

ABO CLINICAL QUALITY IMPROVEMENT (QI) APPLICATION

Topic

Quality Improvement Topic:	Critical Problem Areas in Patient Safety and Patient Education in Age Related Macular Degeneration
	<p>"Critical Problem Areas in Patient Safety and Patient Education in Age Related Macular Degeneration"</p> <p>Key problems identified in the care of such patients include:</p> <ol style="list-style-type: none"> 1. Amsler grid monitoring. Most patients do not understand that a separate Amsler grid should be used for each eye! Many patients with unilateral or bilateral disease are presenting too late. 2. AREDS formula and Nutritional supplements. Patients are taking too many supplements that are dangerous (i.e. Coumadin therapy and supplements and food with Vitamin K). They need to understand the AREDS2 study and that many products are ineffective. 3. Low Vision. Vermont and New Hampshire provide some of the best resources for patients with AMD. We need to find processes for earlier intervention by these agencies including education and family assistance 4. Driving Safety. Many patients are driving impaired or are driving illegally. Provide proper education and referral to driver rehabilitation programs. 5. Endophthalmitis and Post-operative discomfort. Begin telephone calls on post op day 1 to review symptoms and review patient instructions and assess patient's understanding of warning symptoms and emergency contact information -especially for elderly patients. Many patients can have rather silent floaters which can be easily dismissed when they call. Develop a better patient education brochure and process with patient feedback.
What is the reach of this QI activity?	Regional
Please explain/identify:	Academic Teaching Medical Center. Geisel School of Medicine at Dartmouth
Please identify the funding source(s) for this QI activity?	No specific funds necessary

Project Description

1. Describe the quality gap or issue addressed by this activity. (Included in your response to this question should be a description of the resources that informed your decision to pursue this topic, a description of what the literature says about the issue you identified, and the rationale for choosing to address this clinical QI project.)	The patient safety and patient educational issues described in my topic are issues that are incompletely communicated to elderly patients through brochures and one on one communication at many visits in our practice and by referring providers. Early intervention and prompt care is so often delayed because patients do not understand or retain in memory proper Amsler grid instructions or post injection instructions- largely preventable problems. We have witnessed critical safety issues including patients taking supplements contraindicated with concurrent Coumadin therapy. We witness referral patients receiving anti-VEGF therapy who have severe dry macular degeneration. Patients who do not receive formal or office-based low vision counseling and rehabilitation appear to have a higher risk of severe adverse events including driving accidents, falls at home and even severe burns including death. Communication to family physicians and agencies is very inconsistent.
2. Describe the specific aim(s) of this activity (explanation of the numeric goals and importance to your work processes and your organization).	The fundamental outcomes for each problem area will identify patients at risk and we will implement a formal survey and data base at study entry for vision, safety measures, detailed documentation of patient education, intervention and resources provided. The AAO preferred practice guidelines will be used as the initial foundation of patient monitoring and assessment of the problem areas we have identified. All of this can be quantified to provide analysis and specific changes in practice processes and protocol Time frame should be a minimum of 30 days with goal of 90 days.

<p>3. Identify the measures that were evaluated in your workplace and provide a summary of pre- and post-intervention data for each measure. (Please provide source information for each measure.)</p>	<p>Evidence-based measures will include quantitative data and data base management vision, time from symptoms to access of care. Endophthalmitis measures including time from symptoms. Initial survey questions and intake counseling data will be recorded by the physician and eye nurse or technician. End point analysis for Amsler grid monitoring will be a review of the patients who demonstrated proper use of Amsler grid monitoring. Were supplement and safety concerns understood by the patient at the end of the study? Any safety related adverse events? Was low vision counseling accomplished and was it of benefit to the patient and how? Is patient still safe to drive based upon acuity, visual field loss and other considerations?</p>
<p>4. What was the source of your data (check all that apply)?</p>	<p>Electronic Medical Record Survey</p>
<p>Please specify</p>	<p>We have developed survey tailored to EPIC record.</p>
<p>5. What methods were used for data collection (check all that apply)?</p>	<p>Prospective Chart Abstraction Retrospective Chart Review Electronic Medical Record</p>
<p>If other, please specify</p>	<p>Integrate low vision reports and family reports where possible.</p>
<p>6. What was the comparison group in this activity (e.g., a regional or national benchmark)?</p>	<p>There are relatively few studies regarding these areas but we will finish literature review and establish new benchmarks for our study. Meaningful results could be presented to The Dartmouth Institute which study outcomes and quality care in medicine.</p>
<p>7. Will the identified measures address important issues for your processes of care and/or patients?</p>	<p>Yes</p>
<p>8. Describe the process you went through to develop the QI plan and the tests of change that will be undertaken to improve care (i.e., quality improvement plan design, implementation, and re-evaluation)</p>	<p>After appropriate patients have entered the study and have secured follow-up, we are prepared to efficiently analyze data. We would then abstract key information to design effective interventions in the care of elderly patients with age-related macular degeneration so as to eliminate delay in care, avoid toxicity from AMD nutritional therapy and to promote safety with all activities of living. I envision better brochures, better protocols for staff counseling (checklists, more time with patients and family) and relentless communication with primary care physicians, nursing homes and state agencies.</p>
<p>9. Present baseline data that supports the need for your change concept, then specify the intervention(s) that will be implemented in your practice and why they were chosen.</p>	<p>Baseline data is largely my experience with nearly every patient demonstrating knowledge deficiency in at least one area of safety and education. Very serious issues in each of these domains occur every day. Although vision and specific therapy can be integrated in the study, we will also be largely concerned about our data in the context of AAO preferred practice patterns. Will patients be safer? Will they seek follow-up promptly? What have been the barriers to care and what did we identify and formally integrate into our practice at all levels? These are the critical issues!</p>
<p>10. What benefit do you believe these interventions will have on your processes of care and/or patient population?</p>	<p>Improved processes of care Improved patient outcomes Less variation in processes</p>

