

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, currently including ABAI, ABFP, ABIM, ABPeds, and ABPM&R. Projects must at least be completely designed and may be underway or completed after 12/31/10. Individual physicians must complete their participation after 12/31/10 as well as meet their Board's requirements regarding time frames for Part IV completion.

This form has seven sections. 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) 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. The form has question in bold font and answers (generally immediately below the questions should be in regular font. 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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A. Introduction

1. **Date:** 12/28/2011

2. **Title of QI project:** Use of Point of Care Clinical Reminders to improve Tdap vaccination rates

3. **Time frame**

a. **At what stage is the project?**

Design is complete, but not yet initiated

X Initiated and now occurring

Completed (after 12/31/10)

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):** 9/2008

(2). **End date:** actual _____ X expected 1/31/12

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

a. **Name:** Grant Greenberg M.D., M.H.S.A., M.A.

b. **Title:** Assistant Professor, Medical Director Chelsea Health Center, Assistant Director Quality Management Program

c. **Institutional/organizational unit/affiliation:** UMHS Department of Family Medicine

d. **Phone number:** 734-433-3120

e. **Email address:** ggreenbe@med.umich.edu

f. **Mailing address:** University of Michigan Chelsea Health Center
14700 E. Old US 12
Chelsea, MI 48118

5. **What specialties and/or subspecialties are involved in this project?**

Family Medicine

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

x 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?

The Advisory Committee on Immunization Practice (ACIP) added a new recommendation for Tdap immunization booster for all adults in 2006 (MMWR 226;55 (RR-17):1-33). Despite this, there was only minimal increase in Tdap vaccination for eligible patients ages 11-64 who obtained care at the University of Michigan Family Medicine clinics subsequent to this new guideline.

Implementing substantial changes in clinical practice, even with clear cut, agreed upon guidelines, is challenging to accomplish. Even when physicians agree with the changes, clinical practice does not easily follow suit. At UMHS Family Medicine, a patient population management database program (Cielo Clinics) has been in place since 2004 to facilitate clinical care which follows evidence-based guidelines. Among the tools available with this program is a point of care reminder system which prompts specific interventions for a defined patient population.

This project was undertaken to both improve Tdap vaccination rates in our patient population, and more broadly, to evaluate the effectiveness of a point of care reminder system which can be applied to multiple clinical areas if shown to be an effective intervention.

b. Project aim. What aspects of the problem does this project aim to improve?

This project aims to improve Tdap immunization rates for patients with no prior Tdap documented.

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

All patients seen during the study period ages 11-64 receiving care at UMHS Family Medicine clinics.

9. Targeted causes. What are the primary underlying/root causes for the problem (see 6.a) that the project can address?

While providers are aware of the Tdap vaccination recommendation, it is not administered for many reasons that are systemic more so than patient or provider preference.

- Providers and Medical Assistants do not automatically review immunization status for all patients at every visit.
- Many patients with prior immunization for Tdap have received them outside UMHS without concomitant documentation.
- Many patients do not come in for annual health maintenance exams, when immunizations are more typically systematically reviewed.
- Patients may not be aware of the difference between Td and Tdap vaccine, and Tdap vaccine rates may be under-reported when considering outside vaccine administration.

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? What are the numerator and denominator?

The denominator will be all patients age 11-64 seen by a physician, NP, or PA during the study time frame. The numerator is the number of these patients that have a Tdap vaccine or refusal documented.

MEASURES

Percent of patients seen with Tdap vaccine up to date, measured by:

- # patients between the ages of 11-64 seen.
- # of these patients with Tdap vaccine documentation at the conclusion of the study period.
- $b/a = \% \text{ of patients with Tdap vaccination up to date.}$

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

Yes. CDC/ACIP has a recommendation for Tdap vaccination. Cielo prompt response rate is a local, formative process measure.

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

Medical Records, Cielo Clinic

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

Accuracy is equivalent to that in the actual patient medical record, close to 100%.

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

The rates on measures (% of patients with Tdap vaccination, response rates to Cielo prompts) will be compared across time. Cielo clinic (point of care reminder) response rates are reported monthly to individual physicians, patient care teams, site medical directors, health center administration, and Department of Family Medicine leadership and administration.

f. To whom are data reported?

Tdap vaccination rates based on Cielo responses are shared quarterly with each team as an aggregate as part of an overall performance report. Each team is responsible for reviewing, discussing, and adjusting process in response to the data provided.

g. When did/will the baseline data reporting occur?

Baseline data on Tdap immunization rates occurred between 12/1/2008-11/30/2009.

