Department of Medicine
Internal Medicine Residency Program
Stanford University School of Medicine

Elective in Quality Improvement, Patient Safety, and Organizational Change

Syllabus and Reader
2014-2015

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PART I: GUIDELINES AND REQUIREMENTS FOR THE ELECTIVE
About the Elective in QI, Patient Safety & Organizational Change

This elective is a 4-week training and mentorship experience at Stanford University Hospitals and Clinics. **The overarching goal of the elective is to provide mentored practice and growth in residents’ knowledge, skills, and attitudes in quality improvement, patient safety, and organizational change.** The resident will engage in directed readings in quality, patient safety, and organizational change, attend sessions with experienced “QI Champions”, learn about quality improvement projects and processes at Stanford University, participate in ongoing quality and patient safety activities within the Department of Medicine and Stanford Hospital & Clinics, and design and begin a quality improvement /patient safety/organizational change project. Residents should receive regular verbal feedback.

The quality improvement elective is also designed to allow the resident to develop mentoring relationships with “QI Champions” who will serve as role models, mentors, and educators.

Goals of the quality improvement elective
At the end of the quality improvement elective, residents should be able to see increases in:

- Knowledge of key components of reflective practice
- Skill in applying reflective practice
- Knowledge in the definition of quality improvement (QI)
- Knowledge of key steps in a QI project
- Knowledge of criteria for selecting a QI project team
- Knowledge of practice-based learning and improvement
- Knowledge of systems-based practice
- Familiarity with QIPS infrastructure at Stanford Hospital and Clinics
- Familiarity with publicly reported core measures, national data on quality/patient safety
- Appreciation of QI as part of the physician’s professional role
- Confidence in participating in a QI project
- Ability to communicate with peers about QI principles, as well as specific projects and resources at Stanford
- Ability to synthesize QI concepts from key readings
- Ability to apply knowledge to a QI project at Stanford
Course Contacts

Rotation Directors and Educators:
Lisa Shieh, MD, PhD, FHM
Clinical Associate Professor of Medicine
Medical Director of B3/C3 Inpatient Unit
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Quality Improvement Elective Consultants:
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Clinical Professor of Medicine/Family and Community Medicine
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Phone: (650) 723-6963

Kate Bombach, MS
Director of Quality
KBombach@stanfordmed.org

Janet Rimicci, RN, MSN
Executive Director, Emergency and Medicine Services
JRimicci@stanfordmed.org
List of Roles and Responsibilities

What are the responsibilities of the resident?

- Learn and follow all guidelines in this syllabus.
- Satisfactorily complete of all quality improvement elective requirements:
  - Complete required online IHI modules (see pgs. 7, 8)
  - Complete required readings (see pg. 9)
  - Attend departmental and hospital QI/PS meetings (see calendar)
  - Meet regularly with the rotation team (see calendar)
  - Complete a PDSA project plan (see pg. 10)
  - At the end of the rotation, the resident should present their project and/or key learning from their rotation experience to colleagues through the following three activity areas:
    - Lead a QI M&M noon conference (see pg. 12)
    - Lead a QI Project Presentation noon conference with 5 minute overview of Visibility Wall data (see pg. 14)
    - Complete an end-rotation status report through a handoff video (see pg. 15)
  - Complete a final course evaluation (see pg. 16)
- Meet with individuals as relevant to project area
- Seek ongoing evaluative feedback and incorporate suggestions for improvement into ongoing assignments and projects.
- Adhere to academic and professional standards.
- Contact the rotation team if there are concerns about resident responsibilities.
- Serve as "QI Ambassadors" to resident colleagues.

What are the responsibilities of the QI elective team?

- Orient and instruct the resident regarding QI elective academic program requirements, professional behavior and evaluation procedures.
- Be available to the resident on a formal or informal basis to facilitate the progress of the resident.
### Timeline of Roles and Responsibilities
Each Monday afternoon during weekly check-in, there will be time for your reflections and questions about QI meetings attended and IHI modules.

