Improving SITE and Initial Certification Board Scores in a Pediatric Subspecialty Fellowship

Small Group QI Project (1-10) Physicians-Completed Project

* **QI Project Title (a brief title for your project)** *e.g., Better Otitis Management at 123 Pediatrics*

Improving SITE and Initial Certification Board Scores in a Pediatric Subspecialty Fellowship

* **Where do you work?**

Pediatric Medical Program

* **When did the project begin?**
  Dates should be provided in mm/dd/yyyy format.

01/01/2010

* **When was the project completed or when was the most recent cycle of improvement finished? (if approved credit will be awarded on this date)**
  Dates should be provided in mm/dd/yyyy format.

01/01/2013

Quality Improvement Project Description

1

* **What problem (gap in quality) did the project address?**
e.g. Influenza vaccination rates in our practice were consistently lower than the national standard, resulting in an increased frequency of flu among our pediatric patients.

Graduates of the Pediatric [Subspecialty] Program in our hospital perform poorly on the American Board of Pediatrics Initial Certifying Examination for this specialty, with passing rates below the national average, resulting in a program citation from the Accreditation Council for Graduate Medical Education. Poor examination performance can be attributed to multiple factors, including a trainee's low preexisting subject matter knowledge prior to fellowship training, poor test-taking skills, poor study skills or motivation to improve medical knowledge gaps, lack of exposure to a broad base of clinical material during fellowship, and/or poor educational structure of the fellowship program. One or more of the other elements likely contributed to poor performance of our graduates to varying degrees in individual cases, but the program's educational structure was singled out as the most likely modifiable cause that could result in improvement in exam performance.

2

* What did the project aim to accomplish?
An aim statement should state a clear, quantified goal set within a specific time frame. It states what you tried to change, by how much, and by when. For more information about forming an aim statement, visit our QI Guide.

A: What did you try to change?
e.g. We aimed to improve our practice's influenza vaccination rate

Graduates of the training program will increase pass rates for first-time takers of the ABP Pediatric [Subspecialty] Certifying Examination to meet Accreditation Council for Graduate Medical Education Program Requirements for Graduate Medical Education in the Subspecialties of Pediatrics requirement #V.C.4 to achieve at least 75% of fellows eligible for the certifying examination take it and of those who take it, at least 75% pass it on the first attempt. The time limit for assessment of the outcome will be 2 years.

* B: What was your improvement goal?
e.g. Improving our rate to 85% compliance

At least 75% pass it on the first attempt

* C: What was the time frame for this to be accomplished?
e.g. 9 months

2 years

3

* List the measures used to evaluate progress.

Measures are directly related to the aim statement, showing whether a project's changes are resulting in improvement. Visit our QI Guide for information on choosing measures.

Example project: Improving Vaccination Compliance
Example Measures Table:
. *Measure Name: Influenza vaccination compliance*
. *Goal: 85%*
. *Unit of Measurement: Rate of compliance status*
. *Data Source: EHR*
. *Collection Frequency: Monthly*

Click "Add a Row" below to describe each measure used in your project.

Measure Name: Certification exam pass rate for first time takers
Goal: 75% pass rate
Unit of Measurement: Pass/fail report
Data Source: Other
Collection Frequency: Other

Measure Name: SITE scores
Goal: 100% 3rd year fellows are at national mean, half at least 50% above national mean
Unit of Measurement: SITE score
Data Source: Other
Collection Frequency: Other

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1. Baseline Data

ABP Certification Examination pass rates had been generally poor for our fellowship graduates for several years, and the program was cited by ACGME for not meeting standards, although continued with full accreditation. This action contributed, in part, to a change in fellowship program director, but in 2011 that new program director was named to the post of division chief, and another faculty member was appointed as program director to begin in July, 2012. Part of the new initiatives for the fellowship program was to examine the exam problem more closely to develop further program improvements to bring the pass rate to an acceptable level. Data already provided showed that, from 2003 - 2010, 9 program graduates took the certifying exam for the first time, but only 4 passed, a rate of 44%. Although it was generally believed that low scores on the Subspecialty In- Training Exam (SITE) were correlated with risk for exam failure, this had not been examined closely. Thus, the following table was assembled from existing recent SITE and ABP exam scores. (Note that older data were examined but ultimately excluded from analysis since the structure of the fellowship program was dramatically different prior to approximately 2006).

