

Evaluating Progress and Sharing Best Practices

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Poll Questions: Patient Navigation Program

1. When was the first patient navigation program established?
2. Patient navigation programs can address barriers to colorectal screening such as inability to pay for prep and low literacy?

Building a Successful Patient Navigation Program for Colorectal Cancer Screening

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Overview

◆ Patient Navigation

- Definition
- Evidence
- 12 key considerations when building a navigation program
- An example from the Abramson Cancer Center of the University of Pennsylvania Health System
- Lessons learned

What is a Patient Navigation Program?

- ◆ First established and described by Harold Freeman in 1990's Harlem Hospital
- ◆ Navigation programs identify and eliminate barriers to accessing a life saving test or treatment such as:
 - ◆ Low awareness of the benefits/indications
 - ◆ Negative beliefs and attitudes
 - ◆ Scheduling
 - ◆ Low literacy
 - ◆ Inability to pay for prep
 - ◆ Lack of transportation
 - ◆ Lack of access to an escort



CRCS Navigation is an Evidence Based Strategy

- ◆ **CRCS navigation programs are evidence-based strategies for increasing CRCS rates**
 - **At least 17 RCTs confirm efficacy**

Author	Year	Design	Test	Location	Site type	N	Findings
Jandorf et al.	2005	RCT	FOBT	East Harlem, NY	PCC	78	N: 42.1% NN: 25% (P=0.086)
Nash et al.	2006	Historical comparison	Colonoscopy	Bronx, NY	Lincoln Medical Center	1767	75.7 per month to 119.0 per month
Christie et al.	2008	RCT	Colonoscopy	Boston, MA	CHC	21	N: 53.8% NN: 13% (p=0.085)
Myers et al.	2008	Single group	FOBT & Colonoscopy	Delaware	PCCs	154	41%
Chen et al.	2008	Cohort	Colonoscopy	NYC	Mt. Sinai Hospital	532	66%
Percac-Lima et al.	2009	RCT	FOBT, FS, BE, & colonoscopy	Boston, MA	Mass General's Chelsea HC	1223	N; 27.4% NN: 11.9 (p,0.001)
Ma et al.	2009	2 group quasi experimental	NA	NA	Korean Americans thru churches	167	N: 13.1% to 77.4% NN: 9.6% to 10.8%
Lasser et al.	2009	Cohort	FOBT & Colonoscopy	Somerville, MA	CHCs	145	N: 31% NN: 9%
Lasser et al.	2011	RCT	FOBT & Colonoscopy	Cambridge, Somerville, Everett, MA	4 HC/2 public hospital based clinics	465	N; 33.6% NN: 20% (p<0.001)
Lebwohl et al.	2011	Historical comparison	Colonoscopy	NYC	Columbia U	749	11% increase in colonoscopy volume
Paskett et al.	2012	RCT	Colonoscopy	Columbus, OH	8 PCC/4CHC	862	65% difference in arms, p=0.009
Wells et al.	2012	RCT	Colonoscopy	Tampa Bay, FL	PCCs	1267	Did not change timeliness to diagnostic resolution
Reisch et al.	2012	RCT	NA	Denver, CO	Denver Health (Safety net)	993	Shortened timeliness to diagnostic resolution
Myers et al.	2013	RCT	FOBT & Colonoscopy	Delaware	Christian Health Care	945	N:38% NN: 12% (p=0.001)
Myers et al.	2014	RCT	FOBT and/or colonoscopy	Philadelphia	Thomas Jefferson University and Albert Einstein Health Care	764	TN: 38.0% SN: 23.7%
Enard et al.	2015	RCT	FOBT, Colonoscopy and FX	Southwestern US	Latino Medicare Enrollees	303	N: 47.3% NN: 32.1% (p=0.04)
Braun, KL	2015	RCT	FS or Colonoscopy	Hawaii	Pacific Islander Medicare Enrollees	488	N: 43% NN: 27.3%

CRCS navigation is operationalized differently

- ◆ **Low touch to high touch**
- ◆ **Delivered by different means – telephone, in person**
- ◆ **Across different settings – community, primary care, specialty (GI), hospital systems**
- ◆ **Vary from one time to multiple contacts**
- ◆ **Actual intervention varies from education to overcoming a specific system barrier(s)**
- ◆ **Goal is completion of an approved CRCS test(s)**

