Aligning Graduate Medical Education With Hospital's Quality Improvement and Safety Strategies

Wayne State University and Crittenton Hospital Medical Center, Michigan

Overall Goal
- To design QI and safety initiative with the WSU-sponsored IM, FM and TY Residency Programs at the primary hospital, Crittenton
- It involves: QI knowledge acquisition, team building and experience-based strategies
- Residents work in interprofessional teams to understand their workplace, collect and present data, and propose interventions for improvement of care

Background
- The public and profession acknowledge that quality and safety in health care needs improvement.
- The IOM has advocated for interventions and followed up quickly and effectively.
- Resident QI efforts, have the potential to improve care more quickly and effectively.
- It is imperative for GME to focus on the ACGME Practice-Based Learning and Improvement (PBLI) and Systems-Based Practice (SBP) core competencies.
- Residencies are involved in QI projects, but very few have a systematic approach with integration with the hospital's strategic initiatives.
- Data for educational and clinical outcomes is limited.

Vision Statement
- Align GME with hospital strategic planning to improve patient care quality and safety
- Reduce overutilization of health care resources and improve efficiency in the hospital through faculty and residents quality improvement and leadership development
- Recognize the central role and impact of GME programs in QI and patient safety initiatives

Materials/Methods
- **Project 1: Global Immunization**
  - Team: IM Residents, 3 other members (QI, IT, Nursing)
  - Focus on enhancing COPD readmission
  - **Goal:** Developing a systematic process to help reduce factors that cause readmissions

- **Project 2: COPD Readmission**
  - Team: PM Residents, 3 other members (QI, Nursing, IT)
  - Focus on reducing COPD readmission
  - **Goal:** To reduce interventions and that vac. are completed

- **Project 3: In-House Septic Shock**
  - Team: IM Residents, 3 other members (QI, data management, training)
  - Team: IM Residents, 3 other members (QI, data management, training)
  - **Goal:** Using Keystone Septic EBM tools to prevent mortality

Results
- **Immunization Project:**
  - **Measure**
    - Pneumonia Overall: 94.8% before, 96.7% after
    - Pneumonia Age 65+: 96.3% before, 100% after
    - Pneumonia High Risk: 67.7% before, 93.5% after
    - Influenza Overall: 84.8% before, 98% after
  - **COPD Readmission Research Project:**
    - Baseline: 19.85% of COPD readmission rate within 30 days during 2011
    - Data served as a mean to identify any factors that would decrease readmissions and improvement of standardized care set
  - **Sepsis Process Improvement:**
    - Compliance with EBM requirements were analyzed.

Success Factors and Lessons Learned
- The needs assessment proved that QI competencies are lacking in residents and hospital staff
- Residents were able to engage with and lead interdisciplinary teams
- Didactic and experiential learning is powerfully synergistic
- Patient care improvements are very motivating to the teams

Conclusions
- We demonstrated that aligning GME process improvement projects with the hospital’s strategic objectives can lead to superior educational outcomes, reduced over-utilization of resources, improved patient safety and more efficient care delivery through teamwork with faculty, residents and hospital staff.
- Using a systematic approach, we successfully engaged the academic institution, WSUSOM with an independent partnering hospital to align medical education with hospital’s patient safety initiatives.
- The stakeholders understand the importance of teaching the work force QI, safety, teamwork and leadership competencies

Barriers Encountered/Limitations
- It is challenging to coordinate schedules and carve out time for teams activities and meetings
- There is no extra funding for such projects
- The results need to be disseminated through publications and presentations
- Larger studies are needed to evaluate impact

Bibliography
**Introduction/Background**

Health care professionals in faculty and leadership roles are uniquely positioned to have a profound impact on improving the quality and safety of patient care while preparing the next generation of the medical profession workforce. Our Department of Medicine’s vision to increase faculty capability as experts and leaders in quality and safety improvement sciences called for the design and implementation of a faculty development program. This was accomplished by leveraging the success of our interprofessional resident QI curriculum (ACT1) and partnering with our Value Institute.