12. Specific performance objectives

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

Time Period	Number of Patients in Overall Population	Number of Patients with Tdap documented	Percentage of patients with Tdap
12/1/2008-11/30/2009	42,738	13,733	32%

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

of patients seen with Tdap documentation will increase over time to > 80%

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

UMHS Immunization Guideline group benchmark for adolescent Tdap vaccination was 80% for 2010. There is no national or local benchmark published for adult Tdap vaccination rates. Point of

care response rate of 80% benchmarked to internally set norms with consensus and involvement of involved physicians.

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

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

C. Do

14. Intervention(s).

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

Given the CDC recommendation to improve Tdap Vaccination rates, in discussion during faculty meetings we established a point of care reminder with the following simple wording: "Tdap Vaccine". The agreed upon method of addressing this reminder was that when it occurred, the medical assistant would confirm with the patient if they had not had a Tdap vaccine administered elsewhere. If so, they would enter this information into the electronic medical record (careweb). If not, the providers agreed to offer the Tdap vaccine to the patient. Providers agreed to inform patients of the differences between Td and Tdap when this question arose. If the patient agreed to the immunization, the vaccine would be administered and recorded in careweb.

b. How do the interventions address underlying/root causes (see #8)?

- Providers and Medical Assistants do not automatically review immunization status for all patients at every visit.
 - The prompt, when present, indicates the need for an immunization and triggers a confirmatory review
- Many patients with prior immunization for Tdap have received them outside UMHS without concomitant documentation.
 - If a patient acknowledges a prior Tdap outside UMHS, the review triggers this information to be entered into Careweb
- Many patients do not come in for annual health maintenance exams, when immunizations are more typically systematically reviewed.
 - The prompt occurs for all visit types, not just health maintenance exams
- Patients may not be aware of the difference between Td and Tdap vaccine, and Tdap vaccine rates may be under-reported when considering outside vaccine administration.
 - Patients who had documented Td vaccines in the record will still be prompted for Tdap. The prompt results in the initiation of a discussion of the difference between Td and Tdap with the provider.

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

- Medical Assistants:
 - Insure that there is a Cielo form prepared/printed for each patient encounter
 - Confirm Tdap status when a Tdap prompt occurs on the cielo form
 - Enter Tdap data from outside sources into Careweb
 - If patient declines Tdap vaccine, this decision is also entered into Careweb by the MA
 - Administer Tdap vaccine to patient with physician order, and enter data in to Careweb
- Physicians:
 - Confirm Tdap status of patient as reviewed by Medical Assistant
 - Order Tdap according to CDC guideline when prompt indicates patient is due for Tdap.
 - Review Tdap performance data quarterly at team meetings

16. When will/did the intervention(s) occur?

The intervention began in December, 2009.

D. Check

17. Post-intervention performance measurement. Is this data collection to follow the same procedures as the initial collection of data described in #10: population, measure(s), and data source(s)?

Yes No – If no, describe how this data collection

In addition to continuing to measure the % of patients seen with Tdap vaccine up to date, a process measure was initiated to check the use of the Cielo prompt. Response rates were measured by:

- a. Denominator is the number of times the prompts occurred.
- b. Numerators are # of times each specific prompt was addressed by noting either:
 - (1) noting Tdap given, ordered, or documented previously – i.e. “done”,
 - (2) noting the patient declined Tdap or it was discussed but no action taken
 - (3) noting that Tdap vaccine was not addressed.
- c. The response rate to Cielo prompts are:
 - b(1)/a = % of patients with prompt addressed and Tdap given, ordered, or documented
 - b(2)/a = % of patients with prompt addressed and Tdap not given
 - b(3)/a = % of patients with prompt not addressed

Total response rates for “prompt addressed” (either Tdap “given, ordered, or documented” or “declined or discussed but no action taken”) is targeted at 80%.

18. Data collection following the intervention.

a. The collection of performance data following the intervention either:

Will occur on:

Has occurred on: 12/1/09-11/30/10

b. If the data collection has occurred, what is post-intervention performance level?

Time Period	Number of Patients in Overall Population	Number of Patients with Tdap documented	Percentage of patients with Tdap
12/1/2008-11/30/2009	42,738	13,733	32%
12/1/2009-11/30/2010 (4 quarterly intervention subcycles; data during and post interventions)	42,361	24,781	58%

CIELO RESPONSES

Time Period	Number of Tdap Prompts	Prompt Addressed and Tdap given or documented	Prompt Addressed and Tdap not given	Prompt not addressed
12/1/2009-11/30/2010 (during intervention)	16,273	6,828 42%	5,030 31%	4,415 27%

*Note: 11,048 more patients had Tdap documented post-intervention. However, only 6,828 Tdap vaccines were administered or documented in Cielo. Hence, 4220 patients had Tdap added to their medical record that either had prior administration of Tdap or received the vaccine outside UMHS, but this information was not entered into Cielo.

