

## ABO NON-CLINICAL IMPROVEMENT IN MEDICAL PRACTICE ACTIVITY

### Topic

<b>Title of Project:</b>	Improving the Review and Patient Notification of Ordered Tests
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### Project Description

<p>Describe the quality gap or issued 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 project</p>	<p>Laboratory and Radiology tests are ordered for patients on a daily basis. It is important that each result is reviewed by the ordering physician, the patient notified, and actions taken based on the test results. We will develop a system in our office for this process.</p>
<p><b>Background Information:</b> The month you pulled the baseline IRIS performance report and any additional information that me be pertinent:</p>	<p>I routinely order tests for patients, but I wonder how many fall through the cracks and opportunities to help the person are missed. There are four steps that must occur: 1. I rely on the patient to have the test done. 2. I rely on the testing facility to process the test and send the results to my office, whether by FAX or mail. 3. I rely on my staff to get the result and put it on my desk with the patient's chart so that I can contact them. 4. I discuss the result with the patient either by phone or in person at their upcoming appointment. If any one of the steps does not occur, then there is the potential for an abnormal test result to go untreated.</p>
<p><b>Project Setting:</b> (Please select from options below):</p> <ul style="list-style-type: none"> <li>• Group Practice</li> <li>• Healthcare Network</li> <li>• Hospital</li> <li>• Multi-Specialty Group</li> <li>• Solo Practice</li> <li>• Surgical Center</li> <li>• Other</li> </ul>	<p>Solo Practice</p>
<p><b>Study population:</b> (describe the type of patient for whom the care process will be improved, e.g., all patients in your practice, patients with diabetes, patients presenting for emergency care:</p>	<p>All patients for whom any test is ordered by the physician.</p>

**Quality Indicators / Performance****Measures:**

It is important to carefully define outcome or performance measures that will be quantified at baseline (before the care process is changed) and at re-measurement (after you have implemented the proposed improvement) to quantify the impact of your care process change. There are two basic types of performance measures - process of care measures and outcomes of care measures.

- Process of care measures (e.g. timely treatment of diabetic retinopathy) can influence outcome measure (e.g. decreased risk of severe vision loss);
- Outcome measures can be linked to processes of care that can be improved. Generally, performance measures are expressed as rates, often as percentage rates. For example, if the intent of a project is to improve the quality of glaucoma care in your practice, you may choose to improve your rate of establishing a goal IOP in patients with newly diagnosed glaucoma, measured over a 3-month period.
- The numerator of this process measure would be the number of newly diagnosed patients during this time who have a goal IOP recorded in the medical record.
- The denominator would be the total number of patients diagnosed during that same time period.

Continuous variables (e.g. the refracted spherical equivalent after cataract surgery) can often be simplified and transformed then into percentage rates by setting a quality threshold (within 0.5 diopters in the intended spherical equivalent) which, if attained, would qualify the patient to be in the numerator (e.g. number of patients within 0.5 diopters / total number of patients). It can be advantageous but not mandatory to have more than one quality measure in order to gauge the impact of your process change. In the example above, an additional outcome measure might be the percentage of patients in whom the goal IOP is attained within the first 6 months after diagnosis. If possible, measure quality indicators for at least 30 individual patients or data points during the baseline and again during the follow up period.

**Measure Type:** Process**Measure Name:** Percentage of patients with ordered tests that did not receive results.**Numerator Statement:** Number of patients with ordered tests that did not receive results.**Denominator Statement:** Number of patients with ordered tests.

We realize that this may not be feasible or appropriate for all projects. Please indicate at least one measure below; either a process or outcome measure:

**Example Measure:**

- . Measure Type: Process Measure
- . Measure Name: Patient pain level during intravitreal injection
- . Numerator Statement: Number of patients in who pain levels decreased by 2 points on a 1-10 scale
- . Denominator Statement: 30 consecutive patients undergoing intravitreal injection.

