

Practice-Based Learning & Improvement: The Role of Knowledge Management

F. Daniel Duffy

July 27, 2011

Objectives

- What is competence in PBLI
- Experiential learning
- Quality Improvement Science
- Components of PBLI
- Example of KM in PBLI

What is Competence in PBLI?

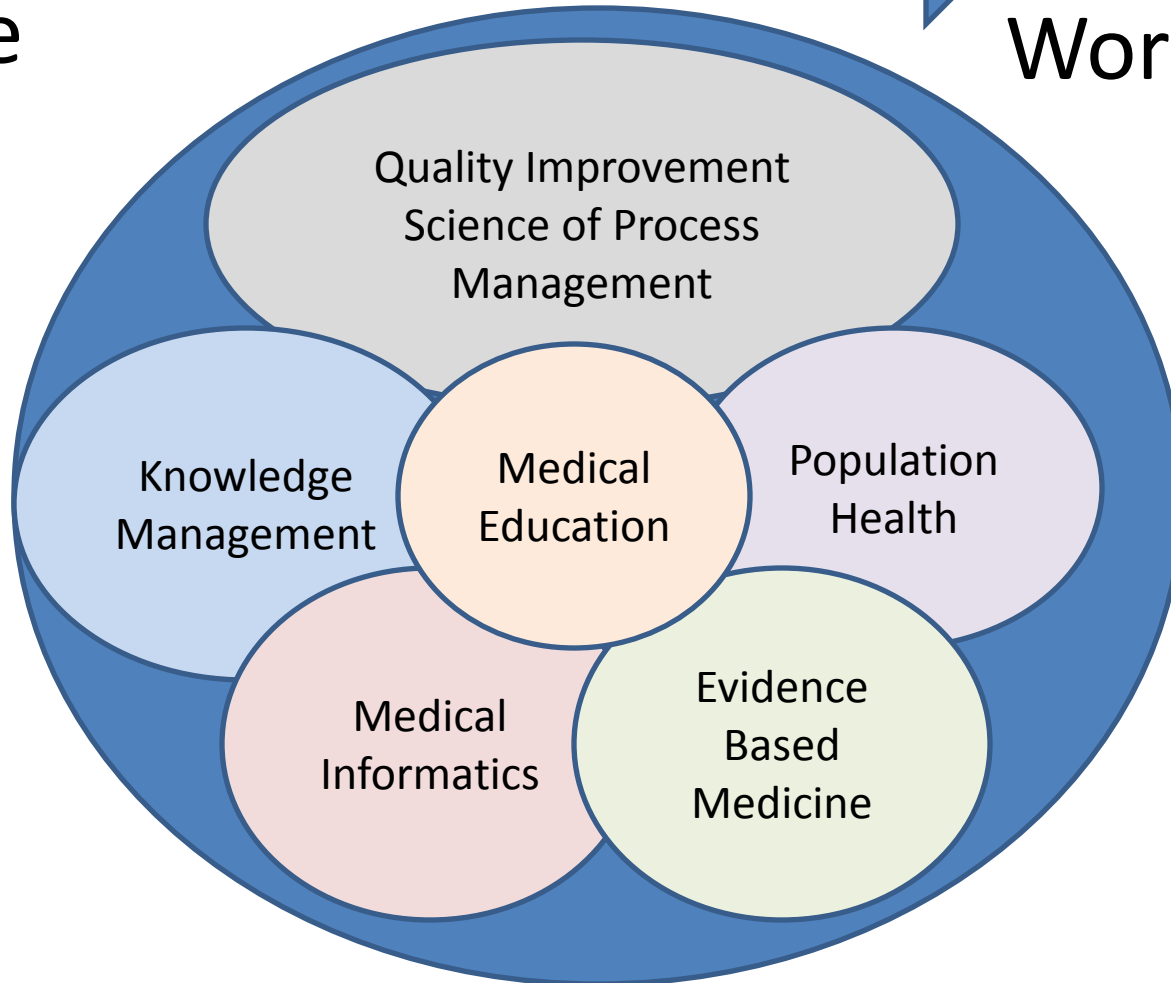
the habit of *advancing* knowledge, attitudes, and skills through feedback and reflection on measures of practice and taking deliberate *action to improve* practice systems, including one's part in it.

