Fostering Culture Change and Rapid Innovation in Healthcare Improvement Science Education in Nursing: Making the Case and Making it Happen

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Conflict of Interest Statement

The presenter has no real or perceived conflicts of interest to report.
Agenda

• **Part 1**: Making the case

• **Part 2**: Making it happen in crowded conditions

• **Part 3**: Applied learning examples

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“What is Healthcare Improvement and why is it important to integrate it into core nursing education and practice culture?”
What this is all about...

Assessing, diagnosing and treating individuals...

Assessing, diagnosing and treating healthcare delivery systems...

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Where it started for me...

Better outcomes for patient, population

Better professional development

Everyone

Better system performance (quality, safety, value)

Batalden and Davidoff (2007)

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Framing it for Leadership and Faculty

Six Aims for Improvement

- Safe
- Effective
- Patient-Centered
- Timely
- Efficient
- Equitable

A User's Manual For The IOM's 'Quality Chasm' Report

Patients' experiences should be the fundamental source of the definition of "quality."

by Donald M. Berwick

www.ihi.org

www.iom.edu
IOM Recommendations

This report is really about the future of health care in our country. It points out that nurses are going to have a critical role in that future especially in producing safe, quality care and coverage for all patients in our health care system.

- Donna E. Shalala, Ph.D., chair of the Committee on the Robert Wood Johnson Foundation Initiative on the Future of Nursing, at the Institute of Medicine (IOM)

Recommendation 2: Expand opportunities for nurses to lead and diffuse collaborative improvement efforts.

Private and public funders, health care organizations, nursing education programs, and nursing associations should expand opportunities for nurses to lead and manage collaborative efforts with physicians and other members of the health care team to conduct research and to redesign and improve practice environments and health systems. These entities should also provide opportunities for nurses to diffuse successful practices.

IOM Future of Nursing Report (2010)

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Drivers of Quality & Safety Education Reform

Accountable Care and Healthcare Value

Cost Quality

Value = Quality/Cost

Education redesign is **NOT** optional...

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The Three Faces of Inquiry and Action

Not mutually exclusive silos

All three areas must be understood as a system – interdependent. Individuals need to build skills in all three areas.

Organizations need translators who are able to speak the language of each approach.

Individuals often identify with one of these approaches and dismiss the value of the other two.
Some Major QI Theorists

- **Donnabedian**: Structure, Process, Outcomes
- **Deming**: Focus on people, the front line, and control of variation
- **Shewhart**: Measuring performance & variation
- **Batalden**: Healthcare QI, clinical microsystems
“Not one more thing!”
(a.k.a. creative ways to integrate improvement science education in a constrained environment without going crazy)
Summary of my job interview in 2012...

- Brant: “I would like to innovate and drive culture change in quality and safety education.”

- The Dean: “Great! That is one of my top 5 priorities for the next five years.”

- Brant: “Great! What is the situation here?”
Summary of my job interview...

- **The Dean:** “Nothing much has happened yet.”

- **Brant:** “OK. Why?”

- **The Dean:** “We don’t have any QI faculty.”

- **Brant:** “OK, what if you had QI faculty? Is that the only problem?”
Summary of my job interview...

• The Dean: “Well, we have a limited budget.”

• Brant: “OK…”

• The Dean: “And we can’t increase cost to students, we can’t create new courses or increase required credits.”

• Brant: “OK…”
• **The Dean:** “And the course coordinators are stretched already, we can’t burden them further.”

• **Brant:** “OK... so what do you want to achieve?”

• **The Dean:** “Integration of quality & safety curriculum in the BSN, MS, and DNP programs within 3 years.”
We need an organized 
“critical mass” 
of quality & safety 
faculty…
If it can work for improvement collaboratives...

• Could a “coaching-like” approach work for developing educators?

• Could the School of Nursing be treated like a “pseudo-collaborative” comprised of multiple courses, each of which is a separate educational service delivery system?
The “Descriptive Cliff”

We were here...

We needed to get here....

Descriptive Q&S

Applied Q&S
A Basic Strategic Plan

- **Innovate**
  - “Coaching-like” approach targeting early adopters, put faculty out front, they “own it.”
  - “Coaching-like” approach, learn by doing, apply microsystems concepts, curriculum threads.

- **Educate**
  - Basic skills seminars, application exercises, writing about the work, build capacity from within.

- **Evaluate**
  - Writing collaborative, publishing and presenting the work

- **Disseminate**
  - Build in real time evaluation, aggregate to program and school levels.

