Fecal blood test may save more lives than colonoscopy

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State public health programs could screen many more low-income and uninsured people for colorectal cancer – and save up to four times as many lives – by using stool sample blood tests instead of colonoscopies, finds a new study in Health Services Research.

Colorectal cancer, or CRC, is the second-leading cause of cancer deaths in the United States, killing 50,000 people annually. Like many cancers, early detection increases the chances of successful treatment and survival.

There are several different methods available to screen for CRC, including colonoscopy and fecal immunochemical testing, or FIT.

Colonoscopy involves threading a small camera into the colon to look for abnormal lesions (called adenomas) or malignant tumors, which can be removed at the time of the procedure. FIT checks a stool sample for the presence of blood, a possible indicator of adenomas or tumors. If blood is detected, patients are referred for a colonoscopy.

Iris Lansdorp-Vogelaar, Ph.D., an assistant professor in the Department of Public Health at Erasmus MC in the Netherlands, and research colleagues used two microsimulation models to measure the effectiveness of the two CRC tests. Both models simulated the low-income, uninsured population of South Carolina, a state that offers a free CRC screening program. Within each model, the researchers assessed whether colonoscopy or FIT would be most effective given a modest budget of $1 million.

Although colonoscopy finds more precancerous adenomas and cancers in a single screening, it costs significantly more than FIT. For example, Medicare reimbursement is between $650 and $830 for the average colonoscopy, compared to about $22 for FIT.

The researchers found that an annual FIT screening program could screen nearly eight times as many individuals and prevent nearly twice as many CRC cases as a colonoscopy program could. A FIT program would also save about four times as many lives.

"When you only have a budget of $1 million," Lansdorp-Vogelaar said, "it's much better to do a FIT program because you're able to save many more lives with the same amount of money."

Samir Gupta, M.D., an associate professor of clinical medicine at the University of California San Diego School of Medicine, focuses his work largely on improving CRC screening rates in underserved populations. Gupta observed that although patients should ideally have a

choice of screenings offered to them, the reality of limited health care funding constrains public health campaigns and most would choose the screening method that reaches the most patients.

"If it's a nuts-and-bolts issue of how much money you have and how many you can screen," he said, "FIT is an effective test and maximizes how many people you can reach."

More information: "Optimal Colorectal Cancer Screening in States' Low-Income, Uninsured Populations—The Case of South Carolina." Alex van der Steen, Amy B. Knudsen, Frank van Hees, Gailya P. Walter, Franklin G. Berger, Virginie G. Daguise, Karen M. Kuntz, Ann G. Zauber, Marjolein van Ballegooijen and Iris Lansdorp-Vogelaar. *Health Services Research* DOI: 10.1111/1475-6773.12246

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