CRCS Navigation is an Evidence Based Strategy

- ◆ **CRCS navigation programs**
 - **Increase CRCS rates compared to controls**
 - **Seen for FOBT, FS and colonoscopy based programs**
 - **Seen across settings and populations**
 - **Increase colonoscopy volumes**
 - **+/- Decrease time to diagnostic resolution**
 - **Limited data on cost-effectiveness**

13 Key Considerations in Designing a Successful Navigation Program

1. Set program goals and develop a theoretical framework
2. Specify the population and community characteristics and their unique barriers
3. Determine the setting in which navigation services are provided
4. Establish points of the beginning and end of navigation
5. Determine the background and qualifications of the navigator(s)
6. Determine the services should and should not be provided
7. Select methods of communication between patients and navigator(s)
8. Design the navigator training
9. Define oversight and supervision for navigator(s)
10. Promote the program
11. Evaluate the program
12. Design data systems to support patient tracking and collection of measures to evaluate the program
13. Establish cost-effectiveness

Adapted from DeGross A, et al. Cancer Prevention. 2014; 15(4): 483-495

An example

The University of Pennsylvania Health System's West Philadelphia CRCS Navigation Program



UPHS West Philadelphia CRCS Navigation Program

- ◆ Established at UPHS in Nov, 2011 with gift from anonymous donor and ACS and foundation funding
- ◆ Population: West Phila residents that were non-adherent to colonoscopy screening
 - Defined as having missed at least 1 colonoscopy appointment (range 1-13)
- ◆ Barriers to CRCS in West Philadelphia residents: Low awareness, low literacy, inability to afford prep, transportation
- ◆ Conduct research to determine program feasibility, acceptability, effectiveness, cost effectiveness

West Philadelphia CRCS Patient Navigation Program

- ◆ **Hired an MA to serve as patient navigator**
- ◆ **Trained at the Harold Freeman Patient Navigation Institute, Bronx, NY**
- ◆ **Resources for program administration (cell phone and service, computer, printer, printing, stationary, software, etc.)**
- ◆ **Resources for patient care (lots of Miralax, crystal light, Dulcolax, Septa tokens**
- ◆ **Created a low literacy prep instructions and video**

CRCs Patient Navigation Program Results as of 6/1/16

Response to program	N (%)
No patients contact attempted	1939
Agreed to participate	705 (36.4)
Declined participation	513 (26.4)
Unable to contact after 3-6 calls	721 (37.2)

CRC Patient Navigation Program Demographics

Demographics	N=690 (%)
Age (mean, s.d.)	60.2, 8.3
Female	427 (61.9)
African American	621 (90)
Marital Status	
Single	320 (46.4)
Married	178 (25.8)
Education	
<High School	125 (18.1)
High School	316 (45.8)
Annual Income	
<\$10,000	240 (34.8)
10,000-29,999	242 (35.1)

CRC Patient Navigation Program Outcomes

Screening colonoscopy results	(n=477)
Normal/no pathology or hyperplastic polyp(s)	269 (56.4)
At least one adenomatous polyp	179 (37.6)
Adenocarcinoma	4 (0.8)
Repeat	11 (2.3)
Other	14 (2.9)

Outcome: Diagnosed Colorectal Cancers

Diagnosed Colorectal Cancer	N
Stage I	1
Stage III	2
Stage IV	1
Total	4

Outcome: Patient Satisfaction

Patient Satisfaction (n=180)	
Overall, I am satisfied with the navigation services I received from the navigator	
Strongly agree	168 (93.3)
Agree	11 (6.1)
Neither Agree or disagree	0
Disagree	1 (0.6)
Strongly disagree	0

Lessons Learned

- ◆ **Recruitment rate: 3:1**
 - **Will navigation really end disparities?**
- ◆ **Once enrolled, almost ~ 67% of patients completed colonoscopy**
- ◆ **Navigation for this population is time and labor intensive**
 - **Average time spent by navigator per patient: 4 hrs 17 min**
- ◆ **Greater than expected adenoma detection rate – 37%**
 - **Higher than what is reported in the literature (10-20%)**
 - **Possible reasons are:**
 - **Racial differences in CRC incidence (90% of participants are AA)**
 - **Higher prevalence of comorbidity/risk factors for CRC (obesity, diabetes)**
 - **Differences in behaviors (delay of screening, ETOH and tobacco use)**
- ◆ **Establishes trust**

