Practice-based Learning and Improvement (and systems-based practice)

January 2011, AHME webinar

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Building Bridges: linking learning and practice
Some questions...

• What are PBLI and SBP?
• Why should we focus on them?
• Where/when do we need to think about them?
• How can we operationalize them?
What is PBLI?

Residents must be able to investigate and evaluate their patient care practices, appraise and assimilate scientific evidence, and improve their patient care practices.

Residents are expected to:

- **analyze practice experience** and perform practice-based improvement activities using a systematic methodology
- **locate, appraise, and assimilate evidence** from scientific studies related to their patients’ health problems
- **obtain and use information about their own population** of patients and the larger population from which their patients are drawn
- **apply knowledge of study designs and statistical methods** to the appraisal of clinical studies and other information on diagnostic and therapeutic effectiveness
- **use information technology to manage information**, access on-line medical information; and support their own education
- **facilitate the learning of students and other health care professionals**

[www.acgme.org](http://www.acgme.org)
What is SBP?

- Systems-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:

- work effectively in various health care delivery settings and systems relevant to their clinical specialty;
- coordinate patient care within the health care system relevant to their clinical specialty;
- incorporate considerations of cost awareness and risk-benefit analysis in patient and/or population-based care as appropriate;
- advocate for quality patient care and optimal patient care systems;
- work in interprofessional teams to enhance patient safety and improve patient care quality; and
- participate in improvement projects and practices
Why PBLI and SBP?
Some forces for change

Research about effective CME, QI, implementation
Accountability; performance measurement
Competency assessment, recertification
Content issues: new diseases, prevention, screening
Comparative effectiveness
The implementation research agenda
Bias, COI and Commercial support issues
IT, other health care reform measures
Information explosion
HEALTH CARE REFORM: plus Regulatory, Accreditation req’ts
IOM, Macy Reports

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QI initiatives
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IT, other health care reform measures
Bias, COI and Commercial support issues
The implementation research agenda
Comparative effectiveness
Content issues: new diseases, prevention, screening
Competency assessment, recertification
Accountability; performance measurement
Research about effective CME, QI, implementation
Is something wrong with med ed?
Causes of the clinical care gap

Best available evidence/practice

Actual Practice

• Clinician
• Health Care system
• Evidence
• Patient, family
• Educational ‘system’
Reflection: Schon’s Model

Zone of Mastery
(Knowing in Action)

Reflection on Action

Surprise

Experiment

Reflection in Action
When/where should we think about PBLI and SBP?

- Problem-based Learning
  - Premedical
  - Medical School
  - Residency and Fellowships
  - Practice

- Performance-improvement CME; PI-CME; quality-driven education; continuing professional development (CPD); workplace learning; learning organizations
How can we operationalize it?

“My doctor told me to start my exercise program very gradually. Today I drove past a store that sells sweat pants.”
Plan for the future: a 2x2 table...

<table>
<thead>
<tr>
<th>Educational</th>
<th>Current picture</th>
<th>Possible scenario</th>
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</table>
| Less effective | In CME: Didactic courses, print materials  
Little PBL/PBLI in UME, in GME | |
| Effective | (audit, feedback in CME; PBLI/SBP/QI initiatives in GME); some PBL in UME | Effective CME methods  
Effective PB strategies in UME, GME |
Further definitions and measures from the AAMC/AACN Report on Lifelong Learning’

...evaluate the outcomes

- A supportive Healthcare and regulatory environment
- Robust clinical evidence base
- Patient competency and performance measurement
  - **skills**: critical appraisal, literature searching, knowledge management,
  - **knowledge**: knowledge ‘products’: guidelines, EBM statements, reminders, root cause analysis, costs, cost/benefit
  - **attitudes** towards: self- and other assessment; reflective ability,
  - **performance**: in teams, in QI projects, in clinical care coordination, advocacy

Further definitions and measures from the AAMC/AACN Report on Lifelong Learning’
Case Study:
Structure and Incentives for Engaging Residents and Fellows in Quality and Safety Projects During Training

Disclosure: No conflict of interest

Robert B. Baron, MD MS
Professor of Medicine, Associate Dean GME & CME and DIO
UCSF GME

