

Report on a QI Project Eligible for Part IV MOC and AAPA PI-CME

Improving Treatment Strategies for Patients with TMJ Syndrome

Instructions

Determine eligibility. Before starting to complete this report, go to the UMHS MOC website [ocpd.med.umich.edu], click on "Part IV Credit Designation," and review sections 1 and 2. Complete and submit a "QI Project Preliminary Worksheet for Part IV Eligibility." Staff from the UMHS Part IV MOC Program will review the worksheet with you to explain any adjustments needed to be eligible. (The approved Worksheet provides an outline to complete this report.)

Completing the report. The report documents completion of each phase of the QI project. Final confirmation of Part IV MOC for a project occurs when the full report is submitted and approved.

An option for preliminary review (recommended) is to complete a description of activities through the intervention phase and submit the partially completed report. (Complete at least items 1-16 and 27a-b.) Staff from the UMHS Part IV MOC Program will provide a preliminary review, checking that the information is sufficiently clear, but not overly detailed. This simplifies completion and review of descriptions of remaining activities.

Questions are in bold font and answers should be in regular font (generally immediately below the questions). To check boxes electronically, either put an "X" in front of a box or copy and paste "☒" over the blank box.

For further information and to submit completed applications, contact either:

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Report Outline

Section	Items
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C. Do	14-16. Intervention(s), who is involved, initiated when
D. Check	17-18. Post-intervention performance measurement, data collection, performance level
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H. Readjust plan	24. Review, continuing/new underlying causes to address
I. Future plans	25-28. Subsequent PDCA cycles, standardize processes, "spread" to other areas
J. Physician involvement	29-31. Physician's role, requirements, reports, reflections, participation, number
K. Sharing results	32. Plans for report, presentation, publication
L. Project Organization	33. Part of larger initiative, organizational structure, resources, oversight, Part IV opportunity

QI Project Report for ABMS Part IV MOC and AAPA PI-CME Eligibility

A. Introduction

1. **Date** (*this version of the-report*):
4/15/16

2. **Title of QI project:**
Improving Treatment Strategies for Patients with TMJ Syndrome

3. **Time frame**

- a. **Date providers begin participating (may be in design phase):** 9/1/15
b. **End date:** 4/15/16

4. **Key individuals**

a. **QI project leader** [*also responsible for attesting to the participation of physicians in the project*]

Name: Brian Kilbarger M.S. PA-C

Title: Associate Chief Physician Assistant UMHS, Lead Physician Assistant Otolaryngology Head and Neck Surgery

Organizational unit: Department of Otolaryngology Head and Neck Surgery Adult section

Phone number: 734-647-6483

Email address: bburgs@med.umich.edu

Mailing address: 1904 Taubman Center

a. **Clinical leader to whom the project leader reports regarding the project** [*responsible for overseeing/"sponsoring" the project within the specific clinical setting*]

Name: Hussam El-Kashlan M.D.

Title: Associate Chair Department of Otolaryngology Head and Neck Surgery, Professor of Otolaryngology

Organizational unit: Department of Otolaryngology Head and Neck Surgery, Division of Neuro-otology

Phone number: 734-936-8006

Email address: Hussam@med.umich.edu

Mailing address: 1904 Taubman Center

5. **Approximately how many participants were involved in this project categorized by specialty and/or subspecialty?**

Physicians: 2-3 Adult Otolaryngology and Neurology faculty.

Physician Assistants: 3 Otolaryngology experienced physician assistants.

6. **Will the funding and resources for the project come only from internal UMHS sources?**

Yes, only internal UMHS sources

No, funding and/or resources will come in part from sources outside UMHS,
which are: _____

The Multi-Specialty Part IV MOC Program requires that projects engage in change efforts over time, including at least three cycles of data collection with feedback to providers and review of project results. Some projects may have only three cycles while others, particularly those involving rapid cycle improvement, may have several more cycles. The items below are intended to provide some flexibility in describing project methods. If the items do not allow you to reasonably describe the methods of your specific project, please contact the UMHS Part IV MOC Program office.

