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Analysis of the Efforts of Urban and Rural Health Systems to Achieve Accountable Care Organization Target Goals for Dilated Eye Exams in Individuals with Diabetes

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**Analysis of the Efforts of Urban and Rural Health Systems to Achieve Accountable Care
Organization Target Goals for Dilated Eye Exams in Individuals with Diabetes**

Capstone Report

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EXECUTIVE SUMMARY

This capstone project was designed to understand and analyze the completion rates for diabetic dilated eye exams within four different health systems participating in the MaineHealth Accountable Care Organizations (ACO). This research is valuable within the current US health care climate as health care providers have sought to evaluate the cost of care in terms of their value to payers. Moreover, many providers have elected to join the ACO in order to demonstrate better outcomes, improve the cost of care and to share programmatic content and tools to standardized care. Within this capstone, system level workflows and processes were evaluated to better identify the factors that hindered eye exam completion rates. These factors included both operational and patient-specific barriers that appeared to negatively impact rates of completion. Workflows and processes were also evaluated with the intention of identifying strategies that were positively influencing rates and that could be replicated in others health systems. Other areas of focus were in understanding what other ACO's had developed as strategies to as well as what approach commercial payers such as Anthem to mitigate the impact of these factors. Lastly, additional supports that can be provided by the ACO to mitigate the impact of these factors were proposed.

BACKGROUND

ACO's are charged with aligning health systems and ambulatory practices to support delivery of value based, integrated care (National Association of ACOs, 2016). In order to achieve their goals to improve the delivery of care, the health of their patient population, while reducing growth in costs in care, ACOs require value-based contracting, care coordination support, quality and performance improvement resources, and health population data to inform the work.

Strategies to achieve these goals include: (1) engaging practices, providers and hospitals in efforts to increase patient experience results; (2) improving clinical outcomes; (3) managing the cost of care; and (4) promoting greater team and provider satisfaction.

The success of an ACO is partially measured through its ability to meet predetermined contractual quality targets via advancement of the aforementioned strategies. ACO quality targets are established through payer contract negotiation and are re-evaluated with each contract renewal. Quality targets, together with value based payments, are a means for reimbursing providers for improving care versus paying for care received, regardless of outcomes. Quality measures often focus on a population of patients with a specific condition such as diabetes and are based on standards of care for that medical condition.

Assuring that care for this population is consistently provided can be a challenge for a primary care team. For example, a recent study showed that while the majority of patients receive diabetes support at their primary care (98%) or endocrinologist's office, the percent of patients that actually follow through on diabetic eye care is significantly lower (Hatef et. al., 2015). This study, involving Medicaid patients, showed that the factors that appear to influence follow up with optometrists or ophthalmologists include: financial concerns, lack of insurance, limited supply of eye specialists in the community, advanced age, and being in a rural community. Additional findings from the Diabetic Eye Disease Follow-up Study, which reviewed the results from blindness studies in four different states (Maryland, Florida, Colorado and Minnesota), suggested that the top two reasons for a patient not following up on diabetic eye exams are their inability to pay for the exam and the fact that they were not experiencing any visual complications related to diabetic eye disease (Will et al., 1994). Additionally, a separate study focused on predicting adherence to diabetic eye examinations also found contributing factors to

completing an eye exam including patients with well controlled blood sugar values, having insurance coverage for diabetes care, length of diagnosis with diabetes and being older in age (Sheppler et. al., 2014).

Complications of Poor Care

Diabetes is a focus across payer contracts due to its prevalence, cost in the population, and the impact of uncontrolled diabetes on the health of an individual or population. Based on 2014 data from the Centers for Disease Control and Prevention (CDC), diabetes affects over 29 million people in the United States or 9.3 percent of the total population. The cost of poorly managed diabetes includes both direct and indirect health care costs, the latter encompassing loss of work, disability, and premature death. Based on 2012 data, the CDC estimated that the total cost of diabetes-associated care was \$245 billion (Data and Statistics, 2015). This is particularly concerning since the prevalence of diabetes appears to be rising. Similarly, according to the U.S. Diabetes Surveillance System, Maine rates of diabetes have more than doubled since 1994, rising from 3.6 percent in 1994 to 7.8 percent in 2014. It is critical to be proactive in the care of individuals with diabetes since uncontrolled diabetes can lead to numerous complications including low or high blood sugar levels, heart disease, kidney disease, elevated LDL Cholesterol levels, loss of limbs, and blindness or other vision problems (CDC, 2014). These conditions are monitored through regular visits to primary care or other healthcare providers who may use a variety of blood tests, physical exams and procedures to regularly monitor an individual or population's ability to manage their condition and determine if any treatment is required.

Based on the standards of care established by the American Diabetes Association (ADA), a dilated, retinal eye exam is recommended for patients with both Type 1 and Type 2 diabetes (2016). This exam is used to help identify and monitor the progression of diabetic retinopathy or macular degeneration, both of which can lead to decreased vision or blindness. Individuals with type 1 diabetes should be tested within five years of their initial diagnosis, while individuals with type 2 diabetes should be tested upon diagnosis and then yearly or bi- annually depending on diagnosis and progression of retinopathy. (American Diabetes Association, 2016). Diabetic Retinopathy (DR) has four distinct phases of progression: (1) mild nonproliferative DR; (2) moderate nonproliferative DR; (3) severe nonproliferative DR; and (4) proliferative DR. (Kirkizlar et.al, 2013). The process of screening for diabetic retinopathy is cost effective and, if diagnosed earlier, can be effective in treating and preventing blindness as well as reducing the cost of care (Hatef et. al., 2015). Once the condition is diagnosed, treatment may include efforts such as improved control of diabetes as well as other options such as laser therapy if the disease progresses (Kirkizlar et.al, 2013).

