Refining the Patient Navigation Role in a Colorectal Cancer Screening Program: Results From an Intervention Study

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Abstract

Background: Oncology patient navigators help individuals overcome barriers to increase access to cancer screening, diagnosis, and timely treatment. This study, part of a randomized intervention trial investigating the efficacy of patient navigation in increasing colonoscopy completion, examined navigators' activities to ameliorate barriers to colonoscopy screening in a medically disadvantaged population. **Methods:** This study was conducted from 2012 through 2014 at Boston Medical Center. We analyzed navigator service delivery and survey data collected on 420 participants who were navigated for colonoscopy screening after randomization to this intervention. Key variables under investigation included barriers to colonoscopy, activities navigators undertook to reduce barriers, time navigators spent on each activity and per contact, and patient satisfaction with navigation services. Descriptive analysis assessed how navigators spent their time and examined what aspects of patient navigation were most valued by patients. **Results:** Navigators spent the most time assessing patient barriers/needs; facilitating appointment scheduling; reminding patients of appointments; educating patients about colorectal cancer, the importance of screening, and the colonoscopy preparation and procedures; and arranging transportation. Navigators spent an average of 44 minutes per patient. Patients valued the navigators, especially for providing emotional/peer support and explaining screening procedures and bowel preparation clearly. **Conclusions:** Our findings help clarify the role of the navigator in colonoscopy screening within a medically disadvantaged community. These findings may help further refine the navigator role in cancer screening and treatment programs as facilities strive to effectively and efficiently integrate navigation into their services.

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Learning Objectives

Upon completion of this activity, participants will be able to:

- Examine the oncology PN role in alleviating barriers to colonoscopy screening in a medically disadvantaged population
- Ascertain PN intervention activities during colonoscopy screening most valued by patients that potentially improve patient outcomes

Background

Oncology patient navigation (PN) is recognized as an important component of cancer care and, as of 2015, all Commission on Cancer (CoC)-accredited programs are required to provide PN services.¹ Oncology PN, pioneered by Dr. Harold Freeman in 1990,² is a process that provides “individualized assistance to patients, families, and caregivers to help overcome healthcare system barriers and facilitate timely access to quality health and psychosocial care from prediagnosis through all phases of the cancer experience.”³ Prediagnosis includes screening, which detects disease early when treatment is the most effective.⁴ Disparities in cancer screening persist and are based on race, ethnicity, and healthcare access and use, among other factors.^{5–8} Studies have shown the effectiveness of PN in increasing patient completion of cancer screening and reducing disparities among the medically underserved.^{9–17}

Generally, patient navigators (herein referred to as “navigators”) are either nonclinical members of the community or healthcare professionals (usually nurses or social workers).^{4,18,19} Many PN programs use navigators who are members of the population they serve, thus they are able to meaningfully address norms related to health beliefs, trust in the medical system, and language barriers.^{20–24} Navigators help patients overcome practical barriers to cancer screening, diagnosis, and treatment; provide culturally appropriate patient education; offer peer counseling; and provide linkages to financial and community resources.^{2,21,25–29} These activities align with the evidence-based strategies to increase early detection through screening as recommended by

the Community Preventive Services Task Force, including offering client reminders and outreach, providing one-on-one education, and reducing structural (ie, practical) barriers.³⁰

As PN programs in cancer screening are increasingly being implemented in healthcare settings, it is crucial to understand navigator activities and to ascertain the value of PN interventions to patients. Such information will yield greater understanding of the navigator activities that are most critical to improved outcomes and enhance effective use of navigators within healthcare teams. Although some studies have systematically examined PN activities in cancer treatment settings,^{23,26,31,32} few have been conducted in cancer screening.^{33,34} Additionally, few PN studies include patient satisfaction measures in their design,^{11,35–37} and only one³⁵ specifically examined the aspects of PN intervention that were valued by patients.

Our study was conducted as part of a larger examination of the efficacy of PN in increasing colorectal cancer (CRC) screening via colonoscopy in a medically disadvantaged population. This analysis was performed to characterize the activities of navigators, including time spent per activity and per patient, using the data collected by the navigators. Additionally, this study examined the extent to which patients valued and were satisfied with the PN intervention, including which aspects of the intervention patients considered most useful.

