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Bowel cancer screening

A role for general practice

Background
Current Australian guidelines recommend regular screening with faecal occult blood tests (FOBT) in asymptomatic people over 50 years of age in order to reduce mortality from bowel cancer. After assessing the feasibility, acceptability and cost effectiveness of bowel cancer screening using FOBTs in an Australian setting, the Australian Government commenced the National Bowel Cancer Screening Program (NBCSP) in August 2006 among certain age groups.

Objective
This article discusses the background to the establishment of the NBCSP and the role of the general practitioner in bowel cancer screening.

Discussion
General practitioners have a number of important roles in the NBCSP, including encouraging participation, managing participants who have a positive FOBT, providing information about referrals to the NBCSP, and managing individuals who, by way of symptoms or significant family history, require diagnostic investigations or targeted surveillance rather than screening. In addition, GPs need to be aware of the populations groups not targeted by the current phases of the NBCSP but for whom bowel cancer screening is recommended.

Bowel cancer is the second most common internal cancer affecting Australians, with approximately 12 500 new cases and 4300 deaths each year.[1] Men are slightly more likely to be affected than women,[1] and the risk of colorectal cancer (CRC) increases with age.[2]

Bowel cancer is usually a slow growing cancer so that early cancers and premalignant lesions can bleed microscopically for some time before the patient presents with symptoms. Early detection is associated with greater survival rates.[3] A number of randomised control trials (RCTs) have shown that detecting this microscopic bleeding with biennial or annual screening with faecal occult blood tests (FOBT) reduces bowel cancer mortality by 15–33% on an intention to screen basis. Actual benefit in participants was a minimum 40% reduction.[4–6] A meta-analysis of these trials confirmed that one in 6 CRC deaths can be prevented by FOBT screening.[7] Faecal occult blood test screening can also reduce the incidence of bowel cancer through the early detection, treatment and surveillance of advanced adenomas.[8]

There are two broad categories of FOBTs:

- guaiac tests identify the haem portion of haemoglobin (these tests were used in the RCTs), and
- newer immunochemical tests react with the globin portion of haemoglobin and do not cross react with certain foods, ie. unlike the guaiac tests, there are no requirements for dietary or medication restrictions before their use. Significantly, not only have immunochemical FOBTs been shown to have higher user acceptance and compliance that guaiac FOBTs,[9,10] they are more sensitive for cancer and advanced adenomas.[9] (Immunochemical FOBTs are used in the National Bowel Cancer Screening Program [NBCSP].)[11]

Toward a national screening program

Current Australian guidelines, endorsed by the National Health and Medical Research Council (NHMRC) recommend 'organised' bowel cancer screening using FOBTs 'at least every 2 years' for asymptomatic people over 50 years of age.[3] The National Bowel Cancer Screening Pilot Program was conducted between November 2002 and June 2004 in order to evaluate the acceptability, feasibility and cost effectiveness of bowel cancer screening using FOBTs in an Australian setting. This pilot involved approximately 57 000 individuals in three pilot sites in Mackay (Queensland), and parts of Melbourne (Victoria) and Adelaide (South Australia). Key results from the pilot program are summarised in *Table 1*.

General practitioners played an important role in the pilot program, including managing the follow up of participants with a positive FOBT and informing the program register of outcomes. Formal evaluation of GPs' experiences of the program suggests that GPs were supportive of the pilot program and felt that their involvement was 'not onerous'.[12] Overall, evaluation of the pilot program concluded that it was acceptable and cost effective. Pressure on colonoscopy services was raised as an area of potential concern. Another significant issue that arose was the incomplete data received about pilot participants from clinicians (including GPs) involved in patient care.

Table 1. Key results from the NBCSP Pilot Program[12]

Participation rates		
(completed tests per 100 invitations out of total 56 907 individuals invited to participate)		
Males	Females	Total
43.4	47.3	45.4
Positive FOBT rate		
(positive FOBT per 100 completed tests out of total 25 688 completed FOBTs)		
Males	Females	Total
10.6	7.7	9.0
Abnormalities detected		
(of the 1265 participants with positive FOBT and reported colonoscopy outcomes)		
Suspected cancer	Advanced adenoma	
67	176	
Positive predictive value		
(rate of abnormalities per 100 investigated positive FOBTs)		
Suspected cancer	Advanced adenoma	Total
5.3	13.9	19.2

GPs and the NBCSP

Following evaluation of the pilot program, the NBCSP commenced in August 2006, targeting specific age groups. The age ranges targeted by the first and second phase of the program are outlined in *Table 2*. Significantly, those who were screened in the first phase of the NBCSP and in the pilot program will not be re-screened in phase two of the NBCSP. This group may turn to general practice to facilitate ongoing screening.

