Increasing Breast, Cervical and Colorectal Cancer Screening through Academic Detailing and Practice Facilitation

Project Summary Report

AUGUST 2017

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This is a modified version of the report submitted in August 2017 to the New York State Department of Health in partial fulfillment of the project's deliverable requirements.

The material within this report has been edited to protect the anonymity of the practices who participated in this Project. While some identifying details have been redacted, the overall content remains largely the same.

The original report was drafted by Morgan A. Pratte, MPH, and the final submission authored by Ms. Pratte, MPH and Christopher P. Morley, PhD, for submission to the New York State Department of Health. The report was re-edited, with identifying information redacted, for public distribution, by Laura A. Schad MPH, in August, 2020.

Executive Summary

Introduction

In June 2016, the Research Foundation of SUNY – Upstate Medical University entered a contract with Health Research, Inc. and the New York State Department of Health (NYSDOH) to complete the project *Increasing Cancer Screening through Academic Detailing and Practice Facilitation* (June 30, 2016 - June 29, 2017). This current project is an extension of the previously funded project *Increasing Cancer Screening through Academic Detailing and Practice Facilitation*, the contract for which concluded June 29, 2016. As this is the fourth iteration of the project, the current project year will subsequently be referred to as Year 4.

The primary goals of the Year 4 project were to implement an intervention using a combination of academic detailing and practice facilitation to increase breast, cervical and colorectal cancer screening within primary care practices, and to assess the outcomes and barriers to intervention success. Under this project, three practice-based research networks (PBRNs) administered from SUNY Upstate Medical University, SUNY University at Buffalo, and University of Rochester Medical Center partnered to provide academic detailing and practice facilitation services on breast, cervical and colorectal cancer screening to 13 primary care practices across Western and Central New York. Practices enrolled in the project were able to receive either an in-person 1-hour academic detailing session, or participate in an online webinar, on breast, cervical and colorectal cancer screening guidelines and strategies to increase screening rates among eligible patient populations. The practices received practice facilitation services from trained professionals for a minimum 6-month period to develop and implement practice-specific strategies with the goal of increasing cancer screening among their eligible patients.

Practice Recruitment and Practice Characteristics

The following PBRNs played an integral role in practice recruitment activities:

- Studying-Acting-Learning & Teaching Network (SALT-Net; Syracuse region)
- Upstate New York Practice Based Research Network (UNYNET; Buffalo region)
- Greater Rochester Practice-Based Research Network (GR-PBRN; Rochester region)

Twelve practices from the Year 3 project re-enrolled for continued participation in the Year 4 project period. One new practice enrolled in the project, totaling 13 participating practices for the current project year. The one new practice received the academic detailing session, and all 13 practices completed the remaining project components. Of the enrolled practices, six were part of a larger medical group or health care system, three were federally qualified health centers (FQHCs), two were affiliated with university hospitals, one was a physician-owned practice, and one was a non-profit clinic. All practices were clinical sites that provide care to underserved patients, more specifically, patients who are low-income, uninsured, or under-insured.

Academic Detailing and Practice Facilitation

The academic detailing session was delivered in-person for the one new practice enrolled in the project. A total of 14 individuals attended the academic detailing session.

Practice facilitators worked primarily with one person or a small team of people within the practice to provide guidance and motivation for quality improvement projects. Having practice facilitators working in-house at their assigned practices consistently acted to help build rapport and buy-in for the project among practice staff. Approximately 466 service hours were delivered to the participating practices by the practice facilitators. This translates to an average of 36 hours per practice over a 6-month period. Across all regions and practices served, the practice facilitators dedicated an approximately even distribution of service hours to quality improvement support, data support, and general administrative activities. Practices primarily focused on utilizing the practice facilitators' skills to implement the following:

- Evidence-based patient outreach and education
- Coordination of staff training sessions with local organizations (e.g. New York State Cancer Services Program, American Cancer Society) to promote cancer screening resources and awareness
- Practice workflow assessments to increase efficiencies in and standardization of cancer tracking processes
- Chart review assistance
- Data cleaning to improve the accuracy of reports and registries

Overall, most practices experienced consistent support and engagement from practice administration. However, support and engagement from clinician champions and site coordinators decreased considerably from pre- to post-practice facilitation for some practices, due largely to lack of time and competing demands among these personnel. After working with the practice facilitators, the practices cumulatively experienced improvements in their ability to develop clear and measureable targets related to increasing breast, cervical, and/or colorectal cancer screening. Validity and reliability issues for data stored in electronic health record (EHR) systems continue to present barriers to implementing quality improvement for most practices. A few practices therefore worked specifically on efforts to improve their EHR data system and to establish workflows around EHR-based provider reminders, which sometimes took precedence over other available evidence-based interventions.

Notable Practice Challenges

Several participating practices experienced significant system-level challenges during the course of the Year 4 project. Three practices affiliated with the same health system experienced an EHR system transition, which considerably impacted their ability to generate accurate cancer screening rates given that providers and staff were adjusting to running reports in the new system. Two additional practices affiliated with a different health system completely lost access to their EHR for two to three months due to a system-wide shut down. Two practices underwent ownership transitions during the project period, in which these clinics shifted from physician-owned to hospital-owned. All of these challenges likely contributed to the decrease in engagement levels observed among practice clinician champions and site coordinators. All but one of the practices participating in the project during Year 4 have been participating for at least two years, with some practices participating for all four years. It appears that cyclical organizational changes have hit across the project in tandem; this was further multiplied by the fact that a number of the participating practices are affiliated with one another through organizational or regional alignments. At the level of the individual practices, this has materialized as apparent drops in observed screening rates for several clinics, in one or more of the targeted cancer types. Whether these changes represent actual differences in true screening rates, or whether they are artifacts of EHR transitions, reporting changes, or engagement, will likely only be apparent with additional observation.

Notable Project Findings and Outcomes

Breast, cervical, and colorectal cancer screening rates were collected from practices prior to practice facilitation and again at the end of the practice facilitation period. The average breast and cervical cancer screening rates decreased overall during the Year 4 project period, while the average colorectal cancer screening rates increased. The decline in breast and cervical cancer screening rates can likely be attributed in part to the EHR-related challenges experienced by many practices, which inhibited their ability to report accurate data. Longitudinal analysis among practices that have participated in the project for the past several years indicates an overall upward trend in breast and colorectal cancer screening rates, while cervical cancer screening rate trends remain inconsistent.

The most commonly implemented evidence-based interventions across all practices included provider reminder systems, client reminder systems, and reducing structural barriers. Strategies utilized to remind providers to discuss cancer screening with their patients included EHR alert systems and pre-visit planning. Client reminder approaches included phone calls, calendar reminders, and postal letters. Structural barriers were addressed by increasing the use of fecal immunochemical testing (FIT), especially among patients that are more likely to experience challenges with transportation, cost, and time associated with colonoscopies. Other strategies included coordination of dedicated screening days for breast or cervical cancer, utilization of mobile mammography, and patient navigation services.

Practices continue to experience a range of issues at the patient, staff, and system levels. Transportation, fear of screening procedures and/or results, and health literacy were some of the top patient barriers reported. Lack of staff time and dedication to quality improvement activities were cited as common challenges, likely due to competing demands among practice staff. Practices were more likely to successfully implement workflow adjustments among practice staff if these changes were adopted in the form of office policies and if the workflows were adaptable to multiple areas of health maintenance, including those outside of cancer screening. The success of primary care practices in closing the loop on patient screening (i.e., securing screening completion reports for patients) is also an issue and is partially contingent on the office operations and policies of area specialists in sharing screening completion reports, areas in which primary care practices have limited influence.

Alignment of quality improvement activities with existing practice priorities, such as Patient Centered Medical Home (PCMH) or Delivery System Reform Incentive Payment (DSRIP), was viewed as an efficient utilization of personnel time and practice resources. Team-based participation was also viewed as an important factor in sustaining quality improvement efforts.

Notably, despite challenges at the practice level caused by organizational disruptions (re-organization, changes in ownership, EHR system conversions, etc.), the average overall screening rates for breast cancer have increased from 37.4% in 2014, to 53.2% at the close of the current project year; and for colorectal cancer, rates have improved from an average of 13.7% in 2013, to 42.6% at the close of the current project year. Cervical cancer screening rates have remained more stagnant over time, likely due to the fact that a great deal of cervical cancer screening responsibility is often “turfed” to gynecological services (previously noted in prior year reports). However, we remain confident that project efforts continue to contribute to increased screening rates in poorer-performing practices, and the maintenance of screening rates in relatively high-performing practices, especially for breast and colorectal cancer screening.

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Acknowledgements

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In addition to practice facilitation conducted by Ms. Norton in the Syracuse and Rochester regions, three practice facilitators from the University at Buffalo contributed to the project in the Buffalo and Rochester regions, including Jennifer Aiello, MS, Victoria M. Hall, RN, MPH, and Linda Franke, BS. Leslie Kohman, MD (*Upstate Cancer Center, SUNY Upstate Medical University*) consulted with the core project team during the creation of the academic detailing material during Years 1-3 of the project.

The project was conducted within a large multi-organizational framework, led by the Studying-Acting-Learning-Teaching Network (SALT-Net, SUNY Upstate Medical University) in partnership with the Upstate New York Network (UNYNET - University at Buffalo) and the Greater Rochester PBRN (GR-PBRN - University of Rochester Medical Center), under the auspices of the Upstate New York Translational Research Network (UNYTE). CNYAHEC was also a contributor to the planning of an online continuing education module derived from the academic detailing presentation materials created for this project.

We would also like to acknowledge the 13 participating practices for their dedication to this project and their commitment to improving the health and lives of their patients.

Introduction

In June 2016, the Research Foundation of SUNY – Upstate Medical University entered a contract with Health Research, Inc. and the New York State Department of Health (NYSDOH) to complete the project *Increasing Cancer Screening through Academic Detailing and Practice Facilitation* (June 30, 2016 - June 29, 2017). This contract was supported by the Cooperative Agreement Numbers DP003879 and DP006102 between the Centers for Disease Control and Prevention (CDC) and the NYSDOH.

The current project is an extension of the previously funded project *Increasing Cancer Screening through Academic Detailing and Practice Facilitation*, supported by the same Cooperative Agreement Numbers DP003879 and DP006102 between the Centers for Disease Control and Prevention (CDC) and the NYSDOH the contract for which concluded June 29, 2016; as well as the project entitled *Increasing Colorectal Cancer Screening through Academic Detailing and Practice Facilitation*, which concluded on June 30, 2014, and was supported by the Cooperative Agreement No. 5U58DP002029 between the Centers for Disease Control and Prevention (CDC) and the NYSDOH. As this is the fourth iteration of the project, the current project year will subsequently be referred to as Year 4.

The primary goals of the current project were to implement an intervention using a combination of academic detailing and practice facilitation to increase breast, cervical and colorectal cancer screening within primary care practices, and to assess the outcomes and barriers to intervention success. Academic detailing is an activity wherein a trained professional (academic detailer) visits health care professionals in their own setting to provide tailored education on specific health topics and to provide guidance on best practices.[1] Practice facilitation involves the work of trained health care professionals (practice facilitators) who assist primary care practices in research and quality improvement activities.[2] This assistance includes data collection, feedback on provider and practice performance, and the facilitation of system-level changes to improve practice processes. Combined, academic detailing and practice facilitation help primary care practices align their work with evidence-based best practices to improve patient care and outcomes.

Under this project, three practice-based research networks (PBRNs) administered from SUNY Upstate Medical University, SUNY University at Buffalo, and University of Rochester Medical Center partnered to provide academic detailing and practice facilitation services on breast, cervical and colorectal cancer screening to 13 primary care practices across Western and Central New York. Practices enrolled in the project were able to receive either an in-person 1-hour academic detailing session, or participate in an online webinar, on breast, cervical and colorectal cancer screening guidelines and strategies to increase screening rates among eligible patient populations. The practices received practice facilitation services from trained professionals for a minimum 6-month period to develop and implement practice-specific strategies with the goal of increasing cancer screening among their eligible patients.

This report provides a summary of the major activities and outcomes of this project.

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[1] Module 10. Academic Detailing as a Quality Improvement Tool. May 2013. Agency for Healthcare Research and Quality, Rockville, MD. http://www.ahrq.gov/professionals/prevention-chronic-care/improve/system/pfhandbook/mod10.html

[2] Practice Facilitation as a Resource for Practice Improvement. May 2013. Agency for Healthcare Research and Quality, Rockville, MD. http://www.ahrq.gov/professionals/prevention-chronic-care/improve/system/pfhandbook/mod1.html

I. Project Development

The activities conducted under the *Increasing Cancer Screening through Academic Detailing and Practice Facilitation* project were guided by the logic model contained in Figure 1 of Appendix A. Core project staff at SUNY Upstate Medical University provided the primary administrative services for the project. Partner site investigators and coordinators in the Buffalo, NY, and Rochester, NY, project regions worked in alignment with the administrative processes developed at SUNY Upstate Medical University.

Academic Detailing Curriculum

The academic detailing curriculum developed during Year 3 was updated to reflect recent guideline changes made by both the United States Preventive Services Task Force (USPSTF) and American Cancer Society (ACS). Upon finalization, the academic detailing curriculum was submitted to the American Academy of Family Physicians (AAFP) for Continuing Medical Education (CME) credit as a live activity. The curriculum was granted 1 Prescribed Credit under the AAFP, which can be accepted by the American Medical Association (AMA) as a Category 1 Credit, and by the American Osteopathic Association as a Category 1-A Credit.

The curriculum was also converted into an electronic web-based course to be hosted on Health Workforce Apps (HWApps; hwapps.org), a system hosted by the Central New York Area Health Education Center (CNYAHEC). The webinar launched on December 1, 2016, and was also granted 1 Prescribed Credit from the AAFP. This course was hosted as open-access on HWApps, and was thus available to individuals outside of our project participant group.

Practice Facilitation Planning

Practice facilitation activities represented the bulk of the work completed with the practices under this project. The Practice Facilitator Log was used to record information about each encounter the practice facilitator had with a practice and collect information on the following items for each encounter:

- Method of contact with the practice (e.g., telephone, in-person, e-mail)
- Service/activity provided to the practice
- Person providing service/activity to the practice
- Time devoted to completing the service/activity
- Travel time
- Preparation time for the service/activity
- Notes/next steps from the encounter

All facilitators received an orientation during the Year 3 project period (August 2015), which included instructions on how to complete the Practice Facilitator Log and other data collection activities under the project. Since all of the same practice facilitators were involved in the project from Year 3 to Year 4, the facilitators received a brief review on how to complete all data collection tools at the start of Year 4.

Data Collection

Several measures of effectiveness were developed to evaluate the impact of project activities on the cancer screening processes and outcomes in participating practices, as outlined in the Logic Model. These measures are further detailed in Table 1.

Table 1. Data Collection Materials Designed to Evaluate Project Impact

Project Component	Activity	Measurement Tool
Practice Recruitment	Practices serve project priority populations	• Practice characteristics survey
Academic Detailing Session	Attendance of primary care providers to academic detailing session	• CME sign-in sheets • HWApps registrations
	Usefulness of academic detailing session	• CME evaluation survey • HWApps post-webinar quiz • Focus groups/interviews
Practice Facilitation	Change in perceived barriers to breast, cervical and colorectal cancer screening	• Pre- and post-practice facilitation surveys • Focus groups/interviews
	Change in perceived barriers to use of breast, cervical and colorectal cancer screening registry	• Pre- and post-practice facilitation surveys • Focus groups/interviews
	Change in patient screening rates for breast, cervical and colorectal cancer	• Pre- and post-practice facilitation screening rates for each cancer type
	Implementation of evidence-based interventions to increase breast, cervical and colorectal cancer screening	• Pre- and post-TRANSLATE evaluation rubric
	Practice readiness and planning for practice improvement	• Pre- and post-TRANSLATE evaluation rubric
	Practice adoption or realignment of practice workflows and policies	• Pre- and post-TRANSLATE evaluation rubric • Focus groups/interviews

The practice characteristics form was delivered to the practices at the commencement of the project period. Most practices required extended time to complete the practice characteristics survey and often returned the surveys four to six weeks after they were administered.

The pre-post facilitation provider surveys were collected using a paper-based form and were anonymized through the use of unique individual identifiers. The collection of the survey data was managed by the practice facilitators and practice champions.

The practice facilitators evaluated their assigned practices on nine elements of a practice improvement model, as represented in the TRANSLATE evaluation rubric, in a pre-post format. The TRANSLATE rubric was also used to capture the implementation of evidence-based interventions, workflows, and policies within the practices, as identified through the CDC's Community Guide to Preventive Services.[3] For the one new practice, the pre-assessment was conducted at the start of practice facilitation activities (December 2016), and for the 12 continuing practices, the post-assessment from Year 3 was considered the pre-assessment for Year 4 (June 2016). For all 13 practices, the Year 4 post-assessment was conducted at the end of the practice facilitation period (June 2017).

[3] http://www.thecommunityguide.org/cancer/index.html

The practice facilitators collaborated with the appropriate personnel at their assigned practices to collect screening data for breast, cervical, and colorectal cancer in a pre-post format. Each practice reported the number of patients meeting recommended screening criteria (numerator) as well as the number of patients eligible for screening (denominator) for each cancer type; the evaluation team at SUNY Upstate Medical University subsequently calculated practice screening rates from these data. Further detail regarding cancer screening rate data collection can be found under the *Notable Project Findings and Outcomes* section.

Focus groups and interviews were conducted by the project coordinator, who has training in qualitative data collection and analysis. The focus groups and interviews were conducted through either in-person meetings or phone-based conference calls, based on timing, availability, and convenience for participants. The participants targeted for inclusion in the focus groups and interviews were those individuals most directly involved in the implementation of the project, including practice medical directors, office managers, and other quality improvement personnel. Practice facilitators assisted in the scheduling of the focus groups and interviews, but were otherwise not involved in the qualitative data collection process.

Copies of the practice characteristics survey, pre- and post-practice facilitation provider surveys, and TRANSLATE evaluation rubrics listed in Table 1 can be found in Appendix B.

II. Summary of Practices and Populations

Practice Recruitment and Enrollment

Practice recruitment activities were completed between July and December 2016. The following PBRNs played an integral role in practice recruitment activities:

- Upstate New York Practice Based Research Network (UNYNET; Buffalo region)
- Greater Rochester Practice-Based Research Network (GR-PBRN; Rochester region)
- Studying-Acting-Learning & Teaching Network (SALT-Net; Syracuse region)

The directors of each PRBN, along with study site coordinators, contacted practices within their regions that had participated during the Year 3 project period. Of these, 12 enrolled for continued participation in the project. One new practice was recruited for participation from the GR-PBRN (13 total practices: 12 continuing, 1 new).

The NYSDOH specifically requested that practices enrolled in the project have the capacity to affect a high percentage of patients who fell within their priority populations. These populations include: racial/ethnic minorities, low socioeconomic status, uninsured, geographically isolated/rural, and Medicaid-eligible populations. Thus, all practices recruited for enrollment in the project were assessed for their ability to meet these criteria.

A one-page enrollment form detailing the purpose of the project, as well as project expectations, benefits, and deliverables, was provided to and completed by each enrolled practice. The enrollment form asked each practice to provide the name and contact information of a designated individual who would be the primary contact for the practice facilitator and act as a practice champion for the project.

Participating Practices and Populations

The practice characteristics survey collected several items of information on the participating practices, including information on practice personnel and patient mix. The following information reflects the practice characteristics of the 13 practices that participated in the Year 4 project period.

Practice Information

Among the participating practices, six were identified as large medical groups or health care systems, three were federally qualified health centers (FQHCs), two were affiliated with university hospitals, one was a physician-owned practice, and one was a non-profit clinic. The majority (10) of the enrolled practices are single-specialty family medicine clinics. The three multi-specialty practices include a mixture of internal medicine, family medicine, OB/GYN, and pediatrics. One of the multi-specialty clinics also includes dentistry, podiatry, optometry, urgent care and behavioral health services. Ten of the practices are Patient-Centered Medical Homes, and 12 practices follow Meaningful Use recommendations. Table 2 displays a summary of selected practice characteristics, including staff composition and patient volume.

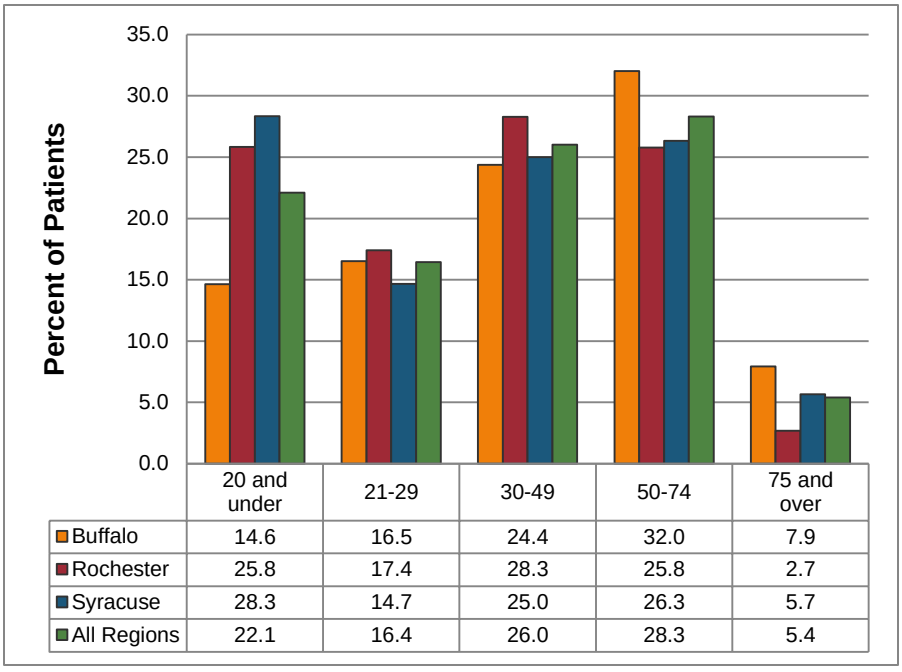
Table 2. Practice Staff Composition and Patient Volume

Practice ID	Physicians Employed	NPs Employed	PAs Employed	Total Patient Population	Practice Categorization	EMR Vendor
1	6	0	0	5,214	Large medical group/health care system	Allscripts Enterprise
2	4	1	0	9,000	University hospital or clinic	Allscripts Enterprise
3	20	2	0	4,471	Large medical group/health care system	Allscripts Enterprise
4	3	2	1	11,000	Physician-owned practice	MedEnt
5	4	0	2	3,844	Large medical group/health care system	Allscripts Enterprise
6	4	1	0	630	Large medical group/health care system	Epic
7	3	0	0	1,676	Large medical group/health care system	Epic
8	2	0	1	2,706	Large medical group/health care system	Epic
9	15	24	2	29,174	FQHC	eClinicalWorks
10	7	2	0	5,500	University hospital or clinic	Epic
11	2	2	1	5,000	Non-profit clinic	MedEnt
12	10	14	6	34,000	FQHC	NextGen
13	2	1	1	4,200	FQHC	Epic
TOTAL	**82**	**49**	**14**	**116,415**		

Across the 13 practices, approximately 56% of the patients served were female. The age distribution of patients overall and by region is provided in Figure 1. Compared to the other regions, Syracuse practices on average had the greatest percentage of patients in the youngest age group (20 years and under) at 28.3%. Buffalo practices on average had the highest percentage of patients in the two oldest age groups, where approximately 40% of this region's patients are 50 years or older.

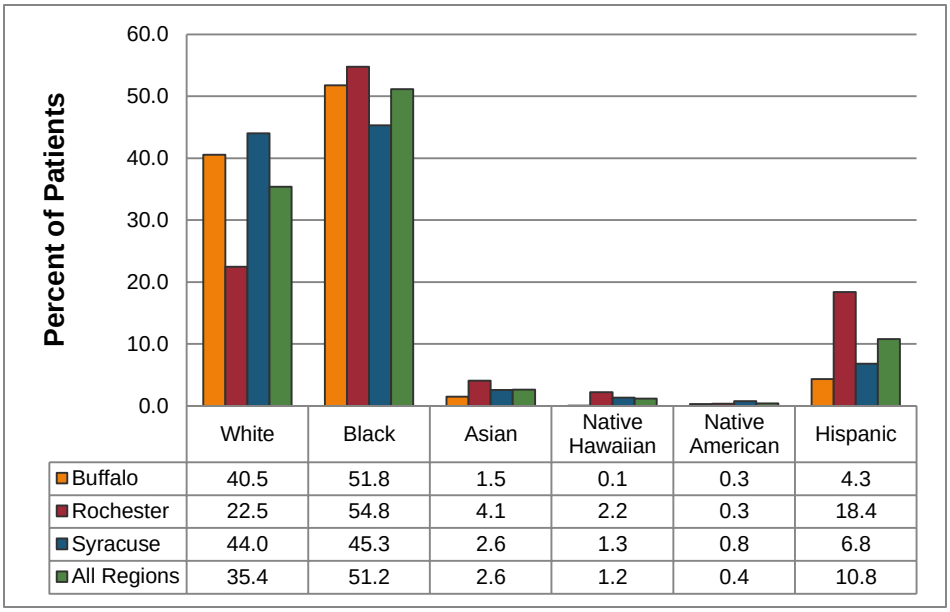
In regards to race overall, 51.2% of patients were Black and 35.4% of patients were White, with less than 5% of patients categorized as Asian, Native Hawaiian/Pacific Islander, or American Indian/Alaska Native. About 10.8% of patients among all regions were reported as Hispanic or Latino. When compared to the other regions, Rochester had the highest percentage of Black (54.8%) and Hispanic (18.4%) patients, while Syracuse had the highest percentage of White (44.0%) patients. Figure 2 provides an overview of patient race/ethnicity distribution.

Figure 1. Patient Age Distribution, by Practice Region



Across all regions, 43.7% of patients were enrolled in Medicaid for insurance, 13.6% were enrolled in Medicare, and 6.8% were uninsured, as illustrated in Figure 3. Compared to the other regions, Rochester had the greatest percentage of Medicaid patients at 61.4%, while Buffalo had the greatest percentage of Medicare patients at 18.7% and Syracuse had the highest percentage of uninsured patients at 10.7%.