**Overall Goal**

Overall goal of the program is to examine whether teaching quality and safety improvement science curricula to faculty increases their capability as experts, teachers, and leaders of safety and quality, systems and practice improvement.

**Methods**

Using Kern’s approach to Curriculum Development for Medical Education, we designed and implemented a professional development program, Advanced Quality and Safety Improvement Science, for our faculty. A learning needs assessment (19 questions addressing 6 competency domains) administered to Internal Medicine Faculty and Residents formed the basis for the description of the program’s goals, objectives, course schedule and curricular topics. Prospective learners applied and submitted a pre-approved improvement project proposal with the intention to demonstrate application by leading an improvement effort. This, in turn involved the mentorship of faculty and residents in quality and safety improvement science skills development. 11 faculty/teaching staff members (Internal Medicine physicians, Nursing Director, Pharmacist, and Physician leaders) were enrolled with 9 improvement projects proposed. The program started in August 2012 and will conclude in May 2013.

**Program Description**

Key elements of the program:
- 16 structured sessions (40 hours over 9 months)- pre-readings, project milestones, report outs to senior leadership
- Content delivered using both didactic and experiential teaching methods, by internal and external content experts (Figure 1)
- Coaching and mentoring between learners, faculty and course directors during sessions and between sessions - “all teach, all learn”
- Skills applied through improvement projects

**Results/ Findings to Date**

Participants’ confidence in teaching quality and safety competencies across six domains was measured using pre and post program surveys. Competency ratings before the program identified gaps in the faculty and teaching staff. Mid-point documentation of learning was performed in February 2013. All competency ratings increased since starting the program (Figure 2). Post-program documentation of learning will be performed. Longitudinal outcomes include measurements of perceived impact of the program on residents (Annual ACGME Resident Survey), perceived impact within the institution (project review 90 and 180 days post), and percent of participants that achieve a professionally recognized quality improvement certification within 1 year of completing the program.

**Conclusions**

There are identifiable gaps in the trainers of our residents regarding improvement sciences. Curricula can be developed and delivered to time constrained faculty that promotes both knowledge acquisition and relevant application. It’s too early to determine whether the program effectively trains-the-trainer in improvement and safety.

**Key Lessons Learned**

Early dialogue with key stakeholders during program design was instrumental in realizing organizational support. While all participants are learning, project progress has varied. Relevance of project selection and team formation led to more success for the projects on track. The integration of interdepartmental, interprofessional course faculty created valuable teaching and learning experiences. For subsequent offerings, the course schedule will be revised to allow for more dedicated project work time.

**Bibliography**

Developing a practical and sustainable faculty development program with a focus on teaching quality improvement: An AIAMC National Initiative III project

Christopher Rodrigue MD, Leonardo Seoane MD, Rajiv Gala MD, Janice Piazza MSN, MBA, and Ronald Amedee MD; Ochsner Clinic Foundation; University of Queensland/Ochsner Clinical School, New Orleans, LA

**Overall Goal/Abstract**

**Goal:** To develop a practical and sustainable faculty development program with a focus on teaching quality improvement (QI) and patient safety (PS).

**Materials/Methods**

- Developed a curriculum to address these 3 areas consisting of 5 online modules completed by resident/faculty pairs
  - 2 modules - part of IHI Open School – focus on QI/PS
  - 3 modules - internally developed teaching/learning
- Developed pre and post curriculum surveys to assess faculty & resident baseline perceptions of their experience with:
  - quality improvement tools and training
  - resident participation in QI and PS programs
- 17 GME training programs developed QI projects while completing the first learning module

**Success Factors/ Lessons Learned**

**Successes:**
- Buy in from all GME programs
- Quality of QI projects developed by programs

**Lessons Learned:**
- Encourage teams to complete QI projects while completing IHI modules
- Regular tracking and team report out encouraged teams to have projects/milestones completed

**Conclusions**

- We demonstrated that it is feasible to develop a sustainable and practical faculty development program within a large academic medical center
- Our pre-implementation survey results confirmed the need and our post-implementation survey demonstrated an improvement in the culture and perception with regards to QI, PS, and faculty development
- Future goals include sustaining & spreading program to all faculty & residents in our institution

**Background**

- Teaching the next generation of physicians requires more than traditional teaching models.
- The Accreditation Council for Graduate Medical Education’s Next Accreditation System places considerable emphasis on developing a learning environment that fosters resident education in quality improvement and patient safety.