#### Week One: Introduction to QI at Stanford

<table>
<thead>
<tr>
<th>Activity</th>
<th>Outcomes due Friday</th>
</tr>
</thead>
<tbody>
<tr>
<td>Literature review on topic area</td>
<td>PDSA plan: topic area and outcomes (e.g. scholarship) defined</td>
</tr>
<tr>
<td>QI meetings</td>
<td>Summary of literature review for presentation on Monday next week</td>
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<tr>
<td>Online IHI modules:</td>
<td></td>
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<tr>
<td>- Introduction to QI (QI 101; QI 102)</td>
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<td>- Introduction to PS (PS 102)</td>
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#### Week Two: Project Development and Peer Education

<table>
<thead>
<tr>
<th>Activity</th>
<th>Outcome due Friday</th>
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<tbody>
<tr>
<td>Review and prep for QI M&amp;M</td>
<td>PDSA plan: progress plan defined</td>
</tr>
<tr>
<td>QI meetings</td>
<td>M&amp;M outline for feedback</td>
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<tr>
<td>Online IHI modules:</td>
<td></td>
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<tr>
<td>- Methodology (QI 103; PS 105)</td>
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<td>- Culture change (PS 106; QI 104)</td>
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#### Week Three: QI implementation and data collection

<table>
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<tr>
<th>Activity</th>
<th>Outcome due Friday</th>
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<tbody>
<tr>
<td>Review of handoff video assignment</td>
<td>PDSA plan: project underway, data collected</td>
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<tr>
<td>Finalize two noon conferences; invite stakeholders</td>
<td>Project presentation outline for feedback</td>
</tr>
<tr>
<td>QI meetings</td>
<td>Visibility Wall updated for peers</td>
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<tr>
<td>Online IHI modules:</td>
<td></td>
</tr>
<tr>
<td>- Methodology (QI 106)</td>
<td></td>
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<td>- Teams (PS 103)</td>
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#### Week Four: Summarizing and Handing off

<table>
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<tr>
<th>Activity</th>
<th>Outcome due Friday</th>
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<tbody>
<tr>
<td>Present QI M&amp;M (Wed)</td>
<td>PDSA plan: project completed, data analyzed, findings summarized, next steps</td>
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<tr>
<td>Present QI Project (Fri)</td>
<td>Handoff video</td>
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<tr>
<td>QI meetings</td>
<td>Course evaluation</td>
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<tr>
<td>Develop end-rotation status report through handoff video</td>
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<td>Course feedback</td>
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</table>
**Required activities: IHI Open School modules**

The IHI Open School is located online [http://www.ihi.org/lms/onlinelearning.aspx](http://www.ihi.org/lms/onlinelearning.aspx)

Login registration for the IHI Open School should be set up as “student” or “resident” role to access the curriculum. The following modules are required during the rotation (see pg. 7 for schedule):

- **Patient Safety:** 102: Human Factors and Patient Safety; 103: Teamwork and Communication; 105: Root Cause and Systems Analysis; 106: Introduction to Culture of Safety

- **Quality Improvement:** 101: Fundamentals of Improvement; 102: The Model For Improvement; 103: Measuring for Improvement; 104: How QI Works in Real Health Care Settings; 106: QI Tools

We encourage you to participate in any additional IHI Open School Modules for self-directed learning.
Required activities: Readings

1) Before the rotation, please purchase the book “Understanding Patient Safety” by Robert Wachter.

2) Before the rotation, please watch:
   http://www.ted.com/talks/atul_gawande_how_do_we_heal_medicine.html

3) For the first day of the rotation, residents should come prepared to discuss 3 articles (see pg. 32 for readings):
   - Physicians’ Professional Responsibility to Improve the Quality of Care (AMJ 2002).

4) All other course readings are available as resources (see reading list pg. 21), and can be found online on MedHub; PDFs available upon request.
**Required activities: PDSA Project Plan/ IRB**
The project plan should be completed each Friday of the rotation for review/ modification with rotation team each Monday. Complete IRB if publishing work.

**Overall aim:**

**Test population:**

**Team members:**

**PLAN:**
Briefly describe the test:

How will you know that the change is an improvement?

What driver does the change impact?

What do you predict will happen?