Figure 2. Patient Race/Ethnicity Distribution, by Practice Region

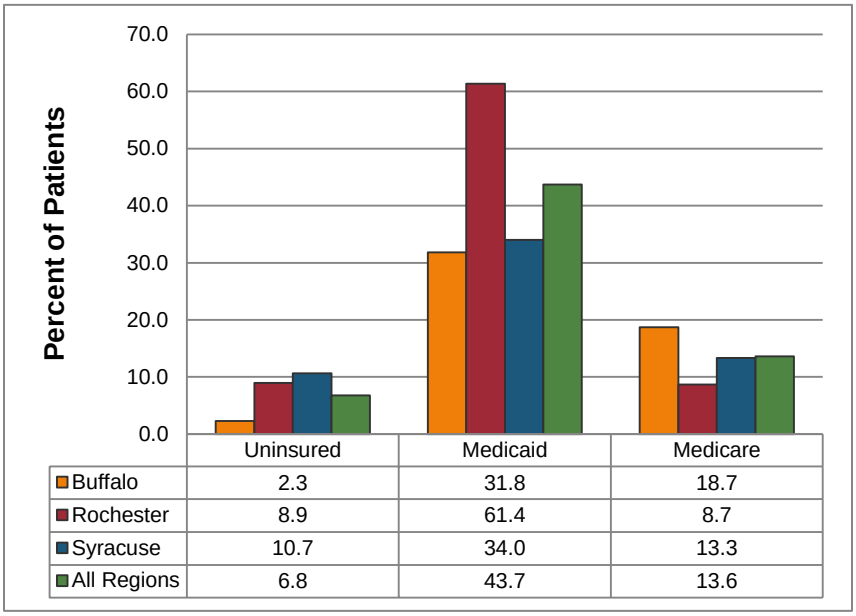


	White	Black	Asian	Native Hawaiian	Native American	Hispanic
Buffalo	40.5	51.8	1.5	0.1	0.3	4.3
Rochester	22.5	54.8	4.1	2.2	0.3	18.4
Syracuse	44.0	45.3	2.6	1.3	0.8	6.8
All Regions	35.4	51.2	2.6	1.2	0.4	10.8

Information on patient demographics, such as race and ethnicity, was not always considered reliable by the participating practices. Some practices placed a disclaimer on the race/ethnicity data they reported, stating that it only represents a portion of their patient population, as many patients do not choose to report this information to the practice. Furthermore, some practices mentioned that practice staff does not routinely ask patients for race/ethnicity information. It is also possible that some practice staff enter assumed race/ethnicity information in the patient record without confirming their determination with the patient.

Four of the enrolled practices provide mammography services; these practices are a mixture of FQHCs, large medical groups, and university clinics. Eleven practices offer cervical cancer screening services. All practices indicated that they provide colorectal cancer screening services by means of fecal testing kits (FIT or FOBT). Only one practice additionally offers colonoscopies to their patients; this practice is a university clinic that specializes in internal medicine. None of the practices indicated that they offer flexible sigmoidoscopy in-office for colorectal cancer screening.

Figure 3. Patient Public Insurance Coverage, by Practice Region



	Uninsured	Medicaid	Medicare
Buffalo	2.3	31.8	18.7
Rochester	8.9	61.4	8.7
Syracuse	10.7	34.0	13.3
All Regions	6.8	43.7	13.6

Twelve of the 13 practices enrolled have established practice-wide guidelines for breast and colorectal cancer screening each; however, only 8 practices have established guidelines for cervical cancer screening. The five practices without cervical cancer screening guidelines do not provide

cervical cancer screening services in-office. The one new practice to join the project does not currently have guidelines established for any of the three screening types. Twelve of the enrolled practices utilize patient registries to track breast, cervical and colorectal cancer screening. The one remaining practice utilizes registries to track only breast and colorectal cancer screening; this practice does not offer cervical cancer screening services or monitor cervical screening rates among its patients.

Only four of the practices felt that the numbers reported through their registries accurately reflect the number of patients who were up to date with breast, cervical and colorectal cancer screening. The primary reasons listed for why the registry data are considered inaccurate include the inability to obtain documentation from outside specialists, non-standardized data entry of screening results, and lack of integration of payor claims data.

Tables 3 and 4 indicate the use of reminder systems among the participating practices for both providers and patients. All 13 practices indicated having some type of provider reminder system in place. The most common provider reminder mechanism was utilization of a flag in patient charts, which 8 practices currently implement. Eleven practices reported having at least one mechanism in place for patient reminders. Six practices utilize reminder telephone calls, four send reminders by postal mail, and four practices indicated that is it practice policy to provide the patient with a verbal prompt during an office visit. Two practices do not currently have a patient reminder system in place; one is the new practice, while the other noted that they previously had a telephone reminder mechanism in place but needed to take it off-line to make adjustments.

Table 3. Cancer Screening Reminders for the Care Team in Use Pre-Practice Facilitation

Reminder Mechanism	Number of Practices
Special notation or flag in patient chart	8
Computer prompt or computer-generated flow sheet	1
Practice policy to review cancer screening in patient medical records at time of visit	4
Other – Pre-visit planning	3
Other – Appointments with registry reports	2
None	0

Table 4. Cancer Screening Reminders for Patients in Use Pre-Practice Facilitation

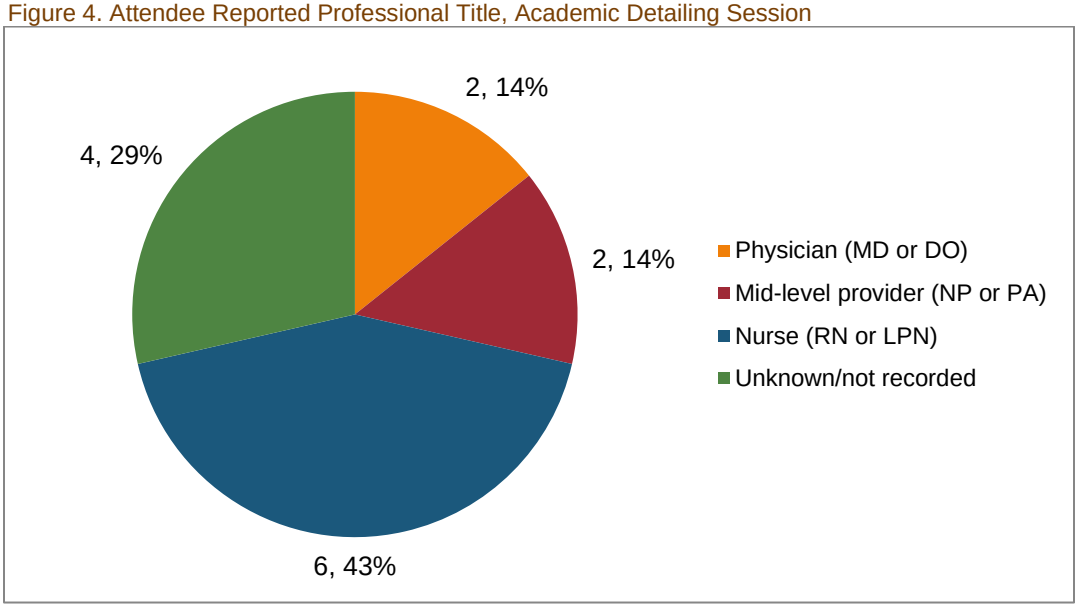
Reminder Mechanism	Number of Practices
Reminder by US mail	4
Reminder by telephone call	6
Reminder by e-mail	1
Personalized web page or patient portal	3
Practice policy to provide a verbal prompt from a member of the care team during an office visit	4
Other – Automated population health reminders	1
Other – Televox outreach	3
None	2

III. Summary of Academic Detailing Activities

Attendance

The 12 practices that participated in the project during Year 3 were offered the ability to participate in the academic detailing (AD) webinar curriculum rather than an in-person delivery of the AD session. This option allowed individuals at these practices who did not receive the course during Year 3 to have the ability to do so while avoiding time constraints among staff at the practices who had already received the material. The one practice that was new to the project in Year 4 was offered the in-person delivery of the AD session, which took place in January 2017. A total of 14 individuals at this practice attended the AD session. Figure 4 presents a summary of the academic detailing session attendee professional titles.

Figure 4. Attendee Reported Professional Title, Academic Detailing Session



Unfortunately, none of the providers or staff at the continuing practices utilized the webinar version of the AD session. While the webinar availability was shared with participating practices via their practice facilitators, it is possible that the lack of a concerted advertising campaign for the online webinar contributed to low enrollment and participation.

Evaluation

The CME evaluation forms were completed by attendees to determine the suitability and efficacy of the academic detailing sessions. However, only those providers and staff seeking AAFP CME credit for attendance were required to complete the CME evaluation forms, resulting in a response rate of 57% (8 respondents). A distribution of respondent professional titles is listed in Table 5.

Table 5. CME Evaluation Respondent Reported Profession

Credentials and Job Description	Number of Respondents
Physician (MD or DO)	1
Nurse Practitioner (FNP)	1
Physician Assistant (RPA-C)	1
Nurse (RN or LPN)	5
Total	**8**

The CME evaluation respondents were asked several questions assessing the value and appropriateness of the academic detailing session content. All respondents felt the academic detailing session was scientifically sound and free of commercial bias, except one who did not respond to this question. All felt the topic of the session was appropriate to their professional needs and that the session had a practical clinical value. All survey respondents, except one who did not provide a response, reported that the session met the following stated objectives:

- Identify the current USPSTF and ACS guidelines for breast, cervical and colorectal cancer screening
- Identify evidence-based strategies to address system-level barriers within primary care practices to increasing breast, cervical and colorectal cancer screening
- Identify evidence-based strategies to increase patient compliance with breast, cervical and colorectal cancer screening recommendations
- Identify specific strategies to identify and track patients who meet eligibility criteria for breast, cervical and colorectal cancer screening

The CME evaluation respondents were also asked to indicate how the academic detailing session impacted their knowledge, competence, performance and patient outcomes. Of the 8 respondents, 100% reported increased knowledge, competence, and patient outcomes, while 87.5% reported increased performance.

IV. Summary of Practice Facilitation Activities

Review of Practice Facilitation Working Items

One practice facilitator operated in the Buffalo region, one in the Rochester region, one in both the Buffalo and Rochester regions, and one in both the Rochester and Syracuse regions. One practice facilitator (operating solely in the Rochester region) left her position mid-way through the project period. Subsequently, one of the practice facilitators who was originally operating solely in the Buffalo region assumed facilitation responsibilities with the Rochester practices that lost their original practice facilitator. The following is a brief summary of the primary working items conducted by the practice facilitators, based on the information recorded in the Practice Facilitator Logs. The data presented below should be interpreted with the understanding that variations in reporting practices may exist across the individual practice facilitators. Table 6 displays a detailed breakdown of the primary activities performed by the practice facilitators during the Year 4 project period, and the accompanying Figure 5 presents the distribution of time by service type. Table 7 displays a breakdown of time spent in the various service delivery modalities.

Table 6. Summary of Primary Activities Performed by Practice Facilitators

Service	Activity Summary	Service Time (hours)
Quality Improvement Support	• Assistance with patient education and outreach interventions	33.65
	• Quality improvement training and planning	60.96
	Total time devoted to quality improvement support	***94.61***
Cancer Screening Support	• Review of screening methods	7.79
	• Training and informational sessions	15.99
	Total time devoted to cancer screening support	***23.78***
Data Support	• Chart review assistance	65.00
	• Collection of practice-related data for project purposes	33.06
	• EHR-related IT support	17.08
	Total time devoted to data support	***115.14***
Administrative Support	• General administrative tasks	72.81
	• Scheduling	21.31
	Total time devoted to administrative support	***94.12***
Travel	***Time spent traveling to practice sites***	***86.58***
Preparation	***Time devoted to preparation for project activity***	***51.75***
Overall Services	**Total time devoted to practice facilitation activities**	**465.98**

Figure 5. Distribution of Time Spent on Practice Facilitation Services

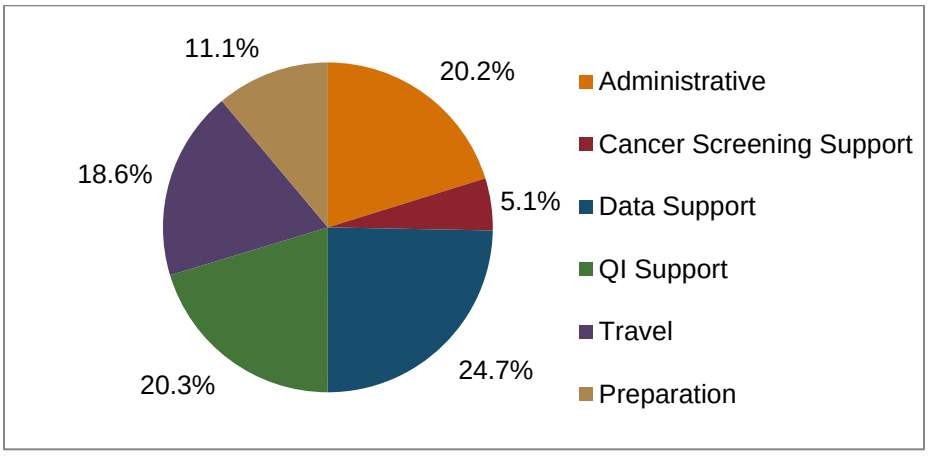


Table 7. Summary of Practice Facilitation Service Modalities

Service Modality	Number of Encounters	Service Time	Travel Time	Service Prep Time	TOTAL Time
Email	234	107.08	0.00	16.29	123.37
Site Visit	65	152.02	78.66	24.50	255.18
Phone Call	72	37.21	0.00	8.05	45.26
Remote/Other	25	31.34	7.92	2.91	42.17
TOTAL	**396**	**327.65**	**86.58**	**51.75**	**465.98**

The practice facilitators dedicated a total of 396 encounters and 465.98 hours across all participating practices during the Year 4 project period. This translates to an average of 35.84 practice facilitation hours of service per practice over a 6-month period. The median number of practice facilitation hours among all practices was 30.91 hours and the number of hours ranged from 17.00 to 95.09 hours. The practice with 95.09 hours was an exception due to extensive chart review services performed by its practice facilitator.

As shown in Figure 5, the practice facilitators dedicated the most service hours to data support, which accounted for nearly one-quarter of all service hours. This was primarily driven by the work of one practice facilitator who provided extensive chart review support to a particular practice, about 65 hours-worth of time. Approximately 20% of total service time was dedicated to each of the following services: quality improvement support, administrative tasks, and travel. About 11% of service hours were dedicated to preparation of project activities, and about 5% of service hours were allocated to cancer screening support activities.

In regards to the practice facilitation service modalities, the greatest number of encounters was dedicated to email interactions, while the most time was dedicated to site visits (see Table 7).

Practices primarily focused on utilizing the practice facilitators' skills to implement the following:

- Evidence-based patient outreach and education
- Coordination of staff training sessions with local organizations (e.g. New York State Cancer Services Program, American Cancer Society) to promote cancer screening resources and awareness
- Practice workflow assessments to increase efficiencies in and standardization of cancer tracking processes
- Chart review assistance
- Data cleaning to improve the accuracy of reports and registries

The practice facilitators frequently worked with practice QI teams, especially for those practices operating under PCMH structures. In roughly half of the practices, the practice facilitators were able to serve as a communication bridge between practice staff and IT support personnel; this is particularly true for those practices operating as part of a greater health system or university clinic.

Some of the practice facilitators faced barriers related to scheduling the kickoff meetings and general site visits with their assigned practices due to time constraints at the participating offices. Additionally, the practice facilitators dedicated a significant amount of time to travel (86.58 hours). Many of the practices enrolled in the Year 4 project period were located in distant locations from the practice facilitators' main office sites.

V. Notable Project Findings and Outcomes

TRANSLATE Model Practice Evaluations

The TRANSLATE model was used to evaluate each practice's readiness for change, shortfalls, and strengths. This evaluation occurred in a pre-post format at the beginning of the practice facilitation period and at its conclusion. The TRANSLATE evaluation was completed by each practice facilitator, and was used as a guide for the work completed with each practice and as a measurement tool for system-level change within each practice at the conclusion of the project. The TRANSLATE model follows a scoring rubric wherein each practice is evaluated on nine elements involved in practice improvement (see Table 8). Each element can be scored on a range of 1-4. For more detail on the scoring criteria, please view the example TRANSLATE model evaluation rubric found in Appendix B. Practice facilitators were also required to provide qualitative commentary on each of the nine elements on the TRANSLATE model evaluation rubric.

Table 8. Nine Elements of Practice Improvement in the TRANSLATE Model

Element	Description
Target	Goal setting
Reminders	Actionable information at the point of care (e.g., point of care reports, pop-ups in EHR)
Administrative Buy-In	Commitment of resources by owner/management (e.g., money, time, personnel)
Network Information Systems	Population health management in EHR, paper list, or other program (i.e., registries)
Site Coordinator	Single point of contact for practice facilitator; local accountability. Arranges team meetings, education of staff, and data collection.
Local Clinician Champion	For clinician buy-in. Leader/educator for other providers in practice. Supports quality improvement team.
Audit and Feedback	Practice-, provider-, and patient-level outcome reports generated to show progress over time and/or progress compared to other practices (benchmarking)
Team Approach	Interdisciplinary team meets regularly to review progress, recommend and test workflow changes. Also refers to decision-making structure. Allowing staff to work at top of licensure.
Education	All forms of training; does not need to be formal. Includes CME, academic detailing, collaborative learning groups, and staff training

Quantitative Scores

The scores for each of the nine elements were averaged across all 13 practices for each measurement period, and paired t-tests were conducted to determine statistical differences between pre- and post-measurement scores. Table 9 displays the changes in the scores across the two measurement periods. On average, the practices improved on the two elements of Target and Reminders, however, these changes were not found to be significant from pre- to post-measurement. There was no change in average score for the element of Administrative Buy-In, and overall decreases in average scores were observed for the remaining six TRANSLATE elements. The cumulative average TRANSLATE score decreased by 1.154 points (p-value not significant). The only statistically significant decrease from pre- to post-measurement was for the element of Local Clinician Champion (pre: μ=3.231, post: μ=2.615; p=0.040). The average score for Site Coordinator also decreased noticeably, however this change was not determined to be significant. Considering these two elements together, it appears that overall, practices experienced challenges in maintaining engagement of providers and staff initially assigned to lead project efforts.

During the pre-practice facilitation measurement period, the practices had the highest average scores for Local Clinician Champion, Administrative Buy-In and Site Coordinator, while the lowest average score for this measurement period was for Education. During the post-practice facilitation measurement period, the practices

had the highest average scores for Target and Reminder, while Education continued to have the lowest average score.

Site-specific data for both the pre- and post-practice facilitation TRANSLATE data are provided in Appendix C.

Table 9. Pre-Post Practice Facilitation TRANSLATE Element Scores for 13 Practices

TRANSLATE Element	Average Pre-Score*	Median Pre-Score*	Range Pre-Score*	Average Post-Score*	Median Post-Score*	Range Post-Score*
Target	3.000	3	1-4	3.308	4	1-4
Reminders	3.000	3	2-4	3.231	3	2-4
Administrative Buy-In	3.154	3	2-4	3.154	3	2-4
Network Information Systems	3.077	3	2-4	2.923	3	2-4
Site Coordinator	3.154	3	2-4	2.692	3	2-4
Local Clinician Champion	3.231	3	2-4	2.615	3	1-4
Audit and Feedback	2.846	3	1-4	2.615	3	1-4
Team Approach	2.769	3	1-4	2.692	3	1-4
Education	2.077	2	1-3	1.923	2	1-2
CUMULATIVE**	**26.308**	**27**	**18-33**	**25.154**	**26**	**17-32**

*Out of score of 4
** Out of total score of 36

Qualitative Summaries

The content of the qualitative commentary from the TRANSLATE evaluations can be found in Table 10.

Target Measures

All but one of the practices entered the Year 4 project with established targets for quality improvement in cancer screening (12 total). Four practices were evaluated to have loosely-defined plans for cancer screening improvement, which needed increased refinement. One practice was evaluated to not have strong targets related to cancer screening.

After working with the practice facilitators, 12 practices continued to have established targets for cancer screening. Of these 12 practices, three had loosely-defined plans needing refinement, and six overlapped their QI targets with PCMH goals.

Reminders

All 13 of the practices had EHR-based point-of-care clinical decision support capabilities at the start of the project. Eleven of those practices had established workflows regarding clinical decision support, but these were only monitored for consistent use in five practices. At project initiation, six practices had concerns over the accuracy of their EMR-based reminder systems.

After working with practice facilitators, new EHR-based registry workflows were developed for one additional practice, and confidence in registry accuracy increased for one practice.

Administrative Buy-In

At the start of Year 4, administration was viewed as supportive of quality improvement projects in nine of the practices. In the remaining four practices, project-related QI activities were not prioritized by administration due to

conflicting priorities (including time constraints, monetary resource issues, and pushback from clinicians). Practice administration became slightly less supportive of project activities across the Year 4 project period due to an increase in competing priorities.

Network Information Systems

At the start of Year 4, nine practices had the capability to run patient registry reports for breast, cervical and colorectal cancer screening, and four practices had the ability to run registry reports for only breast and colorectal cancer. However, only nine of the practices actively utilized patient registries to track their cancer screening targets at the start of Year 4 and among those, eight practices had formal registry workflows established.

After working with practice facilitators, three additional practices had the capability to produce reports for all three cancer screening types (for a total of 12) and only one practice continued to produce reports for breast and colorectal cancer screening. This change can be attributed to an EMR transition during the project period among three practices affiliated with the same health system. The EMR transition also contributed to a decrease in registry utilization while the practice staff undergoing the change learned to adjust to the new EMR system.

Site Coordinator

At the start of Year 4, practice facilitators directly referenced time constraints in working with their site coordinators for four practices. The remaining nine practices had regularly engaged site coordinators.

At the end of the practice facilitation period, only four practices retained regularly engaged site coordinators, while site coordinators at eight of the practices experienced time constraints. One practice had a site coordinator leave their position with no replacement identified by the end of Year 4.

Local Clinician Champion

At the start of Year 4, the local clinician champion at six of the practices was described as heavily engaged in quality improvement work at the practice. The practice facilitators reported that the local clinician champion experienced heavy time constraints at seven of the participating practices. Time constraints among clinician champions increased throughout the project period; by the end of Year 4, clinician champions at four of the practices were described as not identified or not engaged in the project at all.

Audit and Feedback

Eleven practices conducted audit and feedback activities at the practice-level, and eight conducted audit and feedback at the provider-level at the start of Year 4; most of these practices disseminated results widely across practice staff. Two practices did not conduct any audit and feedback activities at the start of Year 4.

Over the Year 4 project period, audit and feedback activities decreased, specifically among the three practices that experienced an EMR transition. Again, EMR-related activities were compromised for this group of practices during this project year.

Team Approach

At the start of Year 4, six practices had established interdisciplinary teams for quality improvement decision-making; at four of these practices, the teams were considered a PCMH team. Four practices employed dedicated QI staff. Three practices had no regular quality improvement team established at the start of Year 4. Team engagement declined slightly during the Year 4 project period.

Education

At the start of Year 4, eight practices offered educational opportunities to staff outside of what is currently offered through participation in this project; this education was informal and limited to targeted staff members.

At the end of the practice facilitation period, educational opportunities decreased among a couple of practices, leaving only six practices that offered staff education outside of what is available through the project.

Table 10. Summary of Pre- and Post-Facilitation Qualitative Commentary from TRANSLATE Evaluations

TRANSLATE Element	No. of Practices Pre-Facilitation	No. of Practices Post-Facilitation
TARGET		
Established targets	12	12
Loosely defined targets	4	3
Overlap with PCMH targets	6	6
No targets	1	1
REMINDERS		
EHR-based point-of-care reminders available	13	13
Reminder workflow developed	11	12
Reminder workflow implementation NOT monitored	6	6
Data reliability issues with EHR-based reminders	6	5
ADMINISTRATIVE BUY-IN		
Administration supportive and engaged	9	7
Administration supportive but little resource allocation	3	6
Administration/staff not supportive of project	1	0
NETWORK INFORMATION SYSTEMS		
Breast, cervical and colorectal cancer screening reports available	9	12
Cervical cancer screening reports NOT available	4	1
Patient registries regularly utilized	9	7
Formal registry workflow developed	8	6
SITE COORDINATOR		
Site coordinator regularly engaged	9	4
Site coordinator faces time constraints	4	8
No site coordinator identified	0	1
LOCAL CLINICIAN CHAMPION		
Local clinician champion regularly engaged	6	6
Local clinician champion faces time constraints	7	3
Local clinician champion not identified or not engaged	0	4
AUDIT AND FEEDBACK		
Audit and feedback at practice level	11	9
Audit and feedback at provider level	8	5
Audit and feedback results disseminated across practice or QI team	7	7
No audit and feedback activities completed	2	4
Audit and feedback on cervical cancer NOT completed	4	1
TEAM APPROACH		
Interdisciplinary QI team	6	5
Same as PCMH team	4	3
Practice has dedicated QI staff	4	3
No regular QI team	3	5
EDUCATION		
No education routinely offered outside current project	5	7
Limited, informal education for targeted staff members	8	6

Patient-Oriented Evidence-Based Interventions

Following the TRANSLATE model scoring system, four evidence-based interventions (EBIs) were also evaluated by the practice facilitators to determine the level of implementation at each practice at the beginning of the practice facilitation period and at its conclusion. The four EBIs are further described in Table 11. Like the TRANSLATE rubric system, each intervention was scored on a range of 1-4, and practice facilitators were required to provide qualitative commentary on each of the four interventions.

Table 11. Four Evidence-Based Interventions

Evidence-Based Intervention	Description
Client Reminders	Messages advising patients they are due for screening (e.g. written, email, patient portal or telephone messages)
Small Media	Resources to inform and motivate patients to be screened (e.g. videos, brochures, posters)
One-on-One Education	Delivery of information to patients about indications for, benefits of, and ways to overcome barriers to cancer screening
Reducing Structural Barriers	Reduction of non-economic barriers that make it difficult for patients to access screening (e.g. transportation, language, patient navigation)

Quantitative Scores

As for the TRANSLATE analysis, mean scores and paired t-tests were conducted to assess pre- and post-practice facilitation differences in the implementation of EBIs among all participating practices. Table 12 displays the changes in the scores across the two measurement periods for each of the EBIs targeted within this project. On average, the practices improved on Client Reminders, experienced no change for Small Media or One-on-One Education, and decreased on Reducing Structural Barriers. None of the changes in average scores were found to be statistically significant. The cumulative average EBI score decreased by 0.308 points (p-value not significant).

During the pre-practice facilitation measurement period, the practices had the highest average score for Reducing Structural Barriers, while during the post-practice facilitation period the highest average score among the practices was for Client Reminders. During both measurement periods, the practices had the lowest average score for One-on-One Education.

Site-specific data for both the pre- and post-practice facilitation evidence-based intervention scores is provided in Appendix C.

Table 12. Pre-Post Practice Facilitation Evidence-Based Patient Intervention Scores for 13 Practices

Evidence-Based Intervention	Average Pre-Score*	Median Pre-Score*	Range Pre-Score*	Average Post-Score*	Median Post-Score*	Range Post-Score*
Client Reminders	3.000	3	1-4	3.077	3	1-4
Small Media	2.538	3	1-4	2.538	3	1-4
One-on-One Education	2.385	2	2-4	2.385	2	2-4
Reducing Structural Barriers	3.154	3	1-4	2.769	3	1-4
CUMULATIVE**	**11.077**	**11**	**8-16**	**10.769**	**11**	**5-14**

*Out of score of 4
** Out of total score of 16

Qualitative Summaries

The content of the qualitative commentary from the evidence-based intervention evaluations, as recorded in the TRANSLATE rubrics can be found in Table 13.