The diabetic eye exam is a commonly used “process” measure of quality. The measure is based on whether a dilated eye exam was completed by an appropriate professional such as an ophthalmologist or an optometrist (ADA, 2016). Assuring patients with diabetes receive regular dilated eye exams can be particularly challenging however, since they rely on referral to a specialist for completion. In addition to the eye specialist completing the exam, the results need to be communicated back to the primary care team which then must document completion of the exam in the electronic health record (EHR). This is the only way the practice and the ACO receive “credit” toward meeting the payer contracted target.

APPROACH

Project Goal and Questions: The goal of this Capstone was to identify and analyze the factors influencing the abilities of four regional hospital systems participating in the MaineHealth ACO to meet the contractual target goal established for completion rates of diabetic eye exams. The established goal is 56.2 percent of all diabetic patients in a region to have the screening completed, across the full population. The questions that were addressed are:

- 1) What operational barriers, if any, exist and how do they affect the regional systems' abilities to meet their diabetic eye exam goals? Are there differences between rural and urban systems?
- 2) What strategies are used in each system to ensure eye exam completion rates? Do similar processes exist across systems or are different staffing resources, technology and patient outreach approaches employed?
- 3) What approaches used in the regional health systems appear to be successful in meeting the ACO's target goals for this measure?
- 4) What innovative approaches have other ACOs taken to increase completion rates for the dilated eye exam and are these strategies worth considering in the MaineHealth ACO?

Systems Studied: I included two urban and two rural health systems to understand if rural communities' access to eye specialists impacted the completion of a dilated eye exam in their patient populations. Systems 1 and 2 represented rural hospital-owned systems and systems 3 and 4 represented urban hospital-owned systems. Systems 1 and 2 represented rural hospital-

owned systems and systems 3 and 4 represented urban hospital-owned systems. I contacted leaders in each system who then identified individuals to participate in the project based on their knowledge of diabetic workflows and/or local quality initiatives.

Data Sources: I contacted quality improvement resources, primary care team members, and population health nurses in each of these four health systems to understand the roles that these team members perform in their respective settings related to improving diabetic dilated eye exam completion rates. This was done through formal in-person meetings, telephone interviews and emailed responses to a defined question set and, when possible, included the gathering of workflows, review of regional metrics, delineation of roles, and documentation of any systematic strategies taken to improve rates of compliance. Identified staff in each region provided feedback based on the established questions (see Appendix I) to determine if strategies such as pre-visit planning, proactive outreach and patient reminders, referrals to eye specialists, or other approaches are taken in an effort to improve overall rates. This survey identified operational barriers to care as well as any patient related barriers to care encountered in their outreach to this patient population.

I also collaborated with Anthem's Community Care Transformation Team supporting the payer's Enhanced Personal Health Care (EPHC) program to understand if rates of completion in this insured population were different than those in the full population in the MaineHealth ACO as well as what diabetes-related care benefit elements are covered in relation to dilated eye exams. Diabetes related benefits include the coverage of tests or procedures as part of the patient medical coverage plan, such a tests for blood glucose levels or tele-health services related to treatment of diabetes. An important difference to note between these data and the data for the

MaineHealth ACO population is that the EPHC data is based on claims results while the MaineHealth ACO rates are based on results captured in patients' medical records.

I conducted a literature review to determine if any innovative approaches might be worth considering as an ACO strategy to improve rates of dilated eye exam completion. I also contacted two other ACOs (in Vermont and Ohio) to determine if dilated eye exams were a focused quality measure in their patient population and if so, to understand what strategies they have taken to meet established targets in their ACOs.

Using a process analysis approach, I also evaluated differences in completion rates between urban versus rural health systems and the factors that may be influencing those rates. This involved: (1) reviewing specific data elements and contributing factors including ACO wide and regional health system rates of completion for the dilated eye exam measure; (2) determining if social barriers appeared to be influencing current rates of compliance; (3) evaluating and comparing workflows from each regional hospital system; (4) determining if consistent strategies were used across regions to promote patient compliance with this clinical measure; and (5) researching innovative approaches used by other health systems or ACOs to increase compliance with this measure.

Data sources for this component of the capstone included the MaineHealth ACO full population heat map reports specific to the dilated eye exams completion rate and reflected a rolling twelve month period through the end of June 30, 2016. These rates were calculated by the ACO's Data Analytics Team, and were compiled from the electronic medical records (EMRs), a clinical registry or via regional submission of an HTML file into a single report for comparison. These data can also be broken down into compliance rates for three of the four regional hospital

systems. For the fourth system, data were obtained directly from their EMR. Additionally, in collaboration with the Anthem Community Transformational Team (CTT), we determined payer-specific completion rates by region from claims data (see Appendix IV). If the regions demonstrated differences in their ability to meet the MaineHealth ACO target then common elements incorporated into the collection process were evaluated to determine their contribution to the overall rate. All compliance rates were reviewed as a percentage of completion and did not involve gathering Personal Health Information (PHI). The definition of MHACO completion rates includes this numerator and denominator:

Numerator: Number of diabetic patients ages 18-75 with documentation of an eye exam in the last 24 months or last 12 months for patients with retinopathy.

Denominator: Active patients (with at least 2 office visits in the last 24 months and at least 1 office visit in the past 12 months) ages 18-75 at the end of the measurement period diagnosed with diabetes (excluding gestational diabetes).

In addition to responding to these questions, regions were also asked to share their current workflows for capturing diabetic eye exam results. If a standardized workflow was available in a region, it was captured and analyzed to identify factors that may influence completion rates.

FINDINGS

Results were gathered from four regional health systems on the following questions:

1. How do you identify which patients are due for diabetic eye exams?
2. What is your process for reaching patients that are overdue for dilated eye exams?
(*Examples include phone outreach, generation of reports from medical records, pre-visit planning*)
3. Does your electronic medical record allow you to make electronic referrals to eye specialists in your community?