**Vision Statement**

We aim to see the outcomes of our success by:
- Improve resident evaluations of teaching faculty
- Align teachers with needs and styles of learners
- Improved understanding of quality as demonstrated by pre and post surveys and number and outcomes of specific quality initiatives
- Ensure successful institutional site visit – with recognition for best practice in faculty development
- Increase resident/faculty participation in PS/QI

**Results**

- Slightly/ not at all effective
- Fairly effective
- Extremely/ Very effective

**Bibliography**

Overall Goal

- **Hypothesis:** Pre-visit planning—medical assistants reviewing a checklist of evidence-based guidelines 1-2 days before an office visit—will improve annual nephropathy screening in patients with diabetes.

- **Rationale for the project:** Pre-visit planning, team-based care, and CQI (continuous quality improvement) are all important for PCMH (Patient-Centered Medical Home) recognition. This also teaches the ACGME core competency of Practice Based Learning & Improvement.

- **Gap:** Annual nephropathy screening on the diabetic population in our family medicine residency (58%) was well below its parent organization (88%) and quality indicator target (80%).

Methods

- **The setting** is a community-based family medicine residency program operating under the parent organization of TriHealth Inc., a nonprofit health system in the greater Cincinnati, OH, area.

- **The study design** is repeated measures CQI “PDSA” (Plan Do Study Act) design. Data was obtained from our EMR and analyzed pre and post-intervention. A patient registry of diabetes patients (n=360) was used for baseline data pre-intervention (March, 2012) then repeated with large QA studies (n=298) at 5, 6, and 10 months post-intervention. Smaller QA chart audits (n = 10) were performed biweekly in the initial 3 months.

- **The intervention:** A resident-lead QI team developed the following QI intervention—using 3 components of the chronic care model:
  1. Team-based care using medical assistants (delivery system redesign),
  2. Evidence-based checklists (decision support) and
  3. A patient registry and an EMR-based software program which extracts clinical quality data (clinical information systems).

- **Outcome measure:** this study focuses on one “process of care” metric: urine microalbumin done annually.

- **Data analysis:** chi square analysis tested for statistical significance (p value < 0.05).

Results

Small random QA audits (n=10) during the initial 3 months showed the following incremental improvements: 64%, 70%, 75%, 80%, 83%, and 85% respectively. Large QA studies (n=298) at 5, 6, and 10 months showed nephropathy screening at 87%, 94%, and 96%, respectively. These changes were statistically significant as follows: 5 month (p value < 0.05) and 6 and 10 month (p value < 0.01).

Conclusions / Implications:

- **Pre-visit planning using a checklist and team-based care significantly improves diabetic nephropathy screening. This improvement is sustained over time.**

- **This project serves as a best practice to improve patient outcomes; to educate resident trainees in CQI and Practice-based Learning & Improvement; and assist practices in achieving PCMH recognition.**

Discussion

- **Successful factor:** team effort from medical assistants, PCMH coordinator, and residents.

- **Applicability to other practices:** checklist ease of use along with ease of obtaining a yearly marker test for nephropathy.

- **Benefits of study:** better diabetic care along with contribution in achieving PCMH Level 3 recognition.

Limitations

- This CQI study addressed only one of 12 outcomes.

- Historical control (not a randomized control trial) limits internal validity.

- Convenience sampling may limit generalizability (external validity).

- The study does not address medical decision making regarding abnormal microalbumin levels.

References


FRED: Shamelessly Stealing Best Practices for Blood Pressure Control for Patients with Diabetes

Andrew Amparo, MD; Kim Abel, LPN; Dwayne Carter; Jessica Holmes; Joyce McGinnis; Parveen Goyal, MD; Mike Pearson, MD; Brian Pollak, MD
York Hospital, York, PA

Introduction
•Treating BP in diabetics is important and difficult.
•We want to improve BP control in diabetics to decrease complication, improve public reporting, and practice system-based care.
•The providers at WellSpan’s 27 primary care offices have varying degrees of success in controlling blood pressure.