Methods

Data were obtained from the intervention arm of the Study of Patient Navigation for Colonoscopy, a randomized intervention study exploring the use of PN to increase screening colonoscopy in a medically disadvantaged population (E.A.R, unpublished data, 2016). The study was conducted at Boston Medical Center (BMC) and approved by Institutional Review Boards of the Centers for Disease Control and Prevention (CDC), BMC, and Westat.

Population

We recruited participants aged 50 to 75 years who were referred for screening colonoscopy from October 2012 to December 2014 at BMC's Section of General Internal Medicine, BMC's Family Medicine Department, and the East Boston Neighborhood Health Center. BMC is the largest

safety-net hospital in New England. Participants were prescreened based on eligibility criteria and were then recruited via telephone; those not reached by telephone were mailed an invitation letter. All participants had either private or public insurance that covered screening colonoscopy. Participants assigned to the control arm (n=423) received usual care, typically consisting of 1 informational call and 1 appointment reminder call.

Intervention

The intervention was conducted by 2 nonclinical navigators. Both navigators were recruited by BMC, were bilingual (English/Spanish), had experience in health care or community health settings, and were familiar with the local community. One navigator had significant PN experience and had previously received additional training in motivational interviewing from Boston University School of Medicine; the other navigator was trained for this study by the Harold P. Freeman Patient Navigation Institute and was mentored by the senior navigator. The junior navigator had a bachelor's degree and the senior navigator was working toward earning a bachelor's degree. Navigators were employed by BMC to work with study participants 20 hours per week for this study. A full-time research coordinator led participant recruitment through November 2013, after which the navigators served as part-time recruiters. Participants were not recruited and serviced by the same navigator (ie, the senior navigator provided navigation only to those recruited by the junior navigator and vice versa). Navigators worked with patients to identify, reduce, and eliminate personal, cultural, structural, and healthcare system barriers to screening colonoscopy and to support completion of the procedure.

Navigators first conducted an assessment of participants to identify relevant barriers to colonoscopy screening. Based on the assessment, they created a plan to facilitate the screening process. Navigators worked with participants primarily via phone, but also conducted some activities in person and by mail. Navigators used the PN Colonoscopy Tracking Form (a database in the medical records system) to track participants through the screening process and to document service completion for each contact ([see supplemental eAppendix 1, available with this article at JNCCN.org](#)).

Consistent with the intervention design, some activities were common among all navigated patients, such as assessment of barriers, patient tracking and follow-up, education about CRC screening and clearing the bowels in preparation for colonoscopy (hereafter referred to as bowel prep), and appointment reminders. Other activities were more individualized, such as addressing patient-specific barriers to colonoscopy screening. The PN intervention ended (1) when a patient completed their colonoscopy, received the results, and the referring primary care provider received the endoscopy report; or (2) if a patient had not undergone a colonoscopy within 6 months after study enrollment.

Data Collection

Data for this analysis were obtained from participant baseline and follow-up questionnaires and the PN Colonoscopy Tracking Form. Research coordinators conducted the 15-minute participant baseline survey primarily via telephone; this information was used for evaluation of the intervention and not shared with navigators. The baseline questionnaire assessed participant demographics and barriers to screening. All participants received a \$25 gift card for completing the baseline survey. As soon as possible after colonoscopy was completed or if the participant was deemed nonadherent after 6 months, participants were called by a professional telephone interviewer (from Westat), who conducted a 10-minute follow-up survey. This survey included some of the same questions as the baseline questionnaire, but also included questions about patient satisfaction with navigation, including identifying which PN activities patients found most helpful. After completion of the follow-up survey, participants received another \$25 gift card.

Navigators documented each patient contact (or activities conducted on behalf of the patient) in the electronic PN Colonoscopy Tracking Form, noting the type of activity (eg, phone, in person, mail, e-mail, no patient contact needed, flag provider, colonoscopy notes), patient barriers assessed (eg, lack of education about colonoscopy, language barriers, lack of transportation, securing an escort for the appointment), activities taken to address identified barriers, time spent on each activity, and overall time spent during that contact. All time fields used

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15-minute increments. Data entry occurred in real time, while the PN was speaking with the patient, or immediately on completion of the phone call.