4. Is there a defined individual responsible for documenting dilated eye exams in your practice?
5. Do you have a process for educating patients on the importance of having regular diabetic eye exams?
6. What does your practice/region do that you believe has helped to improve rates of completion for diabetic dilated eye exams?
7. What, if any, operational or regional barriers to completing dilated eye exams have your practice encountered?
8. What socio-economic barriers have patients identified to be factors that impact their ability to see an eye specialist for diabetic dilated eye exams?

System #1

This small rural system has three employed primary care practices that provide care to their adult population. Individuals that contributed to the survey included the Regional Quality Improvement Specialist and lead RN's from each of the three adult practice sites. It is important to acknowledge that this system only recently joined the MaineHealth ACO and is in the process of implementing the infrastructure needed to share data with other regions that are also in the ACO. System #1 was able to extract similar data from their EMR system in order to participate in this project. It is important to note for comparison purposes that the data provided reflect results through November 2016 instead of June 2016 and that the inclusion criteria are defined slightly different:

Numerator: Number of diabetic patients with documentation of an eye exam in the last 24 months.

Denominator: Patients ages 18-75 and diagnosed with diabetes.

These criteria include patients who may not have seen a provider in the last 12 or 14 months and as a result may result in a lower compliance rate than if evaluated with the same criteria applied to the other three systems of study. The number of patients with diabetes in the system is 1192

and the compliance rate was 41.4 percent through November 18, 2016. The process for identifying patients in need of a diabetic eye exam involves identifying patients due for their exam as practices review daily gaps in care through chart reviews (see Appendix II- System #1 workflow). To date, this system has not implemented a process to reach patients in advance of the office appointment however their electronic medical record system does allow them to make an electronic referral to eye specialists in the community. Review of this process across the three adult practices revealed that there is no one specifically responsible for documenting that the eye exam was completed; it could be a nurse or a medical assistant who is responsible for recording the results. This rural system also had not established a process for educating the patient population regarding the importance of having regular retinal screening; however survey responders believed that any conversation with the patient happened between the provider and the patient at the time of an office appointment.

Patient barriers identified in this region included transportation, cost of care, and lack of insurance. Additionally there is limited access to eye specialists with only two optometrists and one ophthalmologist providing care in the community. This is exacerbated by the fact that the diabetic patient population prefers to see the ophthalmologist over the optometrists for care. This preferential demand has resulted in limited access to the ophthalmologist who in response controls access by only seeing patients on a biannual basis until they present with retinopathy at which point he will follow them more frequently. Efforts put in place at the Internal Medicine practice to improve completion rates included referring patients to the Maine Transportation Green Bus line if transportation was needed to eye appointments; educating patients regarding Medicare coverage for eye exams, and referring patients to financial eye coverage programs such as VISION USA, EyeCare America, or Lions Club International. Lastly, the Internal Medicine

practice felt that an effort to actually schedule the patient's appointment with the eye specialist at the time of the primary care appointment was the approach that improved completion rates to the greatest degree.

System #2

This rural system has seven adult primary care settings some of which are extremely rural compared to sites located on the hospital campus. This system tracks diabetic eye exam completion rates through EMR reporting which allows for comparative reports at both practice and system levels. The system is also able to submit data in order to participate in the ACO full system comparison report for this measure. Survey results for this system were compiled by a practice administrator at one of these primary care settings. As of June 30, 2016, there were 879 patients with diabetes in the system; the compliance rate was 59.4 percent. There are six eye specialists in the community and the EMR can generate referrals to these specialists as a way to track what provider a patient receives care from. Documentation of the eye exam usually falls to the medical assistant in the practice (See Appendix II- System #2 workflow) since they are the staff members that typically reach out to the patient or receive the completed test results.

Patient education regarding the importance of the exam is done by providers during the office visit at which time patients may also be given written education to take home regarding diabetic eye exams. Active outreach to eye specialists in the community seems to have positively influenced System #2's overall completion rates. This outreach has allowed them to verify if eye exams are completed and to request that a copy of the results be shared with the patient's primary care team. Perceived barriers include the lack of follow up from local eye specialists regarding completed eye exams. Respondents noted though that establishing better collaborative

relationships between specialists and primary care providers could improve sharing of this information. Patient-related barriers were lack of insurance coverage and transportation.

System #3

This urban health system has eight adult primary care settings, and has the ability to track completion rates at a practice and system level through their EMR system. The survey was completed by the Performance Improvement and Population Health Supervisor. As of June 30, 2016, there were 2753 patients with diabetes in the system and the compliance rate was 63.31 percent. The system relies on 18 individual eye care providers and two larger eye specialist practices (with multiple providers at each site) for referrals of their patients.

This system also has the ability to track various clinical measures related to diabetes care, and has a process for identifying and referring patients due for dilated eye exams. Patient gap lists are provided to staff members in the primary care settings. Responsibility for patient outreach depends on the staffing structure and may be an RN or a medical assistant contingent on the practice. Standardized workflows for outreach have been established across all sites and when a practice member reaches out to a patient they review all related gaps in care (see Appendix II-System #3 workflow). When an eye exam is identified as needed, staff ask the patient if they have recently seen an eye specialist, and, if so, who they received care from. If an eye exam is needed, the staff member provides education regarding the importance of the exam to maintain good eye health as well as to prevent the progression of visual decline. It is important to note that generation of a referral to an eye specialist serves as a way to identify where patients typically receive eye care and allows for a query of the population and focused outreach at a later time. A

second level of outreach is done by three dedicated population health staff on an as needed basis, and has been done twice between 2015 and 2016.

This outreach strategy includes a review of the system level gap lists for all measures. When a patient is identified as needing a dilated eye exam, population health staff will use the referral generated reports to reach out to local eye specialists to obtain a summary list of patients with completed dilated eye exams. The list of patients provided by eye specialists is then reconciled with EMR documentation of the exam to determine if it has been received by the practice and indexed incorrectly in the medical record, or if the exam results have not been received. If the results have not been obtained then a request to fax results is then made to the eye specialist that provided care so it can be recorded in the medical record. This effort has resulted in finding a significant number of missing eye exam results and is viewed as a beneficial additional outreach effort; however it was not well received by the administrative staff in the eye specialists' offices.

