Report on a QI Project Eligible for Part IV MOC

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	
A. Introduction	1-6.	Current date, title, time frame, project leader, specialties/subspecialties involved, funding
B. Plan	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
C. Do	14-16.	Intervention(s), who is involved, initiated when
D. Check	17-18.	Post-intervention performance measurement, data collection, performance level
E. Adjust – Replan	19.	Review, continuing/new underlying causes,
F. Redo	20-21.	Second intervention
G. Recheck	22-23.	Post-adjustment performance measurement, data collection, performance level
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

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A. Introduction

1. **Date** *(this version of the application):*
   11/12/12

2. **Title of QI project:**
   Pregnancy Risk Assessment for Women with Congenital Heart Disease

3. **Time frame**
   a. **Date physicians begin participating (may be in design phase):** 8/1/11
   b. **End date**: 11/7/12

4. **Key individuals**

   a. **QI project leader** *[also responsible for attesting to the participation of physicians in the project]*
   Name: Timothy Cotts, M.D.
   Title: Clinical Assistant Professor
   Organizational unit: Cardiovascular Medicine in Dept of IM; Pediatric Cardiology in Dept of Peds
   Phone number: 734-936-1619
   Email address: cottstim@umich.edu
   Mailing address: Michigan Congenital Heart Center, Floor 11 C&W, SPC 4204

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

Name:	David Pinsky, MD	John Charpie, MD
Title:	Chief	Chief
Organizational unit:	Division of Cardiovascular Med	Division of Pediatric Cardiology
Phone number:	639-3500	936-8993
Email address:	dpinsky@umich.edu	jcharpie@umich.edu
Mailing address:	2139 CVC, SPC 1275	Floor 11 C&W, SPC 4204

5. **Approximately how many physicians were involved in this project categorized by specialty and/or subspecialty?**
   Internal Medicine: Cardiology (Adult Congenital Cardiology) – 2-3
   Pediatrics: Pediatric Cardiology – 4-5

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?
Woman with congenital heart disease often do not receive proper counseling regarding cardiovascular risks of pregnancy. Women with significant heart disease often present well into pregnancy in situations where a pre-pregnancy evaluation or therapeutic regimen might have improved the pregnancy outcome. The 2008 American College of Cardiology/American Heart Association guidelines for the care of adults with congenital heart disease recommend that women undergo pre-conception counseling and risk stratification prior to pregnancy.

b. Project goal. What general outcome regarding the problem should result from this project? *(Specific aims/targets are addressed in #12b.)*
The goal of the project is to improve communication of risks of pregnancy to women with congenital heart disease.

8. Patient population. What patient population does this project address.
The project includes women aged 18-45 with congenital heart disease. The project will involve women seen in the adult congenital cardiology clinic as well as adult women followed within the pediatric cardiology clinics. The average interval of follow-up for adults with congenital heart disease is one year, so it is not likely that there will be significant duplication of patients during the seven months that interventions and adjustments performed for the project. .

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

☒ Effectiveness	☐ Equity	☒ Safety
☒ Efficiency	☒ Patient-Centeredness	☒ 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?
The measure will be documentation of the CARPREG score, a well-accepted method for risk stratification of women with heart disease. The denominator will be the number of women aged 18-45 seen by the physicians in the adult cardiology clinic and the pediatric cardiology clinic. The numerator will be the number of patients for whom the CARPREG score is documented in the clinic letter.

b. Are the measures nationally endorsed? If not, why were they chosen?
Pre-conception counseling is nationally endorsed by the 2008 American College of Cardiology/American Heart Association guidelines for the care of adults with congenital heart disease. The CARPREG score is the standard risk assessment tool used across North America.

c. What is the source of data for the measure (e.g., medical records, billings, patient surveys)?
Medical records – Outpatient clinic notes documented in CareWeb or MiChart, depending on which electronic medical record system is in place at the time.

To input the data into the medical record, participating physicians review their outpatient clinic letters for documentation of the CARPREG score. Pregnancy risk will be documented in standardized position in the medical record. Within the CareWeb electronic medical record, this will be included in the detailed diagnosis list which appears in all pediatric cardiology and adult congenital program outpatient notes. After the implementation of MiChart, and a dropdown list will be added to the note templates for the proper CARPREG scores.

d. What methods were used to collect the data (e.g., abstraction, data analyst)?
Individual clinicians review their clinic lists on CareWeb or MiChart, identify women aged 18-45, and track their denominator and numerator on a form provided by the project lead.

e. For what time period was the sample collected for baseline data?
September 1, 2011-December 31/2011.