Data Analysis

This analysis discusses the findings on the 420 navigated patients. Although the study assigned 431 patients to receive the intervention, 11 were not included in the analysis (5 could not be reached and 6 were excluded because their spoken language was

neither English nor Spanish). Summary statistics were generated for demographic variables (age, sex, race/ethnicity, language spoken at home, and income). We calculated frequency distributions for barriers reported in the baseline questionnaire, types of activities performed by the PN, and patient satisfaction questions. We calculated the average time PNs spent per patient and per activity for each patient by using the midpoint of each 15-minute time increment, omitting extreme outliers to more accurately represent mean time navigators spent with the patients. We conducted a content analysis on open-ended responses to questions about PN services that patients deemed were most helpful. Responses were coded by the second author (B.S.) and this coding was reviewed by the first (E.A.R.). We resolved differences through consensus, subsequently grouped codes into themes (education, emotional support, and practical support), and calculated the frequencies of responses for each code. All other analyses were performed with SAS version 9.3 (SAS Institute Inc., Cary, NC).

Table 1. Demographics of Navigated Patients	
Characteristic	N (%)
Total navigated patients	420
Age, y	
50–54	222 (52.9)
55–64	142 (33.8)
65–74	55 (13.1)
DK, refused, not ascertained	1 (<1.0)
Sex	
Male	187 (44.5)
Female	233 (55.5)
Race/Ethnicity	
Hispanic	164 (39.0)
Non-Hispanic black	170 (40.5)
Non-Hispanic white	64 (15.2)
Other	21 (5.0)
DK, refused, not ascertained	1 (<1.0)
Language spoken at home	
English	234 (55.7)
Other than English	185 (55.0)
DK, refused, not ascertained	1 (<1.0)
Income (US dollars)	
\$0–\$19,999	244 (58.1)
\$20,000–\$34,999	63 (15.0)
\$35,000–\$49,999	30 (7.1)
\$50,000–\$74,999	15 (3.6)
≥\$75,000	23 (5.5)
DK, refused, not ascertained	45 (10.7)
Health insurance ^a	
Private	87 (20.7)
Public	373 (88.8)
DK, refused, not ascertained	3 (<1.0)

Abbreviation: DK, don't know.
^aRespondents could select more than one answer.

Results

Demographic data for the 420 patients who received navigation services are summarized in Table 1. Approximately half of the patients were aged 50 to 54 years (52.9%) and a similar proportion were female (55.5%). Most patients were either non-Hispanic black (40.5%) or Hispanic (39.0%), and slightly more than half spoke English as their primary language (55.7%). More than half of the patients

Figure 1. Barriers reported at baseline by patients randomized to receive navigation (N=420).

Patient Navigation in a CRC Screening Program

Table 2. Average Time Spent Per Patient Across All Activities

	Minutes
N ^a	404
Mean (SD)	43.7 (31.3)
Minimum	7
25th percentile	21
50th percentile	35
75th percentile	56

^aParticipants with 0 or >180 minutes were not included.

had incomes of less than \$20,000 (58.1%); most patients reported incomes under \$50,000 (80.2%). Most patients were publicly insured (88.8%).

At baseline, 98% of patients reported at least 1 barrier (data not shown); 57% of patients reported between 1 and 3 barriers, and 41% reported 4 or more barriers (data not shown). Patients faced challenges at multiple levels, including individual and interpersonal, cultural, environmental/structural, and healthcare system (Figure 1). The most commonly reported barrier was needing education about the colonoscopy procedure (59%), followed by scheduling the appointment (42%), out-of-pocket expenses related to the procedure (42%), and transportation (41%). One-third of patients (33%) anticipated the need for language translation. Slightly less than a quarter of patients reported time off work or identifying an escort home (required after sedation) as barriers to undergoing colonoscopy (24% and 21%, respectively). Navigators identified additional barriers through their assessment and over the course of navigation.

Across all activities, navigators spent an average of 44 minutes per patient (Table 2), and 75% received less than 1 hour of navigation services. Figure 2 illustrates the percentage of patients receiving each navigator activity and the average number of minutes spent on that activity per patient for the activity reported. Aside from assessment and planning, navigator activities corresponded closely to patient-reported barriers (as reported in Figure 1). Navigators spent more time overall on the most frequently reported activities. On average, navigators spent the greatest amount of time conducting assessment and planning (mean, 27.2 minutes per patient), which was also their most

Figure 2. Percentage of patients for which patient navigators reported activity and average time spent on activity per patient (n=413).

frequently reported activity (89%). Other frequently reported navigator activities included delivering education about colonoscopy (78%; 14.4 minutes), reviewing bowel prep instructions (73%; 13.6 minutes), scheduling or rescheduling colonoscopy appointments (71%; 15.1 minutes), arranging transportation (71%; 13.4 minutes), arranging for an escort (71%; 13.3 minutes), and providing peer support (63%; 15.0 minutes).

