement (mean % of eligible patients)	5.5% Incremental effect (QALYs per patient)						
Points	2	3	4	5	6	7	8	9	10

Expected Achievement	National totals										Change in treatment cost (£)	Change in QALYs
	QOF payments (£000s)											
30%	£0	£0	£0	£0	£0	£0	£0	£0	£0	£0	£46,949,396	9061
35%	£0	£0	£0	£0	£0	£0	£0	£0	£0	£0	£56,530,906	10910
40%	£0	£0	£0	£0	£0	£0	£0	£0	£0	£0	£66,112,415	12760
45%	£0	£0	£0	£0	£0	£0	£0	£0	£0	£0	£75,693,925	14609
50%	£364	£546	£729	£911	£1,093	£1,275	£1,457	£1,639	£1,821	£0	£85,275,434	16458
55%	£729	£1,093	£1,457	£1,821	£2,186	£2,550	£2,914	£3,278	£3,643	£0	£94,856,944	18307
60%	£1,093	£1,639	£2,186	£2,732	£3,278	£3,825	£4,371	£4,917	£5,464	£0	£104,438,453	20156
65%	£1,457	£2,186	£2,914	£3,643	£4,371	£5,100	£5,828	£6,557	£7,285	£0	£114,019,963	22006
70%	£1,821	£2,732	£3,643	£4,553	£5,464	£6,374	£7,285	£8,196	£9,106	£0	£123,601,472	23855
75%	£2,186	£3,278	£4,371	£5,464	£6,557	£7,649	£8,742	£9,835	£10,928	£0	£133,182,982	25704
80%	£2,550	£3,825	£5,100	£6,374	£7,649	£8,924	£10,199	£11,474	£12,749	£0	£142,764,491	27553
85%	£2,550	£3,825	£5,100	£6,374	£7,649	£8,924	£10,199	£11,474	£12,749	£0	£152,346,000	29403
90%	£2,550	£3,825	£5,100	£6,374	£7,649	£8,924	£10,199	£11,474	£12,749	£0	£161,927,510	31252
95%	£2,550	£3,825	£5,100	£6,374	£7,649	£8,924	£10,199	£11,474	£12,749	£0	£171,509,019	33101
100%	£2,550	£3,825	£5,100	£6,374	£7,649	£8,924	£10,199	£11,474	£12,749	£0	£181,090,529	34950

Net Benefit (£000s)										
30%	£134,274	£134,274	£134,274	£134,274	£134,274	£134,274	£134,274	£134,274	£134,274	£134,274
35%	£161,677	£161,677	£161,677	£161,677	£161,677	£161,677	£161,677	£161,677	£161,677	£161,677
40%	£189,080	£189,080	£189,080	£189,080	£189,080	£189,080	£189,080	£189,080	£189,080	£189,080
45%	£216,483	£216,483	£216,483	£216,483	£216,483	£216,483	£216,483	£216,483	£216,483	£216,483
50%	£243,521	£243,339	£243,157	£242,975	£242,793	£242,611	£242,429	£242,247	£242,064	£0
55%	£270,560	£270,196	£269,832	£269,467	£269,103	£268,739	£268,375	£268,010	£267,646	£0
60%	£297,599	£297,052	£296,506	£295,960	£295,413	£294,867	£294,320	£293,774	£293,228	£0
65%	£324,637	£323,909	£323,180	£322,452	£321,723	£320,995	£320,266	£319,538	£318,809	£0
70%	£351,676	£350,765	£349,855	£348,944	£348,033	£347,123	£346,212	£345,302	£344,391	£0
75%	£378,715	£377,622	£376,529	£375,436	£374,344	£373,251	£372,158	£371,065	£369,973	£0
80%	£405,753	£404,478	£403,203	£401,929	£400,654	£399,379	£398,104	£396,829	£395,554	£0
85%	£433,156	£431,881	£430,606	£429,331	£428,057	£426,782	£425,507	£424,232	£422,957	£0
90%	£460,559	£459,284	£458,009	£456,734	£455,459	£454,185	£452,910	£451,635	£450,360	£0
95%	£487,962	£486,687	£485,412	£484,137	£482,862	£481,587	£480,313	£479,038	£477,763	£0
100%	£515,365	£514,090	£512,815	£511,540	£510,265	£508,990	£507,715	£506,441	£505,166	£0

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.

