

# ABO SELF-DIRECTED IMPROVEMENT IN MEDICAL PRACTICE ACTIVITY (CLINICAL)

## Topic

<b>Title of Project:</b>	How to Improve the Effectiveness of Our Treatment of Patients with Diabetic Macular Edema - an Ophthalmologist Led Initiative.
--------------------------	--

## 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>Diabetes is an increasingly common systemic disease often complicated by sight-threatening visual loss resulting from diabetic macular edema. The successful treatment of diabetic macular edema can be slow and difficult, requiring numerous patient visits for the repeated intraocular injection of very expensive drugs. The treatment of diabetic macular edema is well understood to be less effective in patients with poorly controlled blood sugar and higher than normal systolic blood pressure. The objective of this project will be to leverage the resources of an integrated health maintenance organization to achieve a more rapid and significant reduction in blood sugar and systolic blood pressure in our patients with diabetic macular edema.</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>In my practice, patients with macular edema are educated regarding the importance of decreasing their blood sugar and normalizing their systolic blood pressure, explaining that treatment will be less effective and the risk of visual loss greater if their blood sugar and blood pressure are not better controlled. Unfortunately, all too often, after numerous intraocular injections without improvement due to persistently high blood sugars and blood pressures, the patients and I become discouraged. Despite communication with the patient's primary care doctor requesting assistance in helping the patient gain control of their diabetes and hypertension, improvement can be frustratingly slow.</p> <p>I practice within a large, fully capable and very well integrated health maintenance organization (Kaiser Permanente of Southern California). Patient care at KP is managed by a network of health care providers who communicate easily through a world class computerized medical record.</p> <p>This "Self-Directed Practice Improvement Module" project represents a new, more energetic effort by me to leverage the resources of our organization to improve the eye health of my patients with diabetic macular edema.</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>	Health Network
<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>	30 consecutive patients with center-involving diabetic macular edema will be identified and enrolled in this project

**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.

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:** Outcome

**Measure Name:** Blood sugars (Hgb A1c) and systolic blood pressures (mmHg)

**Numerator Statement:** Number of patients with 50 % reduction in Hgb A1c above 7.0 and systolic blood pressure above 130 mmHg

**Denominator Statement:** 30 patients undergoing treatment for diabetic macular edema

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.

**Project Interventions:**

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:

**Process of Care Measures:**

An Action Plan of specific initiatives, representing the care process to be improved, will be implemented in the eye clinic by myself and our staff, including: -

Formalized, written request sent to the patient's Primary Care Physician to join me in this project to rapidly and significantly improve / normalize the patient's blood sugar / systolic blood pressure - requiring a timely review of the patient's medications with strong consideration given to the addition of new medications or an adjustment in dosage of exiting medications aimed at lowering the patient's blood sugar and systolic blood pressure.

Written, signed contract with patient to become and remain compliant in taking all prescribed medications, to keep a daily log of measured blood sugars (blood pressures) and to participate in a personal program of daily exercise (walking).

Immediate referral to a health plan nutritionist with the objective of developing a strategy for improving the diabetic patient's diet and achieving any recommended weight loss as part of an effort to better control blood sugar and blood pressure.

Enroll patient in nurse's clinic program of frequent blood pressure monitoring (recorded). Immediate enrollment in health plan smoking cessation program, if a smoker.

**Outcome Measures:**

The patient's blood sugar (Hgb A1c) and systolic blood pressure will be measured at the beginning and end of a 3-month period. The percent improvement in blood sugar (Hgb A1c) and systolic blood pressure (mmHg) will be measured in each of the enrolled patients. The average percent improvement of the "improved practice" group will then be compared to the average percent improvement in blood sugar and systolic blood pressure after 3 months in a similar group of 30 consecutively identified patients with center-involving diabetic macular edema not participating in the program of practice improvement in order to measure the success of the project interventions.

<p><b>Project Team:</b> (include roles for yourself and all members of your team):</p> <p>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>Retina Specialist (myself) will examine and enroll project patients, order tests, coordinate patient care (Primary Care) outside the eye clinic and review / report results.</p> <p>Office Medical Assistant will measure blood pressures and coordinate patient care within the eye clinic.</p> <p>Office Nurse will assist in coordinating patient care outside the eye clinic, arranging referrals to the nutritionist and nurse's clinic (blood pressure monitoring) as well as obtain the contract with each patient (compliance with prescribed medications, keeping blood sugar log and adhering to an exercise regimen).</p> <p>Primary Care Physician will play a role in the management of the patients' medications to control blood sugar and blood pressure.</p>
<p>Will any other ophthalmologists be requesting MOC credit for participation in this SD-PIM?</p>	<p>No</p>

