UNIVERSITY OF BIRMINGHAM AND YORK HEALTH ECONOMICS CONSORTIUM

(National Collaborating Centre for Indicator Development)

Health economic report on piloted indicators

Pilot QOF indicator: Type 1 diabetes CVD risk factors and statins

Of the patients with Type 1 diabetes who meet the following criteria: aged over 40 years, and who have either had diabetes for more than 10 years, or who have established nephropathy or other CVD risk factors; the percentage currently treated with a statin.

Potential output: Recommendations for NICE Menu

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Introduction and economic rationale for the indicator

This briefing paper presents economic analysis of the following potential indicator from pilot 10 of the NICE Quality and Outcomes Framework (QOF) indicator development programme:

Of the patients with Type 1 diabetes who meet the following criteria: aged over 40 years, and who have either had diabetes for more than 10 years, or who have established nephropathy or other CVD risk factors; the percentage currently treated with a statin.

The economic analysis is presented in two ways: cost-effectiveness analysis of the indicator and an assessment of the incentives to deliver the indicator.

The cost-effectiveness analysis is based on evidence of delivery costs and evidence of benefits expressed as quality-adjusted life years (QALYs). The delivery cost 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 Indicator Advisory Committee 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:

Net benefit = monetised benefit – delivery cost – QOF payment.

For this indicator, the net benefit analysis is applied with a lifetime horizon at baseline. The objective is to evaluate whether the proposed indicator represents a cost-effective use of NHS resources.

The incentive assessment is based on consideration of the monetary value of the QOF points potentially available to each GP practice through achievement of relevant thresholds for this indicator, measured against the likely cost to a practice of delivering the indicator.

This report provides the Indicator Advisory Committee with information on whether the indicator is economically justifiable and whether the potential QOF points provide an incentive to deliver the indicator. The report will inform the Committee's decision making on recommendations about the indicator.

CVD risk assessment and statins

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

Should the CVD risk over 10 years be estimated to be greater than 10%, it is recommended that patients are treated with atorvastatin 20mg. All patients with prior CVD should be offered statin therapy [2].

This potential QOF indicator would incentivise statin treatment for people with Type 1 diabetes and associated the CVD risk factors. While statin treatment for people identified in this indicator 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.

Summary of assumptions:

- Treatment of atorvastatin 20mg is prescribed if 10 year risk >=10%.
- The patients in the Type 1 diabetes indicator have a 10 year CVD risk of 20%.
- Cost savings and QALY gains arise from averted CVD events with statin use.

Assumptions on delivery cost of the indicators

A detailed economic model of risk assessment and treatment was undertaken as part of the lipid modification guideline [2].

The model found that Atorvastatin 20mg is the dominant statin therapy regardless of QRISK2 risk level and so the costs of this statin have been used in calculating the delivery cost of this indicator.

The delivery cost of this indicator focuses on the cost of providing risk reducing therapy to appropriate patients. The model presents total lifetime assessment and treatment costs for patients by QRISK2 risk level in 5% bands, with a starting age of 60 for men and women separately. For a conservative estimate, the gender that has the highest increase in costs for assessment and treatment has been chosen as the cost per patient for the indicator.

For patients with Type 1 diabetes and CVD risk factors it has been assumed that the 10 year CVD risk is 20% or greater, and so a lifetime cost of £692 has been used as the cost. This is based on the cost reported in the model for a female with a 20% risk.

In using the model in this way, it was assumed that treatments considered were not contraindicated, nor had altered efficacy because of the presence of hypertension or Type 1 diabetes or Type 2 diabetes. The target age for the indicator is over 40 and, as such, the cost for a 60 year old may not represent that for someone who is at any other age. Other analysis within the lipid guideline showed that at a QRISK2 10% risk the difference in lifetime costs in statin therapy compared to doing nothing varied between £1,907 for a 40 year old man and £1,102 for a 70 year old man. There is potential that costs could be even higher than the highest reported cost in the model, particularly for younger people. Given the variation in potential costs a scenario analysis explored the impact of lifetime costs rising to £2,500 per patient, i.e. approximately 25% higher than the highest cost reported in the economic model.

Because the focus of the indicator is an action following the assessment, there is a case for excluding the cost of assessment from the economic evaluation. However, for a conservative estimate, the cost of assessment has been included in the cost calculation, under the assumption that it would be undertaken by a nurse. For an even more conservative assessment, it has been assumed that a further consultation with a GP would be required to discuss the results of risk assessment and of potential treatment strategies. It has been assumed that this additional consultation

is required regardless of whether treatment is recommended or not. The cost of this consultation has been assumed to equate to the equivalent of a GP consultation that lasts 17.2 minutes at a cost of £65 [3].

Baseline costs:

- The baseline cost of statin treatment in patients with Type 1 diabetes or the general population with a 20% or greater CVD risk was £757 (£692 + £65) over a patient's lifetime.
- These costs include the costs of assessment, monitoring, treatment with Atorvastatin 20mg, treatment of side effects and costs averted from reductions in CVD events.

Assumptions on the benefits of the indicators

The benefits of the indicator focused on QALY gains, derived from the NICE economic model developed for the lipid guideline [2]. For a conservative approach, the QALY value used was from the gender with the lowest QALY gain reported in the model from assessment and treatment. All QALY gains are over a patient's lifetime.

For people aged 60 with a QRISK2 risk of 20%, the lowest QALY gain was for men and was 0.459 per patient on atorvastatin 20mg compared with no risk assessment and treatment (the gain for women with a 30% risk was 0.622). The 0.459 value was used for the Type 1 diabetes indicator.