CONFIDENTIAL

Appendix C: Net benefit analysis – QALY benefit decreased by 50%

Pilot Referral for psychological intervention (depression)

Value per point achieved	£160.12	Societal value of a QALY	£20,000						
Number of practices	7,962								
Mean practice population	7,034								
Minimum threshold	45%	Baseline achievement	Cost-effectiveness estimates						
Maximum threshold	80%	Eligible population (mean % of practice population)	1.06% Incremental cost (£ per patient)						
		Baseline achievement (mean % of eligible patients)	5.5% Incremental effect (QALYs per patient)						
Points	2	3	4	5	6	7	8	9	10

Expected Achievement	National totals										Change in treatment cost (£)	Change in QALYs
	QOF payments (£000s)											
30%	£0	£0	£0	£0	£0	£0	£0	£0	£0	£0	£31,299,598	4538
35%	£0	£0	£0	£0	£0	£0	£0	£0	£0	£0	£37,687,271	5464
40%	£0	£0	£0	£0	£0	£0	£0	£0	£0	£0	£44,074,944	6390
45%	£0	£0	£0	£0	£0	£0	£0	£0	£0	£0	£50,462,617	7316
50%	£364	£546	£729	£911	£1,093	£1,275	£1,457	£1,639	£1,821	£0	£56,850,289	8242
55%	£729	£1,093	£1,457	£1,821	£2,186	£2,550	£2,914	£3,278	£3,643	£0	£63,237,962	9168
60%	£1,093	£1,639	£2,186	£2,732	£3,278	£3,825	£4,371	£4,917	£5,464	£0	£69,625,635	10094
65%	£1,457	£2,186	£2,914	£3,643	£4,371	£5,100	£5,828	£6,557	£7,285	£0	£76,013,308	11021
70%	£1,821	£2,732	£3,643	£4,553	£5,464	£6,374	£7,285	£8,196	£9,106	£0	£82,400,981	11947
75%	£2,186	£3,278	£4,371	£5,464	£6,557	£7,649	£8,742	£9,835	£10,928	£0	£88,788,654	12873
80%	£2,550	£3,825	£5,100	£6,374	£7,649	£8,924	£10,199	£11,474	£12,749	£0	£95,176,327	13799
85%	£2,550	£3,825	£5,100	£6,374	£7,649	£8,924	£10,199	£11,474	£12,749	£0	£101,564,000	14725
90%	£2,550	£3,825	£5,100	£6,374	£7,649	£8,924	£10,199	£11,474	£12,749	£0	£107,951,673	15651
95%	£2,550	£3,825	£5,100	£6,374	£7,649	£8,924	£10,199	£11,474	£12,749	£0	£114,339,346	16577
100%	£2,550	£3,825	£5,100	£6,374	£7,649	£8,924	£10,199	£11,474	£12,749	£0	£120,727,019	17503

Net Benefit (£000s)										
30%	£59,458	£59,458	£59,458	£59,458	£59,458	£59,458	£59,458	£59,458	£59,458	£59,458
35%	£71,592	£71,592	£71,592	£71,592	£71,592	£71,592	£71,592	£71,592	£71,592	£71,592
40%	£83,726	£83,726	£83,726	£83,726	£83,726	£83,726	£83,726	£83,726	£83,726	£83,726
45%	£95,860	£95,860	£95,860	£95,860	£95,860	£95,860	£95,860	£95,860	£95,860	£95,860
50%	£107,630	£107,448	£107,266	£107,084	£106,902	£106,720	£106,537	£106,355	£106,173	£0
55%	£119,400	£119,036	£118,672	£118,307	£117,943	£117,579	£117,215	£116,850	£116,486	£0
60%	£131,170	£130,624	£130,077	£129,531	£128,985	£128,438	£127,892	£127,345	£126,799	£0
65%	£142,940	£142,212	£141,483	£140,755	£140,026	£139,298	£138,569	£137,841	£137,112	£0
70%	£154,710	£153,799	£152,889	£151,978	£151,067	£150,157	£149,246	£148,336	£147,425	£0
75%	£166,480	£165,387	£164,294	£163,202	£162,109	£161,016	£159,923	£158,831	£157,738	£0
80%	£178,250	£176,975	£175,700	£174,425	£173,150	£171,876	£170,601	£169,326	£168,051	£0
85%	£190,384	£189,109	£187,834	£186,559	£185,285	£184,010	£182,735	£181,460	£180,185	£0
90%	£202,518	£201,243	£199,969	£198,694	£197,419	£196,144	£194,869	£193,594	£192,319	£0
95%	£214,653	£213,378	£212,103	£210,828	£209,553	£208,278	£207,003	£205,728	£204,453	£0
100%	£226,787	£225,512	£224,237	£222,962	£221,687	£220,412	£219,137	£217,863	£216,588	£0

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.

