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

Project Summary Report
AUGUST 2019

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This is a modified version of the report submitted in August 2019 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 Laura Brady, PhD, and the final submission authored by Ms. Brady, Alexandrea Bentham, BS, Onwaniqua Heard, MPH and Laurene Tumiel Berhalter, PhD from SUNY University at Buffalo, and Christopher P. Morley, PhD, and Laura A. Schad, BS, from SUNY Upstate Medical University, 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 2018, 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, 2018 - June 29, 2019). 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, 2018. As this is the sixth iteration of the project, the current project year will subsequently be referred to as Year 6.

The primary goals of the Year 6 project were to implement interventions 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. Activities under this project were administered to 12 primary care practices across Western and Central New York by three practice-based research networks (PBRNs) administered from SUNY Upstate Medical University, SUNY University at Buffalo, and University of Rochester Medical Center. An in-person 1-hour academic detailing session or an online webinar on breast, cervical and colorectal cancer screening guidelines and strategies to increase screening rates among eligible patient populations were available to all participating practices. 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)

Eleven practices that participated in Year 5 re-enrolled to continue participation in Year 6 and one new practice was added. Participating practices completed all project components. Of the enrolled practices, three were part of a larger medical group or health care system, seven were federally qualified health centers (FQHCs), one was affiliated with university hospitals, 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

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. This included evaluating each practice's readiness for change, shortfalls, and strengths using the TRANSLATE model scoring rubric. Practice facilitators built rapport and buy-in for the project among practice staff at their assigned practices. The practice facilitators dedicated a total of 596.63 hours across all participating practices during the Year 6 project period. This translates to an average of 49.72 practice facilitation hours of service per practice over a 6-month period. Across all regions and practices served, the practice facilitators dedicated the largest amount of time on other services which included developing an intervention matrix that details publicly available resources and best practices for implementing

cancer screening interventions. Practices primarily focused on utilizing the practice facilitators' skills to implement the following:

- Evidence-based patient outreach and education
- Creating connections with organizations like the American Cancer Society and Western New York Breast Health (Mammography Coach).
- Assessing gaps in patient knowledge regarding cancer screening.
- Practice workflow assessments to increase efficiencies in and standardization of cancer tracking processes.

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. One practice worked specifically on efforts to improve their EHR data system and to establish workflows around EHR-based provider reminders, which sometimes took precedence over implementing other available evidence-based interventions.

Practice Challenges

Participating practices continued to have challenges with generating accurate cancer screening rates. This was compounded by staff turnover in several practices. There was a decrease in engagement levels observed among practice clinician champions and overall site commitment due to staff turnover and increased competing demands and workloads. In Year 6, there were 4 site coordinators that were new to the role and/or the project. A new practice was added this year and experienced a learning curve, as expected, in getting their practices organized to move forward with interventions.

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 cancer screening rates increased overall during Year 6, while there were decreases in average colorectal and cervical cancer screening rates. The decline in colorectal cancer screening rates can likely be attributed, in part, to the transition of practices to using different screening guidelines and changes in calculating rates. It remains unclear whether observed changes are due to actual changes in number or percentages of patients screened, or whether the observed changes are due to administrative issues related to guideline changes, EHR transitions, or provider turnover. 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. We believe the longitudinal changes present a more robust picture of screening rate trends, than within-year/within-practice changes.

The most commonly implemented evidence-based interventions across all practices included client reminder systems, and reducing structural barriers. Strategies utilized enhance communication with clients include reminder phone calls and increased use of patient portals. Structural barriers were addressed by increasing the

use of fecal immunochemical testing (FIT) and Cologuard, 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, social determinants of health, cost, cultural barriers, 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. Accurate data remained a challenge at the practice level. This was often a result of communication with other providers to receive screening records in a timely fashion. 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.

Year 6 numbers:

Breast: The average pre- and post-screening rates across the 12 practices were 46.43% and 48.36% respectively, with an increase of 1.93 percentage points.

Cervical: The average pre- and post-screening rates across the 10 practices were 32.01% and 30.28%, respectively, with an overall screening rate decrease of 1.73%.

Colorectal: The average pre- and post-screening rate across the 12 practices were 47.96% and 42.96%, respectively, with a decrease in screening rates of 5 percentage points.

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Acknowledgements

A number of individuals were pivotal in the successful completion of this project and/or to the composition of this final report through comments offered on the final draft. These include Gary J. Noronha, MD, Carlos M. Swanger, MD, and Karen Vitale, MSEd (*University of Rochester Medical Center*), and Amanda L. Norton, MSW (*A. Mandatory, Inc*., *consulting for SUNY Upstate Medical University*).

In addition to practice facilitation conducted by Ms. Norton in the Syracuse region, two practice facilitators from the University at Buffalo, Onwaniqua Heard, MPH, and Alexandrea Bentham, BS, contributed to the project in the Buffalo and Rochester regions. Laura Brady, PhD, served as the Project Manager and oversaw the Buffalo Practice Facilitators. Laura Schad, MPH played an invaluable role in the synthesis of all data collected from the practices. 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 12 participating practices for their dedication to this project and their commitment to improving the health and lives of their patients.

Introduction

In June 2018, 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, 2018 - June 29, 2019). This contract was supported by Cooperative Agreement Numbers DP006309 and DP006102 between the Centers for Disease Control and Prevention (CDC) and the New York State Department of Health (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 DP006309 and DP006102 between the Centers for Disease Control and Prevention (CDC) and the NYSDOH, the contract for which concluded June 29, 2018, and by the Cooperative Agreement Number DP003879, the contract for which concluded June 29, 2017; 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 sixth iteration of the project, the current project year will subsequently be referred to as Year 6.

The primary goals of the current project were to implement interventions 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 12 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.

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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

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

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 Appendix A: Project Logic Model. Core project staff at SUNY Upstate Medical University provided the primary administrative services for the project in collaboration with Laura Brady who took on the role of Project Manager, in addition to her practice facilitator role. 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 in Year 5 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

Staff turnover continued to be a challenge in Year 6. At the end of Year 5, one Buffalo facilitator resigned. Two new facilitators were hired to work under the guidance of Laura Brady. They received an orientation at the beginning of Year 6, which included instructions on how to complete the Practice Facilitator Log and other data collection activities under the project. They worked under the leadership of Laura Brady and received ongoing support through bi-weekly meetings.

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

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	Measure	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

Data collection was coordinated between the practice facilitators and appropriate personnel at their assigned practices. Practice champions worked with practice facilitators to collected practice characteristic surveys, facilitation practice surveys, and TRANSLATE evaluation rubrics. Information Technology (IT) contacts assisted with the collection of screening data for breast, cervical, and colorectal cancer.

The practice characteristics survey was administered at the start of the project period. Most practices returned the surveys within four to six weeks. The pre-post facilitation practice surveys were collected at the beginning and end of the project period using a paper-based form.

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] Pre-post TRANSLATE rubrics were completed for the 12 continuing practices.

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

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.

Focus groups and interviews were conducted by either Amanda Norton, Laura Brady, or Onwaniqua Heard. All three are trained in qualitative data collection and analysis. Since all are also practice facilitators, special attention was given to ensure that facilitators did not conduct interviews/focus groups in their assigned practices. 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. The focus groups and interviews were conducted over the telephone to accommodate availability for participants. Audio transcripts were downloaded in a shared folder and transcribed verbatim; no names or otherwise personally identifiable information was recorded in the transcripts. Laura Brady, PhD in anthropology, conducted the analysis of the qualitative data.

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: Data Collection Materials.

II. Summary of Practices and Populations

Practice Recruitment and Enrollment

Practice recruitment activities were completed between July and December 2018. 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 5 project period. Of these, 11 of 13 enrolled for continued participation in the project this year while one new practice enrolled for the first time. The two practices that discontinued participation were faced with competing demands and organizational barriers.

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, refugee, 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, expectations, benefits, and deliverables, was provided to and completed by each enrolled practice. Each practice provided 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 information on practice personnel and patient populations. The following information reflects the practice characteristics of the 12 practices that participated in the Year 6 project period.

Practice Information

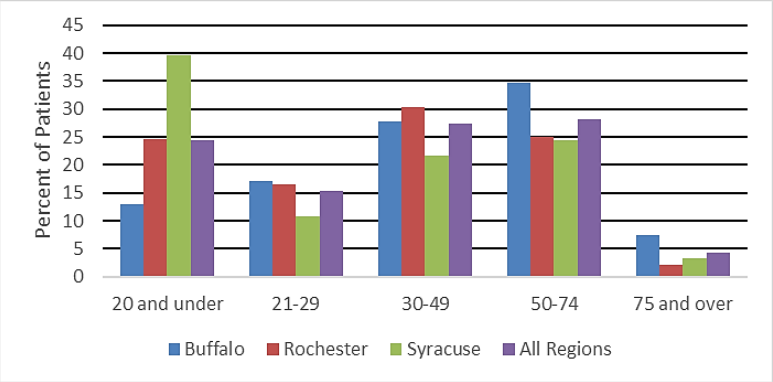
Among the practices participating in this project year, seven were federally qualified health centers (FQHCs), three were classified as large medical groups or healthcare systems, one was classified as a university hospital/clinic, and the last, a non-profit clinic. Eleven of the practices were Patient-Centered Medical Homes, and nine practices followed Meaningful Use recommendations. Seven practices identified as single specialty and five practices identified as multi-specialty; the specialties included pediatrics, endocrinology, dental, optometry, podiatry, and behavioral health services with Medically Assisted Addiction Treatment (MAAT). 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	Practice Region	Physicians Employed	Residents Employed	NPs Employed	PAs Employed	Total Patient Population	Practice Categorization	EHR Vendor
1	Buffalo	3	0	2	3	8,000	Non-profit clinic	Medent
2	Buffalo	3	25	1	0	5,000	Large medical group/health care system	Allscripts
3	Buffalo	5	25	2	1	9,000	Large medical group/health care system	Allscripts
4	Buffalo	4	0	0	2	3,000	Large medical group/health care system	Allscripts
5	Rochester	4	0	1	0	1,904	FQHC	Care Connect
6	Rochester	3	0	0	0	2,932	FQHC	Epic
7	Rochester	2	0	0	1	6,000	FQHC	Epic (Care Connect)
8	Rochester	31	0	18	6	27,669	FQHC	eClinicalWorks
9	Syracuse	8	0	4	0	8,371	University hospital or clinic	Epic
10	Rochester	3	0	1	1	5,800	FQHC	Epic
11	Syracuse	6	0	5	5	15,204	FQHC	GE Centricity
12	Syracuse	3	0	5	2	11,083	FQHC	GE Centricity
TOTAL		**75**	**50**	**39**	**21**	**103,963**		

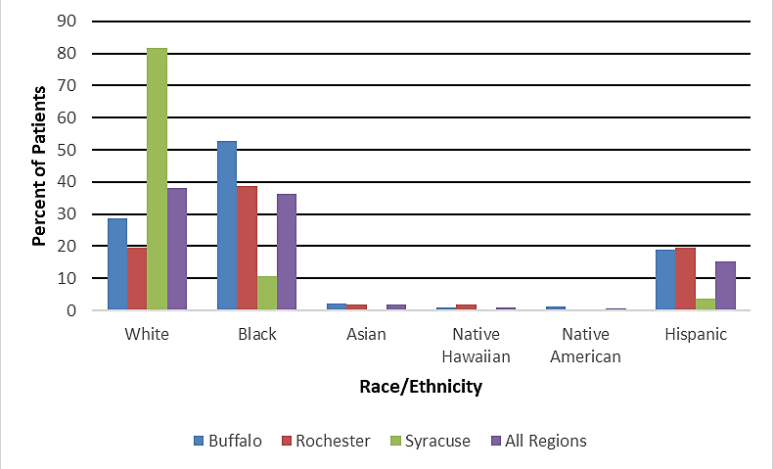
Across the 12 practices, approximately 45% of the patients served were male. The age distribution for the participating practices can be seen in Figure 1. Following the same age trends as last year, the Syracuse practices had the largest percentage of patients in the '20 and under' age group with 39.7% of patients in this category. The Buffalo practices had the largest percentage of patients in the two oldest age groups '50-74' and '75 and over' with approximately 42.1% of their patients falling in these categories.

Figure 1. Patient Age Distribution by Practice Region



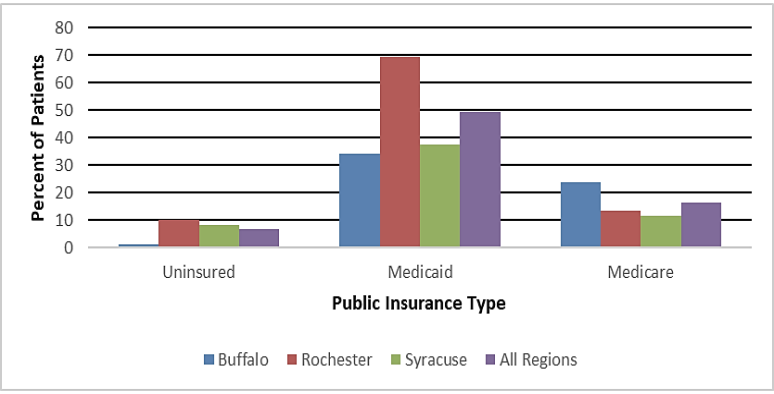
In Figure 2, the distribution of patient race/ethnicity by practice region is shown, as reported by the practices. Overall, 38.1% of patients were White, 36.3% Black, 1.7% Asian, 1% Native Hawaiian, and 0.6% Native American and, 15.1% of patients were reported as Hispanic or Latino. Compared to the other regions, the Buffalo practices had the highest percentage of Black (52.8%), Asian (2.2%), and Native American (1.2%) patients. Both the Buffalo and Rochester practices had similar percentages of patients who identified as Hispanic or Latino at 19% and 19.5% respectively. The Syracuse practices, had the largest percentage of White patients (81.8%).

Figure 2. Patient Race/Ethnicity Distribution by Practice Region



Across all participating practices, 49.5% of patients were enrolled in Medicaid, 16.5% were insured in Medicare, and 6.6% were uninsured. As illustrated in Figure 3, Rochester had the highest percentage of uninsured and Medicaid patients at 9.9% and 69.2%, respectively. Buffalo had the highest percentage of Medicare patients (23.7%), which corresponds to having a larger elderly patient population at the participating practices.

Figure 3. Patient Public Insurance Coverage, by Practice Region



It is important to note that the practice demographics are not proportionately representative of the demographics of the regions. This project worked with safety net practices that serve low-income communities. In the Buffalo and Rochester regions, these practices were located in urban areas that are home to a larger proportion of African American and Hispanic communities. The Syracuse practices represented a larger proportion of rural practices that served more low-income white

patients and more children. Further, 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.

Four of the enrolled practices reported providing mammography services on-site to patients, compared to three practices that offered on-site mammography services the previous year. Nine of the practices reported offering cervical cancer screening services compared to eight practices who indicated offering cervical cancer screening in Year 5. Eleven of the 12 practices that participated in Year 6 offered colorectal screening options to patients using FIT or FOBT. Two of these eleven practices also offered colonoscopy on-site.

All the practices involved in this project implemented guidelines for breast and colorectal cancer screening. All 12 practices utilized registries to track patient screening for colorectal and breast cancer screening. Ten of the 12 practices indicated that they implemented guidelines for cervical cancer screening. The two practices who did not implement cervical cancer guidelines did not offer cervical cancer screening on-site. However, one of the two practices did utilize a registry to track cervical cancer screening.

Eleven of the 12 participating practices expressed confidence 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 one practice that was not confident in their registries had difficulty retrieving reports to validate cancer screenings that occurred outside of the participating practice.

Tables 3 and 4 show the use of reminder systems among the participating practices for both providers and patients. All 12 practices reported having one or more types of care team reminder systems in place. The most common of these mechanisms was reviewing patient medical records at the time of a visit (9 practices), followed by computer prompts (8 practices). All twelve practices also reported having at least one mechanism in place for patient reminders. The most common reminder system was phone calls to patients (11 practices). Other common patient reminder systems this year were letters (9 practices) and verbal prompts (8 practices).

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	7
Computer prompt or computer-generated flow sheet	8
Practice policy to review cancer screening in patient medical records at time of visit	9
Other: Pre-visit Planning	5
None	0

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

Reminder Mechanism	Number of Practices
Reminder by US mail	9

Reminder by telephone call	11
Reminder by e-mail	0
Personalized web page or patient portal	0
Practice Policy to provide a verbal prompt from a member of the care team during an office visit	8
Other	3
None	0

III. Summary of Academic Detailing Activities

In person academic detailing (AD) and a webinar curriculum were available to all practices. All the continuing practices participated in academic detailing in either Year 3 or Year 4. Therefore, none of the practices participated in academic detailing in Year 5 or Year 6. The new practice did not have a formal academic detailing session but components were integrated into their facilitation efforts

IV. Summary of Practice Facilitation Activities

Review of Practice Facilitation Working Items

This year, four practice facilitators worked with the participating practices from the Buffalo, Rochester, and Syracuse regions. Three facilitators were based in Buffalo, and worked with practices in Buffalo and Rochester, while the fourth facilitator was based in Syracuse and worked solely in that region. 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 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 6 project period. The practice facilitators dedicated a total of 596.63 hours across all participating practices this year. This translates to an average of approximately 49.72 practice facilitation hours of service per practice over a 6-month period. Compared to Year 5, the most notable difference was the addition of the category other services provided to participating practices. Other services included coordinating the resolution of practice issues across a multi-sited project team and building an intervention matrix to disseminate to practices, totaling 158.53 service hours. The intervention matrix details publically available resources and best practices for implementing cancer screening interventions. For more details on the matrix, see VII. Recommendations. Hours spent on administrative support also increased this year, due to the need for persistent communication to schedule project time and activities around practices' competing demands.

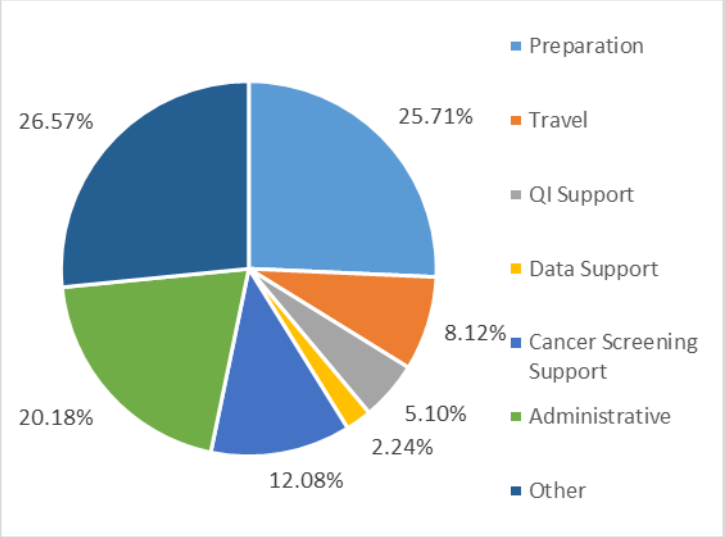
Table 6. Summary of Primary Activities Performed by Practice Facilitators

Service	Activity Summary	Service Time (hours)
Quality Improvement Support	Assistance with patient education and outreach interventions Quality Improvement training and planning	30.45

Cancer Screening Support	Review of screening methods Training and informational sessions	72.10
Data Support	Collection of practice-related data for project purposes EHR-related IT support	13.38
Administrative Support	General administrative tasks Scheduling	120.38
Other	Building an intervention matrix Team coordination across project sites	158.53
Travel	Time spent travelling to practice sites	48.42
Preparation	Time devoted to preparation for project activity	153.37
Overall Services	**Total time devoted to practice facilitation activities**	**596.63**

As shown in Figure 5, the practice facilitators dedicated the most service hours to activities categorized as other which included building an intervention matrix and coordinating the multi-sited team's responses to practice issues, accounting for 26.57% of all service hours. Another large proportion of facilitator time was dedicated to preparation of project activities and administrative tasks such as scheduling. Approximately 12% of time was dedicated to cancer screening support, 8% to travel, 5% to QI support, and 2% to data support. There was a large decrease in time spent on quality improvement support when compared to Year 5. This was due in part to the categorization of the intervention matrix production as other services, though it will be used in the future by practices to support quality improvement activities.

