
Executive summary

Health Council of the Netherlands. Population screening for colorectal cancer. The Hague: Health Council of the Netherlands, 2001; publication no. 2001/01

Colorectal cancer (CRC) is the second leading cause of cancer-related mortality in the Netherlands, resulting in approximately 4400 deaths in 1998. Three randomised trials have shown that screening by faecal occult blood testing (FOBT) every two years has the potential to reduce mortality by up to 21%. According to a meta-analysis, the number needed to screen in order to prevent one death from CRC over 10 years is 1200 (700 to 2800). The real number is probably lower.

We don't have proof that other screening strategies for CRC can reduce mortality. However, much clinical and epidemiologic evidence suggests that flexible sigmoidoscopy (FS) or total colonoscopy, and removal of colonic polyps, may effectively reduce CRC-related mortality *and* incidence. Screening programmes based on FS may be more cost-effective than those based on FOBT. FS-screening could even result in a net savings of direct health care costs due to prevention of cancer treatment costs.

Colonoscopic screening may be less cost-effective than FS-screening, unless delivered at less frequent intervals (10-yearly or a one-time examination).

A recent contender for screening is virtual colonoscopy. This developing technology (computed tomography or MRI colography) has several potential advantages as a screening test. An economic analysis indicates that, to become cost-effective, virtual colonoscopy would need to be offered at a very low price or result in compliance rates better than those associated with conventional colonoscopy. Feasibility studies are needed to examine issues such as participation rates, acceptability and cost.

Increasingly compelling evidence shows that CRC screening programmes can save lives at a cost similar to, or less than that of the existing breast cancer screening programme. It is recommended that a national policy on population screening for CRC be developed. A first priority is to resolve remaining issues, such as: which screening test should be used, at what ages, how often, and who is going to do these investigations. Other important questions are the acceptability of screening for CRC, the GP's role, the programme organisation and evaluation, quality assurance, and the indications for surveillance colonoscopy of those who screen positive.

It is recommended that feasibility studies and pilot trials be conducted and that a simulation model be developed in order to make well-founded judgements about screening strategies. The most uncertain parts in the present models are the dwelling time distribution of adenomas that grow into cancer, and the percentage of cancers not preceded by adenomas. Simulation outcomes depend heavily on assumptions about the natural history of CRC. Better estimates can be made after analysis of observational data from CRC screening trials and surveillance studies. Such an analysis is going on in Rotterdam, taking advantage of emerging data in this area. It is recommended that these validation studies and more detailed modeling be used, and that also feasibility studies and pilot trials be conducted in planning for a possible national CRC screening programme.