Conclusions

- ◆ **A patient navigation program for CRCs for UPHS patients who are residents of West Philadelphia and have not previously been able to complete screening colonoscopy is**
 - **Feasible**
 - **Acceptable**
 - **Effective**
 - **Associated with high patient satisfaction**
 - **Reduces colonoscopy no shows**
 - **Builds trust**

...and the program was cost-effective

	HUP	PPMC	UPHS Total
Volume	80	40	120
Outpatient Net Revenue	\$84,401	\$59,557	\$143,958
Direct Expenses	\$91,955	\$45,114	\$137,089
Contribution Margin	(\$7,555)	\$14,444	\$6,869
Indirect expenses	\$30,251	\$11,653	\$41,904
Net gain (loss)	(\$37,806)	\$2,791	(\$35,015)
Downstream Contribution Margin	\$115,004	(\$947)	\$114,057
Total Gain/Loss including Downstream	\$77,198	\$1,843	\$79,042

Sustainability of cancer screening programs

Cost-Effectiveness Analysis of the First Year of a Colorectal Cancer (CRC) Screening Patient Navigation Program at an Academic Medical Center



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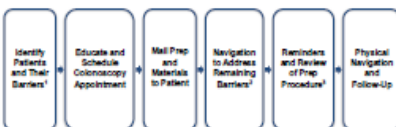
Abstract

- Introduction:** We evaluated the first year of the CRC Screening Patient Navigation Program at the University of Pennsylvania's Health System (UPHS), analyzing the costs of the program and cost per patient who successfully completed a screening colonoscopy (SC).
- Methods:** This is a retrospective cost-effectiveness analysis of data gathered during the first full year (2012) of the navigation program. For this analysis, the outcome of interest was SC completion within 3 months of program enrollment. To perform the cost-effectiveness analysis, the total costs of the navigation program inputs were recorded, and the costs were divided by the number of patients enrolled, scheduled, and screened (both unadjusted and adjusting for an estimate of those who would have completed SC without navigation).
- Results:** The cost per patient enrolled was \$433.76 and the cost per patient screened was \$703.54. However, after adjusting for completion without navigation, the cost was \$874.50 per additional patient screened. Labor comprised over 84% of the cost per successfully screened patient.
- Conclusions:** Although the navigation program significantly increased the percentage of completed CRCs for this previously non-adherent and underserved cohort, there is a significant cost to this navigation program, driven largely by labor costs. However, such cost-intensive interventions may be beneficial in high-risk populations.

Background

- Patient navigation programs have been shown to be effective in increasing colorectal cancer (CRC) screening rates, particularly for underserved populations.
- However, the costs required to institute a successful program and the cost-effectiveness of such programs remains less clear.

Figure 1: Navigation Program Process



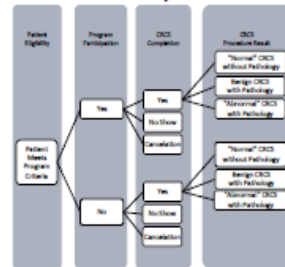
- Common barriers include poor awareness, negative attitudes, inability to afford the out-of-pocket costs of the prep and lack of transportation.
- Navigation often includes helping patients identify an escort, planning transportation, and providing emotional support.
- Phone reminders, especially the colonoscopy prep procedure review call, are crucial to maximizing the likelihood of successful CRC screening in populations with historically low SC completion rates.

Objectives

- To determine the cost effectiveness of the first year of a CRC Screening Patient Navigation Program instituted at UPHS.