It was noted that:
a) Not every fellow in the program completed SITE each year.
b) SITE data interpretation is limited by small sample size, both in terms of numbers of individuals (approximately 30 per training year in early years of reports) and in numbers of test questions, and is only an annual measurement.
c) The certifying examination is given only in odd-numbered years, meaning that the primary outcome measure data are slow to accumulate, and notification occurs long after program interventions are made.
d) The chart has a predominance of red arrows, indicating fellows scoring significantly below the national mean. The fellows graduating in June 2012 had a particularly rocky course with their SITE scores, but had slight improvement in 3rd year.
e) Detail not shown, but SITE and exam scores broken down by content areas failed to reveal any subset of specific content areas that accounted for the majority of missed questions.

As indicated in the Key Driver Diagram, the division faculty members agreed to change the educational structure of our focused learning activities. Fortuitously, this coincided with increasing institutional efforts to provide a common curriculum for all fellows, meaning that individual programs would not need to provide specialized instruction in topics such as biostatistics or study design, leaving more time for specialty-specific topics. Also, it was decided to target individuals scoring at or near 2 SD below the SITE mean in second year of training for individual remediation.

Thus, the initial intervention in this project consisted of:

a) Identifying high risk individuals - both 2nd year fellows qualified; they each worked one-on-one with faculty, going over standard cases with discussion of standard physiology,
b) pathogenesis, and natural course of disease, and approaches to diagnosis and treatment.
c) (Also of note, 1 of the 2012 graduates was in the high-risk category, though had left the institution for a full-time faculty position in another city and thus unfeasible for this type of intervention.)
d) Changing our weekly, 1-hour instructional sessions from teacher-centered, passive learning (i.e. traditional "lecture" format) to an active learning environment where individual fellows
e) are assigned to work with individual faculty to develop aspects of a weekly talk on a topic pertinent to the subspecialty.
f) Particularly for graduates in even-numbered years, the program director would maintain email contact, providing handout updates from ongoing teaching conferences and generally encouraging a planned approach to board exam preparation. This was particularly chosen to benefit the 2012 graduates, both of whom would have been in the high-risk category during the 2nd fellowship years, and 1 who was still high risk in 3rd year.
g) Ensuring that all fellows, barring a personal emergency, complete SITE annually.

New SITE scores became available in spring 2013, and ABP exam scores in fall 2013, the latter representing outcomes from the group graduating immediately before the new changes, as well as the scores from the 2 high-risk fellows who graduated in June 2013.

As can be seen from the data above, all 4 graduates from 2012 and 2013 passed the certifying examination, including the high-risk fellows whose progress is highlighted in yellow. This achieved the primary goal of 75% certifying exam pass rate for graduates taking the exam for the first time.

Clearly some of this improvement occurred before the major program changes, likely as a result of the 2012 graduates' awareness of lack of improvement in their 2011 SITE scores. However, the faculty felt that the ongoing follow up with attention to exam issues helped support their study habits in the 15 months between graduation and sitting for the certifying exam.

Although this represented successful achievement of the primary project goal, however, we did not meet goals for SITE performance. The program director was concerned that "green arrows" remained uncommon in the data chart and that, with small numbers of fellows and slow data accumulation, further changes were indicated to sustain and build on this improvement. It was felt that an accompanying weekly, 1-hour case conference, primarily designed to discuss difficult cases, could be
structured differently to also focus on material that could help improve SITE performance. The conference had been structured primarily as a forum to discuss difficult and unusual cases, which is helpful in clinical management but not particularly suited for items that might appear on a multiple- choice question test. Thus, this conference was restructured to start with a 30-minute fellow presentation of a current patient with a standard or classic disease process, with discussion of key take home points, followed by shorter discussions of the problem patients. We also expanded use of multiple choice questions in the ongoing core content sessions. We have completed baseline data collection followed by 2 rounds of interventions and subsequent data collection, with satisfying results so far. This information forms the basis of this MOC part 4 submission.