Recognizing the volume impact on the eye specialist's team as well as their own need to have a process to better track exam rates this system has organized a community meeting with local eye specialists. In this meeting they had the opportunity to build in-person connections, share ACO goals related to the measure, communicate internal efforts to improve rates and jointly build tools and a workflow that would benefit both primary care and eye specialist practices.

The eye specialists shared the observation that patients do not always communicate to them that they have diabetes. Therefore the office is not aware of the need for the specialized exam.

Additional system-wide efforts to bolster rates of completion included deployment of a standard, customized check out process across the practices for different populations of patients (e.g. diabetics). For patients with diabetes this includes reinforcement of diabetes appointments and

referrals to a specialist and when possible, having the front desk staff schedule eye appointments when the patient checks out from the primary care appointment.

Efforts to address patient socio-economic barriers included referring patients to financial eye coverage programs such as VISION USA; however the system has found this referral results in minimal success in achieving support for their population. Despite the fact that this system has made gains in meeting the ACO target for this measure it continues to have operational challenges related to having consistent processes followed at the point of checkout and has been working to reinforce this effort. Technological challenges also exist with the regional fax system, causing faxed results from eye specialists to not always come through the faxing relay system despite commitment from the specialist office and assurance that the fax number is correct.

System #4

Results for this system were compiled from eight individuals including one RN, four Medical Assistants, a physician, a nurse care manager and a front desk staff member. These results incorporate feedback regarding four adult practices. This is the largest of the regions studied and includes eleven adult practice sites. As of June 30, 2016, there were 3910 patients with diabetes in the system while the rate of compliance with this measure was 55 percent completion. System four also has the ability to track and monitor key diabetes related metrics in their EMR as well as through ACO generated reports. Review of the patient outreach process regarding diabetic eye exams revealed that it is not typically a singular focus but is part of an effort to close multiple gaps in patient care. Additionally, there has been, and continues to be, a significant effort to standardize a system-wide approach to pre-visit planning as a mechanism to identifying the condition-specific needs of incoming patients.

This system has a Population Health Team that can generate and work on patient gap lists of patients missing key processes. The interviews revealed that different staff (RN's Medical Assistants, or Patient Service Representatives) may review the EMR-generated patient gap lists in the practice setting and that each practice may also have different mechanisms for outreach to patients. Patient contact can range from phone calls to sending letters and may include attempts to contact the patient with varying degrees of frequency. One practice may call a patient, then send a letter two weeks later, while another practice may call a patient two weeks in a row then send a letter. Several practices have attempted to leave patients a message in their personal medical record portal called "MyChart". This approach allows the team member to leave a discreet message for a patient with the hope that the individual uses the personal portal for care support and respond to messages from their care team.

A second unique approach regarding patient outreach involved working with pharmacists to leave a note in the patient's prescription record regarding a need for follow up care with their primary care provider. Ideally the patient receives the message when they refill any prescriptions and this reminder would reinforce a connection with their provider. When an exam is completed the process for capturing it in the medical record is outlined in a reference document called the "Clinical Quality Management guide" which is a product of an EMR workgroup team working to address consistent documentation processes. Lastly, one provider directly contacted eye specialists to inform them he had referred patients for a dilated eye exam and that the practice would need results to be sent back to their office. In 2015, this team completed a chart review of patients identified in the MaineHealth ACO reports as needing dilated eye exams.. This chart review allowed the system to determine if exams were indeed completed and captured in the

chart in an area other than the designated section of the medical record or if it was truly needed for completion.

This system identified a number of operational barriers: (1) finding time in a busy day to reach out to patients; (2) incorrect addresses or phone number information; and (3) the inability to contact a patient despite numerous attempts by phone or letter. Mailed requests for patient action may not get a response and patients may not answer phone calls if they do not recognize the caller. When patients were reached, the caller may or may not reinforce the need to have a diabetic eye exam over other needed tests depending on perceived importance. However, when a patient presented at their primary care office, the issue of any missing tests such as eye exams were addressed. Scheduling appointments when a patient is reached may also be a barrier if an individual cannot confirm their ability to make suggested appointment dates. Patient barriers identified by interview responders include cost of service, social instability, language barriers, lack of understanding regarding their diabetes diagnosis, and mental health issues. The system is currently investigating these barriers and will begin to develop strategies for addressing them.

Assessment of System-based Strategies

When comparing these systems it was evident that there are some shared strategies across both rural and urban systems. These ranged from using population health “gap” reports to help identify groups of patients that needed exams, to training key staff in population health patient outreach activities in order to have needed exams completed. Generating an electronic referral to local eye specialists was a second common step. This process allows for focused outreach to specialists as a way to retrieve procedure results. Proactive review of upcoming patient visits, also known as pre-visit planning was another approach consistently seen.

Only systems #2 and #3 met the ACO target goal of 56.25 percent compliance. The aspects that both systems deployed are their efforts to (1) having actively worked to standardize workflows across all practice sites ;(2) and to outreach to local eye specialists. System #3 also took this outreach effort to the next level by organizing a face to face meeting with local eye specialists and collaborating to develop tools that met the needs of both groups. System #3 also (3) created a process for scheduling eye appointments when the patient is in the office; (4) defined the process for population health outreach and reconciliation of completed exams in the medical record.

Development of a dedicated population health team may be contingent upon the size of the community, suggesting that implementation of this model may not be feasible for the smaller rural communities that lack the patient population needed to warrant these functions. In rural practices, team members often have many tasks and allocating a function to one role or individual is complicated in a site that has fewer resources to support daily care, let alone have time to proactively outreach to patient populations. System #1 appears to have the greatest issue with the limited number of local eye care providers in their community, a matter which is further complicated by patient preferences for one provider over the others in the community.

