Poster

HTA25

What is a Highly Specialised Technology (HST)? The Revised NICE HST Criteria in Practice

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OBJECTIVE

To explore the application of the revised topic selection criteria for the HST Programme by the National Institute for Health and Care Excellence (NICE).

BACKGROUND

- The HST Programme evaluates technologies for very rare and severe diseases that require specific considerations and flexibilities permitted by the programme.[1]
- Since 2013, NICE has applied criteria to determine the eligibility of technologies to be evaluated under the HST Programme.[2] NICE updated the HST criteria in February 2022, as part of a broader consultation on methods and processes (Figure 1).[1]
- The eligibility criteria are designed to enable the Topic Selection Oversight Panel to "make subjective judgments as informed, justifiable, consistent and predictable as possible".[1]

METHODS

- The NICE website was searched on 5th–8th June 2023 for ongoing/published technology appraisals (TAs) and HSTs with invitations to participate from 1st February 2022.
- Published HST checklists were identified and reviewed to determine how NICE evaluated candidate technologies against the HST criteria.
- To support analyses for criterion 4 (Figure 1), the availability of treatment options was assessed. Treatments licensed in England were identified by searching for the relevant indication on the Medicines and Healthcare products Regulatory Agency website, on 25th September 2023.

RESULTS

- Eleven published HST checklists were identified; of these, only one appraisal met all four criteria and was routed to HST. All other appraisals were routed to the TA pathway (Figure 2).
- NICE's decision to route to the TA pathway was challenged by the company in 1/10 appraisals (TA10832); this challenge was unsuccessful.
- The critique provided where technologies did not meet a criterion is summarised in Figure 3. NICE commonly considered that data/evidence were insufficient or unclear.

Criterion 1: The disease is very rare

- For criterion 1, which was met by 6/11 appraisals, decision-making was based on the prevalence of the broad disease in 10/11 appraisals (with the exception being TA10204, which was based on the prevalence of the licensed indication).

Criterion 2: The target population is small

- In all appraisals, NICE considered the licensed population, in line with the HST criterion. Meeting criterion 1 did not guarantee that criterion 2 would be met.

Criterion 3: The condition significantly shortens survival, or severely impairs quality of life (QoL)

- NICE often commented that the cited data relating to the impact of the condition on survival/QoL were uncertain and/or variable. In the five appraisals that were unclear or did not meet criterion 3 (Figure 2), no clinical/patient expert opinion was used to validate impacts on survival/QoL. On the other hand, clinical/patient expert opinion was sought for the majority of appraisals that met criterion 3 (4/6 appraisals [TA10948, TA10832, TA10790, TA10834]).

Criterion 4

No satisfactory treatment options

- For all 3/11 appraisals that met criterion 4 (Figure 2), individuals with the conditions were considered to have no satisfactory treatments available. Only symptomatic treatments were available in the three indications.
- Among the remaining 8/11 appraisals, NICE commonly acknowledged that unmet needs remain with current treatment options, but considered these treatments to be satisfactory if they offered some clinical benefits (for example, reducing progression or disease severity, or improving QoL).
  - In 7/8 of these appraisals, licensed treatments already existed for the indicated condition. In the remaining appraisal (TA10817), there were no licensed pharmacological treatments; however, NICE considered surgical procedures as satisfactory treatment options.

Significant benefit over existing treatments

- Despite the positive trial results reported by manufacturers in 6/11 HST checklists, NICE considered that none of the interventions offered significant benefit over existing treatments. NICE did not comment on the benefit of the intervention over existing treatments in the remaining 5/11 appraisals.
- NICE did not accept positive data based on surrogate outcomes, or comparisons against placebo, if treatment alternatives were available in England; NICE also questioned the clinical significance of some statistically significant results (Figure 3).
- Among the 3/11 appraisals that met criterion 4 on the basis of no satisfactory treatments being available, NICE did not comment on whether the candidate technology offered significant benefit over existing treatments.

