

## Report on a QI Project Eligible for Part IV MOC:

### Improving Medication Reconciliation in Primary Care

#### 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
<b>A. Introduction</b>	1-6. Current date, title, time frame, project leader, specialties/subspecialties involved, funding
<b>B. Plan</b>	7-10. General goal, patient population, IOM quality dimensions addressed, experimental design 11-12. Baseline measures of performance, specific performance objectives 13. Data review and identifying underlying (root) causes
<b>C. Do</b>	14-16. Intervention(s), who is involved, initiated when
<b>D. Check</b>	17-18. Post-intervention performance measurement, data collection, performance level
<b>E. Adjust – Replan</b>	19. Review, continuing/new underlying causes,
<b>F. Redo</b>	20. Second intervention
<b>G. Recheck</b>	21-22. Post-adjustment performance measurement, data collection, performance level
<b>H. Readjust plan</b>	23. Review, continuing/new underlying causes to address
<b>I. Future plans</b>	24-26. Subsequent PDCA cycles, standardize processes, “spread” to other areas
<b>J. Physician involvement</b>	27-30. Physician’s role, requirements, reports, reflections, participation, number
<b>K. Project Organization</b>	31-33. Part of larger initiative, organizational structure, resources, oversight, Part IV opportunity

## QI Project Report for Part IV MOC Eligibility

### A. Introduction

1. **Date** (*this version of the-report*):  
4/19/2015

2. **Title of QI project:**

Improving Medication Reconciliation in Primary Care

3. **Time frame**

- a. **Date physicians begin participating (may be in design phase):** 11/1/2014  
b. **End date:** 12/24/2014

4. **Key individuals**

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

**Name:** Gabe Solomon

**Title:** Assistant Professor

**Organizational unit:** Ann Arbor VA Primary Care

**Phone number:** 734-678-5714

**Email address:** gsolomn@umich.edu

**Mailing address:** 2215 Fuller Road, Ann Arbor MI 48105

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

**Name:** Adam Tremblay

**Title:** Associate Professor

**Organizational unit:** Ann Arbor VA Primary Care

**Phone number:** 734-845-5290

**Email address:** astrembl@med.umich.edu

**Mailing address:** 2215 Fuller Road, Ann Arbor MI 48105

5. **Approximately how many physicians were involved in this project categorized by specialty and/or subspecialty?** 27

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 physicians 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?**

Medication reconciliation is a critical component of the outpatient visit and is mandated to occur at each outpatient visit by the Joint Commission. Without proper medication reconciliation patients do not have a clear understanding of the medications they take. Lack of understanding can lead to non-compliance, poor communication between physicians and adverse drug events. However, compliance with medication reconciliation is low in Ann Arbor primary care clinics. Medication reconciliation is time consuming and difficult to perform using the current VA electronic health record.

**b. Project goal. What outcome regarding the problem should result from this project?**

Substantially improve medication reconciliation compliance and documentation.

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

Primary care patients at the Ann Arbor VA

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

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

**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?**

Main outcome: Percent of patients with Medication Reconciliation Compliance (documentation)

- Denominator: 5 patients randomly sampled for each provider
- Numerator: # of patients with med rec compliance documented in primary care note
- Measured in 2 week intervals during study

Secondary process outcome: The intervention included use of a novel web-based Medication Reconciliation Tool. Its use is measured as percentage of patients seen for whom the tool was used.

- Denominator: total number of patients seen by providers
- Numerator: # of patients seen with med rec tool used (printed lists/copy to clipboard)
- Measured monthly during study

Note: The measures likely slightly underestimate appropriate performance. Patients with no medications may be included in the samples. Neither medication reconciliation nor the use of the tool would be performed for these patients. However, almost all patients seen have been prescribed medications, so the results are only lowered slightly by this sampling artifact.

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

Joint Commission requires medication reconciliation to be performed at each visit. The commission also requires a post-appointment medication list be given to each patient.