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Theis & Ayers (2007)

Nelson et al. (2002)
The **Consultation-Collaboration** Approach

- Course Faculty as leader
- QI specialist as consultant (coaching approach)
- Work within course objectives
- Respect credit limitations
- Consultant helps as much or as little as needed
- Course faculty become QI core faculty and own/lead the QI curriculum over time
- Post-doctoral QI fellows teaching and learning
A Quality & Safety Curriculum Threads Integration Pathway in a School of Nursing
Brant J. Oliver, PhD, MS, MPH, APRN-BC; Catherine Alexander, DNP, RN; Connie Cowley, DNP, RN, CPHQ, NE-BC
School of Nursing, MGH Institute of Health Professions, Boston, MA, USA and VA National Quality Scholars Program (VAQS), WRJ, VT

OBJECTIVE
To describe a curriculum thread an applied healthcare improvement science curriculum pathway across all levels of nursing education at a School of Nursing.

BACKGROUND
• The IOM Nurse of the Future report and IOM Health Professions Education: A Bridge to Quality calls for health professions education to prepare nurses to participate and lead in healthcare improvement.
• Many barriers prevent standard implementation approaches to curriculum integration, including competing demands, resource constraints, and lack of trained faculty.
• Coaching approaches have been used in healthcare improvement to facilitate and guide clinical improvement teams, and this approach could be adapted to educational settings to support curriculum integration while simultaneously developing core faculty.
• We describe the development of a curriculum thread pathway integrating quality and safety learning activities across educational programs, using the AACN Essentials for guidance on level of application across programs.

METHODS
• Using a modified healthcare improvement coaching approach, expert “consultant-collaborator” faculty and VA Quality Scholars (VAQS) post-doctoral fellows in healthcare improvement served as mentors to early adopter faculty with interest in integrating quality and safety curriculum into their courses.
• Applied learning activities were developed via a collaboration between core faculty and consultant-collaborators.
• Learning activities were designed to complement, rather than to replace or add to existing curriculum, and did not require modifications in course objectives.
• An online learning platform was utilized to organize and facilitate learning activities, evaluate outcomes, and share examples of curriculum integration strategies.
• A continuous improvement approach utilizing a modified Plan-Do-Study-Act (PDSA) approach was employed to continuously improve the quality and outcomes of the learning activities through improvement cycles conducted once per semester.
• Consultant-collaborators educated and supported core faculty by providing key skills and resources as they were needed, by co-teaching educational sessions, and by helping to “translate” quality & safety for easy application in courses.
• The curriculum thread approach helped faculty to realize an integrated developmental pathway following guidance from the AACN Essentials.

RESULTS
• Successful integration in nine courses across three levels of nursing education over three years.
• Linkage of MS level to post-graduate residency education opportunities
• Linkage of DNP level to post-doctoral fellowship opportunities
• Integration of post-doctoral fellows as consultant-collaborators.
• Ongoing development of core cadre of “quality & safety” nursing faculty
• Development of a real-time data and evaluation structure capable of informing improvement.

CONCLUSIONS
• This approach has promise for facilitating rapid curriculum innovation while overcoming constraints and simultaneously developing core faculty.
• Program evaluation research is required to assess effectiveness and sustainability.
LEVEL: 
- BSN: Apply
- MSN: Lead
- DNP: Design, Evaluate
- Electives: Mastery, Expertise
- Advanced: Fellowships

AACN: 
- Apply
- Lead
- Design
- Evaluate
- Fellowship

COURSES: 
- Health Policy**
- Process & Skills*
- HONI*
- Outcomes Measurement
- Statistical Process Control (SPC)
- Applied projects
- In 2012
  - IHI Open School Chapter (Hoyt)

SKILLS: 
- Two modules (Macro/Policy)**
- IHI Basic (extra credit)**
- Descriptive (QSEN, NDNQI)*
- Micro/Meso/Macro
- Introduction to Quality & Safety (IQS)
- IHI Basic
- Statistical Process Control (SPC)
- Applied projects

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LEVEL: BSN                  MS                     DNP                Electives
AACN: Apply               Lead                     Design   Mastery     Expertise

COURSES: ABSN Immersion             Outcomes
         ABSN Synthesis         Informatics
         DEN Biobehavioral
         DEN Process/Skills
         HONI
         Health Policy

SKILLS: Macro Policy
        IQS Modules
        Some IHI Modules
        IS in Nursing Identity
        MAT assessments

2013-2015

Outcomes Informatics

AC I-III/PC I-III
Prof. Issues
WH (SDM)
IMPACT program

4 Internships
2 DNP Capstones
4 MS Scholarly Projects
Informatics & Applied QI
VARHS Program

Website (D2L)
SON Academy for Improvement Science

IHI Open School
Chapter (Club)
Student Lead
Faculty Advised
Inter-Professional

www.mghihp.edu
A Few Examples...
Application of the Clinical Improvement Equation in a Maternal Child Nursing Course in an ABSN Program