Figure 5. Distribution of Time Spent on Practice Facilitation Services



The decrease in quality improvement support is also likely due to difficulties communicating with the practices and scheduling time to interact due to time constraints at the participating offices. The competing demands of the site coordinators exacerbated the communications barrier, as they were often the sole point person for practice facilitators due to the absence of QI teams or Clinical Champions.

Table 7 displays a breakdown of how facilitators spent their time in the various service delivery modalities. The greatest number of encounters was dedicated to email interactions, while the most time was dedicated to other activities.

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

- Evidence-based patient outreach and education
- Creating connections with organizations like the American Cancer Society and Western New York Breast Health (Mammography Coach)
- Assessing gaps in patient knowledge regarding cancer screening

- Practice workflow assessments to increase efficiencies in and standardization of cancer tracking processes

Table 7. Summary of Practice Facilitation Service Modalities

Service Modality	Number of Encounters	Service Time	Travel Time	Service Prep Time	TOTAL Time
Email	434	114.10	0.00	90.09	204.19
Site Visit	38	38.43	46.23	26.60	111.26
Phone Call	81	30.12	0.00	13.46	43.58
Other	104	213.00	1.75	22.85	237.60
TOTAL	**657**	**395.65**	**47.98**	**153.00**	**596.63**

V. 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 is scored on a range from 1-4, with one being the lowest score and 4 being the highest. For more detail on the scoring criteria, please view the example TRANSLATE model evaluation rubric found in Appendix B: Data Collection Materials. 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 12 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 all elements during this project year with the exception of Team Approach, which decreased slightly. The cumulative average TRANSLATE score increased significantly by 3.163 (p=0.001.) Significant changes were also noted for individual elements measured. Network Information Systems (p=0.002) and Audit and Feedback (p=0.010) elements showed highly significant increases. The elements of Target (p=0.027), Administrative Buy-In (p=0.039), and Education (p=0.039) showed significant increases. A decrease was seen in Team Approach but was not statistically significant.

As shown in Table 9, during the pre-practice facilitation measurement period the practices had the highest average scores for Reminders (3.000), Target Measures (2.917), and Network Information Systems (2.917). The lowest average scores for this pre-facilitation measurement period were for Local Clinician Champion and Team Approach (both 1.667), followed closely by Education (1.917). During the post-practice facilitation measurement period, the practices had the highest average scores for Target Measures and Network Information Systems (both 3.500). The lowest post-practice facilitation score was for Team Approach (1.583), with Local Clinician Champion rated just above it (1.833). The fact that Team Approach was tied for the lowest pre-facilitation score and decreased even more in the post-facilitation score shows that many practices did not have a QI team for this project, or had a team that was not very active. There were also staffing changes at some sites that may have influenced these ratings. Similarly, the low pre- and post-facilitation scores for Local Clinician Champion reflect that multiple practices did not identify a clinical champion for Year 6.

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

Table 9. Pre-post Facilitation TRANSLATE Element Scores for 12 Practices

TRANSLATE Element	Average Pre-Score*	Median Pre-Score*	Range Pre-Score*	Average Post-Score*	Median Post-Score*	Range Post-Score*
Target	2.917	3.0	1-4	3.500	4.0	1-4
Reminders	3.000	3.0	2-4	3.083	3.0	2-4
Administrative Buy-In	2.417	2.0	2-3	2.750	3.0	2-4
Network Information Systems	2.917	3.0	2-4	3.500	3.5	3-4
Site Coordinator	2.750	3.0	2-4	3.083	3.0	2-4
Local Clinician Champion	1.667	1.5	1-4	1.833	2.0	1-4
Audit and Feedback	2.250	2.0	1-4	3.083	3.0	2-4
Team Approach	1.667	1.0	1-3	1.583	1.0	1-3
Education	1.917	2.0	1-3	2.250	2.0	1-3
CUMULATIVE**	21.502	20.5	13-33	24.665	24.5	15-34

***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
Eight of the 12 practices entered Year 6 of the project with established targets for quality improvement in cancer screening, while another three practices had general ideas of what they wanted to achieve during the project year. The remaining practice was new to the project this year, and set no specific targets for cancer screening improvements. Instead, they planned to improve their preventative care services as a whole. After working with practice facilitators, the number of practices with specific plans to reach target measures increased to 10. One of the remaining practices had loosely defined plans for cancer screening improvement, which relied heavily on a short-term intern and did not include details on how to sustain the workflow after the internship ended. The final practice, in their first year with the project, made strides in consistent data review but still struggled to set specific targets.

Reminders
All 12 of the practices had EHR-based point-of-care clinical decision support capabilities for cancer screening at the start of the project year. Four of these practices had established workflows regarding clinical decision support, but this was monitored consistently in only two of the practices. Two practices had data reliability issues with their EHR reminders, one due to the reminders not being up-to-date in the Health Maintenance tab and the other due to missing screening data from specialists. Two practices also had issues with notification fatigue. After working with practice facilitators, all 12 practices involved in Year 6 of the project stated that they had clinical decision support capabilities for cancer screening. Of these practices, 4 reported that the support systems were being used consistently, which was an improvement from the beginning of the project year. Three practices continued to struggle with inconsistent monitoring, due in part to the task being associated with one member of the care team rather than all members.

Administrative Buy-In
At the start of Year 6, practice staff and site managers were viewed as supportive of quality improvement projects in 11 of the practices. However, nine of these practices stated that they had many competing demands that would limit the time and resources available for this project. Another practice had even fewer resources allocated and minimal administrative involvement. After working with practice facilitators, there was improvement in administrative support for and allocation of resources towards QI activities, but not for dedicated QI teams (as seen by the increased administrative buy-in TRANSLATE scores and the decreased Team Approach scores). Five practices continued to be limited by the effects of competing demands, including one practice where, as a result, administrative buy-in decreased and communication grew more difficult.

Network Information Systems
At the start of the project year, eleven practices had the capability to run patient registry reports for cancer screenings. However, not all sites ran registries for all three cancers. Additionally, six of the sites did not utilize the registries frequently while eight did not have a formalized registry workflow developed. After working with practice facilitators, all twelve participating practices had the capability to run patient registry reports for cancer screening. Four practices developed formal workflows for their registries, but three of them had continuing issues: two practices with data accuracy and one with a lack of staff time to dedicate to using the workflow created by their MPH student intern. Another four practices mentioned that they were still not using these registries frequently.

Site Coordinator

At the start of Year 6, all twelve practices had clearly defined site coordinators, with four of the coordinators being new to the role and/or project. Due to competing demands, practice facilitators expected time constraints to be an issue for site coordinators at eight of the twelve practices. At the end of the project year, practice facilitators reported time constraints with six of the site contacts. This decrease is due in part to one practice where another team member took over for the busy site coordinator during the project period. Among these six practices, three had coordinators with very limited availability. One of these coordinators, along with two coordinators from other practices participating in the project, were responsible for two practices each, which also significantly reduced their ability to be engaged with facilitators.

Local Clinician Champion

At the start of Year 6, practice facilitators had identified four clinician champions across the 12 practices. Facilitators noted that the clinicians had many competing demands that would limit their ability to work on this project. By the end of the project year another clinician champion was described as not involved in the project, and of the remaining three, two were described as having heavy time constraints.

Audit and Feedback

Eight practices conducted audit and feedback activities at the practice-level and three of them did so at the provider-level. Four practices stated that this information was disseminated to all practice staff. Three practices did not conduct audit or feedback activities with any regularity. At the end of the Year 6 project period, facilitators noted that all twelve practices were regularly auditing their cancer screening rates, many for their monthly meetings. Four practices were conducting audit and feedback activities at the provider level, while eight practices were now disseminating this information across staff levels.

Team Approach

At the start of Year 6, two practices had established interdisciplinary teams for quality improvement decision making as part of their PCMH process. Another three practices had dedicated QI staff but their teams were not clearly interdisciplinary. The remaining seven practices involved did not have teams dedicated to the project, only select staff. No new teams were established during the project period and facilitators found it difficult to stay connected with practice staff beyond their dedicated site coordinator.

Education

At the beginning of Year 6, five practices offered educational opportunities to staff outside what is currently offered in this project. For three of these five practices, the educational opportunity was limited to providers at the practice. At the end of the practice facilitation period, educational opportunities were offered at six of the practices. Three of these practices continued to limit the opportunities to providers only.

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	8	10
Loosely defined targets	3	1
No targets	1	1
REMINDERS		
EHR-based point-of-care reminders available	12	12
Reminder workflow developed	4	6
Reminder workflow implementation NOT monitored	7	3
Data reliability issues with EHR-based reminders	2	1
ADMINISTRATIVE BUY-IN		
Administration supportive and engaged	11	12
Administration supportive but little resource allocation	9	5
Administration/staff not supportive of project	1	0
NETWORK INFORMATION SYSTEMS		
Cancer screening reports available	11	12
Patient registries regularly utilized	6	8
Formal registry workflow developed	4	8
SITE COORDINATOR		
Site coordinator regularly engaged	4	6
Site coordinator faces time constraints	8	6
No site coordinator identified	0	0
LOCAL CLINICIAN CHAMPION		
Local clinician champion regularly engaged	1	1
Local clinician champion faces time constraints	3	2
Local clinician champion not identified or not engaged	8	9
AUDIT AND FEEDBACK		
Audit and feedback at practice level	8	12
Audit and feedback at provider level	3	4
Audit and feedback results disseminated across practice or QI team	4	8
No audit and feedback activities completed	3	0
TEAM APPROACH		
Interdisciplinary QI team	2	4
Practice has dedicated QI staff	3	3
No regular QI team	7	7
EDUCATION		
No education routinely offered outside current project	7	6
Limited, informal education for targeted staff members	5	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 from 1-4 (with 1 being the lowest score and

4 being the highest score), 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

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 the level of each of the four EBIs after working with practice facilitators: Client Reminders, Small Media, One-on-One Education, and Reducing Structural Barriers. A statistically significant improvement was noted for Reducing Structural Barriers (p=0.026). The other three EBI's showed improvement but did not reach statistical significance, (p=0.082). The cumulative average EBI score increased by 1.25 points, and the total EBI pre and post scores were statistically significant (p=0.014).

During the pre-practice facilitation measurement period, the practices had the highest average score (2.833) for both Client Reminders and Reducing Structural Barriers. For the post-practice facilitation measurement period, Reducing Structural Barriers had the highest average score (3.333). The practices had the lowest average score for One-on-One Education during the pre- and post-practice facilitation measurement periods.

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

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

Evidence-Based Intervention	Average Pre-Score*	Median Pre-Score*	Range Pre-Score*	Average Post-Score*	Median Post-Score*	Range Post-Score*
Client Reminders	2.833	3.0	1-4	3.083	3.0	1-4
Small Media	2.333	2.0	1-4	2.583	2.0	1-4
One-on-One Education	2.167	2.0	2-3	2.417	2.0	2-3
Reducing Structural Barriers	2.833	3.0	1-4	3.333	4.0	1-4
CUMULATIVE**	**10.166**	**10.0**	**5-15**	**11.416**	**11.0**	**5-15**

*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 6, eight practices utilized telephone-based reminder systems for patients; this included both automated reminders and personal calls. Four of the practices mailed reminder letters, while another practice reminded patients about screenings during office visits. Patient portal messages were used to remind patients about cancer screening among three participating practices. Two practices did not utilize any client reminder system at the start of Year 6. By the end of the project period, two additional practices were using patient-portal reminder systems for patients. Four additional practices were implementing reminders during office clinical visits. However, one practice remained without any form of client reminders at the end of Year 6.

Small Media

At the start of Year 6, five of the practices used flyers and posters to promote information on cancer screening among patients. Four practices displayed informational brochures. Three practices played educational videos and used digital frames to display cancer-screening guidelines. Seven practices were inconsistent in their utilization of small media within their offices, and two practices did not offer any form of small media. After working with practice facilitators, three additional practices adopted the use of flyers and posters on cancer screening guidelines. One practice stopped using brochures as their small media. Seven practices continued to be inconsistent in their use of small media, while two practices remained without small media. Two other practices received small media from a practice facilitator, but had not yet implemented them by the project year's end.

One-on-One Education

At the start of Year 6, six of the practices shared the responsibility of providing patient education on cancer screening across multiple members of the care team. At three of these practices, providers and nurses led patient education efforts. At the other three, it was viewed as a staff-wide responsibility. Patient education initiatives were led by physicians at 10 of the practices. Three practices utilized the services of care coordinators to provide patient education. Supporting educational materials, such as anatomical models or small media, were used to supplement efforts at three of the practices. Seven practices were not involved in regular one-on-one education, or it was unclear how often or in-depth the one-on-one education was with this project. Education efforts improved following the practice facilitation period, with one practice widening its shared responsibility from nurses and providers to include staff, and two others establishing providers as the leaders in this implementation. Three more practices became involved in patient education, while four practices provided inconsistent one-on-one education.

Reducing Structural Barriers

Practices addressed varied structural barrier targets at the start of Year 6. Nearly half of the practices were targeting two or more cancers. Seven practices offered mobile mammography while another practice connected patients with an on-site mammography clinic. Three practices emphasized FIT tests and a fourth recommended Cologuard as an alternative to colonoscopy with fewer structural barriers. One practice offered patient navigators, while four provided patients with scheduling assistance. Two practices emphasized the use of educational materials in multiple languages, while another worked with a practice facilitator to understand cultural barriers to screenings. In a fair improvement from last year, four practices emphasized their on-site cervical cancer

screenings in Year 6. Two practices did not directly target any structural barriers to cancer screening at the start of Year 6.

At the conclusion of Year 6, two additional practices were in the process of implementing mobile mammography services and three additional practices implemented increased utilization of FIT tests. One practice had a GI surgeon on site weekly to meet with patients, discuss the colonoscopy procedure, and answer any questions. Two more practices reported the use of patient navigators, and while another began tracking their patients' cervical cancer screenings. Overall, initiatives to address structural barriers increased during the project period. Still, after the facilitation period two practices lacked interventions that targeted structural barriers.

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	8	8
Patient portal messages	3	5
In-clinic follow up reminders	2	6
Posted mail reminders	4	4
No patient reminder system	2	1
SMALL MEDIA		
Flyers and posters	5	8
Brochures	4	3
Educational videos	3	3
Small media inconsistently provided to patients	7	7
No small media utilized	2	2
ONE-ON-ONE EDUCATION		
Provided by multiple members of care team	6	7
Provided by physicians	10	12
Provided by care coordinators	3	3
Supporting educational material used to supplement education (e.g. anatomical models, brochures, videos)	3	6
Provided inconsistently	7	4
REDUCING STRUCTURAL BARRIERS		
Mammography buses routinely offered	7	9
On-site or walk-in mammography clinics	7	8
Patient navigation services	1	3
Scheduling assistance	4	4
FIT tests/Cologuard routinely offered	3	6
On-site cervical cancer screenings	4	5
Translation services	2	2
Structural barriers not targeted	2	2

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) patient 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 of the interventions that were in place at each practice by the end of Year 6. Interventions were determined to be in place or not to be in place using information from both the quantitative scores and qualitative comments provided by the TRANSLATE and EBI evaluations.

Overall, the number of interventions in place ranged from two to six, with a median of four interventions in place. The most common interventions implemented, each in 11 of the 12 practices, were provider reminder systems and provider assessment and feedback. These were followed by patient reminder systems (9 practices) and reducing structural barriers (9 practices). Provider education and training was the least common intervention (3 practices), although small media was a close behind with four 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 5 among 12 Practices

Practice	Patient Reminder System	Provider Reminder System	Provider Assessment & Feedback	Reducing Structural Barriers	Small Media	Provider Education	TOTAL # in place
P1	✓	✓	✓	✓	×	×	4
P2	×	✓	✓	✓	✓	✓	5
P3	✓	✓	×	✓	✓	×	4
P4	✓	✓	✓	✓	✓	✓	6
P5	✓	✓	✓	✓	×	✓	5
P6	✓	✓	✓	✓	×	×	4
P7	✓	✓	✓	✓	×	×	4
P8	✓	✓	✓	✓	×	×	4
P9	×	✓	✓	×	×	×	2
P10	✓	✓	✓	×	✓	×	4
P11	✓	×	✓	✓	×	×	3
P12	×	✓	✓	×	×	×	2
TOTAL	9	11	11	9	4	3	47

Key: ✓=in place; ×=not in place

Cancer Screening Rates

Based on information from the practice characteristics survey, approximately nine of the twelve practices were confident that the numbers reported through their registries accurately reflected the number of patients who were up to date with breast, cervical, and colorectal cancer screening at the time of data collection. The few practices that believed their registry data was inaccurate identified two main problem areas: 1) differences in screening rates between pre and post measurements, and 2) staff turnover causing difficulty in establishing a strong implementation process for the project.

It is important to note that the definition of denominators and numerators varied from practice to practice, and at times, from pre- to post-measurement within the same practices. Oftentimes, practices evaluated screening numbers based on specific metrics preferred by clinic staff or based on the capabilities of their EHR software. It is possible that practice staff overestimate the reliability of their data, although rigorous verification of the difference is beyond the scope of the current project.

Table 15 summarizes the major organizational and EHR reporting changes or issues experienced by the practices during the Year 6 project period as well as the pre- and post-rates for breast, cervical, and colorectal cancer screening. P1, P2, P3, and P8 each had a screening guideline change during Year 6 of the project, a factor that may have influenced changes in their screening rates from pre- to post-practice facilitation. However, P1's large decreases in both breast and colorectal cancer screening rates may be attributed to a change in staff. A new individual at P1 collected the post rates for the practice, resulting in a different calculation method than was used for the pre rates.

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	Change in breast guideline pre-post	87.62%	59.11%	N/A	20.55%	48.95%	28.35%
P2	Change in CRC guideline pre-post	64.66%	60.74%	2.26%	0.66%	69.59%	58.75%
P3	Change in CRC guideline pre-post	47.78%	52.88%	30.12%	26.56%	48.23%	43.96%
P4	N/A	79.71%	80.55%	50.80%	62.69%	75.91%	74.78%
P5	N/A	7.65%	8.51%	17.92%	10.84%	5.11%	5.23%
P6	N/A	31.68%	37.34%	19.74%	19.25%	18.23%	15.59%
P7	N/A	30.12%	41.25%	20.13%	19.37%	21.36%	21.26%
P8	Change in breast guideline pre-post	47.89%	51.16%	50.34%	53.74%	56.53%	52.79%
P9	N/A	57.90%	52.79%	48.80%	42.22%	71.42%	63.34%
P10	N/A	29.55%	41.23%	30.80%	26.80%	37.45%	37.61%
P11	N/A	47.82%	56.94%	48.95%	52.04%	69.88%	68.35%
P12	N/A	24.75%	37.78%	32.26%	28.66%	52.85%	45.55%

Breast Cancer Screening

All 12 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. Five of these practices generated these reports based on the American Cancer Society breast cancer screening recommendation of annual mammography for women ages 45 and older, while four other practices used the USPSTF guideline for a mammogram to be performed once every two years for women ages 50 – 74. Another practice utilized a combined guideline of the ACS and USPSTF. One practice used the HEDIS guideline, which recommends a mammogram to be performed once every two years for women in the age range of 50 – 74 years old. Lastly, there was one practice that used the CMS125 Measure guideline for their breast cancer screenings, which also recommends that women ages 50-74 be screened every two years. The average pre- and post-screening rates across the 12 practices were 46.43% and 48.36% respectively, with an increase of 1.93 percentage points.