Across these systems, cost of care and lack of insurance coverage were identified as patient barriers. Despite this, System #1 appears to have deployed the most strategies to identify alternative coverage options for patients and to identify transportation options. Limited patient knowledge of disease management and progression was another barrier which impacted willingness to have a dilated exam done. Focused education from the provider or population health team member was an approach systems used to reinforce the completion of the exam. Finally, System #4 was the only one that identified language barriers as a patient factor; this is mostly likely due to the number of languages present in the community. System #3 also has a

patient population with multiple primary languages but had previously worked to build relations with local translators which may have mitigated this specific patient barrier.

ACO Process for Support

As part of my research I reviewed what the MaineHealth ACO's has implemented to both inform and support member systems in their efforts to improve dilated eye exam rates. I also contacted two additional ACO's that participate in the Medicare Shared Savings Program (MSSP), an ACO model of care for the Medicare population.

Maine Health ACO

To improve dilated eye exam rates, the MaineHealth ACO conducts a monthly review of system-level, regional level and practice level completion rates across the full population of individuals with a diagnosis of diabetes. Patient level data are also provided via confidential email to a limited number of key individuals in each region. Patient-specific rates or gaps in care allow the regions to identify individuals missing tests or exams. These data also allow practices to cross-reference patients with care gaps against with patients coming into practices or those who need structured outreach to bring into the practice for missing medical care. System-level and practice-level data are also reviewed quarterly with quality committee members where Improvement Advisors can also identify opportunities to help regions address workflow challenges. Whenever possible, effective regional actions are shared with other regions. When innovative approaches are taken by a particular region they are also shared with the other ACO members. This may be through a newsletter article highlighting the approach taken, the resulting rates of improvement seen and regional contact information to learn more about the initiative.

Lastly, the ACO works closely with the MaineHealth Chronic Disease Team which is focusing on management of diabetes care based on clinical best practices.

ACO #2

OneCareVermont is a Vermont based Accountable Care Organization that is the product of a joint effort between the University of Vermont Medical Center and Dartmouth-Hitchcock provider network (OneCare Vermont, 2016). OneCareVermont serves a population of approximately 42,000 Medicare beneficiaries and collaborates with over 125 network providers, hospitals, specialists, and nursing homes in a clinically integrated network. This network of care givers uses a common methodology and toolset that is predominately focused on improving performance. While the methodology for improvement is standardized, strategies to improve performance are done at the local or practice level, not the ACO level. There is no uniform strategy for moving results related to completion of dilated eye exams. Discussions with the Assistant Director, Clinical Quality Operations at OneCare Vermont indicated other system wide areas of focus. However, one practice, St. Albans Primary Care, did undertake a focused effort to improve rates of dilated eye exams by five percent within a three month period in the first quarter of 2016 (Appendix V). Baseline results showed a completion rate of 52 percent while analysis of the findings revealed a need for better communication between eye specialists and the primary care team, and need for better patient awareness about the importance of eye exams. Additional issues included a lack of workflows in the practice, and the recognition that the EMR did not allow for standard formatting of eye exam results.

ACO #3

Integrated Health Collaborative (IHC) is an Ohio-based ACO that formed in 2013 and serves as an ACO for four hospital systems, and multiple primary and specialty practices. (Integrated

Health Collaborative, 2016). Outreach to the Clinical Director of Quality at IHC revealed an ACO strategy to improve dilated eye exam completion rates. Their approach includes having practices utilize a web-based system called “Explorys”. This system allows them to sign in and see their adherence daily to this measure and they can work from non-adherent lists. A second effort includes the development of an education letter that has been sent to local ophthalmologists and optometrists to reinforce the importance of notifying PCPs following a completed eye exam and using the appropriate reporting codes. They identified eye specialists based on the medical claims for their Medicare Shared Savings Plan (MSSP) population and also identified other eye specialists within a 25 mile radius. Other efforts IHC has taken to move this measure includes educating providers on the dilated eye exam MSSP measure and the importance of documenting in a discrete field so then when they pull data in Explorys they can show practices “clean data”. A last point that the Clinical Director shared was that it was important that when a PCP makes a referral, the eye doctor is aware the patient has diabetes. Otherwise the appropriate exam may not be conducted.

Anthem Community Transformation Team Support

Improving the diabetic eye exam completion rate is important to payers in addition to the MaineHealth ACO, including the Maine Anthem Community Transformational Team (CTT). This team is represented by two Care Consultants who have established monthly or quarterly meetings with regional practice leadership in each of the systems in the MaineHealth ACO. In these meetings they share Anthem-specific data reporting tools used to track and support patient populations in their Enhanced Personal Health Care (EPHC) commercial insurance plan (Anthem.com, 2016). Their reporting toolkit offers another mechanism to track patient activity outside of the MaineHealth ACO community since data are claim based, not pulled from medical

records. This allows a rural practice to review the Anthem reports and identify patients who have received care in a different region of the country and they can then attempt to reconcile the information in their own EMR system. Despite the value this added review provides, a few challenges exist at the practice level.