Client Reminders

At the start of Year 4, ten practices utilized telephone-based reminder systems for patients; this included both automated reminders and personal calls. Five of the practices used posted mail reminders, and followed up with patients on patient screening reminders during office clinical visits. Patient portal messages were utilized to remind patients about cancer screening among two participating practices. Two practices did not implement any client reminder system at the start of Year 4.

By the end of the project period, two additional practices had incorporated patient portal messages into their client reminder approach. Only one practice remained without any form of client reminders at the end of Year 4.

Small Media

At the start of Year 4, nine of the practices used flyers and brochures to promote information on cancer screening among patients. Five practices displayed informational posters and three practices played educational videos within their offices. Two practices did not offer any form of small media within their offices.

After working with practice facilitators, three additional practices adopted the use of educational videos (total of six practices). Two practices remained disengaged in small media utilization.

One-on-One Education

At the start of Year 4, four of the practices shared the responsibility of providing patient education on cancer screening across multiple members of the care team. Patient education initiatives were led by physicians or mid-level providers at four of the practices, and three practices utilized the services of care coordinators or nurses to provide patient education. Supporting educational materials, such as anatomical models or videos, were used to supplement efforts at four of the practices. Four practices only provided education on an inconsistent basis.

Provider-led education efforts improved following the practice facilitation period.

Reducing Structural Barriers

A wide variety of structural barrier targets were addressed by practices at the start of Year 4; however, it should be noted that less than half of the practices addressed any given target, with the exception of scheduling assistance (total of nine practices). Mobile mammography and transportation assistance were each offered by five practices. Only one practice did not directly target any structural barriers to cancer screening at the start of Year 4.

At the conclusion of the Year 4 project period, one practice was no longer able to utilize mobile mammography services (total of four practices), and one additional practice began offering transportation assistance (total of six practices). Overall, structural barrier initiatives declined over the project period, and three practices were reported as not addressing these issues at the time of post-measurement.

Table 13. Summary of Pre- and Post-Facilitation Qualitative Commentary from Evidence-Based Patient Intervention Evaluations

Evidence-Based Intervention	No. of Practices Pre-Facilitation	No. of Practices Post-Facilitation
CLIENT REMINDERS		
Telephone reminders	10	10
Patient portal messages	2	4
In-clinic follow up reminders	5	5
Posted mail reminders	5	5
No patient reminder system	2	1
SMALL MEDIA		
Flyers and brochures	9	7
Posters	5	4
Educational videos	3	6
Small media inconsistently provided to patients	3	3
No small media utilized	2	2
ONE-ON-ONE EDUCATION		
Provided by multiple members of care team	4	4
Provided by physicians or mid-level providers	4	6
Provided by care coordinators or nurses	3	3
Supporting educational material used to supplement education (e.g. anatomical models, brochures, videos)	4	2
Provided inconsistently	4	3
REDUCING STRUCTURAL BARRIERS		
Mammography buses routinely offered	5	4
Patient navigation services	4	4
Care coordinators	3	3
Transportation assistance	5	6
Scheduling assistance	9	9
Insurance assistance	4	2
Extended office hours	4	2
Translation services	3	2
Child care services	1	1
Structural barriers not targeted	1	3

Priority Evidence-Based Interventions and Supportive Activities

In addition to reviewing the TRANSLATE and patient-oriented evidence-based interventions, an assessment was conducted among four priority evidence-based interventions and two supportive activities, as designated by the Centers for Disease Control and Prevention (CDC). The four priority EBIs include: 1) client reminder system; 2) provider reminder system; 3) provider assessment and feedback; and 4) reducing structural barriers. The two supportive activities or interventions include: 1) small media; and 2) provider education and training. Table 14 provides an overview on which of these interventions were in place at each practice by the end of the Year 4 project period on a yes/no basis. Interventions were determined to be in place or not to be in place using information from both the quantitative scores and qualitative comments provided from the practice facilitator TRANSLATE and EBI evaluations, as detailed in the previous sections.

Overall, the number of interventions in place by practice ranged from two to all six interventions, with a median of four. The most common intervention implemented among the practices was provider reminder systems (12 practices), followed by client reminder systems (10 practices) and reducing structural barriers (10 practices). Provider education and training was the least common intervention to be in place (6 practices). For more detailed information on specific strategies utilized among participating practices, refer to the section on *Focus Group and Interview Findings*.

Table 14. Priority Evidence-Based Interventions & Supportive Activities in Place Post-Year 4 among 13 Practices

Practice	Client Reminder System	Provider Reminder System	Provider Assessment & Feedback	Reducing Structural Barriers	Small Media	Provider Education	TOTAL # in place
P1	✓	✓	✗	✓	✓	✗	4
P2	✓	✓	✗	✓	✗	✓	4
P3	✓	✓	✓	✓	✓	✓	6
P4	✓	✓	✓	✗	✓	✓	5
P5	✓	✓	✓	✓	✓	✓	6
P6	✓	✓	✗	✓	✓	✗	4
P7	✓	✓	✗	✓	✓	✗	4
P8	✓	✓	✗	✓	✓	✗	4
P9	✓	✓	✓	✓	✗	✗	4
P10	✓	✓	✓	✗	✓	✓	5
P11	✗	✓	✗	✗	✗	✓	2
P12	✗	✗	✓	✓	✗	✗	2
P13	✗	✓	✓	✓	✗	✗	3
TOTAL # in place	10	12	7	10	8	6	53

Key: ✓=in place; ✗=not in place

Cancer Screening Rates

Based on information from the practice characteristics survey, only four of the thirteen practices felt that the numbers reported through their registries accurately reflect the number of patients who were up to date with breast, cervical and colorectal cancer screening at the time of data collection (pre-practice facilitation). The primary reasons listed for why the registry data were considered inaccurate include the inability to obtain documentation from outside specialists, and non-standardized data entry of screening results:

- No integration of claims data from payors
- Inability to get outside records or reports into EHR documentation (most notably from gynecology offices)
- Outside test results not consistently scanned into EHR

It is worthwhile to note that the definition of denominators and numerators varied from practice to practice, and even from pre- to post-measurement within the same practices. Oftentimes, practices evaluate screening numbers based on specific metrics preferred by clinic staff or based on the capabilities of their EHR software. Table 15 summarizes the major organizational and EHR reporting changes or issues experienced by the

practices during the Year 4 project period as well as the pre- and post-rates for breast, cervical, and colorectal cancer screening. One major factor that influenced changes in screening rates from pre- to post-practice facilitation was a transition in the EHR system utilized among three practices (P6-P8) that are part of the same health system. This evidently affected the post-screening rates among these practices, as will be further discussed in the following sections. Another practice (P11) reported considerably higher post-screening rates for each cancer screening type due to changes in reporting methods. This practice is primarily run through a religious organization, with a staff composed primarily of volunteers (aside from the physicians and limited nursing staff). For every iteration of the project, P11 has required outside assistance to help with data management and reporting efforts, in the form of medical or public health graduate student labor. We discovered that this has led to inconsistency in reporting practices for P11. For budget year 2016-2017, we formalized this process, hiring and managing a highly competent and experienced public health graduate student directly, in lieu of a portion of P11's practice stipend. In order to improve reporting consistency, the student's main efforts included working with the P11's EHR vendor to standardize data collection for the project, and to create a written standard procedure as a reference for how to run these reports going forward. The reporting procedure for Year 4 likely differed from methods used in previous years, likely contributing to dramatic observed changes in screening rates for this practice. Additionally, the practice facilitator for this site reported that the practice has been working to improve the functionality of their EHR, the accuracy of their provider reminders, and documentation of screening reports, all of which could also be contributing to the notable increase in screening rates.

Additional variations in screening rates are explained in each section that follows, as appropriate.

Table 15. Notable Practice Changes/Issues and Pre-Post Breast, Cervical, and Colorectal Cancer Screening Rates

Practice	Notable Practice Changes/Issues	Breast		Cervical		Colorectal	
		Pre	Post	Pre	Post	Pre	Post
P1	None reported	66.04%	57.85%	18.22%	12.29%	33.00%	37.79%
P2	EHR inaccessible for 2 months due to system shutdown	85.90%	83.07%	Not Collected	Not Collected	45.91%	29.18%
P3	EHR inaccessible for 2 months due to system shutdown	41.65%	52.59%	17.76%	34.28%	39.70%	32.87%
P4	Substantial data cleaning efforts; clinic transition from private practice to hospital-owned	47.18%	71.53%	18.13%	24.02%	55.62%	74.20%
P5	None reported	64.43%	66.94%	14.92%	19.41%	37.06%	57.41%
P6	EHR transition; staff and leadership turnover	30.21%	12.67%	47.95%	18.32%	24.26%	8.09%
P7	EHR transition	49.10%	42.91%	49.45%	20.20%	55.10%	51.69%
P8	EHR transition	69.80%	41.20%	65.65%	17.03%	67.80%	52.46%
P9	None reported	47.77%	40.33%	49.93%	49.12%	39.02%	44.26%
P10	Clinic transition from private practice to hospital-owned	71.10%	68.08%	46.97%	47.49%	66.92%	68.76%
P11	Reporting changes	19.98%	48.48%	14.62%	42.01%	10.34%	46.61%
P12	Reporting changes from UDS (sample of 70) to entire pt. pop.	30.38%	32.08%	62.86%	32.71%	22.86%	12.60%
P13	None reported	71.15%	47.61%	24.80%	54.47%	53.64%	53.74%

Breast Cancer Screening

All 13 participating practices were able to generate breast cancer screening rates from EHR-based registries; Table 16 displays the pre- and post-practice facilitation screening rates for breast cancer. Six of the practices generated these reports based on the American Cancer Society breast cancer screening recommendation of annual mammography for women ages 40 and older, six additional practices used the USPSTF guideline of a mammogram performed every two years for women age 50-74, and the remaining one practice utilized a guideline of biannual mammography for women ages 42-69. The average pre- and post-screening rates across the 13 practices were 53.44% and 51.18%, respectively, with a decrease in screening rates of 2.26 percentage points; this decrease was not statistically significant (p=0.634).

Five of the 13 practices witnessed increases in their breast cancer screening rates, two of which were flagged as outliers through descriptive analysis (P4 and P11). Feedback from the practice facilitator for P4 indicated that this practice experienced a sizeable increase due to extensive data cleaning efforts over the past project period. The substantial increase observed for P11 can likely be attributed to improvements in reporting methods. Practice P8 experienced a substantial decline in breast cancer screening and was also flagged as an outlier; this practice is among those that underwent an EHR transition during the Year 4 project period. While not flagged as an outlier, practice P13 also reported a considerably lower post-breast screening rate compared to their pre-measurement; the post-denominator was noticeably higher than the pre-denominator and the practice attributes this to an uptake in new patients during the course of the project

Table 16. Pre- and Post-Project Completed Breast Cancer Screening Rates at 13 Participating Practices

Practice	Pre-Breast Rate	Data Period	Post-Breast Rate	Data Period	Raw Change in % Points	Guideline
P1	66.04%	1 year	57.85%	1 year	**-8.19**	USPSTF
P2	85.90%	1 year	83.07%	1 year	**-2.83**	ACS
P3	41.65%	5 mo.	52.59%	1 year	**+10.94**	ACS
P4	47.18%	1 year	71.53%	1 year	**+24.35**	USPSTF
P5	64.43%	1 year	66.94%	1 year	**+2.51**	USPSTF
P6†	30.21%	1 year	12.67%	1 year	**-17.54**	ACS
P7†	49.10%	1 year	42.91%	1 year	**-6.19**	USPSTF
P8†	69.80%	1 year	41.20%	1 year	**-28.60**	ACS
P9	47.77%	1 year	40.33%	1 year	**-7.44**	Age 42-69, biannual
P10	71.10%	1 year	68.08%	1 year	**-3.02**	USPSTF
P11†	19.98%	1 year	48.48%	1 year	**+28.50**	USPSTF
P12†	30.38%	1 year	32.08%	1 year	**+1.70**	ACS
P13	71.15%	1 year	47.61%	1 year	**-23.54**	ACS
Average	**53.44%**		**51.18%**		**-2.26**	**(6) ACS (6) USPSTF (1) Other**

†Practices with major reporting changes (EHR transition, calculation method, etc.)

Cervical Cancer Screening

Twelve of the 13 participating practices were able to generate cervical cancer screening rates from EHR-based registries. One practice did not collect patient data on cervical cancer screening; the primary care physicians within this practice are specialized to internal medicine, and do not conduct cervical cancer screening services in-house, however, they do make referrals for their patients to obtain cervical cancer screening at local OB/GYN

offices. Nine of the practices that collect cervical cancer screening data generate reports based on the American Cancer Society and USPSTF recommendation of screening women age 21–65 every three years with a Pap test, or screening women age 30–64 every five years with the HPV-Pap co-testing option. The other three practices do not include the co-testing option in their data pulls. Table 17 displays the pre- and post-practice facilitation screening rates for cervical cancer screening.

The average pre- and post-screening rates across the 12 practices were 35.94% and 30.94%, respectively, with an overall non-statistically significant decrease in screening rates of 5.00 percentage points (p=0.498)). Half (six) of the 12 practices experienced increases in cervical cancer screening rates. Notably, practices P11 and P13 each improved by almost 30%. Again, the reporting adjustments at P11 are likely a contributing factor. Feedback from the practice facilitator for P13 indicates that there had been an issue with how the data was pulled for pre-measurement. Upon this realization, practice staff were educated on where to abstract the data and manual chart reviews were conducted. Practices P6, P7, P8, and P12 experienced decreases in cervical cancer screening rates in about the 30-50% range. Practices P6-P8 assert this as a result of their EHR transition. The change observed for P12 can be explained by the practice using a monthly UDS Quality Improvement reporting sample for its pre-cervical cancer screening rate, while the entire eligible patient population was used to generate its post-cervical cancer screening rate. None of the practices discussed were identified as outliers through descriptive analysis, however, this is likely attributable to the substantial variation in pre-post comparisons in cervical cancer screening rates.

Table 17. Pre- and Post-Project Completed Cervical Cancer Screening Rates at 13 Participating Practices

Practice	Pre-Cervical Rate	Data Period	Post-Cervical Rate	Data Period	Raw Change in % Points	Guideline
P1	18.22%	1 year	12.29%	1 year	**-5.93**	ACS/USPSTF
P2	Not Collected	NA	Not Collected	NA	NA	N/A
P3	17.76%	5 mo.	34.28%	1 year	**+16.52**	ACS/USPSTF
P4	18.13%	1 year	24.02%	1 year	**+5.88**	ACS/USPSTF
P5	14.92%	1 year	19.41%	1 year	**+4.49**	ACS/USPSTF
P6†	47.95%	1 year	18.32%	1 year	**-29.63**	ACS/USPSTF
P7†	49.45%	1 year	20.20%	1 year	**-29.25**	ACS/USPSTF
P8†	65.65%	1 year	17.03%	1 year	**-48.62**	ACS/USPSTF
P9	49.93%	1 year	49.12%	1 year	**-0.81**	ACS/USPSTF (no co-testing)
P10	46.97%	1 year	47.49%	1 year	**+0.52**	ACS/USPSTF
P11†	14.62%	1 year	42.01%	1 year	**+27.39**	ACS/USPSTF
P12†	62.86%	1 year	32.71%	1 year	**-30.15**	ACS/UDS (no co-testing)
P13	24.80%	1 year	54.47%	1 year	**+29.67**	ACS/USPSTF (no co-testing)
Average	**35.94%**		**30.94%**		**-5.00**	**(9) ACS/USPSTF (3) Other (1) NA**

†Practices with major reporting changes (EHR transition, calculation method, etc.)

Colorectal Cancer Screening

All 13 participating practices were able to generate colorectal cancer screening rates from EHR-based registries. The majority (9) generated colorectal cancer screening reports based on the USPSTF colorectal cancer screening

guidelines while four practices utilized the ACS screening guidelines. Eleven of the practices included FIT/FOBT testing in their colorectal cancer screening data pulls, while only six of the practices included flexible sigmoidoscopy in their data pulls. Table 18 displays the pre- and post-practice facilitation screening rates for colorectal cancer.

The average pre- and post-screening rate across the 13 practices were 42.40% and 43.82%, respectively, with an increase in screening rates of 1.42 percentage points; this increase was not statistically significant (p=0.754). Practice P11 experienced a considerable increase in colorectal cancer screening rate due to changes in reporting methods. This practice was flagged as an outlier through descriptive analysis. Practice P5 witnessed an increase in its colorectal cancer screening rate by about 20%; this practice was not identified as an outlier but this substantial improvement was further explored. Feedback from the practice facilitator suggests that this improvement can be attributed to cleaning registry data, encouraging FIT testing, and an overall increase in awareness and promotion of screening among office staff and residents. Other considerable fluctuations in colorectal cancer screening rates can be explained by general factors described in previous sections (EHR transition, reporting changes, etc.).

Table 18. Pre- and Post-Project Completed Colorectal Cancer Screening Rates at 13 Participating Practices

Practice	Pre-CRC Rate	Data Period	Post-CRC Rate	Data Period	Raw Change in % Points	Guideline
P1	33.00%	1 year	37.79%	1 year	**+4.79**	USPSTF
P2	45.91%	1 year	29.18%	1 year	**-16.73**	USPSTF
P3	39.70%	5 mo.	32.87%	1 year	**-6.83**	ACS
P4	55.62%	1 year	74.20%	1 year	**+18.58**	USPSTF
P5	37.06%	1 year	57.41%	1 year	**+20.36**	USPSTF
P6†	24.26%	1 year	8.09%	1 year	**-16.17**	ACS
P7†	55.10%	1 year	51.69%	1 year	**-3.41**	USPSTF
P8†	67.80%	1 year	52.46%	1 year	**-15.34**	ACS
P9	39.02%	1 year	44.26%	1 year	**+5.23**	USPSTF
P10	66.92%	1 year	68.76%	1 year	**+1.84**	USPSTF
P11†	10.34%	1 year	46.61%	1 year	**+36.27**	USPSTF
P12†	22.86%	1 year	12.60%	1 year	**-10.26**	USPSTF
P13	53.64%	1 year	53.74%	1 year	**+0.09**	ACS
Average	**42.40%**		**43.82%**		**+1.42**	**(4) ACS (9) USPSTF**

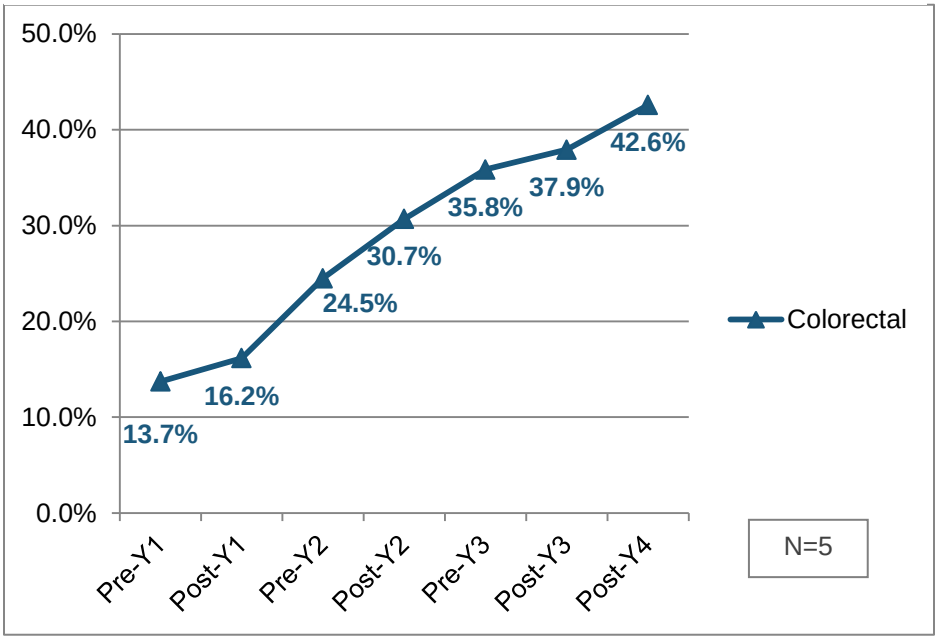
†Practices with major reporting changes (EHR transition, calculation method, etc.)

Comparisons of Practices by Project Period

Longitudinal analyses were conducted to assess change in cancer screening rates over time among practices that have been participating in the project on a continuous basis since Year 1 (total of five practices) and Year 2 (total of eleven practices). It is important to note that screening rates were reported twice for each project year, once before the practice facilitation period began (“pre”) and once following the practice facilitation period (“post”), during Year 1 to Year 3. During Year 4, the pre-measurement of screening rates was eliminated among continuing practices, and their post-measurements from Year 3 were considered to be their pre-measurements for Year 4. Therefore, there is only one time point shown for Year 4.

Year 1 to Year 4 Participants

Figure 6. Change in Colorectal Cancer Screening Rates from Year 1 to Year 4



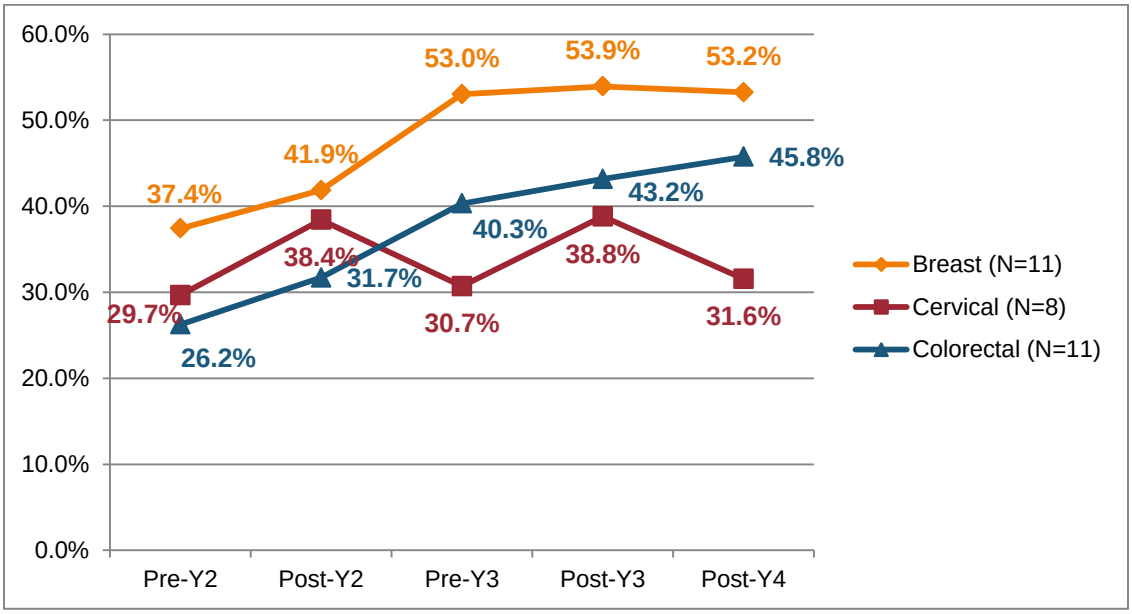
During the Year 1 project period, only colorectal cancer screening rates were collected and evaluated. A total of five practices began participation during the Year 1 project period. Figure 6 illustrates the change in average colorectal cancer screening rates across time, showing that screening rates increased with each time point. The average colorectal screening rate started at 13.7% for the Pre-Year 1 time point and ended at 42.6% for the Post-Year 3 time point, with an overall increase of 28.9%. The greatest increase in colorectal cancer screening between two consecutive time points for this group was from Post-Year 1 to Pre-Year 2, with an 8.3% increase. Overall, there were no statistically significant differences between the mean colorectal cancer screening rates across the different time measurements for this group of participants.

Year 2 to Year 4 Participants

Eleven of the 13 practices in the Year 4 project either continued or began participation in Year 2. All 11 practices had complete data on breast and colorectal cancer screening rates for each measurement period, while only eight practices had complete data on cervical cancer screening rates. The changes in screening rates across the four time points are presented in Figure 7. The colorectal cancer screening rates consistently increased with each time point, while the breast cancer screening rates increased steadily from Pre-Year 2 to Pre-Year 3, then began to plateau for the remaining time points. Overall, the average breast cancer screening rate increased by about 15.8% (p=0.004) and the average colorectal cancer screening rate increased by about 19.6% (p=0.002) from Pre-Year 2 to Post-Year 4, both of which were statistically significant increases. There was no overall statistically significant difference between the mean cervical cancer screening rates across the different time points. The average cervical cancer screening rates went up and down with each consecutive measurement point, with no consistent trend. Cervical cancer screening QI is often difficult for primary care practices to target, as many patients seek this service at outside OB-GYN facilities. Sharing information across practice sites requires dedicated effort, and it is possible that participating practices shifted focus while not engaged with the project team. The decrease in average cervical cancer screening rate between Post-Year 3 and Post-Year 4 could likely

be attributed to the data issues experienced by multiple practices during the Year 4 project period; these data issues affected cervical cancer screening rates most heavily among the three cancer screening types.

Figure 7. Change in Breast, Cervical, and Colorectal Cancer Screening Rates from Year 2 to Year 3 Project Periods



Cancer Screening Rate Correlation Analyses

It is important to note that a number of relationships between TRANSLATE or Evidence-Based Intervention item scores, and observed screening rates, attained correlation coefficients that would typically be considered to be of moderate (as opposed to small) effect size. However, with only 13 practices contributing observations for each set of bivariate analyses, true inferential testing is not likely to yield statistically significant (0.05 or lower) p-values normally associated with moderate effect sizes. All coefficients above approximately r=0.200 should therefore be read as simply illustrative of a possible relationship, but with the understanding that this project is not statistically powered to provide generalizable, research-quality opportunities for inferential hypothesis testing.

TRANSLATE Rating Correlations

Correlation analysis using Spearman's Rho was conducted for the pre-practice facilitation cancer screening rates and pre-practice facilitation TRANSLATE evaluation measures, and also for the post-practice facilitation cancer screening rates and post-practice facilitation TRANSLATE evaluation measures among all practices.

Pre-Practice Facilitation

No significant associations were detected, at the p=0.05 level, between the pre-measurement TRANSLATE elements and cancer screening rates (see Table 19). The strongest correlation was observed between the TRANSLATE element of Audit and Feedback and cervical cancer screening rates, which approached, but did not reach statistical significance at the p=0.05 level (r=0.499, p=0.099). This relationship is consistent with findings from the Year 3 correlation analysis, where Audit and Feedback was determined to have a strong positive association with cervical cancer screening rates during both the pre- and post-measurement periods.

