Cancer Care Nova Scotia
Many Hearts • Many Minds • One Goal
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Cancer Information for Primary Caregivers
In Practice

Colon Cancer Prevention Program – three years on

by Dr. Bernard Badley, Medical Director, *CCNS's* Colon Cancer Prevention Program

In March 2009 the Colon Cancer Prevention Program (CCPP) was introduced in three health districts. All other districts are now involved and by March 2013 over a quarter-of-a-million eligible Nova Scotians, aged 50-74, will have received an invitation to participate in the screening program on at least one occasion. In this edition of *In Practice* we summarize our findings to date, share our early successes and highlight areas that must improve to further reduce the number of Nova Scotians dying from colon cancer.

What has the response been?

Between April 2009 and September 2011, 175,000 Nova Scotians, aged 50-74, received Fecal Immunochemical Test (FIT) kits in the mail. One-third of tests were completed and returned, with a greater response from women (36%) than from men (28%). The highest participation was in the 65-74 age group.

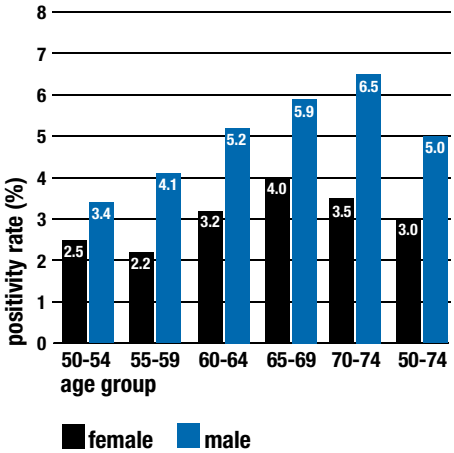
Why does the CCPP use the FIT and not the traditional (guaiac-based) fecal occult blood test (FOBT)?

A major reason for choosing the immunochemical test (FIT) for the program is the fact that it detects blood loss arising predominantly from the colon; it is much less likely to detect the presence of blood coming from the upper gastrointestinal tract.[1] Furthermore, the immunochemical assay is specific for human hemoglobin, so dietary restriction is not required. By contrast, the traditional FOBT is not specific for human hemoglobin; it may test positive for some dietary items and can detect occult blood that is lost from any part of the gastrointestinal tract. The FIT, therefore, has a very limited but specific role – that of detecting blood loss from a colonic source, whereas FOBT is the test of choice for the investigation of iron-deficiency anemia.

What proportion of tests are abnormal (positive)?

Approximately one in every 25 participants (4%) has a positive Fecal Immunochemical Test (FIT). Although there are some regional differences in overall positivity, in all districts men are more likely to test positive (5%) than are women (3%).

Provincial Positivity Rate by sex and age



Family physicians and other primary care providers receive a copy of the results of their patients' screening test, regardless of the result. Recently, in response to feedback from providers, copies of all *normal* screening result letters are now sent to primary care providers in monthly batches. Abnormal test results and normal results from participants who have indicated a potentially significant personal or family history will continue to be mailed to providers as they occur.

What happens when someone's test is abnormal?

Participants receive their test results within about three weeks of mailing their completed kit to the lab. If the test is abnormal, a District Screening Nurse (DSN) calls the participant, meets with the person to inform them about the need for a colonoscopy, instruct them on bowel preparation and outline the possible risks of the procedure. DSNs perform a health status evaluation and, if the participant is considered fit for the procedure and agrees to it, they book the colonoscopy.

How long is the wait for a colonoscopy?

From the date on which the lab identifies an abnormal test, 72% of participants have their colonoscopy within the target interval of eight weeks.

What has been found in people with an abnormal test?

About 50% of people with an abnormal test are found at colonoscopy to have some form of colonic neoplasm, a finding similar to that of other population-based colon cancer screening programs. Our current results are as follows:

	Female	Male
Lower risk polyps	13%	15%
Intermediate/ high risk polyps	23%	41%
Cancer	4%	3%
Total neoplasms	**40%**	**59%**

What happens after a colonoscopy?

Program participants with no clinically significant findings will be sent another screening kit in two years. However, patients who are found to have clinically significant findings on colonoscopy (high risk polyp or cancer) leave the program and sole responsibility for their subsequent follow-up reverts to the colonoscopist and primary care provider. These individuals are not re-invited for screening in subsequent years, but two years later, when they would otherwise have been invited for screening, both they and their care provider receive letters urging them to ensure that they are following the surveillance regime that was recommended by the colonoscopist.