Three of the 12 practices had decreases in their breast cancer screening rates. Feedback from the practice facilitator for P1 indicated that their decrease may be due to a change in the individual retrieving the rates. The numerator and denominator were so different pre to post that it likely reflects a change in method to identify eligible patients. P7 and P10 both implemented mobile mammography days last year, and this year increased the frequency of the coaches' visits to the practice. This was likely a large contributing factor to the increase in their screening rates. P12 experienced a data mapping issue with their mammogram results at the start of the project year. They waited until the issue was resolved to load mammogram reports into the record, which occurred partway through Year 6. This likely contributed to the increase in their post-practice facilitation rates.

Table 16. Pre- and Post-Project Completed Breast Cancer Screening Rates at 12 Participating Practices

Practice	Pre-Breast Rate	Data Period	Post-Breast Rate	Data Period	Raw Change in % Points	Guideline
P1*†	87.62%	1 year	59.11%	1 year	**-28.51%**	USPSTF
P2	64.66%	1 year	60.74%	1 year	**-3.92%**	USPSTF
P3	47.78%	1 year	52.88%	1 year	**5.10%**	USPSTF
P4	79.71%	1 year	80.55%	1 year	**0.84%**	USPSTF
P5	7.65%	1 year	8.51%	1 year	**0.86%**	ACS
P6	31.68%	1 year	37.34%	1 year	**5.66%**	ACS
P7†	30.12%	1 year	41.25%	1 year	**11.13%**	ACS
P8*	47.89%	1 year	51.16%	1 year	**3.27%**	CMS125 Measure
P9	57.90%	1 year	52.79%	1 year	**-5.11%**	USPSTF
P10	29.55%	1 year	41.23%	1 year	**11.69%**	ACS
P11	47.82%	1 year	56.94%	1 year	**9.11%**	ACS & USPSTF
P12†	24.75%	1 year	37.78%	1 year	**13.03%**	HEDIS (women age 50-74, every 2 years)
Average	**46.43%**		**48.36%**		**1.93%**	**(4) ACS (5) USPSTF (1) USPSTF/ACS (2) Other**

†Practices with major reporting changes (EHR transition, calculation method, etc.)
*Practice changed guidelines from Pre-Post

Cervical Cancer Screening

All twelve of the participating practices were able to generate post-cervical cancer screening rates from EHR-based registries. However, P1 and P2 do not offer the service, so have not actively tracked patient screenings in the past. During Year 6, P1 updated their agreement with a nearby OB/GYN office to receive their patients' screening records, while P2 implemented a workflow to track their patient screenings. P1 also updated their EHR to more easily track cervical cancer screening rates. Seven of the ten practices that were able to produce raw percentage changes in the table below reflected a decrease in their cervical screening rates. All twelve of the practices follow the American Cancer Society and USPSTF joint 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. Table 17 displays the pre- and post-practice facilitation screening rates for cervical cancer screening.

The average pre- and post-screening rates across the 10 practices with both rates were 32.01% and 30.28%, respectively, with an overall screening rate decrease of 1.73%. Three practices had increases in cervical cancer screening rates. P4 increased by nearly 12% over Year 6 and was most likely due to a large EHR cleanup where old records were removed and others updated with screenings that were completed outside the practice. This practice in particular focused on cleaning up cervical screening rates first then colorectal, which could explain why they had the highest percent increase in screening rates. P8 and P11 experienced the only other increases in cervical cancer screening rates, with percentages of 3.40% and 3.09%, respectively. All other practices have shown some decrease in their cervical cancer screening rates, with P5 having the largest decrease of 7.08%. Cervical cancer screenings have proven to be the most difficult of the three cancers in this project to track accurately due to the number of local OB/GYN clinics and practice EHR records not being up to date. Due to these difficulties and the fact that they do not offer the screenings on site, practices like P1 and P2 did not track or run registries on their patients' cervical cancer screenings until recently.

Table 17. Pre- and Post-Project Completed Cervical Cancer Screening Rates at 12 Participating Practices

Practice	Pre-Cervical Rate	Data Period	Post-Cervical Rate	Data Period	Raw Change in % Points	Guideline
P1†	N/A	N/A	20.55%	1 year	NA	ACS/USPSTF
P2	2.26%	1 year	0.66%	NA	NA	ACS/USPSTF
P3	30.12%	1 year	26.56%	1 year	**-3.56%**	ACS/USPSTF
P4†	50.80%	1 year	62.69%	1 year	**11.90%**	ACS/USPSTF
P5	17.92%	1 year	10.84%	1 year	**-7.08%**	ACS/USPSTF
P6	19.74%	1 year	19.25%	1 year	**-0.49%**	ACS/USPSTF
P7†	20.13%	1 year	19.37%	1 year	**-0.76%**	ACS/USPSTF
P8	50.34%	1 year	53.74%	1 year	**3.40%**	ACS/USPSTF
P9	48.80%	1 year	42.22%	1 year	**-6.57%**	ACS/USPSTF
P10	30.80%	1 year	26.80%	1 year	**-4.00%**	ACS/USPSTF
P11	48.95%	1 year	52.04%	1 year	**3.09%**	ACS/USPSTF
P12	32.26%	1 year	28.66%	1 year	**-3.61%**	ACS/USPSTF
Average	**32.01%**		**30.28%**		**-1.73%**	**(12) ACS/USPSTF**

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

Colorectal Cancer Screening

All 12 participating practices were able to generate colorectal cancer screening rates from EHR-based registries. Seven of the 12 practices generated colorectal cancer screening reports based on the USPSTF colorectal cancer screening guidelines, which recommend screening adults ages 50 to 75. The other six practices utilized the ACS screening guidelines, which recommend screening adults starting at age 45 to age 75. This year, two practices switched from the ACS guidelines to the USPSTF guidelines. All 12 practices offer FIT/FOBT testing at their practices, while only one of them stated that they offered flexible sigmoidoscopy. Table 18 displays the pre- and post-practice facilitation screening rates for colorectal cancer.

The average pre- and post-screening rate across the 12 practices were 47.96% and 42.96%, respectively, with a decrease in screening rates of 5 percentage points. Only two practices (P5 and P10) experienced increases in completed screening percentages, both no higher than 0.15%. All other practices had decreases in their colorectal cancer screening rates. P1 and P2 had the largest decreases with 20.6% and 10.84%. P1 had the larger decrease, 20.35%, which is likely due to a change in personnel resulting in a different calculation method for reporting. The decrease in rates at P2 is likely related to the change in guidelines from ACS to USPSTF, as well as, according to the PF for P2, a change in focus from colorectal cancer to breast cancer. Major reporting changes occurred at P1 and P7 because of large staff turnover, including new personnel reporting on the data.

Table 18. Pre- and Post-Project Completed Colorectal Cancer Screening Rates at 12 Participating Practices

Practice	Pre-CRC Rate	Data Period	Post-CRC Rate	Data Period	Raw Change in % Points	Guideline
P1†	48.95%	1 year	28.35%	1 year	**-20.60%**	USPSTF
P2*	69.59%	1 year	58.75%	1 year	**-10.84%**	ACS/USPSTF
P3*	48.23%	1 year	43.96%	1 year	**-4.27%**	ACS/USPSTF
P4	75.91%	1 year	74.78%	1 year	**-1.13%**	ACS
P5	5.11%	1 year	5.23%	1 year	**0.12%**	ACS
P6	18.23%	1 year	15.59%	1 year	**-2.65%**	ACS
P7†	21.36%	1 year	21.26%	1 year	**-0.10%**	USPSTF
P8†	56.53%	1 year	52.79%	1 year	**-3.74%**	USPSTF
P9	71.42%	1 year	63.34%	1 year	**-8.08%**	ACS
P10	37.45%	1 year	37.61%	1 year	**0.15%**	USPSTF
P11	69.88%	1 year	68.35%	1 year	**-1.53%**	USPSTF
P12	52.85%	1 year	45.55%	1 year	**-7.30%**	USPSTF
Average	**47.96%**		**42.96%**		**-5.00%**	**(6) ACS (7) USPSTF**

†Practices with major reporting changes (EHR transition, calculation method, etc.)
*Practice changed guidelines from Pre-Post
P1, P4 date range for Pre CRC Rate: 6/30/17-6/29/18
P2, P3, P5, P6, P7, P11, P12 date range for Pre CRC Rate: 1/1/18-12/31/18
P8 date range for Pre CRC Rate: 12/1/17-11/30/18
P9 date range for Pre CRC Rate: 10/8/17-10/7/18
P10 date range for Pre CRC Rate: 6/1/17-5/31/18

Comparisons of Practices by Project Period

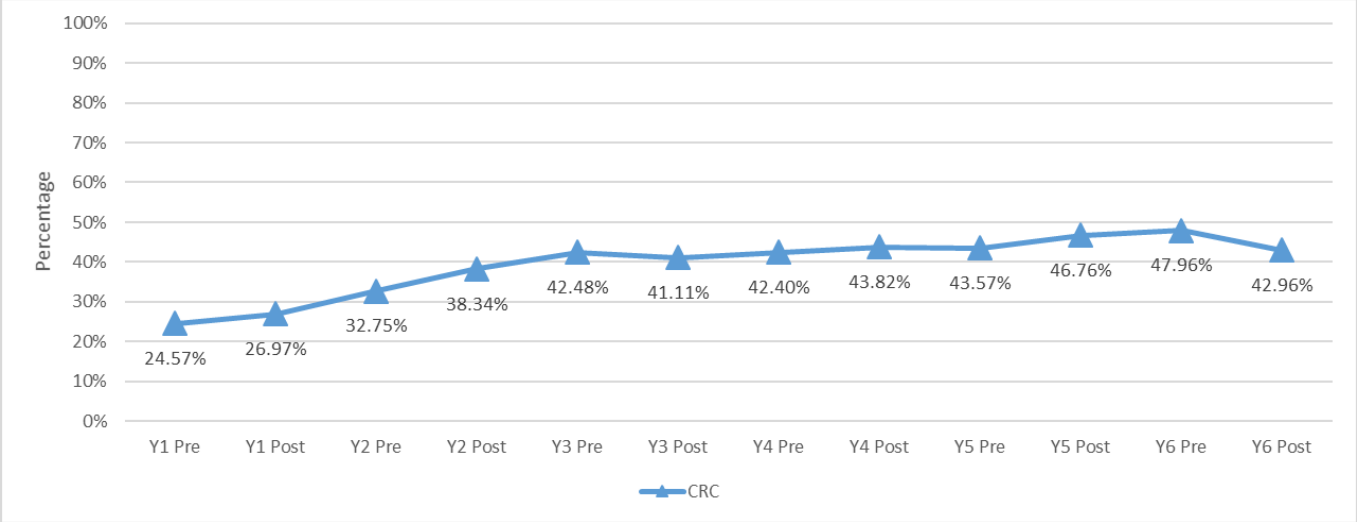
Longitudinal analyses were conducted to assess change in cancer screening rates over time among practices that have been participating in the project on a continuous basis since Year 1 (total of three practices) and Year 2

(total of five 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 their pre-measurements for Year 4. Similarly, during Year 5, the post-measurement from Year 4 was considered the pre-measurement for Year 5. In Year 6, all participating practices were once again required to report their screening rates twice each year.

Year 1 to Year 6 Participants

During the Year 1 project period, the focus was to collect and evaluate colorectal cancer screening rates. Five practices began participation during the Year 1 project period. Figure 6 illustrates the change in average colorectal cancer screening rates across time, and show that screening rates increased with nearly all pre to post periods, except in Year 3 and now Year 6. The average colorectal screening rate started at 24.57% for the Pre-Year 1 time point and ended at 42.96% for the Post-Year 6 time point, with an overall increase of 18.39%. 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 a 5.78% increase.

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

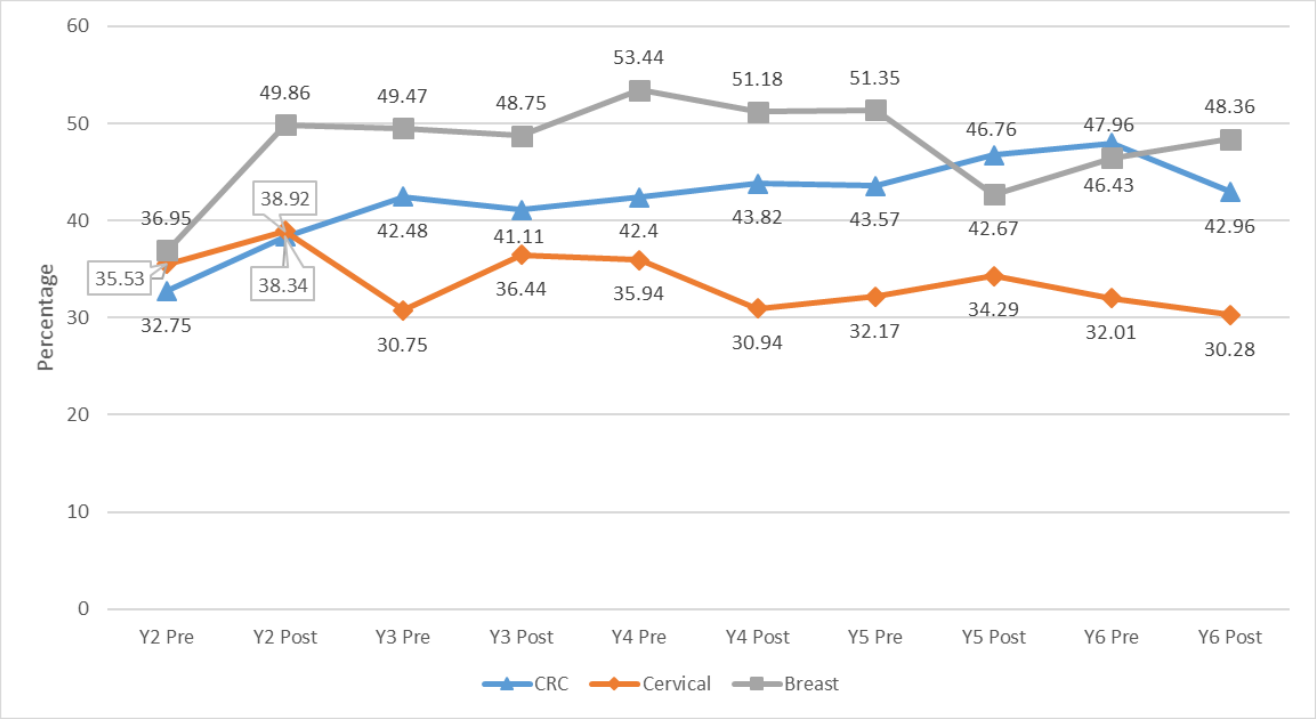


Year 2 to Year 6 Participants

Eight of the 12 practices in the Year 6 project either joined the project in Year 1 or began participation in Year 2. Figure 7 displays the changes in screening rates for colorectal cancer as well as breast and cervical cancer, which were collected and evaluated starting in Year 2. The rates displayed begin with pre Year 2 and conclude with post Year 6. The colorectal cancer screening rates increased with nearly each time point, except from Pre-Year 3 to Post-Year 3, Post-Year 4 and Pre-Year 5, and Pre-Year 6 and Post-Year 6. Breast cancer screening rates increased from Pre-Year 2 to Post-Year 2, with another increase from Post-Year 3 to Pre-Year 4, then a subsequent plateau, followed by another increase from Post-Year 5 to Post-Year 6 (5.69%). Overall, the average breast cancer screening rate increased by 11.41% and the average colorectal cancer screening rate increased by 10.21% from Pre-Year 2 to Post-Year 6. Breast cancer screening rates have doubled their average increase since last year's, (pre-year 2 to post-year 5; 5.72%). The average cervical cancer screening rates increased and decreased with each consecutive measurement point, with no consistent trend. Cervical cancer screening continues to be 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. Many of the practices who participated in Year 6 of the project stated that they were not comfortable with their cervical screening rate reports because they are more difficult to update and track than the other screening types.

Figure 7. Change in Breast, Cervical, and Colorectal Cancer Screening Rates from Year 2 to Year 6 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 12 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 for the post-practice facilitation cancer screening rates and post-practice facilitation TRANSLATE evaluation measures among all practices.

Pre-Practice Facilitation

Highly statistically significant associations were detected between the pre-breast cancer screening rates and the TRANSLATE element of Administrative Buy-In (r=0.710, p=0.010), and between pre-colorectal cancer screening rates and the TRANSLATE element for Local Clinician Champion (r=0.728, p=0.007). Statistically significant

associations were also detected between the pre-breast cancer screening rates and Local Clinician Champion (r=0.661, p=0.019), and the pre-cervical cancer screening rates and the TRANSLATE element of Audit and Feedback (r=0.645, p=0.032). Lastly, in both pre-breast cancer screening rates and pre-colorectal cancer screening rates, there were statistically significant positive correlations with the total TRANSLATE scores (both r=0.576, p=0.050). These findings are presented in Table 19.

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	0.004	0.263	0.117
Reminders	-0.177	-0.337	-0.414
Administrative Buy-In	.710**	0.179	0.367
Network Information Systems	0.315	0.106	0.087
Site Coordinator	0.091	0.235	0.196
Local Clinician Champion	.661*	0.484	.728**
Audit and Feedback	0.354	.645*	0.533
Team Approach	-0.067	0.512	0.197
Education	0.313	-0.551	0.014
TOTAL TRANSLATE SCORE	**.576***	**0.538**	**.576***

*Correlation is significant at the 0.05 level (2-tailed).
**Correlation is significant at the 0.01 level (2-tailed).

Strong administrative buy-in and a local clinician champion was significantly associated with higher pre-breast cancer screening rates. It is possible that this association reflected the process of practice leaders recognizing areas for improvement within their practice and developing a strong plan at the beginning of this project year. Audit and feedback was associated with an increase in pre-cervical cancer screening rates, which may reflect a more valuable perception of where the practice stands with their rates, and advice on how to improve these rates. There was also a strong significance in a local clinician champion and pre-colorectal cancer screening rates. This association again shows a positive correlation when leadership is more involved in the project.

Post-Practice Facilitation

Statistically significant associations were observed between the post-breast cancer screening rate and the TOTAL TRANSLATE Score (r=0.577, p=0.049). These findings are presented in Table 20.

The overall TRANSLATE Score was positively associated with post-breast cancer screening rates. Interestingly, nearly all of the elements on the translate scores had a positive correlation, and although not statistically significant, this should not be dismissed considering the total TRANSLATE score had a positive and statistically significant correlation. Table 20 provides detail on each independent score.

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-CRC Screening Rate
Target	0.290	-0.210	-0.193
Reminders	0.391	-0.161	0.198
Administrative Buy-In	0.287	-0.004	-0.036
Network Information Systems	0.386	-0.241	-0.048
Site Coordinator	0.160	0.101	0.030
Local Clinician Champion	0.439	0.263	0.395
Audit and Feedback	-0.158	0.327	0.205
Team Approach	0.050	0.462	0.261
Education	0.276	-0.442	-0.110
TOTAL TRANSLATE SCORE	**.577***	**0.028**	**0.181**

*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 seen in Table 21, there were significant associations found for the pre-breast cancer screening rates and pre-colorectal cancer screening rates in relation to the TOTAL EBI score (r=0.576, p=0.050). This shows that as Pre-Breast cancer screening rates increase, the TOTAL EBI score increases. A moderate positive correlation existed between pre-cervical cancer screening rates and TOTAL EBI score, but it did not reach statistical significance (r=0.538, p=0.088).