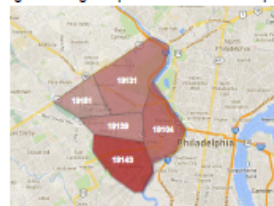
Methods

Figure 2: Cost-Effectiveness Analysis Decision Tree



- The outcome of interest was SC completion within 3 months of program enrollment.
- Both program participants and those who declined navigation were followed and the number of cancelled, missed, and completed SC appointments was recorded.
- To perform the cost-effectiveness analysis, the total costs of the navigation program inputs were recorded, including the navigator's total compensation and training, office supplies, and patient supplies (free prep materials and public transit tokens).
- The costs were divided by the number of patients enrolled, scheduled, and screened (both unadjusted and adjusting for an estimate of those who would have completed SC without navigation).

Figure 3: Target Population – West Philadelphia



Results

Table 1: Demographics

	Navigated Patients (n=138)	Non-participants (n=133)
Female	68%	67%
Average Age	58.5	59.2
Black or African American	93%	86%
White	4%	12%
Hispanic/Latino	1%	2%
Insurance:		
Medicaid	33%	27%
Medicare	43%	26%
Private	21%	43%

- Patients at UPHS from West Philadelphia (representing prespecified zip codes that historically had low SC completion rates) were targeted for the navigation intervention.
- Patients had to be between 50 and 75 years old, live in West Philadelphia, have insurance, have a primary care provider (PCP) in a participating UPHS clinic (3), and have an open SC order.
- "Navigated Patients" agreed to participate in the program; "Non-participants" are defined as individuals who declined to participate after being contacted by the navigation program to enroll.

Table 2: Clinical Effectiveness Analysis

	Navigated Patients	Non-participants
Total Sample, N	169	319
Average Number of Prior Orders (Range)	1.68 (1-5)	1.30 (1-4)
Patients who Scheduled SC (n)	81.7% (138)	41.7% (133)
Patients who Cancelled Appointments	23.9%	44.4%
Patients who Missed Appointments	11.6%	42.9%
Outcomes, n	138	133
Patients who Completed SC within 3 Months (n)	79.0% (109)	19.6% (26)
Adenoma Detection Rate	40.4%	30.8%

- "Total Sample" refers to the total number of patients contacted who enrolled in or declined navigation. All patients in the total sample fulfill the program criteria outlined above.
- "Outcomes" were calculated only for the patients who scheduled SC in each group.

Table 3: Cost-Effectiveness Analysis

Inputs (2012 Dollars)	CY 2012 Costs	
Labor		\$64,531
Training		\$1,800
Office Supplies		\$5,095
Patient Supplies		\$5,260
Total Cost (TC)		\$76,686
TC, Excluding Start-Up Costs		\$73,329
Variable Cost		\$3,838
Outputs (2012 Dollars)		
	Average Total Cost	Average Labor Cost
Per Patient Enrolled in Navigation Program (n=169)	\$453.76	\$381.84
Per Navigated Patient Scheduled (n=138)	\$555.70	\$467.62
Per Completed SC (n=109)	\$703.54	\$592.03
Per Completed SC, Adjusted (n=88)	\$874.50	\$735.88

- To calculate the adjusted costs, it was assumed that 19.6% of the navigation group's successful screenings would have completed SC without the program and were removed, as 19.6% of the non-participating patients were successfully screened.

Conclusions

- Although the navigation program significantly increased the percentage of completed CRCs for this previously non-adherent and underserved cohort, there is a significant cost to this navigation program, driven largely by labor costs.
- However, such cost-intensive interventions may be beneficial in high-risk populations like West Philadelphia patients, given the above-average adenoma detection rate of 40%.
- Future efforts may wish to analyze not only the true downstream impact of screening on this population, but also less labor-intensive ways to engage this population.

Limitations

- Since we were only able to recruit about 30% of the contacted patients for the program, our results may be subject to participation bias.