Are there any changes in the recommended follow-up after colonoscopy?

Although there is evidence that non-steroidal medications (including ASA) reduce the incidence of colonic adenomas, recently concern has been expressed over side effects of long term NSAIDs. For this reason, we now omit reference to these agents in the information we send to participants. As in all other clinical situations, all factors must be considered before recommending such prophylaxis.

The Canadian Association of Gastroenterology has commissioned a group of experts to up-date the colon cancer screening algorithm for individuals at different degrees of risk, and for appropriate follow-up guidelines, depending on the findings at colonoscopy. We will revise and circulate our provincial screening algorithm once the new national guidelines are published.

Why is one test not enough?

It takes several years for a small colonic adenoma to develop into a cancer. But small adenomas rarely bleed, so a single negative screening test does not exclude their presence: they will be detected only by repeated testing. Our program is designed to distribute FIT screening kits every two years to average-risk, asymptomatic individuals between the ages of 50 and 74.

The Program has been available in the three 'early adopter' districts for three years, so some individuals in these districts have received a second invitation for screening two years after the first. Early findings suggest that only 60% of those who participated in the first screening have responded to the second invitation.

In which areas have our expectations not been met?

Overall participation is well below the level needed to make the greatest impact on colon cancer mortality. The current participation of 36% in women and 28% in men contrasts with results of a similar program in England that achieved participation rates of 54% in women and 50% in men. Furthermore, the response rate of Nova Scotians who are re-invited two years after their initial contact is now 30% in women and and 23% in men.

We must improve both initial and subsequent rates of participation. We hope that working with primary care providers will help to influence the behavioural changes required to make this happen.

What are some reasons for low participation rates?

A recent survey of our Nova Scotia target population showed that awareness of a stool test to screen for colon cancer has increased from 38% to 79% in the past two years. Still, there are a number of areas of misunderstanding or misinformation.

1. Don't wait for symptoms!
Despite public awareness programs, a recent Ipsos Reid survey of Nova Scotians enquiring about reasons for *not* taking the test found that 22% said, "I felt fine – why would I be tested?", 19% said, "I didn't think it was necessary," and 13% said, "I just didn't get around to it." We have responded to this last comment by sending a reminder letter if a completed kit has not reached the lab after 12 weeks; this has yielded a 5% increased response.

2. 'Average risk' does not mean equal risk.
The CCPP is aimed at 'average risk' Nova Scotians between 50 and 74 years of age who have no first degree relative with colon cancer, no personal history of a colonic neoplasm and no longstanding inflammatory bowel disease. However, there are individuals among this 'average' group in whom an increased risk can be identified.

As our own findings clearly show, males have a 40% increased risk, and other data show that both males and females of African origin are at a similarly increased risk. Additional factors that increase an individual's risk include smoking, obesity and the consumption of excessive amounts of alcohol and red and processed meats.

Increased risk factors among those who are otherwise ranked at 'average risk'

Factor	Increase in risk
Male sex	40%
Overweight	25%
Alcohol *(>45gm/day)*	40%
Smoking	20%
African heritage	40%

Who has the greatest impact on screening behaviour?

Studies throughout the world have shown that the highest participation rates occur when the individual's primary care provider enthusiastically endorses the screening program.

3. "I *don't* have a family history of colon cancer."
Previous studies have shown that 80% of individuals diagnosed with colon cancer do not have a positive family history. So the absence of a family history is no reason to avoid screening.

4. "I *do* have a family history of colon cancer."
Yes, but it may not be relevant. A recently reported study[2] involving 2.3 million people with known family histories extending back at least three generations and including 10,500 individuals with colon cancer showed that a history of cancer in second degree relatives (grandparents, uncles, aunts) posed no significant increase in risk. An increased risk of cancer was found only in *first degree relatives* (parents, siblings). In practical terms this means we should exclude from the 'increased risk' category those whose family history only involves second degree relatives, thereby decreasing the demand for unwarranted colonoscopy based on family history.

5. "My doctor didn't tell me to take the test."
It is clear that the greatest benefit is derived from testing that occurs **before** any symptoms, and by repeating the test at regular intervals. It is troublesome to note that 18% of respondents in the survey quoted earlier claimed they didn't participate because, "My doctor didn't tell me to do it."

What is *CCNS* doing to improve the program?

Information systems
- We are working to have screening test results sent electronically to primary care providers who are using the provincial primary care EMR.

