Minding your P’s and Q’s: Performance and Quality Improvement in resident training
Michelle Arandes MD
Assistant Professor Pediatrics
Associate Residency Training Director Pediatrics
Co-Presenter:
Ana Paez MD
Fellow, Pediatric Endocrinology UTHSCSA
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“The truth is that our finest moments are most likely to occur when we are feeling deeply uncomfortable, unhappy, or unfulfilled. For it is only in such moments, propelled by our discomfort, that we are likely to step out of our ruts and start searching for different ways or truer answers.”

M. SCOTT PECK

Objectives
Attendee shall have ability to:
1. Summarize basic theory and tools used in quality improvement (QI) projects
2. Understand need to integrate quality improvement and safety projects with existing curriculum and identify methods to facilitate learner engagement in quality improvement/safety programs.
3. Recognize current and ongoing efforts in QI in the Pediatric Residency Program at UTHSCSA.
4. Recognize the ethical implications of quality improvement activity as an extension of physician responsibility to patients.

To Err is Human 1999
- 44,000 - 98,000 deaths in hospitals/annum as a result of preventable medical errors
- NOT a “bad apple” problem.
- PREVENT mistakes by designing the health system at all levels to make it safer

Crossing the Quality Chasm
New Health System for the 21st Century
March 2001
- US health care system delivery does NOT provide consistent, high quality medical care to all people equally
- The delivery of care often is overly complex and uncoordinated.
  – Patient handoffs
  – Medication errors
  – Failure to apply evidence

Quality Chasm charge:
Change the environment
- Apply evidence to health care delivery
- Use information technology
- Align payment policy with quality
- Prepare the workforce****
Patient Safety Goals

1. Safe - avoid injuries to patients from the care that is intended to help them
2. Effective - provide services based on scientific knowledge to all who could benefit and refrain from providing services to those not likely likely to benefit
3. Patient centered - provide care that is respectful and responsive to individual patient preferences, needs, and values and ensure that patient values guide all clinical decisions
4. Timely - reduce waits and harmful delays for both those who receive and those who give care
5. Efficient - avoid waste of equipment, supplies, ideas and energy
6. Equitable - provide care that does not vary in quality because of personal characteristics such as gender, ethnicity, geographic location and socioeconomic status

ACGME /IHI Committee on Innovation (CI) 2007

- Identification of opportunities to enhance quality and safety in teaching settings and explore practical methods to involve residents in clinical quality improvement (QI) efforts.
- Physicians have always sought internal QI based on health outcomes – M & M errors (PBL)
- Change in the expectations and constraints in healthcare systems forced us to look at other factors – (SBP)

Accreditation Council for Graduate Medical Education (ACGME)

- 6 Curriculum competencies in the Common Program Requirements
  - Patient care
  - Medical knowledge
  - Practice based learning and improvement *
  - System based practice *
  - Professionalism
  - Interpersonal skills and communication

Practice Based Learning and Improvement

Residents must demonstrate the ability to investigate and evaluate their care of patients, to appraise and assimilate scientific evidence, and to continuously improve patient care based on constant self-evaluation and life-long learning. Residents are expected to develop skills and habits to be able to meet the following goals:

- (1) Identify strengths, deficiencies, and limits in one's knowledge and expertise;
- (2) set learning and improvement goals;
- (3) identify and perform appropriate learning activities;
- (4) systematically analyze practice using quality improvement methods, and implement changes with the goal of practice improvement;
- (5) incorporate informative feedback into daily practice;
- (6) locate, appraise, and assimilate evidence from scientific studies related to patients' health problems;
- (7) use information technology to optimize learning, and;
- (8) participate in the education of patients, families, students, residents and other health professionals.

System Based Practice

Residents must demonstrate an awareness of and responsiveness to the larger context and system of health care, as well as the ability to call effectively on other resources in the system to provide optimal health care. Residents are expected to:

- (1) work effectively in various health care delivery settings and systems relevant to their clinical specialty;
- (2) coordinate patient care within the health care system relevant to their clinical specialty;
- (3) incorporate considerations of cost awareness and risk-benefit analysis in patient and/or population-based care as appropriate;
- (4) advocate for quality patient care and optimal patient care systems;
- (5) work in interdisciplinary teams to enhance patient safety and improve patient care quality, and;
- (6) participate in identifying system errors and implementing potential systems solutions.

