National Primary Care Research and Development Centre and University of York Health Economics Consortium (NICE External Contractor)

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Health economic report

This paper was prepared by the York Health Economic Consortium/National Primary Care Research and Development Centre (YHEC/NPCRDC) as the external contractor for the NICE QOF process and was considered at the July 2009 Primary Care QOF Indicator Advisory Committee.

This briefing paper is intended to provide a summary of the economic evidence generated on the proposed indicators NM01 and NM02. 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.

Indicator area: Diabetes

Proposed indicators

NM01: The percentage of patients with diabetes in whom the last blood pressure is 150/90 or less in the previous 15

NM02: The percentage of patients with diabetes in whom the last blood pressure is 140/80 or less in the previous 15 months

Economic rationale

Diabetes is a prevalent condition that is estimated to affect over 2 million people in the United Kingdom. Hypertension is known to be prevalent amongst individuals with diabetes. Combined, diabetes and hypertension represent a significant risk factor for the development of cardio-vascular events, including heart attacks and strokes. Hypertension in individuals with diabetes can lead to increased morbidity and mortality, as well as increased consumption of health care resources.

Attempts to control hypertension in individuals with diabetes are to be welcomed, as this can help to reduce the risk of cardiovascular events occurring in the future.

Methods

Evidence on the impact of tight blood control in diabetes was reviewed to

determine whether it would help to inform consideration of the proposed new indicator. Whilst there is a significant body of evidence on diabetes and hypertension, due to the short timescales for analysis as a result of the interim QOF process, no evidence was identified that was sufficiently detailed to allow for differentiation of the risks associated with the proposed blood pressure levels.

The UK PDS study generates estimates that the relationship between blood pressure and the risk of diabetes related events appears to be linear. Whilst this would support the case for tighter control, this does not provide evidence on the direct improvement in health outcomes required to complete this analysis.

Similarly, the HOT study reported a significant reduction in the risk of MACE events in people with diabetes following a reduction in blood pressure of 10mm Hg. However, no utility data were identified in this study that would lend themselves to the economic evaluation of the indicator.

Utility data on the impact of diabetes and hypertension separately were identified from multiple studies. However, no data were identified that were reported in sufficient detail to identify the incremental impact of moving between the proposed cut-offs recommended by the proposed indicator.

Whilst there are existing large-scale patient simulation models of diabetes, which would possibly allow for exploration of the benefits associated with this indicator, these are not easily accessible and it has not been possible to discuss this with the model developers in the time available for the interim process.

In the absence of any economic evaluation of the indicator, some thoughts are presented on the incremental costs and benefits that might result from the proposed introduction of the indicator below.

Evidence on costs and effects

Delivery costs

NICE guidance states that patients with diabetes and uncontrolled hypertension (defined as >140/80) should be seen every 2 months for monitoring, whereas those with controlled and stable hypertension should be seen every 4-6 months. As such, implementation of the indicator might be expected to lead to a net increase in consultations initially, as patients are managed more intensively to achieve control. However, in the longer term the number of consultations should be reduced, as an increasing proportion of patients are controlled.

Additional cost considerations

More intensive management of individuals with diabetes is expected to lead to increases in the number of individuals who are referred for secondary care to help manage their condition. However, no evidence has been identified to help inform an estimate of the number of referrals.

Health benefits

The utility associated with an individual who is diabetic and also has uncontrolled hypertension is estimated to be 0.652 (Tilden 2007), whilst diabetics with controlled hypertension are associated with a utility of 0.785.

Baseline levels of achievement

The proposed indicators are essentially a replacement for an existing indicator that examines how many patients with diabetes have achieved a blood pressure measurement of 145/85. The level of achievement for this indicator has increased from 57% in 2003/4 to 72% in 2006/7.

This should be taken into account when considering appropriate thresholds for the proposed new indicators.

Discussion

It has not been possible to identify evidence on diabetes and hypertension that is sufficiently detailed to allow for an evaluation of the proposed indicators, due to the timescales necessary for the QOF interim process. Whilst there is a significant body of evidence on the impact of hypertension on long-term outcomes in individuals with diabetes, the level of detail required, differentiating between the level of hypertension as defined by the indicator, was not available.

In the absence of evidence on both costs and benefits we have been unable to generate an economic evaluation that can help inform a decision on the net benefit of the indicators. Given that estimates of both cost and effectiveness were unavailable, we have also not been able to undertake any threshold analysis on one parameter whilst keeping the other constant.

Careful consideration is needed for the implementation of the new indicators. Providing a blood pressure target lower than that recommended by the current indicator (DM12) could have a negative impact on practices who are already managing to achieve blood pressure levels of 145/85 for a significant number of patients. However, it is recognised that not all patients will be able to achieve this level, so having tiered indicators that allow for achievement at two different levels may incentivise practices to manage patients as tightly as possible. In order to do so, consideration should be given to whether more points should be attributed to the lowest levels of blood pressure or whether thresholds should be set to acknowledge that achievement of this level is inevitably limited to a proportion of patients.

References

Tilden (2007): A lifetime modelled economic evaluation comparing pioglitazone and rosiglitazone for the treatment of type 2 diabetes mellitus in the UK. Pharmacoeconomics.

Carlos RC et al (2003): Incorporating Patient-Centered Outcomes in the Analysis of Cost-Effectiveness: Imaging Strategies for Renovascular Hypertension. American Journal of Roentgenology.

NICE Clinical Guideline CG66.