

Rising Use of Surveillance Colonoscopy and Potential Impacts

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One-third to one-half of individuals undergoing average-risk screening colonoscopy are found to have an adenomatous colon polyp.¹ Guidelines recommend that these patients undergo periodic surveillance colonoscopy according to the number, size, and histology of adenomas found on prior colonoscopies.^{2,3} Although many patients with adenomas are at low risk for colorectal cancer (CRC), guidelines continue to provide no specific recommendations on when to stop surveillance. Given rising screening rates and an aging population, the absence of clear recommendations on when to stop surveillance has the potential to increase surveillance use over time, limiting access to endoscopic resources for other indications. This concern is of heightened relevance in the COVID-19 era as practices struggle to overcome procedural backlogs induced by pandemic-related shutdowns. The purpose of this study was to quantify temporal changes in colonoscopy indication and assess appropriateness of surveillance use in older adults.

METHODS

We performed a census of colonoscopy use in the Veterans Health Administration (VHA) using electronic data from the VHA Corporate Data Warehouse. Because CRC screening uptake among VHA-enrolled veterans is higher than in the broader US population,⁴ the VHA represents an ideal setting in which to study the effects of increasing screening on use of surveillance. In this study, we aimed to (1) validate an electronic algorithm for classifying colonoscopy indication and (2) use this algorithm to examine trends in colonoscopy indication over time in an integrated health care delivery system.

We used an algorithm previously developed by Ko et al using Medicare-linked data from the National Endoscopic Database.⁵ Details about the methodology used to conduct this record review were published previously.⁶ To validate the Ko algorithm in the VHA, we calculated the diagnostic test characteristics of the electronic algorithm compared with manual record review. Colonoscopies were classified into 4 groups: (1) average-risk screening; (2) postpolypectomy surveillance; (3) high-risk screening (ie, family history

ABSTRACT

OBJECTIVES: To quantify temporal changes in colonoscopy indication and assess appropriateness of surveillance use in older adults.

STUDY DESIGN: Retrospective longitudinal study of national Veterans Health Administration (VHA) data of all patients who underwent outpatient colonoscopy in 2005-2014.

METHODS: After validating an electronic algorithm for classifying colonoscopy indication in VHA, we examined trends in colonoscopy indication over time and across patient characteristics.

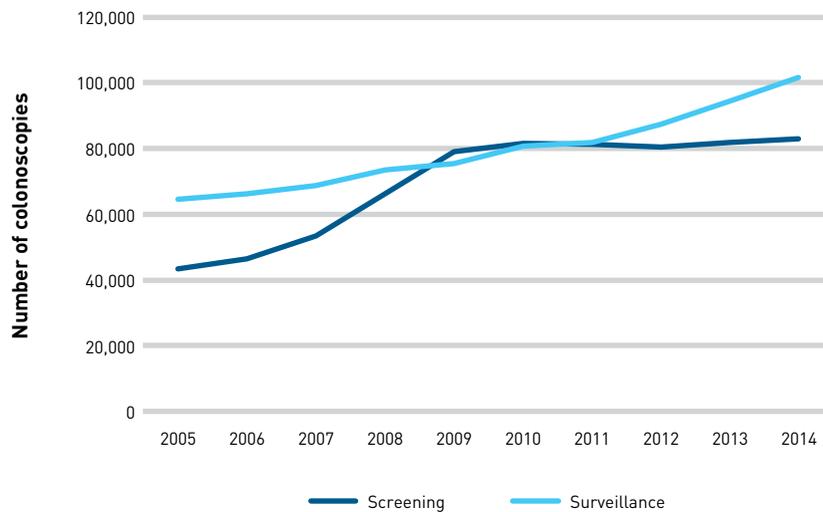
RESULTS: The proportion of colonoscopies performed for postpolypectomy surveillance increased significantly during the study period, particularly among older patients with limited life expectancy, raising concern for possible overuse.

CONCLUSIONS: Guidelines should make clear recommendations about when and how to discontinue postpolypectomy surveillance colonoscopy. Doing so would potentially reduce harms due to complications from low-value procedures and in turn moderate demand and thereby enhance overall procedural access for patients more likely to benefit.

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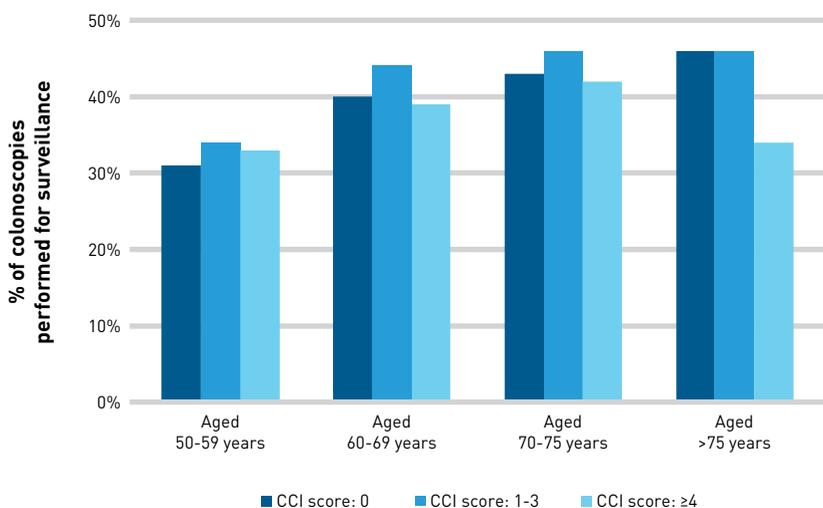
TRENDS FROM THE FIELD

FIGURE 1. Change in VHA Average-Risk Screening and Surveillance Colonoscopy Use From 2005 to 2014 (N = 2,562,091)



VHA, Veterans Health Administration.

