Ambulatory Based Quality Improvement in a Pediatric Residency Program

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Practice Based Learning is an ACGME Core Competency

- All residents and fellows are expected to:
  - Investigate and evaluate their care of patients
  - Appraise and assimilate scientific evidence
  - Continuously improve patient care based on self-evaluation and life-long learning
ECU Pediatric Residency QI Initiative

Integrate a structured quality improvement project into the yearly curriculum

Goals:

- Exposure to practice-based learning and improvement
- Development of leadership skills
- Development of analytical skills needed to improve healthcare delivery
- Improvement of post-graduate preparedness and satisfaction in QI
A Model For Improvement

- Associates in Process Improvement - Model for Improvement
- Plan-Do-Study-Act cycle
**ACT**
- What changes are to be made?
- Next cycle?

**PLAN**
- Objective
- Questions and Predictions (why)
- Plan to carry out the cycle (who, what, where, when)

**STUDY**
- Complete the analysis of the data
- Compare data to predictions
- Summarize what was learned

**DO**
- Carry out the plan
- Document problems and unexpected observations
- Begin analysis of the data
QI Education Modules

- AAP’s online module - “Quality Improvement in Pediatric Care - QI Basics”
- IHI’s Open School Modules related to patient care quality
Ambulatory Continuity Curriculum

- 2004: Resident education module
- 2008: Robust ambulatory continuity curriculum
Annual Topic for Study

- 2009-2010, 2012-2013: Screening tests
- 2010-2011: Environmental health
- 2011-2012: Health supervision visits
- 2013-2014: Psychosocial factors
- 2014-2015: Effective electronic health record utilization
Project Design

* Residents are randomly divided into 4 ambulatory continuity groups at the beginning of their training

* 2 faculty mentors per group

* Each group is given protected time to work on their projects during 3 separate continuity clinic sessions

  * Block 2 (Meeting I): Choose sub-topic, Delegate roles, Create aim statement, Establish measures, Propose intervention, Develop timeline

  * Block 6 (Meeting II): Data collection

  * Block 8 (Meeting III): Final data collection and analysis

* Subsequent meetings are established on an individual group basis
Monitor Current Practice

* Measures are established to record a baseline

  Chart review of patients assigned to PCPs from 8 weeks of continuity clinic sessions pre-intervention (30%)
Each group creates an aim statement:

- Time-specific
- Measurable
- Population-targeted

“In 12 weeks, we will increase the number of patients assigned to PCPs by 50% to maximize continuity of care.”
Improvement Plan

* Each group proposes a final QI intervention, which is implemented

* Weekly verbal reminders, note reminders placed on resident computers
Monitor Impact

* Outcomes are followed and results are presented at a program-wide QI conference

  100% increase in PCP assignment (from 30% pre-intervention to 60% post-intervention)

* Successful interventions are scaled for broader practice
# 2014 - 2015 QI Project: Effective Electronic Health Record Utilization

<table>
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<tr>
<th>QI Group</th>
<th>Subgroups</th>
<th>Interventions</th>
<th>Measures</th>
<th>Outcomes</th>
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<tbody>
<tr>
<td><strong>Group 1</strong></td>
<td>PCP designation</td>
<td>Weekly verbal reminders; Post-it note reminders placed on resident computers</td>
<td>Chart review of PCP designation of all visits within group pre- and post-intervention</td>
<td>Increase in patients assigned to PCPs from 30% at baseline to 60% post-intervention</td>
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<tr>
<td><strong>Group 2</strong></td>
<td>Chart completion time</td>
<td>Laptops in exam rooms - focus on early, in-room documentation</td>
<td>Chart review of time to documentation completion of all visits within group pre- and post-intervention</td>
<td>Increase in chart completion &lt;72 hours after encounter from 76% at baseline to 89% post-intervention</td>
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<td><strong>Group 3</strong></td>
<td>Accurate coding</td>
<td>Billing and coding module; Project discussion amongst group members</td>
<td>Chart review of coding accuracy of all well child visits (ages 6-60 months) within all 4 groups pre- and post-intervention</td>
<td>Decrease in coding accuracy from 47% at baseline to 25% post-intervention</td>
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<tr>
<td><strong>Group 4</strong></td>
<td>Lab result acknowledgement</td>
<td>Project discussion amongst group members; Post-it note reminders placed on resident computers</td>
<td>Chart review of CBC result acknowledgement of all 1 and 2 year well child visits within all 4 groups pre- and post-intervention</td>
<td>Increase in CBC result acknowledgement within 1 week of encounter from 20% at baseline to 50% post-intervention</td>
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100% Exposure

* Since 2008, 100% of ECU pediatric residents have:
  * Been exposed to QI education
  * Participated in at least 3 QI projects by the end of their residency training
Real World Preparedness

* Surveys sent to our graduates assess readiness for quality assessment, QI, risk management and cost-effectiveness
Improvement in Graduate Preparedness Post-QI Program Implementation
Looking Forward

Identifying areas of improvement:

- Extend study period to over full year
- Longitudinal outcome tracking
- Re-visiting unsuccessful interventions
No Group Failure

- Lessons learned:
  - Design
  - Data collection
  - Analysis
  - Teamwork
  - Process improvement
- Improves resident competency in practice-based learning and improvement
Broadening QI

- Graduate self-reporting of adequate preparedness for quality assessment, QI, risk management and cost-effectiveness increases dramatically.

- With the growing focus of quality initiatives in healthcare delivery, our model of QI intervention can be broadened to other residency programs.
References


Questions?