Should NICE's threshold range for cost per QALY be raised?

NICE has recently raised the threshold for end of life drugs. **Adrian Towse** argues it should consider doing the same for other treatments, but **James Raftery** believes that the threshold is already too high

Adrian Towse director Office of Health Economics, London SW1A 2DY **atowse@ohe.org**

YES

Decisions made by the National Institute for Health and Clinical Excellence (NICE) about whether the NHS should fund treatments are based on cost effectiveness. NICE methods guides refer to a threshold of £20 000-£30 000 (€22 000-€34 000; $30 000-$45 000) per quality adjusted life year (QALY).[1] However, this is an arbitrary figure. Evidence on the public's willingness to pay suggests that it should be higher. There is a lack of evidence on opportunity costs.

Willingness to pay

The Department of Health has commissioned research to help it understand what the public wants the NHS to pay for health gain in the knowledge that it has limited resources and pays for care from taxes. This estimates willingness to pay at £30 000 to £70 000 per QALY.[2] On this basis NICE's threshold range should double.

The willingness to pay approach is usually challenged on two grounds. Firstly, it is argued that it is difficult for people to make these informed choices and that surveys asking people to state their preference for A versus B are hypothetical. Studies revealing preferences from the decisions they made[3] do not really mirror the situation facing the NHS. These points have truth in them, but we routinely accept similar "stated" (hypothetical) approaches to assess the relative value of different health states when estimating QALYs. Also, willingness to pay is being used elsewhere to justify public sector investment—notably in transport and the environment.[4]

The second challenge is that willingness to pay is beside the point because the NHS has a fixed budget, set by parliament.[5] The real issue is spending out of that limited budget. The opportunity cost of spending on A is that money cannot be spent on B, the next best way of getting QALYs somewhere else in the NHS. NICE's current approach is to have a threshold based on opportunity cost. But what is B? What will be given up and what is its cost per QALY? NICE has been described as a threshold seeker[6] —that is, an organisation whose role is to identify "technologies in current use that are the least productive

James Raftery professor of health technology assessment University of Southampton, Southampton SO16 7PX **raftery@soton.ac.uk**

NO

The fact that the National Institute for Health and Clinical Excellence (NICE) has not updated its cost effectiveness threshold over the past decade means that the threshold has been falling. This applies whether adjusted for inflation (up 40% from 1999 to 2007) or for the NHS budget (up 90%).[1] This decline is appropriate for several reasons. The correct threshold value, which should be set by the value of those technologies displaced by NICE guidance, seems to be lower. NICE has recently increased the threshold for end of life treatments. To offset this, the general threshold should be reduced. Precedent in the form of treatments previously funded has arguably influenced what people think the threshold should be. The most plausible precedent thresholds are no higher than those of NICE.

Displaced services

Opportunity cost, a key concept in economics, expresses cost in terms of the opportunity forgone by buying one thing rather than another. It plays a crucial part in ensuring scarce resources are used efficiently. Since primary care trusts fund the bulk of NHS health care, they must deal with the opportunity costs of NICE guidance. To fund NICE guidances primary care trusts must either cut existing services or not implement new services. If displaced services are more cost effective than the NICE threshold, that threshold is too high. NICE guidance would be perverse, reducing not increasing health.

The Commons' health committee concluded, largely on the basis of evidence from primary care trusts, that NICE's threshold was too high.[1] Two trusts have controversially appealed against NICE guidance in favour of the costly drugs trastuzumab and ranibizumab (both were rejected).[2 3] Unfortunately, no systematic data are collected on services displaced by NICE guidance. However, examination of the opportunity costs of NICE guidance on trastuzumab for a Norwich hospital indicated that more cost effective oncology services had to be sacrificed.[4] Analysis of the cost per quality adjusted life year (QALY) of annual changes in primary care trust spending shows values well below the NICE threshold.[5] This analysis covers

All references are in the version on bmj.com

WHERE DO YOU STAND ON THE ISSUE?
Tell us on bmj.com

uses of current NHS resources, and . . . better value technologies that are not currently provided." The problem is that we don't know the answers.