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- Abramson Cancer Center
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- Colon Cancer Alliance
- Colon Cancer Coalition

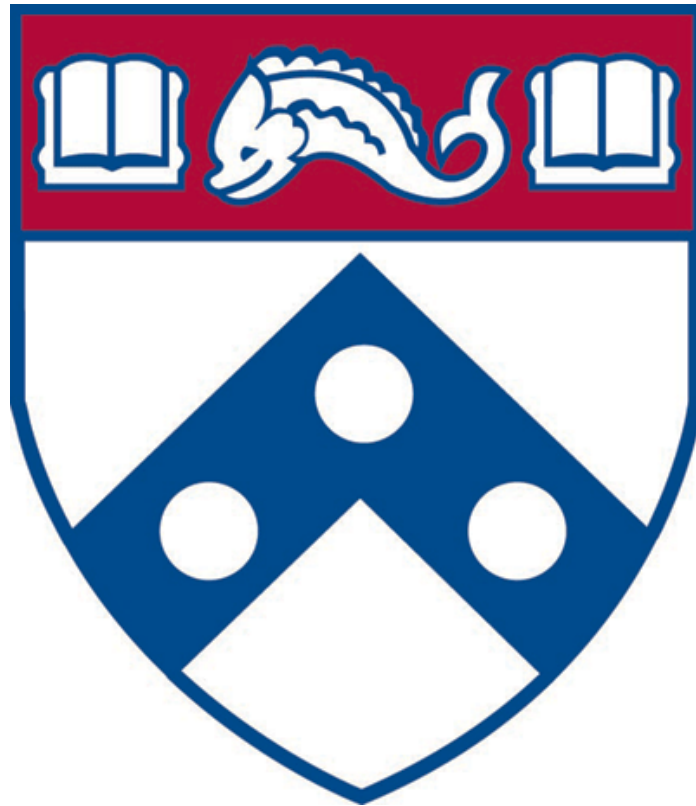
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 - ◆ **Get Your Rear in Gear**
 - ◆ **Haverford School Checking for Cancer**
 - ◆ **Penn CARES Foundation**

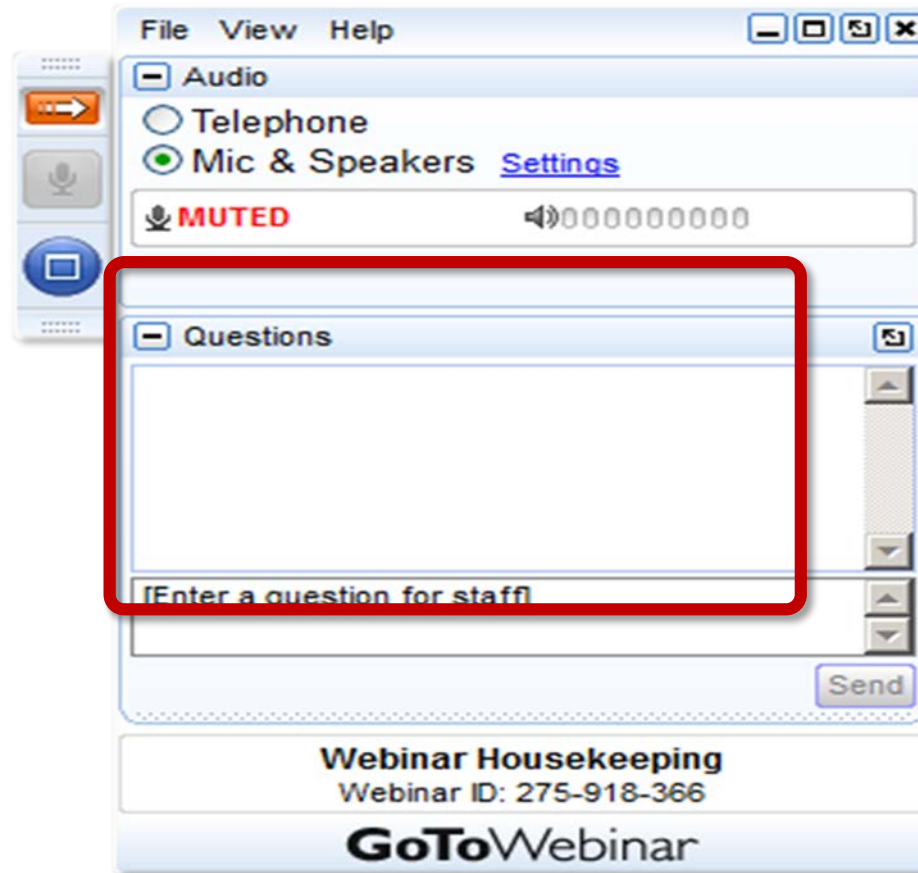
Thank you

Questions?

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Q&A



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