Growth in Advanced-Stage Cancer Treatment Costs in England Reflecting Rising Cancer Prescribing Expenditures

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INTRODUCTION

- Cancer care costs vary substantially by cancer type and stage; historical estimates for lung cancer in England ranged from ~£20,000–£30,000 per patient annually across stages I–IV.[1]
- Systemic anti-cancer therapies (SACT) are an important cost driver, particularly in advanced disease, with historical treatment costs varying considerably across cancer types.[2]
- These cost estimates largely reflect older treatment patterns (e.g., 2016–2018) and may not capture the rapid uptake of newer immuno-oncology and targeted therapies.
- Cancer drug spending in England has increased substantially since 2019, highlighting the need to "nowcast" contemporary cancer- and stage-specific costs using prescribing trends and new medicine approvals.

OBJECTIVE

- This study projected growth in systemic anti-cancer therapy costs by type and stage based on an estimated apportionment of rising cancer prescribing expenditures from 2019-2026 in England.

RESULTS

KEY RESULT: PROJECTED TREATMENT COST GROWTH WAS GREATEST IN ADVANCED-STAGE DISEASE

- Annual malignant disease prescribing costs increased from £1.58B in 2019 to £2.82B in 2024 and are projected to have reached £3.27B-£3.57B by 2026 under linear and log-linear growth assumptions (Figure 1).
- Among 101 identified high-usage TA approvals (2015-2025), most were concentrated in advanced-stage disease with 11% specific to stage IV lung cancer and none identified for stage I disease.
- The weighted stage distribution of TA approvals is shown in Figure 2, with minimal variation across alternative TA eligibility weighting scenarios.
- Projected increases in annual prescribing costs per patient by cancer type and stage from 2019–2026 are presented in Figures 3 across different scenarios.
- Cancers with the highest projected cost increases were broadly consistent across weighting scenarios, with Stage IV lung and melanoma, and haematologic cancers among the highest.
- Projected cost increases were more sensitive to TA weighting for cancers with predominantly broad eligibility, such as melanoma, or highly restricted eligibility, such as lymphoma.

Figure 1. Trends and Projected Growth in Malignant Disease Prescribing Costs in England, 2019–2026

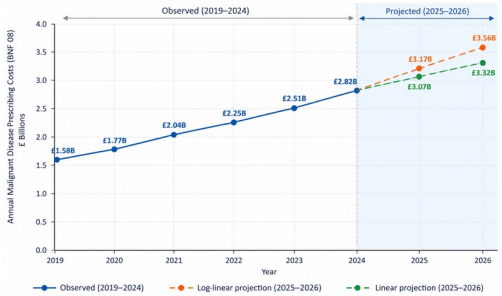
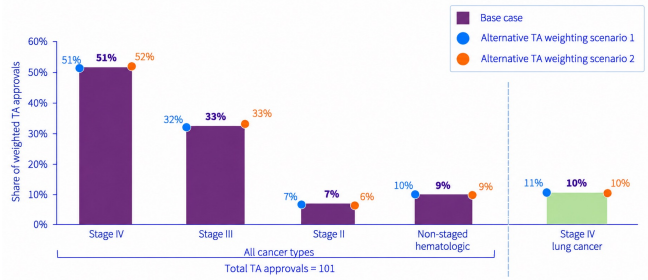
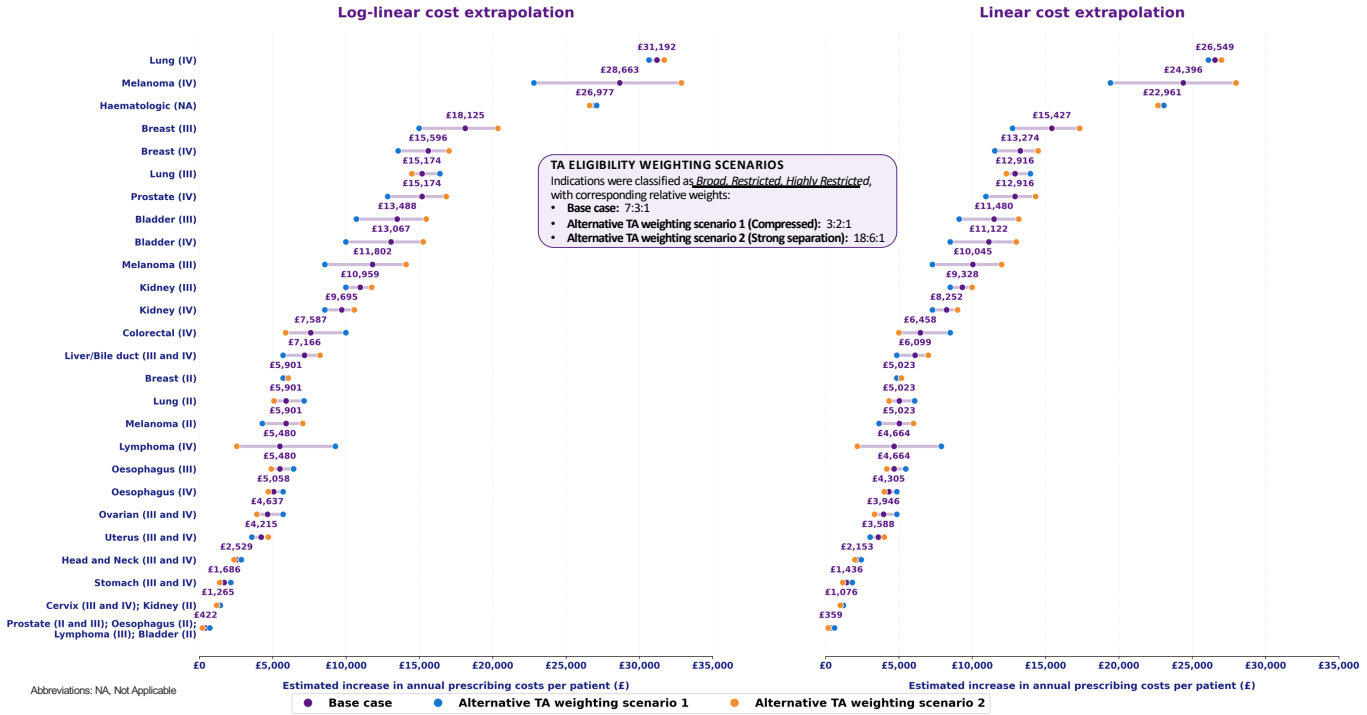


