Working with trainees to turn quality improvement into scholarship and dissemination

James Moses, MD, MPH
Chief Quality Officer, Boston Medical Center
Academic Advisor, Institute for Healthcare Improvement’s Open School
Objectives

• Describe the growing imperative of including GME trainees in efforts to improve patient care

• Provide attendees an organizing framework for engaging GME trainees in efforts to improve quality and patient safety at the point of care

• Review the process of publication and dissemination for trainee-led faculty mentored quality improvement initiatives
Background

Houston, we have a problem

And the 6 Quality Aims are?

• Deeper alignment of engaging GME learners (residents and fellows) in Quality and Patient Safety
Educational reform has led to the direct assimilation of Quality and Patient Safety competencies into Medical Education at all levels

- **Undergraduate Medical Education**
  - LCME requirements now include Quality and Safety, Interprofessional competencies

- **Graduate Medical Education**
  - ACGME Outcomes Project

- **Continuing Medical Education and Board Certification**
  - Maintenance of Certification-Part IV
Educational reform has led to the direct assimilation of Quality and Patient Safety competencies into Medical Education at all levels

- **Undergraduate Medical Education**
  - LCME requirements now include Quality and Safety, Interprofessional competencies

- **Graduate Medical Education**
  - ACGME Outcomes Project

- **Continuing Medical Education and Board Certification**
  - Maintenance of Certification-Part IV
ACGME Outcomes Project: The Good and the Bad

- Better doctors → Improved Quality and Safety

- Competency Domains → Improved Educational Outcomes
  - Creation of QI as requirement (PBLI and SBP)

- Last decade: Key Quality and Patient Safety Attributes
  - Focus on getting residents to be better providers (PBLI > SBP) and
  - Keeping patients safe → duty hours
CLER: A New ACGME Focus

• Lack of clear patient outcomes related to GME
  → Meaningful engagement of GME learners in Quality and Patient Safety in institutions across the country is lacking

• To move away from over emphasis on duty hours and ACGME’s role as ‘educational police’
  → Instead: ACGME as driver of fostering the ‘right environment’ for institutions to more centrally engage and involve GME learners in their Quality and Patient Safety priorities
Focus Area: Patient Safety
Preliminary Analyses, January 2015

For those Clinical Learning Environments where information was available:

A median of 1.2% of patient safety events were reported by residents (≈60% CLEs did not or could not track)

Based on interviews with nurses and other clinical staff, residents infrequently report events; it was not unusual that the CLE’s system was used to report on individual behaviors.
Shift in the healthcare landscape is necessitating a change in our approach to training

• To ensure that the healthcare workforce has the necessary knowledge and skills

• And seeing the trainees, in their role at the point of care, as actual ‘drivers’ of health care quality
### Summary of Changes

<table>
<thead>
<tr>
<th>VI.A. Patient Safety, Supervision, and Accountability</th>
</tr>
</thead>
</table>

These new and expanded requirements have been added in recognition of the need to make explicit that resident education must occur in an environment designed to emphasize a culture of safety and quality improvement, with appropriate levels of supervision and accountability. This increased emphasis on patient safety and quality improvement is expected to improve resident education and patient safety. It is necessary that residents and faculty members consistently work in a well-coordinated manner with other health care professionals to achieve institutional patient safety goals, such as consistent reporting and disclosure of patient safety and adverse events. It is essential that
Is ACGME Right?

Should Housestaff play a key role in Quality & Safety?
Benefits to both the training institution and to the housestaff

**Training Institution**
- Frontline staff involvement and input into solutions
- Housestaff become faculty
- Housestaff engagement → QPS culture

**Trainee**
- QPS as an institutional priority
- QPS as part of every day work (identity) in taking care of patients
- Learn skills of QPS improvement work

With Patient Outcomes as the True North ‘trainee’ integration becomes necessity
GME Learners as Key Stakeholders

• Opportunity to create change

Delivery of Patient Care
  Fellows and Residents ↓
  Faculty ↓
  Department/Division Chiefs ↓
  CMO/Physician-In-Chief ↓
  CEO ↓
  Board

MD Power Structure
  Board ↓
  CEO ↓
  CMO/Physician-In-Chief ↓
  Department/Division Chiefs ↓
  Faculty ↓
  Fellows and Residents
Addressing current state gaps means addressing *historical norms* in the training environment.