Plan for change or test: who, what, when, where

<table>
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<tr>
<th>Test start date:</th>
<th>Target test completion date:</th>
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<table>
<thead>
<tr>
<th>List the tasks necessary to complete this test (what)</th>
<th>Person responsible (who)</th>
<th>When</th>
<th>Where</th>
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<tbody>
<tr>
<td>1.</td>
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<td>3.</td>
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<td>4.</td>
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<td>5.</td>
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Plan for collection of data:

**DO:** Test the changes.
Was the cycle carried out as planned?

Record data and observations.

What did you observe that was not part of our plan?

**STUDY:**
Did the results match your predictions?

Compare the result of your test to your previous performance:

What did you learn?

**ACT:** Decide to Adopt, Adapt, or Abandon.

- [ ] **Adapt:** Improve the change and continue testing plan.
  Plans/changes for next test:

- [ ] **Adopt:** Select changes to implement on a larger scale and develop an implementation plan and plan for sustainability

- [ ] **Abandon:** Discard this change idea and try a different one
**Required activities: QI M&M Noon Conference**

**QI M&M goals:**
- Educate housestaff in practice based learning and improvement and systems based practice
- Gain housestaff input and involvement in ongoing systems improvement
- Partner with housestaff to better understand contributing factors that impact patient care
- Provide follow up on cases and action plan

**QI M&M learning objectives:**
By the end of the M&M Conference, participants will have increased …
1) Confidence and competence in utilizing QI methodologies (including, but not limited to: Root Cause Analysis, Healthcare Failure Modes and Effects Analysis, and Just Culture)
2) Knowledge in the definition of quality improvement (QI)
3) Knowledge of key steps in a QI project
4) Knowledge of practice-based learning and improvement
5) Knowledge of systems-based practice
6) Familiarity with QIPS infrastructure at Stanford Hospital and Clinics
7) Familiarity with publicly reported core measures, national data on quality/patient safety
8) Appreciation of QI as part of the physician’s professional role
9) Confidence in participating in a QI project
10) Ability to communicate with colleagues about QI principles, as well as specific projects and resources at Stanford
11) Ability to identify QI opportunities in case presentations and day-to-day patient care

**QI M&M Educational Format:**
(60 mins, but formatted for 45 since it starts late)
- Review of goals (3-5 mins)
  o What are we learning today? (These can be case-specific or system-specific, but should map onto our overall goals and objectives above)
- Case presentation (10-15 mins)
- Explanation of methodologies used in the case review (5 mins)
  o What is the framework? (Just Culture, RCA, processing mapping, FMEA)
- Identify systems issue(s) in small groups (5 mins)
- Discuss with large group (10 mins)
- Background/data (3-5 mins)
  o Literature/best practices on topic for benchmarking
- Any Stanford or national data we can show for this clinical or systems issue (compare?)
- Review slides with project selection criteria

ACTION PLAN: Where are we now and what happens next? (15 mins)
- Action plan developed with large group
- Identify where we are in the QI infrastructure slide to show process of systems improvement at Stanford (identify resources, etc)
- Identify where we are in the 10 steps of QI project to show where we are in process
  - QI resident does steps 1-3; group does steps 4-6 for the most part

For examples of previous presentations, please speak with Kambria H. Evans, M.Ed.
**Required activities: QI Project Noon Conference**

Your QI Project presentation’s purpose is to gather peer input on your intervention idea and to communicate with peers about QI principles, as well as specific projects and resources at Stanford. *Part of your presentation will be a 5 minute overview of the Resident Performance Dashboard on the Visibility Wall, which you will have updated by the Friday before.*

For examples of previous presentations, please speak with Kambria H. Evans, M.Ed.
**Required activities: End-rotation Status Report through a Handoff Video**
At the end of the rotation, the resident should complete an end-rotation status report in Powerpoint. This is intended to summarize progress to date and outline steps to keep the initiative going, even in the resident’s absence.

The report should include specific resources needed for ongoing data monitoring and evaluation. Think about what you would want to know if you were next month’s QI resident coming into this project.

This will be videotaped/recorded as a virtual handoff in LKSC with EdTech. Prepare for about a 30 minute handoff video.