However, as can be seen above, the "red arrows" are decreasing slightly, but a paucity of green arrows persists, indicating we have not met our secondary goal for SITE scores. This goal is thought to be helpful to provide a "cushion" for lessening risk for a fellow to fall into the high-risk category, which becomes a very labor-intensive endeavor for our faculty. Thus, the project is being continued.

New changes implemented in summer 2015 include a larger modification to our core learning series whereby we plan to cover the entirety of one of the major textbooks in the subspecialty over a 3-year period. All fellows have access to this textbook provided by the institution and division. Fellows will be assigned approximately 40 pages of textbook reading, plus review of any high-quality practice guidelines or original articles, prior to each session, which now occurs 3 times per month. The session will be run by faculty members who begin with approximately 10 board-style multiple choice questions with fellows answering using an anonymous audience response system. The remainder of the discussion focuses on clarifying concepts as indicated by the audience response. All fellows and faculty attended a development session on writing (and answering) high-quality multiple-choice questions in fall 2015.

Also, the ongoing case conferences have been changed slightly in that the initial standard case presentation by 1 fellow is followed by another fellow who was not involved in the patient's care summarizing the case and presenting diagnostic and other management options. This strategy is an attempt to encourage use of problem representation and illness script concepts thought to be helpful in clinical practice as well as testing situations.

Currently we are awaiting board exam results from our 2014 and 2015 graduates who recently took the certifying exam.

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* **Attach the project's de-identified aggregate data over time.**
There must be at least 3 points of measurement. Up to 3 files may be uploaded. Visit our QI Guide for examples of data reported over time.

Graphical_Project_Data_Over_Time.JPG

SITE YEAR	YR 1 FELLOW	YR 2 FELLOW	YR 3 FELLOW	1ST TIME PASS*
2006		↓↓	↓	0/1
2007	↓	↓		0/1
2008	~	↓↓		0/0
2009	~	~	↓	0/1
2010	↓; ↓↓	↓	~	Pending
2011	~;~	↓; ↓↓	↓	Pending
CUMULATIVE				0/3

↑ = 1 SD above mean (2 arrows = 2 SD above mean)

~ = within 1 SD of mean

↓ = 1 SD below mean (2 arrows = 2 SD above mean)

*3rd year fellows graduating that year passing specialty board exam first time/#graduating that year

; = separation to denote results from another fellow in that same training year

SITE YEAR	YR 1 FELLOW	YR 2 FELLOW	YR 3 FELLOW	1ST TIME PASS*
2006		↓↓	↓	0/1
2007	↓	↓		0/1
2008	~	↓↓		0/0
2009	~	~	↓	0/1
2010	↓; ↓↓	↓	~	1/1
2011	~;~	↓; ↓↓	↓	1/1
2012	~;~	~;↑	~;↓	2/2
2013	~	~;~	~;~	2/2
CUMULATIVE				6/9

↑ = 1 SD above mean (2 arrows = 2 SD above mean)

~ = within 1 SD of mean

↓ = 1 SD below mean (2 arrows = 2 SD above mean)

*3rd year fellows graduating that year passing specialty board exam first time/#graduating that year

; = separation to denote results from another fellow in that same training year

SITE YEAR	YR 1 FELLOW	YR 2 FELLOW	YR 3 FELLOW	1ST TIME PASS*
2006		↓↓	↓	0/1
2007	↓	↓		0/1
2008	~	↓↓		0/0
2009	~	~	↓	0/1
2010	↓; ↓↓	↓	~	1/1
2011	~;~	↓; ↓↓	↓	1/1
2012	~;~	~;↑	~;↓	2/2
2013	~	~;~	~;~	2/2
2014	↓;↑	~;~**	~;~	Pending
2015	~;↓	~;↓	~;~**	Pending
CUMULATIVE				6/9

↑ = 1 SD above mean (2 arrows = 2 SD above mean)

~ = within 1 SD of mean

↓ = 1 SD below mean (2 arrows = 2 SD above mean)

*3rd year fellows graduating that year passing specialty board exam first time/#graduating that year

; = separation to denote results from another fellow in that same training year

Improving Monthly Resident Evaluation Completions

Small Group QI Project (1-10) Physicians-Completed Project

* QI Project Title (a brief title for your project) *e.g., Better Otitis Management at 123 Pediatrics*

Improving Monthly Resident Evaluation Completions

* Where do you work?