B. Plan

7. **General goal**

a. Problem/need. What is the “gap” in quality that resulted in the development of this project? Why is this project being undertaken?

Patients are frequently referred to Otolaryngology for complaints of ear pain that are often unrelated to the ear. This pain is commonly due to pain radiating from temporomandibular joint syndrome, bruxism, or muscular spasm and pain that gets classified as myofascial pain syndrome. Evidence in the literature suggests improved pain outcomes with the utilization of medical treatment consisting of a soft diet with non-steroidal anti-inflammatory medications, in addition to an occlusal guard. In addition, implementation of a physical therapy regimen with medical treatment has shown some promise to reduce this chronic condition.

Clinicians specializing in care for these conditions are likely to provide more effective care than primary care providers, who do not have the means to treat these complicated pain issues. However, after otolaryngologists rule out causes related to the ear and diagnose these other conditions, they often refer these patients back to their primary providers rather than to specialists in treating these conditions.

b. Health care provider’s role. What is the provider’s role related to this problem?

In patients with chronic ear pain who are seen in the Otolaryngology clinic, physicians and physician assistants are to diagnose these conditions, exclude more worrisome conditions, provide counseling as appropriate, make referrals to appropriate treatment specialists, and document appropriate counseling provided in the medical record.

c. Project goal. What general outcome regarding the problem should result from this project?

(Specific aims/targets are addressed in #12b.)

The goal of this project is to improve medical treatment for patients presenting with primary diagnosis otalgia with secondary diagnoses of TMJ syndrome, bruxism, and myofascial pain syndrome by referring these patients to dentistry for occlusal guard as well as to physical therapy for treatment of myofascial pain.

8. Patient population. What patient population does this project address.

This project will include all patients seen in the adult Taubman Otolaryngology clinic that have been diagnosed with otalgia, TMJ, bruxism, or myofascial pain syndrome.

9. Which Institute of Medicine Quality Dimensions are addressed? [Check all that apply.]

- | | | |
|---|--|--|
| <input checked="" type="checkbox"/> Effectiveness | <input type="checkbox"/> Equity | <input checked="" type="checkbox"/> Safety |
| <input checked="" type="checkbox"/> Efficiency | <input checked="" type="checkbox"/> Patient-Centeredness | <input checked="" type="checkbox"/> Timeliness |

10. What is the experimental design for the project?

- Pre-post comparisons (baseline period plus two or more follow-up measurement periods)
- Pre-post comparisons with control group
- Other: _____

11. Baseline measures of performance:

a. What measures of quality are used? If rate or %, what are the denominator and numerator?

Four measures are used. For all four measures the denominator is the total number of patients seen in the adult Taubman Otolaryngology clinic that have been diagnosed with otalgia, TMJ, bruxism, or myofascial pain syndrome.

Referral for occlusal guard, only (not physical therapy). The number and percent of patients with documented referral to UMHS dentistry or the patient’s dentist for occlusal guard, and/or documented recommendations for patients to use their existing occlusal guard, but no referral to physical therapy.

Referral for physical therapy only (not occlusal guard). The number and percent of patients referred to physical therapy, but not to dentistry for occlusal guard and no recommendation for patients to use their existing occlusal guard.

Referred for both occlusal guard and physical therapy. The number and percent of patients that referred for either occlusal guard (or recommendation to use existing occlusal guard) and physical therapy.

Referral for either or both occlusal guard and physical therapy. The number and percent of patients referred for occlusal guard only, physical therapy only, and both occlusal guard and physical therapy.

b. Are the measures nationally endorsed? If not, why were they chosen?

These numbers are not nationally endorsed. There is evidence in the literature that suggests that patients with TMJ, bruxism, or myofascial pain syndrome have better outcomes when managed with combined treatments using traditional medical management of soft diet, NSAIDS, in addition to occlusal guard and physical therapy.

c. What is the source of data for the measure (e.g., medical records, billings, patient surveys)?
 Medical records-Outpatient clinic notes.

d. What methods were used to collect the data (e.g., abstraction, data analyst)?
 Using a MiChart report tool, we were able to create a list of patients that were seen in the adult Taubman Otolaryngology clinic that have been diagnosed with otalgia, TMJ, bruxism, or myofascial pain syndrome. This list was then divided among participating clinicians for review of the medical record. The numerator and denominator were tracked on a form provided by the project lead.

e. For what time period was the sample collected for baseline data?
 September 1, 2015-September 30, 2015

12. Specific performance objectives

a. What was the overall performance level(s) at baseline? (E.g., for each measure: number of observations or denominator, numerator, percent. Can display in a data table, bar graph, run chart, or other method. Can show here or refer to attachment with data.)

