Netherlands
The Journal of Medicine

EDITORIAL

Implementation of colorectal cancer screening

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According to the United European Gastroenterology Federation, colorectal cancer (CRC) has become the most frequent cancer in Western Europe. The pathogenesis of CRC has been subject of intense research efforts over the past decades. It has been established that CRC slowly evolves from normal mucosa to precancerous polyps and ultimately to invasive carcinoma.

It has become clear that CRC fulfils all major requirements to allow population-based screening.[1] Studies from different countries have confirmed that screening for CRC reduces mortality[2-4] at favourable costs compared with the screening programmes already implemented for breast cancer and cervical cancer. In 2001 the Dutch Health Council recommended the design of studies to investigate the feasibility of CRC screening in the Netherlands.[5] In 2003 the European Commission wrote a council recommendation for CRC screening.[6] In the same year, a number of research questions for the Dutch situation were formulated in the COCAST report.[7] In addition, the Minister of Health promulgated a policy letter to inform the government of his planning for the actual implementation of a nationwide CRC screening programme.[8] Two trials sponsored by the Dutch Organisation for Health Research and Development are currently running to investigate whether a nationwide screening programme for CRC can be implemented in the Netherlands. These studies mainly focus on response and adequacy of screening tools, but many questions remain.[9] In this issue of the Netherlands Journal of Medicine, two papers deal with other aspects of the implementation of a nationwide screening programme for CRC. One paper focuses on the question who should be screened, whereas the other calculates possible problems with endoscopic capacity following the implementation of screening.

The issue of identifying and narrowing down the population considered to be at risk is important, because screening should only be offered to people at risk. The European Commission currently advises an age range limit of 50 to 75 years, but the optimal age still needs to be determined.[6] Another possibility to narrow down the population at risk is to follow the course of De Jong *et al.* and aim to identify families with an increased risk for CRC.[10] Several high-risk groups, such as hereditary nonpolyposis colorectal cancer (HNPCC), familial adenomatous polyposis (FAP) and MUTYH-associated polyposis (MAP), have already been identified. At present, these groups are only screened opportunistically as there is no system in place that identifies families with a genetic predisposition. De Jong *et al.* used a questionnaire to actively identify families at risk in the population. Although it has been suggested and it even seems obvious that identification of high-risk groups might increase the cost-effectiveness for preventive measures, it has not been proven that this is indeed the case. The only evidence there is to date builds on the intensive screening for CRC within families with HNPCC and FAP leads, and suggests that this would result in a better survival. Whether this is also true for families at lower risk, such as those identified by De Jong *et al.*'s questionnaire, remains to be proven and is highly doubtful. Introduction of an arguably rather wide age range for screening, as proposed by the European Commission, might help to answer this question, since patients with and without a family history of CRC can be distinguished and followed up. Based on these data, it may be possible to narrow down the population to screen in the future. Prerequisite is that screening for CRC should not be implemented as routine care but on a continued research basis. Due to low awareness of CRC risk in the Netherlands, we think that it is currently more important to provide the general public with simple and accurate information to ensure high participation in a screening programme than to confuse them with details such as high or low risk and intensive or less intensive screening.

It is to be expected that screening the general asymptomatic population will result in an increase in the number of colonoscopies. This leads to the next question addressed in this issue of the Journal: Is the current endoscopic capacity adequate once nationwide screening for CRC screening is implemented?[11,12] The authors report that the total number of endoscopies increased by 25% from 1999 to

2004. Unfortunately, we lack information on which types of endoscopic procedures are responsible for this increase. It might be that the number of colonoscopies is increasing faster than the number of gastroscopies or vice versa. In addition, we are not informed about the indications that led to the procedure. For instance, if the increase is the result of an increase in the number of colonoscopies due to random screening for CRC, the implementation of focused CRC screening could even lead to a decrease in the number of colonoscopies. On the other hand, we think that the reported returns of a faecal occult blood test (FOBT)-based screening programme by the authors are rather conservative. Positivity rates for FOBT vary with the method used. Immunochemical FOBT has much higher positivity rates of up to 9% and results in better compliance, with equal or better positive predictive value than the guaiac-based FOBT.[13] The Nijmegen-Amsterdam implementation study is currently focused on this question for the Dutch population. Another issue which only applies at the start of a screening programme is the prevalent cases of CRC and adenoma in the general population, resulting in an initially higher expected FOBT positivity rate. This rate will drop to the level of incidental cases if population screening is continued at regular intervals and eventually prevalent cases will have all but been identified. The reported positivity rate of 2% is an estimation of the rate after several years of screening. Therefore, sensitivity analysis of the assumptions that have to be made for the increase in necessary capacity for endoscopy range from a slight decrease to an increase of about 75,000. The fact that the Minister of Health could decide on another form of CRC screening than guaiac-based FOBT and the consideration of the implications of recent technical developments such as virtual colonoscopy have not been taken into account. We argue for a gradual and structured implementation of a nationwide FOBT-based CRC screening programme in subjects between 50 and 75 years, tightly linked to research in order to optimise the programme in future and control quality of care and costs.

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