Opportunity costs

Primary care trusts claim they can make better use of the money NICE requires them to make available for approved technologies.[7] Sadly, however, most trusts do not know the cost per QALY of services they cut or add to their spending or of many of the health services they pay for.[8 9] Primary care trusts who are low spenders on cancer could achieve health gains at around £19 000 per QALY if they spent more on the right interventions,[10] but that does not mean they will. There is no evidence that cost effective interventions are being cut to make room for NICE approved technologies.[11]

There are many problems with an opportunity cost approach. Firstly, we need to distinguish between what primary care trusts consider cutting in the short run and the resources they could make available over time if they stopped funding activities that are not demonstrably cost effective. But cutting services (or disinvestment) is not popular. Secondly, lack of information about which treatments are poor value for money has meant NICE has struggled with its disinvestment agenda. The Health Select Committee and others have called for more emphasis on disinvestment.[5,12]

Opportunity cost thresholds will also differ by locality because of historical legacy, and new treatments will cost more in some areas because there are more patients. Without a national view on what to cut, the opportunity cost approach logically ends up with primary care trusts setting postcode thresholds.[13]

Pragmatism

NICE has not raised the value of its cost per QALY threshold since it first made public that it had one. It could be argued that the threshold should at least be increased for inflation since then, and also for the large increase in NHS real expenditure. Others have argued that improvements in NHS productivity (getting more from existing technologies) and an expected reduction in the future rate of growth of NHS spend may make the case for reducing the threshold. However, if the original threshold number is arbitrary then using these arguments to make the case either way does not seem sensible. What we want to know is the availability of funds relative to the opportunities to usefully spend them, and whether the funds are being spent efficiently. We do not know this. Until more evidence is available on the cost effectiveness of existing interventions policy pragmatism is called for.

Most trusts do not know the cost per QALY of services they cut or add

There is strong evidence that society's willingness to pay for a QALY is above the current NICE threshold. Other countries that spend similar per capita amounts on health care are approving treatments that NICE is turning down, and we suspect the NHS is spending money on services that probably yield far less health gain per pound spent than NICE's threshold. NICE is raising its threshold for end of life drugs based on willingness to pay[14] and could justifiably extend this to other treatments.

Competing interests: The Office of Health Economics receives research income and consulting income from the Association of the British Pharmaceutical Industry. It has recently completed a consulting project for a group of companies with oncology products.

Cite this as: BMJ 2009;338:b181

three years and may indicate that national service frameworks for particular diseases have been very cost effective. No evidence points the other way—that technologies recommended by NICE are more cost effective than those displaced.

NICE has just raised the threshold for life extending drugs for end of life patients.[6] Given the high cost per QALY for the relevant cancer drugs, the new threshold will have to be substantially raised.[7] If many cancer drugs qualify, the financial impact on the fixed budgets of primary care trusts will be substantial. Unless the general threshold is lowered to offset these new arrangements, even more services will be displaced.

Precedents

Economists see no theoretical basis for any threshold other than one based on opportunity costs. However, thresholds have plausibly been set as much by precedent as by theory. The first threshold may have been for US government funding of renal dialysis, which was introduced in 1973 and was roughly $50 000 (£30 000) per patient for each extra life year.[8] Such benchmarks make it difficult ethically and legally to refuse to fund any treatments of similar cost effectiveness. NICE's appraisal of dialysis put its cost at around £20 000 a year[9] (or around £30 000 per QALY)[10] Given that NICE's appeal process involves precedence, this provides some justification for the current thresholds. To avoid exceptional cases setting precedents the case for their funding needs to be explicitly justified and monitored over time. Otherwise benchmarks set in a storm will be repented in leisure.

If displaced services are more cost effective than the NICE threshold, that threshold is too high

Economists closely linked to NICE have addressed the threshold problem by characterising NICE as a "threshold searcher."[11] They accept that the threshold should be based on the opportunity cost in terms of displaced interventions, and that it should be lower for recommended interventions which displace more (have a large budget impact). They argue for a single threshold rather than a range and that it should be flexible or dynamic, depending mainly on the size of the NHS budget and efficiency gains. Audaciously they suggest that the case for any rise in the threshold linked to the growth in the NHS budget in the past decade may well have been offset by improvements in NHS efficiency.

The key question is whether NICE can be left to search alone for the threshold or whether it needs help. One suggestion has been for an independent threshold committee, similar to how interest rates are set.[1 12] Alternatively, NICE might be made more responsive to primary care trusts by increasing their representation and by improved links with their annual purchasing plans. Since displacement decisions are made by hospitals, they too might be better represented at NICE. Another suggestion is that NICE should develop a disinvestment programme based on identifying treatments with poor cost effectiveness. Several of these options are being researched by NICE.[1] Either way, NICE must relate more closely to those who make decisions in the NHS. Improving those links rather than increasing the threshold must be the priority.

Competing interests: None declared.

Cite this as: *BMJ* 2008;337:a3056

See Features p 266, and Analysis p 271