Baseline benefits:

- The baseline benefit of statin treatment in patients with a CVD risk of 20% or greater or with Type 1 diabetes was 0.459 QALYs.
- These benefits include QALY gains from reductions in CVD events and mortality and include the loss of QALYs due to adverse events from statin treatment. They are based upon the use of the QRISK2 tool for risk assessment and treatment with atorvastatin 20mg.

Assumptions on the Eligible Population

The eligible population for this indicator was taken from the eligible population summing across the pilot 10 practices. This provided the following estimate of the eligible population used in the base case analysis for the indicator:

- Of the ***patients with Type 1 diabetes who meet the following criteria: aged over 40 years, and who have either had diabetes for more than 10 years, or who have established nephropathy or other CVD risk factors***; the percentage currently treated with a statin: ***0.3%***

Baseline Level of Achievement

The baseline level of achievement was taken from the average baseline achievement from across the pilot 10 practices. This provided the following estimates of the baseline achievement for the indicator:

- Of the patients with Type 1 diabetes who meet the following criteria: aged over 40 years, and who have either had diabetes for more than 10 years, or who have established nephropathy or other CVD risk factors; the percentage currently treated with a statin: ***66%***

Population

In the base case, the economic analysis was based on the total practice population registered with practices in England, that is, 7,875 practices with an average practice size of 7,171 [4].

Table 1: Practice information for UK countries, 2014

Country	Number of practices	Average list size
England	7,875	7,171
Scotland	980	5,701
Wales	462	6,868
Northern Ireland	350	5,533

QOF Payments

Each QOF point is assumed to result in a payment of £165.18. This is the value per point in England during 2016/17 (source: NHS Employers).

Value of a QALY

The expected QALY gain from implementing these indicators 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 for a QALY gain of 0.459 the value is £9,180 (0.459 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 this indicator, analysis was carried out using 10 points as a baseline. This was considered to reflect similar current QOF indicators, such as:

- CVD-PP001: Patients diagnosed with hypertension who have a recorded CVD risk assessment score and who are offered lifestyle advice, for which 10 points is available.

Thresholds

Given the high rate of baseline achievement a threshold range of 60% to 90% was used for all the indicators.

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

Under the baseline assumptions of delivery cost (£757), benefit (0.459 QALYs with a value of £20,000 per QALY) and eligible population (0.3%), then assuming all practices achieved the maximum threshold of 90% the total QOF payments with 10 points for the indicator would be £13.0 million with a net benefit of £400.8 million. Under these assumptions, the indicator is therefore highly cost effective, with QOF payments at the base case of 10 points justifiable on economic grounds.

The indicators continue to be cost effective at the base case at 90% achievement up to the unrealistic level of 318 points, or at the base case of 10 points if:

- Lifetime costs per patient are increased 1,077.7% to £8,915 – well above the 25% increase assumed in the scenario analysis;
- The QALY gain per patient is reduced by 88.9% to 0.051 well below the 25% decrease in QALYs explored in the scenario analysis;

Discussion

Under the conservative baseline assumptions in this analysis there is economic evidence to offer the 10 points suggested for this indicator,. The economic evidence is so overwhelming due to the large QALY gains from statins.

Incentive assessment

Under the base case, and if the indicator was adopted in the QOF, there would be 10 available points, representing an average of £1,651.80 available to practices who achieve the assumed 90% upper threshold.

Resources required by the practice to deliver the indicators are difficult to isolate from the lipid model, but would be at least £100 per patient in staff time in the first year (the £65 cost of a 17.2 minute GP appointment plus a nurse assessment and costs of monitoring patients on statins). The annual cost to an average sized practice of delivering the care entailed by the indicator, from a baseline of 66% to the 90% threshold, would be around £540 assuming that 0.3% of patients would be eligible for the indicator (7,171 x 0.3% x 24% x £100). The cost to a practice of delivering the indicators is therefore likely to be some way below the £1,651 that a practice could receive for achieving the 90% threshold.

This suggests that, as well as the indicator being highly cost effective from the perspective of the NHS, the QOF incentive payment would more than cover the full cost to a practice of providing the intervention. This assessment does not take into account any pressure on local prescribing budgets from increased use of statins.

By the end of pilot 10, the following levels of achievement were seen in pilot practices:

Mean across practices: 72.1%

Range: 46.2% to 100.0%

Mean change from baseline: 3.0%

The indicators saw only small improvement from the baseline, although from a relatively high starting point for all indicators accept the 10-20% CVD risk indicator. This suggests that for those at highest risk of CVD the majority of patients are already provided with statins. For those patients not already prescribed statins who are targeted by the indicator, the pilot performance data suggests that there may be a need for a strong financial incentive to encourage GPs to increase statin prescribing rates.

Economic Judgment

Cost effectiveness: Green – this indicator is cost effective from the perspective of the NHS for the baseline points considered.

Incentive assessment: Green – the points considered are likely to be more than sufficient to cover the costs of delivery and provide sufficient financial incentive to increase statin prescribing rates in the target population.

References

[1] Coronary Heart Disease 2010, British Heart Foundation.

[2] National Institute for Health and Care Excellence. Clinical Guideline 181: Lipid Modification: cardiovascular risk assessment and the primary and secondary prevention of cardiovascular disease. 2014

[3] PSSRU. Unit Costs of Health and Social Care. 2015

[4] General practice trends in the UK. NHS Information Centre. Published 31 July 2015