Patients completing the follow-up questionnaire (n=287) were highly satisfied with the PN services (Figure 3). Nearly all (96%) would recommend PN services to others, valued working with their navigator (95%), and rated their experience good, very good, or excellent (95%).

Table 3 summarizes navigation services patients identified as most helpful in the follow-up survey. Their responses largely related to education, emotional support, and practical support services. Nearly half of the patients valued the explanation of the colonoscopy procedure and bowel prep procedures (47.1% and 46.7%, respectively), followed by providing encouragement/social support (40.5%). Several patients reported their fear of the colonoscopy and that the navigator was able to alleviate their fears and anxiety, thereby convincing them to complete their colonoscopy. Many patients reported that they were thankful to have someone to listen to their concerns and answer questions. Education about the importance of completing the colonoscopy (12.8%) was also identified as helpful, as were arrangement of transportation or escort after the procedure (7.5%), appointment scheduling/rescheduling (7.0%), and language concordance between patient and navigator (3.1%).

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Figure 3. Patients' satisfaction with patient navigators.

Discussion

These study data provide insight into how the PN role can be further refined. In our study, PN activities corresponded closely to patient-reported barriers, although a lower percentage of patients anticipated having each barrier. Our findings show that navigators in our study spent the most time assessing needs/planning, educating participants about the procedure, reviewing bowel prep instructions, arranging escorts and transportation, scheduling appointments, and providing peer support. Some activities (eg, arranging escorts and reviewing bowel prep) are specific to colonoscopy, but overall, these activities correspond with findings from other examinations of PN activities in screening^{33,34} and treatment.^{23,31,32} In our study, despite patients' anticipating needing assistance with out-of-pocket expenses for colonoscopy, navigators did not need to spend time addressing these concerns as other

studies have reported,²³ because all screening colonoscopies are covered by health insurance in Massachusetts.³⁸ Given the recent increase of PN programs in healthcare settings, it is necessary to better understand the activities navigators conduct, including how much time they spend engaging in these activities.

Navigators in our study spent an average of 44 minutes per patient, which is less than other studies have reported; one study in cancer screening found that navigators spent an average of 107 minutes with each patient.¹⁴ Navigators in that study helped patients decide between colonoscopy and fecal occult blood test, which could account for the longer time reported. Similarly, a study of navigators in cancer treatment reported that navigators spent 2.5 hours per patient.²³ This difference is not surprising, because it is expected that patient navigators working in a cancer treatment setting versus a cancer screening setting would work with patients over a longer period of time and address more complicated concerns.

Most patients in our study are from disadvantaged socioeconomic backgrounds. This is notable because disparities in healthcare access and treatment persist for those who are economically disadvantaged and/or members of racial and ethnic minority groups.^{5-8,39} Interestingly, a recent multicenter, randomized control trial found that PN intervention decreased

Table 3. Patient Navigation Services Patients Found Most Helpful (n=227)

Type of Support	N (%)	Illustrative Quote
Education		
Explanation of colonoscopy procedure	107 (47.1)	"They explained everything and followed up with any questions that I had."
Bowel preparation	106 (46.7)	"[The navigator] made sure that I was clear when to start taking medication, how to mix, and when to mix everything...made sure I did not eat."
Importance of procedure	29 (12.8)	"[The navigator] explained...the reason for having the procedure done and risks if you don't get it done."
Emotional support		
Encouragement	92 (40.5)	"[The navigator] never gave up on me."
Practical support		
Transportation/Escort	17 (7.5)	"Kept in contact with me; made sure I had a ride to and from."
Appointment scheduling	16 (7.0)	"I missed my appointment and [the navigator] gave me a call back to reschedule."
Language concordance	7 (3.1)	"Explained everything in detail in Spanish."