Table 2. Target age groups for the NBCSP[11]

	Date commenced	Target age groups
Phase 1	7 August 2006	• People turning 55 or 65 years of age between 1 May 2006 and 30 June 2008 • Pilot invitees
Phase 2	1 July 2008	• People turning 50, 55 or 65 years of age between 1 January 2008 and 31 December 2010

The NBCSP pathway is summarised in *Figure 1*. Individuals in the eligible age ranges are identified through Medicare or Department of Veterans' Affairs data and mailed a FOBT kit in the post. The NBCSP register maintains information about participant progression through the screening pathway. Complete data on participation in the program is not yet available.

General practitioners play a number of important roles in the NBCSP such as:

- encouraging participation. While multiple factors influence decisions to screen for bowel cancer, a recommendation by a GP can be effective in encouraging participation in FOBT screening.[13,14] As participation in both the pilot and the current program is higher among women[12,15] and those aged 65 years,[15] GP encouragement of screening in men and in younger age cohorts may be of additional benefit
- investigating people with a positive FOBT. Investigation of a positive FOBT is essential, preferably with colonoscopy.[3] The positive predictive value of a positive screening FOBT is 3–10% for CRC and 30–45% for advanced adenoma.[3] A positive FOBT confers a 12–40 times increased risk of having a bowel cancer compared with a negative test.[3,5,6] A positive FOBT may be associated with a greater likelihood of bowel cancer diagnosis than symptoms such as rectal bleeding alone.[16,17] Investigation is required even if only one sample is positive. There is no role for repeating the FOBT
- notifying the program. The NBCSP requests that GPs notify the register when a patient is referred as a consequence of a positive FOBT. This can be done by fax or by electronic lodgment via the NBCSP website (see *Resources*).[11] (General practitioners receive an information payment of $7.70 for providing this information)
- notifying the colonoscopist. In order to ensure that colonoscopists are aware that they are seeing a NBCSP participant, so they can in turn provide information about the colonoscopy to the register, GPs are also asked to make it clear on their referral letter that the patient is involved in the program
- managing patients with symptoms or significant family history. Given that screening is for asymptomatic individuals it is important that GPs inform people who have symptoms suggestive of bowel cancer or a significant family history that they require diagnostic investigations (in the case of symptoms) or targeted surveillance (in the case of a significant family history) even if they have had a negative FOBT.[3,18] A useful summary of the recommendations regarding surveillance of individuals with increased familial risk

Figure 1. The NBCSP participant screening pathway

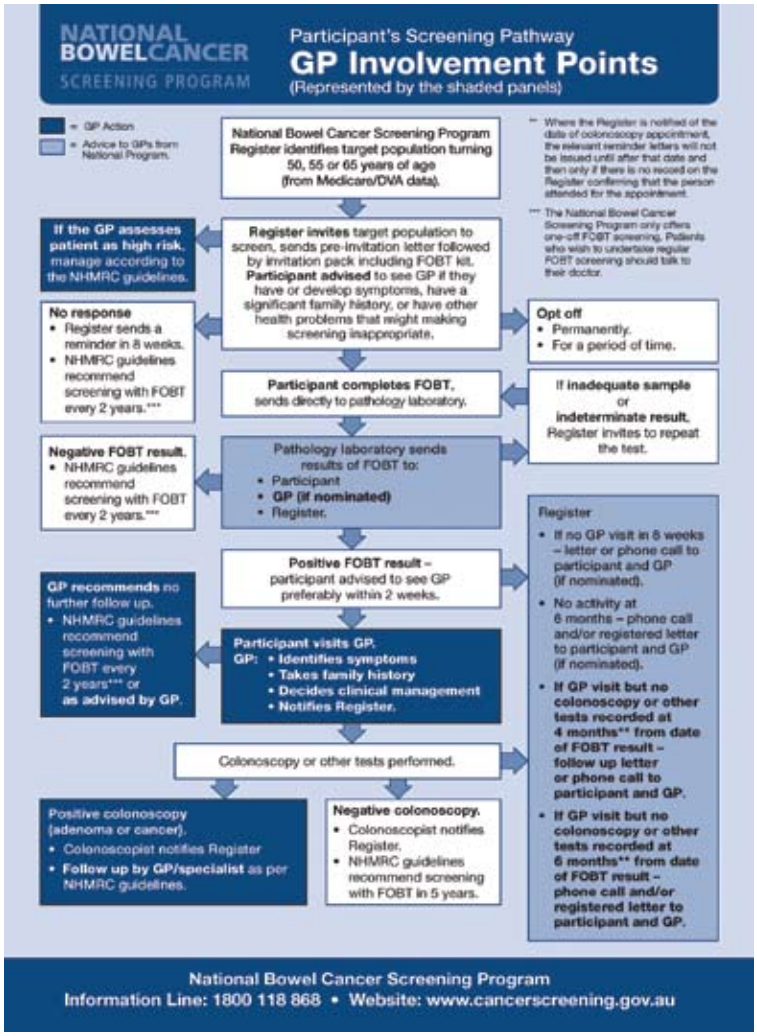

Table 3. Current available data on participation rate and key outcomes in the NBCSP[15]