Time Period	Number of Eligible Patients	% Referred for Dental Evaluation/ Occlusal Guard Only	% Referred for Physical Therapy Only	% with Both Referrals	% with Either or Both Referrals
Baseline: 9/1/15-9/30/15	41	27%	10%	15%	52%

b. Specific aim: What was the target for performance on the measure(s) and the timeframe for achieving the target?

The specific aim is to increase the percentage of patients with any referral from 52% to a target of 80% by the end of the second cycle of improvement, i.e. by the end of March 2016

c. How were the performance targets determined, e.g., regional or national benchmarks?
 There are no regional or national benchmarks. The goal compliance of 80% was considered a realistic target because referrals will occasionally not occur due to specific patients factors (e.g., lack of insurance, inability to travel for physical therapy, patient willingness).

13. Data review and identifying underlying (root) causes.

a. Who was involved in reviewing the baseline data, identifying underlying (root) causes of the problem(s), and considering possible interventions (“countermeasures”) to address the causes? Briefly describe:

- **Who was involved?**

Brian Kilbarger M.S. PA-C (project lead), Alexandra Tiefel M.S. PA-C, and Janet Urban M.S. PA-C

- **How?** (e.g., in a meeting of clinic staff)

The project lead met with them individually, as Mrs. Tiefel is located offsite.

- **When?**

The discussions occurred during October 2015

b. What were the primary underlying/root causes for the problem(s) that the project can address? (Causes may be aspects of people, processes, information infrastructure, equipment, environment, etc. List each primary cause separately.)

Unaware: Physicians caring for patients with chronic ear pain have been trained in neurotology, general otolaryngology, and rhinology, and thus may not be aware of the necessity for referrals to dentistry and physical therapy for the conditions listed in #8. In addition, these physicians are not familiar with the appropriate physical therapists to refer these patients to when they do make the referrals.

Inconsistent process to refer patients: Processes are not consistent across providers for either referring patients to the Hospital Dentistry Department or to the TMJ clinic in our Oral Surgery Department.

Delays for patients to be seen: There are very long wait times for patients to be seen in the TMJ clinic at U of M, and thus physicians are dissatisfied with the service being provided. They have chosen to not send patients at all, as they do not know who else to send these patients to.

C. Do

14. Intervention(s). Describe the interventions implemented as part of the project.

“Unaware” was addressed by education: The initial phase of the intervention was educating providers regarding the need for patient referrals to both dentistry for occlusal guards (including encouragement for patients to wear existing oral appliances) as well as the need for physical therapy. Physicians received emails informing them of this project, and that current literature suggests improved outcomes for patients when combination therapy is initiated.

“Inconsistent process to refer patients” was addressed by developing a standard practice for referrals: The Adult Otolaryngology physicians were informed how to develop standard referral for TMJ physical therapy that could be saved as a favorite in their order sets. In this order, we have recommended that Elizabeth Wiggert PT triage these patients, as she has great experience in managing patients with TMJ.

Delays for patients to be seen by the TMJ clinic were addressed by meeting with the medical director of this clinic (Dr Lawrence Ashman DDS). Dr Ashman suggested that when patients are being referred to his clinic by Otolaryngology providers, that he be included in the letter to the referring physician so that he could attempt to expedite an appointment. He does so by adding these patients to his resident’s schedule, and then he will oversee their care. This information was disseminated to the faculty by email.

15. Who was involved in carrying out the intervention(s) and what were their roles?

Physician assistants (Brian Kilbarger M.S. PA-C (project lead), Alexandra Tiefel M.S. PA-C, and Janet Urban M.S. PA-C), physicians, the director of the TMJ clinic, and a physical therapist were involved.