<p><b>Project Interventions:</b>  Quality improvement requires that you analyze your care delivery processes and identify changes, which if implemented, will improve care and outcomes. Generally, educational interventions are thought to be weak and demonstrate little impact. The introduction of tools, strategies or systematic approaches to care delivery is more powerful. A tool is a thing, for example a preoperative checklist, or written standardized process or protocol. Strategies include changes in procedures or policies like the introduction of a surgical time out before surgery is initiated. Systematic approaches to care delivery involve a comprehensive analysis of care process and the introduction of a combination of tools and strategies designed as a complete process. Please describe the changes to your care processes you intend to introduce:</p>	<p>We will look at the charts of every patient with a test ordered in the last four months and extract the data into a spreadsheet for each of the four steps required to complete the process of proper patient care for ordering tests and acting upon their results. Going forward we will implement a new protocol in the office involving the front desk staff to log each of the steps, and then the physician will log the final step. The physician can review the log at any time. We will continue this for four months involving all patients who have tests ordered prospectively and compare the outcomes before and after implementing the new Lab Test Notification Protocol to examine for an improvement in the delivery of patient care.</p>
<p><b>Project Team:</b>  (include roles for yourself and all members of your team):  List the individuals who will be involved in your quality improvement project (i.e., solo project, partners in practice, office staff, OR personnel, anesthesiologists) and the roles they will contribute.</p>	<p>Solo project, with the assistance of office support staff.</p>
<p>Will any other ophthalmologists be requesting MOC credit for participation in this SD-PIM?</p>	<p>No</p>

## Project Outcomes/Results

<b>Project Summary</b>	In the following sections, please prepare a brief summary of the project highlighting the data collected, effectiveness of your measurement approach, interventions, and the overall impact of the project.
<b>Baseline Data:</b> Quantify each of the quality indicators / performance measures described above for the baseline period (before interventions for improvement were introduced). Report the numerator, denominator and the calculated percentage rate for each measure.	<b>Numerator:</b> 50. The number of patients successfully notified in person or by directly phone of their test results. A chart review was performed for all 55 patients, and documentation was found that 50 patients were notified. One never went through with the test. Four were missed, all of whom were benign normal results. <b>Denominator:</b> 54. From 9/1/17 until 12/31/17 (four months) a total of 55 tests were ordered (pathology, radiology, laboratory), but one patient did not have the test done.  Percentage of patients successfully notified of their test results: $50/54=92.6\%$ .
<b>Follow-up Data:</b> Quantify each of the quality indicators / performance measures described above for the re-measurement period (the period following implementation of the interventions for improvement).	<b>Numerator:</b> 63. The number of patients successfully notified in person or by directly phone of their test results. This included three patients who were unable to be contacted, but whose results were mailed to them based on the specimen log review. <b>Denominator:</b> 64. From 1/1/18 until 4/30/18 (four months) a total of 64 tests were ordered (pathology, radiology, laboratory), but one patient refused to have the test done.  Percentage of patients successfully notified of their test results: $63/64=98.4\%$ .

## Project Impact

<p>Compare the baseline data to the re-measurement / follow-up data and quantify the impact of the process of care changes (your project interventions). The project hopefully resulted in improvement; however, some projects may result in a diminution in quality. If a lack of improvement or reduction in quality occurred, suggest other strategies that might be more effective.</p>	<p><b><u>Two sample t-test (pooled variance), using T distribution (DF=116.0000) (two-tailed) (validation)</u></b></p> <p><b><u>1. H0 hypothesis</u></b></p> <p>Since <math>p\text{-value} &lt; \hat{\pm}</math>, H0 is rejected.</p> <p>The average of <b>Group-1's</b> population is considered to be <b>not equal to</b> the average. of the <b>Group-2's</b> population.</p> <p>In other words, the difference between the average of the <b>Group-1</b> and <b>Group-2</b> populations is big enough to be statistically significant.</p> <p><b><u>2. P-value</u></b></p> <p>p-value equals 1.59084e-58, ( <math>p(x\hat{\%}\circ\pi T) = 7.95420e-59</math> ). This means that the chance of type1 error (rejecting a correct H0) is small: 1.591e-58 (1.6e-56%). The smaller the p-value the more it supports H1.</p> <p><b><u>3. The statistics</u></b></p> <p>The test statistic T equals -31.388738, is not in the 95% critical value accepted range: [-1.9806 : 1.9806]. <math>x_1-x_2=-5.80</math>, is not in the 95% accepted range: [-0.3700: 0.008454].</p> <p>The statistic S' equals 0.185</p> <p>My impression, and supported by the statistical analysis above, is that creating a log for the patient tests has a positive impact on patient care. Before creating the log, I thought we were notifying each patient of their results, but we could not be absolutely certain. The log made it 100% verifiable, and in the rare instance we did not reach a patient, it was readily apparent when we performed our monthly review, and a letter was mailed to the patient.</p>
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## Project Reflection

<p>Did you feel the project was worthwhile, effective?</p>	<p>YES</p>
<p>How might you have performed the project differently?</p>	<p>I think the project was performed very well, and we have instituted this as a standard operating procedure in our office in order to prevent patient care errors.</p>
<p>Please offer suggestions for other ophthalmologists undertaking a similar project.</p>	<p>I think this should be a standard operating procedure for all ophthalmologists. Some EMR systems may already have this feature built into their operating platform.</p>