- Resident/fellows as transitory
- Trainee QI efforts not linked to system priorities
- Input as frontline staff not incorporated into hospital QI efforts

*Care improvement occurs in organizations despite housestaff as opposed to because of housestaff.*
A foundational paradigm shift
Developing a Framework

GME Engagement and Activation

- Workforce QI/PS Competence
- Leadership Prioritization
- Culture of Patient Safety and Quality Improvement
- Hearing the Patients' Voice
  • Experience and Engagement
- Inter-Professional Team-Based Care
- Quality and Patient Safety
Barriers to address

- Time
- Lack of role models
- Resource and support allocation
- Competing priorities
So how to best to integrate ‘trainees’ into QPS activities?

Moving from ‘in vitro’ to ‘in vivo’ experiential learning at the point of care
Three Different Models

Getting QI to be facilitated by anyone, everywhere
Figure 1 The iterative process used to develop three models for trainee engagement in quality improvement and patient safety work at the point of care. Abbreviation: IHI indicates Institute for Healthcare Improvement.
Model 1: Short-term, Team-based

- Definition: Focused on *behavior change and/or process change* within control of interdisciplinary medical team.

- Scenario: Inpatient team spends 2-4 weeks together, integrating QI/PS into daily clinical care routines.

- Improvement Objective: To solve a proximal workflow issue or gap in care that a team identifies.

- Educational Objective: Motivate trainees to incorporate improvement principles and systems based thinking into daily clinical routines versus thinking of QI/PS as separate activity.

*Example:* Team prioritizes ensuring that 100% of patients admitted to the service have a completed VTE Risk Assessment completed by admitting resident prior to initiation of DVT prophylaxis.
Model 2: Medium-term, Unit-based

• Definition: Focused on a workflow in a particular unit or clinic with aims that are tied to institutional priorities

• Scenario: Trainees who rotate through an unit (or clinic) and work on a QI project developed by the unit (or clinic)

• Improvement Objective: To develop new practice or implement an evidence-based intervention for the unit or clinic

• Educational Objective: To demonstrate to the trainee that even with limited period of time spent in one particular unit, he or she can play a vital role in accelerating that unit’s improvement initiatives

Example: Trainees who have weekly continuity clinic, participate as part of the clinic’s QI team working to improve flu vaccination rates
Model 3: Long-term, Systems-based

- Definition: Focused on a workflow(s) that crosses multiple units/clinics with an aim to improve systems at departmental/institutional level

- Scenario: Trainees who join a hospital taskforce related to improving a corporate quality goal prioritize ensuring interventions are adopted locally as they rotate through a unit (or clinic)

- Improvement Objective: To make system-level change that helps achieve institutional QI/PS objectives

- Educational Objective: To integrate trainees into a larger institutional objectives for quality and safety; to make robust connections between clinical care at the bedside and institutional quality and safety aims

Example: Trainees on a hospital readmissions taskforce join multidisciplinary rounds when on an inpatient rotation to ensure all patients have follow-up with PCP scheduled by the unit coordinator within 2 weeks of discharge
Selecting a Model

• Intentionally flexible

• Factors to consider from ‘faculty’ perspective:
  • Role in GME education
  • Location within the QPS infrastructure of the institution
  • Comfort with QPS principles and practice

• Factors to consider from a ‘trainee’ perspective:
  • Current QPS knowledge, skills and behaviors
  • Motivation and time availability
  • Interest in QPS as potential career
Putting the 3 Different Models to Action

Sharing of ‘Best Practice’ Examples
Model 1

Short-term, Team-based
Aim & approach

• Teach trainees how to improve (and how not to hate QI)

• What could we improve in 2 weeks?
  • Team-based approach

• Start with a question:
  • What’s something you think we can do better?

• And then...wait
What Christine told me...
Simple measurement

• So, I asked...how many of our patients needed interpreters?

• Our Day 2 measure:
  • Total # patients not English Speaking

• Data collection plan:
  • MS III to note from morning signout patients not English Proficient
  • Plot number on workroom whiteboard

• Our Day 4 measure (final measure):
  • Interpreters used on rounds/# of LEP patients
What changes did we make?