Hypothesis
•We can improve our blood pressure management by learning from others’ successes.
•Successful behaviors can be spread and will replicate that success.
•Our goal was to have at least 72% of our office’s diabetics BP < 140/90 by the end of June, 2012.

Methods
•Identify successful providers.

Survey providers to identify common behaviors.
•Distill four common principles, FRED: Frequent visits, Rechecking blood pressure, Education and Drug adjustment.
•Disseminate FRED principles to our office's providers via e-mails, posters, conferences.

FRED can lower blood pressure.

• FREQUENT visits
  o Appointment if home BPs are high
  o Appointment in 2-4 weeks after medication change
  o Appointment in 3-4 months if controlled conditions

• RECHECK BP
  o Provider repeats & records BP

• EDUCATE
  o Convey your belief that BP control is important
  o Lifestyle
  o Check BP at home, send log to office
  o Consequences of uncontrolled hypertension

• DRUGS
  o Start BP medications
  o Purpose & side effects of BP medications
  o Increase doses
  o Use drug combinations

Results
•October, 2010 – September, 2011 – 68% of diabetic patients had blood pressure less than 140/90.
•End of February, 2012 – started to sustain results above our goal of 72%.
•By June, 2012 – 76% met this measure.
•We continue to sustain this result.
•Anecdotal reports of other primary care offices using FRED approach.
•WellSpan leadership is endorsing FRED as an institutional best practice
•Similar project underway for hemoglobin A1c control

Conclusions
•Steal shamelessly.
•Make the message simple.
•When introducing a new workflow or expectation, repeat the message, repeat the message, repeat the message.
•Sustain the practice through audit and feedback.
•Resident-led projects can yield high performance outcomes.
•Spread what you learn.
Overall Goal/Abstract

• To achieve a top quartile performance rating in 13 outpatient primary care quality outcome parameters for low income populations through a focus on care coordination.

Background

• The concordance between the Institute for Healthcare Improvement (IHI) Triple Aim and the Clinical Learning Environment Review (CLER) patient care quality & outcomes priorities allows GME sponsoring institutions to explicitly align residency training to improve patient experience (quality and satisfaction), improve the health of populations, and reduce per capita cost of health care.

• However, achieving the triple aim can be challenging in inner city residency clinics staffed by multiple care givers (students, residents, and faculty) serving a low income, transient patient population.

Vision Statement

• To improve the GME training with regard to health care quality and patient satisfaction, improve the health of our inner city patient population while reducing the per capita cost of healthcare.

Materials/Methods

Two strategies were used to achieve our objective:
1. Practice standardization (education of staff and trainees, accountability algorithms, monthly distribution and transparency of data)
2. Leveraging these standardized practices to provide comprehensive, quality healthcare to improve the health of this patient population

Specific Steps:
• We created a Health Management Team to develop standardized processes within our underserved clinics
• Aligned these processes with AHC’s established primary care quality outcomes parameters thereby leveraging our organization’s:
  o Established QI resources (scoring system; results sent to all providers/staff)
  o Accountability algorithm to track progress
• Provided intensive team training for faculty, residents, and staff regarding these new processes and procedures in internal medicine (IM) and family medicine (FM)

Results (data gathered both quant & qual.)

Barriers Encountered/Limitations

Needs Post Health Management Team Start-Up in FM/IM Clinics:
• Further practice standardization is necessary
• More frequent and intensive monitoring of resident progress is needed to achieve our current goal.
• Strategy needed for resident communication re: system changes and quality parameters and align with CLER / ACGME:
  o Resident representation on our Health Management Team & System quality and patient experience planning groups
  o Resident succession planning

Success Factors and Lessons Learned (Discussion)

• We achieved significant success with regard to improvement of resident scores in quality and patient satisfaction.
• During this process, we developed standards for intensive resident and student training- specific to quality and patient experience providing consistency across the continuum of medical education.
• We changed our in-clinic focus to involve the entire patient care team rather than individual or position specific training
• In SUM: We improved team member engagement in the patient care process while improving clinic standardization and efficiency.