**c. What is the source of data for the measure (e.g., medical records, billings, patient surveys)?**

1. Med Rec Compliance: Medical record
2. Med Rec Tool use/lists printed: Med Rec Tool database

**d. What methods were used to collect the data (e.g., abstraction, data analyst)?**

1. Med Rec compliance: Individual clinicians calculated the total number of patients that they saw during the study period. Support staff performed a chart review to determine medication reconciliation compliance.
2. Med Rec Tool use: Report printed from the Med Rec Tool database

**e. How reliable are the data being collected for the purpose of this project?**

The data may slightly underrepresent actual performance. As noted above, both measures may slightly underrepresent actual performance to the extent that patients not on medications are included in the sample. The data documenting that medication reconciliation was performed may also be lower than the extent to which it was actually performed if a provider overlooked checking the “documentation it occurred” entry.

**f. How are data to be analyzed over time, e.g., simple comparison of means, statistical test(s)?**

The data are analyzed as simple comparison

**g. For what time period was the sample collected for baseline data?**

1. Med Rec Compliance: Last quarter of fiscal year 2014 (July 2014 - September 2014)
2. Med Rec Tool use/lists printed: Baseline use is zero because this tool was not used prior to this study

**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.)**

Medication Reconciliation Documented			Medication Reconciliation Tool Used		
Time Period	# Patients Sampled *	% Patients with Med Rec Documented	Time Period	# Patients Seen	% Patients with Med List Printed
Baseline 7/1/15 – 9/30/15	51	25%	Baseline		Not used

\* Baseline data were a representative sample of patients collected over a three-month period. For the shorter data collection periods following the intervention, 5 patients were randomly sampled from patients seen by each of the physicians on service during the time period.

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

By the end of the study period:

1. Med Rec Compliance: 80% of patients sampled
2. Med Rec Tool use: 80% of patient visits

**c. How were the performance targets determined, e.g., regional or national benchmarks?**

1. Med Rec Compliance: Goal set by VA at a regional level
2. Med Rec Tool Use/Lists Printed: No regional or national benchmarks. The goal was considered a realistic target.

**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?**  
All physicians providing primary care at the Ann Arbor VA
- **How?** (e.g., in a meeting of clinic staff)  
Journal club presentation on October 9, 2014
- **When?**  
The discussion occurred during October 2014 through January 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. How the intervention(s) address each primary underlying cause will be explained in #14.c.)

1. Unaware: some physicians did not understand the importance of performing medication reconciliation at every visit.
2. Different approaches: physicians had their own strategies for performing medication reconciliation
3. Logistical difficulty: Using the traditional electronic health record is time consuming. It was difficult and time consuming to review medications effectively and difficult to print out new (updated) medication lists

**C. Do****14. Intervention(s).****a. Describe the interventions implemented as part of the project.**

1. New Medication Reconciliation Tool: An electronic tool was added to the medical record system that allowed physicians quickly and easily to review medications, note changes in medications, and print a list of medications that was current at the end of the visit.
2. Education: Providers were educated about the importance of medication reconciliation and providing feedback concerning performance. Participating physicians received a handout and PowerPoint presentation. They also received a demonstration of the new med rec tool.
3. Standardized process for performing and documenting medication reconciliation: We created a standardized process for medication reconciliation during a typical primary care visit. Clerks use the Med Rec Tool to print a *pre-appointment* medication list that was given to the LPN to review with the patient prior to their clinic appointment. Physicians used this list as a template for medication discussions during the visit.

After the appointment physicians were asked to use the Med Rec Tool to create a *post-appointment* medication list for the patient to take with them.

Physicians were then asked to document that they performed medication reconciliation in their primary care progress note. This could be done either by using the Med Rec Tool (work done on the tool can be pasted into note) or by documenting an attestation statement that they performed medication reconciliation during the appointment.

**b. How were underlying/root causes (see #13.b) addressed by the intervention(s)? (List each cause, whether it was addressed, and if so, how it was addressed.)**

1. Unaware: The establishment of the project and the initial education of clinicians increased awareness as to the importance of performing medication reconciliation.
2. Different approaches: The establishment of a protocol for handling medication reconciliation from check-in to check-out created the expectation for each provider to perform medication reconciliation. It also made the process more efficient by engaging multiple team members (clerk, lpn) in the process.
3. Logistical difficulty: Utilizing the Med Rec Tool allowed for improvement over the deficiencies in using the native electronic health record. The tool streamlined medication review and facilitated printing of lists and documenting medication reconciliation/medication changes.