One is that claims data may be old, given that most insurers give 90 days for practitioners to submit a claim for payment with significantly higher results for all four systems noting rates of completions to be between 60 percent for System #1 to 74.9 percent completion for System #3 revealing almost a 20 percent higher rate of completion for this Anthem specific population. Additionally, multiple commercial payers are presenting similar reporting tools to systems and most practices do not have the manpower or ability to utilize multiple tools to support subpopulations of their patients. It is also important to note that the criteria for capturing this patient population is defined slightly differently than the MSSP criteria and as a result, completion rates are typically higher than for the full system population (See Appendix V). An additional factor that is likely also contributing to the higher EPHC rates is that all patients represented have insurance coverage for this service, unlike the full-system population. The inclusion criteria for the EPHC population are defined as:

Numerator: Exams done - Number of EPHC attributed patients between the age of 18 and 75 who have diabetes and who had a retinal eye exam from an eye care professional in the 24 months prior to measurement date

Denominator: Number of EPHC attributed patients between the age of 18 and 75 who have diabetes

Innovative Strategies for Consideration

The completion of a dilated exam and the accurate recording of the exam results into a patient medical record has been a challenge nationally across health systems. The fact being that exam completion is dependent on a patient being willing to schedule and then complete a second appointment with an eye specialist complicates completion. This is further complicated by requiring the outside provider to share the exam results with the primary provider. Systems have developed a variety of innovative approaches for improving completion rates. One innovative approach incorporates the use of telemedicine to initiate the required diabetic exam while the patient is still physically in the primary care setting. “Tele-ophthalmology” is the term used when a remote digital image of an eye is captured and submitted electronically to an eye specialist for review (Kroenke, K., 2015). This technology can be taught to clinical staff such as medical assistants or nurses in a medical office, who then upload the results to approved specialists, who can then interpret the results and make recommendations for further evaluation or treatment. The eye specialist community recognizes that a growing number of patients will need eye care and that the supply of ophthalmologic eye specialists has not expanded, making this option a very serious alternative to tradition care (Shaw, 2016). Remote screening through tele-ophthalmology may be beneficial for rural communities and those with limited specialty eye care providers (Kirkizlar,E, 2013). The tele-health option is also beneficial from the patient perspective because it does not require the patient to have their eyes dilated at the time of the screening (Cavallerano AA. et. al, 2005). Factors that a system would need to consider to operationalize this model includes:

- review of the tele-health software and hardware components for ease of integration with local EMRs,

- locating a participating eye specialist agreeable to developing a partnership in remote retinal scan readings and diagnosis,
- a review of state and federal tele-health laws,
- evaluation of start-up and ongoing costs of technology relative to the volume of patients that might benefit from the technology,
- assessment of the practice staff training needs
- review of approaches to integrate the new process into an already busy office appointment.

There may also be implementation challenges finding equipment that provides the right level of detail needed for a remote view and diagnosis to be accurate. And finally, practices will need to determine what aspects of the screening are billable from the doctor's office and on the specialist side and how the reading and diagnosis by the eye specialist is coded and billed.

IMPLICATIONS OF FINDINGS

Closing the gap on the dilated eye exam measure is a focus in several payer contracts for 2017 and as a result it will remain a priority for the ACO community. The MaineHealth ACO is supporting improvement of this measure by incorporating pre-visit planning into the MaineHealth-wide Medical Assistant training curriculum. This is core training for Medical Assistants across all regions in MaineHealth and reinforces the value of standardizing visit preparation processes. Simultaneously, the ACO is working with both the MaineHealth Chronic Disease and Supply Chain Teams to evaluate the feasibility of a tele-health initiative for screening and completion of dilated eye exams across any needed regions. The ACO

Improvement and Chronic Disease Teams are in a unique position to develop and spread the use of standard workflows, and to define the content for and deployment of patient educational material focusing on the importance of dilated exams. While standardization and spread of workflows will remain a focus, there is an opportunity to promote patient awareness related to visual complications from poor diabetes management. Other efforts include identifying financial resources available to eligible patients to help defray the costs of diabetic eye exams such as Maine Health's CarePartners Program (MaineHealth, 2016) or Vision Care USA and communication to regions regarding the findings.

The results of this Capstone should benefit ambulatory care practices and health systems challenged with adopting strategies to move their quality goals related to completion of dilated eye exams. The results should also benefit existing ACOs, by helping them with benefit design and their negotiations with payers around achievable contractual target goals. In addition, ACOs will benefit if innovative and reimbursable approaches can be identified and deployed in a cost effective manner to improve care and clinical outcomes.

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Appendix –I

Dilated Eye Exam Capstone Interview Protocol

Date:

Regional Health system:

[INSERT]

Name/Position of Interviewee:

RESEARCH PURPOSE

The purpose of this research is to identify and analyze what factors influence four regional hospital systems that participate in the Maine Health Accountable Care Organization (MH ACO) in their abilities to meet the contractual targets established for completion rates of diabetic eye exams

INTRODUCTION

I am working on my capstone at the University of Southern Maine and as part of this research effort am are interested in talking with you about the process for completing diabetic dilated eye exams in (regional hospital systems name's) primary care practices. We are talking with you and other health systems to understand what barriers or opportunities exist in regards to completion of this test. Based on our interviews and the workflows that we hope you can share with us, we will summarize and analysis the results to share in a capstone presentation. We would like to identify participating regional health systems in our report. Before sharing anything, however, we will provide you with an opportunity to review and comment on the summary notes from this interview/survey as well as those portions of our report that pertain to your primary care setting. I/we want you to know that this interview is voluntary and has been approved by our Office of Research Integrity and Outreach. Are you agreeable with proceeding?

WORKFLOW

If you are willing to participate in this research I will reach out to you by email or phone to set up an interview time based on your convenience. If a personal conversation is not feasible and you are still willing to participate in this research you may do so by responding to the attached questions and by emailing them to me by confidential email (CONFMSG: subject line) and sending it to mgilliam@mmc.org.

How will my privacy be protected?

- This interview/survey is designed to be anonymous, please do not include any information anywhere on the survey that may individually identify you or anyone else.

- **Whom may I contact with questions?** “The researchers conducting this study are *Michele Gilliam, Muskie MPH Program Candidate, and Faculty Advisor- Andy Coburn* Professor (Research) of Public Health.
- For questions or more information concerning this research you may contact them at Michele.briggs1@maine.edu. and 207-661-3804, and/or Andy Coburn at coburn@maine.edu.
- “If you have any questions or concerns about your rights as a research subject, you may call the USM Human Protections Administrator at (207) 228-8434 and/or email usmorio@maine.edu.”