Conclusions

• IMPACT: Quality care coordination can yield improved patient care outcomes in an academic residency setting populated by low income, inner city patients.
• STRATEGY: To improve patient care & disease prevention outcomes:
  o REFRAME EVERY PATIENT ENCOUNTER as an opportunity for every team member to practice to the limits of their ability, with a coordinated health care team approach.
  o EXPLICITLY INCLUDE RESIDENTS AND STUDENTS as part of the care coordination team - prepares them to provide improved health care now and for the next generation.
• ALIGNMENT: Aligning resident clinic care coordination & quality with our AHC system priorities:
  o TRIPLE AIM: Enhances institutional capacity to meet future health care needs
  o ACGME CLER: Institutional and program requirements

Bibliography

• Aurora Health Care – Care Management http://www.aurorahc.org/aboutus/caremanagement/index.asp
• ACGME Clinical Learning Environment Review Overview http://www.acgme.org/CLER.html
• IHI Triple Aim Initiative http://www.ihi.org/offerings/initiative/TripleAim/Pages/default.aspx
**Overall Goal/Abstract**

Quality metrics and patient experience data (CGCAPS) in our resident clinics lag behind those of ambulatory clinics elsewhere in Aurora Health Care (AHC).

**HYPOTHESIS:** Implementation of TeamSTEPPS training for all site caregivers will result in improved patient experience metrics and caregiver satisfaction.

**Background**

**AURORA HEALTH CARE AND MEDICAL EDUCATION**

- Private, not-for-profit integrated health care provider, serving 31 counties and 90 communities
- 30,000 employees including more than 1,500 employed physicians and 90 communities
- TEAM functioning is a critical factor in patient experience scores
- ACGME/NAS Competencies, Milestones, CLER programs emphasize patient care TEAM skills
- Multiple initiatives across AHC that address quality, patient satisfaction, communication
- Gap: No AHC initiatives to date have explicitly addressed the competencies required to be a member of an effective TEAM

**Vision Statement**

We will be satisfied only when we provide the best medical education to provide the best patient care.

**Materials/Methods**

**METHODS**

- All providers at 2 Family Medicine Residency Sites participated in a 4-hr /3 module TeamSTEPPS training
- Instructors trained by system organizational leader trained in TeamSTEPPS: senior physician faculty, resident, staff from each site (Nurse, PSR, MA, Prevention Specialist)
- TeamSTEPPS training modules selected based on needs assessment including: TeamSTEPPS background, team structure and mutual support (strategies to improve team effectiveness and provide effective feedback)
- Modules adapted to ambulatory care setting
- Aurora Research Subject Protection Program determined that this project does not constitute human subject research and does not require Aurora IRB oversight
- 2-mo post follow-up data obtained using selected TeamSTEPPS TEAM Assessment Questionnaire items representing the 7 domains
- 2-mo Retrospective Pre/Post Caregiver Commitment to Change themes
- AHC ongoing patient experience metrics at baseline and post training

**Conclusions**

- *TEAM* competency may be the critical PROCESS element in enabling successful accomplishment of clinic and system achievement of strategic targets
- TeamSTEPPS is an excellent, comprehensive, yet flexible tool to teach TEAM competency

**Success Factors and Lessons Learned**

- **Discussion**
  - All sites have committed to and are enthusiastically engaged in performing better as a TEAM
  - Our education unit has been tasked to lead dissemination efforts across Aurora Health Care
  - C-suite champions and system stakeholders are critical in the initiation of TEAM process and system wide dissemination
  - Superb leadership support (C-Suite, medical group, clinic) from conception through alpha test phase, continuing into beta testing
  - Use interprofessional staff as facilitators/champions (Nursing, Social Worker, PSR, Residents, Faculty)
  - Supportive and active steering committee
  - Need to clearly communicate the challenge and why this is important
  - Need to plan early and with the site leaders about how the curriculum will be reinforced and sustained