CONFIDENTIAL

Appendix D: Net benefit analysis – Lower eligible population (0.81%)

Pilot Referral for psychological intervention (depression)

Value per point achieved	£160.12	Societal value of a QALY	£20,000						
Number of practices	7,962								
Mean practice population	7,034								
Minimum threshold	45%	Baseline achievement	Cost-effectiveness estimates						
Maximum threshold	80%	Eligible population (mean % of practice population)	0.81% Incremental cost (£ per patient)						
		Baseline achievement (mean % of eligible patients)	5.5% Incremental effect (QALYs per patient)						
Points	2	3	4	5	6	7	8	9	10

Expected Achievement	National totals										Change in treatment cost (£)	Change in QALYs
	QOF payments (£000s)											
30%	£0	£0	£0	£0	£0	£0	£0	£0	£0	£0	£23,917,617	6924
35%	£0	£0	£0	£0	£0	£0	£0	£0	£0	£0	£28,798,763	8337
40%	£0	£0	£0	£0	£0	£0	£0	£0	£0	£0	£33,679,910	9750
45%	£0	£0	£0	£0	£0	£0	£0	£0	£0	£0	£38,561,056	11163
50%	£364	£546	£729	£911	£1,093	£1,275	£1,457	£1,639	£1,821	£0	£43,442,202	12576
55%	£729	£1,093	£1,457	£1,821	£2,186	£2,550	£2,914	£3,278	£3,643	£0	£48,323,349	13990
60%	£1,093	£1,639	£2,186	£2,732	£3,278	£3,825	£4,371	£4,917	£5,464	£0	£53,204,495	15403
65%	£1,457	£2,186	£2,914	£3,643	£4,371	£5,100	£5,828	£6,557	£7,285	£0	£58,085,641	16816
70%	£1,821	£2,732	£3,643	£4,553	£5,464	£6,374	£7,285	£8,196	£9,106	£0	£62,966,788	18229
75%	£2,186	£3,278	£4,371	£5,464	£6,557	£7,649	£8,742	£9,835	£10,928	£0	£67,847,934	19642
80%	£2,550	£3,825	£5,100	£6,374	£7,649	£8,924	£10,199	£11,474	£12,749	£0	£72,729,080	21055
85%	£2,550	£3,825	£5,100	£6,374	£7,649	£8,924	£10,199	£11,474	£12,749	£0	£77,610,227	22468
90%	£2,550	£3,825	£5,100	£6,374	£7,649	£8,924	£10,199	£11,474	£12,749	£0	£82,491,373	23881
95%	£2,550	£3,825	£5,100	£6,374	£7,649	£8,924	£10,199	£11,474	£12,749	£0	£87,372,519	25294
100%	£2,550	£3,825	£5,100	£6,374	£7,649	£8,924	£10,199	£11,474	£12,749	£0	£92,253,666	26707

Net Benefit (£000s)										
30%	£114,564	£114,564	£114,564	£114,564	£114,564	£114,564	£114,564	£114,564	£114,564	£114,564
35%	£137,945	£137,945	£137,945	£137,945	£137,945	£137,945	£137,945	£137,945	£137,945	£137,945
40%	£161,326	£161,326	£161,326	£161,326	£161,326	£161,326	£161,326	£161,326	£161,326	£161,326
45%	£184,706	£184,706	£184,706	£184,706	£184,706	£184,706	£184,706	£184,706	£184,706	£184,706
50%	£207,722	£207,540	£207,358	£207,176	£206,994	£206,812	£206,630	£206,447	£206,265	£0
55%	£230,739	£230,374	£230,010	£229,646	£229,282	£228,917	£228,553	£228,189	£227,825	£0
60%	£253,755	£253,208	£252,662	£252,116	£251,569	£251,023	£250,477	£249,930	£249,384	£0
65%	£276,771	£276,043	£275,314	£274,586	£273,857	£273,129	£272,400	£271,672	£270,943	£0
70%	£299,787	£298,877	£297,966	£297,055	£296,145	£295,234	£294,324	£293,413	£292,502	£0
75%	£322,804	£321,711	£320,618	£319,525	£318,433	£317,340	£316,247	£315,154	£314,062	£0
80%	£345,820	£344,545	£343,270	£341,995	£340,720	£339,445	£338,171	£336,896	£335,621	£0
85%	£369,200	£367,925	£366,651	£365,376	£364,101	£362,826	£361,551	£360,276	£359,001	£0
90%	£392,581	£391,306	£390,031	£388,756	£387,481	£386,206	£384,932	£383,657	£382,382	£0
95%	£415,961	£414,686	£413,412	£412,137	£410,862	£409,587	£408,312	£407,037	£405,762	£0
100%	£439,342	£438,067	£436,792	£435,517	£434,242	£432,968	£431,693	£430,418	£429,143	£0

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.