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	-0.035	0.145	-0.341
Small Media	0.345	-0.082	0.255
One-On-One Education	-0.130	0.298	-0.065
Reducing Structural Barriers	0.176	-0.015	-0.059
TOTAL EBI SCORE	**.576***	**0.538**	**.576***

*Correlation is significant at the 0.05 level (2-tailed).

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, there is a highly significant negative correlation between post-breast cancer screening rates and one-on-one education (r=-0.710, p=0.010),

along with significant positive correlation between post-breast cancer screening rates and TOTAL EBI score (r=0.577, p=0.049). For post-colorectal cancer screening rates, there is a significant negative correlation with one-on-one education, similar to that with post-breast cancer screening rates (r=-0.661, p=0.019).

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	-0.244	-0.033	-0.433
Small Media	0.535	-0.124	0.204
One-On-One Education	-.710**	-0.269	-.661*
Reducing Structural Barriers	-0.063	-0.330	-0.559
TOTAL EBI SCORE	**.577***	**0.028**	**0.181**

*Correlation is significant at the 0.05 level (2-tailed).
**Correlation is significant at the 0.01 level (2-tailed).

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 collected through paper hardcopy. Practice facilitators administered the surveys.

In Year 6, a total of 130 surveys were completed; 80 pre-practice facilitation and 50 post-practice facilitation. Table 23 provides a total description of demographics among survey respondents' demographics among all respondents. 95 females and 29 males responded to the survey. The greatest number of respondents were physicians (41), followed by NP/PA (25) and practice nurses (17). The remaining respondents were fairly evenly represented by other clinical positions.

Table 23. Demographic Data for 130 Pre- and Post-Practice Facilitation Survey Respondents

Sex	Job Title										
	Physician	NP/PA	Practice Nurse	Medical Assistant	Practice Manager	Case Manager	Clerical	Multiple	Missing	Other/No Response	TOTAL
Female	18	20	16	6	6	7	7	1	7	7	**95**
Male	22	4	1	1	0	0	0	0	1	0	**29**
Prefer not to answer	0	0	0	0	1	0	0	0	0	0	**1**
Missing	1	1	0	0	1	0	0	1	1	0	**5**
TOTAL	**41**	**25**	**17**	**7**	**8**	**7**	**7**	**2**	**9**	**7**	**130**

[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/

In past years, pre-post surveys were matched by respondent. Starting in Year 5 and continuing this year, pre-post surveys were compared as a group rather than as paired samples due to staff turnover and inconsistency of individuals completing surveys. The following findings of the pre- and post-practice facilitation surveys represent the results across all respondents.

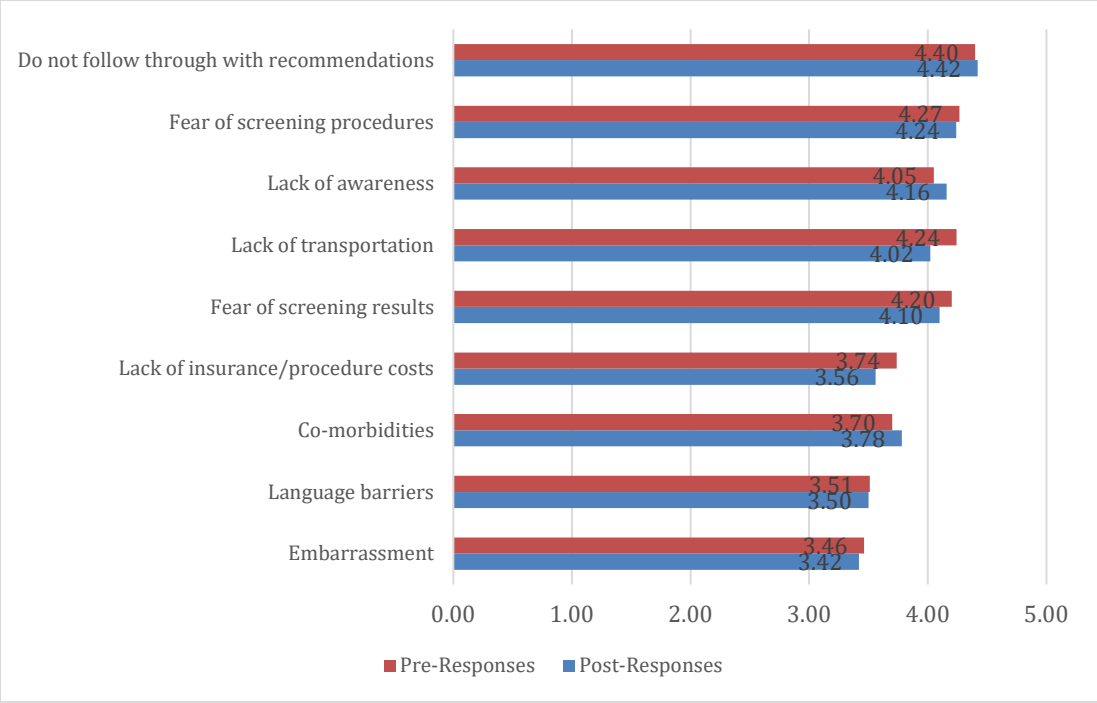
Cancer Screening Barriers

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: Data Collection Materials 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.

As seen in Figure 8a, among the participants surveyed, the top two most important care team perceived patient-related barriers to increasing cancer screening, both before and after practice facilitation, were: 1) lack of follow through on provider recommendations; and 2) fear of screening procedures. Before practice facilitation, the third most important perceived patient-related barrier was lack of transportation. After practice facilitation, the third most important perceived barrier was lack of awareness. However, 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. The average rating of all but three perceived patient-related barriers either did not change or decreased from pre- to post-measurement. Not following through on provider recommendations, lack of awareness, and co-morbidities increased slightly from pre- to post-measurement. No patient-related barriers had statistically significant changes in average rating.

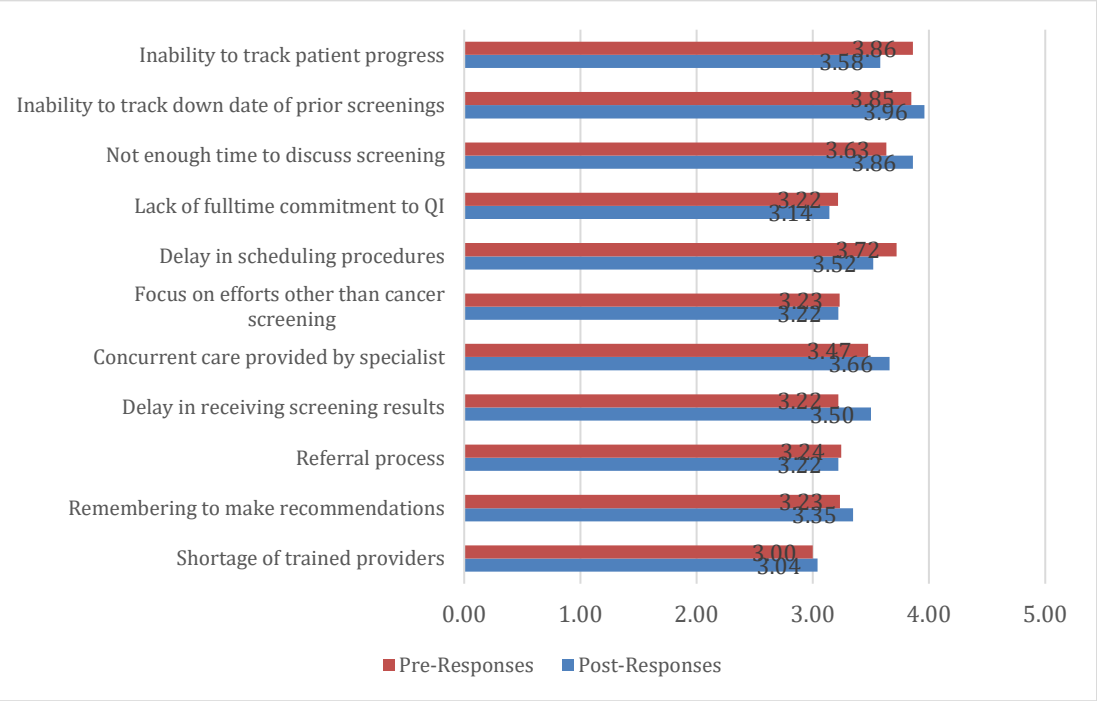
Figure 8. Mean Scores for Questions on Barriers to Increasing Cancer Screening

a) Perceived Patient-Related Barriers



Prior to practice facilitation, the top three most important system-related barriers to increasing cancer screening as perceived by practice teams were: 1) inability to track patient progress in completing screening tests; 2) inability to track down the date of a prior screening; and 3) delay in scheduling procedures. This can be seen in Figure 8b. After practice facilitation, the most important system-related barriers were: 1) inability to track down the date of a prior screening; 2) not enough time to discuss screening with patients; and 3) concurrent care provided by specialist. As with the patient-related barriers, all of the system-related barriers had an average rate of 3.0 or higher for both pre- and post-scores, indicating that survey respondents considered all barriers to be of high importance. Average rating increased for about half of the system-related barriers, including the inability to track down the date of a prior screening, not enough time to discuss screenings, and the delay in receiving screening results. These changes were determined to not be statistically significant.

Figure 8. Mean Scores for Questions on Barriers to Increasing Cancer Screening
b) System-Related Barriers



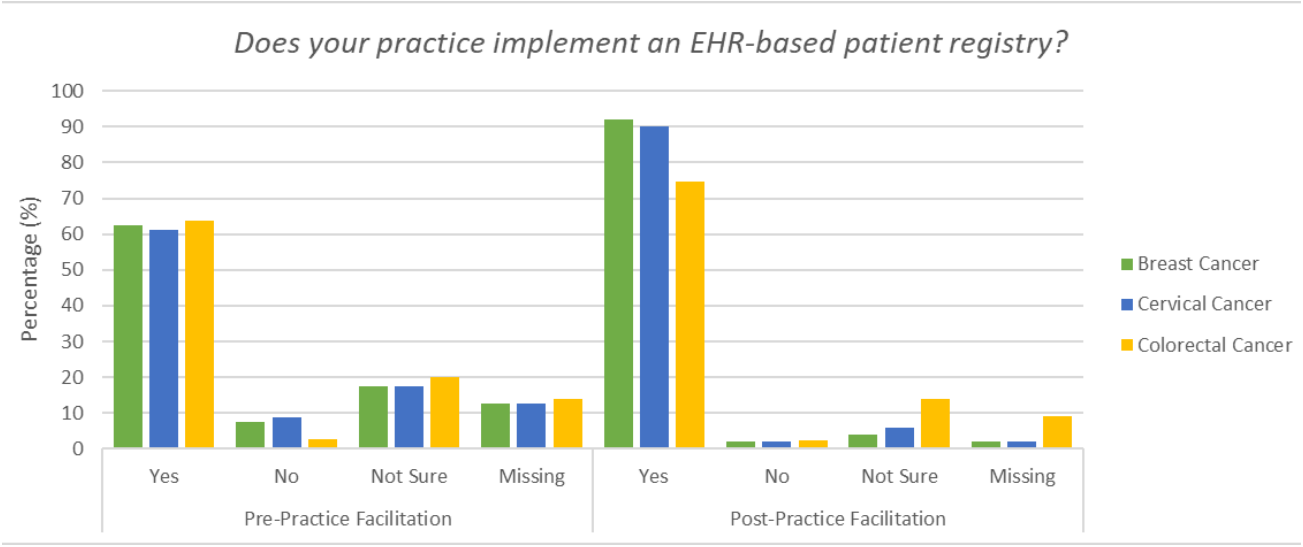
Respondents were asked to write in any additional barriers to increasing cancer screening not listed in the Likert-scale response options. The following list summarizes the written responses:

- Overall lack of patient compliance and adherence
- Social determinant or cultural barriers
- Staff turnover leading to frequent re-training
- Scheduling and prep issues associated with colonoscopy
- Patient lacks escort to accompany them to colonoscopy
- Specific population challenges, such as homelessness and mental illness
- Lack of time to conduct cancer screening education during acute visits and chronic disease management
- Inaccurate data on completed screenings, and the lack of time and staff to locate records

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. The number of respondents reporting that their practice did implement an EHR-based patient registry increased between the two measurement periods for all three cancer screenings, while the number of respondents who were "not sure" decreased, indicating an overall increase in awareness of this capability among respondents. A distribution of survey responses can be found in Figure 9.

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

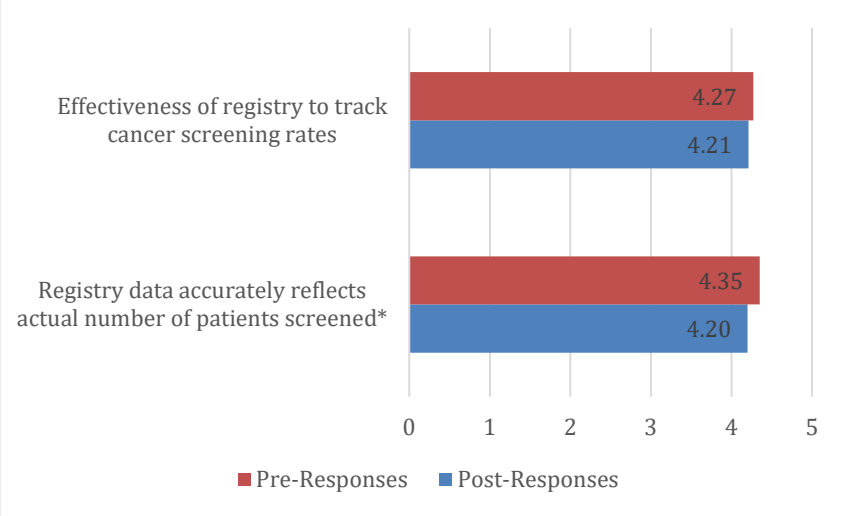


Following the information reported in the practice characteristics form from the pre-practice facilitation period, all 12 practices reported that their practice utilized patient registries to track patient cancer screening. Only one practice did not have a registry for cervical cancer screening; the remaining practices reported having registries for all three cancer screening tests. Additionally, the TRANSLATE evaluations conducted by practice facilitators indicated that all 12 practices had the capability to run EHR-based reports, but that this capability was underutilized by a quarter of the practices. Thus, it appears that gaps remain in knowledge, trust in accuracy, 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 decrease in both the perceived effectiveness and perceived accuracy of registry data. However, neither decrease was significant.

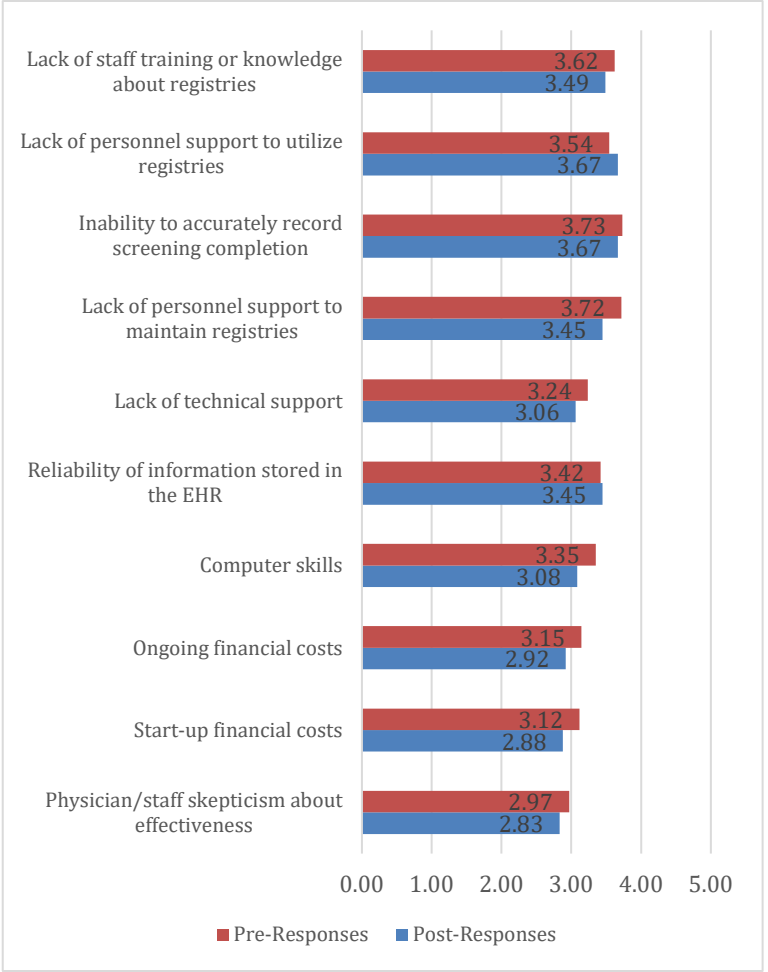
Survey respondents were also asked a series of Likert-scale questions assessing the importance of selected barriers to utilizing EHR-based registries to track patient cancer screening (see Appendix B: Data Collection Materials for survey text). The Likert scale ranged from a low value of 1 (not important) to a high value of 5 (very important). Mean scores for each question were obtained to estimate the overall degree to which respondents assessed the barriers to EHR-based registries as 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 on barriers to registry use.

Figure 10. Perceived Effectiveness and Accuracy of Patient Registries



Respondents identified the following as the top three most important barriers, on average, to utilizing EHR-based registries prior to receiving practice facilitation: 1) inability to accurately record screening completion; 2) lack of personnel support to maintain registries; and 3) lack of staff training or knowledge about registries. Following practice facilitation, the two most important barriers tied for first place: lack of personnel support to utilize registries, and inability to accurately record screening completion. The third most important barrier remained the same: lack of staff training or knowledge about registries. All barriers except for physician/staff skepticism about effectiveness were rated as higher than 3.0 prior to practice facilitation, with physician/staff skepticism rated on average just under at 2.97, highlighting the importance attributed to each of the barriers. After practice facilitation, the average ratings decreased for all barriers except for the reliability of information stored in the EHR, which increased slightly. The ratings for three barriers dropped below 3.0, revealing a drop in their perceived importance as a barrier for utilizing EHR-based registries: ongoing financial costs associated with maintaining registries, start-up financial costs

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



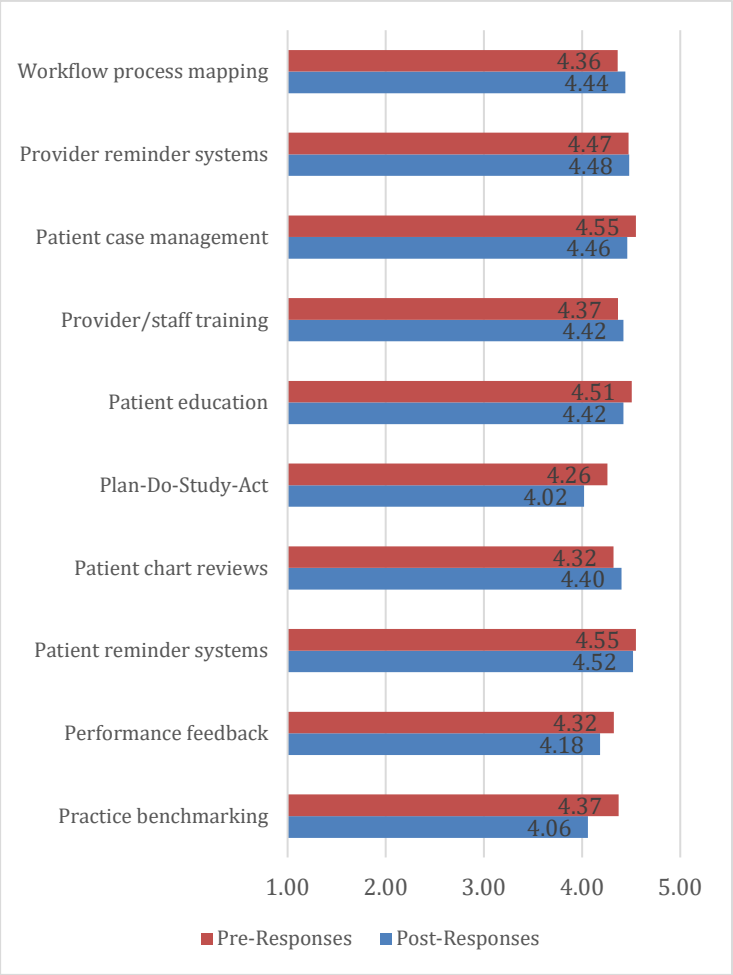
associated with creating registries, and physician/staff skepticism about effectiveness. No changes were statistically significant.