Pediatric Medical Program

* When did the project begin?
Dates should be provided in mm/dd/yyyy format

01/01/2014

* When was the project completed or when was the most recent cycle of improvement finished? (if approved credit will be awarded on this date)
Dates should be provided in mm/dd/yyyy format.

12/31/2015

Quality Improvement Project Description

1

* What problem (gap in quality) did the project address?
e.g. Influenza vaccination rates in our practice were consistently lower than the national standard, resulting in an increased frequency of flu among our pediatric patients.

A critical tool in resident professional development is receiving feedback on their performance on a regular basis. One such tool that aids residents formatively and summative is rotation based evaluations by faculty. Completion of these evaluations has decreased in frequency (declining response rate) and increasing in time from end of rotation to completion of the evaluation. Both hinder residents' ability to learn from current practice and become progressively more competent in providing care to children.

Since a decline in evaluation completion rate occurred in the context of a consistent evaluation system, we believe the root cause is in people. A suspected contributing cause is increased clinical productivity expectations place on faculty that push non-revenue generating activities, e.g. completing resident evaluations, to a lower priority. Additional contributing causes may include varying degrees of faculty stress and burnout, uncertainty by faculty on how to complete the evaluation when a resident's performance needs improvement, discomfort with completing evaluations that may have negative information about the resident performance, and uncertain value of the task, i.e. uncertain that anything they rate or comment on in the evaluation has any impact on improving a resident's performance.

* B: What was your improvement goal?
e.g. Improving our rate to 85% compliance

* C: What was the time frame for this to be accomplished?
e.g. 9 months

2 years

2

* What did the project aim to accomplish?
An aim statement should state a clear, quantified goal set within a specific time frame. It states what you tried to change, by how much, and by when. For more information about forming an aim statement, visit our QI Guide.

A: What did you try to change?
e.g. We aimed to improve our practice's influenza vaccination rate

75% of monthly (rotation) evaluations of residents' performance will be completed by 14 days after the end of each rotation by the end of 2014-2015 Academic Year.

3

* List the measures used to evaluate progress.

Measures are directly related to the aim statement, showing whether a project's changes are resulting in improvement. Visit our QI Guide for information on choosing measures.
Example project: Improving Vaccination Compliance
Example Measures Table:

- *Measure Name: Influenza vaccination compliance*
- *Goal: 85%*
- *Unit of Measurement: Rate of compliance status*
- *Data Source: EHR*
- *Collection Frequency: Monthly*

Click "Add a Row" below to describe each measure used in your project. Measure Name: Evaluation completion rate query from New innovation

Goal: 75% within two weeks of end of rotation
Unit of Measurement: Evaluations incorrectly assigned to wrong attending
Data Source: Other
Collection Frequency: Monthly

4

* What interventions or changes were made?
e.g. Education for our clinical staff on importance of this vaccine, added compliance check in patient's EHR, utilized pamphlets on this vaccine in well patient visits.

First intervention was to raise faculty awareness of importance of timely completion of evaluations through discussion at a departmental faculty meeting. The department chair endorsed and promoted the importance of this activity. This was paired with heightened auto-reminders from the program.

5	* **Attach the project's de-identified aggregate data over time.**
	There must be at least 3 points of measurement. Up to 3 files may be uploaded. Visit our QI Guide for examples of data reported over time.
	Graphical_Project_Data_Over_Time.JPG

	2013 - 2014		2014 - 2015	
	Completed on Time	Overall Compliance	Completed on Time	Overall Compliance
July	35%	81%		
Aug	46%	91%	19%	81%
Sept	24%	99%	33%	89%
Oct	43%	94%	41%	79%
Nov	26%	100%	18%	74%
Dec	26%	93%	19%	49%
Jan	37%	95%	19%	70%
Feb	27%	97%	20%	63%
March	34%	90%	18%	67%
April	37%	82%	15%	53%
May	32%	72%	9%	21%
June	16%	79%		

% Completed On Time

Completed on Time — Overall Compliance — Target