CONFIDENTIAL

Appendix E: Net benefit analysis – Worst case (50% increase in costs, 50% reduction in QALYs, lower eligible population)
Pilot Referral for psychological intervention (depression)

Value per point achieved	£160.12	Societal value of a QALY								£20,000
Number of practices	7,962									
Mean practice population	7,034									
Minimum threshold	45%	Baseline achievement								Cost-effectiveness estimates
Maximum threshold	80%	Eligible population (mean % of practice population)								Incremental cost (£ per patient)
		Baseline achievement (mean % of eligible patients)								0.81% 5.5%
Points	2	3	4	5	6	7	8	9	10	Incremental effect (QALYs per patient) 0.0312
National totals										
Expected Achievement	QOF payments (£000s)									Change in treatment cost (£)
30%	£0	£0	£0	£0	£0	£0	£0	£0	£0	£35,876,426
35%	£0	£0	£0	£0	£0	£0	£0	£0	£0	£43,198,145
40%	£0	£0	£0	£0	£0	£0	£0	£0	£0	£50,519,865
45%	£0	£0	£0	£0	£0	£0	£0	£0	£0	£57,841,584
50%	£364	£546	£729	£911	£1,093	£1,275	£1,457	£1,639	£1,821	£65,163,304
55%	£729	£1,093	£1,457	£1,821	£2,186	£2,550	£2,914	£3,278	£3,643	£72,485,023
60%	£1,093	£1,639	£2,186	£2,732	£3,278	£3,825	£4,371	£4,917	£5,464	£79,806,743
65%	£1,457	£2,186	£2,914	£3,643	£4,371	£5,100	£5,828	£6,557	£7,285	£87,128,462
70%	£1,821	£2,732	£3,643	£4,553	£5,464	£6,374	£7,285	£8,196	£9,106	£94,450,181
75%	£2,186	£3,278	£4,371	£5,464	£6,557	£7,649	£8,742	£9,835	£10,928	£101,771,901
80%	£2,550	£3,825	£5,100	£6,374	£7,649	£8,924	£10,199	£11,474	£12,749	£109,093,620
85%	£2,550	£3,825	£5,100	£6,374	£7,649	£8,924	£10,199	£11,474	£12,749	£116,415,340
90%	£2,550	£3,825	£5,100	£6,374	£7,649	£8,924	£10,199	£11,474	£12,749	£123,737,059
95%	£2,550	£3,825	£5,100	£6,374	£7,649	£8,924	£10,199	£11,474	£12,749	£131,058,779
100%	£2,550	£3,825	£5,100	£6,374	£7,649	£8,924	£10,199	£11,474	£12,749	£138,380,498
Net Benefit (£000s)										
30%	£33,476	£33,476	£33,476	£33,476	£33,476	£33,476	£33,476	£33,476	£33,476	
35%	£40,308	£40,308	£40,308	£40,308	£40,308	£40,308	£40,308	£40,308	£40,308	
40%	£47,139	£47,139	£47,139	£47,139	£47,139	£47,139	£47,139	£47,139	£47,139	
45%	£53,971	£53,971	£53,971	£53,971	£53,971	£53,971	£53,971	£53,971	£53,971	
50%	£60,439	£60,257	£60,074	£59,892	£59,710	£59,528	£59,346	£59,164	£58,982	
55%	£66,906	£66,542	£66,178	£65,813	£65,449	£65,085	£64,721	£64,356	£63,992	
60%	£73,374	£72,827	£72,281	£71,735	£71,188	£70,642	£70,096	£69,549	£69,003	
65%	£79,841	£79,113	£78,384	£77,656	£76,927	£76,199	£75,470	£74,742	£74,013	
70%	£86,309	£85,398	£84,488	£83,577	£82,666	£81,756	£80,845	£79,934	£79,024	
75%	£92,776	£91,684	£90,591	£89,498	£88,405	£87,313	£86,220	£85,127	£84,034	
80%	£99,244	£97,969	£96,694	£95,419	£94,144	£92,870	£91,595	£90,320	£89,045	
85%	£106,076	£104,801	£103,526	£102,251	£100,976	£99,701	£98,426	£97,152	£95,877	
90%	£112,908	£111,633	£110,358	£109,083	£107,808	£106,533	£105,258	£103,983	£102,709	
95%	£119,739	£118,464	£117,190	£115,915	£114,640	£113,365	£112,090	£110,815	£109,540	
100%	£126,571	£125,296	£124,021	£122,746	£121,472	£120,197	£118,922	£117,647	£116,372	

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.