- 80 Accredited Programs
- 50 Non-standard Programs
- Over 1300 residents and clinical fellows
- UCSF School of Medicine is Sponsoring Institution
- Designated Institutional Official (DIO) reports to the Dean
- Three major affiliates: UCSF Medical Center (AMC), SFGH (County), SFVAMC (VA)
- GME Office funded by School of Medicine (but with contributions from UCSF Medical Center)
BUILDING A RESIDENT AND FELLOW QUALITY AND SAFETY PROGRAM

Operational goals: Front line provider

Educational goals: the trainee

Residents

Hospital

GME Program

Educational goals: the trainee
BUILDING A RESIDENT AND FELLOW QUALITY AND SAFETY PROGRAM: Basics

- Orientation focused on quality and safety
- Monthly GME Grand Rounds
- Frequent emails from GME leadership and CMO
- Quarterly newsletter, Residents Report
- On-line learning modules (e.g. infection control, hand hygiene, central lines, fatigue/impairment)
BUILDING A RESIDENT AND FELLOW QUALITY AND SAFETY PROGRAM: Leadership

- Director, Patient Safety and Quality in GME (0.4 FTE)
- Chief Residents as quality and safety change agents
- Monthly dinners with School (Dean, Associate Dean and DIO) and Medical Center leadership (CEO, CMO, COO, CNO, CIO)
- Chief Resident Development Program
BUILDING A RESIDENT AND FELLOW QUALITY AND SAFETY PROGRAM: Residents and Fellows

- Resident-Fellow Council takes on quality and safety
- Nurse-Resident Council
- MD-RN Conflict Resolution Process
- Patient Safety and Quality Committee (all three hospitals)
- Residents on Executive Medical Board, most hospital and medical staff committees
- Residents and fellows invited to all root cause analyses
BUILDING A RESIDENT AND FELLOW QUALITY AND SAFETY PROGRAM: Patient Care Fund

- UCSF ($50,000/year): Managed jointly by Resident Council, Medical Center, GME

- SFGH ($100,000/year): Managed by residents

- One-time projects to improve patient care that typically serve as seed money for permanent funding
BUILDING A RESIDENT AND FELLOW QUALITY AND SAFETY PROGRAM: Formal Curricula

- Program specific curricula (Internal Medicine (EIP), Pediatrics, Psychiatry, Anesthesia, others)

- Cross-specialty curricula: Pathways to Discovery Program

- Five Pathways: Molecular Medicine, Clinical and Translational Science, Health and Society, Global Health, Health Professional Education
Pay for performance has become widespread: CMS, VA, private insurers, independent physicians associations, hospital systems, etc.

At UCSF Medical Center: longstanding incentive program for all staff, all leadership
- Link everyone to organizational mission, vision, values, and goals
- Excluded physicians

Incentives for trainees? At first, resistance from both Program Directors and CMO
BUILDING A RESIDENT AND FELLOW QUALITY AND SAFETY PROGRAM: Incentives

- Program begun in mid year, 2007. Several key measures were well below goals
- Now considered routine
- Engage residents and fellows in the organizational mission, values, and goals, motivate improvement in quality/safety/satisfaction measures, and teach systems-based practice and practice-based learning and improvement
- $1200 per trainee; “all for one”
- Total budget $1.2 million per year
Three all-trainee goals each year:

- Patient satisfaction (2007- current year)
- Quality and Safety
  - Core measures 2007
  - Pain control (2007 - 2009)
  - Hand hygiene (2009 - current)
- Operation/Utilization
  - Documentation standards (07 – 09)
  - Reduce unnecessary lab tests (09 – current year)
Patient Satisfaction: For the period of June 2009 – July 2010, on the patient satisfaction survey likelihood of recommending question, maintain an annual average mean score of 90 or a percentile ranking of 71
Resident and Fellow Incentive Goals 09-10

Likelihood of Recommending

<table>
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<th>Month</th>
<th>FY09</th>
<th>July</th>
<th>Aug</th>
<th>Sept</th>
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- **Immediate Attention (≥5% below target)**
- **Warning (<5% below target)**
- **On Target (meets or exceeds target)**
Resident and Fellow Incentive Goals 10-11

Likelihood of Recommending

- Monthly percentile
- Monthly mean score
- Running average percentile
- Running average mean score

Bar chart showing:
- FY11: 72
- July: 90.9
- Aug: 90.9
- Sept: 90.5
- Oct: 73
- Nov: 73

