QI Project Application for Part IV MOC Eligibility

Complete the following project description to apply for UMHS approval for participating physicians to be eligible to receive Part IV MOC credit through the Multi-Specialty Part IV MOC Pilot program. Actions regarding the application depend on the stage of the project, as described below. As stages are accomplished, you may submit updates of the application with the description of planned activities replaced by descriptions of actual activities performed. An application describing the completed project is required. Submitting earlier versions helps assure that when planned activities are carried out, they will meet Part IV requirements.

Preliminary approval. Plans have developed for the expected activities, but little actual work has been performed.

Part IV credit designation. Baseline data have been collected and the intervention performed, with completion of both steps documented on an application (or application update). The project has demonstrated its operational feasibility and the likelihood that subsequent data collections and adjustment will be performed.

Participation ("attestation") forms provided. The project has been completed with the expected sequence of activities performed and documented on an application (or application update), which is the "final report" on the project.

The introductory section asks for basic operational information. The next four sections ask about the project's activities organized within a basic sequential Plan–Do–Check–Act /Adjust–Recheck outline. The following section asks how physicians participate in the project. The last section asks about the relationship of this project to other UMHS institutional QI initiatives. Questions are in bold fond 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:
Terry Kowalenko, MD, UMHS Part IV Program Lead, 763-936-1671, terryk@med.umich.edu
R. Van Harrison, PhD, UMHS Part IV Program Co-Lead, 763-1425, rvh@umich.edu
Chrystie Pihalja, UMHS Part IV Program Administrator, 763-936-1671, cpihalja@umich.edu

A. Introduction

1. Date*(this version of the application):* 10/21/12

2. Title of QI project: Improving the Appropriateness of Packed Red Blood Cell Transfusions for Patients admitted on the General Medicine Services

3. Time frame

a. At what stage is the project?

☐ Design is complete, but not yet initiated
☐ Initiated and now occurring
☒ Completed *(UMHS Part IV program began 1/1/11)*

Note: an *Annual Project Progress Report* form must be submitted annually in January while the project is underway and a final one submitted at the project's conclusion.

b. Time period

(1). Date physicians begin participating (may be in design phase): 7/2010
(**2). End date**: ☒ actual 10/1/12 ☐ expected _____

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

a. Name: Jeffrey Rohde MD
b. Title: Assistant Professor of Internal Medicine
c. Institutional/organizational unit/affiliation: University of Michigan Department of Internal Medicine
d. Phone number: 734-647-1599
e. Email address: jefrohde@med.umich.edu
f. **Mailing address**: Division of General Medicine, Department of Internal Medicine, 3119 Taubman Center SPC 5376, 1500 E. Medical Center Dr, Ann Arbor MI 48109-5376

5. **What specialties and/or subspecialties are involved in this project?**
   General medicine, Hospitalists

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?**
   There is a growing body of data that shows judicious use of packed red blood cells to be associated with decreased cost to the hospital system as well as improved patient outcomes. To this end, institutional guidelines were developed to promote a more restrictive transfusion practice here at the U of M. Despite this, transfusion practices vary significantly between individual physicians and need to be monitored and reviewed.

   b. **Project aim. What aspects of the problem does this project aim to improve?**
   This project aims to improve the overall appropriateness of RBC transfusions given to patients admitted to the general medicine services. This will be accomplished by improving physicians' understanding and awareness of institutional guidelines that are in place to help direct RBC transfusion practices, as well as allowing physicians to review their own transfusion practices and compare them to their peers' in addition to monitoring the appropriateness of their RBC transfusions based on lab parameters.

8. **Patient population. What patient population does this project address.**
   General medicine adult patients admitted to inpatient medicine services at University Hospital

9. **Targeted causes. What are the primary underlying/root causes for the problem (see 6.a) that the project can address?**
   - Lack of awareness of institutional guidelines regarding appropriateness of red blood cell transfusions
   - Lack of awareness of trends of physician peers in regards to their use of blood products
   - Lack of ability to review personal transfusion practices
   - Belief that solely a low hemoglobin level is dangerous for patients and needs to be corrected

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?**

Percentage of total orders for red blood cell transfusions that do not meet pre-transfusion lab criteria for hemoglobin and hematocrit

Denominator: All RBC transfusions for patients on the General Medicine service during the measured quarter. Excluding RBC transfusions used to treat bleeding episodes (i.e., transfusions of four or more units within four hours or less, active GI bleeding, etc).

Numerator: RBC transfusions from the denominator where the patient's pre-transfusion hemoglobin was less than 8.3 g/dL or hematocrit was less than 25% during the measured quarter

In addition to calculating the percentage for the total orders by general medicine hospitalists, the percentage do not meet criteria was calculated for each hospitalist in order to provide individual feedback.