Will I receive a copy of this consent form?

- “You may print/keep a copy of this consent form.”

I understand the above description of the research and the risks and benefits associated with my participation as a research subject. I understand that by proceeding with this survey I agree to take part in this research and do so voluntarily.

INTERVIEW

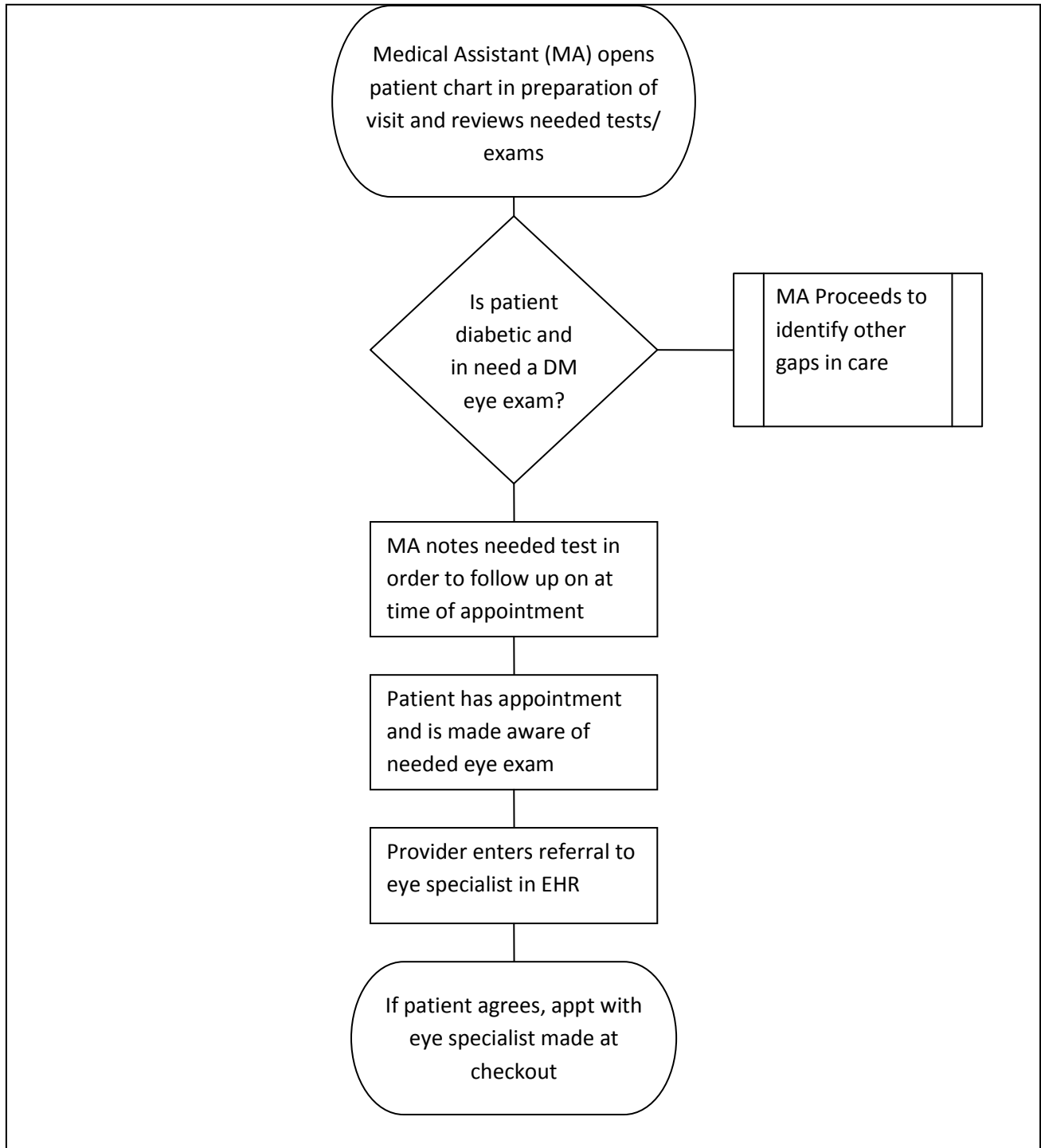
[Briefly summarize what we know about the current process for collecting dilated eye exams]

Interview Questions Related to Barriers for Dilated Diabetic Eye Exams

1. How do you identifying which patients are due for diabetic eye exams?
(*planning, population health staff, generation of gap reports*)
2. What is your process for outreaching to patients that are overdue for dilated eye exams?(*Examples include phone outreach, email, letter, discussion at time of visit*)
3. Does your electronic medical record allow you to make electronic referrals to eye specialists in your community? (*If so, are eye specialists listed by provider?*)
4. Is there a defined individual responsible for documenting dilated eye exams in your practice?
(*Provider, nurse, medical assistant*)
5. Do you have a process for education patients on the importance of having regular diabetic eye exams? (*Conversation with patient at time of visit, pamphlet, video, other*)
6. What does your practice/region do that you believe has helped to improve rates of completion for diabetic dilated eye exams? (*strategies or approaches such as community outreach*)
7. What if any operational or regional barriers to completing dilated eye exams has your practice encountered?

Appendix –II

System #1 Internal Medicine Diabetic Eye workflow



System # 2 Diabetes Management / DM Eye Exam Capture

Manager/ Care Coordinator runs report of specific provider's diabetic patients with **no DM eye exam on file.**

At staff meeting,

- Presentation of list and determination of:
 - "Who" will validate data, and "by when"
 - What type of outreach will occur
- Once data is validated:
 - Check for upcoming appointment –
 - If yes, note in visit
 - If no, use patient outreach (letter/call) as decided by care team



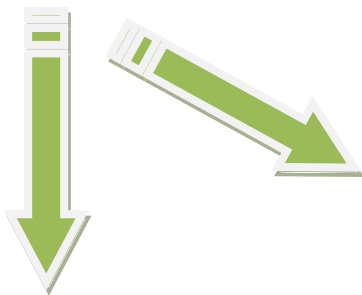
Provider and Clinical Support Staff identify gaps in care at morning huddle.

