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Should cost effectiveness analyses for NICE always consider future unrelated medical costs?

More health would result from including all future care costs in decisions to approve interventions, write **Pieter van Baal and colleagues**. **Sarah Davis** worries that always including unrelated costs might lead to unfair distribution of care, including among people with incurable illness

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Yes—Pieter van Baal, Alec Morton, Werner Brouwer, David Meltzer

When developing guidance on the use of new technologies in the NHS, the National Institute for Health and Care Excellence (NICE) recommends considering their cost effectiveness. NICE deems an intervention cost effective if its “health benefits are greater than the opportunity costs of programmes displaced to fund the new technology, in the context of a fixed NHS budget. In other words, the general consequences for the wider group of patients in the NHS are considered alongside the effects for those patients who may directly benefit from the technology.”¹

Currently, NICE explicitly states that future medical costs incurred that are not directly related to the intervention in question should be excluded from economic analyses. But NICE should change its definition to include consideration of these costs.²

What are unrelated medical costs?

Medical interventions that prolong a patient’s life often create additional consumption of medical goods and services in years that would not have been lived without the intervention. Some of this consumption is directly related to the intervention. For example, after a successful heart transplantation, the costs of visiting the cardiologist in the years gained are considered to be related. These costs are typically included in economic analyses. But other medical costs in added years are not directly related to the intervention. The costs of dementia care in added years after the same heart transplantation would be an example of such future unrelated costs.

Dutch guidelines have been revised and now advise inclusion.³ New US guidance also recommends inclusion of future unrelated medical costs in economic analyses.⁴ These changes are in line with economic theory^{5,6} that shows that including costs of unrelated diseases in cost effectiveness analyses would result in more efficient allocation of resources that would increase population health. Estimating such costs is not difficult given current knowledge on how ageing affects healthcare use.^{7,8}

Different choices, more health

It may seem counterintuitive that including more costs in economic evaluations, making interventions seem more expensive, ultimately results in more health. However, given a fixed budget, including all future costs, leads to different choices that, on balance, result in more health.⁵

If unrelated future costs are neglected, life prolonging technologies seem more cost effective than they truly are. Ultimately, these future unrelated costs will have to be paid and this will reduce the budget left for other care. Given that NHS budgets are fixed, the opportunity costs of implementing new technologies consist of quality adjusted life years (QALYs) forgone because of disinvestment in technologies for unidentified patients in the future. Ignoring future unrelated medical costs results in an underestimate of losses in QALYs for these patients. Intuitively, including the costs of unrelated medical care also makes sense because unrelated care also contributes to health gains, which are currently implicitly included in assessments of health benefits.^{5,6}

Ethical dilemmas

For technologies that substantially extend life, including future unrelated medical costs may substantially affect cost effectiveness, potentially triggering difficult ethical debates.^{9 10}

Denying any patient a treatment because of cost can be ethically troubling. However, opportunity cost is not only an economic concept but also an ethical one, because of health losses among other patients. The relevant policy question is whether we are willing to sacrifice health gains in these other patient groups (which may be higher) to yield health gains in a specific patient group. Pretending that future unrelated medical costs do not exist is equivalent to deeming the lives of some future patients worthless, which is neither fair nor ethically acceptable.

Ethical dilemmas should be dealt with explicitly in fully informed decision processes. NICE emphasises that decisions should be made through fair procedures that allow for ethical arguments to be considered.¹⁰ Analysts should provide decision makers with a full picture of the consequences for the healthcare budget, now and in the future; to do otherwise is inconsistent with NICE's definition of cost effectiveness. Only then can those with the responsibility for decision making come to an informed judgment considering the relevant (ethical) trade-offs.

No—Sarah Davis

The objective of welfare economics is to maximise population health from a fixed healthcare budget. To achieve this objective, economic evaluations of different healthcare interventions should consider all consequences related to healthcare, including future medical costs unrelated to the interventions.⁵

The problem comes when trying to implement this approach in the real world. The utilitarian objective of maximising population health does not take into account whether health gains within the population are distributed fairly.

In some situations, inclusion of unrelated costs would preclude specific groups of people from having equitable access to care. In these cases, decision makers should consider cost effectiveness analyses that exclude unrelated costs.

A patient receiving dialysis

The classic example cited to justify the exclusion of unrelated costs is that of a life extending treatment in a patient receiving dialysis where the treatment does not alter the need for lifelong dialysis.⁹ If dialysis is expensive, and the quality of life of patients receiving dialysis is low, then the value of the life years gained by the treatment may not outweigh the cost of dialysis during those additional life years. In this situation, the life extending treatment would not be cost effective even if it were provided at zero cost.¹¹

Some health economists have argued that if the treatment being evaluated does not alter the need for lifelong dialysis, then the dialysis costs can be considered to be unrelated because the increased cost is driven solely by the increased longevity of the patient.⁹ The exclusion of future dialysis costs on this basis allows cost effective prices to be identified for life extending treatments in this patient group.

This situation may apply among any group of patients with high ongoing costs that cannot be reduced by better care. In the UK this may include people with high social care needs because of disability, because NICE requires costs met by personal and social services to be included in cost effectiveness analyses.¹

As a society we would never refuse to provide good preventive healthcare, such as flu vaccinations, to patients with disabilities

purely because their high ongoing health and social care costs would mean that their early death would release funds that would generate more health gains elsewhere in the health system. A decision to do so would be unethical and would face legal challenges under the UK's equalities legislation.¹²

This same ethical argument can apply when considering interventions that are indicated only for groups of patients who need expensive ongoing care. It would be inequitable to fund technologies that are not themselves cost effective but to refuse to fund life extending treatments in populations receiving those cost ineffective technologies. The effect of such a decision would be to deny patients more of a treatment already prolonging their life when new patients would be able to receive it.¹¹

Healthcare systems have more than one purpose

Some health economists might argue that more health would be gained by society as a whole if funding was removed from cost ineffective interventions and spent on cost effective interventions elsewhere in the healthcare system. However, the point here is that healthcare systems are not currently configured to maximise population health because that is not their only purpose.

Society also values providing compassionate care to patients who cannot currently be cured, with the aim of maximising the health that can be achieved during their individual lifetimes. If the societal value of providing such care is not currently captured in cost effectiveness analyses, then excluding these costs as unrelated may be a means to appraise technologies in these populations in an equitable manner. It is for these reasons that NICE asks that unrelated future medical costs are omitted from cost effectiveness analyses.

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