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: Data Collection Materials 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 believed 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 assessed all listed strategies as highly beneficial. Prior to practice facilitation, the top two quality improvement strategies that respondents indicated, on average, would most benefit their practices' ability to increase cancer screening were patient case management and patient reminder systems. The third most beneficial QI strategy was patient education. After practice facilitation, the top three rated quality improvement strategies were: 1) patient reminder systems; 2) provider reminder systems; and 3) patient case management. These strategies were closely followed by workflow process mapping, with patient education and provider/staff training ranked just below. Several strategies received a higher post-practice facilitation rating compared to pre-practice facilitation rating, including workflow process mapping, provider reminder systems, provider/staff training, and patient chart reviews. There were no statistically significant changes.

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 both the patient-related barriers to increasing cancer screening and the system-related barriers as important (based on average rates above 3.0). However, similar to the trend in Year 5, the average ratings of all but three patient barriers decreased or did not change over the Year 6 project period while the average ratings of half of the systems barriers increased over the same period. These results indicate that the perceived importance of most 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 the practice to reduce the impact of these barriers. At the same time, the perceived importance of system-related barriers has grown among staff and providers. This could indicate that systems barriers are more challenging for low-resource practices to overcome, or that the implemented interventions raised awareness among staff and providers as to the impact of such barriers on their screening rates.

The top barriers to utilizing EHR-based patient registries touch on inadequate personnel resources and inadequate technical capabilities. Thus, it appears that as in Year 5, participants recognize the potential of EHR-based patient registries to help track and increase patient cancer screening, but the function of these tools continues to be reduced by their current system and staffing constraints. The recognition of these barriers may help to explain why survey respondents on average perceived a decrease in both the accuracy and effectiveness of their patient registries this year.

Finally, the perceived utility of system-level quality improvement strategies, such as patient and provider reminder systems and patient case management, is evident from the consistently high scores (over 4.0) for all. While there were no significant changes across the project period, half of the QI strategies received a higher post-practice facilitation rating compared to pre-practice facilitation rating. These results could be related to the achievement of desired or expected outcomes through the use of these strategies. It could also be the case that outcomes were not achieved, but that the practice facilitation period increased awareness among staff and providers of the need for such strategies.

Focus Group and Interview Findings

Focus groups were conducted with five out of the 12 practices this year. Due to scheduling challenges, key informant interviews were conducted with 5 individuals representing the remaining seven practices. Two of the five key informants represented more than one practice enrolled in the project, so during the interview each spoke about both her 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, as well as feedback on project processes and insight on how to make efforts to increase cancer screening rates more sustainable.

Methods

The project principal investigator, co-investigators, and quality improvement consultant jointly developed the original script for the focus groups/interviews. The script was updated this year to include a new question on barriers to sustainability. This update was jointly developed by the project principal investigator, co-investigators, quality improvement consultant, and the project manager (see Appendix B: Data Collection Materials). The project manager worked with practice facilitators to identify participants and schedule the focus groups and interviews. This year, coordination and facilitation of the focus groups and interviews were split between the quality improvement consultant (who worked as a facilitator for four practices in the Syracuse region this year), the project manager, and a qualified practice facilitator. Practice facilitators, including the project manager and quality improvement consultant, were excluded from any focus group or interview activities pertaining to their assigned practices in order to reduce bias in participant responses. All focus groups and interviews were 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 University at Buffalo, Laura Brady, PhD in anthropology, 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. Five individuals participated in the key informant interviews, and 16 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, practice physician, care coordinator). One participant was a community health outreach worker.

Summary of Findings

The following summary briefly describes the main findings of the focus group analysis, grouped by topic area. Topic areas like cancer screening barriers appear to be reaching saturation, but each year's findings reveal new details and increase our understanding of how primary care practices can sustainably increase cancer screening rates among their underserved patients.

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 reported that they valued the collaboration, emphasizing the facilitators' ability to connect them to new resources and share best practices. One participant described their partnership with their practice facilitator as "very important. I think if she wasn't available and I had concerns I would probably be lost." Another remarked that the facilitator's "knowledge base made us want to participate." Three participants provided neutral remarks about working with their practice facilitator, with one describing the relationship as "helpful" to their efforts to raise screening rates, "but sort of accessory." Another participant noted, "I still feel very motivated," but working with the facilitator "just hasn't been as therapeutic." Common feedback from participants included comments that the practice facilitator contributed insights and tools to address screening barriers, and that it was helpful to have a practice facilitator assess their current workflow and motivate people to improve.

Four practices in the Rochester region went through a transition from one practice facilitator to another when their initial practice facilitator left the project after the start of the year. All four of these practices remarked that their new facilitator was helpful and a "good resource." In addition, one new practice in the Syracuse region joined the project before the start of the year. They described working with their facilitator as "helpful to give us some direction and to focus our attention."

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 two of the practices and practice managers at seven of the practices. Some practice facilitators also worked closely with quality improvement staff and care coordinators, and one practice facilitator worked with a Master of Public Health student who helped to support project activities at one practice in the Syracuse region. While all practices had at least some face-to-face interaction with their practice facilitators, participants from six practices indicated that they had several in-person

meetings during the project period. Participants from eight practices indicated that they had regularly scheduled meetings or check-ins with their practice facilitator. Ten 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. Eight practices indicated the importance of their practice facilitator in focusing their quality improvement efforts, while another two noted the role of their practice facilitator in setting goals and drafting workflow plans. A practice facilitator coordinated an in-service training among staff at one of the practices, incorporating speakers from partnering organization the American Cancer Society. Topics covered at the training session included guidelines and risk factors for colorectal cancer, and the use of FIT kits as a screening test. Participants from seven practices reported that overall, their practice facilitator was a key link to best practices and new resources.

Project-Related Activities and Interventions

Four practices addressed all three cancer screening types (breast, cervical, and colorectal) during Year 6, while six practices identified two as their top priority. Of these six, five practices targeted breast and colorectal cancer screenings while the sixth addressed colorectal and cervical cancer screenings. One practice focused solely on colorectal cancer screening, while another focused on breast cancer screening efforts. This year, no practices focused only on cervical cancer screening efforts. Two practices focused on data cleaning to improve the accuracy of their registries, with one targeting colorectal screening and the other on both colorectal and cervical cancer screening registries. When asked about their approach to colorectal cancer screening, participants from all twelve practices indicated increased use of FIT in their office, two of which commented that FIT is the preferred colorectal cancer screening method when considering their patient populations. Participants from five practices noted a policy of annually mailing FIT kits to patients who had completed one in the past. Two practices noted that postage cost was a barrier to their patients returning the completed FIT test. One of these practices implemented an intervention to provide prepaid postage, while the second practice implemented an intervention in which staff picked up completed FIT tests from patients' homes. One practice has begun implementing Cologuard as another option alongside FIT testing for patients who refuse a colonoscopy.

Participants from 10 practices reported implementation of individual-level interventions among patients at their practices, mainly focusing on education, outreach, and reminders. Six practices aimed to improve efforts on patient education. Two of the practices utilized small media resources, distributing patient instruction sheets to increase awareness and knowledge of breast cancer screening among their patient populations. Another worked with their facilitator to display posters in each exam room. One specified that their facilitators had connected them with materials in multiple languages for their specific patient populations. The other two of these practices included patient home visits, specifically to increase understanding of colorectal cancer screenings. Eight practices utilized strategies to remind patients that they are due for cancer screening or to follow up on screening test orders. Participants from all eight of these practices discussed contacting patients by phone to follow up on screening while participants from four of the practices mentioned mailing reminder letters. Four practices implemented patient incentives, offering gift cards, small gift bags, or tokens to markets with fresh produce.

Practices also discussed their efforts on practice-level and system-level interventions. Participants from ten practices described efforts to collect cancer screening reports and data from outside providers and/or regional

health information organizations (RHIOs), while six practices aimed to address improvements on data capture and EHR accuracy. Seven practices undertook small initiatives to improve the functionality of their registries. Three practices further developed approaches to identify patients due for screening using registries and reports. Two practices prioritized data clean up during the project year to increase the accuracy of patient records. Participants spoke of these improvements to their EHRs as integral to the use of point of care reminders, with six practices utilizing EHR alert systems or pre-visit planning to remind providers to address cancer screening with their patients during appointments.

Efforts to address structural barriers were also shared. Most practices utilized approaches to improve access to screening services, such as mobile mammography (nine practices) and dedicated screening days for breast and/or cervical cancer (two practices). Another practice has an agreement with a mobile mammography service to begin screenings in August 2019, while one additional practice is interested in connecting with that service. One practice has implemented an intervention in which their outreach worker visits patients from her community at home to answer questions and explain colorectal cancer screening procedures in their native language. Another practice has developed a team of cancer screening patient navigators through support from a New York State grant. A third practice has updated their EHR in order to track social determinants that affect their patients' health.

When asked about staff involvement in project efforts, participants from ten 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 utilized dashboards to monitor screening rates and encourage staff involvement.

Cancer Screening Barriers and Facilitators

Patient-related barriers were mentioned by participants from all 12 practices during key informant interviews and focus groups. Participants from the 12 practices cited patient compliance issues such as not showing up for scheduled appointments, not returning completed FIT kits, and refusal. Participants attributed non-compliance to factors such as lack of transportation (nine practices), aversion or fear of screening procedures and results (six practices), health literacy issues (six practices), and financial or insurance barriers (four practices). Refugee and homeless patients were cited to present unique and additional challenges to cancer screening compliance.

Participants frequently noted two main barriers at the staff level: lack of staff time and manpower to carry out quality improvement and cancer screening activities. Seven participants explained that these initiatives are mixed among competing demands and are often viewed among providers and staff as another thing to do. Participants from two practices noted different levels of engagement among providers and staff. Turnover among clinic staff was another barrier; two practices referred to the issue during the focus groups and key informant interviews. Another common issue was practices' limited financial resources, including for cancer screening initiatives.

Challenges at the organizational and system levels were also emphasized by participants. Communication issues between the participating practices and outside specialists (i.e., gastroenterologists, gynecologists) were cited by participants from four practices as barriers to receiving screening reports and therefore accurately tracking screening rates. Participants from all four of these practices noted that cervical screening results were the most difficult to track, due to communication issues with the specialists and to the number of gynecological clinics used by their patients. Each of these four practices has implemented EHR improvement interventions to address this

barrier, tracking down missing results and updating cervical screening registries. Scheduling patients to see specialists was also a barrier, with one practice reporting long waits for colonoscopy appointments.

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 were also identified as important, while participants from five practices expressed their need for more staff in data management roles. Several participants also highlighted factors that they viewed as catalysts to increase cancer screening. Five participants noted the usefulness of health information systems like RHIO and HEALTHeLINK in locating a patient's missing documentation, while another three remarked on their relationship building with specific specialist clinics to ensure more reliable communication. Two participants noted the importance of relationship building with their patients. Finally, external funding for quality improvement activities, from grants to incentives from insurance companies, was key to the cancer screening efforts of three practices.

The barriers to breast, cervical, and colorectal cancer screening observed in the Year 6 project period were very similar to the screening barriers observed during Year 5. 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	Catalysts of Increased Screening
Patient-Level	
Transportation Social determinants 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 Trusting relationship with providers and staff
Staff-Level	
Lack of time EHR data and documentation errors Lack of investment in quality improvement interventions Staff turnover Differing levels of engagement/awareness	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 Access to health information systems PCMH certification requirements

Sustainability

The majority of participants expressed that quality improvement has become engrained in their office operations. Five participants noted that they had adapted interventions into practice-wide workflows, while four participants indicated that the quality improvement activities implemented at their practices through this project aligned with requirements for PCMH, CPC+, and DSRIP. 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 one of the participants.

Overall, participants reported that the monetary incentive was valuable for launching and sustaining cancer screening interventions. Three practices reported that the funds were used to purchase materials for patient education or reminders, while another three practices purchased patient incentives to encourage screenings. Two other practices applied the monetary incentive towards improving their EHR accuracy by either paying staff overtime hours or hiring an MPH student to track down missing documents and update patient records. Another practice put the funds towards patient transportation costs. The final three practices considered the stipend important but remarked that they would be implementing the same activities without the monetary support. Moreover, one practice received an additional grant during the Year 4 period that continued into the Year 6 period, while another two practices jointly received an additional grant this year. These grants supplemented the work of the current project; one was a grant to support patient navigation services (P8) and the other was a grant to increase breast cancer screening from the partnering National Football League and American Cancer Society (P2 and P3).

Participants from all 12 practices reported offering FIT or FOBT, while 8 practices reported increased efforts to support fecal testing. Some examples of increased support were: automatically sending FIT kits to patients who completed one the previous year, creating alternative workflows to overcome the barrier of return postage for patients, promoting FIT as the primary screening test for colorectal cancer, and increasing patient education on FIT testing. In comparison, the first year of the project only one practice offered FIT kits while two offered FOBT kits.

Examples of other policy changes included standardizing a protocol to retrieve cancer screening reports from specialists via health information systems and integrating dashboard metrics into monitoring and feedback on cancer screening rates. One practice made improvements in processes for making referrals and following up on screening orders. Participants from six practices discussed the value of pre-visit planning efforts, with two noting the need to improve consistency at their practices.

Two participants commented on the importance of training needs and opportunities within their practices in relation to sustaining quality improvement efforts. One participant described an informational session that was coordinated by their practice facilitator on the topics of colorectal cancer and FIT testing. Another participant reported their practice's involvement in training specialists in their system in cultural competency to facilitate access for the refugee population they serve.

Plans to continue initiatives to increase breast, cervical, and colorectal cancer screening were reported from all practices. Participants from one practice have an agreement to expand their patient outreach through a new mobile mammography service, while another practice indicated their interest in connecting patients with such a

service to expand beyond their on-site clinic. Since Year 5, the number of participating practices who utilize a mobile mammography service has increased from five to nine, and when practices with on-site imaging clinics are included, the current number of practices who have overcome transportation as a barrier to breast cancer screening stands at 11. When the final site's mobile mammography service begins in August, all 12 practices will have implemented interventions that address transportation as a barrier for breast cancer screening.

Recommendations for Project Administration

Overall, the participating practices were very pleased with their experiences working on the project. All participants shared positive feedback on administration, remarking that the project is a good reminder to focus on increasing breast, cervical, and colorectal cancer screening rates. Some participants also recommended the following:

- Increased focus on social determinants of health
- Consider connecting practices to community groups to assist in patient outreach and education, similar to the role of peers in addiction treatment
- Embed the practice facilitators so that they are on-site and available for hands on data management and patient engagement

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. However, increasing use of mobile mammography buses is helping to address the barrier for breast 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

Organizational disruption

Practices continue to face organizational changes that disrupted their progress on cancer screening initiatives. This began in Year 4, when four Rochester practices were absorbed by a large regional health system and one was incorporated into a university health system. Challenges with transition continue, causing difficulties requesting the data reports that are required for this project due to changes in how such requests are processed. The larger health organizations also have other screening/health benchmarks that these practices must now achieve. This has put stress on some of the site coordinators because they have to meet competing demands. A Buffalo site closed and reopened under new leadership requiring the provider and staff teams to be completely rebuilt, adaption to a new EHR, and creating new workflows that coordinate with a sister practice (also located in an underserved community) that has extensive infrastructure. During Year 6, a Rochester practice moved to new offices and had very limited time available for the project while they prepared for their operational site visit.

Staff Turnover and added responsibility

Staff changes, including turnover of multiple site coordinators, made communication and progress difficult. At the start of Year 6, four site coordinators were new to the role and/or project. During the project period, another site coordinator stepped down due to time constraints and was replaced by a team member. There was also staff turnover within the practices, which preoccupied the site coordinators. Staff turnover in Year 5 at two sites (1 in Buffalo and 1 in Rochester) resulted in practice managers, who served as site project coordinators, to each be responsible for two practices participating in the project. By the start of Year 6, a third site coordinator (also in

Rochester) had become practice manager for two practices, though only one of her practices participated in the project. This increase in workload made focus on this project very difficult. Feedback from the participants in the focus groups/interviews indicated that staff turnover creates multiple barriers to quality improvement, ranging from understaffing to the reallocation of resources towards hiring and training new staff. **Practices also indicated a need for additional staff to fulfill roles in data management and patient engagement to aid in achieving their cancer screening targets and improve overall patient care.**

Project and Practice Staff Relationship

Following the trends from previous years of the project, practice facilitators worked with one or two members from each practice and these were often practice managers or the head of a QI team. Feedback from practice facilitators indicated that it was difficult to involve other staff members due to the competing demands of a busy office. Focus group/interviews reinforced this, with one site coordinator stating her preference for one-on-one meetings with the facilitator rather than involve others. “Everyone is busy. I can’t pull somebody off of the phone to come down to meet with you… In our office it felt more like it delayed things.” Competing demands at practices impeded efforts by both the facilitator and the practice. 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.

Issues due to competing demands were reflected in some of the discussion that was conducted through the focus group/interviews. In more than one of the focus groups, participants stated that they did not have sufficient staff to dedicate time to sustained quality improvement activities. Data management, in particular, was an area practices recognized as key but which they were understaffed to support. Several participants expressed interest in having practice facilitators fulfill that role, though this would fall outside the project’s focus on sustainable interventions.

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.

Staff Buy-In and Participation

As in previous project years, participants 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 care managers. Due to competing priorities, levels of engagement continued to decrease among several project champions, which impacted practice momentum on project initiatives.

Several 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 care coordinators, nurses, and providers in their project initiatives reported a sense of overall increased engagement.

Quality Improvement to Track Patient Screening

Data Validity and Reliability Concerns

As in previous project years, all of the practices enrolled in the Year 6 project period had 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. Two practices dedicated specific time to systematically improve the accuracy of their records, while ten of the twelve practices reported increased efforts to locate and collect missing cancer screening reports and data. Several practices experienced issues around inconsistent reporting methods and metrics (i.e., screening guideline changes, varying numerator and denominator definitions, staff turnover among data management personnel), which impacted their ability to accurately assess practice progress towards cancer screening targets. Five practices expressed difficulty due to understaffing for data management roles. Reporting and data management require ongoing efforts to train and support practice personnel.

Data clean up and validation was a focus for two of the practices participating in Year 6 of this project. During one key informant interview, the participant stated that the practice spent a majority of the project stipend to pay staff for extra time, utilized in cleaning up and updating records. Another practice used their stipend to pay an MPH student to do the same. At both practices, the staff then called patients who had not been at the practice in order to update their records and track down any results that needed to be entered.

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 6 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. Multiple practices noted that cervical cancer screenings are the most difficult to track. One practice that did not offer cervical cancer screening services in-house has chosen to start using a registry to track patient screening completion for cervical cancer. In the past, they chose not to due to the inability to obtain screening documentation from outside specialist providers.