Legend:
- Immediate Attention (>5% below target)
- Warning (≤5% below target)
- On Target (meets or exceeds target)
Our mean score has continuously improved over time
Patient Safety and Quality: By June 2010, residents will achieve an average combined compliance of 85% with:

1) Physician hand hygiene as measured by direct observation
2) Influenza vaccination or completion of declination form
3) Completion of the mandatory infection control module
Clinical Housestaff
Incentive Goals 09-10

Patient Safety & Quality: Infection Control Measures

Compliance %

JUL 09 | AUG 09 | SEP 09 | OCT 09 | NOV 09 | DEC 09 | JAN 10 | FEB 10 | MAR 10 | APR 10 | MAY 10 | JUN 10

Physician Hand Hygiene | Trendline

Seasonal Flu | H1N1 | Infection Control Module

Desired Combined Compliance
(Average Annual Combined Compliance = 81.4%)

Immediate Attention (>5% below target)
Warning (≤5% below target)
On Target (meets or exceeds target)
Patient Safety and Quality: For the period of July 2010 – June 2011, achieve 85% hand hygiene compliance for at least six of twelve months.
Clinical Housestaff Incentive Goals 10-11

Physician Hand Hygiene Compliance Rate

- UCSF Target (>85%)
- Average (64.2%)
- 80%
- 56%
- 65%

July-10 August-10 September-10

Immediate Attention (>5% below target) Warning (≤5% below target) On Target (meets or exceeds target)
Resident and Fellow Incentive Goals: Resident Leadership

- Angela Walker MD:
  - Pediatric-Dermatology Resident
  - Co-chair, Resident and Fellow Council
- Devoted vacation week October 2011 to hand hygiene
  - Met with fellow residents and chief residents
  - Spoke at Grand Rounds
  - Rounded with ward teams from multiple specialties
  - Handed out cards, “Good Job, Hand-hygiene Card” good for raffle prize
  - Set up and staffed table in patient entrance to inform patients about hand hygiene
UCSF Ranks #1 in Tests Used per Patient Discharged
Lab Utilization: By June 2010, UCSF Medical Center will decrease its average CBC and CBC plus differential volume by 5% (1.05 to 0.99 tests/patient/day). Volume will be calculated based on 10 months performance.
Clinical Housestaff
Incentive Goals 09-10

CBC Utilization

- Immediate Attention (>5% below target)
- Warning (≤5% below target)
- On Target (meets or exceeds target)
Lab Utilization: By June 2011 residents will decrease by 5% the aggregated utilization of common laboratory tests (defined as tests/ inpatient day). Common tests will include, CBC, CBC with differential electrolytes (Na, K, Cl, CO2, HCO3, Mg, Ca, Phos), BUN, Cr, AST, ALT, total bilirubin, alkaline phosphatase, and albumin.
Clinical Housestaff
Incentive Goals 10-11

Common Lab Tests per IP Day

- Lab Tests per IP Day
- Target
- YTD

Legend:
- Immediate Attention (≤5% below target)
- Warning (≥5% below target)
- On Target (meets or exceeds target)
Resident and Fellow Incentive Goals: CBC Utilization 10-11
Lessons learned from early experiences: incentive goals need to be granular enough to be meaningful to trainees

Solutions
- Better all-trainee goals
- Program-specific goals
Program-specific Incentives

- Training programs invited to propose program-specific goals
- Requires resident champion(s), program director, departmental physician QI director
- Proposals evaluated by committee of Medical Center and GME leadership, QI leadership, Resident and Fellow Council, Program Directors.
- Iterative process
Anesthesia: Administer antibiotics within one hour of incision
- Goal: 96% of patients
- Results: 96.3% (Achieved)

Dermatology
- Goal: Decrease wait time in clinic by 25% (below 18 minutes)
- Results: 13.3 minutes (Achieved)

Emergency Medicine
- Goal: Contact 50% of PCPs at Discharge
- 8% (Not achieved)
PROGRAM-SPECIFIC INCENTIVES: 09-10

- **Internal Medicine:**
  - Goal: Contact 80% of PCPs
  - Results: 87.6% (Achieved)

- **Neurology**
  - Goal: Document Swallow exam 90% stroke patient
  - Results: 91.2% (Achieved)