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

While this is not a nationally endorsed quality measure currently, the Joint Commission on Accreditation of Healthcare Organizations (JCAHO) lists measurement of RBC transfusion indication as an excellent tool to improve patient safety. Furthermore, this is a growing body of data that indicates that a restrictive transfusion protocol leads towards improved outcomes in patients. Based on this data, UM has developed institutional guidelines to help direct transfusion practices.

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

Administrative data pulled from electronic medical records as directed by Clinical Information and Decision Support Services (CIDSS)

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

Very reliable

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

This will be analyzed by comparing at the total percentage across the department as well as each individual physician's percentage.

f. To whom are data reported?

The Hospital Medicine Quality Committee receives all of the following reports. Each attending in the general medicine division of the Internal Medicine department receives the departmental report plus the individual's specific data.

- For the department: Total number of RBC transfusions, Percentages of transfusions that meet lab criteria;
- For physician specific data: Total number of RBC transfusions, Total number of RBC transfusions that meet lab criteria, Percent of RBC transfusions that meet lab criteria, Percent of RBC transfusions meeting lab criteria excluding this MD;
- For specific physicians RBC transfusions that do not meet lab criteria, each physician gets the patient's CPI # and admission date.

g. When did the baseline data collection occur?

6/10-8/2010

12. Specific performance objectives

a. What is the overall performance level(s) at baseline?

8% of transfusions did not meet criteria. (See Figure at the end showing data over time.)

b. What are the targets for future performance on the measures?

95% of all pRBC transfusions be deemed appropriate based on lab criteria

c. How were the performance targets determined, e.g., regional or national benchmarks?
This was agreed upon at a meeting of the Hospital Medicine Quality Committee.

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

☒ Safety	☐ Equity	☐ Timeliness
☒ Effectiveness	☒ Efficiency	☐ Patient-Centeredness

C. Do

14. Intervention(s).

a. Describe the interventions implemented as part of the project.

1. An educational campaign was presented to the group drawing attention to data indicating improved outcomes with a restrictive transfusion protocol as well as drawing attention to institutional guidelines.
2. Individual-specific feedback was presented to each individual physician on a quarterly basis in the form of an email containing the data mentioned in 11e. Each physician could then assess how they are performing as compared to their peers as well as enabling them to go back and review specific cases that were felt to be outliers based on laboratory parameters.
3. Each physician was encouraged to communicate any suggestions and potential improvements in this QI initiative with each emailing, as well as at multiple group-wide conferences.

b. How do the interventions address underlying/root causes (see #9)?

- Awareness. The educational campaign increased awareness of institutional guidelines, the potential clinical benefits of a restrictive transfusion practice, and trends of physician peers.
- Specific feedback to the physician informs them and draws their attention to their personal transfusion practices and allows them to compare this to their peers' practices.
- The discussions provide an opportunity to propose and initiate improvements.

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

- Clinical Information and Decision Support Services (CIDSS) retrieves and presents the data.
- An administrative assistant sends each individual physician report to the correct physician.
- Scott Flanders and Jeff Rohde are responsible for following up with any concerns that are brought about by the physicians.
- Quality committee for general medicine will review feedback from individual physicians as well as need to adjust the intervention going forward.

16. When will/did the intervention(s) occur?
The educational campaign began in October 2010 and is ongoing. Data for 6/10-810 were distributed to individual physicians in 10/10 to provide feedback to individual physicians.

D. Check

17. Post-intervention performance measurement. Is this data collection to 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. Data collection following the intervention.

a. The collection of performance data following the intervention:

Data have been collected and shared on a quarterly basis.

b. If the data collection has occurred, what is post-intervention performance level?
The Figure at the end of the text presents the results for post-intervention performance on a quarterly basis. The quarter immediately following the intervention showed a stable 7.5% of transfusions did not meet criteria.

E. Act/Adjust

19. Following the collection of post-intervention data:

a. How did/will the following processes occur:
- **Review the most recent performance data to identify current problems**
- **Analyze the current underlying causes of those problems**
- **Redesign the intervention to address underlying causes**

The following activities have occurred after each quarterly data collection.
- At the Hospital Medicine Quality Committee's quarterly meeting the Committee reviews the most recent data (including trends) and considers causes and needed changes.
- The departmental data and individual data are emailed quarterly to individual hospitalists.
- Every six months at a regular meeting of the hospitalists the departmental data are reviewed, underlying causes of problems considered, and needed changes proposed for implementation.

The primary interventions have been group discussions of clinical cases where transfusions did not meet criteria. This educates individuals regarding specific factors that should and should not influence ordering transfusions based on available evidence and peer's views regarding appropriate care.

b. **When did the implementation of adjustments occur**?
Adjustments have occurred quarterly (Quality Committee meetings, individual feedback) and every 6 months (group meeting and discussion).