To address the issue of missing screening documentation, several practices assigned staff to call specialist providers and search insurance company databases and their regional health information organization (RHIO) to obtain reports for individual patients on screening tests performed outside of the primary care office. 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. As mentioned above, two practices used the stipend to fund their records clean up, including locating patient results, with one practice paying for staff overtime and the other employing an MPH student intern.

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. Two of the most prevalent changes being made across practices have been 1) the uptake of FIT testing as either the primary option for colorectal cancer screening or an alternative to colonoscopy, and 2) the utilization of mobile mammography services. 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. Mobile mammography is also very beneficial for those with transportation barriers. As with last year, this project year the most prevalent change to address structural barriers is the utilization of mobile mammography. Since Year 5, the number of participating practices who utilize such a service has increased from five to nine, with a tenth practice's mobile mammography service due to start in August. The two remaining practices both have on-site imaging clinics.

A particularly notable outcome from the 2018-2019 project year was the number of observed decreases in screening rates at many individual practices, for breast cancer screening. An important consideration is the transition to guidelines that include broader eligibility criteria. In addition, many aberrant screening rate changes could be linked to changes in practice management, ownership, EHR systems, or calculation methods. A further issue is the continuing problem of varied workflows for data entry in patient EHRs, which decreases the accuracy of registries. While many practices have created workflows to increase accuracy, including methods for obtaining reports from outside specialists, the varied engagement among staff, providers, and specialists remains a barrier.

Communication among the team is also a major barrier. Across the practices, not all staff and providers were familiar with the capabilities of their EHR systems, nor of their QI efforts. Often an individual or a small team was responsible for quality improvement efforts around cancer screening. Initiatives are often not integrated into the practice culture. Strategies on how to increase communication on these efforts and how the EHR is a tool that can be used to enhance and evaluate quality improvement efforts should be a focus moving forward.

Barriers to Cancer Screening

Factors of Patient Noncompliance

Practices participating in the Year 6 period emphasized both patient-related barriers and system-related barriers as primary concerns for increasing cancer screening. The primary perceived patient-related barriers identified include:

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

The primary systems-related barriers identified include:

- Inability to track patient progress in completing screening tests
- Inability to track down the date of a prior screening
- Not enough time to discuss screening with patients

- Delay in scheduling procedures
- Delay in receiving screening results
- Concurrent care provided by specialist

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 6 was lack of transportation. Many of the practices focused their efforts on decreasing patient barriers, in particular for breast and colorectal screenings. One method of decreasing barriers to screening that was heavily emphasized this year was the use of the local mammography coaches. Many of the practices involved in this project have agreements with the coaches in Rochester or Buffalo. The mammography coach in Buffalo was already established in the area and has existing relationships with participating practices. During Year 5, Rochester practices were linked with a newly funded mammography coach in Rochester through connecting contacts. In Year 6, four Rochester practices were utilizing the mammography coach and a fifth practice had an agreement in place to start offering the service in August.

As in previous years of the project, there has been continued focus on providing FIT kits to patients at the practices. FIT kits are now available to patients at all the practices involved in this project so the goal has shifted to increased utilization. Some practices are attempting to increase the use of FIT kits by continually training staff on their use so they can inform patients. Many other practices have directly mailed out FIT kits to patients due for CRC screening, rather than waiting until they come in for an appointment. During focus groups/interviews, several participants said this was useful for patients who are due for a rescreen since they are more likely to complete the FIT test after already doing it once.

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 and Rochester 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.

Social determinants as a whole were a concern for practices this year. Participants in the focus groups/interviews reported that along with transportation and health literacy, child care, housing insecurity, and food insecurity were also barriers to preventive care in general and to cancer screenings in particular. Several practices provided case

managers and social workers to help patients address such barriers, while another practice used their health home to refer patients to care management outside their practice. One focus group participant suggested that to have the most impact on cancer screening rates, they needed to "have a one-stop shopping thing for patients, so having like a medical village or having something where patients can go and not only meet their healthcare needs but also meet their food needs, transportation needs, childcare needs."

One practice participating in the Year 6 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.

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. Cervical cancer, in particular, was an issue for all practices, as even practices that offer Pap smears find that many of their patients prefer to visit an OB/GYN for the service. 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.

During focus group interviews, practice managers highlighted the difficulty of coordinating and communicating with specialists who provide screenings to patients. One practice mentioned that they have an OB/GYN inside of their building, but still have difficulty getting the results from cervical screenings back into their EHR. Another practice with a large refugee population stated that they had trouble scheduling patients with specialists in the same health system due to a stigma that refugees would be difficult to work with. Lastly, practices noted the long wait times once a patient has agreed to a colonoscopy, which can lead to the patient not complying. These challenges make it difficult to get patients screened, and to keep accurate records of their completed screenings.

VII. Recommendations

Assessment of Influential Factors on Screening Rate Data

A major component of this project is tracking screening rates for the 3 cancers that are the focus of this project. Yet the varied quality of screening rate data from participating practices has been an ongoing issue. As discussed in VI. Lessons Learned & Implications, there are several factors adding to the variability of the data, from changes in screening guidelines or the calculation method to major practice changes in management or in their EHR system. Another factor is the difficulty closing the loop with specialist practices, which necessitates workarounds to accurately track patient screenings. While practices have added new workflow and strategies to combat these issues, problems remain.

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.

Longitudinal Data Reporting

A more proximate step that can be taken is to work more closely with practices in defining their patient panel. During this project year, many of the practices had difficulty not only with data variability in their EHR system, but with the process of defining their denominator and numerator for their data pull. A prime example of this difficulty is Practice 1, who experienced a change in the staff person who pulled data and calculated their rates for this project between the pre and post practice facilitation period. The staff turnover resulted in a huge change in denominator and numerator, revealing what is likely a change in the definition of their patient panel rather than a sharp drop in cancer screening rates. Such difficulties are not limited to changes in staff and screening guidelines, as changes in the patient population itself also increase the difficulty of defining patient panels for practices without population health expertise. Providing more guidance to practices in defining their patient panels is necessary to improve the reliability of measurements such as cancer screening rates.

A guide for reporting screening rates is strongly recommended. It is important to provide specific guidelines for each rate because practices have differing definitions of their “eligible” screening population. Since there is often a gap in time between speaking with site contacts and their processing the data request, verbal instructions can be forgotten. Further complicating data reporting is the recent transition of the Rochester practices to the larger Rochester Regional system, as many of these requests are filled by an IT team. This places the busy site coordinators in the middle, between practice facilitators and their IT department, forcing them to relay questions

and answers on data specifications for their IT department. An instructional guide would be an efficient solution to this situation.

Additionally, there have been changes in the practices that have participated in this project. Our longitudinal reporting is limited to those that have completed all years.

A Team Approach to Sustaining Cancer Screening QI

Another important component of this project is practice engagement. As discussed in the previous section, staff turnover and competing demands are ongoing challenges for the practices, and can often be barriers to the completion of activities for this project. We recommend the development of increased provider and staff engagement with quality improvement within the practices, especially through a team approach. The majority of the practices in Rochester and Buffalo had limited project involvement from practice staff besides a primary site contact who worked with the practice facilitators. This placed a large burden on a single staff member that was involved in the project. This was especially apparent during deadlines when the site contact had to balance providing data reports with managing the interventions at their practice. Creating workflows that involve multiple team members will alleviate burden on a single person and enhance sustainability of interventions that are put in place. Having greater involvement from other staff members at the practice could relieve some of this burden on the primary site contact. It would also benefit the project to have insight from other staff members on the practice. Developing a stronger team approach to quality improvement among providers and staff would not only increase engagement and sustainability of QI practices as a whole, but could also maintain momentum on project specific activities when the project champion is pulled away by competing demands.

Primary care practices, particularly those providing care to underserved communities facing many social determinants, are in a constant state of chaos, with ever changing patient panels, systems changes, few resources, and staff changes. One recommendation is to offer guidance on how to build QI teams, assist in identifying who in the practice has the necessary skills sets to contribute to the team. Ideally, the team would need leadership to ensure screening activities remain a priority, clinical expertise to interpret and implement guidelines, management/administration to design the queries, enforce workflows, etc., and IT support to ensure information systems and queries are optimized according to the specifications set by the rest of the team. Guidance can be given to development of workflows and communication strategies to engage the team around these efforts.

Implementation of Priority Evidence-Based Interventions

As for barriers to cancer screening, this year the team created an intervention guide that provides a discrete list of priority evidence-based interventions that practices can choose from and work on during future years of the project. The intervention matrix 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. The goal was to identify strategies for overcoming screening barriers that have been successful and are already operationalized so that practices don't feel overwhelmed by implementing something new. 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.

Academic Detailing

Finally, in the next project year, a stronger emphasis should be placed on interpreting the data that has been collected over the past 7 years to guide strategic decisions on next steps. Our ultimate goal is to improve cancer screening rates and thereby, improve early detection and treatment, improve quality of life for those diagnosed with cancer, and ultimately decrease cancer related mortality. We need to learn from the past six years on how to identify efficient and effective prevention efforts and keep them at the at the forefront in the ever-chaotic primary care environment. The focus should shift

- **away** from practice specific facilitation; and
- **toward** interpretation of data to drive prevention efforts to improve cancer related outcomes.

Appendix A: Project Logic Model

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**

I. Practice Characteristics 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 members of the care team 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 patients 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

II. Pre-Post Practice Facilitation Survey

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	×	×	×	×	×
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 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	×	×	×	×	×	×

III. Focus Group/Interview Script and Structured Guide

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 priorities** across these three cancer types?
   i. Probe: for example, did your practice try to implement strategies on all 3 cancers, or did you focus on one cancer type?

b. **How did you determine your focus** for this year's project?

c. How did last year's work shape what you worked on this year?
   i. How do your **challenges with screening** vary by each cancer? How did these challenges shape your strategies?
   ii. How did your work in cancer screening influence practice policies? For example, did your practice **implement any new policies** related to cancer screening?

d. What **plans** does your practice have to **continue this work**?
   i. How important were the **monetary incentives** offered under this project (e.g. project stipend)?

e. What were **your practice's biggest barriers to increasing screening** for each cancer type?
   i. Probe: Are there particular barriers that affect your patient population, such as transportation? What about barriers in dealing with other parts of the healthcare system, such as specialists or insurance companies?

f. How would you describe the **level of involvement across the staff** at your practice in this project?
   i. Was there a **particular individual in the practice that championed** the project? How?

II. Questions regarding **practice facilitator interactions**

a. Overall, how did the PF impact your practice?
   i. Probe: How useful to your practice was it to have a practice facilitator?

b. How did the facilitator interact with providers and staff at the practice? Who was their **main contact**?
   i. How important were these relationships in terms of achieving project goals?

c. **What type of interaction would you like to see** with your practice facilitator?

d. What types of **quality improvement topics** were reviewed by your practice facilitator?
   i. How did you incorporate these quality improvement ideas into your work on cancer screening?
   ii. What is the **quality improvement culture** like at your practice?

III. Where do you most need **help**? How would having this need met **affect your strategies** to increase cancer screenings?

a. In thinking about the next 2 to 3 years, what could you do to have the largest impact on improving cancer screening rates?

IV. Do you have any comments or **feedback** you'd like to share in regards to the **project administration?**

IV. TRANSLATE and Evidence-Based Intervention Evaluation Rubrics

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, EHR) 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	+2	0	+1	+1	+2	0	0	0	0	+6
P2	+1	+1	0	+1	0	0	+1	0	0	+4
P3	+2	0	0	+1	0	+1	+1	0	+1	+6
P4	0	+1	0	+1	0	0	+1	0	+1	+4
P5	0	0	0	+1	0	+1	+1	0	+1	+4
P6	+1	0	+1	0	+1	0	+3	0	0	+6
P7	+1	-1	0	+1	0	0	+1	0	+1	+3
P8	0	0	0	0	0	0	0	0	0	0
P9	0	0	0	0	0	0	0	0	0	0
P10	0	0	+1	0	0	0	0	-1	0	0
P11	0	0	0	0	0	0	0	0	0	0
P12	0	0	+1	+1	+1	0	+2	0	0	+5
Avg. Score	+0.583	+0.083	+0.333	+0.583	+0.333	+0.166	+0.833	-0.084	+0.333	+3.163
Median Score	+1	0	+1	+0.5	0	+0.5	+1	0	0	+4

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	0	0	+1	+1
P2	0	0	0	0	0
P3	+1	0	0	+1	+2
P4	0	+1	0	0	+1
P5	0	0	+1	0	+1
P6	+1	+1	+1	+1	+4
P7	0	+1	+1	+2	+4
P8	0	0	0	0	0
P9	0	0	0	0	0
P10	+1	0	0	+1	+2
P11	0	0	0	0	0
P12	0	0	0	0	0
Avg. Score	+0.25	+0.25	+0.25	+0.50	+1.25
Median Score	0	0	0	+1	+1

PRACTICE: P1				
RUBRIC ELEMENT	**PRE-SCORE**	**PRE-COMMENTARY**	**POST-SCORE**	**POST-COMMENTARY**
Target	2	Practice has set improvement targets, but it is not clear how realistic they are or whether the practice will fully implement them.	4	Practice has clear, measurable improvement targets set, and the resources to make implementation feasible.
Reminders	3	CDS is available, but it is not clear how consistently it is used.	3	CDS is available and the EMR dashboard makes it possible for individual providers to monitor their own progress towards benchmarks, but it is not clear how consistently this is used across providers and as a whole-practice protocol.
Administrative Buy-In	3	The administration has provided resources through its personnel involved in the project, but does not appear to be fully engaged in it.	4	A member of the administration has been engaged in QI activities and meetings, while admin as a whole has allocated resources to support the project.
Network Info. Systems	3	Practice does have the ability to create registries and expresses interest in population health management but it is not clear how regular and established the workflow is in the office.	4	Practice has a data team that regularly creates registries, as well as patient navigators dedicated to population health management. However, the navigators are focused on patients with chronic conditions like diabetes; it is unclear how often cancer is a focus of their population management.
Site Coordinator	2	Several personnel are involved in this project, so there are two who act as site coordinators. Both are busy and it is common to have long delays in communicating with the PF.	4	A member of admin who has been involved in the project for the past two years is now the clear site coordinator, as the data coordinator left the practice. She regularly communicates with the PG and has facilitated project completion within the practice.
Local Clinician Champion	2	Clinical champion is clear, but he has many competing priorities and also does not seem to be on the same page as the two site coordinators. He has many ideas for QI, but the coordinators do not appear to view the ideas as feasible and they would be the ones tasked with implementing them.	2	The clinical champion is still at the practice, but he has many competing priorities. Further, the practice's QI team for this project no longer appears to involve the champion, as he has not attended any project meetings this year.
Audit and Feedback	2	The practice does track its rates, but it is unclear whether/when feedback is provided beyond the providers.	2	The practice does track its rates, but it is unclear whether/when feedback is provided beyond the providers.
Team Approach	2	Practice has multiple personnel involved in QI for this project, but it is definitely top-down with no representation from staff.	2	The practice has multiple personnel involved in QI for this project, and indeed made the effort to replace a team member who left the practice during this project year. However, the team is definitely top-down with only admin and data personnel included, and no providers or staff directly involved in meetings with the PF.
Education	2	Practice does have an office for a GI oncologist in the building, and tries to do warm handoffs between patients and the specialist, but it is unclear how often this workflow is actually followed and	2	Practice does have a GI oncologist in the building on Mondays, and tries to do warm handoffs between patients and the specialist, but there appears to be no chance for practice staff to benefit from

		whether staff benefit from education and training with the specialist.		education and training with the specialist.
TOTAL TRANSLATE	**21**		**27**	
Client Reminders	3	Practice uses telephone reminders.	3	Practice uses telephone reminders regularly, and has tried letters.
Small Media	2	Some small media, but not for all 3 cancers.	2	Some small media, but not for all 3 cancers.
One-on-One Education	2	Providers and nurses usually do one-on-one ed with patients, but there are also patient navigators at the practice, whose workflow includes talking with patients about chronic health issues. It is not clear whether/how often this includes cancer screening ed.	2	Providers and nurses usually do one-on-one ed with patients, and on Mondays patients due for a CRC screening are walked up to talk with the GI oncology specialist. There are also patient navigators at the practice, whose workflow includes talking with patients about chronic health issues. It is not clear whether/how often this includes cancer screening ed.
Structural Barriers	3	Practice regularly participates in the mobile mammography program at both sites, but has been inconsistent in scheduling patients to attend. Practice also has an on-going relationship with the OB/GYN practice next door to its main site, and sends patients there for cervical cancer screenings. As stated above, practice also has an office space for a gerontologist who is present once a week to meet patients and discuss the colonoscopy procedure, but it is unclear how often this actually happens. Alternatively, practice does provide FIT tests.	4	Practice hosts a mobile mammography bus once a month at both sites, but has been inconsistent in scheduling patients to attend. Practice also has an on-going relationship with the OB/GYN practice next door to its main site, and sends patients there for cervical cancer screenings though it has been difficult to get results back at times. As stated above, practice also has an office space for a GI oncologist who is present on Mondays to meet patients and discuss the colonoscopy procedure, as well as perform a rectal exam. Alternatively, practice does provide FIT tests though providers prioritize colonoscopy.
TOTAL EBI	**10**		**11**	

PRACTICE: P2				
RUBRIC ELEMENT	**PRE-SCORE**	**PRE-COMMENTARY**	**POST-SCORE**	**POST-COMMENTARY**
Target	3	General targets have been identified, but need to work with the PF to set clear, feasible implementation plans.	4	The practice identified some general targets with the PF, but then set in place a very clear and feasible implementation plan due to a grant they received for breast cancer.
Reminders	3	CDS for CRC screening reminders was a big part of the practice's grant last year. However, there is more limited use of such for breast, and none for cervical cancer as they do not offer OB/GYN services.	4	CDS for CRC screening reminders was a big part of the practice's grant last year. This year, with the new grant they have set in place CDS and monitoring for breast cancer screening. However, there are none for cervical cancer as practice does not offer OB/GYN services.
Administrative Buy-In	3	Some buy-in, but no dedicated QI team for this project.	3	There is some admin buy-in with QI activities being a priority, as seen by the practices' cancer screening grants, but there is no dedicated QI team.
Network Info. Systems	3	Practice can and does generate registries, but it is unclear how regularly this occurs.	4	Practice generates registries regularly and has implemented new workflow thanks to a grant that funds two employees to do weekly record clean-up and registries. Grant is for breast, but practice has implemented same workflow for colorectal. Nothing for cervical, as do not offer OB/GYN services and so do not track.
Site Coordinator	3	Site coordinator is identified, and communicates with PF. However, she is now the manager of two practices, both of which are participants in this project, and as such has very limited time.	3	Site coordinator is identified and communicates semi-regularly with the PF. Difficulty is that she manages two practices, both of which participate in this project, and as such has very limited time and can be hard to get a hold of.
Local Clinician Champion	2	Champion has been identified by site coordinator, but has yet to meet with the PF and did not attend the kickoff meeting. It is very unclear whether she will be involved, due to her competing priorities.	2	Champion from previous years was identified as such for this year by the site coordinator at the kickoff, but she never met with or communicated with the PF. It is unclear whether she will be more involved in the future.
Audit and Feedback	2	Practice does perform audits regularly for CRC, but has been less concerned with breast cancer while they have had a CRC-specific grant. No emphasis on cervical since they do not offer OB/GYN services, so no audits on it.	3	Practice performs audits regularly for CRC and breast cancer, and provides feedback to providers. No audits for cervical since they do not offer OB/GYN services.
Team Approach	1	No QI team for this project.	1	Still no QI team for this project, and no apparent initiative to create one.
Education	3	Practice provides training and education regularly, but is focused on providers--specifically residents.	3	Practice provides training and education regularly, but is focused on providers--specifically residents.
TOTAL TRANSLATE	**23**		**27**	
Client Reminders	2	It is unclear how often the practice offers client reminders for screenings outside of patient visits.	2	It remains unclear how often the practice offers client reminders for screenings outside of patient visits.