- Brian Kilbarger spent time discussing this project individually with faculty members, encouraging buy in for management of a condition that most Otolaryngologists do not feel they should be treating. Mrs. Tiefel sent emails to the group of physicians reminding them of the same.

- Mr. Kilbarger also met with Dr Larwence Ashman DDS, who is the director of the TMJ clinic at U of M to determine ways to increase access for patient to his clinic.
- Janet Urban made contact with Elizabeth Wiggert to ensure proper triage of these patients once the physical therapy order was placed.

16. When was the intervention initiated? (For multiple interventions, initiation date for each.)

Kilbarger: Met with Dr Ashman in October 2015. Meetings with physicians began in early November, through mid-November during clinic interactions.

Tiefel: Email was sent out in early November informing physicians of this project, and the specific aims.

Urban: Email conversation with Ms. Wiggert PT. was undertaken in October 2015.

The interventions were fully implemented by November 1, 2015.

D. Check

17. Post-intervention performance measurement. Did this data collection follow the same procedures as the initial collection of data described in #11: population, measure(s), and data source(s)?

Yes No – If no, describe how this data collection

18. Performance following the intervention.

a. The collection of the sample of performance data following the intervention occurred for the time period:

November 15, 2015- December 15, 2015

b. What was post-intervention performance level? (E.g., for each measure: number of observations or denominator, numerator, percent. Can display in a data table, bar graph, run chart, or other method. Can show here or refer to attachment with data.)

Time Period	Number of Eligible Patients	% Referred for Dental Evaluation/ Occlusal Guard Only	% Referred for Physical Therapy Only	% with Both Referrals	% with Either or Both Referrals
Baseline: 9/1/15-9/30/15	41	27%	10%	15%	52%
Post-Intervention: 11/15/15-12/15/15	32	44%	3%	41%	88%

c. Did the intervention produce the expected improvement toward meeting the project’s specific aim (item 12.b)?

Yes. The specific aim is to increase compliance beyond 80%. Baseline measurements were 52%, and with this recent measurement, we are at 88%.

E. Adjust – Replan

19. Review of post-intervention data and identifying continuing/new underlying causes.

a. Who was involved in reviewing the post-intervention data, identifying underlying (root) causes of the continuing/new problem(s), and considering possible adjustments to interventions (“countermeasures”) to address the causes? Briefly describe:

- **Who was involved?**

Physician assistants (Brian Kilbarger M.S. PA-C (project lead), Alexandra Tiefel M.S. PA-C, and Janet Urban M.S. PA-C), physicians, the director of the TMJ clinic, and a physical therapist were involved.

- **How?** (e.g., in a meeting of clinic staff)

A MiChart diagnosis report was run by Janet Urban to establish our data set. The list of patients was divided amongst Alex Tiefel, Janet Urban, and Brian Kilbarger to review each patient chart and determine if patient was appropriate for inclusion, and which category they should be placed.

- **When?**

This was completed in early January 2016.

b. What were the primary underlying/root causes for the continuing/new problem(s) that the project can address? (Causes may be aspects of people, processes, information infrastructure, equipment, environment, etc. List each primary cause separately.)

Multiple people assisting the medical providers can add a level of misunderstanding of this new process. The first post intervention data suggests an improvement from 52% at baseline, to 88% after education, development of smart order sets, and dissemination of contact information to the faculty. We feel as though we did not reach 100% compliance, as the faculty members are often working with trainees as well as medical scribes and their understanding of this process had not been considered.

Faculty members do not wish to treat non-otologic sources for ear pain. Throughout the project, one senior faculty member expressed alternatives to smart orders, and education. They proposed that all patients with referring diagnosis of ear pain be triaged into the physician assistant clinics.

F. Redo

20. Second intervention. What additional interventions/changes were implemented?

Multiple people assisting the medical providers can add a level of misunderstanding of this new process was addressed by informing the medical scribes of our project, and the smart phrases and order sets were shared with them. The faculty members were comfortable with the wording, and thus the scribes began implementing this change for the faculty. Having smart physical therapy orders pre-populated has helped reduce scribe confusion when placing the order for the faculty. Due to resident educational rotations, we opted not to include the residents in this process improvement, as we would have to educate multiple providers as the rotations change.