Practice-Based Learning & Improvement

Habit of Practice



Standard Work Process



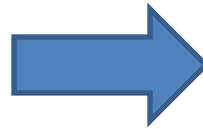
Learning Professional Practice

- Learned by doing it, reflecting on it and changing one's ideas, knowledge, habits, and systems that make it happen.
- Involves the active interaction between the individual professional and a system designed to deliver service.
- Merges learning theory with methods of knowledge management and system process management and improvement

Experiential Learning

Instruction:

Learning facts, concepts,
method for scientific
validation



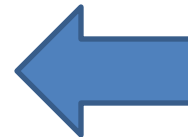
Concrete Experience:

In supervised professional
practice – brings concepts
to life



Feedback & Reflection

Directly observed or indirectly
measured behavior – guides
reflection on action to ascertain
the generalized mental models,
reasoning approach, and
emotional and moral processes
underlying a service commitment

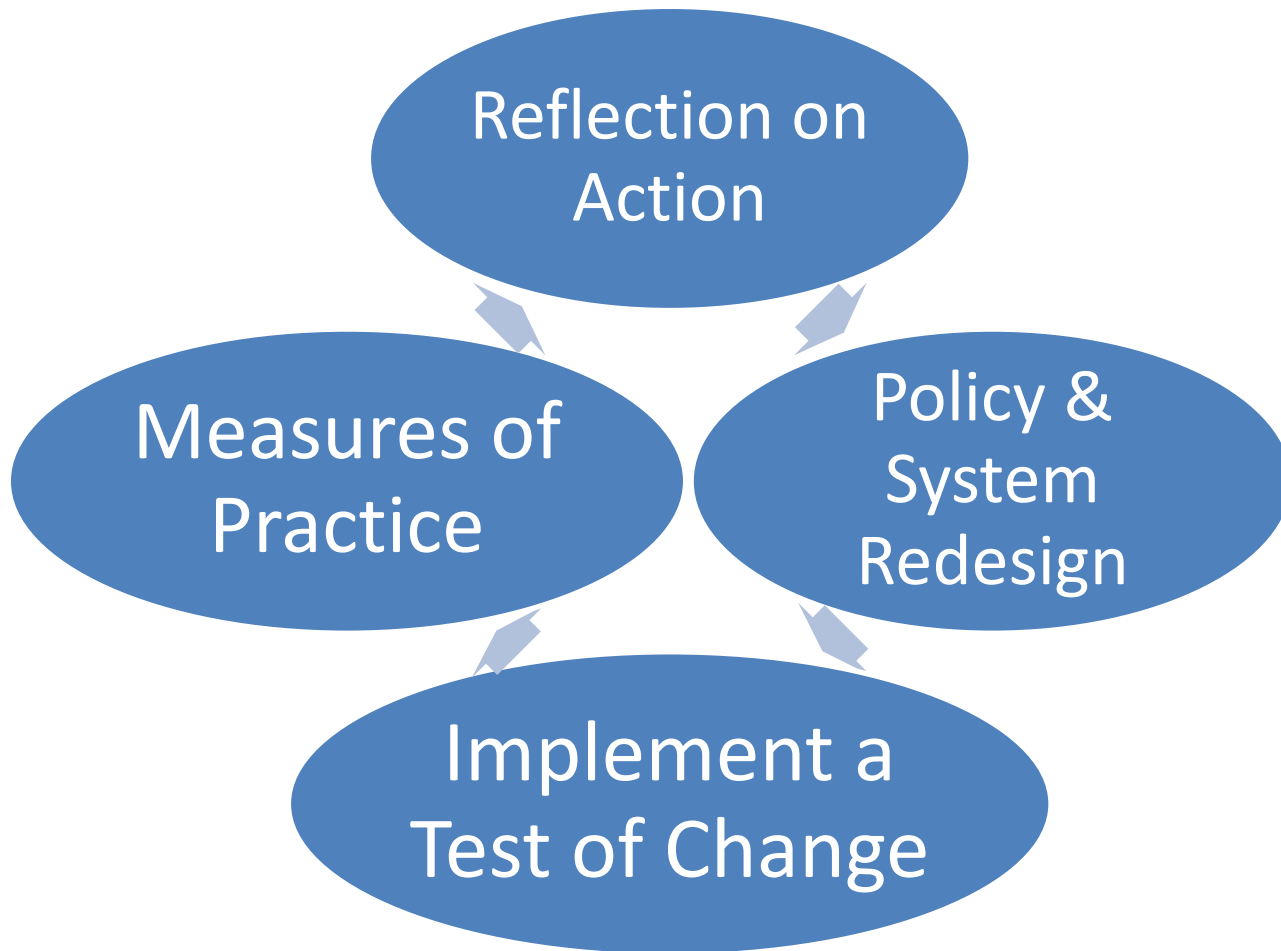


Performance in Action

Demonstrates the
assimilation of new
cognitive, emotional,
moral, and technical
processes