For more specific instructions, please speak with Kambria H. Evans, M.Ed.
### Required activities: Course Evaluation

Your responses on this instrument are entirely confidential. They will be used for programmatic evaluation research purposes only and will be reported only as grouped data. We appreciate your cooperation in completing every item.

Rate yourself on each of the following BEFORE participating in the rotation (as viewed retrospectively) and CURRENTLY.

<table>
<thead>
<tr>
<th></th>
<th>BEFORE ROTATION</th>
<th>CURRENTLY</th>
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<tbody>
<tr>
<td></td>
<td>Low</td>
<td>High</td>
</tr>
<tr>
<td>Knowledge of key components of reflective practice</td>
<td>1</td>
<td>2</td>
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<tr>
<td>Skill in applying reflective practice</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>Knowledge in the definition of quality improvement (QI)</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>Knowledge of key steps in a QI project</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>Knowledge of criteria for selecting a QI project team</td>
<td>1</td>
<td>2</td>
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<tr>
<td>Knowledge of practice-based learning and improvement</td>
<td>1</td>
<td>2</td>
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<tr>
<td>Knowledge of systems-based practice</td>
<td>1</td>
<td>2</td>
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<tr>
<td>Appreciation of QI as part of the physician's professional role</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>Confidence in participating in a QI project</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>Familiarity with QIPS infrastructure at Stanford Hospital and Clinics</td>
<td>1</td>
<td>2</td>
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<tr>
<td>Familiarity with publicly reported core measures, national data on quality/patient safety</td>
<td>1</td>
<td>2</td>
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<tr>
<td>Ability to communicate with peers about QI principles, as well as specific projects &amp; resources at SU</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>Ability to synthesize QI concepts from key readings</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>Ability to apply knowledge to a QI project at Stanford</td>
<td>1</td>
<td>2</td>
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</table>

**What worked well in the rotation?**

**What can be improved in the rotation?**
Optional activities

If you’d like skill development in (1) creating curriculum and teaching in patient safety topics to nurses at the VA or (2) participating in a rapid improvement project (RPIW), please contact:

Nazima Allaudeen, MD
Hospitalist, Department of Medicine
Veterans Affairs Palo Alto Healthcare System

VA- Palo Alto Healthcare System
3801 Miranda Ave, MC 111
Palo Alto CA 94304
Office: 650 493 5000, Ext 68982
Fax: 650 849 1213
email: nazima.allaudeen@va.gov
PART II: NATIONAL AND STANFORD QI RESOURCES
### Resources

<table>
<thead>
<tr>
<th>Category</th>
<th>URL</th>
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<tbody>
<tr>
<td>JCAHO Core Measures</td>
<td><a href="http://www.jointcommission.org/PerformanceMeasurement/PerformanceMeasurement/default.htm">http://www.jointcommission.org/PerformanceMeasurement/PerformanceMeasurement/default.htm</a></td>
</tr>
<tr>
<td>UHC Core Measures &amp; Mortality</td>
<td><a href="http://www.uhc.edu/">http://www.uhc.edu/</a></td>
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<tr>
<td>Society of Hospital Medicine</td>
<td><a href="http://www.hospitalmedicine.org/AM/Template.cfm?Section=Quality_Improvement">http://www.hospitalmedicine.org/AM/Template.cfm?Section=Quality_Improvement</a></td>
</tr>
<tr>
<td>Institute for Healthcare Improvement</td>
<td><a href="http://www.ihi.org/IHI/Programs/StrategicInitiatives/TransformingCareAtTheBedside.htm">http://www.ihi.org/IHI/Programs/StrategicInitiatives/TransformingCareAtTheBedside.htm</a></td>
</tr>
<tr>
<td>HHS Hospital Compare</td>
<td><a href="http://www.hospitalcompare.hhs.gov/Hospital/Search/Welcome.asp?version=default&amp;browser=IE%7C7%7CWinXP&amp;language=English&amp;defaultstatus=0&amp;pagemlist=Home">http://www.hospitalcompare.hhs.gov/Hospital/Search/Welcome.asp?version=default&amp;browser=IE%7C7%7CWinXP&amp;language=English&amp;defaultstatus=0&amp;pagemlist=Home</a></td>
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<tr>
<td>Cal Hospital Compare</td>
<td><a href="http://www.calhospitalcompare.org/">http://www.calhospitalcompare.org/</a></td>
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<td>Picker Institute</td>
<td><a href="http://www.pickerinstitute.org/index.html">http://www.pickerinstitute.org/index.html</a></td>
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Additional online module and resources