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

Dr. Solomon coordinated the project and came up with the process for performing comprehensive medication reconciliation in clinic.

The clerks printed out a pre-appointment medication list.

The LPN performed preliminary medication reviews.

The physicians reviewed the medications, updated medications and then provided a post-appointment medication list to the patient.

The programmers at Avicenna reviewed the data for tool use in real time.

Karen Belanger, support staff for Dr. Solomon, reviewed charts to measure medication reconciliation compliance/documentation.

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

The interventions began on November 1, 2014.

**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:**

11/15 to 11/30

**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.)

Medication Reconciliation Documented			Medication Reconciliation Tool Used		
Time Period	# Patients Sampled *	% Patients with Med Rec Documented	Time Period	# Patients Seen	% Patients with Med List Printed
Baseline 7/1/14 – 9/30/14	51	25%	Baseline		Not used
Post-Intervention 11/15-30/14	125	42%	Post-Intervention 11/1-30/14	1840	44%

\* Baseline data were a representative sample of patients collected over a three-month period. For the shorter data collection periods following the intervention, 5 patients were randomly sampled from patients seen by each of the physicians on service during the time period.

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

The evaluation in November showed an improvement from 25% to 42% for Med Rec compliance. This is moving in the right direction but not at goal.

The tool was used at a rate less than the project goal .

**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?** All ambulatory care physicians enrolled in the MOC project.
- **How?** (e.g., in a meeting of clinic staff) The project lead met with participants during staff meeting on 11/17 and 12/4. Feedback taken providers on 11/17 and data reviewed 12/4.
- **When?** 12/4/2014

**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. How the intervention(s) address each primary underlying cause will be explained in #20.c.)

Medication list often not needed: Physicians felt that printing a new list of medications after every visit was time consuming and often unnecessary, especially if no/few medications were changed at the appointment. They preferred to update the pre-appointment medication list by hand and return it to the patient.

An important result of this discussion was that the goal for the Med Rec Tool to be used to print post-appointment medication lists was no longer appropriate. Originally it was thought that the tool would facilitate providing lists to most patients. Recognizing that easier approaches were available, a goal

for Med Rec Tool use was eliminated and the appropriate level of use would be determined through its actual use as one option.

Printer access: There are not printers in the physician rooms, so printing out a new list required the physician to go into the staff room to pickup the list. This disrupted clinic workflow.

## F. Redo

### 20. Second intervention.

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

12/8/2014

b. **What interventions were implemented?**

Option to modify pre-appointment medication list: Allowed physicians to update the pre-appointment list by hand rather printing out a new list if there were no/few medication updates. Encouraged them to include an attestation statement that they performed medication reconciliation if they did not use the tool to print a new list.

Printing to checkout: Educated physicians that they could print the medication lists directly to the check-out clerk station rather than giving the lists directly to the patients. Started a discussion with clerk supervisor to create a process where physicians could circle 'Print med list' and clerks would be able to print out a new post-appointment medication list for the patient

c. **How were continuing/new underlying/root causes (see #19.b) addressed by the intervention(s)?** (List each cause, whether it was addressed, and if so, how it was addressed.)

Medication list often not needed: Allowed physicians to update pre-appointment list by hand rather than printing out another list.

Printer access: Addressed by educating physicians about how to use their team (clerk) to print out the post-appointment medication list.

## G. Recheck

21. **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

22. **Performance following the second intervention.**

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

12/16 to 12/24

- 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.)

Medication Reconciliation Documented			Medication Reconciliation Tool Used		
Time Period	# Patients Sampled *	% Patients with Med Rec Documented	Time Period	# Patients Seen	% Patients with Med List Printed
Baseline 7/1/14 – 9/30/14	51	25%	Baseline		Not used
Post-Intervention 11/15-30/14	125	42%	Post-Intervention 11/1-30/14	1840	44%
Post-Adjustment 12/16-24/14	135	85%	Post-Adjustment 12/1-31/14	1806	33%

\* Baseline data were a representative sample of patients collected over a three-month period. For the shorter data collection periods following the intervention, 5 patients were randomly sampled from patients seen by each of the physicians on service during the time period.