Table 19. Correlation between Pre-Practice Facilitation Cancer Screening Rates and Pre- TRANSLATE Evaluation Scores

TRANSLATE Scores Correlation Coefficient	Pre-Breast Cancer Screening Rate	Pre-Cervical Cancer Screening Rate	Pre-Facilitation CRC Screening Rate
Target	0.274	-0.296	0.190
Reminders	-0.037	-0.334	0.148
Administrative Buy-In	0.230	0.209	0.204
Network Information Systems	0.280	0.118	0.393
Site Coordinator	0.259	0.328	0.426
Local Clinician Champion	0.236	0.450	-0.072
Audit and Feedback	-0.261	0.499	0.378
Team Approach	0.391	0.363	0.265
Education	-0.473	0.124	-0.127
TOTAL TRANSLATE SCORE	**0.218**	**0.389**	**0.383**

Post-Practice Facilitation

Statistically significant associations were detected between the post-breast cancer screening rates and the TRANSLATE elements of Reminders (r=0.603, p=0.029) and Local Clinician Champion (r=0.656, p=0.015). A strong positive correlation, which approached but did not reach statistical significance, was also detected between post-breast cancer screening rates and post-total TRANSLATE score (r=0.548, p=0.052). A statistically significant association was also observed between post-cervical cancer screening rates and the TRANSLATE element of Site Coordinator (r=0.599, p=0.040). These findings are presented in Table 20.

Strong provider reminder system activities were significantly associated with increases in breast cancer screening. Practices with high scores on Reminders implemented multiple strategies (i.e. EHR alerts, pre-visit planning, workflow adjustments) within their practices to ensure that providers discuss cancer screening with their patients. It is possible that these strategies improved the consistency of provider recommendations for breast cancer screening among their patients. Local Clinician Champion was also significantly associated with breast cancer screening rates and Site Coordinator was significantly associated with cervical cancer screening rates. It is possible that cancer screening efforts improved among practices that were able to maintain the engagement of these key project team members.

Table 20. Correlation between Post-Practice Facilitation Cancer Screening Rates and Post- TRANSLATE Evaluation Scores

TRANSLATE Scores Correlation Coefficient	Post-Breast Cancer Screening Rate	Post-Cervical Cancer Screening Rate	Post-Facilitation CRC Screening Rate
Target	0.308	-0.388	0.050
Reminders	0.603*	-0.042	0.258
Administrative Buy-In	0.211	0.212	0.000
Network Information Systems	0.446	-0.123	0.082
Site Coordinator	0.420	0.599*	0.482
Local Clinician Champion	0.656*	-0.032	0.179
Audit and Feedback	0.305	0.489	0.337
Team Approach	0.080	-0.119	0.088
Education	0.386	-0.044	0.386
TOTAL TRANSLATE SCORE	**0.548**	**0.186**	**0.278**

*Statistical significance determined at α=0.05

Evidence-Based Patient Intervention Correlations

Correlation analysis using Spearman's Rho was conducted between the pre-practice facilitation cancer screening rates and pre-practice facilitation evidence-based patient intervention evaluation measures, and between the

post-practice facilitation cancer screening rates and post-practice facilitation evidence-based patient intervention evaluation measures.

Pre-Practice Facilitation

As shown in Table 21, the only significant association detected for the pre-practice facilitation correlation analysis was between breast cancer screening rates and one-on-one education (r=0.636, p=0.019). Practices with higher scores on this EBI incorporated a team-based approach to patient education in which multiple providers and staff members (i.e. front desk team, nurses, physicians) were involved. It is possible that this strategy is linked with improved cancer screening awareness and knowledge among patients, and potentially increased motivation to complete cancer screening tests.

Table 21. Correlation between Pre-Practice Facilitation Cancer Screening Rates and Pre- Evidence-Based Interventions Evaluation Scores

Evidence-Based Intervention Scores Correlation Coefficient	Pre-Breast Cancer Screening Rate	Pre-Cervical Cancer Screening Rate	Pre-Facilitation CRC Screening Rate
Client Reminders	0.021	-0.143	0.135
Small Media	0.252	-0.071	0.262
One-On-One Education	0.636*	0.207	0.325
Reducing Structural Barriers	0.364	-0.339	0.277
TOTAL EBI SCORE	**0.366**	**-0.067**	**0.397**

*Statistical significance determined at α=0.05

Post-Practice Facilitation

Table 22 presents the post-practice facilitation associations for cancer screening rates and evidence-based intervention scores. Upon conducting the post-practice facilitation correlation analysis, statistically significant associations were identified between cervical cancer screening rates and small media (r=-0.630, p=0.028), one-on-one education (r=-0.594, p=0.042), and the total EBI score (r=-0.695, p=0.012). Unexpectedly, all of these significant correlations were negative. It is likely that these findings can be attributed to the issues with the post-cancer screening rates that have been previously acknowledged. The most extreme changes in post-measurement cancer screening data was observed for cervical cancer screening rates in a cluster of practices that were transitioning to a new EHR system. These practices, which are typically very engaged in the project, were also the same practices that were most energized about implementing education-related evidence-based interventions for cervical cancer screening rate improvement. It is unlikely that the observed correlation was in any way causal.

Table 22. Correlation between Post-Practice Facilitation Cancer Screening Rates and Post- Evidence-Based Interventions Evaluation Scores

Evidence-Based Intervention Scores Correlation Coefficient	Post-Breast Cancer Screening Rate	Post-Cervical Cancer Screening Rate	Post-Facilitation CRC Screening Rate
Client Reminders	0.215	-0.363	-0.291
Small Media	0.087	-0.630*	0.190
One-On-One Education	0.365	-0.594*	0.108
Reducing Structural Barriers	0.023	-0.072	-0.159
TOTAL EBI SCORE	**0.235**	**-0.695***	**-0.148**

*Statistical significance determined at α=0.05

Practice Personnel Perceptions and Attitudes

Providers and staff working at the participating practices were surveyed both before and after the practice facilitation services were completed to measure their attitudes and experiences with breast, cervical and colorectal cancer screening, EHR-based registries, and quality improvement. The language and question items in this survey were adapted from previously validated and published surveys available from Houser et al.,[4] the National Cancer Institute,[5,6] and the Michigan Department of Community Health.[7] Surveys were tracked by individual and collected through paper hardcopy. Practice facilitators administered the surveys.

A total of 93 individuals responded to the surveys. While the project team attempted to collect every individual survey in a pre-post format, some individuals responded during only one of the two measurement periods. A total of 36 individual surveys have only pre-practice facilitation data, 22 have only post-practice facilitation data, and 35 (38% of those who completed any survey) have both pre- and post-practice facilitation data. One factor that greatly contributed to the discrepancy between pre- and post-survey completion is staff turnover and absence at several of the participating practices. Table 23 provides a full description of survey respondent demographics among all respondents. Sixty-seven females and 20 males responded to the survey. The greatest number of respondents were physicians (30), followed by practice nurses (19). The remaining respondents were fairly evenly represented by other clinical positions.

Table 23. Demographic Data for 135 Pre- and Post-Practice Facilitation Survey Respondents

Sex	Job Title								
	Physician	NP or PA	Practice Nurse	Medical Assistant	Practice Manager	Case Manager	Clerical	Other/No Response	TOTAL
Female	13	6	16	4	8	4	5	11	**67**
Male	16	1	2	1	0	0	0	0	**20**
No response	1	0	1	1	0	0	0	3	**6**
TOTAL	**30**	**7**	**19**	**6**	**8**	**4**	**5**	**14**	**93**

The following findings of the pre- and post-practice facilitation surveys represent the results for only the subset of 35 linked pre-post surveys.

Cancer Screening Barriers

Survey respondents were asked a series of Likert-scale questions assessing the importance of specific patient-related and system-related barriers to increasing cancer screening rates in their practices (see Appendix B for survey text). The Likert scale ranged from a low value of 1 (not important) to a high value of 5 (very important). Mean scores for each question were obtained to estimate the overall relative importance respondents ascribed to the listed barriers in their practice: mean scores of less than 3.0 indicate low importance, and mean scores above 3.0 indicate high importance. Figure 8a-b displays the distribution of pre- and post-practice facilitation mean scores for the questions addressing barriers to increasing cancer screening.

[4] Houser SH, Colquitt S, Clements K, Hart-Hester S. The impact of electronic health record usage on cancer registry systems in Alabama. *Perspect Heal Inf Manag*. 2012;9(1f).

[5] http://appliedresearch.cancer.gov/screening_rp/

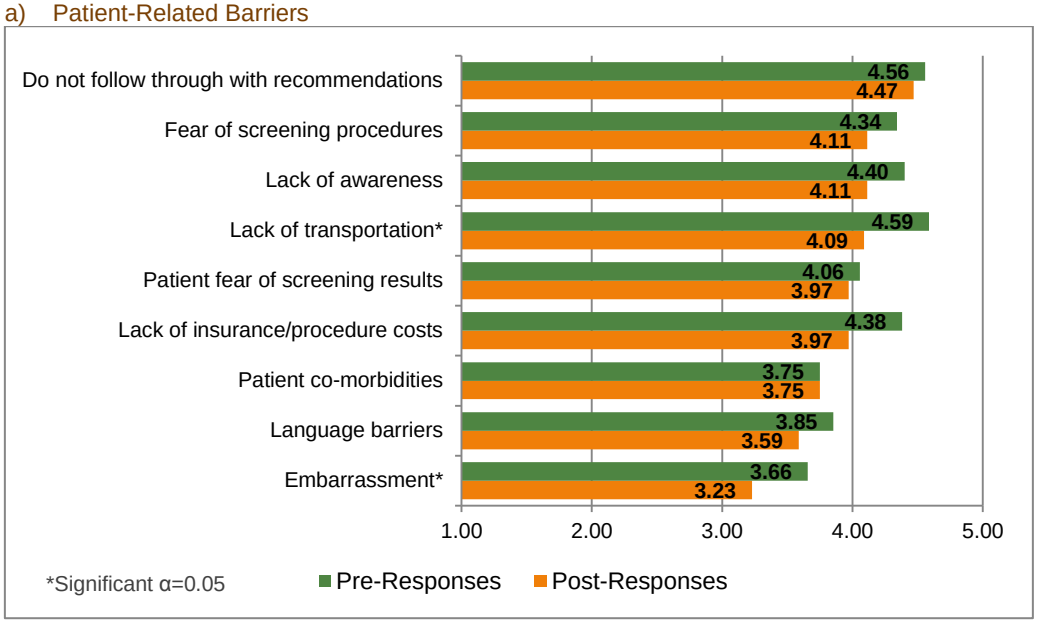
[6] http://healthcaredelivery.cancer.gov/crc_surveys/

[7] http://www.astho.org/Quality-Improvement/Toolkit/Michigan-Department-of-Community-Health-Quality-Improvement-and-Performance-Management-Survey/

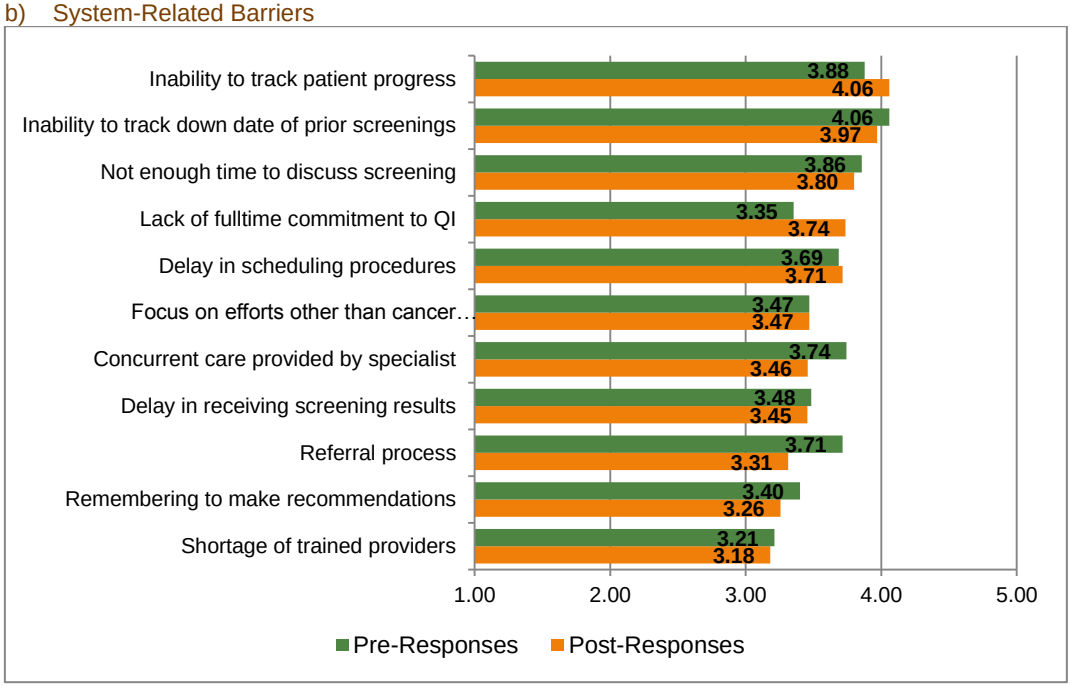
Among the participants surveyed, the top three most important patient-related barriers to increasing cancer screening as perceived by practice staff both before practice facilitation were: 1) lack of transportation; 2) lack of following through on provider recommendations; and 3) lack of awareness. After practice facilitation, the top three patient-related barriers included: 1) lack of following through on provider recommendations; 2) fear of screening procedures; and 3) lack of awareness. All of the barriers had an average rate above 3.0 for both pre- and post-scores, indicating that all barriers were considered of high importance among survey respondents. Average rating of all patient-related barriers either did not change or decreased from pre- to post-measurement. Two patient-related barriers had statistically significant decreases in average rating: lack of transportation (p=0.009) and patient embarrassment (p=0.037).

Figure 8. Mean Scores for Questions on Barriers to Increasing Cancer Screening

a) Patient-Related Barriers



b) System-Related Barriers



The top three most important system-related barriers to increasing cancer screening both prior to and following practice facilitation were: 1) inability to track down the date of a prior screening; 2) inability to track patient progress in completing screening tests; and 3) not enough time to discuss screening with patients. Average rating increased for only three system-related barriers, which included the inability to track patient progress in completing screening tests, lack of full-time commitment to quality improvement efforts, and delay in scheduling screening procedures; however, these changes were not determined to be statistically significant. There was a marginally significant decrease in average rating for the referral process (p=0.055). Otherwise, there were no notable changes in rating of system-related barriers.

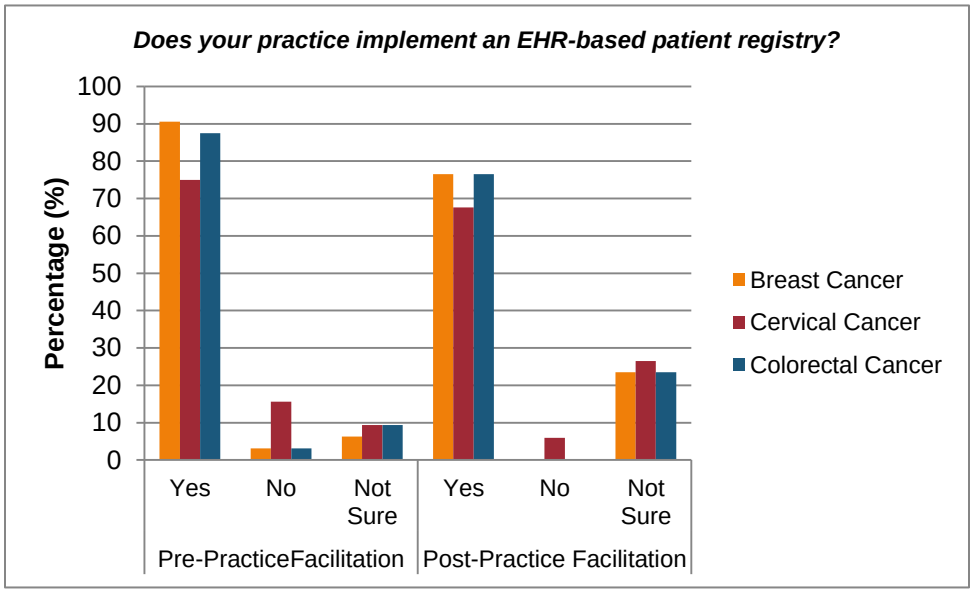
Respondents were also asked to write in any additional barriers to increasing cancer screening not listed in the Likert-scale response options. The following list summarizes the written responses:

- Overall lack of patient compliance and adherence
- Religious and cultural barriers
- Lack of patient trust in medicine
- Scheduling and cost issues associated with colonoscopy
- Lack of time and staff to conduct cancer screening education and outreach, as well as track cancer screening orders and results
- Major organizational changes (i.e. moving to a new clinic site)
- Inaccurate data and unreliable EHR provider and patient reminders
- Lack of IT support for data and EHR issues

EHR-Based Registry

The majority of respondents indicated that their practice did implement an EHR-based patient registry to identify and track patients eligible for breast, cervical and colorectal cancer screening during both the pre- and post-practice facilitation measurement periods. However, the number of respondents reporting that their practice did implement an EHR-based patient registry decreased between the two measurement periods for all three cancer screenings, while the number of respondents who were "not sure" increased, indicating an overall decrease in awareness of this capability among survey respondents. This finding was further investigated by identifying which practices were more likely to have respondents reporting uncertainty. As expected, the majority of respondents that indicated they were "not sure" about whether their

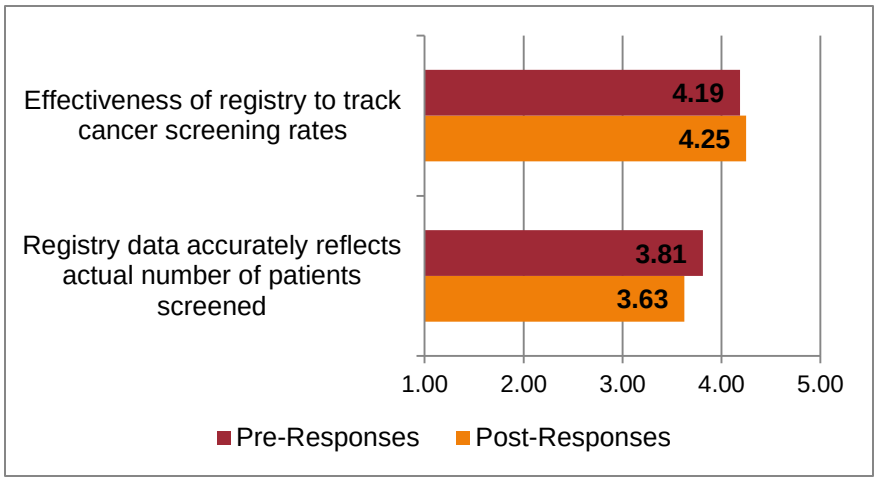
Figure 9. Summary of Respondent Knowledge of EHR-Based Patient Registries



practice implemented patient registries were from the three practices that experienced an EHR transition during the Year 4 project period. Providers and staff from these practices are still adjusting to the new EHR and its capabilities, and it is possible that new patient registries are still under development. A distribution of survey responses can be found in Figure 9.

Following the information reported in the practice characteristics form from the pre-practice facilitation period, all 13 practices reported that their practice utilized patient registries to track patient cancer screening. Only one practice did not have a registry for cervical cancer screening; the remaining practices reported having registries for all three cancer screening types. Additionally, the TRANSLATE evaluations conducted by practice facilitators indicated that all 13 practices had the capability to run EHR-based reports, but that this capability was underutilized by about half of the practices. Thus, it appears that gaps remain in knowledge, awareness, and utilization among staff at the participating practices on this EHR feature. Respondents were also asked to rate 1) the effectiveness of the registry to track cancer screening rates, and 2) whether the registry data accurately reflects the actual number of patients screened on a five-point Likert scale that ranged from a low value of 1 (not effective/accurate) to a high value of 5 (very effective/accurate). Figure 10 presents the average pre- and post-measurement ratings for these survey items, which shows a slight overall increase in perceived effectiveness of the registry's ability to track cancer screening rates but an overall decrease in perceived accuracy of registry data in reflecting the actual number of patients screened. These changes were not statistically significant.

Figure 10. Perceived Effectiveness and Accuracy of Patient Registries

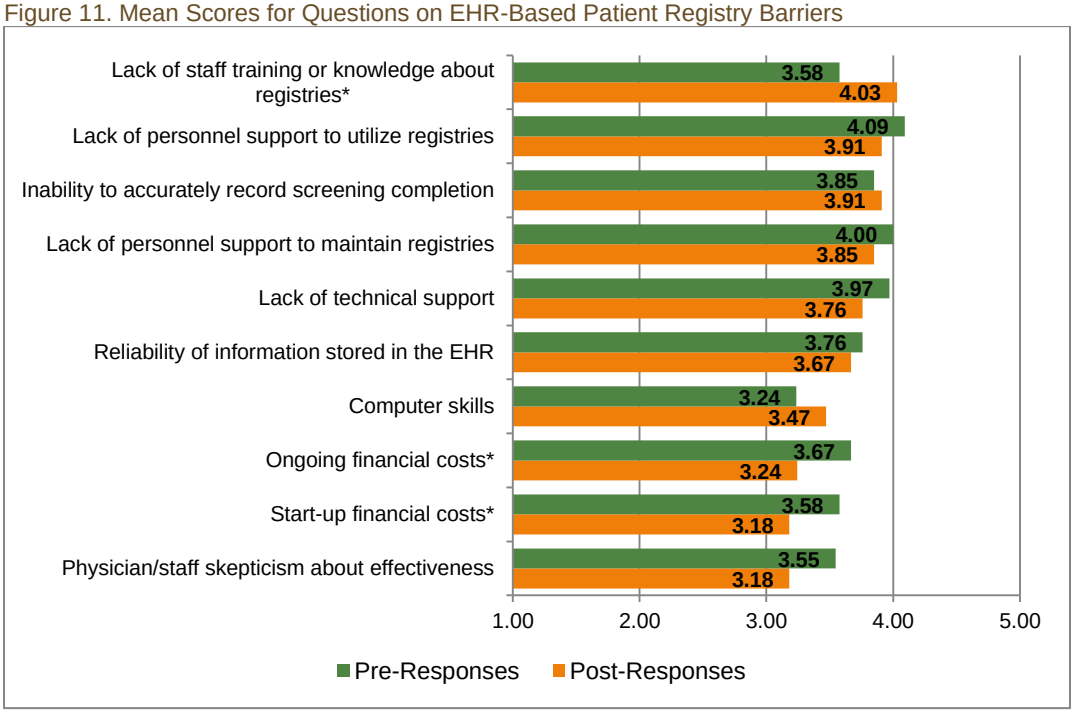


Survey respondents were also asked a series of Likert-scale questions assessing the importance of selected barriers to utilizing EHR-based registries to track patient cancer screening (see Appendix B for survey text). The Likert scale ranged from a low value of 1 (not important) to a high value of 5 (very important). Mean scores for each question were obtained to estimate the overall degree to which respondents felt the barriers to EHR-based registries were important in their practice: mean scores of less than 3.0 indicate low importance, and mean scores above 3.0 indicate high importance. Figure 11 displays the distribution of pre- and post-practice facilitation mean scores for the questions addressing barriers to EHR-based registry use.

Respondents identified the following as the top three most important barriers to utilizing EHR-based registries prior to receiving practice facilitation: 1) lack of personnel support to utilize registries; 2) lack of personnel support to maintain registries; and 3) lack of technical support. Following practice facilitation, the top three barriers included: 1) lack of staff training or knowledge about registries; 2) lack of personnel support to utilize registries; and 3) inability to accurately record screening completion. The average rating for lack of staff training or knowledge about registries increased significantly from pre- to post-measurement ($p=0.037$), while the average

ratings significantly decreased for both ongoing financial costs associated with maintaining registries (p=0.017) and start-up financial costs associated with creating registries (p=0.051).

Figure 11. Mean Scores for Questions on EHR-Based Patient Registry Barriers

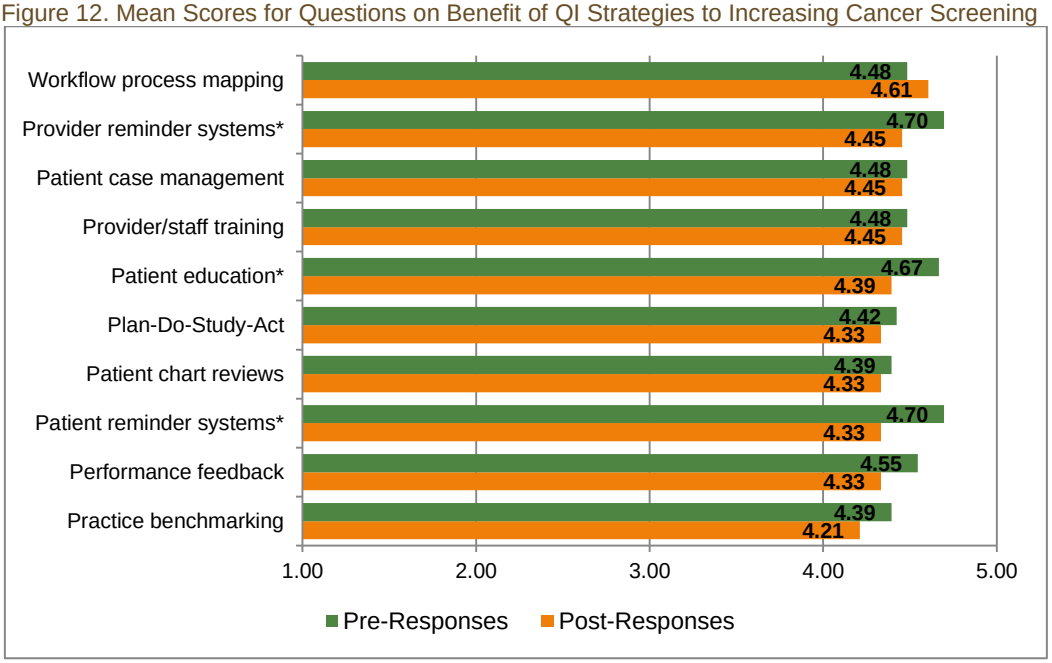


Quality Improvement

Survey respondents were asked a series of Likert-scale questions assessing the level to which selected quality improvement strategies were perceived as beneficial to improving cancer screening rates (see Appendix B for survey text). The Likert scale ranged from a low value of 1 (not beneficial) to 5 (very beneficial); a response option was also available if the respondent was not familiar with the selected quality improvement strategy. Mean scores for each question were obtained to estimate the overall degree to which respondents felt the quality improvement strategies would benefit their practices: mean scores of less than 3.0 indicate low benefit, and mean scores above 3.0 indicate high benefit. Figure 12 displays the distribution of pre- and post-practice facilitation mean scores for the questions addressing quality improvement strategies.

All quality improvement strategies received a mean score above 4.0, indicating that respondents collectively felt that all listed strategies were highly beneficial. The top three quality improvement strategies that respondents felt, on average, would most benefit their practices' ability to increase cancer screening before practice facilitation were: 1) provider reminder systems; 2) patient reminder systems; and 3) patient education. After practice facilitation, the top three rated quality improvement strategies included: 1) workflow process mapping; 2) provider reminder systems; and 3) patient case management. Workflow process mapping was the only strategy to receive a higher post-practice facilitation rating compared to pre-practice facilitation rating, which was not a statistically significant change. Three quality improvement strategies received statistically significantly lower ratings from pre- to post-measurement: 1) provider reminder systems (p=0.018), 2) patient reminder systems (p=0.037), and 3) patient education (p=0.037).