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	Eligible Women Seen (Aged 18-45 with Congenital Heart Disease)	
	N	% with CARPREG Score
Baseline: 9/1/11 – 12/31/11	150	3%

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 compliance from 3% to a target of 80% by the end of the second cycle of improvement, i.e. by the end of October 2012.

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.

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 care in the adult congenital heart clinic and the pediatric cardiology clinic
- **How** *(e.g., in a meeting of clinic staff)***?**
  The project lead met with them in groups by clinic or individually if they could not attend the group discussion.
- **When?**
  The discussions occurred during Feb. and March 2012.

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 adults with congenital heart disease have often been trained in pediatric cardiology, and may not be aware of the necessity for risk stratification. They also may not be educated about methods of risk stratification, including the CARPREG risk score.

Calculation difficulty. The process for calculating risk scores can be difficult to for clinicians to remember.

No standard process. There is a lack of uniformity in provision of pre-conception counseling and risk stratification.

C. Do

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

Education: CARPREG scores and calculation worksheet. The initial phase of the intervention was educating regarding the CARPREG score. Participating physicians received the original paper describing the justification for the score and how to calculate it. They were also instructed in how to use a worksheet to simplify calculating the score.

Process for identifying relevant patients, scoring, and recording scores. The operational process differed slightly between the adult congenital clinic and the pediatric cardiology clinic because clinic processes and resource vary. Implementing the process involved educating other health care team members regarding the process.

Adult Congenital Program Process

- The adult congenital program assistant reviewed the clinic list for the day and identified women aged 18-45.
- The clinic nurse brought this patient list to clinic. As patients were brought back, the clinic nurse affixed the CARPREG calculation worksheet to the patients' paperwork.
- The attending physician calculated the CARPREG score at the time of the visit, and dictate the CARPREG score into the diagnosis list of the clinic letter. The score in the letter was entered into CareWeb or MiChart.

Pediatric Clinic Process

Pediatric cardiologists review their patient list the day prior to or the morning of clinic and note what studies the patients will require at their visit. This is then written on a dry erase board next to the patients name during clinic. The following steps were added.

- When pediatric cardiologists reviewed their patient lists, they identified women aged 18-45 and noted "CARPREG" next to the patients name
- The medical assistants then transcribed this to the dry erase board. This served as a reminder to do the CARPREG assessment
- CARPREG worksheets were made available in bins in the clinic team rooms. This was done by the physician lead.
- The attending physician calculated the CARPREG score at the time of the visit, and dictated the CARPREG score into the diagnosis list of the clinic letter. If a fellow performed the dictation, the fellow would dictate the CARPREG score. The score in the letter was entered into CareWeb or MiChart.

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

The physician lead for the project provided the physician education and oversaw the development and implementation of changes in process.

Physicians were responsible for carrying out the intervention and assessing compliance. The worksheets were made available in the clinic team rooms. Individual physicians record the results of the risk assessment in their clinic notes.

Program assistants (Adult congenital Program) and medical assistants (Pediatric Clinic) helped with identifying or listing relevant patients.

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

The intervention began on March 16, 2012.

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:
April 1, 2012 and June 30, 2012

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	Eligible Women Seen (Aged 18-45 with Congenital Heart Disease)	
	N	% with CARPREG Score
Baseline: 9/1/11 – 12/31/11	150	3%
Post-intervention 4/1/12 – 6/30/12	117	74%

c. Did the intervention produce the expected improvement toward meeting the project's specific aim (item 12.b)?
The intervention resulted in a large increase in performance, nearing the 80% aim.

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 physicians providing care in the adult congenital heart clinic and the pediatric cardiology clinic
- **How** *(e.g., in a meeting of clinic staff)***?**
  The project lead met with them in groups by clinic or individually if they could not attend the group discussion.
- **When?**
  During the first two weeks of July, 2012.