the time from abnormal screening result to diagnostic resolution, but only after a 90-day lag time. This finding led the authors to conclude that PN may be most effective for participants who are in the most need, such as those at higher risk of being lost to follow-up.⁴⁰

Finally, our study found that patients were highly satisfied with the PN intervention and most valued the navigators for providing emotional support and education. This builds on conclusions drawn from qualitative studies of navigators in cancer care, which found that PN processes are based on relationship-building and instrumental assistance.^{32,35} These findings support the premise that healthcare professionals need to respect patients as individuals whose social circumstances affect their health and health behaviors—a central element of patient-centered care.^{41,42}

One limitation of our study was that the PN tracking database only allowed navigators to record time spent in 15-minute intervals, rather than allowing them to add actual time spent, which limited variation needed for some analyses. Additionally, because just more than half (55%–57%) of navigated patients completed the follow-up questions related to satisfaction with PN and which activities/services were most helpful, this limited our assessments of those constructs. A major strength of this study is its large sample size, particularly compared with similar studies of the PN intervention itself^{23,26,31} and patient satisfaction with PN services.^{32,35} Another strength is this study's use of the data generated by the navigators during the course of their interactions with patients, rather than the report of others either observing or supervising their work. Finally, this study examined 3 important domains: navigator activities, time spent per activity and per patient, and patient satisfaction.

Conclusions

Although this study pertains to CRC screening via colonoscopy, these findings may inform other cancer screening and treatment programs, including public health programs funded by the CDC that support PN, such as the National Breast and Cervical Cancer Early Detection Program, the CRC Control Program, and the National Comprehensive Cancer Control Program.⁴³ Given both the requirement

to incorporate PN services into CoC-accredited cancer programs and the promise patient navigators hold in helping to reduce health disparities, further research of existing PN programs is needed to refine the nonclinical navigator role to avoid duplicating services already provided, especially by nurses or social workers.¹⁸ Additionally, future research may explore the relationship between PN services and outcomes, including whether concordance between self-reported barriers and barriers assessed and addressed by navigators influences outcomes.

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To participate in this journal CE activity: 1) review the learning objectives and author disclosures; 2) study the education content; 3) take the posttest with a 66% minimum passing score and complete the evaluation at <http://education.nccn.org/node/79763>; and 4) view/print certificate. After reading the article, you should be able to answer the following multiple-

choice questions. Credit cannot be obtained for tests completed on paper. You must be a registered user on NCCN.org. If you are not registered on NCCN.org, click on "New Member? Sign up here" link on the left hand side of the Web site to register. Only one answer is correct for each question. Once you successfully answer all posttest questions you will be able to view and/or print your certificate. Software requirements: Internet

Posttest Questions

1. True or False: Oncology PN is a process that provides individualized assistance to patients, families, and caregivers to help overcome healthcare system barriers and facilitate timely access to quality health and psychosocial care from prediagnosis through all phases of the cancer experience.
2. In this study, the most commonly reported barrier to colonoscopy screening for the participants was _____.
 - a. Time off work
 - b. Transportation
 - c. Out-of-pocket expenses
 - d. Elder or child care
 - e. Lack of education about the colonoscopy procedure
 - f. A need for language translation
 - g. Scheduling the appointment
3. In this study, the navigator interventions that patients identified as most helpful were the provision(s) of _____.
 - a. Encouragement/social support
 - b. An explanation of the colonoscopy procedure and bowel prep
 - c. Education about the importance of completing the colonoscopy
 - d. Transportation or escort after the procedure
 - e. Appointment scheduling
 - f. Language concordance between patient and navigator

Supplemental online content for:

Refining the Patient Navigation Role in a Colorectal Cancer Screening Program: Results From an Intervention Study

*Elizabeth A. Rohan, PhD, MSW; Beth Slotman, MS; Amy DeGroff, PhD, MPH;
Kerry Grace Morrissey, MPH; Jennifer Murillo, BA; and Paul Schroy, MD, MPH*

J Natl Compr Canc Netw 2016;14(11):1371–1378

- **eAppendix 1:** Screenshots of PN Colonoscopy Tracking Form

eAppendix 1. Screenshots of PN Colonoscopy Tracking Form

Many of these fields will be pre-populated but the patient navigator should review and verify at initial encounter.