- **Neurological Surgery**
  - Goal: Increase on time start in OR for 95% of cases
  - 97.5% (Achieved)
PROGRAM-SPECIFIC INCENTIVES: 09-10

- **Ob-Gyn**
  - Goal: Adequate inpatient diabetes orders and outpatient follow-up of 90% of diabetes patients
  - Results: 97% *(Achieved)*

- **Pediatrics**
  - Goal: Complete asthma care plan on 90% asthma inpatients
  - Results: 93.7% *(Achieved)*

- **Radiology**
  - Goal: Report critical results in 95% of eligible cases
  - 97.3% *(Achieved)*
Internal Medicine Program
Incentive: PCP Communication

Monthly Rates of PCP Communication Note Use-Total

Goal: 60%

Month          | Rate
--------------|------
August        | 0.54
Sept (9/1-9/27) | 0.61
Oct (9/28-11/1) | 0.75
Nov (11/2-11/29) | 0.85
Dec (11/30-1/3) | 0.84
Jan (1/4-1/31) | 0.94
Feb (2/1-2/28) | 0.89
March         | 0.96
Program-Specific Incentives: 10-11

- Anatomic Pathology
  - Goal: Decrease incorrectly submitted specimens
- Dermatology
  - Goal: Appropriate Medication monitoring
- Emergency Medicine
  - Goal: Smoking cessation in Emergency Department
- Internal Medicine
  - Goal: Same day electronic discharge summary
- Internal Medicine Subspecialty Fellowships
  - Goal: Improve consultation notes
PROGRAM-SPECIFIC INCENTIVES: 10-11

- **Neurology**
  - Goal: Increase primary care provider communication

- **Ob-Gyn**
  - Goal: Decrease wait from presentation to induction

- **Otolaryngology**
  - Goal: Patient satisfaction on “time spent with patients.”

- **Pediatrics**
  - Goal: Immunization status documented

- **Radiation Oncology**
  - Goal: Use of correct ICD-9 codes

- **Urology**
  - Goal: Reduce use of CBC by 15%
BUSINESS CASE FOR INCENTIVE PROGRAM: Costs

- **Incentive payments**
  - $1.2 million/year budgeted
  - 58% spent (7 out of 12 all-trainee goals achieved)

- **Administrative time**
  - GME and Medical Center leadership
  - Incentive committee
  - Program Directors and Departmental QI directors
  - Residents and fellows
BUSINESS CASE FOR INCENTIVE PROGRAM: Benefits

- Enhanced educational outcomes (systems-based practice, practice-based learning and improvement)
- Improved clinical outcomes and quality measures
- Cost avoidance and savings
  - Costs to meet core measure compliance
  - Increased efficiency (e.g. OR starts)
- Revenue Generation
  - Potential for increase market share (e.g. patient satisfaction)
- Enhanced reputation (e.g. UHC ranking, other publically reported quality measures)
- Alignment of missions within institution and in clinical departments
EDUCATIONAL OUTCOMES:
Structured Interviews with Resident Champions

Learning fell into three categories:

- **System change**
  - Role of system in performance improvement
  - Realization of difficulty of implementation
  - How to leverage existing structures

- **Measurement**
  - Residents consistently had challenges with measurement

- **Teamwork and leadership**
  - Need to clarify team and leadership
  - Leadership styles: top down to consensus driven
  - Improved teamwork and camaraderie
BUILDING A RESIDENT AND FELLOW QUALITY AND SAFETY PROGRAM

Accountable leadership
Aka CMO

Operational goals
Front line provider

Residents

Educational goals:
the trainee

Residents Council
CR development program
Patient Care Fund
RCA Engagement
Formal Curricula
Incentive Program

Director of Quality and Safety Programs

Hospital
GME Program

Director of Quality and Safety Programs
Challenges and Potential Solutions

- Engaging housestaff in the mission
  - Some curricula geared toward all housestaff and an in-depth track for those more interested allows for learner-centered teaching and better outcomes

- Faculty to teach and mentor
  - Strong need for faculty development

- Funding for the program
  - Must effectively articulate the business case and determine the alignment of goals
Teaching quality and safety remains challenging, but institutional goals and educational goals are increasingly aligned.

Partnerships are there for the making.

Explicit curricular time must be created out of trainee schedules.

Trainee incentives/pay for performance may be helpful to achieve both quality and safety goals and educational goals.