PHARMACOECONOMIC EVALUATION CRITERIA FOR HIGHLY SPECIALISED TECHNOLOGIES, AND SUBSEQUENT RECOMMENDATIONS; A COMPARISON OF NICE UK AND THE NCPE IRELAND

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BACKGROUND

- In recent years, there has been an increase in the development and approval of treatments for very rare diseases, offering significant benefits for affected patients.
- Due to the rarity of the conditions, treatments are associated with high acquisition costs and often limited data resulting in challenging economic evaluations.
- Most rare disease treatments are found not to be cost effective when measured by standard thresholds (1), highlighting the need for specific economic evaluation guidelines for rare disease therapies.
- Several countries have adopted such guidelines including the UK's National Institute for Health and Care Excellence (NICE), with their Highly Specialised Technologies (HST) program which outlines several criteria by which to evaluate HST for very rare diseases. In contrast, the National Centre for Pharmacoeconomics (NCPE) follows a broader guideline for evaluation of all types of Health Technology Assessments (HTA).
- Despite having received a negative recommendation for reimbursement from the NCPE, HST in Ireland may subsequently receive reimbursement following negotiations with the Health Service Executive (HSE).
- The need for specific economic evaluation guidelines for rare diseases is an ongoing discussion in Ireland with various stakeholders calling for an amendment to the Health Act 2013 (2).

OBJECTIVES

- The objective of this analysis is to delineate trends in evaluations by NICE and the NCPE for treatments for very rare diseases since the introduction of the 2017 HST guidance by NICE, and the subsequent reimbursement outcomes in both jurisdictions.

METHODS

- A review of the methods for the evaluation of HST from the 2017 NICE Interim Process and Methods of the Highly Specialised Technologies was conducted. Areas of differentiation in appraisal criteria of NICE HST were then compared with that of the NCPE for all therapies, in the absence of HST specific criteria (3, 4).
- Three main points of interest in the appraisal criteria of HST were identified for the purpose of this research: the application of additional QALY weighting between 1 and 3 used when the QALY gain is between 10 and 30 QALYs; discounting levels for future costs and QALYs (1.5%-3.5%), and the cost-effectiveness (CE) threshold (£100,000/QALY) (3).
- All HST submissions evaluated by both NICE and the NCPE from May 2017 to October 2021 were included for the purpose of this research.
- Reimbursement recommendations from each respective HTA body were analysed, and a search of the reimbursement status following HTA recommendations was completed for both jurisdictions.

RESULTS

- From the period of May 2017 to October 2021, eleven HST were evaluated by NICE, six of which were evaluated by the NCPE, where below is a summary of the findings (5).

Results from NICE UK HST appraisals

QALY weighting

- Of the eleven NICE appraisals, five were granted additional QALY weighting:
- One applied a QALY weight of <1.86 based on QALY gains of >18*
- One applied a QALY weight of 3.0 based on QALY gains of >30
- One applied a QALY weight of 1.2 based on QALY gains of 12.1
- One applied a QALY weight based on QALY gains of 5.2 to 15.99*
- One applied a QALY weight of 1.4 based on QALY gains of 14

Reduced Discount

- One was assessed at a reduced discount rate of 1.5%, while the committee considered the 1.5% and 3.5% discount rates for two other appraisals in their decision-making process

Cost-Effectiveness Threshold

- All eleven were evaluated against a CE threshold of £100,000/QALY

Recommended for Reimbursement

- All eleven were recommended for reimbursement

Reimbursed and available with NHS

- All eleven are reimbursed and available with the NHS

Results from NCPE Ireland appraisals

QALY weighting

- No QALY weighting were applied in the six assessments

Reduced Discount

- Reduced discounting was not applied in any of the six assessments
- A discount rate of 4%-5% was utilised**

Cost-Effectiveness Threshold

- All six were evaluated against a CE threshold of €20,000-€45,000/QALY

Recommended for Reimbursement

- None of the six were recommended for reimbursement by the NCPE unless CE could be improved

Reimbursed and available with HSE

- Five were later reimbursed following negotiations with the HSE
- One of which has gone through the joint assessment and pricing negotiations as part of the Beneluxa agreement
- One is still going through the post-HTA process

*QALY weight is not explicitly stated in the appraisal document

**Discount rate applied as per relevant HIQA Guideline for Economic Evaluation at time of appraisal

Case Study- voretigene neparvovec (VN)

- Table 1 outlines the assessment criteria and outcome for gene therapy, VN for the treatment of an Inherited Retinal Disease, when evaluated by the NCPE and NICE (6, 7).
- Similar efficacy, durability and costing base-case assumptions were employed by both assessors.
- The resulting assessor ICERs are relatively similar (when accounting for exchange rates), while the recommendation outcomes differ, largely due to the nature of the assessment criteria applied in both cases.
- VN was deemed an appropriate use of NHS resources (see Table 1 'outcome'). Consequently, it was made available to eligible patients through the NHS from January 2020 (3 months post-assessment completion), while eligible patients in Ireland continue to wait for access following the completion of the assessment in September 2020 (7).
- It is important to note that the recommendation from the NCPE does not prevent VN from entering the reimbursed market, but leads to pricing negotiations with the HSE, a review by the Rare Disease Technical Review Committee (RDTRC), and a further wait for funding once an agreement has been reached on price (8).
- VN has been with the RDTRC since February 2021, and while timelines are variable for this process, it has not yet returned to the HSE for discussion as of October 2021 (8).

Table 1 VN assessment criteria applied by NICE & NCPE

Jurisdiction	HTA completed	Company ICER	Assessor ICER	CE Threshold	Additional QALY Weighting	Discount rate applied	Outcome	Access
Ireland (NCPE)	Sep-2020	€148,473	€189,037	€45,000	None	4%	Not considered for reimbursement unless cost-effectiveness could be improved	None as of October 2021
UK (NICE)	Oct-2019	£86,635	£155,750	£100,000	Additional QALY weight of 1.2	3.5%	Considered an appropriate use of NHS resources for HST	Access as of Jan 2020

*All ICERs recorded in Table 1 are based on list prices submitted (6, 7)

CONCLUSIONS

- As HST rapidly advance, so too must methods of evaluation. Based on the evidence reviewed, the implementation of the NICE HST criteria may allow for a more appropriate assessment of these technologies.
- Considering that five of the six HST that were not recommended for reimbursement (unless CE could be improved) by the NCPE were later reimbursed following discussions with the HSE, there may be a disconnect between the value criteria laid out in the HTA guidelines, and the willingness-to-pay of the health service.
- However, this research focuses on evaluation criteria alone and it must be noted that net-pricing negotiations are an important factor in subsequent decisions to reimburse.
- Nevertheless, more appropriate economic evaluation criteria for HST could result in more meaningful assessments, with potential for positive recommendations, allowing for negotiations with the HSE to commence from an improved position.
- Further research may be required to draw more definitive conclusions on the matter.

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