ISPOR Europe 2026

HTA18

Same Evidence, Different Prices? A Comparative Analysis of HTA Outcomes and Pricing Dynamics Across NICE and ICER

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Background

- NICE guidance informs NHS funding in England, whereas ICER assessments inform US pricing and policy discussions. [1,2]
- Both organisations must project long-term benefits beyond the available clinical follow-up.
- Differences in assumptions between NICE and ICER may reflect evidence maturity, modelling choices and how each assessment handles uncertainty.

Objective

- To explore the difficulty in proving cost-effectiveness for high-cost therapies, this review compared NICE and ICER assessments of three high-cost therapies to understand how key modelling assumptions and institutional roles may explain different economic, pricing and access conclusions.

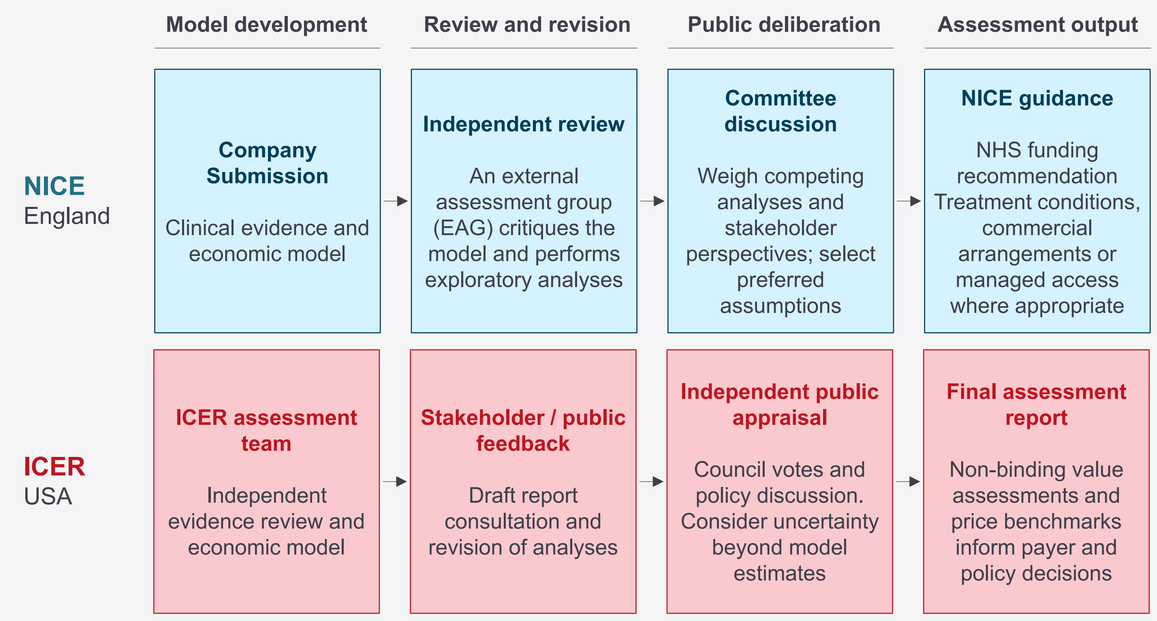
Methods

- A targeted qualitative review examined public assessments published between January 2015 and December 2025.
- The review covered tisagenlecleucel for B-cell ALL in people aged ≤25 years, lumacaftor/ivacaftor for cystic fibrosis, and nivolumab for previously treated NSCLC.
- NICE appraisals TA975 (2024), TA988 (2024) and TA655 (2020) were compared with ICER assessments from 2018, 2018 and 2016, respectively. [3–8]
- The comparison examined long-term assumptions, treatment costs and report development. Differences in evidence and populations limited causal interpretation.

Discussion

- Report development shapes how long-term assumptions inform decisions (Figure 1). NICE's model critique and committee deliberation assess whether projected benefit justifies NHS funding at the relevant commercial terms. ICER's analysis and public appraisal identify value and pricing implications, while subsequent pricing and coverage decisions remain with other stakeholders. [1,2]
- Across all three examples, NICE was willing to accept residual uncertainty where mechanisms were available to manage the associated risk. For nivolumab, uncertainty around post-treatment durability was addressed through a two-year treatment cap and commercial arrangement; for tisagenlecleucel, managed access enabled further evidence generation before routine commissioning; and for lumacaftor/ivacaftor, commercial arrangements helped mitigate uncertainty around the value of long-term benefits.
- Rather than resolving uncertainty primarily through more conservative modelling assumptions, NICE often relied on its broader access and reimbursement framework to manage the associated risk. In contrast, ICER appears more willing to operationalise uncertainty within its modelling assumptions and value assessment, consistent with its advisory rather than direct decision-making role.
- Across HTA systems, decisions therefore appear to depend not only on the level of uncertainty, but also on who bears the clinical and economic consequences if assumptions about long-term benefit prove incorrect.