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

On a monthly basis, Cielo form response and return rates are reported to each physician. Physicians who have a prompt response rate (for all prompts, not just Tdap) lower than 80% are made aware and encouraged to review the process with their team and medical assistant to identify methods for improvement.

Tdap vaccination rates based on cielo responses are shared quarterly with each team as an aggregate as part of an overall performance report. Each team is responsible for reviewing, discussing, and adjusting process in response to the data provided.

• Analyze the current underlying causes of those problems

Causes of low cielo form response and return rates have included: printer failure, MA not providing a cielo form for each patient, MA and/or provider not addressing prompt due to overlaying workflow issues (e.g. running late in clinic, patient has multiple compelling active issues relegating Tdap vaccination status to a matter best deferred to a later visit). Additionally, MA's may note the Tdap vaccination status and providers either inadvertently forget to order Tdap or other medical issues distract the provider from ordering the Tdap vaccine. MA's may enter information into Careweb regarding the Tdap vaccine from previous administration but fail to notify the provider and therefore the Cielo form is not updated accordingly. Providers may indicate a Tdap from an outside source on Cielo but fail to either enter this data into Careweb or notify the MA to enter the data into Careweb.

• Redesign the intervention to address underlying causes

Established standing orders for Tdap administration by the medical assistant when a prompt occurs with Cielo.

The other causes are variations that are typically individual and not systemic, therefore the main intervention is to hold monthly team meetings where individual process issues as listed in #19 above are discussed openly and reviewed/corrected, and on a quarterly basis to review the aggregate quality performance data provided from cielo.

b. When did/will the implementation of adjustments occur?

This adjustment is ongoing, and locally based (not systemic). An additional year of data collection (12/1/2010 – 11/30/2011) occurred to validate continued success of the intervention.

20. Data collection following the adjustment(s).

a. The collection of performance data following the adjustment(s) either:

Will occur on:

Has occurred on: 12/1/2010 to 11/3/2011.

b. If the data collection has occurred, what is post-adjustment(s) performance level?

Time Period	Number of Patients in Overall Population	Number of Patients with Tdap documented	Percentage of patients with Tdap
12/1/2008-11/30/2009	42,738	13,733	32%
12/1/2009-11/30/2010 (4 quarterly intervention subcycles; data during and post intervention)	42,361	24,781	58%
12/1/2010-11/30/2011 (4 quarterly adjustment subcycles; data during and post adjustments)	43,081	30,298	70%

CIELO RESPONSES

Time Period	Number of Tdap Prompts	Prompt Addressed and Tdap given or documented	Prompt Addressed and Tdap not given	Prompt not addressed
12/1/2009-11/30/2010 (during intervention)	16,273	6,828 42%	5,030 31%	4,415 27%
12/1/2010-11/30/2011 (during adjustment)	21,776	12,848 59%	6,533 30%	2,395 11%

Note: 5,517 patients had additional documentation of Tdap during the post-adjustment period. Cielo data indicates 6,033 had Tdap addressed or documented during this same time frame. Hence, 516 more patients had Tdap addressed in Cielo than had additional documentation in Careweb. This discrepancy is due to a process issue, not all providers indicated outside Tdap by entering the data directly into careweb, instead, this was only indicated on the cielo form. Indicating a Tdap on a cielo form does not automatically result in documentation in Careweb.

21. Following the third collection of data, how did/will the following processes occur:

On a monthly basis, Cielo form response and return rates are reported to each physician. Physicians who have a prompt response rate (for all prompts, not just Tdap) lower than 80% are made aware and encouraged to review the process with their team and medical assistant to identify methods for improvement.

Tdap vaccination rates based on cielo responses are shared quarterly with each team as an aggregate as part of an overall performance report. Each team is responsible for reviewing, discussing, and adjusting process in response to the data provided.

- **Analyze the current underlying causes of those problems**

Causes of low cielo form response and return rates have included: printer failure, MA not providing a cielo form for each patient, MA and/or provider not addressing prompt due to overlaying workflow issues (e.g. running late in clinic, patient has multiple compelling active issues relegating Tdap vaccination status to a matter best deferred to a later visit). Additionally, MA's may note the Tdap vaccination status and providers either inadvertently forget to order Tdap or other medical issues distract the provider from ordering the Tdap vaccine. MA's may enter information into Careweb regarding the Tdap vaccine from previous administration but fail to notify the provider and therefore the Cielo form is not updated accordingly. Providers may indicate a Tdap from an outside source on Cielo but fail to either enter this data into Careweb or notify the MA to enter the data into Careweb.