FIGURE 2. VHA Surveillance Colonoscopy Use by Age and Health Status in 2014 (n = 276,430)



CCI, Charlson Comorbidity Index; VHA, Veterans Health Administration.

of CRC); and (4) diagnostic. We examined trends in colonoscopy indication over time and across patient characteristics.

RESULTS

Compared with manual record review, the Ko algorithm accurately estimated the proportion of colonoscopies performed for screening (30% vs 27%) and surveillance (39% vs 37%). The algorithm had a C

statistic of 0.70 (95% CI, 0.69-0.72) and 0.72 (95% CI, 0.70-0.73) for the indications of average-risk screening and surveillance, respectively.

Between 2005 and 2014, a total of 2,562,091 colonoscopies were performed in the VHA. The total number of colonoscopies performed per year increased modestly (236,841 in 2005 to 276,430 in 2014; 17% increase). However, the number of colonoscopies performed for prevention (screening or surveillance) increased markedly (107,940 in 2005 to 184,585 in 2014; 71% increase). Concurrently, there was a 30% decrease in diagnostic colonoscopies.

Screening use increased dramatically from 2005 to 2009 (82% increase) but remained relatively stable from 2009 to 2014 (5% increase) (Figure 1). In contrast, surveillance use increased steadily over the entire study period, with a more rapid increase after 2011. Of 276,430 procedures performed in 2014, 30% were for average-risk screening, 1% for high-risk screening, 37% for surveillance, and 32% for diagnostic purposes. In veterans 70 years and older, 44% of colonoscopies (22,402 of 50,997) were performed for surveillance. In veterans 70 years and older with a Charlson Comorbidity Index score of 4 or greater (indicating poor health and limited life expectancy), a group for whom surveillance colonoscopy is unlikely to be of benefit, 39% of colonoscopies (1787 of 4634) were performed for surveillance (Figure 2).

DISCUSSION

Between 2005 and 2014, the number and proportion of VHA colonoscopies performed for postpolypectomy surveillance increased significantly. Surveillance use is particularly pronounced in older veterans, including those with limited life expectancy, which is concerning for possible overuse. These results likely reflect the success of the VHA's efforts to increase CRC screening uptake, the high population prevalence of adenomas, an aging

population, and the lack of clear recommendations on when to stop surveillance. Notably, for average-risk CRC screening, specification of a "stop age" has resulted in low screening rates in the VHA in those older than 75 years.⁷

Guidelines should make clear recommendations about when and how to discontinue postpolypectomy surveillance colonoscopy. Furthermore, clinicians should carefully consider the impact of continued surveillance in this cohort on overall procedural

access, particularly in the setting of resource scarcity induced by the COVID-19 pandemic. ■

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REFERENCES

1. Lieberman DA, Weiss DG, Bond JH, Ahnen DJ, Garewal H, Chejfec G. Use of colonoscopy to screen asymptomatic adults for colorectal cancer. Veterans Affairs Cooperative Study Group 380. *N Engl J Med*. 2000;343(3):162-168. doi:10.1056/NEJM200007203430301
2. Lieberman DA, Rex DK, Winawer SJ, Giardiello FM, Johnson DA, Levin TR. Guidelines for colonoscopy surveillance after screening and polypectomy: a consensus update by the US Multi-Society Task Force on Colorectal Cancer. *Gastroenterology*. 2012;143(3):844-857. doi:10.1053/j.gastro.2012.06.001
3. Gupta S, Lieberman D, Anderson JC, et al. Recommendations for follow-up after colonoscopy and polypectomy: a consensus update by the US Multi-Society Task Force on Colorectal Cancer. *Gastroenterology*. 2020;158(4):1131-1153.e5. doi:10.1053/j.gastro.2019.10.026
4. Quality of care: prevention – colorectal cancer screening. US Department of Veterans Affairs. Updated May 23, 2019. Accessed March 8, 2021. https://www.va.gov/QUALITYOFCARE/initiatives/compare/Prevention_Colorectal_Cancer_Screening.asp
5. Ko CW, Dominitz JA, Neradilek M, et al. Determination of colonoscopy indication from administrative claims data. *Med Care*. 2014;52(4):e21-e29. doi:10.1097/MLR.0b013e31824ebdf5
6. Saini SD, Powell AA, Dominitz JA, et al. Developing and testing an electronic measure of screening colonoscopy overuse in a large integrated healthcare system. *J Gen Intern Med*. 2016;31(suppl 1):53-60. doi:10.1007/s11606-015-3569-y
7. Saini SD, Vijan S, Schoenfeld P, Powell AA, Moser S, Kerr EA. Role of quality measurement in inappropriate use of screening for colorectal cancer: retrospective cohort study. *BMJ*. 2014;348:g1247. doi:10.1136/bmj.g1247

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