**Barriers Encountered/Limitations**

- TeamSTEPPS is longitudinally information rich; selectivity needed to support application/practice
- Tensions: Immediate clinical care delivery needs with the patience needed for institution wide culture changes; Competing challenges for time and energy
- Balance between local clinic implementation versus creating a process that will work broadly across the Aurora System
- Scheduling and Training
- Finding the right room to hold the session (conducive to group interaction AND small group break outs)

**Bibliography**

Multidisciplinary Simulation Training To Improve Communication and Teamwork in Rapid Response Teams

Julian Diaz Fraga MD; Anthony Donato MD
Reading Health System. West Reading, PA

Background
- Rapid Response Teams (RRT) have been widely implemented to intervene in the care of patients with unexpected clinical deterioration
- Evidence showing the benefits of RRTs is currently mixed
- One potential cause cited for failure focuses on proper implementation and training of RRTs
- Simulation-based team training has been used successfully in aviation and healthcare to improve communication and leadership in critical situations
- Optimum multidisciplinary training environment and amount of training exposure is unknown.

Hypothesis
- Interprofessional physician-led simulator based RRTs training will be well-accepted, and will improve leadership and communication in real-world RRT calls.

Interventions
- Interventions: biweekly 30-minute team training sessions with team responsible for RRT coverage that day (floor nurse, RT, ICU nurse, resident)
- Instructors: A nurse educator was confederate “code recorder”, rates team and leads debrief session; physician educator managed the simulator physiology and played the role of the patient’s voice
- Evaluation instrument: adapted version of Yule’s NOTSS instrument, with raters trained in frame-of-reference training using actual video performances
- Standard setting: Passing scores were set by contrasting groups method, and a mastery training model was employed (participants returned until passing scores achieved)

Subject/ Setting
- Subjects: Senior internal medicine residents (n=35), floor nurses (n=100), ICU nurses (n=40), respiratory therapists (n=25)
- Setting: Single facility in hospital Simulation Lab, using high-fidelity simulator programmed with the exact scenarios of prior RRT cases.

Resident Confidence in running RRTs

<table>
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<tr>
<th>n=35</th>
<th>Before training</th>
<th>After Training</th>
<th>Paired samples t- testing</th>
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<tr>
<td>Confidence in running real world RRT’s</td>
<td>2.1±0.9 (6-point Likert scale)</td>
<td>5.2±0.9 (6-point Likert scale)</td>
<td>T+11.1 p&lt;0.001</td>
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Results
- 35 different residents participated
- 194 simulated sessions were conducted

Nurse Rating of Real World RRTs

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<th>Resident vs. Full-time Hospitalist</th>
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<tr>
<td>N=206</td>
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<tr>
<td>Performance in real world RRT’s</td>
</tr>
<tr>
<td>Resident (Trained)</td>
</tr>
<tr>
<td>Hospitalist (Untrained)</td>
</tr>
<tr>
<td>Two-tailed t- test</td>
</tr>
</tbody>
</table>

Conclusions
- Residents felt the training helped them gain confidence
- Those residents performed better than untrained full-time hospitalists in real-world RRT emergency situations
- Simulation-based training improves physician’s skills and may enhance the quality of leadership and communication of real-world RRT’s

Bibliography
**Introduction**

Reporting the prevention of an adverse event from reaching a patient – a Good Catch – affords the potential to reduce medical errors by proactively implementing system changes. Nationally, physicians comprise only 1% of voluntary reports despite Internal Medicine residency program competency requirements in practice-based learning and systems-based practice. This study aims to understand and mitigate barriers between cognition and behavior specific to our institution.

**Analysis**

A baseline assessment for functional barriers was conducted by direct observation and a five-point Likert scale anonymous survey measured influencing factors and perceived value of reporting events. The results of this analysis informed a process redesign.