Why is this important?....

- Engaging residents
- Residents rate QI activities as enhancing their competence and proficiency in PBLI and SBP
  - quality assessment-systems improvement exercises
    - multidisciplinary rounds
    - morbidity and mortality
    - morning conferences /reports
    - clinic chart self-audits
  - nursing evaluations
- Goals
  1) preparing them for life-long practice
  2) allowing them to assume an expanded role in QI initiatives in their programs and sponsoring institutions.
American Board of Pediatrics MOC

- **Performance in Practice (Part 4)**
  - Demonstrate competence in systematic measurement and improvement in patient care. Involves surveying patients about their experience of care and completing American Board of Pediatrics (ABP) approved QI projects and activities.

- **Quality Improvement**: The ABP approves a wide range of established and web-based practice improvement initiatives. The ABP offers two options to meet Part 4 requirements:
  - Established Quality Improvement Projects. Structured QI projects that involve physician teams collaborating across practice sites and/or institutions to implement strategies carefully designed to improve care. Experienced coaches guide these multi-practice improvement projects in clinical improvement.
  - Web-based Improvement Activities. Self-paced, expert-developed quality improvement activities that physicians complete within their own practice setting. ABP-approved web-based QI activities are ideal for pediatricians who do not have access to multi-practice improvement initiatives.

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**What is QI?**

"Quality Improvement means reflecting on how we practice medicine and looking for ways to offer better outcomes, greater ease of use and lowering costs.

To do this we need clear improvement aims, ways to monitor progress and above all, a willingness among clinicians to make changes when evidence is presented.

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**Scientific Method**

- Principles and procedures for the systematic pursuit of knowledge involving:
  - Recognition and formulation of a problem
  - The collection of data thru observation and experiment
  - Formulation and testing of hypothesis

- Implicit hope that results will lead to improvement but no accountability or evaluation of how far results spread or degree of improvement achieved.

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**Ethical Imperative**

- Health care is of unusual consequence because of the role it plays in relieving suffering, preventing premature death, restoring function, increasing opportunity, providing vital information about an individual’s condition and giving evidence of a community’s mutual empathy and compassion. As a result health care access quality and cost have always been matters of social ethical concern.

- It is more evident now than in years past that the ethical imperative to “serve the patient’s interests” does not mean ignoring the interests of every patient except the one present at the moment.
Truth is found more often from mistakes than in confusion

- francis bacon

- It is more important that you do it the SAME than that you do it RIGHT.
  - Error rates fall
  - Costs fall
  - You can apply the scientific method to systematically improve practice
- Clinical improvement
  - Do the “right” thing for our patients
- Process improvement
  - Do the right thing “right”.

We laugh, however..

- They’re still laughing about this at IBM. Apparently the computer giant decided to have some parts manufactured in Japan as a trial project. In the specifications, they set out that they will accept three defective parts per 10,000.

  When the delivery came in there was an accompanying letter. "We, Japanese people, had a hard time understanding North American business practices. But the three defective parts per 10,000 have been separately manufactured and have been included in the consignment. Hope this pleases you.

How to

- Squeeze in one more thing
  - 3 years, 36 blocks, 8780 hours.
- NO PROBLEM... we will just pull them out of clinical work, make them sit in a room and listen to another lecture then make them put together a powerpoint presentation.....

Solution

Make it matter!

- to residents
- to patients
- to institution

Integrate into routine practice

- faculty buy in
- institutional/multidisciplinary support
- mentor leadership

Where did we start

- Blackboard Module
  - Repository of information available asynchronously
  - Access to IHI open school modules
  - Support
- Clinical exposure across divisions
  - Discussion of quality in daily practice, increase awareness
- Mentorship

“Top Down” vs “Bottom Up”

- Multidisciplinary teams
  - Integration of resources.
- Institution-level goal
  - Develop a process to achieve the goal and decide how to integrate residents’ efforts into institutional goals.
- PRO:
  - Allows personal exploration of ideas
    - Single resident or peer groups (e.g., continuity clinic, a particular block)
    - May be short time limited projects or multi step projects
    - Tangible outcome measures and complete cycle of learning
- CON:
  - Labor intensive for residents/mentors
- PRO:
  - Beneficial for those interested in academic, fellowship training, administrative roles
- CON:
  - Will need to focus on educational aspect
Of Note

- Residents are good at identifying quality problems, but generally not able to take on sustained and complex QI action.
- Enhanced resident peer leadership and faculty engagement are needed to overcome the limitations of resident-initiated QI.
- Faculty physicians active in teaching, who improve their own work, are an invaluable teaching and learning resource, giving residents exposure to QI as part of their daily experiences.

