Evaluation of Rejected Reimbursement Decisions in NICE and CADTH Submissions for Non-Small Cell Lung Cancer

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Background

- Lung cancer is the most prevalent cancer in Canada and the third most common in the United Kingdom (UK),[1,2] with >80% of cases being non-small cell lung cancer (NSCLC).[3,4]
- Health technology assessment (HTA) agencies such as the National Institute for Health and Care Excellence (NICE) in the UK and Canada's Drug Agency (CDA; previously Canadian Agency for Drugs and Technologies in Health [CADTH]) play critical roles in evaluating new interventions for NSCLC.
- HTA submissions are subject to rigorous review and must demonstrate sufficient evidence of cost-effectiveness to be approved. Each agency applies distinct criteria and thresholds to assess new technologies.
- Despite the considerable burden of NSCLC, many submissions fail to meet HTA criteria, resulting in rejection by NICE and/or CDA.

Objectives

This review examines the reasons for HTA rejection of NSCLC submissions by NICE in the UK, with comparison of HTA decisions between NICE and CDA.

Methods

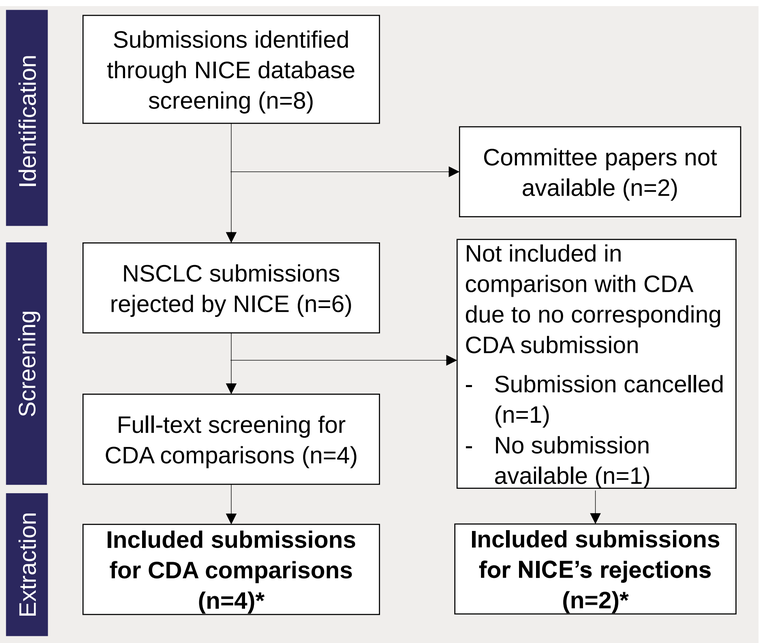
Targeted review

- A targeted review was conducted to identify NSCLC submissions rejected by NICE and the corresponding accepted submissions by CDA between January 2014 and May 2024 (**Figure 1**).
- Submissions that lacked fully documented committee papers or had been replaced by later resubmissions were excluded from this review.

Data extraction

- Information from included submissions, e.g., summary of the economic evaluations, committee's critiques, and reasons for rejection, were extracted into a pre-defined extraction sheet.
- Reasons for rejection by NICE were categorised and compared with critiques in the CDA submissions.

Figure 1. PRISMA diagram



* The 2 excluded submissions without corresponding CAD submissions were discussed for NICE's rejection reasons only.
Abbreviations: CDA, Canada's Drug Agency; NICE, National Institute for Health and Care Excellence; NSCLC, non-small cell lung cancer; PRISMA, Preferred Reporting Items for Systematic Reviews and Meta-Analyses.