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.)*

Adult Congenital Clinic
- Fellows unaware. Many of the dictations are performed by fellows or nurse practitioners as opposed to the attending physician. Although the physician reviews the final dictation, the attending did not always remember to add the CARPREG score.
- Clinic nurse not adequately trained. The clinic nurse was not adequately taught the process of placing the worksheet with the patient's data.

Pediatric Cardiology Clinic

- Physician awareness. Not all attending physicians were aware of the need to document the CARPREG score in the clinic note.
- Importance. Not all attending physicians felt that the CARPREG tool is useful for certain cardiac diagnoses. (Single ventricle patients, patients with prosthetic heart valves, patients with Eisenmenger syndrome)
- Fellows performing. Fellows dictating the notes forgot to dictate the CARPREG score despite the attending cardiologists instructing them to do so.

F. Redo

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

Adult Congenital Clinic

- Rotating fellows will be instructed in the project as part of their orientation to the rotation.
- The clinic nurse has been re-educated regarding the clinic process

Pediatric Cardiology Clinics

- The need to document the CARPREG score has been clarified with all faculty
- In order to make the project more meaningful, we will exempt Fontan patients, Eisenmenger physiology patients, and prosthetic heart valve patients from a formal CARPREG assessment. Instead, a statement "pregnancy risks were discussed with the patient" will suffice in these situations.
- The fellows were individually educated regarding the project.

21. The second intervention was initiated when? (For multiple interventions, initiation date for each.)
July 15 – July 31, 2012

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:
August 1, 2012-October 31, 2012

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	Eligible Women Seen (Aged 18-45 with Congenital Heart Disease)	
	N	% with CARPREG Score
Baseline: 9/1/11 – 12/31/11	150	3%

Post-intervention 4/1/12 – 6/30/12	117	74%
Post-adjustment 9/1/12 – 10/31/12	96	80%

c. Did the second intervention produce the expected improvement toward meeting the project's specific aim (item 12.b)?
The second intervention achieved the project's aim of 80%. As explained in 23.b below, an additional intervention during the observation period resulted in compliance rates of greater than 90% during the final month.

H. Readjust

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

a. Who will be/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 physicians providing care in the adult congenital heart clinic and the pediatric cardiology clinic
- **How** *(e.g., in a meeting of clinic staff)***?**
  The project lead met with them in groups by clinic or individually if they could not attend the group discussion.
- **When?** The meetings occurred during the first week of November, 2012

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.)*
The primary problem for both clinics noted during the review was related to implementation of MiChart. This resulted in a lower number of visits during this period of time. Also, MiChart did not have a standard location for recording CARPREG scores. A template was ultimately created for use in MiChart. Information about the template was distributed to all participating physician. This resulted in compliance rates greater than 90% for the final month.

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 will occur.

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

The continued reminder to physicians to document the CARPREG score should make the process sustainable. Although the patient population is relatively stable, new patients will be seen which will require documentation. Additionally, a woman's clinical status can change, prompting revision of the CARPREG score.

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 project could be potentially applicable to the high risk obstetrics service. The high risk obstetric service often becomes involved in the care of patients with congenital heart disease. The same risk stratification process would be helpful to the obstetricians in terms of developing follow up and delivery plans.

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??

- While the underlying causes were similar in both clinics, the operational details of interventions had to be modified to follow somewhat different established work processes in each clinic.
- Plan ahead for routinely orienting new staff, particularly regularly changing staff like residents.

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

29. 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, considering underlying causes, and planning intervention. *(As appropriate, use or modify the following response.)*
Physicians had to participate as described in item #13a.

b. Implementing intervention. *(As appropriate, use or modify the following response.)*
Physicians 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.)*
Physicians had to participate as described in item #24a.

d. Implementing further intervention/adjustments. *(As appropriate, use or modify the following response.)*
Physicians 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.)*
Physicians had to participate as described in item #24a

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

The project lead participates in the meetings where physicians interpret data and make recommendations for changes. The project lead incorporates this information into overall project planning.

31. How did the project ensure meaningful participation by physicians who subsequently request credit for Part IV MOC participation?
The project lead monitors the participation of the physicians involved.

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?**

  Pediatrics, Division of Pediatric Cardiology
  Internal Medicine, Division of Cardiovascular Medicine, Adult Congenital Cardiology Service

- **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):*