When...

- PGY2 year - early, frequent reminders of the need to complete a QI activity
  - Quarterly update on development/status.
- End of 1st quarter of PGY3 they must have initiated/participated in (or completed) a project and documentation will be expected by no later than March-April block or PGY3 year.
- Current 360 evaluation item

Table of Contents for Quality Improvement

- Quality Improvement definitions
  - Quality Improvement module
- Tools and resources
  - Action Planning Matrix
  - Action_Plan_form
  - Fishbone diagram
  - Force_Field_Analysis
  - PDCA template
  - PDCA1
  - PSA_wheel
  - Quality_Quadrant
- Activities
  - IHI open school
  - Literature
  - Current project list
  - Project ideas/suggestions

SMART START Aim Statement

- Specific
- Measurable
- Actionable
- Realistic
- Timely
Department of Pediatrics

Improvement of transitions of care

Educational tools

Report on High Blood Pressure in Children & Lovenox

Collect data to monitor impact

Resident Admit H & P

National High Blood Pressure Education Program Working

Initial intervention failed

Pediatric BP norms are non

PICU transfer form

Flynn JT. Pediatric Hypertension: Recent Trends and

Standardized documentation

Instruct staff on how to use BP

Analyze

GBS in NBN

Communication with PCP initiative

RESULTS

Poor recognition of normal vs abnormal BP in pediatric patients

Pediatric BP norms are non-intuitive and differ based on age, gender and Ht%

- Execute Plan and Monitor impact:
  1. Instruct staff on how to use BP chart and encourage use
  2. Collect data to monitor impact
  3. Initial intervention failed
  4. Re-think possible solutions—New BP wheel Developed!!! Start Cycle all over again...

- Develop an implementation plan with Promising solution: Place BP chart in vitals room for nurses/MA to use for identifying patients with abnormal BP

- Collect Data to get baseline data
- Recognize patterns and stumbling blocks

- Get most influential factors i.e. Very fine tuning to plot Ht% and calculate BP % based on chart

Pediatric Blood Pressure Wheel: An Efficient Tool

University of Texas Health Science Center San Antonio

BACKGROUND

METHODS

RESULTS

CONCLUSIONS

acknowledgements

REFERENCES

Projects completed by residents

- Standardized Order Sets
  - Lovenox
  - Fever/Neutropenia
  - Diabetes Admission
- Standardized Protocols
  - GBS in NIN
- Standardized documentation
  - Resident Admit H & P
- Improvement of transitions of care
  - PICU transfer form
  - Communication with PCP initiative
- Improvement in patient communication
  - Translation tools
  - Educational tools
Projects in development

- Hand Hygiene
- Standardizing care:
  - Kawasaki
  - Failure to thrive
  - Community Acquired Pneumonia
  - Breastfeeding initiatives
- Medication Safety
- Patient Education

NEXT STEPS

- Formally structured time
  - Monthly, 30 min interactive review of stepwise process based on CS & E course.
  - Monthly, 1 hour open forum group
- Quality Improvement Project Award
- QI project board

“Good Doctor”

This shift requires reprocessing the very definition of a “good doctor.” In the past, a stereotypical good doctor was independent and always available, had encyclopedic knowledge, and was a master of rescue care. Today, a good doctor must have a solid fund of knowledge and sound decision-making skills but also must be emotionally intelligent, a team player, able to obtain information from colleagues and technological sources, embrace quality improvement as well as public reporting, and reliably deliver evidence-based care, using scientifically informed guidelines in a personal, compassionate patient-centered manner.

“Cottage Industry to Postindustrial Care — The Revolution in Health Care Delivery”

Stephen J. Swensen, M.D., NEJM Jan 2010

Success factors for Resident Curriculum in QI

- Faculty supportive of the project(s);
- Having residents learn about QI as part of their formation
- Having the time and settings to increase resident knowledge of and excitement about QI
- Overcoming resident and faculty assumptions that QI is separate from the practice of medicine
- Define a clear process for QI
  - Use of regular, small tests of change.
  - Financial and "moral" support from the institution’s clinical and educational leadership.