Participation rates			
(completed tests per 100 invitations out of total 929 329 invitations)			
Males	Females	Total	
39.2	46.7	42.9	
55 years of age	65 years of age	Total	
39.9	47.7	42.9	
Positive FOBT rate			
(positive FOBT per 100 correctly completed tests out of 364 993 completed FOBTs)			
Males	Females	Total	
8.9	6.4	7.5	
55 years of age	65 years of age	Total	
6.4	9.0	7.5	
Abnormalities detected in national program			
(of the 14 429 participants with positive FOBT and reported colonoscopy outcome)			
Suspected cancers	Confirmed cancers	Confirmed adenomas	No cancer/ adenoma
706	46	1784	5938

of bowel cancer can be found in the NHMRC guidelines for bowel cancer (see *Resources*)

- re-screening. As the NBCSP does not currently provide re-screening, GPs can help facilitate and promote the concept that benefit from screening requires ongoing participation. Results from the first phase of the NBCSP showed a participation rate of 80% among pilot participants who received their second invitation to screen compared with program participants invited for the first time.[15]

Table 3 summarises currently available data on participation rate and key outcomes in the NBCSP.[15]

Challenges for GPs

Reporting outcomes to the register

General practitioners have both a clinical and administrative role in the management of NBCSP participants with a positive FOBT. While the clinical role is familiar, the administrative one is not. For a significant number of participants with a positive FOBT there is no record of follow up by a GP. In the pilot program, 62% of participants with a positive FOBT are recorded as seeing their GP for follow up[12] and this figure is substantially lower in the current program, based on available data.[15] Reasons for this may include the low number of NBCSP participants with a positive FOBT that a GP sees each year (estimated at 1–2 per year per full time GP equivalent), so that it is not 'usual' practice to complete the forms. The paper based form may also be a barrier.[12] There is no specific information available about whether GPs feel that the information payment reflects the effort involved in completing the forms. The program has been made aware of the need for easier reporting and exploration of electronic modalities is being undertaken. As the NBCSP expands, and with enhanced GP awareness of, and familiarity with, their administrative role, the reporting of outcomes could be expected to improve. Utilisation of other practice staff such as practice nurses to assist in the reporting of outcomes may also be helpful.

Duty of care and follow up

Evaluation of the pilot program reported that GPs felt that 'duty of care issues were well defined'.[12] As outlined in the screening pathway (*Figure 1*), the NBCSP register initiates reminders to participants at key steps in the pathway. In addition, GPs have a responsibility in following up their patients with positive FOBTs, as defined in the program materials, and it is important for GPs to be familiar with this information.[19] In the situation where a GP has been nominated by a participant who is not known to that GP, the program advises that the GP notify the NBCSP register and advise them of this. The register will then remove the GP's details and also contact the participant regarding follow up.[19]

Screening for those not currently included in the NBCSP

Despite the NHMRC recommending FOBT screening for all age groups over 50 years of age,[3] at this stage the NBCSP is focusing on specific age groups. Much of the bowel cancer screening that occurs outside

the program is likely to occur within the general practice setting. There are three groups of people who may present to GPs (or whom GPs may choose to target):

- those who were screened in the first round of the NBCSP (and pilot program participants) not being invited to re-screen in phase two of the program
- age groups not yet targeted for screening, ie. those currently aged 51–52 years, 58–62 years, and 68 years and over in 2008
- people aged 68 years and over may be considered a particular priority as, given the envisaged staggered rollout of the NBCSP, they may never be eligible for the program. They are nevertheless the group with the highest incidence of bowel cancer.[2]

Conclusion

The evidence for the benefit of FOBT screening for bowel cancer is well established. The NBCSP is a significant step in turning this evidence into reality in Australia. General practitioners play a critical role in this program, both clinically, in managing participants with a positive FOBT, and providing outcome data to the register. A further role for GPs is in encouraging screening among individuals not captured in the present phase of the program. In order to do this it is important for GPs to be aware of current recommendations for bowel cancer screening as well as understanding the population groups that are not included in the program at this stage.

Resources

- National Bowel Cancer Screening Program. Available at www.cancerscreening.gov.au
- Australian Cancer Network. Clinical practice guidelines for the prevention, early detection and management of colorectal cancer – A guide for general practitioners. Available at www.cancerscreening.gov.au/internet/screening/publishing.nsf/Content/bw-gp-crc-guide.

Conflict of interest: none declared.

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