When observed, report submission was generally considered confusing and cumbersome: 14% of observations ended when reporters’ frustrations in finding or navigating the form resulted in abandoning the effort. Survey response rate was 24% (21 of 85 residents, 27 of 120 faculty). All agreed or strongly agreed there was value in reporting a Good Catch; similarly, 67% of residents and 96% of faculty felt stronger than neutral that, “Reporting a Good Catch is equally as important as reporting adverse outcomes.” The strongest motivators influencing reporting were legislated protection of reports from discoverability (62% residents and 81% faculty) and the potential to improve quality of patient care (76% residents and 96% faculty). Conversely, barriers included fear of blame (48% residents and 30% faculty) and doubting influence (only 19% residents and 30% faculty felt reports impacted system changes).

**Hypothesis**

Barriers to voluntary safety event reporting can be overcome by education, tiered recognition, and closing the feedback loop.

**Intervention**

In response to the gaps identified by our analysis, reporting instruments were improved, education efforts expanded, and a competition launched encouraging Good Catch reporting through sports-style scoring of each block rotation as a new “game” and by tiered recognition of individual participation (Fig 1). A scoreboard tracking providers’ individual reports provides feedback regarding participation and lapel pin award presentations highlight specific peer-identified opportunities for improvement, celebrate prevented errors, and recognize participants in front of peers and leadership. Monthly Systems Based Practice Conference also provides a forum for closing the feedback loop by discussing “fixes” to the system that were identified by the Good Catch reports.

**Results**

In contrast to the 6-month baseline wherein there were no resident reports, the intervention yielded 69 resident reports in 4 months (Fig 2) with 26% of residents having submitted at least one Good Catch (Fig 3) and an average of more than 3 new reports each week (Fig 4). A modified Agency for Healthcare Research and Quality (AHRQ) Common Formats system is used to group reports into categories (Fig 5); the following common themes have been identified:

- Blood pressure medication frequently ordered without hold parameters
- Lab orders incorrectly default to nurse collect
- Stress test results not viewable in outpatient electronic health record
- Tall-Man Lettering for two medications starting with “Solu-” were missing the hyphen in computerized provider order entry search screen

**Conclusions**

Event outcome severity bias does not account for low report rates by Department of Medicine providers at CCHS; rather involvement is limited by practical hindrances, fear of blame and skepticism that reporting will result in system improvements. Interventions such as adapting reporting tools and providing education, encouragement, recognition, and feedback regarding the impact of reports should be areas of focus to spur a change in safety culture and to motivate physician participation in safety event reporting programs.
Overall Goal/Abstract

Objective of your project?
- To develop a multidisciplinary quality improvement clinical forum that focuses on improving patient outcomes across the continuum of care.
- 100% of Continuing Medical Education (CME) and Graduate Medical Education (GME) learning activities tied to curricular development.
- Include quality metrics.
- Increase number of scores of participants to 1-2 on the Likert scale.

What made you choose this project?
- There is a lack of integration of continuum of care for patients across hospital, ambulatory, and community settings causing some performance gaps.

Background

Root Cause Analysis: The 5 Whys
1. There is a lack of integration of continuum of care for key patient populations across the system with multidisciplinary collaboration aligned with GME, CME, and the use of quality improvement tools and methods. Why?
2. There has not been an approach which addresses how to integrate quality with hospital and outpatient care with the notion of continuum of care. Why?
3. Activities in the hospital settings and community care facilities are aligned and fragmented. Why?
4. No cohesive efforts exist to align medical education, the continuum of care, and quality improvement. Why?
5. Lack of systematic approach and importance of continuum of care. Why?

Caused:
- No systematic program exists to align quality improvement, medical education, and a continuum of care that ensures high patient quality outcomes.

Vision Statement

SHC Quality Improvement Clinical Forum Goals & Aims:
1. At least 1 Family Medicine resident will participate in every quarterly QRM meeting between Jan 2012 and April 2013.
2. Family Medicine Chief Residents and the Medical Director of CME will implement at least one Grand Rounds meeting quarterly between Oct 2012 and April 2013. Case review will be designed to identify strengths as well as opportunities for improvement related to integrated patient care and patient-oriented outcomes that matter.
3. Document attendance at Grand Rounds will reflect multidisciplinary participation as relevant to the case review.
4. Demonstrate improved understanding of the integration of patient care across the continuum, including knowledge of quality improvement methods, as demonstrated by an increased number of 1-2 scores ("strongly agree" or "agree") on the Likert scale.
5. 100% of CME and GME learning activities tied to curricular development will include quality metrics starting Nov. 2013.