Project Outcomes/Results

<p>1. Describe in detail your role in this activity (i.e., your role in identifying measures and reviewing data, identifying the QI topic, developing the QI plan, identifying interventions, implementing the QI plan and interventions into your practice, etc.).</p>	<p>My role was to define a comprehensive strategy for specific and appropriate patients (including support staff) educational measures regarding prevention of progressive vision loss, new onset of vision loss, and safety measures to minimize unnecessary vision loss, adverse reactions to medications and adverse events with activities of daily living including fall prevention and driving safety. Initially, our specific aim was approached through comprehensive and well communicated patient education with respect to these important components of care. We wanted to go beyond standard brochures and education with the aim of discovering, developing, and improving the process of care during the study but also with new foundational care standards for our practice after completion of the study.</p> <ol style="list-style-type: none"> 1. We wanted to be sure that each patient used a separate grid to test each eye separately and that they were performing this test each week. 2. Were patients taking the proper AREDS formula safely and were patients on Coumadin not taking supplements or food with vitamin K? 3. Did they receive and understand written post-injection instructions regarding when to call and whom to call? 4. Were there safety concerns in terms of fall risk, kitchen safety and driving? We had been witness to several terrible events in the recent past. 5. How could we effectively communicate the importance of continued smoking cessation? 6. Did patients understand available rehabilitative services including Low Vision services through the state of Vermont or New Hampshire? 7. Did we communicate with primary care physicians and other providers regarding these issues? 8. 8. Did visual acuity or changes in visual acuity correlate with any of the aforementioned goals?
<p>2. Were other members from your care team involved in this activity?</p>	<p>Yes</p>
<p>If yes, please describe their role(s) in this activity.</p>	<p>Our ophthalmic technician helped with the initial identification of appropriate patients. She also helped design intake data and with myself provided initial comprehensive patient education in the clinic setting and through follow-up communication. After the initial set up, I was responsible for all ongoing patient education and each of the specific strategies we outlined above. The other ophthalmic technicians in our practice also provided support but were not solely responsible for all of the aims.</p> <p>At the conclusion of our study, I spoke with each and every one of our patients and I recorded the final data measurements and performed the final analysis.</p> <p>The goal after the study is to develop a quality improvement initiative within our department with input from all technicians and providers to develop a thorough, uniform and efficient strategy for addressing all of this care issues. Fortunately, our electronic medical record system will allow us to achieve uniformity and organize communication during the process of care and counseling. Our final goal will be to prepare a clear and understandable patient educational brochure. Christopher Chapman M.D.</p>
<p>3. Describe the impact this QI effort had on your practice and the care that you provided to your patients.</p>	<p>The immediate benefit during the study allowed us to develop a consistent and more thorough approach to patient education. It gave us time to think about how we wanted to best to communicate with our patients. We spent a lot of time communicating with our patients about their concerns and they in turn provided us with good ideas and better approaches. A "flight checklist" allowed us to cover most of the bases. Although relentless one-to-one communication with each patient is critical, we wanted a better educational brochure that patients and families could turn to for reference purposes. We viewed this study as an important and initial phase for developing our long-term goals.</p>

Project Reflection

4. What data can you provide to demonstrate that your change concept produced meaningful improvement in your current processes or patient outcomes? (i.e. percentage of reduction in post-operative complication, percentage of improvement in a specific cohort of patients etc.)