- Supervisor communicated with night team to capture language preference and communicate in morning signout
- Supervisor have ‘ward assistant’ call for interpreters for rounds
- Created form for tracking to be used by MSIII
- Realized we should reach out to interpreter office and see if ok with to ensure interpreter involvement on rounds
- Ensure LEP patients prioritized due to interpreter arrival
What I didn’t do

• Teach the Model for Improvement, PDSA, run charts, variation analysis, systems thinking
• Mention Juran, Deming or Shewhart
• Use acronyms
• Work on an abstract idea
• Work on something they didn’t feel was important
Your role:
Before rounds:
1) Fill out form for each non-English speaking patient on YOUR ROUNDING TEAM.
2) Make a copy of the form.
3) Give copy to unit coordinator (Pam) before 7:15am lecture. Hold onto original form.

During rounds:
4) Complete starred (*) fields on original form.
5) At the end of rounds, write “Huddle time”, and give both team’s completed sheets to Marjorie before huddles.
Hey Team!

Another 10/10 on interpreter rounding forms! We really appreciate the work you've put into this project, and hope you know that your patients appreciate it too! Sometimes it's not easy to round in the room and schedule interpreters, but here are a few highlights from the surveys Lizzeth and I do on the floor weekly:

"They all came in at once, talking about everything in front of me so I know what's going on."

"I liked that it was a team, it was very interactive. There was opportunity to see different opinions and viewpoints. They were nice, concerned, and supportive."

Way to go!

Julio and Lizzeth
Model 2

Medium-term, Unit-based
Residents take on CDI in our ICU

- *C. diff* rate higher than national average
- Routine infection control precautions are not always in place
- Hospital epidemiologist looking for pilot project
ICU focused initiative

- Single unit, small 12-bed ICU
- Staff and leadership aware and on board
- Flexible scheduling
- No funding initially
Aim Statement

• Improve adherence to basic infection control measures in the 9N ICU by 15% by January 31, 2016.
Team membership

- Led by resident

- MS and SPH Students brought on board to track adherence

- Mentorship from hospital epidemiologist

- Collaboration with RN and MD leaders, unit RNs
Measurement

- Healthcare workers observed with checklist
- Observations at irregular intervals given duty schedule
- Baseline data taken
- Process analyzed by traditional QI techniques
Hand hygiene: Not so simple

- All healthcare workers had trouble adhering to basic hand hygiene & special precautions
- Multiple common failure points identified
Solutions tested

• Install more hand sanitizer dispensers

• Create a campaign with infection control characters

• Make new alert signs featuring characters
Resident Project

- $1,600 QI grant from Resident Union’s BMC HS QI Council jointly supported by BMC’s Malpractice Captive
- Work orders for new hand sanitizers
- Printed up signs and posters
- Measuring for change currently
Resident Project

• Lessons learned
  • Duty schedule often not compatible with project schedule
  • Do project in manageable chunks
  • Observations are more difficult than chart-based measurements
  • Resident/student QI programs can work
  • Trainees and students want to take leadership roles

• Unit based project
  • Unit was engaged and interested in improvement
  • Leadership comfortable with resident-run project
  • Smaller is better; easier to make changes
  • Less funding needed
  • Unit-based pilots are the gateway to larger projects
Model 3

Long-term, Systems-based
Residents experience errors...

Have you ever been involved in a near miss while at BMC? 76.1%

Have you ever been involved in an adverse event while at BMC? 62.8%

Have you ever submitted an electronic incident report (STARS report) at BMC? 36.8%

But do not report them....
Objectives

• Increase physician (trainee and faculty) reporting of adverse events via Hospital-based taskforce with housestaff and faculty representatives

• Key intervention:
  • Department specific didactic/discussion based STARS sessions
Participating Departments

- Psychiatry
- Orthopedics
- Medicine
- OB/GYN
- Emergency Department
- Surgery
- Pediatrics
- ENT
- Family Medicine
- Cardiology
Increase by 50% the number of STARs filed by GME trainees across the organization per month

Aim Statement

Primary Drivers

- Knowing How To File a STARs
- Knowing Why to File a STARs
- Belief that filing a STARs will improve care for patients
- Rewarding Environment for filing STARs by Trainees

Secondary Drivers

- Actions taken to effectively improve care and communicated back to GME Trainees
- Education on STARs
- Role Modeling by Faculty

Change Strategies

- Regular STARs related Educational Sessions
- Faculty Development Programming
- STARs Dashboard
- Collection and reporting out of Action Steps taken by HS QI council and Risk Management Team
Total number of STARs filed continues to go up, demonstrating improved engagement by staff in raising awareness to safety issues across our clinical areas.
Nursing continues to be the group that files the most STARS but other staff are making meaningful contributions to the number of STARs filed as well.
Though nursing makes up the majority of staff that file STARs, the total number of STARs filed by Attendings and Residents has risen steadily over the last year, largely as a result of a STARs initiative being lead by key faculty and the Housestaff Quality Improvement Council.
Conferences and Publications

A Win-Win
Can QI be published?