Figure 2. Weighted Distribution of High-Usage NICE TA Approvals by Cancer Stage: Base Case and Alternative Eligibility Weighting Scenarios (2015–2025)



Abbreviations: TA, Technology Assessment

Figure 3. Projected 2019–2026 Increase in Annual Prescribing Costs per Patient by Cancer Type/Stage Under Different TA Eligibility Weighting and Cost Extrapolation Scenarios



Abbreviations: NA, Not Applicable

CONCLUSIONS

- Across cancers, treatment cost growth was projected to be higher in advanced-stage disease.
- Newer therapies and expanding indications contributed to greater cost growth, particularly in areas of active treatment innovation.
- For Stage IV lung cancer, projected prescription-cost growth alone (~£25,000–£30,000 annually) could approximately double historical per-patient care costs.
- These findings highlight the potential value of earlier detection to mitigate long-term costs.

LIMITATIONS

- Indication-level uptake and pricing data were not available; however, relative eligibility weighting provided a practical approach to estimating stage-specific cost trends, although these factors may influence the magnitude of projected increases.
- Treatment lifecycle dynamics and timing of adoption were not taken into account.

METHODS

- Prescribing Costs in Hospitals and the Community (PCHC) data were used to quantify malignant disease (BNF Chapter 08) prescribing costs from 2019-2024.[3]
- Nominal costs were projected to 2026 using linear and log-linear extrapolation of observed 2019-2024 trends, implicitly incorporating inflation.
- High-usage therapies were identified using recent NICE Innovation Scorecard uptake data.[4]
- Spending growth was attributed to high-usage oncology therapies, including immuno-oncology and targeted agents (e.g., BTK, PARP, and BRAF inhibitors) and therapies with plateaued uptake were excluded.
- NICE Technology Appraisals (TAs) for these therapies were reviewed to map each treatment indication to the relevant cancer type and all applicable stages.[5]
- TA approvals were weighted by relative eligibility within cancer type/stage, accounting for histology, biomarkers, treatment setting, and line of therapy.
- Eligibility was categorized as broad, restricted, or highly restricted, with base-case relative weights of 7:3:1.
- Given uncertainty in the assigned weights, two alternative TA weighting scenarios were explored:
  - 3:2:1 (compressed)
  - 18:6:1 (strong separation)
- The projected increase in prescribing costs was then apportioned based on relative ratio of weighted TA approvals and cancer incidence across cancer types and stages.

References: **1.** Pearson C, et al. Lancet Oncol. 2026;27:361–371. **2.** Wills L, et al. Eur J Health Econ. 2024;25:763–774. **3.** NHS Business Services Authority (NHSBSA). Prescribing Costs in Hospitals and the Community – England 2024/25. 2025. **4.** NHS Business Services Authority (NHSBSA). NICE Technology Appraisals in the NHS in England (Innovation Scorecard) – to December 2025. 2026. **5.** NICE. Technology appraisal guidance: cancer appraisal recommendations. 2026.

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