logg's; fortified with hydrogen-reduced iron) given as part of a typical Western breakfast. Geometric mean iron absorption from the fortified cereal was 14.1%. If we use this absorption value and consider, for example, Cheerios (General Mills; 8.1 mg iron per 30-g serving) or Count Chocula (General Mills; 4.5 mg iron per serving), a single serving of Cheerios will provide 1.1 mg and of Count Chocula 0.63 mg of "absorbed" iron. These quantities meet or exceed the recommended amount of absorbed iron for children up to 8 years of age.[4] Thus, when used on a regular basis, ready-to-eat breakfast cereals are a reasonably good source of bioavailable iron.

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Competing interests: Dr. Zlotkin has been an occasional consultant to General Mills Canada.

Considering colorectal screening

I was disappointed by the tone of Richard Schabas's commentary on colorectal screening.[1] Phrases such as "It is now time to act" do not suggest thoughtful weighing of the risks involved with widespread screening initiatives.

The recommendations of the National Committee on Colorectal Cancer Screening[2] clearly describe the potential benefits and risks of screening but also emphasize the need for adequate informed consent. For the family physician, this means ensuring that the patient knows the motivation for the test, giving advice on diet and the test procedure, explaining the concepts of false-negative and false-positive results and their rates, and clarifying the need for colonoscopic follow-up of positive results and its associated morbidity. Anything less would be inadequate in the current Canadian legal environment.

The time required for a family doctor to provide such education, follow-up and counselling can be significant. Physician resources are finite, and widespread deployment of fecal occult blood screening could be undertaken only at the expense of other medical services. Specifically, measurable increases in family physician workload, surgical consultations and colonoscopic waiting lists are predictable.

Evidence-based analysis cannot effectively weigh important factors such as patient anxiety and longer waiting lists arising out of false-positive results. We fail our patients by concluding that what is not easily quantified is irrelevant.

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The report of the Canadian Coordinating Office for Health Technology Assessment[1] (CCOHTA) cited in Richard Schabas's commentary on colorectal cancer screening[2] was not a full assessment but a feasibility study based on a limited literature search. CCOHTA undertakes such feasibility studies to determine whether to proceed with a full assessment. In this case, CCOHTA did not proceed, and the feasibility study was published electronically as a quick guide to current assessment information.

We would urge caution before the initiation of a national population-based screening program for people at average risk of colorectal cancer, such as the biennial program (beginning at age 50 years and ending at age 74 years) recommended by the National Committee on Colorectal Cancer Screening (NCCCS).[3] Participants should be fully informed of the risks and benefits, as outlined below.

- Screening for colorectal cancer is likely to have only a modest clinical benefit, as Schabas notes.[2] The NCCCS study[3] estimated that for people at average risk, 1300 fecal occult blood tests and 127 colonoscopies are needed to prevent 1 colorectal cancer death, that the risk of dying from colorectal cancer is 1 in 64 for people 50 to 74 years of age (1 in 345 for those 50 to 59 years of age) if they do not participate in a screening program, that the chance of improved survival is 1 in 204 if they participate fully in screening from 50 to 74 years of age and undertake any indicated follow-up procedures (1 in 1000 for those 50 to 59 years of age) and that only 1.75 life years are gained for each case detected.
- People at average risk who are unlikely to benefit from screening are asked to accept significant risks.[4] The rates of complications from follow-up colonoscopy described in the NCCCS study[3] (0.17% for perforations, 0.03% for hemorrhage and 0.02% for death) could very well be underestimated for various reasons,[5] including screening by operators who are less experienced than those in the studies on which these rates are based. More recent data from 6 prospective studies[5] suggest that the rate of perforation and hemorrhage combined could be double (0.4%) the rate given in the NCCCS report.[3] In addition, risk of

infection and psychological harm and the time that participants must devote to the screening process are not generally accounted for in these evaluations.

- Although all of the published economic evaluations that CCOHTA reviewed showed that screening was cost-effective, the NCCCS[3] analysis showed that cost-effectiveness and reduction in deaths from colorectal cancer depend strongly on the assumed participation rate for the first screen (67% in the base case) and the frequency of screening. However, the participation rate that can be achieved in Canada is largely unknown.

To our knowledge, no country has implemented a population-based screening program at the national level, although several countries have undertaken pilot studies or large-scale programs. If Canada embarks on an expensive ($112 million per year, according to the NCCCS study[3]) community-based screening program for patients at average risk, then health care professionals and the general public should understand that this would be an experiment. Whether the benefits will outweigh the harms is unknown.

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In his commentary, Richard Schabas compared various tools for colon cancer screening.[1] Regarding fecal occult blood (FOB) testing, he stated that the test is "undeniably imperfect" and that "it misses almost as many cancers as it finds." He went on to say that colonoscopy is "probably a better screening tool than FOB" and "appears to be at least as cost-effective." Schabas concluded that we must start doing FOB testing and not colonoscopy in Canada because we believe in "the principles of equity and distributive justice." Instead of setting a goal of increasing the capacity to offer widespread screening colonoscopy, which could significantly reduce the incidence of and mortality associated with colon cancer, Schabas suggested that we opt for a clearly inferior test and accept our "inadequate health system capacity."

By comparison, there is no consensus on the value of mammographic screening for breast cancer, yet we are prepared to spend millions of dollars on such programs. Why should colon cancer not be regarded as at least of equal importance?

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[The author responds:]

In discussing my commentary about colorectal cancer screening,[1] Ted Mitchell is quite right to point out the importance of informed consent for cancer screening. The Cancer Care Ontario[2] and NCCCS[3] reports both emphasize this point. However, it is inappropriate to suggest that these reports do not reflect a "thoughtful weighing of the risks." Both groups included strong consumer representation and put much thought into the issue.

Mitchell is also concerned that colorectal screening will place a new burden on family doctors. However, this burden would be minimized if provincial governments introduced organized screening programs, with provisions for follow-up recall and timely colonoscopy assessment.

There are 3 problems with Bruce Brady's analysis. First, it should be remembered that an intervention with a modest clinical (i.e., individual) benefit can still have a significant population impact. The 20% reduction in mortality projected by the Cancer Care Ontario report[2] would result in about 1500 fewer deaths from colorectal cancer annually in Canada by 2015. Second, cost-effectiveness does not necessarily depend "strongly" on participation rate. In fact, a colorectal screening program would have relatively low fixed costs and high discretionary costs. Our own (unpublished) work at Cancer Care Ontario suggested that the cost-effectiveness curve is very flat above 20% participation, which is hardly a daunting target. Third, Brady refers to a national screening program as an "experiment," but it would be more appropriate to view the randomized clinical trials as the experiments. An evidence-based program emulating these randomized clinical trials would be good health policy, not just an experiment.

Brady is properly concerned about the risks of colonoscopy assessment by inexperienced operators. This is a compelling reason for offering colorectal screening through an organized program rather than on an ad hoc basis (as would be the case with simply issuing clinical guidelines).

With regard to Gordon McLauchlan's letter, there is no need to choose between starting colorectal screening with FOB testing (because we are able to do so) and building our endoscopy capacity so that some day we can replace FOB testing with endoscopy.

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