

ABO CLINICAL QUALITY IMPROVEMENT (QI) APPLICATION

Topic

Quality Improvement Topic:	Assess the Degree of Pain Experienced by Patients Undergoing an Intravitreal Injection at the Moment of Needle Insertion.
What is the reach of this QI activity?	Local
Please explain/identify:	We will be assessing pain in a cohort of patients (30 consecutive) undergoing intravitreal injections in my practice.
Please identify the funding source(s) for this QI activity?	No funding is being sought for this activity.

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.)	Pain is generally a major fear and source of anxiety for patients undergoing intravitreal injections. Patients frequently require subsequent injections and reducing pain and therefore the fear of the procedure might improve the patient's experience as well as compliance.
2. Describe the specific aim(s) of this activity (explanation of the numeric goals and importance to your work processes and your organization).	Specific Aims include: <ul style="list-style-type: none"> • Identifying the degree of pain experienced at the time of needle insertion in patients undergoing intravitreal injection. • Identifying quality improvement interventions that may reduce pain in these patients
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.)	I propose collecting the initial data by asking patients to assess their pain on a 10 point scale with 1 being no pain experienced and 10 being the worst pain that they can imagine. We will collect this data from 30 consecutive patients undergoing intravitreal injections in my practice using our current standard technique. After we have collected this baseline data, we will endeavor to improve the quality with which we are administering the injections to reduce the pain experienced by our patients.
4. What was the source of your data (check all that apply)?	Patient Paper Chart
5. What methods were used for data collection (check all that apply)?	Prospective Chart Abstraction
6. What was the comparison group in this activity (e.g., a regional or national benchmark)?	The benchmark will be the baseline data from our initial assessment. We will also reference the online article by Sami Kamjoo, MD "Intravitreal Injections" available on the EyeWiki portal of the American Academy of Ophthalmology.
7. Will the identified measures address important issues for your processes of care and/or patients?	Yes
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)	Following the assessment of the baseline data, I will assemble a team from the practice to assess the way we currently perform the intravitreal procedure in light of the pain assessments we obtain. Areas that will be possible candidates for improvement include the technique of anesthesia, the technique of injection, the waiting room milieu and wait time, and the environment in the procedure room.

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.	See above answer to question 8. We will determine the baseline pain assessment first and then based upon a team approach determine the most likely quality improvement change. We believe that the amount of pain is fairly low already, so even a reduction of 5-10% should be significant.
10. What benefit do you believe these interventions will have on your processes of care and/or patient population?	Improved processes of care Improved patient outcomes Less variation in processes

Project Outcomes/Results

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>I perform approximately 20 intravitreal injections daily. Our protocol for anesthesia is for a technician to administer 2% Lidocaine gel to the eye to be injected and to allow the patient to sit in the waiting room for between 5 and 20 min. The patient is then brought into the treatment room where I perform pledget anesthesia with topical Tetracaine to the injection site for 2 minutes.</p> <p>I decided to investigate how closely we were adhering to our own guidelines and whether there was any association between adherence to our guidelines and level of pain at the moment of injection. After we obtained this baseline data, we implemented a quality improvement program to improve our adherence to our guidelines. We then reassessed our adherence. We determined that prior to our improvement plan adherence to our internal guidelines was only 64%; after implementation of our QI plan, it increased to 94%. In addition, patient reported pain decreased as well.</p>
2. Were other members from your care team involved in this activity?	Yes
If yes, please describe their role(s) in this activity.	<p>We assembled a team including me, my office manager, the scheduling clerk, two technicians and one imaging specialist to assist in designing the study to determine our baseline compliance with our internal guidelines and then to come up with suggestions how we could improve our compliance. Technicians documented the time of administration of the topical Lidocaine gel and time patient was brought into the treatment room. They also filled out the patient's disease, laterality, and pain score after the procedure. I recorded the length of Tetracaine pledget anesthesia and I analyzed the data. In the implementation phase, the scheduling clerk worked with my office manager to insure that patients needing intravitreal injections were scheduled sufficiently apart to allow timely flow.</p> <p>The technicians and imagers prioritized patients having injections to insure that patient flow allowed compliance with our guidelines. Separate chart racks were used for injection patients and time stamps were prominently displayed. When there appeared to be a danger in going past our guidelines, the technicians would inform me so I could manage patient flow more appropriately.</p>
3. Describe the impact this QI effort had on your practice and the care that you provided to your patients.	We significantly improved our compliance with our internal anesthesia guidelines by streamlining the way patients who have been treated with topical 2% lidocaine are ushered into the treatment room to receive pledget anesthesia from me prior to injection. The number of patients whose time with topical 2% lidocaine was outside our protocol dramatically decreased.

Project Reflection

<p>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 reduction in post-operative complication, percentage improvement in a specific cohort of patients etc.)</p>	<p>Our initial data (before the QI plan) demonstrated that our adherence to our internal guidelines for the time it took for patients to be brought into the treatment room for an intravitreal injection following instillation of 2% Lidocaine gel (guidelines 5-20 minutes) was only 64%. Following our QI plan implementation to streamline our processes, 94% of our patients were treated within our guidelines. Our guidelines to administer pledget Tetracaine to the injection site was 100% both before and after QI implementation.</p> <p>The average time for topical Lidocaine gel was approximately 19 minutes prior to our QI and 15 minutes after. Even for patients who weren't treated within our guidelines (whose time with 2% Lidocaine gel was greater than 20 minutes), the average time decreased from 29 minutes to 22.3 minutes, indicating that we were doing a better job even with these patients. In addition, the average pain index score decreased from 1.12 prior to our intervention to 0.5 afterwards.</p>
<p>5. Reflecting on this self-directed Clinical QI project, how do you plan to sustain your improvement?</p>	<p>We will continue to utilize the streamlining protocol that we implemented and periodically re-assess compliance with our anesthesia guidelines.</p>
<p>6. Was this Clinical QI project beneficial to your processes, patient population or practice?</p>	<p>The project was of great benefit. It showed us the value not just of having internal treatment guidelines, but the importance of testing to see whether we are achieving benchmarks. It showed my staff that we can work as a team to identify problems, test and evaluate them, work as a team to develop new procedures, implement them and see the results. It certainly benefited my patients as we were able to improve our compliance with our own internal guidelines and decreased the pain that patients were experiencing.</p>
<p>7. Please describe any lessons learned about your work processes by participating in this self-directed Clinical QI project?</p>	<p>The project confirmed the importance of establishing guidelines, periodically re-evaluating our guidelines, testing to determine adherence, and utilizing a team approach to develop and improve procedures.</p>
<p>8. What do you plan to do next to improve i.e. reduce variation in your processes of care?</p>	<p>I earned an MPH (Healthcare Administration) from Columbia University in 2010. Since then we have striven to continuously improve the quality of the medicine we practice in my group. We have weekly meetings for the physicians in my group. My Office Manager meets weekly with the clinical and clerical staff and I meet weekly with my Office Manager. After this project, we have placed Quality Improvement as a permanent agenda item for all of these meetings.</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>Yes, I think this project reinforced many of the things I learned in my MPH studies and demonstrated once again the importance of establishing practice guidelines and benchmarks and constantly striving to improve patient care through a team approach.</p>