Figure 1. Revised HST criteria from February 2022[1]

1. The disease is very rare, with a prevalence <1:50,000 people in England.
2. The target population is small, with <300 people in England eligible for the technology in its licensed indication.
3. The condition significantly shortens survival, or severely impairs QoL.
4. No satisfactory treatment options exist, or the technology is likely to offer significant benefit over existing treatments.

Figure 1. Appraisals with HST checklists published since February 2022, and the degree to which the HST criteria were met

Appraisal	Criterion 1	Criterion 2	Criterion 3	Criterion 4	Routed to HST or TA
TA10834 Obesity and hyperphagia in Bardet-Biedl syndrome	Met	Met	Met	Met	HST
TA10948 Seizures caused by CDKL5 deficiency disorder	Met	Met	Met	Not Met	TA
TA10608 Relapsed neuroblastoma	Met	Met	Met	Not Met	TA
TA10887 Late-onset Pompe disease	Met	Met	Unclear	Not Met	TA
TA11016 AQP4 antibody-positive neuromyelitis optica spectrum disorder	Met	Not Met	Met	Not Met	TA
TA10822 FGF23-related hypophosphataemia in tumour-induced osteomalacia	Met	Not Met	Unclear	Met	TA
TA10832 Cholestatic pruritus in Alagille Syndrome	Not Met	Not Met	Met	Met	TA*
TA10817 Tumours associated with von Hippel-Lindau disease	Not Met	Met	Not Met	Not Met	TA
TA10655 Homozygous familial hypercholesterolaemia	Not Met	Met	Not Met	Not Met	TA
TA10790 Fabry disease	Unclear	Not Met	Met	Not Met	TA
TA10204 Post-transplant lymphoproliferative disorder caused by the Epstein-Barr virus	Unclear	Unclear	Not Met	Not Met	TA

Met: There is clear and strong evidence that this criterion is met

Unclear: There is some evidence, or the evidence available is unclear

Not Met: There is no evidence or limited evidence that the criterion is met

*The company challenged NICE's routing decision to the TA pathway, but was unsuccessful.

Figure 3. NICE's critique in cases where HST criteria were not met

Criterion 1

- Insufficient data [TA10790, TA10204]
- Wide-ranging epidemiology estimates, contributing to uncertainty [TA10817]
- Published epidemiology data likely an underestimate, due to underdiagnosis or recent improvements in diagnosis [TA10655, TA10832]

Criterion 2

- Insufficient data [TA10204]
- Inappropriate methods/sources used to calculate eligible population size [TA10832, TA11016]

Criterion 3

- Insufficient data [TA10822]
- Impact on survival/QoL significant only for a portion of the population [TA10204, TA10887]
- Uncertain size of impact on survival/QoL [TA10817, TA10655]

Criterion 4

- Despite unmet needs, existing treatments are deemed satisfactory [TA10948, TA10608, TA10887, TA11016, TA10655, TA10790, TA10204]
- Clinical evidence based on inappropriate comparator or surrogate endpoints [TA10948, TA10655]
- Unclear clinical significance, due to uncertain magnitude or duration of clinical benefit [TA10608, TA10887, TA10204]

CONCLUSIONS

- Where technologies did not meet HST criteria, the data presented by manufacturers were typically considered insufficient or unclear. Manufacturers may therefore need greater clarity from NICE on what may be considered as 'sufficient' evidence, particularly when seeking to demonstrate significant benefit over existing treatments.
- Further detail within the criteria wording may improve predictability in decision-making, allowing manufacturers to better assess the suitability of their treatments for HST, thereby offering efficiencies to all stakeholders.

REFERENCES: 1. National Institute for Health and Care Excellence. NICE health technology evaluation topic selection: the manual. 2022. Last accessed: 6 September 2023. **2.** National Institute for Health and Care Excellence. Interim Process and Methods of the Highly Specialised Technologies Programme Updated to reflect 2017 changes. 2017. Last accessed: 13 September 2023.

ABBREVIATIONS: AQP4: aquaporin 4; CDKL5: cyclin-dependent kinase-like 5; FGF23: fibroblast growth factor-23; HST: Highly Specialised Technology; NICE: National Institute for Health and Care Excellence; QoL: quality of life; TA: technology appraisal.

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