Figure 12. Mean Scores for Questions on Benefit of QI Strategies to Increasing Cancer Screening



Change in Provider Perceptions

The results of the pre- and post-practice facilitation surveys illustrate that overall, the survey respondents perceived the patient-related barriers to increasing cancer screening as more important than the system-related barriers (based on higher ratings). However, the average ratings of all patient barriers decreased over the Year 4 project period. These results indicate that the perceived importance of patient-related barriers has diminished among staff and providers, potentially indicating that they have become more accustomed to dealing with these barriers or that they have implemented interventions in practice to reduce the impact of these barriers

The top barriers to utilizing EHR-based patient registries touch on inadequate personnel resources and inadequate technical capabilities. Thus, it appears that while participants recognize the potential of EHR-based patient registries to help track and increase patient cancer screening, their current system and staffing constraints reduce the function of these tools.

Lastly, the perceived utility of system-level quality improvement strategies, such as patient and provider reminder system interventions and patient education, decreased significantly across the project period. While these results could be related to a lack of training regarding these specific strategies among survey respondents, it may also be the case that respondents did not achieve desired or expected outcomes through the use of these strategies.

Focus Group and Interview Findings

Focus groups were conducted with five out of the 13 practices; due to scheduling conflicts, the project coordinator held key informant interviews for the remaining eight practices. The goal of the focus groups and interviews was to obtain in-depth information about the unique experiences of each practice within the project, feedback on project processes, and insight on how to make efforts to increase cancer screening rates more sustainable.

Methods

The project principal investigator, project coordinator, and quality improvement consultant jointly developed the script for the focus groups/interviews (see Appendix B), and the project coordinator facilitated the focus groups and interviews. The project coordinator worked with practice facilitators to identify participants and schedule the focus groups and interviews. Practice facilitators were excluded from any focus group/interview activities pertaining to their assigned practices in order to reduce bias in participant responses. Focus groups were either hosted at the practice offices at a time convenient for the attendees or conducted via conference call.

All focus groups/interviews were audio recorded and transcribed verbatim for analysis; no names or otherwise personally identifiable information was recorded in the transcripts. One member of the project team at SUNY Upstate Medical University conducted a content analysis on the transcripts. This team member reviewed and coded the transcripts to identify generalized concepts. These codes were then organized according to topic areas discussed during the focus groups; summaries of each topic area were reviewed by the larger project team.

Participants

The participants targeted for inclusion in the focus groups/interviews were those individuals most directly involved in the implementation of the project. Eight individuals participated in the key informant interviews, and 12 individuals participated in the focus groups. The majority of participants were practice medical directors, practice managers, quality improvement specialists, and clinic staff (e.g. practice nurse, front desk team leader, data coordinator).

Summary of Findings

The following summary briefly describes the main findings of the focus group analysis, grouped by topic area.

Practice Facilitator Relationship

When asked to discuss the working relationship with their assigned practice facilitator, the majority of participants expressed positive remarks about their experience. Most participants felt that they worked well with their practice facilitator and enjoyed the collaboration. One participant remarked that their practice facilitator was “a joy to work with,” while another commented that their practice facilitator was an “excellent asset.” Participants from two practices provided neutral remarks about working with their practice facilitator, each describing the relationship as “fine.” Common feedback from participants included comments that the practice facilitator managed the project well through organization of project activities, and that it was helpful to have a practice facilitator to keep them updated on timelines and deliverables. Participants at six practices that were continuing work from previous project years communicated that it was valuable to have had an established relationship with their practice facilitator to move forward with initiatives for the current year. Three practices in the Rochester region went through a transition from one practice facilitator to another when their initial practice facilitator left the project mid-year. All three of these practices remarked that the transition phase went well and that it was a smooth process.

Most participants stated that their practice facilitator worked primarily with one or a few main contacts throughout the project period. Practice facilitators worked mainly with medical directors at five of the practices and practice managers at six of the practices. Some practice facilitators also worked closely with quality improvement staff, data support staff, and one practice facilitator worked with a Master of Public Health student who helped to support project activities at two practices in the Syracuse region. While not considered to be the primary contacts with practice facilitators, nursing staff were also reported to be in contact with practice facilitators at three practices either regularly or on an as-needed basis. While all practices had at least some face-to-face interaction with their practice facilitators, participants from four practices indicated that they had several in-person meetings during the project period. Participants from seven practices indicated that they had regularly scheduled meetings or check-ins with their practice facilitator. Six practices also noted having regular communication with their practice facilitators by phone or email.

Participants also discussed the various contributions made by their practice facilitators throughout the project year. All practices received assistance with planning and implementing cancer screening interventions. Six participants indicated that their practice facilitator provided some form of quality improvement support, such as reviewing quality improvement methods, helping to develop PDSAs, or drafting workflow plans. Another four participants reported that their practice facilitators assisted with data support by helping to clean up and optimize registries, run reports, and address other general EHR issues. Practice facilitators coordinated in-service trainings among staff at four of the practices, which incorporated speakers from partnering organizations such as the New York State Cancer Services Program and the American Cancer Society. Topics covered at these training sessions included patient outreach and education, risk factors for cancer, and screening tests available for each type of cancer. Participants from three practices indicated that overall, their practice facilitator was a motivational force to keep their project efforts focused and in motion.

A few practices experienced challenges in maintaining continuous contact or involvement with their practice facilitators due to organizational barriers. Two practices affiliated with the same health system lost access to their EHR for a couple of months during the project period. Both of these practices sought data support from their practice facilitator, and therefore lost significant time to receive this type of assistance. A participant from another practice described staff and leadership turnover during the project period as a disruption in the practice facilitator's ability to achieve seamless engagement from the practice.

Project-related Activities and Interventions

Most practices addressed all three cancer screening types (breast, cervical, and colorectal) during the Year 4 project period. One practice (P2) addressed breast and colorectal cancer screening only as they do not collect patient information on cervical cancer screening, however, they do make referrals for their patients to receive cervical cancer screening as necessary. Three practices placed an emphasis on their cervical cancer screening efforts during this project period, two practices placed an emphasis on colorectal cancer screening, and one practice emphasized breast cancer screening efforts. When asked about their approach to colorectal cancer screening, participants from seven practices indicated increased use of FIT in their office, four of which commented that FIT is the preferred colorectal cancer screening method when considering their patient populations. Several participants described that both FIT and colonoscopy are discussed with patients so that they can make an informed choice about which test they would like to undergo. Participants from three practices

inferred that colonoscopy is the default or preferred method of screening, and that FIT is only offered when patients are averse to colonoscopy.

Participants from 10 practices reported implementation of individual-level interventions among patients and/or providers at their practices, mainly focusing on education, outreach, and reminders. Seven practices aimed to improve efforts on patient education. All seven of these practices utilized small media resources such as videos, brochures, and patient instruction sheets to increase awareness and knowledge of breast, cervical, and colorectal cancer screening among their patient populations. Two practices partnered with an organization to obtain patient education material to display in their office via digital screens (i.e. e-frames, tablets). Among the practices that implemented patient education interventions, participants from two practices specified that they ensured materials were available in multiple languages. Eight practices utilized strategies to remind patients that they are due for cancer screening or to follow up on screening test orders. Participants from three practices discussed contacting patients by phone to follow up on screening and participants from two practices mentioned mailing reminder letters or FIT kits to patients. Two practices implemented patient reminders through distribution of pocket calendars to patients to mark dates when patients were due or scheduled for screening tests. Additionally, four participants remarked that their practices implemented provider reminders to address cancer screening with their patients during appointments by using EHR alert systems or pre-visit planning.

Participants also discussed their efforts on practice-level and system-level interventions. Seven practices aimed to address improvements on data capture and issues with EHRs. Participants from three practices described deliberate efforts to collect cancer screening reports and data from outside providers and/or regional health information organizations (RHIOs). Four practices undertook initiatives to clean up data, improve the functionality of their registries, and streamline data entry processes to increase the accuracy of patient records. Three practices further developed approaches to identify patients due for screening through the use of registries and reports. Participants also shared their efforts to address structural barriers. Most practices utilized approaches to improve access to screening services, which include the following: dedicated screening days for breast and/or cervical cancer (four practices), mobile mammography (three practices), and walk-in appointments (one practice). Three practices implemented patient navigation and outreach strategies. Several participants explained that FIT testing was the preferred method for colorectal cancer screening in order to avoid the various barriers associated with colonoscopy.

When asked about staff involvement in project efforts, participants from seven practices indicated that their office demonstrated a multi-disciplinary team approach towards cancer screening interventions. Several of these participants commented on the engagement of providers, nurses, care teams, and front desk staff. Participants from two of the practices implemented staff incentive strategies to keep team members motivated towards cancer screening goals.

Cancer Screening Barriers and Needs

Patient-related barriers were mentioned by participants from all 13 practices during key informant interviews and focus groups. Participants from 11 practices cited patient compliance issues such as not showing up for scheduled appointments or not returning completed FIT kits. Participants attributed non-compliance to factors such as lack of transportation (six practices), aversion or fear of screening procedures and results (five practices),

health literacy issues (three practices), and financial or insurance barriers (two practices). Refugee, homeless, and psychiatric patients were cited to present unique and additional challenges to cancer screening compliance.

Lack of staff time and manpower to carry out quality improvement and cancer screening activities were common barriers expressed by participants. Four participants explained that these initiatives are mixed among competing demands and are often viewed among providers and staff as another thing to do. Other common issues included lack of provider awareness of cancer screening initiatives and staff turnover within clinics.

Challenges at the organizational and system levels were also discussed by participants. Communication issues between the participating practices and specialists (i.e. gastroenterologists, gynecologists) were cited by participants from six practices as barriers to receiving screening reports and therefore accurately tracking screening rates. Ten practices experienced issues with their EHR system during the Year 4 project period; five practices were not confident in the accuracy or reliability of the data captured in their EHR, three practices experienced an EHR transition and are still adjusting to the new system, and two practices experienced a temporary shutdown of their EHR and were only starting to regain functionality in the final months of the project period.

During the discussion of cancer screening barriers, many participants were able to identify needs that, if fulfilled, would help to address some of these issues. Needs included access to patient education materials that can be understood by patients with low health literacy and that are culturally and linguistically competent. Transportation services and increased availability of mobile mammography units were also identified as important services. Participants from three practices expressed their needs for staff roles in patient navigation, care coordination, and data management.

The barriers to breast, cervical, and colorectal cancer screening observed in the Year 4 project period were very similar to the screening barriers observed during Year 3. A summary of these concepts can be found in Table 24.

Table 24. Common Barriers to Increasing Cancer Screening Expressed During Focus Groups/Interviews

Barriers to Increased Screening	Facilitators of Increased Screening
Patient-Level	
• Transportation • Insurance/financial constraints • Cultural and linguistic barriers • Comprehension/health literacy • Refusal/Non-compliance	• Education and outreach • Case management and follow up • Lifestyle-amenable screening methods • Reduction of structural barriers
Staff-Level	
• Lack of time • EHR data and documentation errors • Lack of investment in quality improvement interventions • Staff turnover	• Shared responsibility to discuss and document screening with patients • Standardized data entry and/or EHR technical assistance • Performance assessment and feedback • Point-of-care reminders
Practice-Level	
• Lack of personnel • Workflow inefficiencies • EHR data errors and reporting limitations • Two-way communication with specialists	• Team-based care • Quality improvement coaching • Workflow assessment and adjustment • EHR “workarounds” and technical assistance • PCMH certification requirements

Sustainability

Five of the participants indicated that the quality improvement activities implemented at their practices through this project aligned with requirements for PCMH. Many participants expressed that quality improvement has become ingrained in their office operations. Participants from three practices cited team-based participation as a facilitator to achieving their quality improvement goals. The utility of implementing PDSA cycles was discussed by five of the participants.

Overall, participants reported that the monetary incentive was valuable for launching current cancer screening interventions. Four practices reported that the funds were used to purchase materials for patient education or reminders such as brochures, anatomical models, and pocket calendars. Four additional practices used the monetary incentive towards staffing hours and administrative support related to project activities. Several participants reported that they used this money to cover expenses associated with patient outreach and navigation, as well as coordinating dedicated screening days. Three participants expressed that they had some difficulty determining the best way to utilize their stipends in order to maximize benefits for their patients. Two practices received additional grants during the Year 4 period that supplemented the work of the current project; one was a grant from the American Cancer Society to increase colorectal cancer screening specifically (P2) and the other was a grant to support patient navigation services (P9).

Participants from roughly half (six) of the practices discussed establishing policies at their practices that are anticipated to improve cancer screening rates among their patients. Participants at four practices reported making improvements in the use of fecal testing such as automatically sending FIT kits to patients who completed one the previous year, having FIT results sent directly to a lab rather than back to the office, promoting FIT as the primary screening test for colorectal cancer, and setting a specific timeframe for patients to return FIT kits. Examples of other policy changes included switching which guidelines to follow for breast cancer screening to a two-year interval (USPSTF), establishing check-in policies around patient RHIO consent, and standardizing a protocol for cancer screening reports.

Participants at nine practices reported that new workflows were designed and implemented during the Year 4 project period. Six practices made improvements in processes for making referrals and following up on screening orders. Participants from four practices discussed the value of pre-visit planning efforts, and participants from two practices emphasized the involvement of multiple providers and staff members to reinforce the importance of cancer screening with patients. Two practices improved workflows around entering data and running queries within their EHR.

Six participants commented on the importance of training needs and opportunities within their practices in relation to sustaining quality improvement efforts. Four participants described informational sessions that were coordinated by their practice facilitator on topics such as using e-frames for patient education and reviewing screening methods with nursing staff. Three participants indicated that staff training took place at their practices independent of the cancer screening project. One of these participants detailed an office-directed workshop for residents and staff that entailed discussing barriers to colorectal cancer screening and how they can be overcome.

Plans to continue initiatives to increase breast, cervical, and colorectal cancer screening were reported from all practices. Participants from seven practices indicated that they would like to expand their patient outreach and navigation services through efforts such as mobile screening services, providing transportation, and care coordination. Five practices would like to improve their patient education efforts; some examples include bringing information into homeless shelters, displaying videos that are well-suited for the waiting room, and obtaining materials that are culturally sensitive and appropriate for refugee populations. Participants from two practices felt that patient incentives, such as gift cards for completing FIT tests, would increase motivation to adhere to screening recommendations. Participants at four practices discussed building upon their current quality improvement efforts, three of which indicated that they are planning to evaluate interventions from the Year 4 project period to identify areas for improvement and future work.

Recommendations for Project Administration

Overall, the participating practices were very pleased with their experiences working on the project and looked forward to project continuation. Most participants did not have any particular feedback to share for project administration; however, some participants recommended the following:

- More widespread availability of mammogram buses across counties
- Continue to offer opportunities for practices to network and collaborate, such as the conferences that took place during Years 3 and 4 of the project
- Provide more structure or suggestions on what the stipends can be used for

VI. Lessons Learned & Implications

Practice Recruitment, Enrollment and Engagement	
Organizational Disruption	• Organizational and system-level changes, such as transitions in EHR or practice ownership, impede the ability of practices to sustain focus on cancer screening efforts • Leadership and staff turnover often delay progress towards screening goals, and staff often feel overwhelmed with competing demands and priorities
Project and Practice Staff Relationship	• Practice facilitators work primarily with one person or a small team within the practice to provide guidance and motivation for QI projects • Practice facilitators mainly contribute by providing guidance and services around cancer screening interventions, quality improvement, and data support • Practices strongly prefer working with the same individual across time
Staff Participation and Buy-In	• Practices increase efficiencies and engagement when QI activities align with existing priorities (e.g., PCMH, DSRIP) • Project champions are an important source of encouragement for practice-wide investment in QI projects • Multi-disciplinary team approach improves accountability towards cancer screening efforts
Quality Improvement to Track Patient Screening	
Data validity and reliability concerns	• Improvement in EHR data reliability and validity will require extended time, documentation fidelity, and consistent staff engagement • Lack of valid and reliable data can be a significant barrier to implementing QI initiatives • Inconsistency in report metrics impacts ability to assess practice progress
Closing the loop	• All practices experience issues in obtaining screening completion reports across all cancer screening targets, but particularly for cervical cancer screening • Success in closing the loop partially contingent on office operations and policies of specialist providers
Implementation of new office policies	• Promotion of strategies that reduce structural barriers are commonly pursued to ease the burden of cancer screening completion • Workflow adjustments to data entry, referral processes, and follow-up streamline efforts to track screening • Staff training and incentives are needed to encourage implementation of practice-level workflow and policy changes
Barriers to Screening Completion	
Factors of patient non-compliance	• Transportation is a significant structural barrier for patients needing breast and colorectal cancer screening • Lack of referral follow-through, fear of screening procedures, lack of knowledge/awareness, and inadequate insurance contribute to patient non-compliance • Special populations that face unique barriers include homeless, low-income, and refugee patients, as well as those with psychological disorders
Specialist provider supply and communication	• Lack of local specialists (particularly GI) to accept referred patients is a structural barrier primary care practices cannot address • Lack of clinical integration between primary care and specialist offices inhibits timely follow up, and much of the burden is placed on primary care offices

Practice Recruitment, Enrollment, and Engagement

1. Organizational disruption

Many practices participating in the Year 4 project experienced major organizational or system-level changes that disrupted their ability to sustain momentum on cancer screening initiatives. Three practices affiliated with the same health system underwent an EHR transition during the project period, which consumed considerable time and attention as staff members learned to adapt to their new system. Two additional practices were in the process of ownership transitions during Year 4, both of which shifted from physician-owned to hospital-managed clinics.

Another challenge that practices continue to experience is leadership and staff turnover, which often delay progress on implementing quality improvement projects. Not only does this affect a practice internally, but it also impacts the practice facilitator's ability to maintain regular communication and involvement with a site. Along with staff turnover, under-staffing creates a situation where practices have fewer resources to work with and oftentimes, quality improvement is overlooked as a priority. Feedback from the participants in the focus groups/interviews indicated that **practices have a need for additional staff to fulfill roles in care management and patient navigation to aid in achieving their cancer screening targets and improve overall patient care.**

2. Project and Practice Staff Relationship

Feedback provided during the focus groups/interviews, as well as observations made by the project team and practice facilitators, indicates that practice facilitators worked most closely with one to three staff members at each practice, and did not widely interact with practice staff and providers on a routine basis. Most commonly, practice facilitators worked primarily with practice managers and medical directors. **The practice facilitators' role was predominantly focused on providing guidance and services towards cancer screening interventions, quality improvement, and data support. Practice facilitators also acted as a catalyst for cancer screening QI efforts within their assigned practices.**

Feedback from project participants during the focus groups/interviews revealed that they interfaced with their practice facilitators in a variety of ways; some practices preferred to hold regular in-person meetings, while others chose to communicate primarily via email or phone.

Many project participants expressed having an established connection with their practice facilitators, and expressed a strong desire to continue working with the same individuals in future iterations of the project.

3. Staff Buy-In and Participation

As in previous project years, participants in the Year 4 project period aligned their quality improvement activities with existing practice priorities, including PCMH and DSRIP. This was viewed as an efficient utilization of personnel time and practice resources, and enhanced buy-in among practice staff.

Feedback obtained from both the participant focus groups/interviews and TRANSLATE evaluations illustrated the **importance of having invested project champions. Project champions were individuals within a practice who took a lead role in QI activities and provided encouragement across other staff members to work**

toward shared goals. While these individuals were not universally in positions of authority, most project champions were physicians or lead nurses. Levels of engagement decreased among several project champions during Year 4 due to competing priorities, which impacted practice momentum on project initiatives.

Project participants also indicated that **a multi-disciplinary team-based approach helped to maintain accountability towards cancer screening efforts.** Practices that included a combination of front desk staff, nurses, providers, and others in their project initiatives reported a sense of overall increased engagement.

Quality Improvement to Track Patient Screening

1. Data Validity and Reliability Concerns

As in previous project years, all of the practices enrolled in the Year 4 project period held concerns with the validity and reliability of the data stored in their EHR systems. All of the participating practices recognized the value of making continual improvements to EHR system functionality. Several practices dedicated specific time to work with the practice facilitators and IT staff on data mapping and workflow adjustments in order to obtain both accurate patient reports and develop practice policies to enhance long-term data capture. **Many practices experienced issues around inconsistent reporting methods and metrics (i.e. EHR transition, screening guideline changes, varying numerator and denominator definitions), which impacts their ability to accurately assess practice progress towards cancer screening targets.** Reporting and data management require ongoing efforts to train and support practice personnel.

2. Closing the Loop

As in previous project periods, **the issue of closing the loop on patient screening (i.e., securing screening completion reports for patients) was ubiquitous across the practices enrolled in the Year 4 project period**. Practices reported issues securing colonoscopy reports, mammography reports, and cervical cancer screening pathology reports from specialist providers outside of their health system or care network. One practice that did not offer cervical cancer screening services in-house has chosen not to use a registry to track patient screening completion for cervical cancer due to the inability to obtain screening documentation from outside specialist providers.

To address this issue, some practices assigned staff to call specialist providers and obtain reports for individual patients. However, this approach requires significant personnel time and is difficult to implement on a long-term basis. Furthermore, practices without dedicated care coordinators do not have the resources necessary to maintain a consistent focus on reaching out to specialist providers. One practice focused on workflows to improve processes involved in collecting patient data from their regional health information organization (RHIO) to collect information on screening tests performed outside of the primary care office.

3. Implementation of New Office Policies and Strategies

Practices are increasingly aware of the structural barriers that prevent their patients from adhering to cancer screening recommendations, and in response, they are promoting the implementation of strategies that aim to reduce these barriers to ease the burden of cancer screening. One of the most prevalent changes being made across practices is the uptake of FIT testing as either the primary option for

colorectal cancer screening or an alternative to colonoscopy. Project participants reported that FIT testing is especially beneficial for refugee and homeless populations, as well as those who generally have difficulty securing transportation for a colonoscopy. Other common strategies to addressing structural barriers include utilization of mobile mammography and coordination of dedicated screening days for breast and/or cervical cancer screening.

Feedback from focus group/interview participants indicated that workflow adjustments to data entry, referral processes, and follow-up on screening test orders streamline practice efforts to track cancer screening among patients. Incorporating pre-visit planning and automated patient and/or provider reminders are a couple of common approaches implemented by practices during the Year 4 project. **Some participants in the focus groups and interviews felt that providing incentives for staff (i.e., gift cards, bonuses, lunch celebrations) would increase their ability to successfully implement PDSAs while also demonstrating their appreciation of staff efforts.** One practice implemented a "tiered incentive program" that involved providing staff with incentives that increased in value as they met different levels of their cancer screening goals.

Barriers to Cancer Screening

1. Factors of Patient Noncompliance

As in previous project periods, practices participating in the Year 4 period overwhelmingly identified patient-related barriers as a primary concern for increasing cancer screening. The primary patient-related barriers identified include:

- Lack of transportation support
- Inadequate insurance coverage
- Fear of screening procedures and/or results
- Failure to follow through with screening referral
- Lack of health literacy, knowledge, and awareness

Every practice instituted some form of patient outreach and/or education to address these patient-related barriers during the project period. Some participants in the focus groups/interviews directly commented that many patients do not follow through with screening, and while education, testing options, and resource support do help some patients access services, others continue to present compliance issues. **Patient non-compliance is consistently noted by practice staff as a significant issue for practices as they work to increase cancer screening among their patients.** Whether this reflects patient unwillingness to comply, patient inability to adhere due to practice, system, or societal barriers, or whether this is a reflection of practice staff frustration, remains an open question.

One barrier that continued to receive particular emphasis during Year 4 was lack of transportation. Patients with limited transportation have difficulty arranging plans to travel to and from colonoscopy services. Patients who routinely rely on public transportation cannot use mass transit after a colonoscopy due to the effects of anesthetic medication used during the procedure. Additionally, many patients do not have the economic resources or social network of relatives or friends who can assist them with travel to and from colonoscopy and mammogram service locations. FIT testing was commonly utilized by practices as an alternative to colonoscopy for colorectal cancer

screening, especially among patients that are more likely to face transportation barriers. Additionally, the Buffalo practices with access to mobile mammography units have ongoing efforts to coordinate breast cancer screening services for their patients, which also eases the burden of traveling to outside clinics. Despite these efforts, **transportation remains a significant structural barrier to cancer screening for many patients.**

One practice participating in the Year 4 project period serves a predominantly homeless population, and this practice struggled to address cancer screening since, for many of their patients, concerns over housing, substance abuse, and chronic disease care take precedence during an office visit. Additionally, due to the transitory history of their patients, the practice is not always able to obtain records of prior screenings, which creates issues for documentation and insurance coverage. Another practice serves exclusively refugee populations; this presents a range of unique issues such as health literacy as well as cultural and linguistic barriers. Some refugee patients are more likely to be averse to certain cancer screening procedures due to their cultural beliefs or traumatic events. In general, low-income populations are especially affected by transportation and financial barriers. Feedback from focus group/interview participants indicated that any cost related to accessing health care services had to be weighed against their patients' daily needs, and that patient incentives could be a possible solution to this issue.

2. Specialist Provider Supply and Communication

As in previous project years, **practices continued to view the lack of available GI specialists in their area as a significant barrier to colorectal cancer screening for their patients**. Patients from these practices routinely waited several months for colonoscopy appointments. This not only negatively impacted patient compliance with screening recommendations, but also impeded the ability of the primary care practices to track screening completion among their referred patients. While this is a structural barrier that primary care practices are unable to address, many practices are turning to FIT as an alternative colorectal cancer screening option. The lack of clinical integration between primary care and specialist offices was mentioned by several focus group/interview participants as a significant barrier to closing the loop on patient screening. **The lack of bi-directional communication places a heavy burden on primary care offices to proactively contact specialists for patient information, therefore increasing the chance that a patient may not receive appropriate care in the form of screening.**

VII. Recommendations

Assessment of Influential Factors on Screening Rate Data

A particularly notable outcome from the 2016-2017 project year was the number of observed decreases in screening rates at many individual practices, for one or more cancer types. The important distinction is that the observed changes in rates may not reflect true screening rates for any particular cancer. As noted previously in this report, many aberrant screening rate changes could be plausibly linked to major changes in practice management, ownership, EHR systems, or calculation methods.

An important quality assurance step that may be pursued is the calculation of an estimate of the size of discrepancies between observed and true screening rates. **We recommend that a protocol to retrospectively re-collect information from practices, using a variety of screening rate calculation methods and data queries, is appropriate, to determine the amount of variance that is contributed by calculation and query choice.** Additionally, systems change (EHR, ownership, etc.) may have contributed, and **the effects of system changes on observed screening rates should be estimated as well through the retrospective re-collection of screening rates and several past time points.**

These steps should be taken in the context of a separately-developed protocol. It is also likely that participating practices will need to be compensated for this step explicitly, in addition to typical quality stipends for the regular quality improvement work the team does with each practice each year.