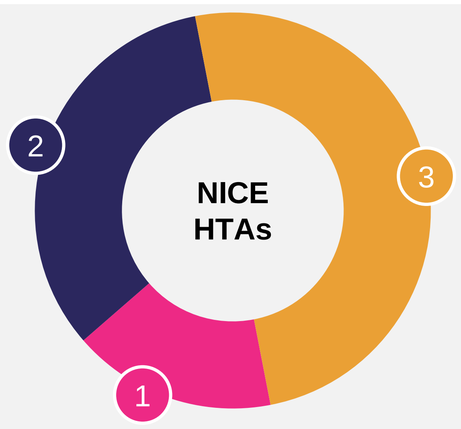
Results

Rejections from NICE

- Six appraisals were identified through the NICE database (TA812,[5] TA403,[6] TA411,[7] TA909,[8] TA724,[9] and TA850[10]). Two were excluded due to unavailable committee paper (**Figure 1**).
- Reasons for rejection by NICE were: [1] clinical evidence (trial design, population, and immature data), [2] comparators, [3] modelling approach (ITC, survival data and extrapolation, treatment effect, and model structure) and inputs, and [4] model outcomes (**Figure 2**)**.**
  - All rejections were due to issues with clinical evidence (4 with trial design issues; 3 of which were single arm).
  - Three submissions were criticised for comparators.
  - All rejections were due to modelling approach and inputs (3 with substantial uncertainty, and 2 with systematic literature review methodological problems).
  - Five rejections were due to model outcomes, primarily due to an incremental cost-effectiveness ratio (ICER) above the acceptable threshold.

Results (continued)

Figure 2. Summary of rejections from NICE



Most NICE submission rejections in NSCLC were due to multiple reasons

16.7%	33.3%	50.0%
Two reasons	Three reasons	More than three reasons

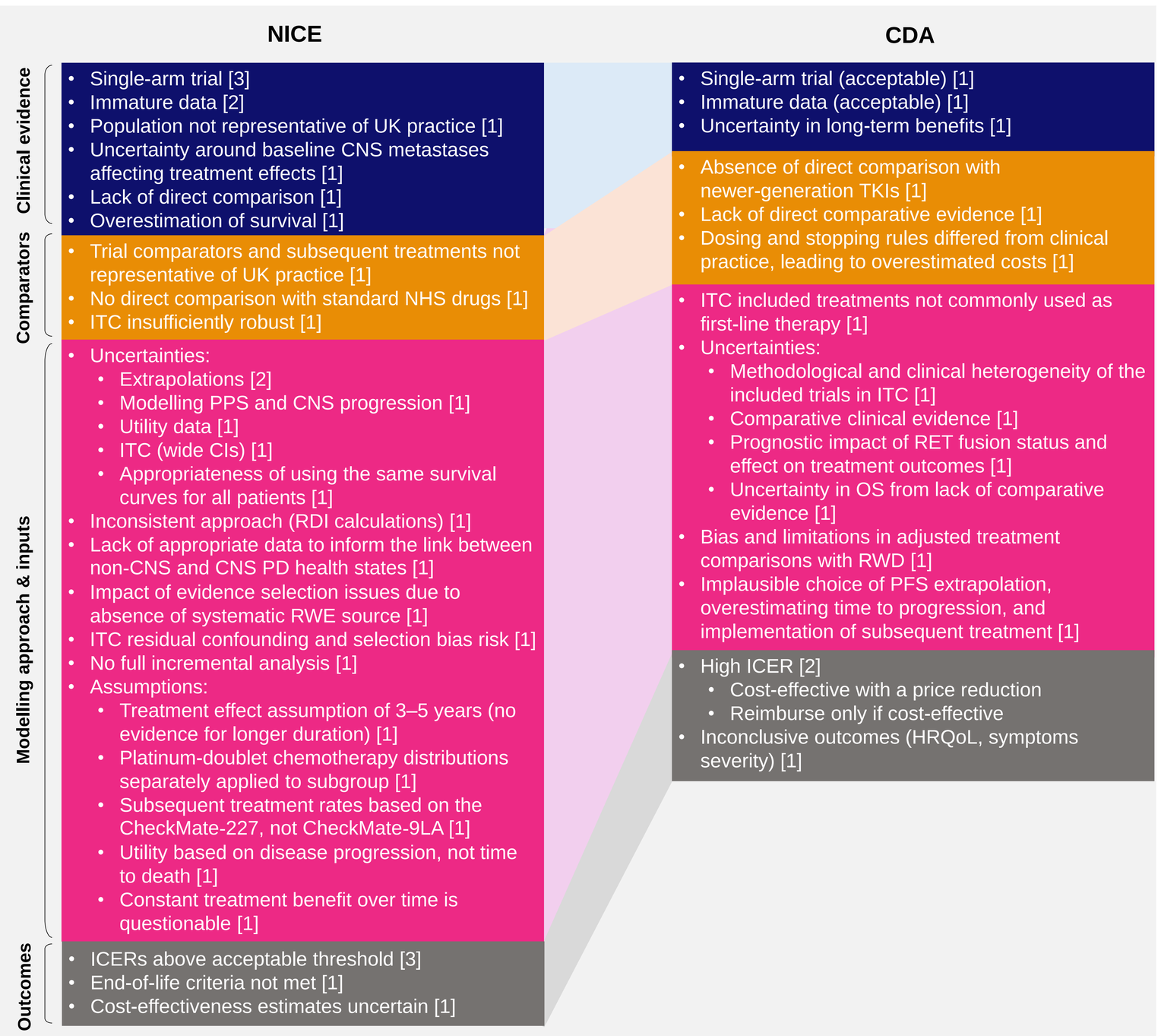
	n/N	%
Reason 1. Clinical evidence	6/6	100%
Reason 2. Comparators	3/6	50%
Reason 3. Modelling approach & inputs	6/6	100%
Reason 4. Model outcomes	5/6	83%