- **Redesign the intervention to address underlying causes**

Established standing orders for Tdap administration by the medical assistant when a prompt occurs with Cielo.

The other causes are variations that are typically individual and not systemic, therefore the main intervention is to hold monthly team meetings where individual process issues as listed in #19 above are discussed openly and reviewed/corrected, and on a quarterly basis to review the aggregate quality performance data provided from cielo.

- **Implement necessary adjustments (and when implementation will occur)**

This adjustment is ongoing, and locally based adjustments are occurring on a regular basis. The overall process, however, of a cielo prompt identifying a patient without a documented Tdap in the medical record continues.

22. How many subsequent PDCA cycles are to occur?

Reviewing the response rate to Cielo prompts is part of the ongoing quarterly performance review and improvement.

23. How will the project standardize processes to maintain improvements?

After the initial faculty meetings to develop the initial process, each site holds monthly team meetings during which process is reviewed and discussed. The topics and minutes from these meetings are reviewed by the site medical director. In turn, each site medical director has attends a quarterly “New Model of Family Medicine” meeting during which population level interventions and problem solving for these interventions is discussed, as they may arise at the site based team meetings.

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?

Working to improve Tdap vaccine rate is applicable to all patients age 11-64 at UMHS. However, only the Department of Family Medicine has access to Cielo for point of care reminder systems. Despite this limitation, as UMHS moves forward to a new medical record (epic) the experience of using a point of care reminder and the process of involving teams of MA’s and Physicians to implement the prompt is an area that can be communicated for “spread”.

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 participating will be required to address > 80% of the Tdap prompts they receive on the cielo forms for patients seen. Addressing a prompt does not necessarily require that a Tdap vaccine is administered; rather it means they acknowledge the prompt and respond with one the following options:

- done: Tdap was done previously
- ordered: Tdap was ordered and given during the visit
- declined: Tdap vaccine was offered; patient chose not to get one and has no plans to get one in the future.
- discussed: Tdap vaccine was reviewed, but neither ordered nor declined.
- not addressed: Tdap vaccine was not topical to the visit and was not discussed. No credit is given if this option is selected.

Physicians are expected to attend team meetings and actively participate in discussing process and problem solving, as well as reviewing quarterly, team based local performance data from Cielo.

26. If not addressed in #24, 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?

In addition to the quarterly performance data reviewed by the team, physicians receive monthly reports on their response to cielo prompts (in general). These reports also include site and departmental level response to prompts. Since the process involves formative process rather than summative process, the actual Tdap vaccine percentage is less important and more of a secondary (but important) outcome than the process of addressing the cielo prompts.

27. If not addressed in # 24, how are reflections of individual physicians about the project utilized to improve the project?

Individual physicians can provide input to their teams or medical directors to suggest department wide adjustment/changes.

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

Only physicians who have responded to 80% of the Tdap prompts and have >90% overall Cielo return rate would be considered meaningful participants for Part IV MOC participation. These are the Dept. of Family Medicine's threshold for monetary compensation based on Cielo prompt response rates and Cielo form return rates. All faculty in the department are meeting these criteria.

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.]

25 Physicians.

G. Project Organizational Role and Structure

30. Is this project part of a larger UMHS institutional or departmental initiative?

X Yes No *If No, go to # 30.*

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

Department of Family Medicine

b. What is the larger initiative?

Use of Cielo for population management

c. How does this project advance it?

Improving Tdap vaccination rates improves the health of the population. The lessons learned from enhancing and optimizing this process can inform subsequent projects.

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

Yes, there are cielo prompts for influenza, pneumococcal, gardasil, and menactra vaccines currently active in addition to Tdap vaccine.

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

No.

31. What is the organizational structure of the project? [Include who is involved, their general roles, and reporting/oversight relationships.]

Jean Malouin: Assistant Chair for Clinical Programs, Department of Family Medicine, co-chair New model of Family Medicine group. Oversight
Lee Green: Co-Chair New Model of Family Medicine group. Oversight.
Grant Greenberg: Medical Director, Chelsea health center. Data gathering and reporting. Project Lead.

32. Are resources needed beyond those under the control of the project lead(s) ?

Yes x No *If No, go to #32.*

a. What types of resources are needed and who has agreed to provide them?

33. To what oversight person or group will project-level reports be submitted for review?

Family Medicine New Model Committee

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*)?