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Report for the Pharmaceutical Oncology Initiative (POI)

Assessment and appraisal of oncology medicines: does NICE's approach include all relevant elements? What can be learnt from international HTA experiences?

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Executive Summary

- Recently issued NICE provisional deliberations on a group of cancer treatments led to protests by patients and the general public and have reinforced perceptions of lower access to cancer medicines in the UK as compared to other countries.

- Evidence provided in the Cancer Reform Strategy confirms that this is the case. It states that usage of new cancer medicines in the UK is about 60% of that in other major European countries. The reasons for this disparity are complex and not fully understood. However, the recent Richards Review speculated that health technology assessment (HTA) methodology, and the fact that NICE has declined to recommend some drugs for use in the NHS which are available elsewhere, may be a contributory factor.

- Our report sets out to identify whether the current approach by NICE is an influencing factor on access to cancer medicines in this setting and whether there is rationale and scope for bringing about any changes in the HTA approach. The purpose of our study is to:

    - review the current status of NICE's methods for cancer medicines and compare them with other HTA bodies in the UK and internationally;
    - identify potential issues concerning the assessment of health gains of oncology medicines using the QALY and factors other than cost per QALY that are deemed important in the context of health care resource allocation (based on a literature review);
    - discuss the theoretical and practical issues related to the integration of Social Value Judgments (SVJs) in the decision making processes;
    - provide an overview of the challenges in assessing and appraising cancer therapy (based on practical experience);
    - develop appropriate options for bringing about any changes within current HTA approaches.

- As part of the study, the research team conducted detailed reviews of the published literature and consulted with key experts directly involved in the work of UK HTA bodies.

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- The current NICE methods indicate the QALY as the preferred measure of health effects. Other HTA bodies operating in other jurisdictions also have a preference for the QALY but a larger proportion of health care bodies using HTA are less prescriptive than NICE over which type of economic analysis to employ. However, other bodies using HTA have not necessarily approved more cancer drugs than has NICE. Our comparison of coverage decisions of a sample of 10 cancer drugs in five countries using HTA reveals that NICE had the highest approval rate, albeit with only four out of the 10 cancer treatments approved for use in the NHS without restrictions. It is important to note that the analysis includes countries relying on cost effectiveness evidence to make coverage decisions and does not therefore include four of the five major European countries.

- Our literature review points out that the QALY has a number of limitations, mainly due to the way it is structured. In particular, one of the deficiencies of the EQ-5D, which is the generic preference-weighted health-related quality of life measure preferred by NICE, is that it may not be sensitive enough to pick up changes in the health status of cancer patients (e.g. it has no domain to capture changes in vitality or energy).

  Recommendation: the EQ-5D (EuroQol) group is considering whether the instrument should be modified in this regard. In the meantime, it might be advisable to explore the use of the SF-6D in the evaluation of cancer therapies, in order to assess whether it is more sensitive to change and to try to make better use of cancer specific measures of health related quality of life (HRQoL).

- On the valuations of health states generated by the EQ-5D questionnaire, which are based on general public preferences, there are issues related to the potential divergence between the values of patients, who directly experience the health state, and of the general public, who have been asked to make choices over hypothetical heath states which they might find difficult to fully understand. Cancer patients' preferences may be driven by specific characteristics of the disease. If someone has been told that they only have six months to live, gaining an extra two months might be worth a lot more to them than would a two-month gain if they had five years to live (over and above any discounting arising from the timing of future health effects.) As currently calculated a QALY valuation of health effects would not reflect this.

  Recommendation: more research is required to test both whether cancer patients (and members of the general public if asked to think about being in this position) attach more value to survival gains when their life expectancy is short and to find the point up to which they are willing to trade quality of life for survival benefits. This would provide a weighting system that better reflect individual utility of health states. It is clear from the literature that there are other aspects of patient experience (such as the extent to which they do or do not adapt to conditions or value other aspects of end of life care) which may not be routinely reflected in valuations of these health states undertaken by the general public. We do not think it appropriate at this stage to depart from using the valuations of the general public. However, more research is required in this area.

- From a resource allocation perspective, under the current approach all QALYs are deemed to be of equal social value. However, our literature review indicates that there is societal willingness to give priority to the worse-off (people suffering from more severe illness), even if this involves a sacrifice in aggregate health gains. We discuss the ways through which social value judgements such as severity can be integrated in health resource decision making (i.e. a formal QALY weighting system or more flexible approaches such as a deliberative process). Studies commissioned by NICE through NCCHRM have made a significant contribution to the ongoing debate but have not identified an exact estimation of the health gain weights which might be used by NICE in the context of its QALY framework.

  Recommendation: the results of the empirical studies supporting the principle of a societal willingness to give priority to severity should be considered in the appraisal as part of a deliberative process. However, efforts need to be made to ensure the Committee is aware of the assumptions it is making and to achieve a degree of transparency in reporting. One option might be the introduction of multi-criteria decision analysis (MCDA) to assist NICE Appraisal Committees in their deliberative process, which provides a framework for explicitly trading off various priority-setting concerns.

- Our interview programme points out that there is uncertainty surrounding projections from progression-free survival (PFS) to overall survival (OS). The principal reason for this uncertainty is the difference between the approaches of licensing bodies and of HTA bodies, which reflects their respective roles.

  Recommendation: NICE and the Medicines and Healthcare products Regulatory Agency (MHRA) could hold discussions with companies to increase joint understanding as to those instances in which PFS is a good predictor of OS and those in which it is not. Advice from NICE on these matters could be reviewed with companies through the consultancy process that NICE has recently established. However, as reliance upon these data is common amongst reimbursement agencies across the developed world, a co-ordinated and international approach may be the best way to tackle these issues.

The recently published NICE advice on “Appraising life-extending, end of life treatments” makes changes that are in line with the main findings of our study. It indicates that in certain circumstances end of life treatments with a cost per QALY exceeding the standard threshold can be recommended for use. But the lack of detailed rationale for the changes and for the way clinical and cost effectiveness evidence will be appraised by NICE (e.g. mechanisms to ensure transparency) may make it difficult to apply the changes in practice. We note that NICE includes a suggestion for further methodological research to provide more robust basis for the application of the advice. Our report indicates areas where such research could usefully be undertaken.

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