Of course
SQUIRE Guidelines

• [http://squire-statement.org/](http://squire-statement.org/)
Academic Products Opportunities

• Posters/Abstracts
  • Local: Research Day/Quality Day
  • Regional/National: Discipline specific society meetings, IHI, AHI, AAMC Integrating Quality

• Journals dedicated to QI
  • American Journal of Medical Quality
  • BMJ Quality and Safety Journal
  • Journal of Healthcare Quality
  • Joint Commission Journal on Quality and Safety

• Many major journals with dedicated quality forum
  • NEJM/JAMA
  • Society specific (Pediatrics, Hospital Medicine)
Where QI and Research Should Play Together
Why they need each other:

- **QI**
  - Evolves interventions based on learning
  - Fits into the local system
  - Uses data over time to guide improvement
  - Improvement realized is sustained intentionally in the system

- **Research**
  - Controls for confounding/bias
  - Formalizes hypothesis testing of differences between populations
  - Interventions are decided *apriori*
  - Adherence to intervention is formalized

- **Does not control for confounding/bias**
- **Measures what is necessary for improvement (no controls)**
- **Data technique not intended for null hypothesis testing**
- **Does not allow for rapid improvement of an intervention**
- **Does not leverage data for learning purposes**
- **Heavy in resources/takes a long time**
- **Adherence to intervention or during study period**
Addressing Health Disparity by Increasing In-person Interpreter Participation during Family-Centered Morning Rounds
Lizzeth Alarcón; Julio Martínez; Kathleen Xu, MPH; Vivian Wang, BS; Christine Cheston MD; James Moses MD, MPH

Elucidating Reasons for Resident Underutilization of Electronic Adverse Event Reporting
Jonathan Hatoun, MD, MPH; Winnie Suen, MD, MSc; Constance Liu, MD, Sandy Shea, BA; Gregory Pattis, MPH; Janice Weinberg, SLP; Jessica Eng, MD, MS

Increasing Trainee Reporting of Adverse Events With Monthly Trainee-Directed Review of Adverse Events
Alia Smith, MD; Jonathan Hatoun, MD, MPH; James Moses, MD, MPH

Increasing Medication Possession at Discharge for Patients With Asthma: The Meds-in-Hand Project
Jonathan Hatoun, MD, MPH; Megan Bair-Merritt, MD, MSCE; Howard Gabrael, PhD; James Moses, MD, MPH

Impact of Parental Presence at Infants’ Bedside on Neonatal Abstinence Syndrome
Mary Beth Howard, MD, MSc; Danita M. Doherty, MD; Nicole Perriell, BA; Wendy Gil, MS; Asiahi Fen, MD; Tobin Wolfgang, MPH; James Moses, MD, MPH; Elisa M. Wechman, MS

Reducing Unnecessary Lab Orders on the Inpatient General Internal Medicine Service
Sherif Aly, BS; Faisal Rahman, MD; Alexandra Wong, MD; Mayank Sardana, MD; Tom Peteet, MD; Dane Miller, MPH; Karin Sloan, MD; James Moses MD MPH
Boston Medical Center, General Internal Medicine, Boston MA
To create and support a culture of healthcare quality improvement (QI) engagement for BMC, the Boston HealthNet Community Health Centers and Boston University through accredited education, mentorship and administrative oversight.

www.bucme.org/BMCQIHUB
Summary

• Changing landscape of medicine requires a change in the learning environment of trainees
• ACGME is calling for better integration and active participation of the trainees by hospital leaders in achieving meaningful quality and safety improvements for training institutions
• Lessons learned from CLER’s initial round of site visits demonstrates a clear gap of where we are currently and where we need to get to at a national level
• Locally, many barriers exist in integrating trainees into Quality and Patient safety initiatives in a meaningful way
• Solutions do exist by integrating trainee improvement work at the point of care
• Which can be done in team based, unit based and system based efforts in which trainees play a central role to realizing improvement