- Mayo Clinic Quality Academy Educational Resources: [http://qiresources.mayo.edu/](http://qiresources.mayo.edu/)
- Vanderbilt: [www.improvementskills.org](http://www.improvementskills.org) (small fee to register)
- Interprofessional Healthcare Informatics (online course) [https://www.coursera.org/course/newwayhealthcare](https://www.coursera.org/course/newwayhealthcare)

Research and survey design

- Survey design
  - [http://www.keene.edu/crc/forms/designingsurveysthatcount.pdf](http://www.keene.edu/crc/forms/designingsurveysthatcount.pdf)
  - [http://www.sagepub.com/upm-data/14496_Chapter5.pdf](http://www.sagepub.com/upm-data/14496_Chapter5.pdf)
  - [http://www.socialresearchmethods.net/kb/survey.php](http://www.socialresearchmethods.net/kb/survey.php)
- Writing in the Sciences (online course) [https://www.coursera.org/course/sciwrite](https://www.coursera.org/course/sciwrite)
Resource Readings

Course readings can be found online on MedHub, and are available as PDF upon request.

Reflective Practice: Concepts and Applications


Patient Safety


Rosner F, Berger JT, Kark P, Potash J, Bennett AJ. Disclosure and prevention of


**Quality Improvement**


Endsley S. Putting measurement into practice with a clinical instrument panel. *Family Practice Management* 2004 Available at http://www.aafp.org/fpm/20030200/43putt.html


**Facilitating Change through Leadership and Teams**


Holmboe ES, Bradley EH, Mattera JA, Roumanis SA, Radford MJ, Krumholz HM.


**Organizational Development and Process Planning**


Resident QI Project Themes

- Alcohol withdrawal treatment best practices
  - February 2011: Judy Ashouri

- Discharge process improvements

- EPIC: utilization for documentation and BPAs
  - July 2008: Jason Adams; April 2009: Crystal Evey; November 2009: Roni Brar; December 2013: Daniel Fang; September 2014: Justin Lofti (nutrition)

- Engaging housestaff in quality and core measures

- Goals of care
  - December 2008: Zach Koontz; January 2010: Sarah McGill; October 2011: Tyler Johnson; February 2012: Becky Chase

- Hand hygiene compliance
  - July 2009: Sidharta Sinha; August 2012: Wendy Caceres

- Handovers and transfers (e.g. ICU, day to night team, outside records)

- Impact of resident call schedules
  - November 2013: Nathaniel Myall; James Barnes
- MD-RN communication/ MD-RN rounding
  - August 2008: Prateeti Khazanie; May 2009: Lily Kao; April 2011: Aaliya Yaqub; May 2011: Tyler Johnson; September 2011: David Iberri

- Outpatient diabetes improvement
  - August 2009: Ellen Eaton; April 2010: Kat Cheung

- Patient satisfaction and experience
  - December 2009: Troy Leo (teamcards); January 2012: Marilyn Tan (whiteboards); January 2013: Neera Narang (language placards); January 2014: Anna Postolova

- Procedures: increasing resident confidence
  - February 2009: Azar Mehdizadeh; June 2012: Jason Bartos

- Sepsis identification and treatment best practices
  - September 2009: Vickie Kelly; June 2010: Steve Pan; October 2010: Jessica Zhou; April 2012: Janet Leung

- Value and Cost
  - October 2009: Andy Samuelson; March 2012: Gurmeet Sran

Resident QI Publications


M. Kantor, K. Evans, L. Shieh, “Pending studies at hospital discharge: A pre-post analysis of an electronic medical record tool to improve communication at hospital discharge”, accepted to JGIM, Sept 2014