PN Colonoscopy Tracking Form: TEST

Info | Act Review | Referral | Appt | Nav Act 1 | Nav Act 2 | Barr-Resol | Outcome

Demographics:

Name: TEST DOB: 01/01/1954 Ethnicity: Asian
 MRN: Gender: Male Country of Origin: Unmeshed, abusive
 SSN: 001-33-4444 Race: Other Language: English

Patient Contact Info:

Prev Corrected Phone #s **Prev Corrected Addresses**

Home Phone: (555)555-5555 Work Phone:
 Cell Phone: (555)555-5555 Other Phone:
 Email:
 Address: 13 E B, MA 021180000
 Special Needs:
 Availability:

Alternate Contact Info:

Name:
 Relation:
 Phone:
 Address:
 Availability:

PCP Info:

Name: Joe Blow
 Address:

Pharmacy Info:

Pharm:
 Pharm Ph:
 Pharm Fax:

Patient Insurance Information:

☒ Primary: **MEDICARE A AND B**
☐ Secondary: SELF PAY
☐ Other: S.T.D. CLINIC D.P.H.
 Medicare D:
 Plan: MEDICARE (PART A)
 Group:
 ID: 000000000A
 Phone:
 Address: MEDICARE A AND B
 PO BOX 919
 PORTLAND, ME 041040919

Prev Form (Ctrl+PgUp) Next Form (Ctrl+PgDn) Close

Form 1: A new note will be created for each encounter with the navigator. Previously entered information will appear, but only newly added or edited information appears in the actual electronic medical record note; all fields are searchable.

eAppendix 1. Screenshots of PN Colonoscopy Tracking Form (cont.)

PN Colonoscopy Tracking Form: TEST

InfoAct ReviewReferralApptNav Act 1Nav Act 2Barr-ResolOutcome

Demographics:

Name:TEST

MRN:

SSN:021-33-4444

DOB:01/01/1954

Gender:Male

Race:Other

Ethnicity:Asian

Country of Origin:Unmeshed, abusive

Language:English

Patient Contact Info:

Prev Corrected Phone #s

Home Phone:(555)555-5555

Cell Phone:(555)555-5555

Email:

Address:13 E
B, MA 021180000

Special Needs:

Availability:

Prev Corrected Addresses

Work Phone:

Other Phone:

Alternate Contact Info:

Name:

Relation:

Phone:

Address:

Availability:

PCP Info:

Name:

Address:

Morning (8-12)

Afternoon (12-5)

Evening (5-8)

Anytime

Insurance Information:

Primary:MEDICARE A AND B

Secondary:SELF PAY

Other:STD. CLINIC D.P.H.

Medicare D:

Plan:MEDICARE (PART A)

Group:

ID:000000000A

Phone:

Address:MEDICARE A AND B
PO BOX 919
PORTLAND, ME 041040919

Pharmacy Info:

Pharm:

Pharm Ph:

Pharm Fax:

Prev Form (Ctrl+PgUp)

Next Form (Ctrl+PgDn)

Close

Data entry fields with drop-down menus also allow flexibility to insert text if needed for free-texting if needed.

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eAppendix 1. Screenshots of PN Colonoscopy Tracking Form (cont.)

PN Colonoscopy Tracking Form: TEST

Info | Act Review | **Referral** | Appt | Nav Act 1 | Nav Act 2 | Barr-Resol | Outcome

Referral:

Referral Date:

Referring Provider:

Referring Site:

Phone:

Fax:

Address:

Referrer is PCP:

Insurance:

Authorization #:

Indication: ☒ Screening ☐ Diagnostic ☐ Surveillance

Prior Colonoscopy:

Date of Prior Colonoscopy:

Notes:

Prev Form (Ctrl+PgUp) | Next Form (Ctrl+PgDn) | Close

Form 3: Here the patient navigator (and research coordinator for control patients) should document date the colonoscopy referral was generated (which should be date of enrollment), referring provider, and indication at a minimum.

eAppendix 1. Screenshots of PN Colonoscopy Tracking Form (cont.)

Status changes when "End Navigation" is checked on the Outcome Form.