MA rooms patient identified and:

- Asks if patient has had DM Eye Exam
 - If yes, obtains information (who/when/release if needed)
- If no, queues up referral for approval by provider



When the DM Eye Exam Report Is Obtained



Resulting the Order – Clinical Support

The diabetic eye exam result must be documented in the patient's chart.

If it is not received electronically, manually enter the eye exam as **Normal (No Retinopathy)** or **Abnormal (Retinopathy)** in the [QM Results Console](#) activity.

Click test tube to the right of '**Diabetic Retinopathy Eye Exam Report Summary**' and document Abnormal or Normal.

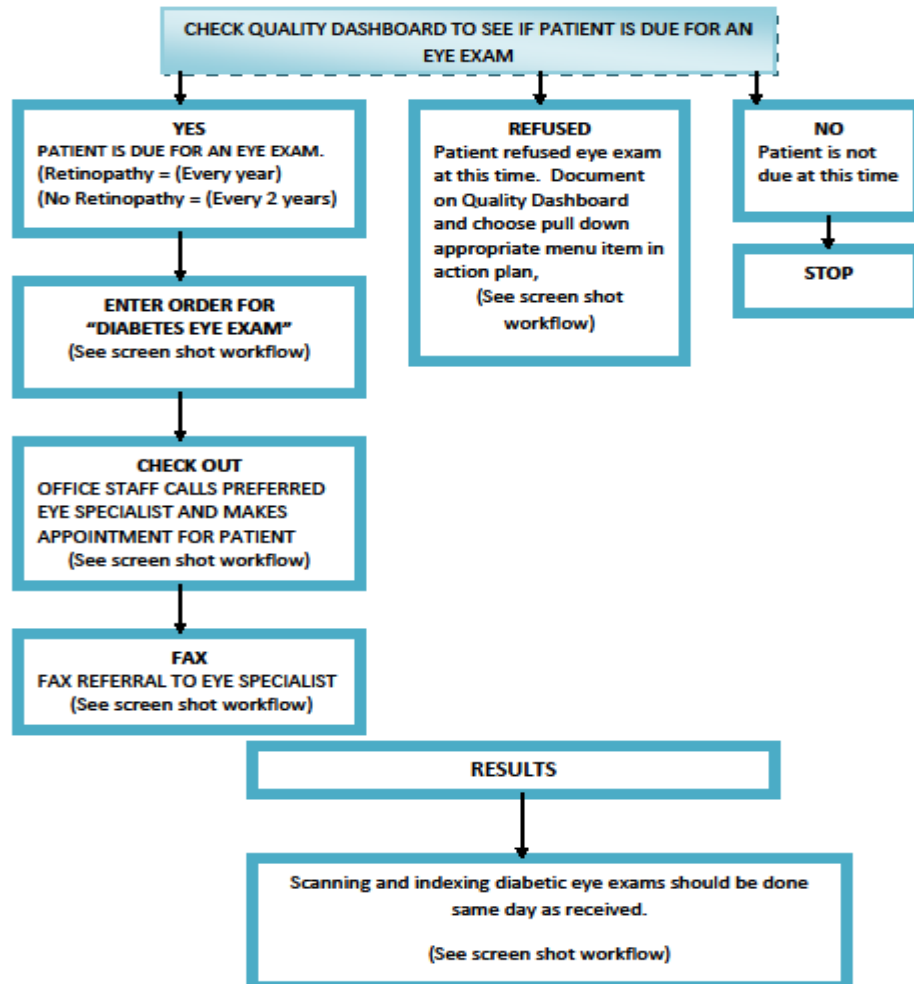
- Results entered appropriately
- Patient referral to Chronic Illness Care Manager if high risk or barriers to care

TOOL & RESOURCES

.hmdue
CQM Guide

System # 3 DM Eye Exam workflow

DIABETES PATIENT COMING IN FOR OFFICE VISIT WORKFLOW



Appendix –III MHACO Full Population Diabetic Eye Exam Rates

Full Population completion rate as of June 30, 2016

Goal Rate of 56.25 %

Group	Number of Exams completed	Patient population	Rate of completions
Region #1*	494	1192	41.4%
Region #2	522	879	59.4%
Region #3	1743	2753	63.3%
Region #4	2150	3910	55.0%

Source: MHACO, Regional Reports Full population MHACO members, June 30th, 2016

Completion rate definition:

Numerator: Number of patients in the denominator with documentation of an eye exam in the last 24 months or last 12 months for patients with retinopathy

Denominator: Patients ages 18-75 at the end of the measurement period diagnosed with Diabetes (excluding gestational diabetes), with at least 2 office visits in the last 24 months and at least 1 office visit in the past 12 months.

*System #1 Completion rate definition as of November 18th, 2016

Numerator: Number of patients in the denominator with documentation of an eye exam in the last 24 months.

Denominator: Patients ages 18-75 and diagnosed with diabetes.

Appendix IV– Anthem EPHC Diabetic Eye Exam Rates

Commercial Payer completion rate as of June 30, 2016 with 3 month run out

Group	Number of Exams completed	Patient population	Rate of completions
Region #1	53	80	66.25%
Region #2	68	103	66.02%
Region #3	155	207	74.88%
Region #4	248	348	71.26%

Source: Anthem EPHC Program, MHACO members, 2016

Inclusion definition: Data is based on Anthem claims data

Numerator: Exams done - Number of EPHC attributed patients between the age of 18 and 75 who have diabetes and who had a retinal eye exam from an eye care professional in the 24 months prior to measurement date.

Denominator: Number of EPHC attributed patients between the age of 18 and 75 who have diabetes.

Appendix V- OneCareVermont Supporting Material