Small Media	4	Practice has up-to-date media on all 3 cancers, as last year for this project they added digital displays in each exam room with patient education materials loaded.	4	Practice has up-to-date media on all 3 cancers, due to their work with the PF last year to add digital displays in each exam room with patient education materials loaded.
One-on-One Education	2	Patient education is largely the purview of providers and nurses, with supporting material like small media.	2	Patient education is largely the purview of providers and nurses, with supporting material like small media.
Structural Barriers	3	Practice uses the mobile mammography bus and connects patients with the GI specialist on its medical campus. Does not provide cervical screenings as does not offer OB/GYN services.	3	Practice continues to use the mobile mammography bus and refers patients to the GI specialist on their medical campus. Does not provide cervical screenings as does not offer any OB/GYN services.
TOTAL EBI	**11**		**11**	

PRACTICE: P3				
RUBRIC ELEMENT	**PRE-SCORE**	**PRE-COMMENTARY**	**POST-SCORE**	**POST-COMMENTARY**
Target	2	General targets have been identified, but need to work with the PF to set clear, feasible implementation plans.	4	The practice identified general targets with the PF, but then set in place a very clear and feasible implementation plan due to a grant they received for breast cancer.
Reminders	3	CDS available, workflow established, but there appears to be fatigue with the number of notifications/reminders.	3	CDS is available and used regularly, but inconsistency can be a problem due to notification fatigue and the acute issues a patient presents.
Administrative Buy-In	3	Some admin buy-in, but no dedicated QI team.	3	There is some admin buy-in with QI activities being a priority, as seen by the practices' cancer screening grants, but there is no dedicated QI team.
Network Info. Systems	3	Practice does generate registries, but unclear how consistently this occurs. Workflow is for registries to be cleaned 2x a year, but this requires extra hours from willing staff.	4	Practice generates registries regularly and has implemented new workflow thanks to a grant that funds two employees to do weekly record clean-up and registries. Grant is for breast, but practice has implemented same workflow for colorectal and cervical.
Site Coordinator	3	Site coordinator is identified, and communicates with PF. However, she is now the manager of two practices, both of which are participants in this project, and as such has very limited time.	3	Site coordinator is identified and communicates semi-regularly with the PF. Difficulty is that she manages two practices, both of which participate in this project, and as such has very limited time and can be hard to get a hold of.
Local Clinician Champion	1	This site does not have a clinical champion, however one provider who attended the event was interested and could become the site champion. Unclear whether he will have time with his competing priorities.	2	This site does not have a clinical champion per se. The provider who attended the kickoff has continued to express interest in the work but do to competing priorities could not re-connect.
Audit and Feedback	1	It is not clear that any audits occur regularly. For example, FIT test return rates are not known.	2	Practice performs audits regularly, but does not widely disseminate. Also continues to have some issues with consistent workflow-- FIT tests are supposed to be tracked but this occurs inconsistently.
Team Approach	1	Practice does not have a QI team.	1	Practice still does not have a QI team and there is no apparent initiative to create one.
Education	2	Unclear how consistent training availability is, and it is largely focused on providers.	3	There is regular training and education for the residents, but not across all levels of clinicians and staff.
TOTAL TRANSLATE	**19**		**25**	
Client Reminders	3	Practice uses telephone reminders, and has tried letters. However, it is difficult since their patients do relocate or change phone numbers, often without notifying the practice.	4	Practice uses telephone reminders regularly, but continues to have difficulties with patients relocating or changing phone numbers and not notifying the practice. They also utilize a patient ambassadors group to make

				scheduling, reminder, and follow up calls to women for breast cancer screenings on the mobile mammography bus.
Small Media	4	Practice has up-to-date media on all 3 cancers, as last year for this project they added digital displays in each exam room with patient education materials loaded.	4	Practice has up-to-date media on all 3 cancers, due to their work with the PF last year to add digital displays in each exam room with patient education materials loaded.
One-on-One Education	2	Patient education is largely the purview of providers and nurses, with supporting material like small media.	2	Patient education is largely the purview of providers and nurses, with supporting material like small media.
Structural Barriers	3	Practice has the mammography bus come every month so patients can be screened on site for breast cancer. Practice has an OB/GYN who provides cervical cancer screenings on site. Practice also offers FIT tests but not all providers are supportive of this alternative to colonoscopies since so many patients have risk factors, comorbidities. There is a GI office on the medical campus, but often delays in scheduling--though not nearly as bad as last year.	4	Practice continues to use the monthly mammo bus to screen patients on site, and uses the patient ambassadors group to schedule appointments and make reminder calls. The practice also provides cervical cancer screenings on site. They do FIT tests but some providers focus on colonoscopies since many of their patients have risk factors, comorbidities. There is a GI office on the same medical campus, but delays in scheduling can still be a barrier.
TOTAL EBI	**12**		**14**	

PRACTICE: P4				
RUBRIC ELEMENT	**PRE-SCORE**	**PRE-COMMENTARY**	**POST-SCORE**	**POST-COMMENTARY**
Target	4	Practice has clear targets, and is working with PF to set feasible implementation plans. Two confirmed plans are to clean up the CRC screening registry, and to send out reminder letters to women due for a mammogram.	4	Practice has clear and feasible targets, and has been successfully implementing.
Reminders	3	CDS is available, and in use, but the amount of monitoring is unclear.	4	CDS is used regularly, and the practice is more closely monitoring.
Administrative Buy-In	3	Some admin buy-in, but no dedicated time & resources for a QI team. More of a focus on QI activities, but lacking an effort for sustainability.	3	There is admin buy-in, but not dedicated time & resources for a QI team. However, there is clear support for sustainable QI activities led by the site coordinator/clinical champion.
Network Info. Systems	3	Practice regularly runs registries for breast cancer screenings, but it is not clear that registries are regularly generated for cervical and colorectal screenings. Last year, the practice began cleaning up these registries as part of this project, but did not get to the CRC registry. Will likely continue this cleanup process this year.	4	Practice regularly runs registries for all three cancer screenings, and has completed initial cleanup of the registries as part of this project. They are now moving on to a second level of clean up that involves adding permanent deferments for women who are unable to receive mammograms (group home patients who cannot be touched), and better targeting their registry to the USPSTF guidelines (50 -75 yo).
Site Coordinator	3	Site coordinator is identified and regularly communicates with the PF. She is also the clinical champion. However, she has many demands on her time so dedicated time is uncertain.	3	Site coordinator is identified and regularly communicates with the PF. She is also the clinical champion though, so has many competing demands on her time. Still, she prioritizes QI activities.
Local Clinician Champion	4	Local clinical champion is an enthusiastic supporter, and as the site coordinator is in a position to prioritize and encourage this project's activities.	4	Local clinical champion continues to be an enthusiastic supporter, and since she is still the site coordinator remains in a position to prioritize and encourage this project's activities.
Audit and Feedback	3	Practice does track screening rates, and feedback is given to providers and staff. It is unclear how regularly this process occurs.	4	Practice tracks their screening rates, and feedback is given to providers and staff regularly. The coordinator at times uses incentives to encourage friendly competition for raising rates.
Team Approach	1	Practice does not have a QI team.	1	Practice still does not have a QI team, and there is no apparent initiative to create one. However, the PF has worked to make staff more knowledgeable about the project and the coordinator involves providers and staff in QI activities as their roles pertain to them.
Education	2	Cancer screening trainings are inconsistent, and largely focused on residents.	3	Cancer screening trainings are routine but largely focused on residents. There are inconsistent wider trainings that involve staff.
TOTAL TRANSLATE	**26**		**30**	

Client Reminders	3	Practice uses a patient ambassadors group for telephone reminders and scheduling assistance for mammograms, and is instituting a letter to remind women that they are due. Unclear whether reminders for cervical and colorectal screenings happen outside patient visits.	3	Practice uses a patient ambassadors group for telephone reminders and scheduling assistance for mammograms, and is instituting a letter to remind women that they are due. Practice is also implementing a letter to patients due for a FIT test to inform them about Cologuard and let them know to call their insurance to see if it is covered. They do not offer assistance with scheduling.
Small Media	3	The practice has a display on their bus days for mobile mammography. Also plays a video with patient testimonials reminding people to get screened. Nothing specific on cervical cancer.	4	There is a poster with the bus days for mobile mammography and a video with patient testimonials reminding people to get screened in the waiting room. This year, the PF worked with the practice to create and hang a poster in every exam room reminding patients to inform their doctor if they have been screened for colorectal, cervical, or breast cancer outside the clinic.
One-on-One Education	2	Patient education is largely done by providers.	2	Patient education is largely done by providers, with some supporting materials.
Structural Barriers	4	Practice has the mammography bus come every other month so patients can be screened on site for breast cancer. Practice has an OB/GYN who provides cervical cancer screenings on site. Practice also encourages the use of FIT tests for patients who cannot/won't access a GI specialist for their colonoscopy.	4	They use the mammo bus every other month so patients can be screened on site for breast cancer. Practice also has an OB/GYN who provides cervical cancer screenings on site, but otherwise refers patients out. Their SOP is to encourage FIT tests for patients who cannot/won't access a GI specialist for their colonoscopy, and now the practice is implementing Cologuard as another option. The coordinator feels it will help with barriers, too, since the FIT-DNA test is every 3 years.
TOTAL EBI	**12**		**13**	

PRACTICE: P5				
RUBRIC ELEMENT	**PRE-SCORE**	**PRE-COMMENTARY**	**POST-SCORE**	**POST-COMMENTARY**
Target	4	The providers at the practice have a much better idea of their screening rates this year. At the kickoff meeting, one physician had screening rates for all 3 cancer types. The providers at the practice also had a good discussion about where they need to improve their rates.	4	The site coordinator is head of the QI team, and it shows in the practice's clear targets and feasible implementation plans.
Reminders	3	Similar to last year there are issues with reminders at this practice being not up to date, or too many which overwhelms providers. The other issue with the reminders that are used in the EMR is that they are often not updated in the "health maintenance" tab of the EMR, which is where providers look to make sure PTs are up to date on their screening. The practice is working to improve this.	3	CDS is available, and there is workflow for consistent use, but it is not clear how regularly this is monitored for consistent use.
Administrative Buy-In	2	At the kickoff meeting there were two providers, a dietitian, and a practice manager, which was more practice staff that in last year's kickoff meeting. However, it remains to be seen how involved the additional staff who were at this meeting will be. Often times with this practice the additional staff do not stay involved in the project.	2	While there appears to be buy-in for QI overall that includes cancer screening, there were limited resources for this project. It was difficult to communicate regularly with the champion, resulting in minimal availability for practice facilitation.
Network Info. Systems	2	A physician generated a registry for the kickoff meeting but the other practice staff who were at the meeting did not seem to be aware of the screening numbers of the practice. Additionally, from working with the practice last year, it does not seem that the practice generates this registry frequently outside of this project.	3	Practice regularly pulls registries for FIT tests, but the patient population can make it difficult to get records. RHIO is helpful for this, but can also produce limited results. The situation is further complicated by the fact that providers only work part time for this clinic, and data pulls regularly include their patients from other sites.
Site Coordinator	2	One physician is both a provider at the practice and on the hospital side so his schedule is very busy. Often times he does not have time to dedicate to this project in a meaningful way. It can also be very challenging to get in touch with him through email for this project.	2	The site coordinator is extremely busy, making communication an on-going challenge and resulting in him being largely uninvolved in the project.
Local Clinician Champion	1	No local clinician champion has been identified for this project.	2	The site coordinator is a provider with the clinic, so is basically the champion as well. However, he is extremely busy so has been largely uninvolved.
Audit and Feedback	2	Practice performs cancer screening audits, but they are infrequent. There was discussion between providers about what exactly should be looked at in the registry, which gave the sense that these providers do not frequently use them,	3	The practice regularly performs audits, and has meetings with various levels of staff for feedback. However, it is unclear how often cancer screenings are the focus of the audit.

		and there is not an established workflow.		
Team Approach	1	No QI teams are formed for this project.	1	There remains no QI team for this project.
Education	2	There are CME opportunities available for staff at this practice, but not on a consistent or frequent basis.	3	There are regular staff trainings now, but it is unclear how often cancer screening is the focus. This is further complicated by high staff turnover.
TOTAL TRANSLATE	**19**		**23**	
Client Reminders	3	This practice has the unique challenge of working with a primarily transient population, which makes communication to these patients difficult. The practice does have a "text-blast" system that is used to send patients appointment reminders, but many of the patients don't have access to a cell phone.	3	The patient population is transient, making it difficult to have a regular protocol for reminders. They do use text message reminders for those who have phones.
Small Media	3	There are educational handouts for patients to look at but they do not cover all the screening tests covered in this project.	2	Some media available, but not for all 3 cancers.
One-on-One Education	2	Only nurses and providers provide one-on-one education to patients, and it is only when they have time or something specific to address.	3	Nurses and providers provide one-on-one education to patients. Case managers are also available to work with patients on barriers like transportation.
Structural Barriers	4	Providers at this practice go to shelters in the area and treat patients on site. Additionally, this practice is beginning to work with the Rochester mammography bus to provide breast cancer screening on site of the practice.	4	Providers at this practice go to shelters in the area and treat patients on site. They work with the local mammography bus to provide breast cancer screening on site of their sister practice, and are also partnering with the OB/GYN in the same building. Further, case managers work with patients to overcome other barriers.
TOTAL EBI	**12**		**12**	

PRACTICE: P6				
RUBRIC ELEMENT	**PRE-SCORE**	**PRE-COMMENTARY**	**POST-SCORE**	**POST-COMMENTARY**
Target	2	The practice has ideas of where it would like to improve cancer screening, but not specific target goals and improvement mostly focused on breast cancer screening. There is a new practice manager who is unfamiliar with this project that can explain some of the gaps in knowledge surrounding the project.	3	The practice has screening improvement targets, and is pursuing specific strategies for breast (mammo bus) and CR cancer (FIT tests). Pap smears are done in house for most patients, but there is not a specific strategy to increase screening rates.
Reminders	3	The practice has reminders available but it is not clear how frequently they are used.	3	The practice has reminders available but as a same-day appointment only practice, it is unclear how often CDS is checked during acute appointments.
Administrative Buy-In	2	The practice is mostly focused on small incentive and "health day" projects to encourage more patients to attend their scheduled screenings.	3	The practice-level administration is very engaged, with resource allocation and support for QI activities. However, the practice is part of a larger system and it is unclear how much support/engagement occurs at upper levels, though benchmarks are set.
Network Info. Systems	4	The site coordinator said the practice generates registries to call patients and remind them of their screening appointments. This is just focused on patients who have been recommended for a screening by their provider. I am not sure how accurate the registries are in thei entirety.	4	The practice is part of Care Connect, and receives quarterly reports on their progress which include registries of patients who are due for procedures like cancer screenings. These registries are used to contact patients, follow up.
Site Coordinator	3	I am just meeting the new site coordinator for this practice but she seems very invested in the project and is excited to work with me. Unfortunately, she is the practice manager for two practices, and this caused many issues last year with the previous practice manager. Going forward will determine her ability to dedicate time to the project.	4	The site coordinator regularly communicates with the PF and sets aside time for QI activities and to complete project deliverables.
Local Clinician Champion	1	No local clinician champion identified.	1	There is still no local clinician champion identified, although the practice's 3 providers are reportedly involved in raising screening rates.
Audit and Feedback	1	Most of the cancer screening auditing done by this practice is during the data pulls of this project, but I don't think that they do this frequently on their own.	4	The practice has monthly meetings at all staff and provider levels, during which audits and feedback occur, as well as discussions of best strategies to address problem areas.
Team Approach	1	There are no QI teams formed for this project.	1	There is still no QI team for this project.
Education	2	Infrequent cancer screening training offered.	2	Infrequent cancer screening training offered-- providers take the "if it isn't broke" approach.
TOTAL TRANSLATE	**19**		**25**	

Client Reminders	3	Front office staff frequently call patients to remind them of screening appointments. Pamela said that patients are much more likely to go to their appointment when a staff member has called them.	4	Front office staff frequently call patients to remind them of screening appointments and to follow up. When there are open appointment slots, staff also call patients who have not come in for a while to follow up and get them back in.
Small Media	1	I did not see any cancer screening handouts in the waiting room of the practice, but there may be some in the exam room. I will have to follow up with the site coordinator.	2	There was a flyer on breast exams in the reception area, but I did not see material on the other 2 target cancers. Will need to check if there is material in exam rooms.
One-on-One Education	2	Only providers and nurses provide one-on-one education at this practice, I am not sure if there are materials that accompany this.	3	Providers and nurses work with patients, but are also supported by a social worker and a financial counselor. There was also a Diabetes educator until recently--they are now looking for a replacement.
Structural Barriers	3	Yes, the practice is now having the local mammography coach at the practice, it is going to the practice once a month and will be going anytime the adjacent school is on break.	4	The practice partners with a mobile mammography bus to reduce barriers for mammograms, and offers incentives for patients who do complete their screening. The practice also emphasizes FIT tests, since the patient population is unlikely to get a colonoscopy, and provides most of their eligible patients' cervical cancer screenings in practice.
TOTAL EBI	**9**		**13**	

PRACTICE: P7				
RUBRIC ELEMENT	**PRE-SCORE**	**PRE-COMMENTARY**	**POST-SCORE**	**POST-COMMENTARY**
Target	3	Similar to the rest of the practices in the area, this site struggles to get their CRC screening numbers up. They are also focusing on improving their breast cancer screening numbers by working with the local mammography bus.	4	This practice works in tandem with another practice in this project, including with the champion who is head of QI. They thus have similarly clear targets and feasible implementation plans. Right now their focus is on patient incentives for completing screenings.
Reminders	4	Doctors at this clinic are up to date on patient screening requirements based on EMR reminders. From these reminders they schedule patients for screening appointments through referrals. Patients will get reminders from providers every time they attend the practice and have yet to be screened.	3	CDS is available and a workflow has been developed. However, it is not regularly monitored. The site coordinator said it is the nurses who are responsible for looking at reminders, but that doesn't always happen.
Administrative Buy-In	2	Very limited resources dedicated to this project.	2	Though there is clear support for QI, including cancer screenings, there was little resource allocation for this project. It was impossible to communicate with the coordinator regularly due to how busy she was.
Network Info. Systems	2	Practice has the ability to generate a registry but it usually takes them a while to generate it, and there are often inaccuracies. They are hoping that with additional staff hires that they will be able to manage and clean their registries to a greater degree.	3	Practice regularly runs registries, but it is unclear how often this is for cancer screenings.
Site Coordinator	2	Site coordinator is very busy with other practice responsibilities and is an "interim" practice manager. I did not receive any details about if there is currently a search for a new practice manager or, what the timeline would look like.	2	The site coordinator was extremely busy as she manages two practices, and this year included a move to new offices and an operational site visit. It was extremely difficult to communicate with her, limiting the extent to which practice facilitation was possible.
Local Clinician Champion	1	There is no local clinician champion identified at this practice.	1	There is still no local clinician champion for this practice.
Audit and Feedback	2	Screening and auditing at this practice happens infrequently.	3	Auditing and feedback happens at monthly practice meetings, but it is unclear how regularly this includes cancer screenings.
Team Approach	1	No teams are formed for QI in this project.	1	There is still no team for this project.
Education	2	There are no open opportunities for practice staff to receive education. The academic detailing sessions that were set up through this project did offer a session for practice staff to learn about updated screening guidelines and implementation techniques.	3	There are trainings for staff somewhat regularly, but it is not clear how often this includes cancer screenings. Further, staff overturn is an on-going challenge.
TOTAL TRANSLATE	**19**		**22**	