The colonoscopy program
- The success and acceptance of the program depends to a large extent on the skills and support provided by screening nurses and endoscopy unit nurses in each district. We learn a great deal from the annual meetings in which these dedicated professionals share experiences and suggest ways to improve the program.
- In order to enhance quality monitoring we have implemented and are upgrading an electronic standardized synoptic operative reporting system for colonoscopies performed on patients with an abnormal FIT.
- Our recently developed performance standards for colonoscopy align with the newly published Canadian Association of Gastroenterology guidelines. These standards are reflected in the annual performance report cards sent to participating colonoscopists, in which their individual performance in key technical areas is compared with that of other colonoscopists in the program and with the program's standards.
- We have instituted a successful 'first-in-Canada' colonoscopy master class program that provides 'hands-on' skill-enhancing opportunities for experienced colonoscopists who are credentialed by the program.

Cancer Care Nova Scotia is a program of the Department of Health and Wellness. Its mandate is to evaluate, coordinate and strengthen the cancer system in Nova Scotia.

Cancer Care Nova Scotia works with and supports professionals and stakeholders in the health care system to bring about patient-centred change. Its ultimate goal is to reduce the burden of cancer on individuals, families, communities and the health care system.

In Practice is a supplement to *Cancer Care Nova Scotia's* newsletter. It is written specifically for primary care practitioners with information that we hope will make a difference in your cancer practice.

Please contact Christine Smith, Communications Manager, *Cancer Care Nova Scotia,* by phone at 902-473-2932 or by email at christine.smith@ccns.nshealth.ca with comments or suggestions for future topics.

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What are the early successes?

We have successfully implemented a program that is unique in Canada. Our direct mail approach, use of a card-based FIT, and robust synoptic colonoscopy reporting and management information systems set us apart. Most importantly, we are discovering colonic neoplasms in asymptomatic Nova Scotians. To date:

- The direct mail approach reached 99% of Nova Scotians in our target group.
- In comparison to the traditional guaiac-based screening kit, the FIT identifies a greater proportion of asymptomatic individuals within a community for whom a colonoscopy is indicated, thereby helping to ensure this scarce resource is used for those whom it will most likely benefit. All national and international advisory groups now endorse the FIT as the fecal screening test of choice.
- Initially, up to 10% of test cards returned to the lab could not be analyzed. Changes in packaging and instructions have reduced this figure to 2.4%.
- DSNs effectively prepare people with an abnormal FIT for colonoscopy and facilitate the booking process, so that 72% of resulting colonoscopies are completed within 8 weeks of an abnormal test.
- Our information systems enable data collection, analysis and evaluation to guide continuous quality improvement.
- **Already, close to 800 asymptomatic Nova Scotians have been found to have early cancers or precancerous neoplasms.**

How can you help?

CCNS recognizes that primary care providers have the greatest impact on screening behaviour. Here are a few key messages that may influence your patients' behaviour.

Screening for colon cancer using stool-based tests is very effective.

Do the screening test when you are well. Don't wait for symptoms!

Males are at an increased risk for colon cancer. Get checked!

Canadians of African heritage are at increased risk. Get checked!

Once is NOT enough! Effective screening requires repeated testing.

Your patients' birth dates determine when they will receive their test kits. The kits are sent out every two years shortly after their birthday. If born in an even year (e.g., 1956) they will receive a kit in an even year (e.g., 2014) and if born in an odd year, the kit will come in an odd year (e.g., 2013). You may be able to program your EMR to flag these birth dates to act as a reminder to check with your patients at that time to encourage their participation.

What can *CCNS* do to help you?

Cancer Care Nova Scotia hopes the information in this edition of *In Practice* has increased your understanding of the Colon Cancer Prevention Program and provided you with information to educate your patients about the importance of repeated colon cancer screening.

The CCPP welcomes your comments, suggestions and questions. Email us at *info@ccns.nshealth.ca* or call toll-free at 1-866-599-2267.

Videos and print information on colon cancer screening are available for patients and providers at *www.cancercare.ns.ca/coloncancerprevention*

[1] Tsung-Hsein Chiang et al. Performance of the immunochemical fecal occult blood test in predicting lesions in the lower gastrointestinal tract. *CMAJ* 2011;183(13)

[2] Taylor DP, Burt RW, Williams MS, Haug PJ, Cannon-Albright LA. Population-based family history-specific risks for colorectal cancer: a constellation approach. *Gastroenterology* 2010;138(3):877-85.

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