PN Colonoscopy Tracking Form: TEST

Info | Act Review | Referral | **Appt** | Nav Act 1 | Nav Act 2 | Bar-Resol | Outcome

Status: NOT COMPLETE

Appointment Information:

Date Colonoscopy Scheduled:

Colonoscopy Date:

Site:

Endoscopist:

Prep Ordered:

Interpreter Needed: Language: English

Patient Education Materials Requested: ☐ Yes ☐ No Format: ☐ Printed ☐ DVD ☐ Internet

Medical Issues:

OSA: ☐ Yes ☐ No [Add to Prob](#)

CHF: ☐ Yes ☐ No [Add to Prob](#)

AICD: ☐ Yes ☐ No [Add to Prob](#)

CRT: ☐ Yes ☐ No [Add to Prob](#)

Anti-Coag: ☐ Yes ☐ No

Endocarditis Prophyl: ☐ Yes ☐ No

Indicated for high risk cardiac lesion with high risk GI procedure incl. esophageal dilatation or sclerotherapy

Additional Pertinent Data:

[Problems](#) [Medications](#) [Allergies](#)

Prev Form (Ctrl+PgUp) Next Form (Ctrl+PgDn) [Close](#)

Form 4: Here the patient navigator (and research coordinator for control patients) will add the date the colonoscopy was actually scheduled (this should be the same date as enrollment and referral date initially, but could change if the patient reschedules), the appointment date, endoscopist, preparation ordered (from drop-down menu), need for interpreter and whether the patient has requested education materials. The "Medical Issues" section is derived from the referral form and helps identify which patients may need some form of medical clearance with one of the triage nurses or anesthesiologists.

eAppendix 1. Screenshots of PN Colonoscopy Tracking Form (cont.)

PN Colonoscopy Tracking Form: TEST

Info | Act Review | Referral | Appt | **Nav Act 1** | Nav Act 2 | Barr-Resol | Outcome

Navigator Activity:

Activity Date: Type of Contact:

Navigator: Outcome:

Reason: Time Spent Coordinating Care:

Tasks:

Patient Assessment and Planning: ☐ Initial ☐ Confirmation ☐ Reminder ☐ Follow-up ☐ Problem Solving

Notes:

Appointment: ☐ Scheduled ☐ Rescheduled ☐ Confirmed

Notes:

Preparation: ☐ Reviewed bowel prep instructions ☐ Ordered/pre-ordered prep materials ☐ Confirmed receipt of prep instructions/prescription/materials ☐ Provided reminder for prep/procedure

Notes:

Transportation: ☐ Discussed Transportation ☐ Arranged Transportation ☐ Confirmed

Notes:

Escort: ☐ Discussed need for escort ☐ Assistance in arranging escort for colonoscopy procedure ☐ Accompany patient to endoscopy procedure ☐ Confirmed

Notes:

Education: ☐ Discussed need for CRC screening ☐ Discussed colonoscopy procedure ☐ Provided patient education materials

Notes:

Time Spent:

Prev Form (Ctrl+PgUp) | Next Form (Ctrl+PgDn) | Close

Form 5: Here the patient navigator documents the reason for an interaction (see drop-down list), type of contact (eg, "phone" or "in person"), outcome (eg, "contacted", "left message", etc.), and time spent, as well as specific activities performed with time spent (eg, <15 min, 15–30 min, etc.).

eAppendix 1. Screenshots of PN Colonoscopy Tracking Form (cont.)

PN Colonoscopy Tracking Form: TEST

Info | Act Review | Referral | Appt | Nav Act 1 | **Nav Act 2** | Barr-Resol | Outcome

Navigator Activity (cont.):

Tasks:	Time Spent:
Peer Support / Problem Solving: <ul style="list-style-type: none"> ☐ Provided support for fear, anxiety, embarrassment ☐ Facilitated communication with medical staff ☐ Addressed issues of time off work/employers ☐ Assisted with arranging dependent care Notes:	
Medical Clearance: <ul style="list-style-type: none"> ☐ Scheduled/re-scheduled MPAC visit ☐ Confirmed MPAC visit appointment kept Notes:	
Financial Issues: <ul style="list-style-type: none"> ☐ Referred for Financial Counseling Notes:	
Interpreter Services: <ul style="list-style-type: none"> ☐ Scheduled Interpreter ☐ Arranged for family member to serve as interpreter Notes:	
Referrals: <ul style="list-style-type: none"> ☐ Scheduled/Confirmed GI Appointment ☐ Scheduled/Confirmed Radiology Appointment ☐ Scheduled/Confirmed Surgery Appointment Notes:	
Other: <div></div> Notes:	

Form 6: This is a continuation of Form 5 with additional possible activities.

eAppendix 1. Screenshots of PN Colonoscopy Tracking Form (cont.)

