**Objective**

- Type 2 diabetes mellitus (T2DM) represents a major public health burden. Consequently, several T2DM treatments will be submitted to health technology assessment agencies for reimbursement over the next years and assessed according to their cost-effectiveness.
- The NICE reference case for the measurement and valuation of health for use in cost-effectiveness models emphasizes the QALY as the preferred measure of the benefit (1, 4). EQ-5D has been shown to be valid, reliable and responsive in T2DM (2).
- Other NICE preferences include patient reported outcomes, tariffs elicited with the general population, UK setting.
- The reference case states that the quality and the relevance of the studies should be assessed following the same principles as for clinical effectiveness reviews, however there are currently no agreed reporting standards to justify the selection of a set of relevant utility values.
- The aim of this systematic literature review was to provide a set of utility values associated with T2DM complications in line with NICE reference case to be used in modelling studies.

**Methods**

- At the scoping stage, the list of health state utility values to be captured was identified by reviewing the list of microvascular and macrovascular complications associated with T2DM and commonly used within existing models.
- The search strings combined 1) T2DM, 2) utility and 3) individual complication search terms. The literature searches were conducted on May 24th, 2012 in Medline & Medline In-Process, Embase, EconLIT and NHS Economic Evaluation Database.
- Articles were included if they reported a cohort study performed in adults reporting the effect of T2DM complications on utility values. Exclusion criteria included non-English publications, paediatric population, instruments without conversion to utility measure or the effect of a specific therapies on utility values.
- When articles presenting EQ-5D index data were available for a given complication, only these articles were included in the relevance assessment.
- A set of utility values was selected following the relevance and quality assessment. The use of values generated using a multiple regression was preferred over use of the unadjusted data. Given the high number of T2DM complications homogeneity of the estimates was considered important.

**Results**

- The articles were systematically assessed for relevance with the NICE reference case.
- The quality of the studies is reviewed in Table 1. It was possible to identify relevant values associated with the EQ-5D for all pre-specified T2DM complications except for renal transplant following diabetic nephropathy.
- Figure 2 presents the suggested utility values for T2DM complications with the estimated 95% confidence intervals.

**Conclusions**

- This study generates utility inputs suitable for use in cost-effectiveness modelling elicited with a robust methodology. To our knowledge, it is the first review to specifically address the appropriateness of the studies from the perspective of the NICE reference case.
- This study presents several limitations. Statistical methods used as well the reporting of variability and statistically significant measures were inconsistent across studies. The populations compared were also heterogeneous.
- An area that would benefit from further research is the calculation of utility value for patients experiencing several complications, an important consideration for T2DM patients who typically develop several complications over time.
- The major limitation in terms of interpreting the values is that they have been sourced from different studies, using different methodologies and populations.
- Future research could focus on eliciting a coherent set of values for T2DM-related complications in line with the NICE reference case and to define the variance around the utility value point estimates.