Faculty members do not wish to treat non-otologic sources for ear pain was addressed by communicating with the faculty members that patients have a choice to see a physician provider, or a physician assistant. It is our current practice to schedule patients with the first available provider, which consistently is a physician assistant. We therefore did not intervene with the call center to develop new strategies.

21. The second intervention was initiated when? (For multiple interventions, initiation date for each.)

2/1/16-2/14/16

G. Recheck

22. Post-second intervention performance measurement. Did this data collection follow the same procedures as the initial collection of data described in #11: population, measure(s), and data source(s)?

Yes No – If no, describe how this data collection

23. Performance following the second intervention.

a. The collection of the sample of performance data following the intervention(s) occurred for the time period:

2/15/16-3/15-16

b. What was the performance level? (E.g., for each measure: number of observations or denominator, numerator, percent. Can display in a data table, bar graph, run chart, or other method. Can show here or refer to attachment with data.)

Time Period	Number of Eligible Patients	% Referred for Dental Evaluation/ Occlusal Guard Only	% Referred for Physical Therapy Only	% with Both Referrals	% with Either or Both Referrals
Baseline: 9/1/15-9/30/15	41	27%	10%	15%	52%
Post-Intervention: 11/15/15-12/15/15	32	44%	3%	41%	88%
Post-Adjustment: 2/15/16-3/15/16	44	48%	2%	32%	82%

c. Did the second intervention produce the expected improvement toward meeting the project’s specific aim (item 12.b)?

Yes. The specific aim is to increase compliance beyond 80%. Baseline measurements were 52%, and with this recent measurement, we are at 82%. We believe the change from 88% to 82% is random variation.

H. Readjust

24. Review of post-second intervention data and identifying continuing/new underlying causes.

a. Who was involved in reviewing the data, identifying underlying (root) causes of the continuing/new problem(s), and considering additional possible adjustments to interventions (“countermeasures”) to address the causes? Briefly describe:

• **Who was involved?**

Physician assistants (Brian Kilbarger M.S. PA-C (project lead), Alexandra Tiefel M.S. PA-C, and Janet Urban M.S. PA-C), physicians, the director of the TMJ clinic, and a physical therapist were involved.

• **How?** (e.g., in a meeting of clinic staff)

A Mi Chart diagnosis report was run by Janet Urban to establish our data set. The list of patients was divided amongst Alex Tiefel, Janet Urban, and Brian Kilbarger to review each patient chart and determine if patient was appropriate for inclusion, and which category they should be placed.

• **When?**

This process was completed between 3/16/16 and 4/11/16.

b. What were the primary underlying/root causes for the continuing/new problem(s) that the project can address? (Causes may be aspects of people, processes, information infrastructure, equipment, environment, etc. List each primary cause separately.)

A possible internal cause is that some faculty members do not wish to address non-otologic sources for ear pain. However, throughout our project we encountered this only once, although there may be an underlying culture among surgeons to avoid treatment of non-surgical conditions.

The main causes for the gap between 80% and 100 % for referrals are patient specific factors (e.g. (e.g., lack of insurance, inability to travel for physical therapy, patient willingness), which are beyond the scope of this project.

If no additional cycles of adjustment are to be documented for the project for Part IV credit, go to item #25.

If a few additional cycles of adjustments, data collection, and review are to be documented as part of the project to be documented, document items #20 – #24 for each subsequent cycle. Copy the set of items #20 – #24 and paste them following the last item #24 and provide the information. When the project to be documented for Part IV credit has no additional adjustment cycles, go to item #25.

If several more cycles are included in the project for Part IV credit, contact the UM Part IV MOC Program to determine how the project can be documented most practically.

I. Future Plans

25. How many subsequent PDCA cycles are to occur, but will not be documented as part of the “project” for which Part IV credit is designated?