Materials/Methods

Results

Success Factors and Lessons Learned (Discussion)

What made your project successful?
- Utilizing the A3/PDSA thinking methodology.
- Identifying the importance of integrating quality within CME/GME across the system.
- The importance of communication.
- Inclusion of physician leaders across the continuum as key participants in the clinical forum.

What worked?
- The team concept.
- Identifying credible quality metrics that impacted patient care.
- What are you most satisfied with?
- Developing a high quality sustainable educational program.
- Unexpected "wins"?
- The ability to identify un-utilized metrics, underutilized resources and incorporating the outpatient settings into the program.

Conclusions

Was it a transformative/worthwhile experience?
The quality metrics which were measured identified opportunities to improve clinical care.

What do you want to share with the audience?
This approach can provide an effective and sustainable method to ultimately enhancing patient care and clinical outcomes across the continuum of care.

Bibliography

Biblilography

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We would like to thank Abdul N. Mansour, MHA, Director Lean & Process Improvement and Quality Enhancement Services at Scottsdale Healthcare for his help and support with this poster presentation.

Development of a multidisciplinary quality improvement clinical forum: Improving patient outcomes across the continuum of care.
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¹Scottsdale Healthcare Family Medicine residency program
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**Overall Goal**

Our goal was to develop a simple intervention to improve timely follow-up of laboratory test results.

**Background**

A lot of outpatient care occurs when the patient is not in the office. This care includes phone calls, requests for medication refills, and review of test results. We sought to identify an aspect of indirect patient care that could be quantified and measured through our electronic medical record (EMR) and chose to study the response times to outpatient laboratories.

**Hypothesis:** Weekly reminders via pagers or email would shorten the responsible health care providers' response time to addressing laboratory test results.

**Vision Statement**

We sought to study response times as a way to highlight the importance of indirect patient care, particularly from a patient safety perspective. We were hoping to improve awareness of outpatient follow-up.

**Methods**

Electronic medical records of residents, faculty and Allied Health Practitioners working in two primary care practice sites were assessed for laboratory results. Sign time was defined as the time between the results appearing in the responsible health care providers’ EMR inbox to that same providers' signature appearing on the result.

**Pre-Intervention:** The study was announced at two department wide conferences, and all providers were e-mailed weekly for four weeks information about the study and the intervention.

**Control Period:** July 1, 2011-January 31, 2012

**Intervention Period:** March 2, 2012-June 30, 2012

**Intervention:** All providers received weekly pager reminders to check their in-boxes.

**Data extraction:** Centricity - GE Clinical Informatics application, EMR data extracted by EMR project director.

**Results**

<table>
<thead>
<tr>
<th>Number of Laboratory Tests (n)</th>
<th>Mean Sign Time (SD)</th>
<th>P value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pre-intervention</td>
<td>8390</td>
<td>1.41 (1.61)</td>
</tr>
<tr>
<td>Intervention</td>
<td>4257</td>
<td>1.20 (1.56)</td>
</tr>
</tbody>
</table>

**Discussion**

Our brief intervention showed that a simple weekly reminder to providers to check their in-boxes resulted in shorter viewing and signing times than without the reminders. Further study is needed to determine if other forms of reminders such as cell phone texts would produce similar results.

**Limitations**

Our study did not determine if medical errors were prevented or if patients received higher quality of care when their providers signed labs in a more timely fashion.

Our study was only 16 weeks long; it is unclear if the intervention affects sustained or weaned after the intervention.

Study completed at one medical center and results may not be applicable to other settings and locations.

**Conclusions**

It might be possible that even a simple intervention such as a weekly reminder could improve the shortening of the viewing and signing time in EHR.

**Bibliography**