20. Data collection following the adjustment(s).

a. The collection of performance data following the adjustment(s):
The Figure at the end of the text presents the results for performance over the series of quarterly adjustments following the intervention.

b. If the data collection has occurred, what is post-adjustment(s) performance level?
The overall trend is to maintain and slightly decrease the percent of transfusions that do not meet laboratory criteria. The average rate of transfusions not meeting laboratory criteria fell from 10.5% to 5.9%. For the final quarter the rate was 6.5%.

21. Following the third (post-adjustment) collection of data, how did/will the following processes occur:
- **Review the most recent performance data to identify current problems**
- **Analyze the current underlying causes of those problems**
- **Redesign the intervention to address underlying causes**

This has continued to occur via meetings of the Hospital Medicine Quality Committee reviewing available data, data feedback to individual hospitalists, and discussions at meetings of hosptialists. Recent actions include:
- Discussions with the three physicians who had >1 transfusion of pRBCs not meeting lab criteria.
- A root cause analysis was performed for one particular outlying physician who was noted had only 56% of transfusions meet lab criteria.

22. How many subsequent PDCA cycles are to occur?
This will be an ongoing process with continued quarterly review of data by all physicians and ongoing meetings of the Hospital Medicine Quality Committee.

23. How will the project standardize processes to maintain improvements?
This will continue to occur via a continuation of the educational campaign (as new physicians are coming into the group on a regular basis), regular quarterly review of data by each physician, as well as culture change within the group. Additionally, new guidelines have been published that further support a restrictive blood transfusion protocol, which should help to standardize this process.

24. Do other parts of UMHS 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?
Yes, other departments face a similar problem. Through coordination with the UMHS Transfusion Committee, a multi-departmental campaign to provide transfusion data feedback to physicians in other departments has been explored and is likely to be implemented in the not too distant future.

F. Physician Involvement

Note: To receive Part IV MOC a physician must both:
a. Do one or more of the following:
- *Provide direct or consultative care in the QI project.*
- *Implement changes to improve patient care as guided by the project leadership*
- *Actively participate in or supervise data collection as part of this project*
- *Review project data that reflect care the physician provided during the project*

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

25. Physician's role. What are the requirements for meaningful physician participation as part of this QI effort?
- Physicians will need to have reviewed their specific data on their performance on utilization of blood products as compared to their peer physicians as well as based on laboratory parameters.
- Based on this provided data, physicians will have needed to consider any necessary adjustments to their transfusion practices. They will need to have reviewed their specific outlying flagged cases to determine if their clinical practice needed to be adjusted or if the parameters for appropriateness needed to be adjusted for each specific case.
- Physicians need to have attended related group-wide conferences or have read group-wide emails allowing them to participate in this initiative as well as giving them the opportunity to provide active feedback and suggestions to improve the project.
- Physicians will need to have been active in the project for a minimum of four consecutive quarters (improvement cycles) between 8/10 and 6/12.

26. If not addressed in #25, in conjunction with each cycle of data collection, what local (physician-level or practice/unit-level) feedback report and what overall project level report will be provided to physicians?

27. If not addressed in # 25, how are reflections of individual physicians about the project utilized to improve the project?
Suggestions and reflections of individual physicians were encouraged and collected by Jeff Rohde and Scott Flanders throughout the program, with pertinent recommendations incorporated into the initiative. This included evaluation of outlying transfusions to ensure that exclusion parameters did not need adjustment as well as suggestions on how to improve adherence to this restrictive transfusion protocol.

28. How will the project ensure meaningful participation by physicians who subsequently request credit for Part IV MOC participation?
Physicians will provide a signed attestation.

29. What is the approximate number of physicians anticipated to participate in this project? ***[Provide number or range – by specialties and/or subspecialties if more than one.]***
A total of 46 general medicine physicians have been involved in this project to date.

G. Project Organizational Role and Structure

30. Is this project part of a larger UMHS institutional or departmental initiative?
☐ Yes ☒ No *If No, go to #31.*

a. What UMHS unit/group is overseeing or coordinating the larger initiative?

b. What is the larger initiative?

c. How does this project advance it?

d. Is this project coordinated with related quality improvement activities?

e. Has someone at a higher institutional level authorized/approved this project? If so, who?