Client Reminders	4	The practices reaches out to patients through mailings and phone calls. The practice also has front office staff call patients prior to their scheduled screening to make sure that they are still going to their appointment.	4	The practice provides regular reminders for patients, and also connects them to care managers to overcome barriers to accessing care.
Small Media	2	The practice has educational posters located around the practice related to health education, but they do not cover all 3 cancer types that this project is focused on. The practice has TVs in the waiting room but they play television shows instead of educational videos.	3	The practice has small media, but not for all 3 cancers.
One-on-One Education	2	Providers and nurses provide education to patients regarding cancer screening when the provider has extra time or if the patients specifically asks about it. The staff have some handouts for FIT kits that they can give to patients to help explain the screening method.	3	While providers and nurses provide patient education, care managers work with the patients to overcome barriers. There are also small media on FIT tests.
Structural Barriers	2	The practice provides scheduling assistance to patients using reminders and other methods so that patients don't forget that they have an appointment. A physician mentioned at the kickoff meeting last week that the practice and its sister practice (both enrolled in this project) would like to have a combined mammography coach screening day.	4	The practice has case managers to work with patients to overcome barriers. They have also partnered with the local mammography bus to provide on-site screenings for their patients. The practice has also partnered with the OB/GYN in their building to provide easy access to cervical screenings for their patients.
TOTAL EBI	**10**		**14**	

PRACTICE: P8				
RUBRIC ELEMENT	**PRE-SCORE**	**PRE-COMMENTARY**	**POST-SCORE**	**POST-COMMENTARY**
Target	4	Their targets are clear and attainable. They have seen progress growth over the years and leadership is highly engaged in setting these targets	4	Their targets are clear and attainable. They have seen progress growth over the years and leadership is highly engaged in setting these targets
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	Clinical decisions available but providers don't always use them. It is not monitored for consistency, but worked during this phase to improve utilization
Administrative Buy-In	3	QI team is well resourced and has been given time to improve screening rates, specifically CRC. Still struggle to get providers fully engaged, but leadership is highly engaged and supportative of the work	3	QI team is well resourced and has been given time to improve screening rates, specifically CRC. Still struggle to get providers fully engaged, but leadership is highly engaged and sup portative of the work
Network Info. Systems	3	Practice registry is strong and significant resources are allocated to updated and cleaning data. There is interest in moving to a new systems due to a few flaws found in the current system and due to low provider utilization	3	Practice registry is strong and significant resources are allocated to updated and cleaning data. There is interest in moving to a new systems due to a few flaws found in the current system and due to low provider utilization
Site Coordinator	3	Strong site coordinator who continues to grow into the leadership role and building a strong team. So when time is limited he is able to allocate work to other team members. Growth of the care coordination team is helping this	3	Strong site coordinator who continues to grow into the leadership role and building a strong team. So when time is limited he is able to allocate work to other team members. Growth of the care coordination team is helping this
Local Clinician Champion	2	Very minimal engagement with clinical leadership during this phase, only the QI team	2	Very minimal engagement with clinical leadership during this phase, only the QI team
Audit and Feedback	4	Information disseminated monthly and goals/targets are often updated	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, nursing increasingly engaged and now have 2 care coordinators just for screening improvement	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	1	Has not occurred since the last training we did	1	Has not occurred since the last training we did
TOTAL TRANSLATE	**26**		**26**	
Client Reminders	4	Client reminder system very strong and at a point where FIT kids are automatically being mailed to those who completed last year. Telephone, email, letter, and portal communication also exists	4	Client reminder system very strong and at a point where FIT kids are automatically being mailed to those who completed last year. Telephone, email, letter, and portal communication also exists
Small Media	2	Used occasionally and comes from ACS	2	Used occasionally and comes from ACS
One-on-One Education	3	Care coordinators are working to fill this role and the providers see it as a good shared responsibility. The only	3	Care coordinators are working to fill this role and the providers see it as a good shared responsibility. The only downside

		downside is when a coordinator is not on site this might be missed		is when a coordinator is not on site this might be missed
Structural Barriers	3	Care coordinators work actively to reduce structural barriers and support patients	3	Care coordinators work actively to reduce structural barriers and support patients
TOTAL EBI	**12**		**12**	

PRACTICE: P9				
RUBRIC ELEMENT	**PRE-SCORE**	**PRE-COMMENTARY**	**POST-SCORE**	**POST-COMMENTARY**
Target	3	The team has begun to set specific measureable targets but they have struggled to stick to their plan for implementation. When they can get a student or extra resources they are able to move this plan forward, but struggle when they do not have the extra man power.	3	The team has begun to set specific measureable targets but they have struggled to stick to their plan for implementation. They currently have a student supporting the implementation plan and making great progress. This often happens for this site, and once the student is done with their work the plan will fall apart again
Reminders	3	The reminder continues to be present and is effective but monitoring for consistent usage does not typically occur. This has been a focus of the team for many years, specifically around Paps	3	The reminder continues to be present and is effective but monitoring for consistent usage does not typically occur. This has been a focus of the team for many years, specifically around Pap smears
Administrative Buy-In	2	Administration unable to allocate much time due to increased responsibilities and organizational and staffing changes. Some concern about ability to continue now that the once private site is now affiliated with the hospital	2	Administration has stepped in as the site coordinator role and this seems to have limited buy-in. The site has done was is required of them, but has not been as engaged as years past.
Network Info. Systems	3	Practice has PCMH reports and uses registry often. Changes to EPIC and registry has given them increased confidence in this data	3	Practice has PCMH reports and uses registry often. The student has been actively engaged in working these registries and ensuring their accuracy. The student has identified a strong workflow that could be taken over by a hired employee if the time could be dedicated to this role
Site Coordinator	2	Previous site coordinator is no longer primary point of contract. There is some concern about how well it will go working with the new appointed site coordinator. She is unwilling to allow me to meet with the entire team, although I've had years of good experience with this team	2	Previous site coordinator is no longer primary point of contract. It has been difficult to meet with the new coordinator and the rest of the team in not available at these meetings
Local Clinician Champion	2	Clinical champion is very engaged when you can get him, but that has become increasingly difficult with changes to the organizational structure and the fact that there are now two sites. While he cannot always be fulling involved he still supports the work day to day	2	Clinical champion is very engaged when you can get him, but that has become increasingly difficult with changes to the organizational structure and the fact that there are now two sites. While he cannot always be fulling involved he still supports the work day to day
Audit and Feedback	3	Data is often reviewed and disseminated, but feedback is not always present. Often the data is just shared with no input. Data tends to be reviewed based on the two sites and not provider by provider.	3	Data is often reviewed and disseminated, but feedback is not always present. Worked with previous site coordinator to improve the data display and representation so they are able to see graphs of data over time. This was well received by providers and staff
Team Approach	1	A great team still exists but I'm not longer able to communicate with them, I'm concerned what this will mean for the work	1	A great team still exists but I'm not longer able to communicate with them, I'm concerned what this will mean for the work

Education	2	Practice tries to include educational information during regularly scheduled provider meetings, but it is done inconsistently. There is no push for CME-credited education within the practice that I am aware of. 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	Practice tries to include educational information during regularly scheduled provider meetings, but it is done inconsistently. There is no push for CME-credited education within the practice that I am aware of. 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.
TOTAL TRANSLATE	**21**		**21**	
Client Reminders	2	Reminder system available, and reminders happening through portal but this has fallen off the priority list	2	Reminder system available, and reminders happening through portal but this has fallen off the priority list
Small Media	2	A small amount of small media is available but used infrequently	2	A small amount of small media is available but used infrequently
One-on-One Education	2	Some providers actively engage in one on one education while others are not participating well	2	Some providers actively engage in one on one education while others are not participating well
Structural Barriers	2	Little being done to reduce structural barriers	2	Little being done to reduce structural barriers
TOTAL EBI	**8**		**8**	

PRACTICE: P10				
RUBRIC ELEMENT	**PRE-SCORE**	**PRE-COMMENTARY**	**POST-SCORE**	**POST-COMMENTARY**
Target	4	The staff at the practice, with the site coordinator as the lead, are very up to date and aware of the practices screening performance. During our kickoff meeting, the site coordinator was able to tell me the screening rates for their practice and where they needed to make improvements. She was also able to tell me what she wanted to work on this year and ideas from her staff. These plans were all realistic and obtainable.	4	The practice has clear improvement targets and strategies for raising screening rates. They came up against several barriers during implementation this year, but have been able to deal with them.
Reminders	3	The practice uses reminders to have patients screened for breast and colorectal cancer. The one area they are behind in using reminders is for cervical cancer screening. Part of the issue is that patients go downstairs to the OB/GYN for any cervical screening and for some reason patients are not being screened properly. The site coordinator and I discussed how we could capture more of those patients when they go for other routine procedures to the OB/GYN so that they also receive a Pap when they are there.	3	Practice uses regular reminders, but nurses do not always check when rooming a patient (which is the workflow).
Administrative Buy-In	2	This practice, like all the others in the area, are very busy working with their patients and do not have the resources to assign additional staff to this project. The site coordinator is my main point person on this project and does most of the work when we need data pulled. I do not expect to work with other staff or to receive additional support from the practice for this project.	3	The practice-level administration is very engaged, with resource allocation and support for QI activities. However, the practice is part of a larger system and it is unclear how much support/engagement occurs at upper levels, though benchmarks are set.
Network Info. Systems	4	Practice is easily able to generate registries. The practice is also beginning to use MyCares patient portal so that patients can view their own records and charts online.	4	Site coordinator runs registries on a regular basis from their Health Maintenance tab, and staff utilize the registries for population health management.
Site Coordinator	4	The site coordinator is dedicated with great EMR experience and understanding.	4	The site coordinator communicates regularly with the PF, and has set aside time for both QI activities and project deliverables.
Local Clinician Champion	1	No clinician champion identified.	1	Still no clinician champion identified.
Audit and Feedback	3	Screening rates are often monitored for improvement, but I am not sure how much of the practice is made aware of screening rates.	3	The practice performs audits and feedback, and disseminates to a team of staff that includes patient navigators and social workers, but it is not clear how regularly this occurs.
Team Approach	2	The site coordinator does most of the EMR work on this project and when asked about a QI team she stated that it	1	There is no QI team for this project, although varying staff members do work on QI activities.

		is primarily her responsibility alone. There was not another QI person that she could put me in contact with for this project.		
Education	2	The practice trains their staff but it is not clear how often this happens or the level of training given.	2	It is not clear how often/how regularly training occurs and at what levels.
TOTAL TRANSLATE	**25**		**25**	
Client Reminders	3	MyCares is a new patient portal that the practice uses to allow patients to see their results online. The site coordinator also told me that she would like to begin using it as a reminder system for patients so that they know when they are due for screenings. We also discussed the possibility of sending paperwork for screening reminders through this system.	4	The practice uses telephone reminder and follow up calls, and also assists patients in scheduling appointments with specialists.
Small Media	3	The site coordinator told me that the doctors have some materials they hand out to patients but couldn't specify what they were exactly. Another possibility we discussed was to have the front office staff hand patients screening information prior to their appointment if they are due for a screening.	3	Practice has some small media available in the waiting room, but it is unclear whether patients receive material in the exam room.
One-on-One Education	3	Multiple levels of staff are involved in cancer screening but it seems that the providers are the main source of education in most cases.	3	Multiple levels of staff are involved in cancer screening support, but providers and nurses are the main educators. They are supported by social workers and patient navigators.
Structural Barriers	3	The practice has a mammography clinic on the campus and an OB/GYN on the floor below which addresses breast and cervical screening. There is not as much support for colorectal screening at this practice.	4	The practice has a mammography clinic on the campus and is also working with the mobile mammography bus to increase breast cancer screenings. They also have patient navigators to assist with colonoscopy, including a staff member who does home visits to teach proper prep. The practice also works with the pharmacy in their building to create prep kits, and used part of the project stipend to purchase Gatorade for the prep kits. FIT tests are used for patients who do not want to get a colonoscopy. As for cervical cancer screenings, there is an OB/GYN in the building that patients use. However, there was staff turnover at that clinic and since then communication has been spotty and it is difficult to get patient results. The site coordinator has been attempting to reestablish the relationship.
TOTAL EBI	**12**		**14**	

PRACTICE: P11				
RUBRIC ELEMENT	**PRE-SCORE**	**PRE-COMMENTARY**	**POST-SCORE**	**POST-COMMENTARY**
Target	3	Data is reviewed routinely, and targets are established based on leadership and insurer incentives. An implementation plan has not been developed therefore implementation is unrealistic.	3	Data is reviewed routinely, and targets are established based on leadership and insurer incentives. An implementation plan has not been developed therefore implementation is unrealistic.
Reminders	2	Clinical decision is available but care management staff report this is often overlooked at point of care. Care management team works on outreach before and after appointments. Often staff consider this the care management team's role and there is, at times less focus on the point of care changes. This is different when care management is on site and can "catch patients as they come in"	2	Clinical decision is available but care management staff report this is often overlooked at point of care. Care management team works on outreach before and after appointments. Often staff consider this the care management team's role and there is, at times less focus on the point of care changes. This is different when care management is on site and can "catch patients as they come in"
Administrative Buy-In	2	Administration unable to allocate much time due to increased responsibilities and organizational and staffing changes.	2	Administrative buy in decreased throughout this year due to competing demands
Network Info. Systems	3	Practice successfully uses CPCI for registry functions. Coordinators report this system works very well and they are able to run reports routinely	3	Practice successfully uses CPCI for registry functions. Coordinators report this system works very well and they are able to run reports routinely. They are also trying to use HealtheConnections more this year.
Site Coordinator	4	New site coordinator role given to one of the care coordinators as the QI leader is too busy with other work. She has been very good to work with and responsive	4	New site coordinator role given to one of the care coordinators as the QI leader is too busy with other work. She has been very good to work with and responsive. QI Director is leaving the organizations shortly and I'm unsure what impact this will have on the team.
Local Clinician Champion	1	Currently the previous clinical champion is not involved as he is engaged in other organizational projects	1	Currently the previous clinical champion is not involved as he is engaged in other organizational projects
Audit and Feedback	3	Routine audits continue to occur. Cervical cancer improvements is a current focus. Breast cancer becomes a focus when they are planning for the mammo bus, and colorectal occurs routinely with a new focus on mailing fit kits	3	Routine audits continue to occur. Cervical cancer improvements is a current focus. Breast cancer becomes a focus when they are planning for the mammo bus, and colorectal occurs routinely with a new focus on mailing fit kits
Team Approach	3	Continues to be a strong team, and the new members are finding their roles well.	3	There has been some turnover within the team with 2 members leaving and two new ones added. They've only been added in the past month.
Education	2	Very little education is occurring and there is no interest in starting this any time soon	2	Very little education is occurring and there is no interest in starting this any time soon
TOTAL TRANSLATE	**23**		**23**	
Client Reminders	3	Reminder systems are utilized both through telephone and letters and the patient portal	3	Reminder systems are utilized both through telephone and letters and the patient portal

Small Media	2	A small amount of small media is available but used infrequently	2	A small amount of small media is available but used infrequently
One-on-One Education	2	Some providers actively engage in one on one education while others are not participating well	2	Some providers actively engage in one on one education while others are not participating well
Structural Barriers	3	A strong partnership with a hospital mammo bus has helped reduce some structural barriers. Still a struggle to address barriers with colonoscopy. Team working to utilize Cologuard but is having difficulty getting the lab to pay due to contract issues	3	A strong partnership with a hospital mammo bus has helped reduce some structural barriers. Still a struggle to address barriers with colonoscopy. Team working to utilize Cologuard but is having difficulty getting the lab to pay due to contract issues
TOTAL EBI		**10**	**10**	

PRACTICE: P12				
RUBRIC ELEMENT	**PRE-SCORE**	**PRE-COMMENTARY**	**POST-SCORE**	**POST-COMMENTARY**
Target	1	Team can review their data but they have not sent specific targets for improvement	1	Team can review their data but they have not sent specific targets for improvement. During the project they still never really set targets though they began reviewing the data more often
Reminders	3	Reminder systems are available and used by providers but routine monitoring is not occurring	3	Routine monitoring, mostly of CRC has improved and is a current focus of the PIP team
Administrative Buy-In	2	Administration seems to have bought into this work but the allocation of resources does not appear to be high. Hoping this expands as the PIP team is developed	3	Allocation of resources improved as the PIP and care management teams grew over the past few months
Network Info. Systems	2	This will be a critical role of the PIP team, but the person currently involved was just hired to run the team and is working to both develop the work and grow the team	3	This is a core focus of the PIP team, it has begun with CRC but will move into mammo as they plan to have the mammo bus come to their site in the summer and are planning to work these registries to fill the slots for the bus
Site Coordinator	2	Site coordinator and clinical champion are the same right now which is limiting my access to the broader team as she does not have much time. I'm working to get the clinical coordinator to assume this role	3	This improved as the data coordinator stepped into the role and was able to communicate with me more frequently
Local Clinician Champion	2	See above	2	The clinical champion stayed involved but distanced from the project. When key meetings were occurring she was there but otherwise she let the team take the main steps to move the project forward
Audit and Feedback	1	The site currently does not seem to know where they stand on cancer screening. The data can be reviewed but it is not. It does seem to be reviewed annually but it was difficult to get the team to focus on their QI efforts because they really did not know where their data was	3	Site improved in this area once they finally looked at the data and began to look at it more routinely
Team Approach	3	Strong interdisciplinary team	3	Strong interdisciplinary team
Education	1	Very little education is currently occurring	1	Very little education is currently occurring
TOTAL TRANSLATE	**17**		**22**	
Client Reminders	1	No reminders are currently occurring	1	No reminders are currently occurring
Small Media	1	Very minimal small media is available	1	Very minimal small media is available
One-on-One Education	2	Team indicates some providers are better at this than others, and that it tends to vary based on cancer. There are a few providers very committed to CRC	2	Team indicates some providers are better at this than others, and that it tends to vary based on cancer. There are a few providers very committed to CRC

		screening and therefore they do much more one on one education here, but do less in cervical and breast		screening and therefore they do much more one on one education here, but do less in cervical and breast
Structural Barriers	1	No effort here	1	The only effort here is the new partnership with the mammo bus
TOTAL EBI	**5**		**5**	

Appendix D: Durable Materials

As discussed with the project management team at the NYS Department of Health, the project team (PI, Morley) subaward PIs (Tumiel-Berhalter, Noronha, Swanger), and coordinators, managers & consultants (Brady, Schad, Vitale, Norton) discussed several approaches to the production of durable materials for the purpose of distribution to other contractors, partners and grantees engaged in practice change. The following concepts warrant further discussion between project and program management:

- The creation of videos (6 – 8), each describing an element of practice improvement. These would roughly follow the operational topics covered at the previous three learning collaborative conferences, although content can be addressed in these discussions. The videos could be hosted on a web server at one of the participating universities, a third party, or (deferring to the judgement of DOH staff) directly from the NYS DOH.

- A series of manuscripts that summarize the learnings from this project and looks more in depth at the data and the processes to implement sustainable cancer screening workflows into practice.

- Implementation of the intervention matrix as a QI tool for practices.

- An additional option would be to conduct “Project ECHO” style telehealth seminars in real-time, record those seminars, and host and store. This forum would be interactive with participants (e.g. case presentations, question/answer periods, etc.) in real-time at the time of the live conference, and unidirectional afterward (where as pre-produced videos would be unidirectional). Following an ECHO model would likely be substantially more costly.