Figure 1. NICE and ICER report-development processes



Results

Tisagenlecleucel

- In TA975, the company submitted a mixture-cure model, while the committee preferred EAG extrapolation using pooled data. ICER instead used an explicit 5-year landmark, treating patients alive and responding at 5 years as long-term survivors. [3,4]
- Despite 6.6 years of ELIANA follow-up, NICE remained uncertain about the cured proportion and retained standard discounting.
- ICER's outcomes-based payment assumption was more favourable to tisa-cel, with acquisition costs incurred only for 1-month responders; in contrast, NICE incurred acquisition and delivery costs at infusion, irrespective of subsequent response. [3,4]
- NICE addressed residual uncertainty through managed access, initially recommending tisa-cel via the Cancer Drugs Fund to enable further evidence collection before routine commissioning. [3,9]

Lumacaftor/ivacaftor

- ICER assumed no lung-function (ppFEV1) decline for two years, followed by annual decline at 50% of the best-supportive-care rate. NICE accepted a 42% relative reduction in long-term decline. [5,6]
- ICER assumed a greater relative reduction in lung-function decline than NICE, yet still found lumacaftor/ivacaftor poor value at the assessed US price.
- For chronic therapy, longer survival can add both health gains and drug costs. NICE's recommendation under commercial arrangements may therefore reflect a different price for those gains, rather than more optimistic assumptions about their durability. [5,6]

Nivolumab

- ICER's model assumed treatment until progression, whereas NICE TA655 accepted a two-year cap and considered benefits could persist for at least three additional years. [7,8] For patients who would otherwise continue treatment after two years, the cap could improve cost-effectiveness if benefits persist after drug costs stop.
- However, the long-term survival data considered by NICE came from a study without a predefined stopping rule, meaning the evidence did not directly demonstrate sustained benefit following planned treatment cessation. [7]
- NICE's acceptance of more favourable treatment durability assumptions than ICER may reflect a greater willingness to manage residual uncertainty through commercial arrangements.

Table 1. Long-term benefit and treatment costs

Case	Long-term assumption	Economic implication
Tisagenlecleucel	Durable survivor fraction and later mortality	Future benefit follows upfront costs. Early-response payment leaves durability uncertain.
Lumacaftor/ ivacaftor	Sustained slowing of lung-function decline	Longer survival can add health gains and continuing drug costs.
Nivolumab	Benefit after treatment stops	A cap limits costs. Value depends on persistent benefit.

Table 2. How report development informs decisions

Analytical step	NICE	ICER
Develop and challenge	An EAG critiques the company model in single technology appraisals. Multiple technology appraisals may use an EAG model.	ICER develops the analysis and incorporates stakeholder and public feedback.
Judge uncertainty	The committee weighs competing analyses and stakeholder perspectives.	The reference case and scenarios inform independent public appraisal.
Act on findings	NICE may recommend funding with treatment conditions, commercial terms or managed access.	Public value and price benchmarks inform payer and policy decisions.

Future research

- Future research should use common evidence and populations to test the separate effects of extrapolation, treatment duration and price.
- Tracking changes in assumptions during review and as follow-up matures would help clarify how process and timing influence conclusions.

References

1. NICE. Health technology evaluations: the manual (PMG36).
2. ICER. Methods and process.
3. NICE. Tisagenlecleucel (TA975). 2024.
4. ICER. CAR T-cell therapy for B-cell cancers. 2018.
5. NICE. CFTR modulators (TA988). 2024.
6. ICER. Modulator treatments for cystic fibrosis. 2018.
7. NICE. Nivolumab for advanced squamous NSCLC (TA655). 2020.
8. ICER. Non-small cell lung cancer. 2016.
9. NHS England. Cancer Drugs Fund.

Abbreviations

ALL, acute lymphoblastic leukaemia; EAG, external assessment group; ICER, Institute for Clinical and Economic Review; NHS, national health service; NICE, National Institute for Health and Care Excellence; NSCLC, non-small cell lung cancer; ppFEV1, percent predicted forced expiratory volume in 1 second

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