No further PDCA cycles are planned at the current time. The goal has been reached and then sustained. Improvement beyond the 80% goal will involve addressing patient factors that are substantially more difficult.

26. How will the project sustain processes to maintain improvements?

Implementation of smart order sets and smart phrases, which are pre-populated, will help providers identify appropriate channels for referral to appropriate providers. Inclusion of our departmental medical scribes with these order sets, and smart phrases in the electronic medical record has proven instrumental in successfully implementing change.

27. Do other parts of the organization(s) face a similar problem? If so, how will the project be conducted so that improvement processes can be communicated to others for “spread” across applicable areas?

This problem is unique to Otolaryngology, as many patients are seen by non-Oto providers and referred to our department for evaluation of their ear complaints. Other departments can learn through our ability to enact change by creating simple smart orders and smart phrases that can be shared among providers and scribes.

28. What lessons (positive or negative) were learned through the improvement effort that can be used to prevent future failures and mishaps or reinforce a positive result??

Faculty members are hesitant to invoke change in their clinical practice. By taking a series of steps, and simplifying the interventions, we were able to successfully invoke the desired change.

J. Provider Involvement

Note: To receive Part IV MOC a provider must both:

a. Be actively involved in the QI effort, including at a minimum:

- Work with care team members to plan and implement interventions*
- Interpret performance data to assess the impact of the interventions*
- Make appropriate course corrections in the improvement project*

b. Be active in the project for the minimum duration required by the project

29. Provider’s role. What were the minimum requirements for physicians to be actively involved in this QI effort? (What were physicians to do to meet each of the basic requirements listed below?)

If this project had additional requirements for participation, also list those requirements and what physicians had to do to meet them.)

- a. Interpreting baseline data, considering underlying causes, and planning intervention. *(As appropriate, use or modify the following response.)*
Providers had to participate as described in item #13a.
- b. Implementing intervention. *(As appropriate, use or modify the following response.)*
Providers had to participate as described in items #14, #15, and #16.
- c. Interpreting post-intervention data, considering underlying causes, and planning changes. *(As appropriate, use or modify the following response.)*
Providers had to participate as described in item #24a.
- d. Implementing further intervention/adjustments. *(As appropriate, use or modify the following response.)*
Providers had to participate as described in items #20 and #21.
- e. Interpreting post-adjustment data, considering underlying causes, and planning changes. *(As appropriate, use or modify the following response.)*
Providers had to participate as described in item #24a.

30. How were reflections of individual providers about the project utilized to improve the overall project?

The physician assistants provided their ideas to the project lead at each stage of the project, which the project lead incorporated into project planning.

In addition to the physician assistants, Dr Ashman was essential in helping to develop a communication plan between the Department of Otolaryngology and his TMJ clinic within Oral and Maxillofacial surgery. Dr Hussam El-Kashlan served as a mentor, as well as a physician liaison to the faculty should any concerns over the scope of this project come up. He was very supportive with this project; however he had no direct involvement with the data collection or interventions that were undertaken.

31. How did the project ensure meaningful participation by providers who subsequently request credit for Part IV MOC participation?

The project lead monitored the participation of providers in the project.

K. Sharing Results

32. Are you planning to present this QI project and its results in a:

- Yes No Formal report to clinical leaders?
 Yes No Presentation (verbal or poster) at a regional or national meeting?
 Yes No Manuscript for publication?

L. Project Organizational Role and Structure

33. UMHS QI/Part IV MOC oversight – this project occurs within:

University of Michigan Health System

• **Overseen by what UMHS Unit/Group?**

Department of Otolaryngology Head and Neck Surgery

• **Is the activity part of a larger UMHS institutional or departmental initiative?**

No Yes – the initiative is:

Veterans Administration Ann Arbor Healthcare System

• Overseen by what AAVA Unit/Group?

• Is the activity part of a larger AAVA institutional or departmental initiative?

No Yes – the initiative is:

An organization affiliated with UMHS to improve clinical care

• The organization is:

• The type of affiliation with UMHS is:

Accountable Care Organization type (*specify which*):

BCBSM funded, UMHS lead state-wide Collaborative Quality Initiative (*specify which*):

Other (*specify*):