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

Med Rec Documentation: The second intervention achieved the project’s aim of 80% compliance. Most physicians were regularly documenting medication reconciliation at clinic appointments.

Med Rec Tool use: Use decreased slightly compared to November. This slight reduction in use was expected with physicians sometimes simply updating the *pre-appointment* list printed by the clerk by hand. Also, the number of lists printed may be under reported because clerks began printing some of the post-appointment lists for the physicians and lists printed by clerks are not included in the count.

**H. Readjust**

**23. 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?** All ambulatory care physicians enrolled in the MOC project.
- **How?** (e.g., in a meeting of clinic staff) Staff meeting
- **When?** January 5th

- 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.)

1. Lack of printers in provider rooms: Some providers might not have been aware that they could either print the post-appointment medication list to the clerk or have the clerk print the list for them. It wasn’t until after the study was completed that we added a option to circle ‘print post-appointment list’ on the check-out sheet. During the study the physician would have had to hand write for the clerk to print out the list

2. Lack of time in clinic: Providers who had a low percentage of compliance with medication reconciliation were queried as to why they did not perform as well as other physicians in the study. They universally reported that there is too much to do during a primary care clinic visit and adding 'one more thing' to the visit was difficult, no matter how easy an additional thing is. Some were unaware that the clerk could have printed the list for them, while others didn't realize that they could simply use an attestation statement rather than the tool if they performed medication reconciliation without pasting from the tool.

## I. Future Plans

### 24. 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?

We will continue to perform PDCA cycles after the study is completed. Will continue with periodic (quarterly) monitoring of medication reconciliation compliance and provide feedback to providers on their level of compliance.

### 25. How will the project sustain processes to maintain improvements?

By monitoring the medication reconciliation compliance quarterly and providing feedback to physicians. Will continue to elicit feedback from physicians at staff meetings to continue to improve the process.

### 26. 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?

Given the improvement in medication reconciliation documentation, we plan to spread the lessons learned from this study to other (specialty) clinics at the AAVA. All clinics are required by the Joint Commission to perform medication reconciliation. I have met with the chief of staff and have helped write the Medication Reconciliation policy for the AAVA hospital. We will use the lessons from this study to help all the clinics at the VA improve their performance and documentation of medication reconciliation.

## J. Physician Involvement

*Note: To receive Part IV MOC a physician 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*

### 27. Physician'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 and planning intervention: Attend the meeting on 10/9/14 to interpret performance data, assess underlying causes, and consider interventions.
- b. Implementing intervention: Starting 11/1/14 actively engage in using the technology to improved medication reconciliation. Work with care team members to plan and implement the intervention. Make appropriate course corrections in the improvement project.

- c. Interpreting post-intervention data and planning changes: Attend meeting on 12/4/14 to interpret performance data, assess current underlying causes, and consider additional interventions.
- d. Implementing further intervention/adjustments: Starting 12/8/14 actively engage in using the technology to improved medication reconciliation. Work with care team members to plan and implement the intervention. Make appropriate course corrections in the improvement project.
- e. Interpreting post-adjustment data and planning changes: Attend meeting on 1/5/15 to interpret performance data, assess current underlying causes, and consider additional interventions.

**28. How were reflections of individual physicians about the project utilized to improve the overall project?**

The project lead participated in the formal meetings of the project and in informal discussions with project participants. Based on their feedback/reflections we adapted the tool and process over the course of the project. For example, we made printing lists easier and made documenting their discussions of med rec easier.

**29. How did the project ensure meaningful participation by physicians who subsequently request credit for Part IV MOC participation?**

The project lead monitored physician’s participation in project meetings, their compliance with medication reconciliation, and their use of the med rec tool. We provided feedback to them by email and during staff meetings.

**K. Project Organizational Role and Structure**

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

**University of Michigan Health System**

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

- **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 Collaborative Quality Initiative** (*specify which*):

**Other** (*specify*):