Abstract

Impact of Automated Digital Navigation Program on Bowel Preparation Quality and Patient Satisfaction for Colonoscopy: A Comparative Study Across Multiple Sites

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Abstract

Background: Nearly 1 in 5 patients suffers from inadequate or poor bowel preparation in advance of a colonoscopy. Prior studies have shown that this leads to a decrease in adenoma detection rate, increased time spent in completing efficiency in endoscopy suite, as well as an overall increase in cost of care from 13-20%. With the shift to value-based care in the American healthcare system, there is an urgent need for solutions that can automate pre-procedure guidance and post-procedure follow up.

Objective: As part of the American Gastroenterology Association digital transformation network, we sought to automate and improve pre-procedure navigation for colonoscopy using connected health technologies (specifically digital navigation). At Arizona Center for Digestive Health (AZCDH), we assessed the impact of digital navigation on bowel preparation quality, patient engagement, and patient satisfaction. We also sought to assess the reproducibility of outcomes seen at AZCDH at additional sites that have implemented digital navigation for endoscopic procedures as part of the American Gastroenterology Association network, including Yale New Haven Hospital (YNHH) and three Mount Sinai Hospital locations.

Methods: At AZCDH, we compared two cohorts of patients (usual care versus digital navigation) scheduled for colonoscopy. The digital navigation cohort received usual care in addition to time based messages and education content pathways on smartphones and delivered through Rx.Health's digital medicine platform. Bowel preparation quality was then assessed, as well as patient satisfaction with the digital navigation intervention. Patient engagement and satisfaction were then compared with initial data from other sites within the network.

Results: Of the 217 patients prescribed the digital navigation program at AZCDH, 93 completed the procedure to date and had bowel preparation results documented in the electronic endoscopic record system. After implementing the digital navigation program the rate of aborted procedures decreased from 2.2% at baseline to 1.07%. In a follow up survey, 93% of respondents "strongly agreed" or "agreed" that the digital navigation program was helpful in preparing for their colonoscopy. At other locations to date, 433 patients have been prescribed the pathway at YNHH along with 213 patients at Mount Sinai locations. One hundred percent and 94% of respondents "strongly agreed" or "agreed" that the digital navigation program was helpful in preparing for their procedure at YNHH and Mount Sinai locations, respectively.

Conclusions: Our single-site study at AZCDH paved the way to implementing digital navigation pathways at YNHH and Mount Sinai endoscopy locations by demonstrating that colonoscopy instructions are well received by patients, can reduce the rate of aborted procedures and can result in higher patient satisfaction as well as a higher quality of bowel preparation. Further, patient engagement rates and satisfaction with the program was consistent at all sites across the US where the digital navigation program

has been implemented. In the future, we plan to report on patient outcomes (including reduction in no shows, poor bowel preparation) to allow benchmarking on a national scale.

KEYWORDS

endoscopy; digital medicine

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