



COMPUTED TOMOGRAPHIC COLONOGRAPHY FOR COLORECTAL CANCER SCREENING IN AN AVERAGE RISK POPULATION

TECHNOLOGY

Computed tomographic colonography (CTC).

ISSUE

In Canada, screening is recommended for individuals who have an average risk of developing colorectal cancer (CRC). CTC or “virtual colonoscopy” has been developed as a less invasive alternative to colonoscopy for CRC screening. There is uncertainty about the clinical utility and cost-effectiveness of CTC in comparison with other available CRC screening modalities. No Canadian guidelines recommend CTC for the screening of asymptomatic adults who have an average risk of CRC.

METHODS

A systematic review of clinical and economic studies in individuals with an average risk of CRC was conducted. The clinical review compared CTC with colonoscopy. The economic review compared CTC with no screening, annual fecal occult blood test (FOBT), or colonoscopy. An incremental cost-utility analysis comparing CTC, colonoscopy, and FOBT with no screening was performed. A publicly funded health care perspective and a lifetime analytic horizon were used.

IMPLICATIONS FOR DECISION MAKING

- **CTC and colonoscopy have comparable sensitivity and specificity for detecting polyps that are 10 mm or greater and for detecting CRC.** CTC has lower sensitivity and specificity than colonoscopy for detecting polyps that are smaller than 10 mm.
- **Colonoscopy is more cost-effective than CTC.** Colonoscopy leads to reduced disease burden at less cost than CTC. Compared with no screening, colonoscopy is likely to reduce disease burden at additional cost and may be perceived as cost effective. However, increased screening with colonoscopy requires additional infrastructure. If colonoscopy is not available, CTC is the next most cost-effective strategy for detecting CRC.
- **If Canadians who are eligible for CRC screening were to undergo screening, there would be an acute shortage of radiologists and gastroenterologists.** To screen efficiently with colonoscopy, the number of gastroenterologists would have to be 12 times higher. With the CTC strategy, the number of radiologists would have to increase by five times and the number of gastroenterologists by 2.5 times.

This summary is based on a comprehensive health technology assessment available from CADTH's website (www.cadth.ca): Ho C, Heitman S, Membe SK, Morrison A, Moulton K, Manns B, Au F, Reed M, Hilsden R. *Computed Tomographic Colonography for Colorectal Cancer Screening in an Average Risk Population: Systematic Review and Economic Evaluation* [Technology Report number 114] and *Overview of Computed Tomographic Colonography for Colorectal Cancer Screening in an Average Risk Population* [Technology Overview number 47].

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