31. What is the organizational structure of the project? ***[Include who is involved, their general roles, and reporting/oversight relationships.]***
1. Scott Flanders MD, Sponsor. 2. Jeffrey Rohde MD, Owner. 3. Clinical Information and Decision Support Services, Data Provider. 4. Hospital Medicine Quality Committee, Reviewer

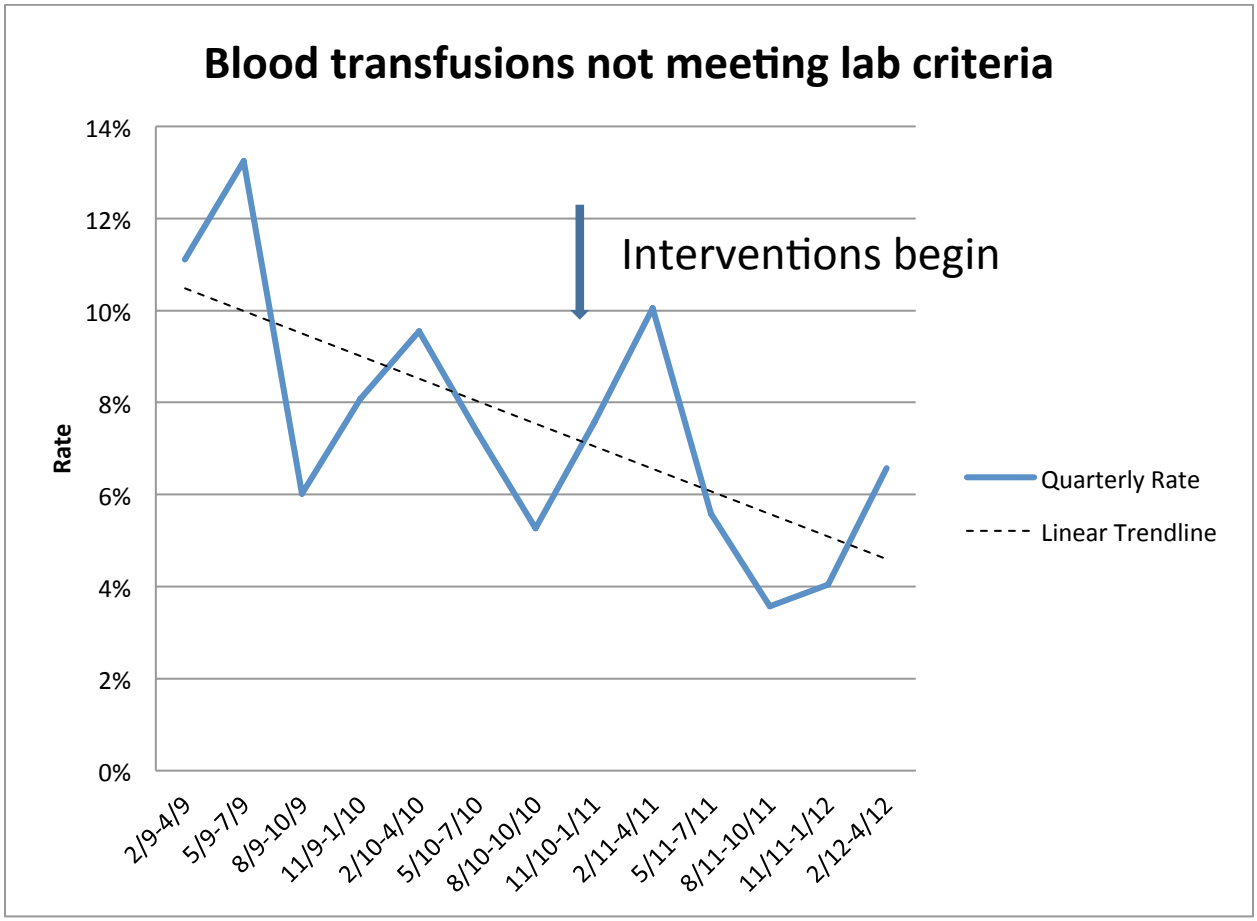
32. Are resources needed beyond those under the control of the project lead(s) ?
☒ Yes ☐ No *If No, go to #33.*

a. What types of resources are needed and who has agreed to provide them?
Generation and retrieval of the individual datasets for each physician is being provided by CIDSS who has agreed to continue to provide them on an ongoing basis.

33. To what oversight person or group will project-level reports be submitted for review?
Project-level reports will be submitted for review by the Hospital Medicine Counsel as well as the director of the hospitalist service, Scott Flanders MD, and the chief of the division of general medicine, Larry McMahon MD.

34. Have UMHS physicians who will participate in this project had the opportunity to participate in a UMHS Part IV project within the past two years?
☐ Yes ☒ No

a. If "Yes," why do these physicians need more frequent opportunities for Part IV credit ***(e.g., board gives additional credit for more Part IV activities in a time period; qualify for CMS incentive payment)*****?**


Blood transfusions not meeting lab criteria
Rate
14%
12%
10%
8%
6%
4%
2%
0%
Interventions begin
2/9-4/9
5/9-7/9
8/9-10/9
11/9-1/10
2/10-4/10
5/10-7/10
8/10-10/10
11/10-1/11
2/11-4/11
5/11-7/11
8/11-10/11
11/11-1/12
2/12-4/12
Quarterly Rate
Linear Trendline