Abbreviations: HTA, health technology assessment; NICE, National Institute for Health and Care Excellence; NSCLC, non-small cell lung cancer.

Comparing decisions from NICE and CDA

- Among the six included NICE submissions, four had corresponding CDA submissions (PC0218-000,[11] PC0283-000,[12] PC0289-000,[13] and PC0249-000[14]); one CDA submission was cancelled (PC0078-000,[15] linked to TA403). TA411 had no corresponding CDA submissions.
- All four corresponding CDA submissions were reimbursed with conditions (all with a condition of price reduction).
- NICE tended to be more critical than CDA, especially regarding trial design, modelling approaches, and input assumptions, while CDA often focused more on budget impact.

Figure 3. NICE vs CDA: critiques and comments on the submissions



Numbers in square brackets represent number of submissions that were criticized or received comments for the stated reason. Abbreviations: CDA, Canada's Drug Agency; CI, confidence interval; CNS, central nervous system; HRQoL, health-related quality of life; ICER, incremental cost-effectiveness ratio; ITC, indirect treatment comparison; NHS, National Health Service (UK); NICE, National Institute for Health and Care Excellence; OS, overall survival; PD, progressed disease; PFS, progression-free survival; PPS, post-progression survival; RDI, relative dose intensity; RET, rearrangement during transfection; RWD, real-world data; RWE, real-world evidence; TKIs, tyrosine kinase inhibitor; UK, United Kingdom.

Conclusions

- While CDA acknowledged similar issues as NICE regarding clinical evidence and modelling approaches, CDA's consideration of unmet needs and patient values underscored a more flexible approach compared with NICE's stringent requirements.
- A reverse comparison would be helpful to determine if the agencies are consistent in their criteria for rejecting or approving submissions.

References

1. Cancer Research UK. n.d. Lung Cancer Statistics. **2.** Brenner, et al., 2024. CMAJ, 196(18). **3.** National Health Service (NHS). 2022. https://www.nhs.uk/conditions/lung-cancer/. Lung cancer. **4.** Canadian Cancer Statistics. A 2020 special report on lung cancer. https://cdn.cancer.ca/-/media/files/cancer-information/resources/publications/2020-canadian-cancer-statistics-special-report/2020-canadian-cancer-statistics-special-report-en.pdf. **5**. NICE. 2022. Technology appraisal guidance [TA812]. **6.** NICE. 2016. Technology appraisal guidance [TA403]. **7**. NICE. 2016. Technology appraisal guidance [TA411]. **8.** NICE. 2023. Technology appraisal guidance [TA909]. **9.** NICE. 2021. Technology appraisal guidance [TA724]. **10.** NICE. 2022. Technology appraisal guidance [TA850]. **11.** CADTH. 2021. Reimbursement review PC0218-000. **12.** CADTH. 2022. Reimbursement review PC0283-000. **13.** CADTH. 2023. Reimbursement review PC0289-000. **14**. CADTH. 2022. Reimbursement review PC0249-000. **15**. CADTH. 2016. Reimbursement review PC0078-000.

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Disclosures

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