Emphasis on Longitudinal Data Reporting

Nearly all of the practices in the 2016-2017 project year have been working with the project team for several years. The number of changes that occurred in this, fourth, year of the project are likely due to cyclical changes that are coincidentally or systematically (in the case of affiliated groups of practices) co-occurring.

The more realistic estimation of the effects of the project are, at this point, more likely realized via long-term longitudinal observations. Additionally, given the number of practice-level challenges observed during the 2016-2017 budget year, the re-collection of data described in the previous recommendation would also serve to better depict the longitudinal, multi-year effects of the project.

Implementation of Priority Evidence-Based Interventions

For the next budgetary year, we recommend the development of a guide, or “change package,” that provides a discrete list of priority evidence-based interventions that practices can choose from to work on during future years of the project. The change package would contain specific examples of priority EBIs in each category (provider reminders, patient reminders, provider assessment & feedback, and reducing structural barriers), selected by reviewing data from the history of this project, the medical and health services research literature, and input from the NYS Department of Health. In past years, practices have been essentially free to seek approval for any evidence-based intervention that has been observed in the literature to improve screening rates. In future years, we believe it is time to proceed to a more standardized set of best practices, while still allowing individual sites to select interventions that fit their circumstances.

VIII. Summary of Increasing Colorectal Cancer Screening in New York State Conference

Overview

The *Increasing Colorectal Cancer Screening in New York State Conference* was a one-day event hosted by the project team in May 2017, and held in Syracuse, NY. The primary objective of the conference was to share innovations and strategies for increasing colorectal cancer screening rates in primary care practices and health systems that provide care to underserved populations, specifically Medicaid Managed Care patients.

The audience for the conference was structured on several tiers. The first tier consisted of physicians, other providers, and clinical staff serving Medicaid Managed Care populations in the Central New York and Adirondack regions of New York State. After an initial invitation period was completed, an announcement was sent to practices that currently or previously have participated in the project. Finally, a third tier of attendees consisted of invitees from additional primary care practices throughout Western and Central New York, as well as partner organizations, which included the American Cancer Society, the Upstate Cancer Center, and others. Along with attendees, staff from the project team (including all investigators, practice facilitators, coordinators, and consultants) and staff from the NYSDOH were also in attendance, with most serving as presenters, workshop leaders, and conference organizers.

The conference included presentations from two keynote speakers; 1) James Allison, MD from the University of California San Francisco, who addressed screening test options with a focus on fecal immunochemical testing (FIT), and 2) Martin Mahoney, MD, PhD, from Roswell Park Cancer Institute, who discussed the challenges of meeting colorectal cancer screening targets in practice. Emily Mader, MPH, MPP (former project coordinator) gave an overarching presentation on the processes and outcomes of the cancer screening project since its inception. A presentation on the fundamentals of quality improvement was given by a quality improvement advisor, Amanda Norton, MSW, who also served as a practice facilitator on the project. Other features of the conference included an expert panel of members from four primary care practices on the topic of quality improvement and efforts to overcome barriers to colorectal cancer screening, in addition to workshops on elements to a quality screening program, each of which was moderated by two project team members or project affiliates.

Attendance

A total of 75 individuals were registered for the conference, of which, 64 (85.3%) attended the event. Among the 64 attendees, 17 (26.6%) individuals were involved as speakers or conference organizers, some of which were also considered to be part of the target audience. The general conference audience consisted of the remaining 47 individuals.

Attendee information on job title/academic credentials and professional specialty was collected from conference registration forms. The conference audience was comprised of a variety of health professionals, as shown in Figure 13. Approximately 20% of attendees indicated that they were physicians (MD or DO), 15.6% were mid-level providers (NP or PA), and another 15.6% were nurses (RN or LPN). About 15.6% of attendees indicated

holding another type of doctoral or master's degree (e.g. PhD, MBA, MPH). The conference audience was also comprised of other types of clinical and outreach staff; 14.1% were practice or program managers and 10.9% were care coordinators or patient navigators. The remaining 7.8% of attendees reported some other type of professional title or they did not specify this information on their registration form.

Figure 13. Conference Attendee Reported Title or Academic Credentials

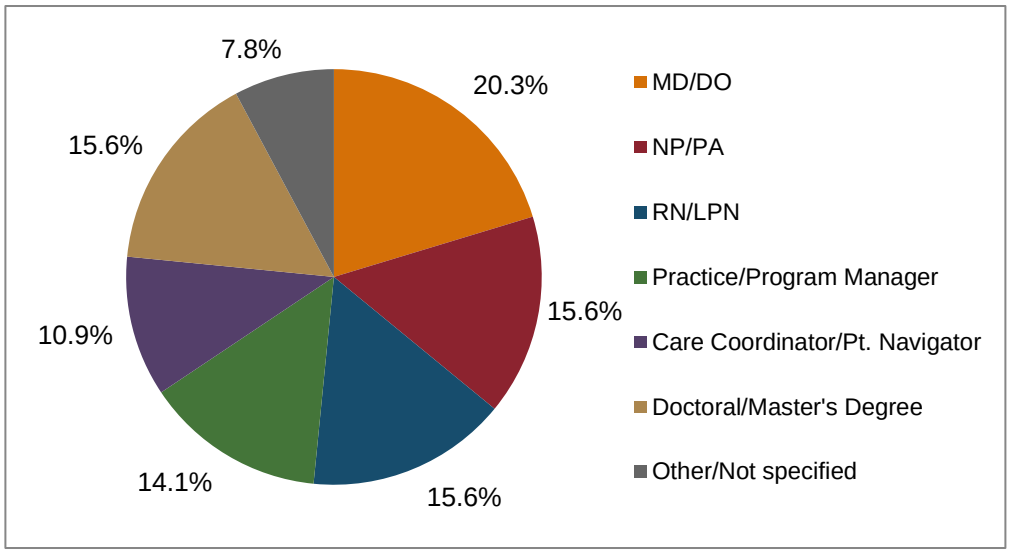


Figure 14 displays the distribution of attendee-reported specialty area. Over one-third (35.9%) of attendees reported primary care or family medicine as their professional specialty. Fairly even representation of specialties was reported among the remaining attendees; 20.3% worked in quality improvement, 18.8% worked in public health or preventive medicine, and 17.2% worked in gastroenterology or internal medicine. About 7.8% of attendees indicated another type of specialty or did not report one on their registration form.

Figure 14. Conference Attendee Reported Specialty

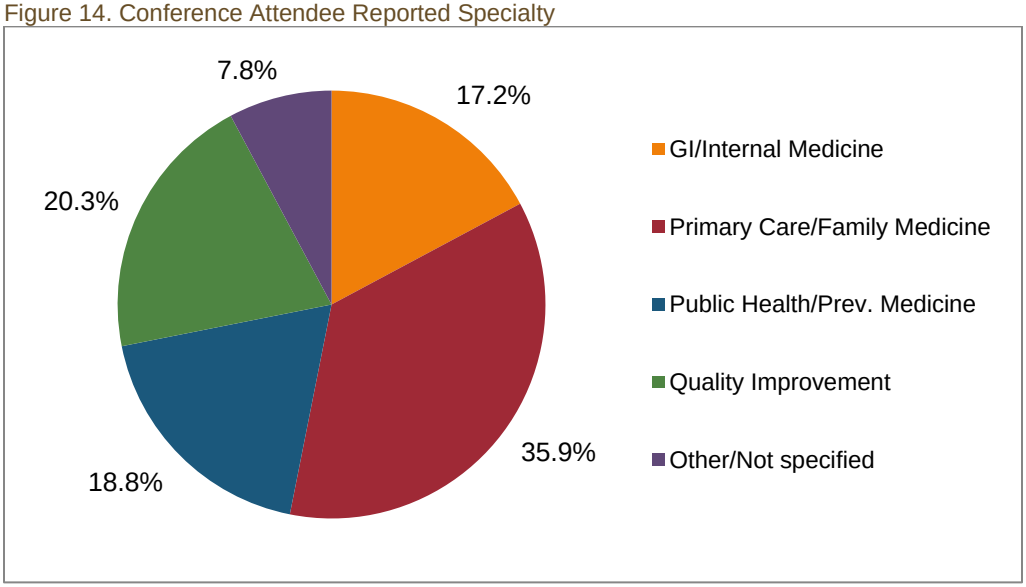
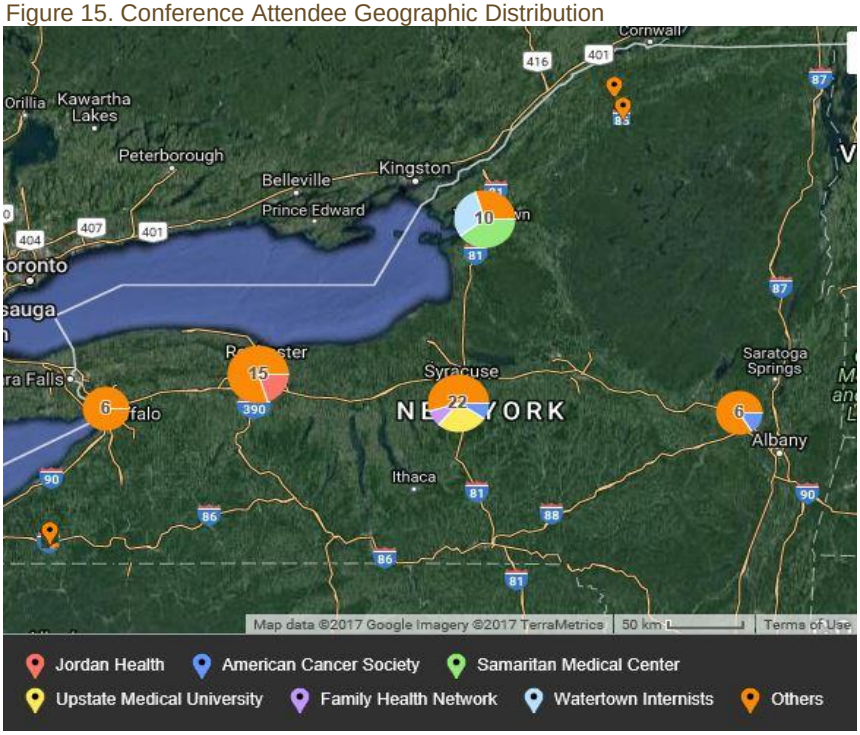


Figure 15 displays a map that represents the geographic distribution of attendee office locations. BatchGeo, an online mapping tool, was used to create this map based on addresses provided on attendee registration forms. Locations were clustered by city region, and markers were color coded by organization as shown in the key at the bottom of the map. The greatest number of attendees represented the Syracuse region (22), the city in which the conference took place. Within the Syracuse area, several attendees were affiliated with each of the following organizations: Upstate Medical University, Family Health Network, and the American Cancer Society. Fifteen attendees traveled from the Rochester region, several of which were affiliated with Jordan Health. Ten attendees represented the Watertown area, mostly from Samaritan Medical Center and Watertown Internists. The remaining attendees were spread across New York State, but were mostly concentrated in the Albany and Buffalo regions.

Figure 15. Conference Attendee Geographic Distribution



Evaluation

Evaluation forms were provided to all conference attendees, and the conference organizers requested that all attendees complete the form. Thirty-six forms were returned, for a response rate of about 56.3% among all attendees. Provided below is a summary of the evaluation data collected from the sample of 36 conference attendees. Some individuals skipped certain questions on the form, and therefore the summaries of each question provided are among those who did respond.

Activity Assessment

Respondents were asked to answer the following four questions in regards to the conference overall:

- *Was this activity scientifically sound and free of commercial bias?*
- *Was the program topic appropriate for your needs?*
- *Did the program have practical clinical value?*
- *Did the program meet stated objectives?*

All (100%) respondents answered “yes” that the activity was scientifically sound and free of commercial bias. Only one (2.8%) respondent answered “no” to the remaining three questions; all other respondents answered “yes” to these questions.

Respondents were also asked to rate the projected impact of the conference on their knowledge, competence, performance, and patient outcomes. This information is presented in Figure 16. The conference appears to have had the greatest impact on attendee knowledge, where 88.2% of respondents indicated that their knowledge increased as a result of this activity. About 81.5% of respondents indicated that this activity increased their performance, 79.3% reported increased competence, and 75.9% reported increased patient outcomes. Some respondents provided written comments about how the conference impacted these four areas. In summary, a number of individuals indicated that their knowledge of fecal immunochemical testing (FIT) increased and several reported that their competence to discuss and recommend FIT as an option to patients increased. Improved knowledge of colorectal cancer screening recommendations and statistics was also reported.

Figure 16. Impact on knowledge, competence, performance, and patient outcomes

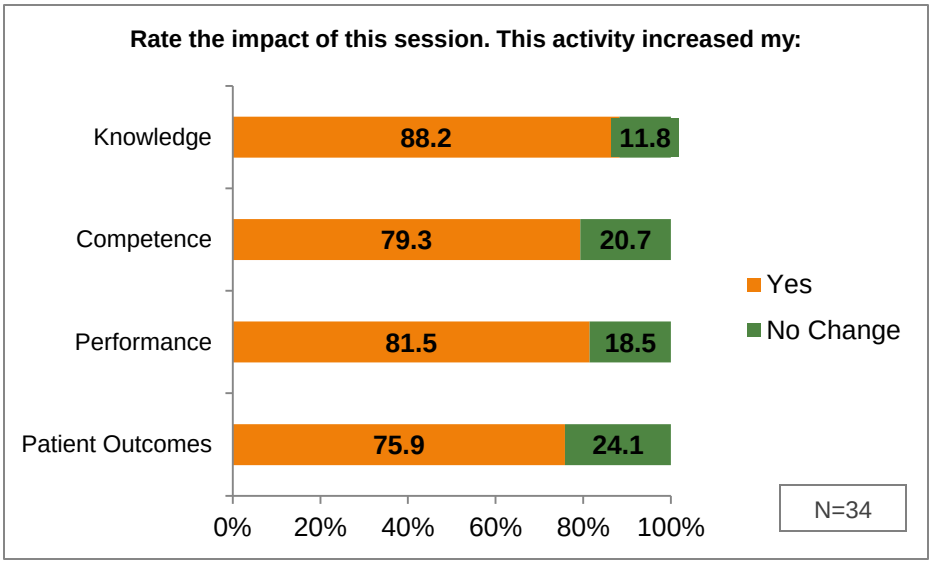
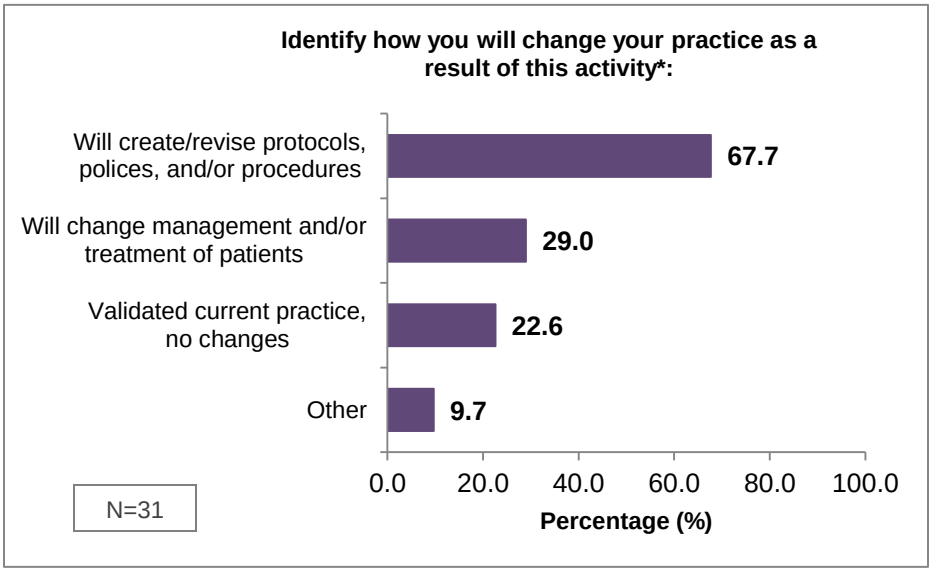


Figure 17. Intended practice changes



*Respondents permitted to select all that apply

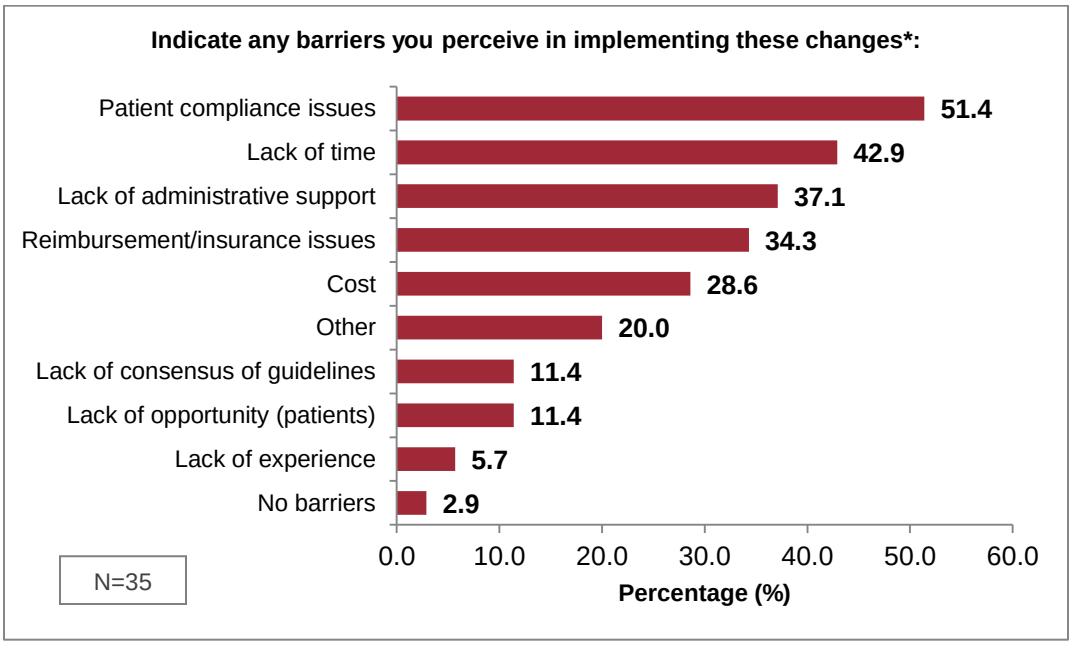
Intended Practice Changes and Perceived Barriers

When asked how they will change their practice as a result of attending this conference, the greatest percentage of respondents indicated that they will create or revise protocols, policies, and/or procedures (67.7%), whereas 29.0% reported that they will change the management and/or treatment of their patients. Nearly one quarter (22.6%) of respondents indicated that the conference content validated their current practices, but they do not anticipate making any changes. Three (9.7%) respondents reported that they would make changes other than

those listed on the form, two of which specified that they will increase use of FIT as an option for colorectal cancer screening in practice. Figure 17 presents a visual summary of results from this question.

Respondents were then asked to select which barriers they perceive in implementing the changes they intend to make. The most frequently reported barrier was patient compliance issues (51.4%), followed by lack of time (42.9%), lack of administrative support (37.1%), and reimbursement or insurance issues (34.4%). Refer to Figure 18 for a list of additional perceived barriers acknowledged. Specified "other" barriers included staff, needing to request additional information about FIT from labs, and disparities in patient populations (i.e. ethnicity, rural vs. urban).

Figure 18. Perceived barriers to practice change



*Respondents permitted to select all that apply

The two open-ended questions below were asked to follow-up on intended practice changes and the associated perceived barriers:

1) *Will you attempt to address these barriers in order to implement changes in your competence, performance, and/or patient outcomes? Please explain.*

   Twenty-two individuals answered this question, four of which simply responded "yes" while others provided brief explanations. The most common themes included expanding utilization of FIT for colorectal cancer screening and increasing staff involvement/buy-in. Two respondents indicated that they will discuss plans for change at their next provider meeting. One individual responded "I think prevention needs to be even earlier before the office visit; community members need to be aware/educated and ask for screening, and lay community health workers can help reduce barriers."

2) *What problems in practice do you face that you would like to see addressed through this CME activity?*

Eight individuals responded to this question. Respondent feedback is listed below and is organized into three main categories:

- **Patient-level:** transportation, navigation, non-compliance
- **Staff-level:** team-based care, bias, provider and clinic staff burnout, incentives
- **System-level:** EMR efficiency, tracking screening results

Speaker Assessments

The evaluation forms provided space for respondents to give open-ended comments on each of the individual presentations, in addition to space for general comments about the presentations or conference experience. The response rates on individual presentation comments were fairly low, ranging from 6 (16.7%) to 18 (50.0%) per presentation. Even fewer written comments were received on workshop sessions (3 -5 comments per session), given that conference attendees only participated in two out of four workshop sessions offered. Summaries of speaker evaluations are given below.

Keynote Speakers

Respondents provided outstanding feedback on keynote speaker James Allison, MD. Respondents regarded Dr. Allison's presentation as excellent, informative, or engaging. Many commented on their appreciation of his shared knowledge on FIT as an option for colorectal cancer screening.

Keynote speaker Martin Mahoney, MD, PhD, also received positive feedback. Several respondents referred to Dr. Mahoney's presentation as excellent, thorough, or helpful. One respondent remarked that he "really put things into clinical context."

The only criticism received on the keynote presentations was that some information was repeated between the two speakers.

Cancer Screening Project Speaker

Emily Mader, MPH, MPP, provided an overview of lessons learned from a multi-regional cancer screening project. Several respondents commented that Ms. Mader delivered a great presentation and review of the project. One respondent indicated that "the project data is encouraging." Only one respondent reported that they felt the presentation was not relevant to them.

Quality Improvement Speaker

Amanda Norton, MSW, received excellent reviews on her quality improvement presentation. Several respondents referred to her as a great speaker and others found her talk to be enjoyable and applicable. Criticism that the talk was not relevant to "acting physicians not involved in administration" was received from the same individual who made a similar remark on Ms. Mader's presentation.

Panel Session

Overall, the speakers involved in the panel session received positive feedback. Respondents felt that the panel session was informative and two individuals expressed that the panelists produced good discussion. One respondent expressed that the panel session was “kind of basic.”

Workshop Sessions

Workshop participants felt that speakers did a nice job of reviewing the information covered in their respective sessions, and that they facilitated good discussions among the groups.

General Comments

Respondents that did not provide individual comments on each speaker noted that all presenters were knowledgeable, helpful, and provided valuable information. One respondent requested to have access to presentation slides.

Appendix A: Project Logic Model

Figure 1. Logic Model: Increasing Cancer Screening through Academic Detailing and Practice Facilitation

Mission: Increase breast, cervical and colorectal cancer screening in New York through evidence-based interventions in targeted primary care practices				
Core Component	**Activities**	**Measurement Tool**	**Proximal Outcomes**	**Distal Outcomes**
Administration	▪ Manage & coordinate core activities and programs ▪ Recruit primary care practices serving low-income, diverse populations	▪ Management & administrative structures and databases in place	▪ Number practices enrolled ▪ Number of practices completed	▪ Increase use of evidence-based interventions targeting breast, cervical and colorectal cancer screening in primary care practices ▪ Increase guideline-recommended cancer screening among patient populations in New York ▪ Increase utilization of screening resources in New York for under/uninsured patients ▪ Reduce incidence of preventable new cases of breast, cervical and colorectal cancer ▪ Reduce disparities in cancer screening among New York residents ▪ Observe trends in cancer screening using MMIS or NPI numbers (by NYS-DOH)
Academic Detailing	▪ AD session designed by Detailing Panel and designated as live activity with CME credit under AAFP ▪ AD session adapted to enduring electronic material with CME credit under AAFP ▪ Screening guidelines, tools and explanatory materials uploaded to EducareCE online learning system under CNY-AHEC ▪ AD session and durable goods delivered to participant primary care practices	▪ CME attendance sign-in sheets ▪ CME certificates distributed ▪ Post-CME evaluation forms ▪ Volume of durable goods distributed (administrative databases)	▪ Number of PCPs receiving AD session ▪ Increase in knowledge of current CRC screening guidelines among PCPs participating in AD sessions ▪ Increase in knowledge of CRC screening resources available in New York for under/uninsured patients among PCPs participating in AD sessions	
Practice Facilitation	▪ Distribute and collect survey materials ▪ Assist practice in use of EHR to track cancer screening ▪ Implement practice facilitation methodologies to coach practices on cancer screening quality improvement ▪ Track all practice facilitation activities ▪ Facilitate focus groups	▪ PF Logs ▪ PF Notes ▪ Survey forms ▪ Focus group transcripts ▪ TRANSLATE rubrics ▪ EBI worksheets ▪ Baseline breast, cervical and CRC screening rate per practice (administrative databases) ▪ Volume of small media distributed (administrative databases)	▪ MMIS or physician NPI numbers of participating practices ▪ Pre-post intervention difference in patients screened per participating practice ▪ Number and description of new practice workflows developed for cancer screening quality improvement ▪ Number and description of new practice policies developed for cancer screening quality improvement ▪ Number, type and approximate cost of investment for practice facilitation activities ▪ Existing EHR report/registry function capabilities and barriers in practices ▪ Existing practice-level, physician-level and patient-level barriers to cancer screening as experienced by participating practices ▪ Existing barriers to tracking patient cancer screening as experienced by participating practices	
Inputs		**Immediate Outputs**	**Proximal and Distal Outcomes**	

Appendix B: Data Collection Materials

I. Practice Characteristics Survey

II. Pre-Post Practice Facilitation Survey

III. Focus Group/Interview Script and Structured Guide

IV. TRANSLATE and Evidence-Based Intervention Evaluation Rubrics

CANCER SCREENING ACADEMIC DETAILING AND PRACTICE FACILITATION PROJECT
PARTICIPATING PRACTICE SURVEY

PRACTICE INFORMATION

1. Practice Name:_____

2. Please list the provider Medicaid Management Information System (MMIS) ID(s) of this practice. If you cannot provide the MMIS number, please provide the individual NPI number for each primary care provider at this practice. (If you need more room, please write in the space by question 11)

   MMIS ID:_____

3. Which of the following categories best describes this practice?
   - ❍ Physician-owned practice
   - ❍ Large medical group or health care system
   - ❍ University hospital or clinic
   - ❍ Non-profit clinic
   - ❍ Federally Qualified Health Center
   - ❍ Other (please specify):

4. Is this practice in a single specialty or multi-specialty setting (multi-specialty practice includes specialists other than primary care physicians)?
   - ❍ Single specialty
   - ❍ Multi-specialty

5. Which specialties are employed at your practice? (check all that apply)
   - ❍ Family Medicine
   - ❍ Internal Medicine
   - ❍ Gastroenterology
   - ❍ OB-GYN
   - ❍ Other (please specify):

6. How many primary care physicians work in this practice? _____

7. Approximately how many nurse practitioners work in this practice? _____

8. Approximately how many physician assistants work in this practice? _____

9. Making your best guess, about how many patients are served by your practice? _____

10. What is the name of your practice's medical record system?

    _____

11. Is this practice recognized/certified for any of the following? (check all that apply)
    - ❍ Patient Centered Medical Home
    - ❍ Patient Centered Specialty Practice
    - ❍ Meaningful Use