PN Colonoscopy Tracking Form: TEST

Info | Act Review | Referral | Appt | Nav Act 1 | Nav Act 2 | **Barr-Resol** | Outcome

Barriers Identified:	Resolutions:
☐ None	N/A
☐ Bowel Prep	☐ Free sample provided ☐ Changed
☒ Transportation	<input type="text"/>
☐ Escort	BMC Shuttle Health Center Shuttle Taxi Voucher
☐ Language	
☐ Literacy	
☐ Lack of Knowledge	
☐ Fear (Anxiety/Embarrassment)	
☐ Family Care Issues	☐ Arranged w/ family ☐ Changed ref
☐ Time Off Work Issues	
☐ Physical Disability	
☐ Mental Health Concern	
☐ Financial Issues	
☐ Not Interested	☐ Education ☐ Referral back to PCP

Prev Form (Ctrl+PgUp) | Next Form (Ctrl+PgDn) | Close

Form 7: List of potential barriers and resolutions with a check box or drop-down menu list of options (as per Transportation example). The patient navigator can also add free text.

eAppendix 1. Screenshots of PN Colonoscopy Tracking Form (cont.)

PN Colonoscopy Tracking Form: TEST

Info | Act Review | Referral | Appt | Nav Act 1 | Nav Act 2 | Barr-Resol | Outcome

Outcome:

Colonoscopy Completed?: ☒ Yes ☐ No

Examination: ☐ Adequate ☐ Inadequate

Was result an adenoma diagnosis?: ☐ Yes ☐ No

Next Colonoscopy:

Was result a cancer diagnosis?: ☐ Yes ☐ No

Action:

- ☐ PCP notified
- ☐ Referred to Surgery
- ☐ Referred to Radiation Oncology
- ☐ Referred to Medical Oncology

Plan:

- ☐ End Navigation
- ☐ Test rescheduled
- ☐ Patient notified by mail
- ☐ Patient notified by phone
- ☐ PCP notified by mail
- ☐ PCP notified by Phone

Rescheduled for Date:

Prev Form (Ctrl+PgUp) | Next Form (Ctrl+PgDn) | Close

Form 8: Outcome form will appear if "Yes" is checked next to "Colonoscopy Completed"; the drop-down menu will appear if "Inadequate" is checked with options such as "poor prep" or "patient tolerance". The adenoma or cancer diagnosis fields will not be used for tracking outcomes in this study, but rather for future internal use related to recall for surveillance.

eAppendix 1. Screenshots of PN Colonoscopy Tracking Form (cont.)

PN Colonoscopy Tracking Form: TEST

Info | Act Review | Referral | Appt | Nav Act 1 | Nav Act 2 | Barr-Resol | Outcome

Outcome:

Colonoscopy Completed?: ☐ Yes ☒ No

If not, why?

☐ DNKA	☐ Rescheduled	☐ Cancelled
☐ DNKA x 2	☐ Rescheduled x 2	☐ Cancelled x 2
☐ DNKA x 3	☐ Rescheduled x 3	☐ Cancelled x 3

Reason(s):

☐ Moved	☐ Not needed	☐ Dependant care issue
☐ Unable to contact	☐ Not interested	☐ Anxiety/Fear
☐ Booking error/bumped	☐ Scheduling Conflict	☐ Deceased
☐ Financial reasons	☐ Prep issues	☐ Transferred care
☐ Medical clearance	☐ Forgot	☐ Declined work up
☐ Medical reasons	☐ Transportation issue	☐ Unknown

Plan:

☐ End Navigation	Rescheduled for Date: <input type="text"/>
☐ Test rescheduled	
☐ Patient notified by mail	
☐ Patient notified by phone	
☐ PCP notified by mail	
☐ PCP notified by Phone	

Prev Form (Ctrl+PgUp) | Next Form (Ctrl+PgDn) | Close

Form 8 (cont.): Outcome form if "No" is checked next to "Colonoscopy Completed". For "Test Rescheduled" checked under "Plan", the appointment date will reset on Form 4.