

Reply: cost-effectiveness of population-based screening for colorectal cancer

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Sir,

In his letter, Dr O’Mahony (2012) makes two main points. The first of these relates to the number of alternatives explored during our assessment of colorectal cancer screening in Ireland (Sharp *et al*, 2012), and the second relates to the terminology used in the paper.

Our paper reports findings from a health technology assessment (HTA) of colorectal cancer screening; the full report has been published (Health Information and Quality Authority, 2009a). The purpose of HTA is to inform decision makers about the relative efficacy and costs of possible health-care interventions in order that coherent policy decisions can be taken. In the case of our work, the question of interest was whether population screening for colorectal cancer in Ireland would be effective and cost-effective.

The initial phase of an HTA involves scoping the assessment. During this process, the alternative screening strategies to be considered were identified. The selection of the screening scenarios that would be considered was informed by an Expert Group established by the commissioners, the Health Information and Quality Authority, to oversee the evaluation. In an ideal world, all possible interventions (an exhaustive and mutually exclusive list of alternative courses of action) would be considered. However, some options may be excluded because they are deemed infeasible to implement (e.g., due to insufficient endoscopy capacity) or unacceptable to the service providers (e.g., due to risk of death associated with the technology). It may also be impractical to detail all alternatives (e.g., every possible screening frequency or combination of tests). Specifically, in our HTA, whether to consider screening by colonoscopy or CT colonography was discussed at this stage; the former was considered to be associated with unacceptably high risks of death and the latter was considered

as both unfeasible and to have an insufficient evidence base. Thus, after scoping, the actual number of alternatives to be investigated in the detailed modelling was fewer than the initial set examined.

The second point made in the letter is that of terminology. The concept of ICERs and ACERs is discussed, and the received interpretation of them is highlighted. In our HTA, the results are provided in a disaggregated fashion (as is recommended by 5.7.6 of the NICE methods guidance, 2008) (National Institute for Health and Clinical Excellence, 2008). This allows a proper comparison to be made between the interventions, and ensures that the decision maker does not blindly adopt a course of action deemed to be ‘cost-effective’ by reference to the ICER alone. It also permits other readers to calculate ICERs for many different comparisons should they so wish. Similarly, it is possible to evaluate any scenario *vs* no screening (which equates to an ACER, but also to the ICER when other options become infeasible).

An additional consideration when carrying out an HTA is how uncertainty in model inputs will be treated. Our analysis included a full probabilistic sensitivity analysis (PSA). Doing this involves greater consideration of the details of each scenario, but provides better information for the decision maker. For similar strategies (such as limiting screening to particular age groups), the relative cost-effectiveness of each was indistinguishable in the PSA. That is, the uncertainty made it impossible to determine which was the most cost-effective. This provides another reason to include a limited number of scenarios and to provide results in a disaggregated manner.

Since our HTA was conducted, additional work has been carried out by the Health Information and Quality Authority to establish how a screening programme, although cost-effective, might be funded at a national level (Health Information and Quality Authority, 2009b). Following this work, a decision was made to

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implement a population-based colorectal cancer screening programme in Ireland, based on biennial faecal immunochemical testing. Significant progress has been made towards this objective (National Cancer Screening Service, 2012). This process illustrates very effectively how the reality of limited resources means that HTA is of increasing importance for decision makers in prioritising health-care interventions.

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