12. IF YOU CANNOT PROVIDE AN MMIS ID FOR YOUR PRACTICE, PLEASE LIST NATIONAL PROVIDER IDENTIFIER (NPI) NUMBERS FOR ALL PRIMARY CARE PROVIDERS IN YOUR PRACTICE:

    _____

    _____

    _____

    _____

    _____

    _____

    _____

    _____

    _____

    _____

PATIENT DEMOGRAPHICS

13. Approximately what percentage of the patients in this practice is insured by:

	% of Patients
Uninsured	%
Medicaid	%
Medicare	%

14. Approximately what percentage of the patients in this practice is female? _____%

15. Approximately what percentage of the patients in this practice is Hispanic/Latino? _____%

16. Approximately what percentage of the patients in this practice is:

	% of Patients
White	%
Black/African American	%
Asian	%
Native Hawaiian/ Pacific Islander	%
American Indian/ Alaska Native	%

17. Approximately what percentage of the patients in this practice is:

	% of Patients
Age 20 and under	%
21 – 29 years	%
30 – 49 years	%
50 – 74 years	%
75+ years	%

CANCER SCREENING

18. Do you provide mammography services at your practice?
    - ❍ Yes
    - ❍ No

19. Do you provide cervical cancer screening services at your practice?
    - ❍ Yes
    - ❍ No

20. Do you provide colorectal cancer screening services at your practice (If "Yes," please go to Question 21. If "No," skip to Question 22?
    - ❍ Yes
    - ❍ No

21. Which of the following colorectal cancer screening services are provided at your practice? (check all that apply)
    - ❍ Fecal testing kits (FIT or FOBT)
    - ❍ Colonoscopy
    - ❍ Flexible sigmoidoscopy

22. Does this practice utilize a patient registry to track patient screening for any of the following?

	Yes	No
Breast Cancer Screening		
Cervical Cancer Screening		
Colorectal Cancer Screening		

23. Has this practice implemented guidelines for any of the following?

	Yes	No
Breast Cancer Screening		
Cervical Cancer Screening		
Colorectal Cancer Screening		

24. Are the patient screening rates generated from these cancer screening registries viewed as an accurate measure of the number of patients screened within your practice?
    - ❍ Yes
    - ❍ No, Please explain:

25. Does this practice have a mechanism to remind <u>members of the care team</u> that a patient is due for breast, cervical and/or colorectal cancer screening? (check all that apply)
    - ❍ Yes, special notation or flag in patient chart
    - ❍ Yes, computer prompt or computer-generated flow sheet
    - ❍ Yes, practice policy to review this item in patient medical records at the time of visit
    - ❍ Yes, other mechanism (please specify):
    - ❍ No

26. Does this practice have a mechanism to remind <u>patients</u> that they are due for breast, cervical and/or colorectal cancer screening? (check all that apply)
    - ❍ Yes, reminder by US mail
    - ❍ Yes, reminder by telephone call
    - ❍ Yes, reminder by e-mail
    - ❍ Yes, personalized web page
    - ❍ Yes, practice policy to provide a verbal prompt from a member of the care team during an office visit
    - ❍ Yes, other mechanism (please specify):
    - ❍ No

PROVIDER INFORMATION

1. Practice Name:_____

2. Please indicate your sex:
   - ❍ Male
   - ❍ Female
   - ❍ Prefer not to answer

3. Please select your credentials:
   - ❍ MD, DO, MBBS
   - ❍ NP
   - ❍ PA
   - ❍ MSN
   - ❍ CNM
   - ❍ RN
   - ❍ LPN
   - ❍ MSW
   - ❍ BSW
   - ❍ CASAC
   - ❍ MOA
   - ❍ Other:

4. Please select your job title:
   - ❍ Physician
   - ❍ NP/PA
   - ❍ Practice Nurse
   - ❍ Medical Assistant
   - ❍ Practice Manager or Clinic Manager
   - ❍ Care Manager, Case Manager, or Care Coordinator
   - ❍ Clerical
   - ❍ Information Technology
   - ❍ Other:

CANCER SCREENING

5. In your opinion, how important are each of the following as potential **barriers to increasing the cancer screening rates** in your practice?

PATIENT-RELATED BARRIERS	Not Important	Low Importance	Neutral	Moderate Importance	Very Important
Patient fear of screening procedures	☐	☐	☐	☐	☐
Patient fear of screening results	☐	☐	☐	☐	☐
Patient lack of awareness	☐	☐	☐	☐	☐
Patient lack of insurance/procedure costs	☐	☐	☐	☐	☐
Language barriers	☐	☐	☐	☐	☐
Lack of transportation	☐	☐	☐	☐	☐
Patient embarrassment	☐	☐	☐	☐	☐
Patients do not follow through with recommendations	☐	☐	☐	☐	☐
Patient co-morbidities	☐	☐	☐	☐	☐
SYSTEM-RELATED BARRIERS	Not Important	Low Importance	Neutral	Moderate Importance	Very Important
Not having enough time to discuss screening with patients	☐	☐	☐	☐	☐
Inability to track down date of prior screenings	☐	☐	☐	☐	☐
Inability to track patient progress in completing screening	☐	☐	☐	☐	☐
Long delay in scheduling screening procedures	☐	☐	☐	☐	☐
The cancer screening referral process	☐	☐	☐	☐	☐
Remembering to make screening recommendations	☐	☐	☐	☐	☐
Concurrent care is provided by a specialist (e.g., OB-GYN, GI)	☐	☐	☐	☐	☐
Delay in receiving screening results from specialists	☐	☐	☐	☐	☐
Shortage of trained providers to conduct screening	☐	☐	☐	☐	☐
Organizational focus on efforts other than cancer screening	☐	☐	☐	☐	☐
Lack of fulltime commitment to quality improvement efforts	☐	☐	☐	☐	☐

6. What other barriers to increasing cancer screening rates exist in your practice?

_____

_____

_____

ELECTRONIC HEALTH RECORDS AND CANCER SCREENING

7. Does your practice currently use an EHR-based patient registry to identify and track patients eligible for the following:

	Yes	No	Not Sure
Breast Cancer Screening	☐	☐	☐
Cervical Cancer Screening	☐	☐	☐
Colorectal Cancer Screening	☐	☐	☐

If yes, please answer questions 8-9. If no, skip to question 10.

8. Please rate the degree to which the patient screening data generated from these cancer screening registries accurately reflects of the actual number of patients screened within your practice, on a scale of 0 to 4 (0 = 0% accurate, 4 = 100% accurate)?

0 (0% Accurate)	1	2	3	4 (100% accurate)	Not familiar with registry
☐	☐	☐	☐	☐	☐

9. In your opinion, how effective is the use of an EHR-based patient registry to track cancer screening rates in your practice?

Not Effective	Slightly Effective	Neutral	Moderately Effective	Very Effective	Not familiar with registry
☐	☐	☐	☐	☐	☐

10. In your opinion, how important are each of the following as potential **barriers to utilizing an EHR-based patient registry to track cancer screening rates**?

EHR-RELATED BARRIERS	Not Important	Low Importance	Neutral	Moderate Importance	Very Important
Computer skills of you and/or other physicians/staff	☐	☐	☐	☐	☐
Lack of staff training or knowledge about patient registries	☐	☐	☐	☐	☐
Start-up financial costs to create registries	☐	☐	☐	☐	☐
Ongoing financial costs to maintain registries	☐	☐	☐	☐	☐
Physician/staff skepticism about effectiveness of registries to improve patient care	☐	☐	☐	☐	☐
Lack of personnel support to maintain registries	☐	☐	☐	☐	☐
Lack of personnel support to utilize registries	☐	☐	☐	☐	☐
Inability to accurately record in the EHR when screening has been completed	☐	☐	☐	☐	☐
Reliability of the patient information stored in the EHR	☐	☐	☐	☐	☐
Lack of technical support	☐	☐	☐	☐	☐

11. In your opinion, how beneficial would each of these quality improvement strategies be to improving cancer screening rates in your practice?

QI Strategies	Not Beneficial	Slightly Beneficial	Neutral	Moderately Beneficial	Very Beneficial	I'm Not Familiar
Workflow process mapping	☐	☐	☐	☐	☐	☐
Plan-Do-Study-Act interventions	☐	☐	☐	☐	☐	☐
Patient chart reviews	☐	☐	☐	☐	☐	☐
Practice benchmarking	☐	☐	☐	☐	☐	☐
Provider reminder systems	☐	☐	☐	☐	☐	☐
Patient education	☐	☐	☐	☐	☐	☐
Patient reminder systems	☐	☐	☐	☐	☐	☐
Provider performance feedback	☐	☐	☐	☐	☐	☐
Patient case management	☐	☐	☐	☐	☐	☐
Provider/staff training	☐	☐	☐	☐	☐	☐

I. Questions regarding intervention activities and sustainability

a. This project targeted breast cancer, cervical cancer and colorectal cancer screening. Can you briefly describe your practice's priority focus area(s) across these three cancer types?

i. Probe: for example, did your practice try to implement strategies on all 3 cancers, or did you focus particularly on one cancer type, and why?

ii. Probe: How do your challenges with screening vary by each cancer? How did these challenges shape your strategies?

iii. Probe: **Did your practice implement any new policies related to cancer screening**?

b. What plans does your practice have to continue this work?

i. Probe: how important were the monetary incentives offered under this project (e.g., patient outreach, project stipend)?

ii. Probe: what would be your practice's biggest barrier to increasing screening for each cancer type?

c. How would you describe the level of involvement across the staff at your practice in this project?

i. Probe: was there a particular individual in the practice that championed the project, how?

II. Questions regarding practice facilitator interactions

a. Overall, how useful to your practice was it to have a practice facilitator?

b. What types of quality improvement topics were reviewed by your practice facilitator?

i. Probe: How did you incorporate these quality improvement ideas into your work on cancer screening?

c. Were you the main contact with the practice facilitator? If not, who filled that role?

i. Probe: How important were these relationships in terms of achieving project goals?

TRANSLATE MODEL EVALUATION RUBRIC PRACTICE NAME: EVALUATION PERIOD:

Rubric Element	Score Options				Score	Comments
	1	2	3	4		
T: Target Measures	No cancer screening improvement targets set	Cancer screening improvement targets set, but unrealistic or hard to measure	Cancer screening improvement targets set. Targets are clear and measurable, but implementation is unrealistic	Cancer screening improvement targets set. Targets are clear, measurable, and the implementation plan is clear and feasible.		[please write a brief description of the practice's targets and how they will be measured. Please mention if the practice is working on all three cancer screening groups or only a subset. Please mention if the improvement targets overlap with other practice initiatives, e.g. PCMH]
R: Reminders (clinical decision support, e.g. point of care reminders and guidance)	No clinical decision support available	Clinical decision support is available, but never used	Clinical decision support available. A workflow has been developed for the use of CDS, but is not monitored for consistent use	Clinical decision support available. Workflow has been developed and is routinely monitored for consistent use with every patient		[please write a brief description of the practice's clinical decision support capabilities and implementation. Please make note of any barriers to implementing CDS at this practice. Please note any practice policies regarding this rubric element]
A: Administrative Buy-In (resource allocation - money, time, personnel)	Administration is resistant to allocation of practice resources for this project	Administration agrees to limited practice resource allocation for this project	Administration agrees to resource allocation for this project, but remains disengaged from QI activities	Administration agrees to resource allocation for this project, and is engaged in QI activities and meetings		[please write a brief description of the practice administration's level of engagement, commitment to and support of the QI initiatives adopted under this project]
N: Network Information Systems (registries - population health management)	Practice does not have an information system in place	Practice has the ability to generate a registry. No workflow exists for the registry and it is not used by practice staff.	Practice has the ability to generate a registry. Practice has a defined workflow, but it is not followed on a regular basis.	Practice generates registries on a regular basis. Practice has a defined workflow for utilizing the registry for population health management.		[please write a brief description of the practice's information system and registry use, making note of how the registry is maintained (i.e., paper-based, excel, EMR) and if a workflow is present to utilize the registry regularly. Please note whether a registry is used for each cancer screening target. Please note any practice policies regarding this rubric element]
S: Site Coordinator	No site coordinator is identified for this project.	Site coordinator has been identified for this project, but does not devote much time to practice facilitator or project activities.	Site coordinator has been identified for this project. Site coordinator communicates regularly with practice facilitator, but has limited time to complete QI activities and project deliverables.	Site coordinator has been identified for this project. Site coordinator communicates regularly with practice facilitator, and has dedicated time to complete QI activities, project deliverables, and facilitate project completion within the practice.		[please write a brief description of the practice's site coordinator, describing level of engagement and involvement with the practice facilitator and QI objectives. Please note if the site coordinator is part of practice administration and/or is a clinician. Please note any barriers to engagement]
L: Local Clinician Champion	No local clinician champion is identified for this project.	Local clinician champion is identified for this project, but is largely uninvolved.	Local clinician champion is identified. Is able to moderately support peer-to-peer education and QI activities, but has competing priorities.	Local clinician champion is identified. Is able to enthusiastically support peer-to-peer education and QI activities.		[please write a brief description of the practice's local clinician champion, describing credentials and role in the project. Please note if the local clinician champion is part of practice administration. Please note any barriers to engagement]

TRANSLATE MODEL EVALUATION RUBRIC (CONTINUED)						
A: Audit and Feedback (practice-level; provider-level; patient-level outcome reports)	Practice does not perform cancer screening audit and feedback activities at any level.	Practice performs cancer screening audit and feedback regularly, but not at all levels.	Practice performs cancer screening audit and feedback regularly and on multiple levels. Practice does not widely disseminate the performance data within the practice.	Practice performs cancer screening audit and feedback regularly and on multiple levels. Practice disseminates the performance data within the practice on a regular basis.		[please write a brief description of the practice's audit and feedback activities. Please note if these activities are conducted for all three cancer screening targets. Please note at what levels the audit and feedback is conducted (i.e., practice-level, provider-level) and how it is disseminated across the practice. Please note any practice policies regarding this rubric element]
T: Team Approach (interdisciplinary teams for QI decision-making)	No teams are formed for QI in this project.	Practice has a QI team for this project, but it operates in a top-down approach without input from multiple levels of staff]	Practice has a QI team for this project. QI team involves multiple levels of staff, but not all staff are present at/invited to each team meeting.	Practice has a QI team for this project. QI team involves multiple levels of staff that are engaged in project activities and decision-making at each meeting.		[please write a brief description of the practice's level of team work on this project. Please note what barriers exist to interdisciplinary teams. Please note if your practice has PCMH status. Please note any practice policies regarding this rubric element]
E: Education (all forms of training, both formal and informal)	No opportunities for cancer screening training and education.	Cancer screening training and education available on limited and inconsistent basis.	Practice provides routine cancer screening training and education, but only for certain levels of clinicians.	Practice provides routine cancer screening training and education across all levels of clinicians and staff. This training involves population health management topics.		[please write a brief description of the practice's educational and training opportunities made available to staff on cancer screening topics. Please note the level to which this training focuses on clinical care, quality improvement and population health management. Please note any practice policies regarding this rubric element]

EVIDENCE-BASED INTERVENTION MODEL EVALUATION RUBRIC PRACTICE NAME: EVALUATION PERIOD:

Item	Score Options				Score	Comments
	1	2	3	4		
Client Reminders (written, email, or telephone messages advising patients they are due for screening)	No current system to implement client reminders at the practice.	The practice has a reminder system available, but it is rarely used or has outdated information.	The practice uses telephone, written and/or email reminders routinely.	The practice uses telephone, written and/or email reminders routinely, and supplements with routine follow-up.		[please write a brief description of the practice's client reminder system and level of implementation]
Small Media (videos and printed material to inform and motivate people to be screened)	No current use of small media.	The practice has some small media available, but it is outdated and does not address all 3 cancer screening targets.	The practice has a variety of up-to-date small media available (e.g., brochures, flyers, posters, videos, etc.), but may not be comprehensive in addressing all 3 cancer screening targets.	The practice has a variety of up-to-date small media available (e.g., brochures, flyers, posters, videos, etc.) targeting all 3 cancer screening services.		[please write a brief description of the practice's small media utilization]
One-on-One Education (delivers info to patients about indications for, benefits of and ways to overcome barriers to cancer screening)	No current use of one-on-one education.	Only practice physicians and nurses provide one-on-one education. May or may not be accompanied by supporting materials.	Multiple individuals affiliated with the practice are trained to provide one-on-one education to patients regarding cancer screening (e.g., providers, nurses, care coordinators, referral staff, etc.).	Multiple individuals affiliated with the practice are trained to provide one-on-one education to patients regarding cancer screening (e.g., physicians, nurses, care coordinators, referral staff, etc.), and these discussions are accompanied by small media and client reminders.		[please write a brief description of practice policies and implementation regarding one-on-one patient education]
Reducing Structural Barriers (reduction of non-economic burdens that make it difficult for people to access screening. Can include reducing time/distance to service delivery, modifying service hours, offering services in alternative/non-clinical settings, and simplifying administrative procedures)	No current efforts to reduce structural barriers to screening.	Practice provides some assistance to patients to reduce structural barriers, but inconsistently and not for all 3 cancer screening targets.	Practice provides consistent assistance to patients to reduce structural barriers, but only for one or two of the targeted cancer screening services.	Practice provides consistent assistance to patients to reduce structural barriers for all 3 cancer screening targets.		[please write a brief description of how the practice addresses structural barriers for the 3 cancer screening targets]

Appendix C: Pre-Post TRANSLATE Data

TRANSLATE Scores

Table 1. Site-Specific Changes from Pre- to Post-Practice Facilitation TRANSLATE Element Scores

Practice	Target	Reminders	Administrative Buy-In	Network Information Systems	Site Coordinator	Local Clinician Champion	Audit and Feedback	Team Approach	Education	TOTAL
P1	0	0	0	0	-1	0	0	0	0	-1
P2	0	+1	0	0	0	0	0	0	0	+1
P3	0	0	0	0	0	0	0	0	0	0
P4	0	0	0	0	-1	0	0	+1	-1	-1
P5	0	0	0	0	0	0	+2	0	0	+2
P6	+1	0	0	0	-1	-1	-2	0	0	-3
P7	0	0	0	0	0	0	-3	-1	0	-4
P8	+1	0	0	-1	-2	-2	-3	0	0	-7
P9	0	0	+1	0	1	-1	+1	0	0	+2
P10	0	0	0	0	0	0	0	0	0	0
P11	0	0	0	-1	0	0	0	0	0	-1
P12	0	0	-1	0	-2	-3	-1	-1	-2	-10
P13	+2	+2	0	0	0	-1	+3	0	+1	+7
Avg. Score	+0.308	+0.231	0.000	-0.154	-0.462	-0.615	-0.231	-0.077	-0.154	-1.154
Median Score	+1	0	0	0	0	0	0	0	0	-1

Evidence-Based Intervention (EBI) Scores

Table 2. Site-Specific Changes from Pre- to Post-Practice Facilitation EBI Scores

Practice	Client Reminders	Small Media	One-on-One Education	Reducing Structural Barriers	TOTAL
P1	0	-1	-1	0	-2
P2	0	-1	0	0	-1
P3	0	0	0	0	0
P4	0	0	+1	-3	-2
P5	+1	0	0	0	+1
P6	+2	0	0	0	+2
P7	0	+1	0	-1	0
P8	0	0	+1	0	+1
P9	+1	+1	0	0	+2
P10	0	0	-1	-1	-2
P11	-2	0	0	0	-2
P12	-1	0	0	0	-1
P13	0	0	0	0	0
Avg. Score	+0.077	0.000	0.000	-0.385	-0.308
Median Score	0	0	0	0	0

PRACTICE: P1				
RUBRIC ELEMENT	**PRE-SCORE**	**PRE-COMMENTARY**	**POST-SCORE**	**POST-COMMENTARY**
Target	4	Goal to improve accuracy of registry; making it more reflective of screening for all 3 cancers.	4	Continue to improve accuracy of registry by 1) identifying missing and misplaced results 2) improving workflows related to obtaining results, and documenting them in EMR.
Reminders	4	Registry regularly reviewed during pre-visit planning; provider reminders on EMR during visit.	4	No changes.
Administrative Buy-In	3	Medical director met less frequently as time went on; project remained as agenda item on monthly PCMH meetings.	3	Medical director and QI team met less frequently as time got closer to practice closing in June 2017.
Network Info. Systems	4	Registries updated monthly for all 3 cancers through Excel spreadsheet, which is reviewed by staff for pre-visit planning; reminders placed in chart for physicians.	4	No changes.
Site Coordinator	3	No specific site coordinator; PCMH team lead ended up being point person with limited time for project activities.	2	QI team ended up being main point of contact overall. Had some time to help with project activities. Time decreased closer to practice closure.
Local Clinician Champion	3	Medical director; involved in some QI and involved other staff members; limited time to work on the grant.	3	Medical director; less involved in QI as time got closer to practice closure but provides opportunities for other staff members from multiple disciplines to be involved.
Audit and Feedback	2	Only practice-level outcome reporting is done for all 3 cancers; reviewed primarily by PCMH team.	2	No changes.
Team Approach	4	Multidisciplinary PCMH team meets monthly; this project added to monthly agenda; discuss progress, problem-solving, next steps. Level 3 PCMH.	4	Multidisciplinary PCMH team sustained, although met less frequently as practice closure approached.
Education	2	Cancer screening training not provided consistently outside of project.	2	No changes.
TOTAL TRANSLATE	**29**		**28**	
Client Reminders	4	Reminder calls and patient portal messages; physicians follow-up during office visits; scheduling assistance.	4	No changes.
Small Media	4	Patient hand-outs available for 2 cancers in waiting room. Working on providing patient education videos. Brochures for all 3 cancers handed out on mammo bus.	3	Patient hand-outs available for 2 cancers in waiting room.
One-on-One Education	4	Providers, residents, pre-visit planners and patient advocates provide one-to-one education. Patient education materials for all 3 cancers on mammo bus.	3	Providers, residents, pre-visit planners and patient advocates provide one-to-one education.
Structural Barriers	4	Mammography bus offered monthly on-site; health navigator; in-house facilitators for scheduling; transportation services; patient portal.	4	Mammography bus offered monthly on-site; health navigator; in-house facilitators for scheduling; transportation services; patient portal; FIT testing.
TOTAL EBI	**16**		**14**	

PRACTICE: P2				
RUBRIC ELEMENT	**PRE-SCORE**	**PRE-COMMENTARY**	**POST-SCORE**	**POST-COMMENTARY**
Target	4	Clean colonoscopy and mammography registries; patient follow-up for due/overdue; scheduling assistance; survey to identify patient barriers. Level 3 PCMH.	4	No changes.
Reminders	3	Staff assigned to place EMR alerts for providers, who then discuss screening with patients; scheduling assistance. Use monitored sporadically.	4	Staff assigned to place EMR alerts for providers, who then discuss screening with patients; scheduling assistance. Monitored through screening numbers and registries.
Administrative Buy-In	4	Medical director assigns staff to clean screening registries and place EMR alerts. Regular check between medical director and site coordinator and/or facilitator.	4	No changes.
Network Info. Systems	4	Registries for colonoscopy and mammography pulled from EMR and maintained in Excel; staff assigned to review and follow-up with patients.	4	No changes.
Site Coordinator	3	Program manager identified as site coordinator; communicates weekly with facilitator. Limited time for project deliverables.	3	Program manager identified as site coordinator; weekly communication with facilitator. No dedicated time, but arranges staff to work with facilitator to meet deliverables.
Local Clinician Champion	4	Medical director of the clinic; also a preceptor for residency program. Oversees project, determines priorities, and informs staff in progress.	4	No changes.
Audit and Feedback	2	At practice-level only; performance data not widely disseminated, only to those directly involved in QI.	2	No changes.
Team Approach	3	Facilitator mainly works with program manager and MA; medical director oversees project. Information relayed to staff. MA and nurses assist at times.	3	Facilitator mainly works with program manager and an MA; medical director oversees project. Information relayed to staff.
Education	2	Informal cancer screening training mainly offered to residents and staff working on registries; training offered on clinical care and QI. Webinar available for staff to view.	2	Informal cancer screening training mainly offered to residents and staff working on registries; training offered on clinical care and QI.
TOTAL TRANSLATE	**29**		**30**	
Client Reminders	4	Staff call patients overdue for mammograms and offer to schedule on mammo bus. Alerts placed in EMR for providers to discuss screening with patients.	4	No changes.
Small Media	3	Use of posters provided through Y2 & Y3 of grant. Placed wall pockets throughout clinic containing cancer screening information for patients.	2	Practice has used posters & brochures provided through project. Experimented with patient education video for FIT testing, but patients didn't like it.
One-on-One Education	3	Various clinical staff provide education to patients at points of contact; not accompanied by brochures. Obtained anatomical models for education.	3	Various clinical staff provide one-to-one education to patients at various times i.e. during appointments, pre-visit planning, reminder calls. Not accompanied by brochures.
Structural Barriers	3	Offers scheduling assistance, social worker for socio-economic barriers; mammo bus on-site weekly.	3	Offers scheduling assistance, social worker for socio-economic barriers; mammo bus on-site weekly. FIT kits offered at patient visit.
TOTAL EBI	**13**		**12**	

PRACTICE: P3				
RUBRIC ELEMENT	**PRE-SCORE**	**PRE-COMMENTARY**	**POST-SCORE**	**POST-COMMENTARY**
Target	4	Will work on improved workflow which includes care team; tracking patients due for screening; how often reports pulled; who is responsible for follow up.	4	In addition to pre-commentary: special focus on implementing FIT testing by designing & implementing workflow, regularly monitoring screening numbers.
Reminders	3	Reminders automatically generated once report from is uploaded into EMR; sets due date for next screening. If patient never screened, provider must place order.	3	No changes.
Administrative Buy-In	3	Admin is supportive & engaged in QI; regular QI meetings held. Clinic is understaffed but willing to commit some time & personnel to project.	3	No changes.
Network Info. Systems	3	Registries pulled regularly, and reviewed with providers & staff. Workflow not implemented due to lack of staffing.	3	No changes.
Site Coordinator	3	Practice coordinator; regularly works on QI efforts, but squeezes in time to work on project & deliverables.	3	In addition to pre-commentary: site coordinator also has increased responsibilities with another hospital clinic.
Local Clinician Champion	2	Medical director is supportive of project, but left responsibility to site coordinator.	2	No changes.
Audit and Feedback	4	Registries pulled regularly, and reviewed with providers and staff. Both practice and provider level reports.	4	In addition to pre-commentary: practice level reports shared during staff meetings, provider level shared one-on-one.
Team Approach	2	Clinic challenged with being understaffed over last few months. Many staff became less available to work on project. Obtained PCMH 2011, working on 2014.	2	Practice is understaffed. Practice coordinator mainly worked with facilitator as other staff was less available and mainly helped with delegated tasks. Practice PCMH certified.
Education	2	Mainly what is provided through grant. Guidelines occasionally discussed with providers at QI meetings.	2	No changes.
TOTAL TRANSLATE	**26**		**26**	
Client Reminders	4	Phone calls to remind and get overdue patients on mammo bus/scheduled for Paps; verbal reminders during visits; reminder letters mailed; scheduling assistance provided.	4	No changes.
Small Media	3	Brochures, posters and DVDs obtained through grant, but materials vary based on cancer type.	3	No changes.
One-on-One Education	2	Done by providers during visit, and nurses review education with patient upon discharge. Also use anatomical models for education.	2	No changes.
Structural Barriers	4	Help patients obtain insurance, transportation, find clinics closer to home, scheduling assistance. Done for all 3 cancers; Pap tests done on-site.	4	In addition to pre-commentary: provide FIT kits.
TOTAL EBI	**13**		**13**	