31 patients were followed for three months. 29 patients had exudative disease requiring intravitreal therapy. One patient was included with high risk non-exudative disease. One patient refused intravitreal therapy. Only one patient was lost to follow-up having moved to CT

1. Visual acuity was measured at study entry and at completion of the study. All patients, but one, experienced visual improvement or essentially stable vision in each eye. The single patient with acute reduction of acuity to 20/800 developed a subretinal hemorrhage in association with a CNVM. There was no correlation with Coumadin therapy or any other measure of care. The patient was testing vision in each eye with an Amsler grid each eye each week, thus eliminating sudden discovery as a reason for acute reduction in acuity.
2. Only 4 of 31 patients were not using an Amsler grid. 2 of these 4 patients had profound vision loss and were simply not able to perform the test. 2 patients indicated they simply did not have time to perform the test. 4 patients who were using the test properly did not understand they were to test each eye separately each week. In addition to counseling in the clinic, a follow-up phone call was made to nearly all patients to stress the importance of proper testing of each eye at least weekly.
3. 26 of 31 patients at the conclusion of our study were taking the AREDS 2 formulation as described to them in the clinic setting. The 5 patients that were not taking this formulation simply had forgotten about its importance but were open to initiating therapy.
4. 2 of 31 patients were taking Coumadin but each of them understood that they were to avoid nutritional supplements or foods rich in vitamin K. They understood the importance of proper intake of leafy green vegetables in the setting of Coumadin therapy.
5. In the 29 of 31 patients undergoing active intravitreal therapy, each and every one of them received postoperative instructions and understood these symptoms require urgent evaluation including photophobia, pain, floaters and reduced acuity. All patients understood the process of contacting the eye physician on call emergently should they develop these symptoms. Fortunately, no patient developed any severe side effects or endophthalmitis. WRITTEN communication was deemed most important in this facet of our study.
6. With respect to patient's safety, the patient described above with acute vision loss with a subretinal hemorrhage fell at home and was hospitalized for brief time. She attributes her fall to her reduced visual acuity. Three other patients described either tripping or unstable gait in association with reduced visual acuity. They were encouraged to work with their primary care physician after careful counseling regarding the risk of hip fracture and other injuries that might result from visual impairment. Patients were also counseled regarding visual acuity requirements for driving. Remarkably, only 8 of 31 patients were still driving. Fortunately, there were no adverse driving events, however, great care was undertaken to review the risk of driving in the setting of age-related macular degeneration even with visual acuity criteria meeting department of motor vehicle thresholds.

	<p>7. Only 2 of 31 patients had a significant smoking history. Each patient began cessation in the past 12 months. Both patients are indicated that they had stopped smoking given their understanding of the risk of progression of age-related macular degeneration as communicated in our office.</p> <p>8. Fortunately, the electronic medical record allows us to forward important information to the patient's primary care physician with the single click of a button for all encounters. In retrospect, it may have been important to verify that communications had also been received by nursing homes and physical therapists.</p>
<p>5. Reflecting on this self-directed Clinical QI project, how do you plan to sustain your improvement?</p>	<p>Sustained improvement is predicated upon translation of results into action by a physician leader. Fortunately, I have a remarkable team of technicians and a talented support staff who can devise electronic smart sets viewable to all when taking a patient history. Several of our staff worked closely with the state agencies for the blind and visually impaired and have demonstrated a willingness to develop a comprehensive patient educational brochure. I have the great privilege of working with medical students who wish pursue ophthalmology and who will likely help. Importantly, our Medical Center has a demonstrated and vibrant interest in all quality initiatives providing excellent financial support as needed.</p>
<p>6. Was this Clinical QI project beneficial to your processes, patient population or practice?</p>	<p>One of the most rewarding dimensions of this project was communicating with patients not only in the clinic setting but more so when calling them at home to review our care strategies and to address their additional concerns and listen to their suggestions for process improvement. It should have been obvious from the beginning that many of our patients are not only visually impaired but are hearing impaired and I was most definitely reminded of this consideration during my phone calls! I'll think more about this in the clinic and when writing better care brochures.</p>
<p>7. Please describe any lessons learned about your work processes by participating in this self-directed Clinical QI project.</p>	<p>I think the most important lesson learned was to define study strategies earlier and delegate more responsibility to my staff. I don't think this study was as easy as perhaps comparing the efficacy of Lucentis with Eyelea or Avastin and looking at visual acuity. It had much more of a human dimension and was quite time consuming.</p>
<p>8. What do you plan to do next to improve i.e. reduce variation in your processes of care?</p>	<p>The most important strategy for reducing variation in the process of care is communicating clear standards (a flight checklist if you will) to our support staff and ophthalmic technicians in the workup phase but also in the concluding phase of care. Clear and uniform information properly documented will allow me to rapidly integrate important care information more completely, and in turn, efficiently communicate necessary and meaningful information to the patient, their families and to all care providers</p>
<p>9. Please describe whether or not you found participation in the self-directed Clinical QI project to be meaningful, impactful and a valuable use of your time.</p>	<p>Most importantly, I have developed even stronger relationships with my patients as a result of this activity. In nearly every instance, the patients were most appreciative of my efforts to improve their care through this study. We are a very busy and large practice and projects such as these have meaningful benefits for my staff and technicians as well.</p>