## Project Outcomes/Results

<p><b>Project Summary</b></p> <p>In the following sections please prepare a summary of the project highlighting the data collected, effectiveness of your measurement approach, interventions and the overall impact of the project.</p>	
<p><b>Baseline Data:</b></p> <p>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.</p>	<p>The objective of this self-directed practice improvement activity is to establish a method to more rapidly improve blood sugar and systolic blood pressure in a group of 30 diabetic patients with center-involved macular edema, increasing the effectiveness of treatment and reducing the risk of visual loss in these patients.</p> <p>Blood sugar (HgbA1c) and systolic blood pressure (BP, mmHg) were measured on enrollment for each of 60 consecutive diabetic patients with center-involved macular edema. 30 of these patients were randomly selected to receive the "Improved Care Process".</p> <p>Baseline measures:</p> <p>(cumulative) Average HgbA1c = (317.7/30) 10.59 in Improved Care Process patients</p> <p>(cumulative) Average HgbA1c = (309.3/30) 10.31 in Routine Care Process patients</p> <p>(cumulative) Average systolic BP = (4647/30) 154.9 mmHg in Improved Care Process patients</p> <p>(cumulative) Average systolic BP = (4608/30) 153.6 mmHg in Routine Care Process patients</p>

<p><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).</p>	<p>Blood sugar (HgbA1c) and systolic blood pressure (BP, mmHg) were measured again after at least 3 months (not more than 4 months) following enrollment in each patient group.</p> <p>Follow-up measures:</p> <p>(cumulative) Average HgbA1c = (238.8/30) 7.96 in Improved Care Process patients</p> <p>(cumulative) Average HgbA1c = (267.6/30) 8.92 in Routine Care Process patients</p> <p>(cumulative) Average systolic BP = (4050/30) 135.0 mmHg in Improved Care Process patients</p> <p>(cumulative) Average systolic BP = (4236/30) 141.2 mmHg in Routine Care Process patients</p>
--	--

## 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>Improvement in blood sugar (HgbA1c) and systolic blood pressure (BP, mmHg) for each patient group were expressed as a percent decrease from baseline measurements toward a target value or goal of HgbA1c = 7.0 and systolic BP = 130 mmH, respectively.</p> <p>Improved Care Process Group (decrease in HgbA1c) baseline &lt;HgbA1c&gt; 10.59 - follow-up &lt;HgbA1c&gt; 7.96 = 2.63 / [10.59 - 7.00] or 3.59 = 73.2 % decrease in HgbA1c</p> <p>Routine Care Process Group (decrease in HgbA1c) baseline &lt;HgbA1c&gt; 10.31 - follow-up &lt;HgbA1c&gt; 8.92 = 1.39 / [10.31 - 7.00] or 3.31 = 41.9 % decrease in HgbA1c</p> <p>Improved Care Process Group (decrease in systolic BP, mmHg) baseline &lt;BP, mmHg&gt; 154.9 - follow-up &lt;BP, mmHg&gt; 135.0 = 19.9 / [154.9 - 130] or 24.9 = 79.9 % decrease in systolic BP</p> <p>Routine Care Process Group (decrease in systolic BP, mmHg) baseline &lt;BP, mmHg&gt; 153.6 - follow-up &lt;BP, mmHg&gt; 141.2 = 12.4 / [153.6 - 130] or 23.6 = 52.5 % decrease in systolic BP</p> <p>Blood sugar (HgbA1c) and systolic blood pressure (BP, mmHg) in the Improved Care Process group decreased 73.2 % and 79.9 %, respectively, representing significantly greater rates of decrease versus the Routine Care Process group with decreases of 41.9 % (HgbA1c) and 52.5 % (BP, mmHg), respectively.</p> <p><b>Conclusion:</b> Patients in the Improved Care Process group experienced a greater rate of decrease in both blood sugar and systolic blood pressure. The Improved Care Process, as described in the "Action Plan of Specific Initiatives" in the Process of Care Measures section, would be expected to improve the effectiveness of treatment and reduce the risk of visual loss in patients with center-involved diabetic macular edema.</p>
---	--

## Project Reflection

Did you feel the project was worthwhile, effective?	Yes
How might you have performed the project differently?	The Improved Care Process patient group might have been divided into 2 subgroups with an improvement in blood sugar emphasized in one subgroup and the improvement in systolic blood pressure as the objective in the second subgroup. After lengthier follow-up, allowing for a period of treatment, visual outcome measures validating the increased effectiveness of treatment in the Improved Care Process subgroups as well as a conclusion regarding the relative importance of blood sugar verses systolic blood pressure control in the successful treatment of diabetic macular edema might then be achieved.
Please offer suggestions for other ophthalmologists undertaking a similar project.	N/A