PRACTICE: P4				
RUBRIC ELEMENT	**PRE-SCORE**	**PRE-COMMENTARY**	**POST-SCORE**	**POST-COMMENTARY**
Target	4	Practice has divided into clinical teams that meet regularly to review data and discuss workflows. Data coordinator is works with practice to assist with this.	4	Goals are reviewed at regular individual team meetings and practice-wide meetings. Barriers are discussed and information is posted in conference room.
Reminders	4	DM/HM is being used more regularly. One provider on QI team has updated formulas. Data coordinator and practice facilitator also using Arcadia to check data.	4	Use of DM/HM system enhanced greatly. Data coordinators confirm info. entered correctly. Pre-visit planning workflow developed and implemented. Point of care reminder system.
Administrative Buy-In	4	Some resistance to new changes, but overall providers are working hard on these new workflows.	4	Administration is very involved; two part time data coordinators have been added to the staff to assist in QI, and reinforcement of new workflows are regularly distributed to staff.
Network Info. Systems	4	Data coordinator and PF work together to pull data. Data are then shared with the teams and nurses call the patients to remind them of needed screenings.	4	Arcadia system is used in addition to Medent for population management. Reports are run monthly at least, often more frequently.
Site Coordinator	4	Data coordinator and practice facilitator work closely with QI team.	3	Site coordinator is very willing to help, but due to many other concerns for the practice at this time has had limited time for this project recently.
Local Clinician Champion	3	Practice is experiencing "transformation fatigue", but new workflows seem to be giving some relief on this.	3	Local clinical champion has limited time for this project or peer-to-peer education.
Audit and Feedback	4	Clinical teams meet either monthly or weekly, data is pulled regularly, feedback given to teams at least monthly, data posted in break room for all staff to view.	4	Arcadia reports are run regularly and are shared with clinical teams and staff as a whole. Results are also displayed in the conference/break room.
Team Approach	3	Clinical teams have developed and are working well; meet at least monthly but often weekly. PF and QI lead meet 4 to 5 times a week to ensure smooth workflows.	4	Each clinical team meets regularly to discuss and make decisions on plans of action to improve quality metrics. Each team includes a physician, an NP or PA, nursing staff and a secretary.
Education	3	Training available but not always in a regular routine. Available to all staff.	2	Training is available to all staff that wish to take advantage of it, but is not mandatory, and few people take advantage of it.
TOTAL TRANSLATE	**33**		**32**	
Client Reminders	4	Nurses and data coordinator call patients regarding screening needs and follow-up.	4	Reminders are generated from gap lists regularly and calls are made at least weekly to keep up to date on the gap lists.
Small Media	3	Some small media available.	3	Information is available, but it does not appear that information on all three measures is being distributed.
One-on-One Education	2	Currently only providers and nurses are providing one-on-one education.	3	Staff is trained in educating patients on the screenings, but may not be including small media.
Structural Barriers	4	Practice provides assistance for all 3 cancer screening targets, though with limited resources.	1	There have been many discussions about this topic with the practice, but currently this measure is not being worked on.
TOTAL EBI	**13**		**11**	

PRACTICE: P5				
RUBRIC ELEMENT	**PRE-SCORE**	**PRE-COMMENTARY**	**POST-SCORE**	**POST-COMMENTARY**
Target	4	Create and implement workflow to improve upon identifying and following up with patients for any of the 3 cancers with regular use of registry.	4	No changes.
Reminders	3	EMR reminders being used more often; new workflows starting to be implemented; patients due for screening are shown educational video, then provider discusses w/ pt.	3	No changes.
Administrative Buy-In	2	Interested but not highly engaged due to competing priorities; understaffed & high turnover. Limited time and staff availability for project.	2	No changes.
Network Info. Systems	2	Registries available but no workflow, not used regularly. Staff has no time to review registries; however clinician champion has started to track monthly screening rates.	2	Registries available but no workflow, not used regularly. Staff has no time to review registries.
Site Coordinator	3	Clinician champion as site coordinator; communicated regularly with PF and helped coordinate project activities, but had limited time.	3	No changes.
Local Clinician Champion	3	Physician took time to meet with facilitator regularly, decision-making for project and delegating certain activities to staff, although had same competing priorities.	3	No changes.
Audit and Feedback	2	Audit and feedback for cancer screening is now starting to be used on a practice-wide level in terms of %s of eligible patients in practice who have completed screenings.	4	Incentive program: screening numbers shared each month, and providers/staff get small incentives (i.e. coffee, snacks, lunch) based on increasing screening numbers.
Team Approach	1	No QI team established for this project, clinic is too understaffed. PCMH 2011	1	No changes.
Education	2	Mainly provided through cancer screening project materials; occasionally provided by LCC at staff meetings.	2	No changes.
TOTAL TRANSLATE	**22**		**24**	
Client Reminders	2	Providers address screening during office visits, routinely during annual physical. Sometimes mailing and phone reminders are used as well.	3	Patients reminded over phone during pre-visit planning, sent reminder letters routinely.
Small Media	3	Videos, brochures, posters used to educate patients about screening, although availability of small media varies for the 3 cancer types.	3	No changes.
One-on-One Education	2	One-to-one patient mainly provided by providers & nurses during office visits; accompanied by supporting materials.	2	No changes.
Structural Barriers	4	Staff assist patients with transportation services, offer patients a variety of locations to get screening done for all 3 cancers; workflow for bus passes.	4	In addition to pre-commentary: plans for mammo bus to start coming to the practice starting in July 2017. Practice provides FIT testing as alternative to colonoscopy.
TOTAL EBI	**11**		**12**	

PRACTICE: P6				
RUBRIC ELEMENT	**PRE-SCORE**	**PRE-COMMENTARY**	**POST-SCORE**	**POST-COMMENTARY**
Target	3	They enacted QI measures in past phase; specifically increasing cervical cancer screening by opening their clinic 2.5 mornings dedicated solely to women's healthcare.	4	Site has target measures for breast and CRC screening in place for PCMH; practice wants to bring patient education to shelters.
Reminders	3	Uses program called Care Opportunities (CO) to track screenings - only tracks mammograms and CRC screenings currently. Separate from EMR.	3	CO functionality lost with EMR change; CO now only useful for pre-scheduled pt. visits. Working on creating compatible program with new EMR.
Administrative Buy-In	4	Administration is very dedicated to QI and the site has a QI committee that meets bi-monthly.	4	Administration committed to QI, including applying for grant to go towards breast cancer screening activities. Also have regular QI team meetings.
Network Info. Systems	2	The providers have become more cognizant of the reports and briefly look them over. Again, because they see their patients irregularly the report is difficult to use.	2	EMR change disrupted CO registry. Due to their unique patient population, it is also unpredictable when they will see their pts.
Site Coordinator	3	QI coordinator left about 2 months into project. Practice manager became main contact.	2	Practice manager left about 6-8 weeks after new facilitator began engaging with practice. New practice manager served as new contact, but engagement was difficult due to transition.
Local Clinician Champion	4	Physician; very enthusiastic of any QI strategies to reduce barriers for this population; very supportive of her staff.	3	Was able to communicate with LCC on biweekly project calls to receive updates, but would often refer to site coordinator.
Audit and Feedback	3	CO shows providers where they stand in terms of percentage of breast and CRC screenings - both as a single provider and as a site as a whole.	1	Providers/staff feel data is not accurate since EMR change due to drastically decreased screening numbers.
Team Approach	4	Very dedicated staff and QI team - and are also PCMH.	4	Site has a multidisciplinary, engaged, QI team.
Education	2	Providers try to educate patients but because they may only see them once or twice they try to focus on their particular health issues at that time. They have used educational materials such as flyers and posters.	2	Provided mainly by project team.
TOTAL TRANSLATE	**28**		**25**	
Client Reminders	2	The doctors also try to remind the patients at visits but, again, the population makes follow-up difficult.	4	Clinic uses reminders calls and texts, but due to population, their phones are often out of service, so they try to follow-up at patient visits and at that time offer scheduling assistance.
Small Media	3	They would like to get instructor from CSP to give informational sessions but that has not started yet.	3	Use posters and brochures in shelters, mainly for breast and CRC screening; also obtained screening DVDs to play.
One-on-One Education	2	Trying to be consistent with face-to-face reminders; FIT usage has increased. Dedicated office time specifically to cervical cancer screening allows for an opportunity for women's health education, including mammograms.	2	Physicians are the ones who usually do this during the patient visit.
Structural Barriers	2	They have used the mammogram bus in the past to address the barrier of transportation and they do have a patient navigator to help schedule appointments.	2	Provide FIT kits; sent Cancer Services rep to provide patient education at shelter (although low attendance).
TOTAL EBI	**9**		**11**	

PRACTICE: P7				
RUBRIC ELEMENT	**PRE-SCORE**	**PRE-COMMENTARY**	**POST-SCORE**	**POST-COMMENTARY**
Target	2	A few strategies have been put in place - including using their care coordinator more extensively and being a bit more open to suggestions from outside of the practice.	2	Want to improve cancer screening rates using intervention to improve client reminders and patient education. Site has PCMH initiatives.
Reminders	3	Care Opportunities (CO) to track screenings - only tracks mammograms and CRC screenings currently. Separate from EMR.	3	CO functionality lost with EMR change; CO now only useful for pre-scheduled pt. visits. Working on creating compatible program with new EMR.
Administrative Buy-In	2	Unfortunately the providers are not very supportive of suggestions for new QI practices.	2	Agrees to project participation, but uninvolved and do not provide allocated time for the few who are.
Network Info. Systems	3	The nurses and practice manager enacted a preliminary workflow, relying heavily on their care coordinator that they are testing.	3	Site was testing a workflow, however EMR change disrupted CO registry; registries cannot be relied upon.
Site Coordinator	3	Practice manager has also recruited a nurse to help in these endeavors.	3	She was the practice manager and although her time was limited she was responsive to facilitator, easy to work with.
Local Clinician Champion	2	See above regarding clinicians' involvement under "Administrative Buy-In."	2	Uninvolved in the project activities.
Audit and Feedback	4	CO shows providers where they stand in terms of percentage of breast and CRC screenings - both as a single provider and as a site as a whole. Monthly reports.	1	Providers/staff feel data is not accurate since EMR change due to drastically decreased screening numbers.
Team Approach	3	Improvement seen in terms of dedicating more time to QI activities.	2	Two staff members assigned to work on project (one of whom left the practice), with no specifically allocated time for project.
Education	2	Training seems to mostly take place when Cancer Services and PF go in to start these projects.	2	Mainly just what was provided as part of grant.
TOTAL TRANSLATE	**24**		**20**	
Client Reminders	3	The site was sending letter reminders to their patients and trying to follow-up with phone calls. Nurse responsible for face-to-face patient reminders.	3	Send reminder letters and do reminder calls.
Small Media	3	Brochures pertaining to all 3 screenings; bulletin board in waiting room that they dedicate to screening; educational DVDs being played in waiting room.	4	In addition to pre-commentary: Working on implementing neFrames (digital picture frames to play patient educational materials).
One-on-One Education	2	Nurses provide most one-on-one education.	2	Mainly done by nurses since providers don't have a lot of time.
Structural Barriers	3	The practice wants to use funds for transportation - whether bus passes, cab fare, etc.	2	Distribute things like FIT kits, glucometers, BP cuffs in bags for pts, scheduling assistance.
TOTAL EBI	**11**		**11**	

PRACTICE: P8				
RUBRIC ELEMENT	**PRE-SCORE**	**PRE-COMMENTARY**	**POST-SCORE**	**POST-COMMENTARY**
Target	3	The office is working to develop a more specific plan to ensure cervical cancer screenings are completed as needed.	4	Plan to improve cancer screening rates for all 3 cancers by implementing patient outreach and education strategies, as well as pt. navigation. PCMH certification.
Reminders	3	This site does not particularly care for the CO reports as they are printed in an excel format.	3	CO functionality lost with EMR change; CO now only useful for pre-scheduled pt. visits. Working on creating compatible program with new EMR.
Administrative Buy-In	3	Practice manager is very engaged in the QI process; committed to any QI strategies suggested and is very helpful to the process.	3	Agrees to participate in project, has practice staff involved but does not set aside specific time or resources for it.
Network Info. Systems	4	The care coordinator works off of these registries to send letters/call patients. The registry only tracks breast and CRC screenings.	3	Site was testing a workflow, however EMR change disrupted CO registry; registries cannot be relied upon.
Site Coordinator	4	The practice manager and the nurse care coordinators are very involved and engaging with the practice facilitator.	2	Was not highly responsive to facilitator or Cancer Services, even though she had requested their services, slowing down time to implement interventions. Competing demands.
Local Clinician Champion	4	The practice manager and one of the nurses are the practice champions; both part of the administration and are available as needed.	2	Uninvolved in project as far as facilitator is aware.
Audit and Feedback	4	CO shows providers where they stand in terms of percentage of breast and CRC screenings - both as a single provider and as a site as a whole. Monthly reports.	1	Providers/staff feel data is not accurate since EMR change due to drastically decreased screening numbers.
Team Approach	3	The providers are not always receptive - although some strides have been made this phase - with the help of the practice manager.	3	Practice manager encourages all staff to participate in QI related to this project, providers don't always participate.
Education	2	Staff can take educational courses/refreshers as requested.	2	Mainly what is provided through this project.
TOTAL TRANSLATE	**30**		**23**	
Client Reminders	3	Developed a workflow for this initiative and the nurse care coordinators are extremely receptive.	3	Send reminder letters as well as reminder phone calls regularly.
Small Media	3	The site has models and print media (brochures, posters) pertaining to all 3 cancers.	3	In addition to pre-commentary: Working on implementing neFrames (digital picture frames to play patient educational materials).
One-on-One Education	3	The nurses also remind patients at face-to-face visits.	4	Often done by nurses, social worker also does this as well and will offer educational materials.
Structural Barriers	3	The site will be holding women's educational sessions at the practice and they are also considering using specific 1/2 days dedicated to cervical cancer screening.	3	Assistance with transportation services, scheduling assistance, thinking of using services of Cancer Services patient navigator.
TOTAL EBI	**12**		**13**	

PRACTICE: P9				
RUBRIC ELEMENT	**PRE-SCORE**	**PRE-COMMENTARY**	**POST-SCORE**	**POST-COMMENTARY**
Target	3	They have improvement targets but this often gets lost with competing demands.	3	No changes.
Reminders	3	Clinical decisions available but providers don't always use them. It is not monitored for consistency, but worked during this phase to improve utilization.	3	No changes.
Administrative Buy-In	2	Administration buys into the project but this is one of several competing demands on the QI team.	3	QI team is well resourced and has been given time to improve screening rates, specifically CRC.
Network Info. Systems	4	Practice registry is strong and significant resources are allocated to updated and cleaning data.	4	No changes.
Site Coordinator	2	Through project phase communication was limited and coordinator seems to struggle with competing demands.	3	Strong site coordinator who is growing into the leadership role and building a strong team. So when time is limited he is able to allocate work to other team members.
Local Clinician Champion	3	Clinical champion engaged and supportive but interaction with them is difficult. Seems supportive but does not attend routine meetings.	2	Very minimal engagement with clinical leadership during this phase, only the QI team.
Audit and Feedback	3	Providers see aggregate data often; site working to use provider by provider data to improve provider engagement.	4	Information disseminated monthly and goals/targets are often updated.
Team Approach	3	Strong team, but again clinical champions not often engaged just QI team; nurses never present.	3	Strong team, but again clinical champions not often engaged just QI team, nursing increasingly engaged and now have 2 care coordinators just for screening improvement.
Education	2	We held training with nursing staff that was very well received but education still remains inconsistent across sites.	2	No changes.
TOTAL TRANSLATE	**25**		**27**	
Client Reminders	3	Through previous iterations of this work client reminders are strong; receive letter when overdue.	4	Client reminder system very strong and at a point where FIT kits are automatically being mailed to those who completed last year. Telephone, email, letters, and pt. portal also used.
Small Media	1	Not used at all.	2	Used occasionally and comes from ACS.
One-on-One Education	2	Some providers provide education, others do not. Not consistent and not documented.	2	No changes.
Structural Barriers	3	Close partnership with Cancer Services and has mammo on-site. Often working to support transportation and scheduling needs of patients.	3	In addition to pre-commentary: great use of onsite mammo this year.
TOTAL EBI	**9**		**11**	

PRACTICE: P10				
RUBRIC ELEMENT	**PRE-SCORE**	**PRE-COMMENTARY**	**POST-SCORE**	**POST-COMMENTARY**
Target	3	Goal to meet the national targets for breast, cervical and colorectal cancer screening, as stated under HP2020. Improvement targets overlap with PCMH and MU.	3	Practice has goals and can review measures. Implementation is unrealistic at times.
Reminders	3	The practice has a pop-up reminder (HM) as well as a care coordination note that appears on every patient chart; both have some limitations.	3	No changes.
Administrative Buy-In	4	Medical director, practice manager both very engaged in this project. Starting to also see larger health system become involved by devoting IT resources.	4	No changes.
Network Info. Systems	3	Practice has been working with health system IT to develop PCMH reports from EHR. Workflow designed to pull reports once/month to share results during monthly provider mtgs.	3	Practice has PCMH reports and uses registry often.
Site Coordinator	3	Practice manager; very engaged with PF, QI team and objectives, but the practice overall struggles with full engagement due to overriding responsibilities.	3	Site coordinator is new, and has much going on but was great at prioritizing this work when needed.
Local Clinician Champion	3	Medical director; devoted to QI efforts, but peer-to-peer education is limited and often inhibited due to competing demands and lack of practice staff cohesion.	3	Clinical champion changed, but new lead equally engaged.
Audit and Feedback	3	Practice will focus on this for next PDSA; will work on cleaning up PCMH reports to be run every month, by provider, and shared at monthly provider meetings.	3	Routine audits lead to nursing follow up to get mammo and pap results.
Team Approach	3	For next PDSA cycle, they want to directly involve the nursing staff in the QI initiative development; in the hopes it will generate more buy-in. They are going to focus on increasing cervical cancer screening rates, their biggest area for growth.	3	Great team, although moved building and split to 2 floors has compromised this a bit.
Education	2	Education inconsistent. The practice does recognize that they need to provide more training for nurses and providers in order to achieve their PDSAs on data entry workflows.	2	No changes.
TOTAL TRANSLATE	**27**		**27**	
Client Reminders	3	Reminders via telephone and pt. portal. Practice also uses insurance lists to contact Medicaid patients who are overdue for screenings as part of the care coordinator workflow.	3	No changes.
Small Media	3	Small media designed in MIYO, available in waiting room and check out. Practice has not distributed very many of these since they were designed and printed; could be improved.	3	No changes.
One-on-One Education	3	Largely left to physicians, inconsistent. Care coordinators now also providing education on screening for patients that are identified as unscreened.	2	In addition to pre-commentary: practice has plans to target nursing staff for more training to do education in the future, but no plan has been established for this yet.
Structural Barriers	3	Care coordinators provide education, insurance assistance, scheduling assistance, and at times are able to help connect patients to transportation resources.	2	Little being done to reduce structural barriers.
TOTAL EBI	**12**		**10**	

PRACTICE: P11				
RUBRIC ELEMENT	**PRE-SCORE**	**PRE-COMMENTARY**	**POST-SCORE**	**POST-COMMENTARY**
Target	1	Team does not set targets; they are unable to review measures easily or often.	1	No changes.
Reminders	3	New reminder system built into EHR this phase and seems to be working well. Still inconsistency in utilization but great improvement.	3	Reminder system built during the last phase seems to be working well.
Administrative Buy-In	2	Administration agrees this work is important but does not have adequate time to dedicate to the effort.	2	No changes.
Network Info. Systems	3	Registry built during this phase, but done with the aid of a student, now that student is gone it's unclear who will follow up on the registry.	2	Registry built during the last phase, but done with the aid of a student, now that they are gone there is no ongoing support.
Site Coordinator	2	Site coordinator changed and is now the same as the leadership - this makes time difficult. Student engaged but they have limited pull in the organizations.	2	No changes.
Local Clinician Champion	3	Strong clinical champion - who is also leadership but other clinicians are less engaged.	3	No changes.
Audit and Feedback	1	Practice never reviews data, cannot pull their own data routinely, and must hire someone to do it every time they need to look at their data.	1	No changes.
Team Approach	1	There is no team just clinical lead and student.	1	No changes.
Education	2	Training provided to staff but is not incorporated routinely.	2	No changes.
TOTAL TRANSLATE	**18**		**17**	
Client Reminders	3	Implemented "TalkSoft" system to robo call patients on registry who are due.	1	Last phase they implemented "talk soft" to make robo calls, but this has not been sustained and many patients called unsure what to do after receiving robo call.
Small Media	1	Providers are not using any small media, and are often not (or not documenting) any conversations around screening.	1	No changes.
One-on-One Education	2	Again conversations are not routinely documented and happen sporadically.	2	No changes.
Structural Barriers	1	No effort here.	1	No changes.
TOTAL EBI	**7**		**5**	

PRACTICE: P12				
RUBRIC ELEMENT	**PRE-SCORE**	**PRE-COMMENTARY**	**POST-SCORE**	**POST-COMMENTARY**
Target	2	They have a structured process and goals with breast cancer screening, but need to establish targeted goals and metrics for CRC and cervical.	2	Site has targets set but is unable to get accurate and reliable data so it's unlikely they will meet targets, nor do they have a good sense of if they are improving.
Reminders	2	Have a point of care clinical decision support system, but this not activated for all patients. EMR to be upgraded soon; IT personnel can activate this feature for all patients.	2	Supports continue to be available but again, with inaccurate data the reminders are also often inaccurate.
Administrative Buy-In	4	Administration strongly supports QI; have monthly QI meetings wherein all departments and sites are required to have a representative who shares key metrics.	3	New CMO seems engaged, but the QI department is under-resourced and has several competing demand.
Network Info. Systems	2	Practice is joining CHCANYS' CPCI database at the end of January; will allow them to generate patient reports for key metrics. EMR system needs to be optimized for this.	2	While CPCI continues to be a resources, and it has supported the clinic there are years of mis-filled, mis-located results that impeded the accuracy of this data.
Site Coordinator	4	The QI director has strong support from the administration, and engages regularly with the PF.	2	Site coordinator is identified, but has several competing demands and allocates very minimal time to this work.
Local Clinician Champion	4	Medical director; communicates regularly with QI director, and will be able to attend meetings with the PF as well. She has a strong voice for engaging all staff in the QI process.	1	No clinical champion has been identified. New CMO seems interested as mentioned by QI director by was never engaged in any project meetings.
Audit and Feedback	4	Holds chiefs of services meetings on a monthly basis, in which provider-specific HQM measures (based on Meaningful Use) are shared.	3	Audits are performed, but data concerns impede the effectiveness. Information is also not always distributed outside management team.
Team Approach	2	Poor team developed, QI director is a gate keeper and cannot get into sites effectively.	1	There is no team developed, just the QI director.
Education	3	On-site training provided at one site for this project, very well received, but not institutionalized for future trainings.	1	During this phase there were no education opportunities provided.
TOTAL TRANSLATE	**27**		**17**	
Client Reminders	3	The practice uses telephone reminders on a consistent basis. They sporadically use mail reminders, but have a lot of mail returned to sender.	2	Practice stopped using phone call and mail reminders. Some being done through portal.
Small Media	2	Small amount of material available, mostly provided by ACS; want to add posters to exam rooms, and distribute small media around different clinical sites; add language options.	2	No changes.
One-on-One Education	2	Physicians provide one-on-one education, but only during preventive visits.	2	No changes.
Structural Barriers	3	Translation services, nursery/child care, late operating hours 3 days a week. However, if patients are seen for services outside of practice, they cannot address any of those barriers at this time; mostly impacts CRC.	3	No changes.
TOTAL EBI	**10**		**9**	

PRACTICE: P13				
RUBRIC ELEMENT	**PRE-SCORE**	**PRE-COMMENTARY**	**POST-SCORE**	**POST-COMMENTARY**
Target	2	Practice is looking to improve all 3 measures but no set plans, or specific targets yet. They also intend to overlap project goals with their PCMH efforts.	4	Practice is looking to improve all 3 measures through consistent implementation of set workflows. They also intend to overlap project goals with their PCMH efforts.
Reminders	2	Have point of care reminders that pop-up in EMR, but no clear workflow to follow for the use of these reminders. Hope to develop a workflow as part of this project.	4	They have point of care reminders that pop-up in EMR, with workflow to follow for the use of these reminders has implemented and been monitoring consistently.
Administrative Buy-In	4	Practice has resources, and is eager to be part of this project in an effort to help build their foundation for more formalized QI activities that go with PCMH. They have formed a QI team that meets regularly.	4	No changes.
Network Info. Systems	2	Have ability to create registries, but still trying to figure out how to create them accurately and efficiently, no workflows.	2	Still trying to figure out how to create registries more accurately and efficiently. They do however, generate and monitor screening rates regularly.
Site Coordinator	4	Motivated, and takes initiative with QI activities. Takes lead with PCMH as well. She is an RN and Practice Manager.	4	No changes.
Local Clinician Champion	4	Physician selected to serve as LCC; has already been involved regularly with the QI team which will be adding this project to their agenda going forward.	3	Did not interact with facilitator, but worked on project within the practice.
Audit and Feedback	1	No audit and feedback done at this time. Focus on data cleaning and accuracy of EMR data.	4	Screening numbers shared on practice level monthly/bi-monthly. Incentives (food, drinks) provided to staff/providers based on increasing screening numbers.
Team Approach	4	Multidisciplinary QI team in place that holds regular meetings to work on various QI initiatives. This project will be added to their agenda moving forward.	4	No changes.
Education	1	None at this time.	2	Provided only by facilitator/project team.
TOTAL TRANSLATE	**24**		**31**	
Client Reminders	1	No system in place.	1	Reminder done mainly in person due to patient language barriers.
Small Media	1	Some brochures/handouts used but not for cancer screening.	1	Some brochures/ handouts used but not for cancer screening due to language barriers of patients.
One-on-One Education	2	MDs provide this education to patients but cancer screening-related small media is not provided.	2	No changes.
Structural Barriers	4	Staff walk patients across the street to imaging center; clinic provides varying business hours, financial assistance, patient navigators & social workers assist with appts., translation service available. Available for all 3 cancer screening targets.	4	No changes.
TOTAL EBI	**8**		**8**	