PBLI CYCLE



Quality Improvement

- Quality agenda transitions
 - Professionalism – train doctors to do the right thing and the outcomes of care will be excellent
 - Quality is a system characteristic that develops through the deliberate quality measurement and improvement practice
- Professional self-assessment, self-directed learning, and self-regulation are insufficient
 - Maintenance of Certification - CME
 - Training in PBLI and evaluation and improvement of performance in practice are lifelong skills for physicians

Knowledge Management

- Searching medical literature and databases
 - Medical knowledge is more than acquiring, assimilating, and analyzing the scientifically-based explicit knowledge published in the medical literature
 - Involves capturing and transmitting knowledge learned through practice.
- Explicitly capturing the insights from everyday practice and understanding the exceptions clinicians make when protocols or the evidence doesn't apply to particular patient situations.
- Captures the successes and failures of rapid-cycle tests of change aimed at improving care

Practice of KM in Medicine

- KM as an organizational process
 - Storage, transition and sharing of practice-based knowledge
 - Focused on competitive advantage, innovation, and quality improvement
 - Retain intellectual capital of organization
- KM as an individual habit
 - Store and retrieve information at point of care
 - Share valuable insights to reduce redundant work
 - Reduce training time for new employees

Population Health

- Analysis and assessment of health outcomes for a group of individuals (population or a practice)
- Distribution of outcomes within the group
- Practices of Public health
 - Measurement – bases for quality improvement
 - Experimental design & statistics
 - Factors that impact health
 - Focus of SCM

Evidence-Based Medicine

- Disciplined habit that applies the highest quality of evidence obtained from the scientific method to make medical decisions about tests and treatments.
- Process
 - Formulate a clinical question
 - Locate scientific evidence using science, engineering, statistics, risk-benefit analysis, and randomized controlled trials.
 - Make conscious, explicit, and judicious use of current best evidence in everyday practice.
- All experts are now expected to reference their pronouncements to scientific studies.

Medical Informatics

- Intersection of information sciences, computer sciences, and health care
- MI Tools
 - Computers & databases
 - Clinical guidelines,
 - Formal medical terminologies
 - Information and communication systems
- Electronic Medical Records
 - Standard terminology
 - Templates for applying clinical guidelines
 - Embedded evidence-based decision support

Healthcare Education

- The KM role of transferring knowledge and technical skill to novice and advanced beginner members of the healthcare team
 - Training & education of newbies on team
 - Training on new processes and technologies
- Collaborative Learning
 - Clinical microsystems are part of a learning organization
 - Continuous quality improvement and learning from rapid-cycle improvement trials.

How Intermountain Trimmed Health Costs Through Robust Quality Improvement Efforts

Brent C. James and Lucy A Savitz

Health Affairs, 30, no. 6 (2011):1185-1191

From Clinician to Process Variation

- Detailed list of elements that make up treatment
 - Clinical decision
 - Related outcome
 - ½ of elements had associated costs
- Activity-based cost accounting system
- Clinical quality, financial utilization, and hospital efficiency (QUE) analysis

Results of QUE Analysis

- Patients with similar initial characteristics and good outcomes
- Little variation in patient characteristics
 - Debunked: “My Patients Are Sicker.”
- Massive variation in physician practices
 - Two-fold variation in resource use rates across physicians for each element of clinical decision
- Best patient care did not reside in one physician
 - Everyone had something to learn
 - Everyone had something to teach

Process Management

- Measurement for improvement
- Quality Improvement is the science of process management
- Every process always produces parallel
 - Clinical outcomes – improved health
 - Service outcomes – interaction with patient
 - Cost outcomes – resources expended to create clinical and service outcomes

How to Manage Process Variation

- Develop guideline for care
- Do not teach the guideline and ask clinicians to remember to apply them from memory
- Blend the guideline into the flow of clinical work tools already used to document care
 - Add to checklists
 - Add to order sets
 - Add to clinical flow sheets

Shared Baselines – Feedback

- Recorded adaptations in applying guidelines
- Reported them as variances
 - Clinicians changed the guideline
 - Clinicians changed their practices to align closely
- Applied to ARDS patients
 - Variation fell from 59% to 6%
 - Survival from 9.5% to 44%
 - Physician time cut in half
 - Cost of care decreased by 25%

Clinical Integration

- Identify key processes
- Create information systems designed for parallel clinical and financial management
- Revise the organization's structure so that it can use the resulting data to encourage accountability and change
- Align financial incentives so that clinicians will not suffer financial harm for doing what is best for patients

Summary

- PBLI is the system and personal habit of capturing lessons learned through reflection on practice.
- It measures, uses measurement to change systems of practice and educate people
- KM is a part of PBLI that keeps the tacit flow of knowledge alive in an organization