Mimi Pomerleau DNP, RNC-OB
Post-Doctoral Fellow, VA Quality Scholars Program

Kristine Ruggeiro PhD, PNP

Brant Oliver, PhD, MS, MPH, APRN-BC
Faculty Senior Scholar, VAQS Program
“A health care *clinical microsystem* can be defined as the combination of a *small group* of people who work together in a defined setting on a regular basis—or as needed—to provide care and the *individuals* who receive that care (who can also be recognized as members of a discrete *subpopulation of patients.* )”
Microsystems Context Assessment: The “5Ps”

- **Purpose** - Our aim and mission.
- **Patients** - Our reason for doing our work.
- **Professionals** - Our staff who work in the trenches to take care of patients.
- **Processes** - Our system of inter-related events that constitute the microsystem.
- **Patterns** - Our way of doing our work (Measurements, Data, Run Charts)

Microsystem Assessment: Alternate Birthing Positions

Purpose: Blake 14 is a L&D unit at Massachusetts General Hospital (MGH) caring for women of childbearing age that are pregnant. The purpose of this QI project was to assess: Do the nurses of Blake 14 promote/encourage alternate birthing positions? Evidence-based research shows that the benefits of alternate positioning, such as standing or kneeling, drastically improves the woman's overall birthing experience. Increasing the use of alternate birthing positions will enhance the labor experience on Blake 14 and aid in reduction in the number of c-sections and time spent in labor [Gizzo et al. 2014].

Process: Nurses suggest alternate birthing positions based on patient needs, comfort, and birthing process. When patients are able to deliver vaginally, vs. c-section, alternate birthing positions should always be encouraged with regards to patient safety. For example, if the patient receives an epidural, and cannot feel her lower extremities, this practice should not be implemented. However, if the patient can feel her lower extremities, the nurse can both educate and empower the patient through different positions.

Process (cont.): Patients arrive on the unit and are evaluated by triage nurse and midwife to determine stage of labor. Patients are admitted to the unit upon cervix exam (dilation >3cm). Nurses will continue to monitor mom and baby until full dilation at 10 cm (when active labor can begin). Prior to active pushing, the mother has the option to receive an epidural administered by anesthesia. During active labor, alternate birthing positions can be encouraged by the nurse. A midwife or attending assist with the delivery of the newborn.

Professionals: A multidisciplinary healthcare team supports the delivery process and care for mothers and their newborns on antepartum and labor/delivery. The Blake 14 team typically consists of 12 nurses (with 3N:/1:1 nurse-to-patient ratio), 2 midwives, 2 OB attendings, and 1 to 2 residents. The team supports the patient care model, a model focused on the patient. “Patient focused care is high quality, comprehensive, accessible, supportive and personalized care” [MGH, 2016].

Pattern: Our data reveals that a majority of patients on the unit are encouraged to perform alternate positions during labor, whether it be supine, side lying, squatting or on hands and knees. When nurses provide encouragement and education about the benefits of altering positions, most patients will gladly accept these recommendations. Despite nursing encouragement, some patients refused altering positions due to the reasons shown on the graph below. The major reason reported on Blake 14 for not encouraging position change was due to high epidural rates. On this unit, there is a 90% epidural rate.

Encouraging Position Change

Reasons for Not Encouraging Position Change

Next Steps:
- Global aim: Improve patient use of alternative birthing positions
- Specific aim: Ensure that 90% of patients are presented with a MGH developed picture-card describing the type and benefit of using alternative birthing positions
- PDGA: develop and validate the development of a handout for patients on different birthing positions.

References


QI Team:
- Nicole Alessi
- Lauren Mallon
- Jonathan Sheedman
- Christina Toomey

Patient Age

Age:
- Age 32: 35%
- Age 33: 15%
- Age 31: 10%
- Age 30: 10%
- Age 29: 5%
- Age 28: 5%
- Age 27: 5%
- Age 26: 5%
- Age 25: 10%
- Age 24: 10%
- Age 23: 10%
- Age 22: 5%
- Age 21: 10%
- Age 20: 10%
- Age 19: 10%

Patients:
- Age — Advanced Maternal Age, thirties early forties, mean age 35.
- Gender — Female
- Community — tertiary care center
- Beds — 12 private labor, delivery, recovery rooms; two operating rooms; and a triage area (6 beds). On average 4/12 of these beds are full.
- Ethnicity — Japanese, Spanish, White Caucasians, Arabic, Somali, Haitian.

- Higher population of White Caucasians and Hispanics

Data obtained by clinical group based off memory of experience 3/13-3/27

Answered Reason

C-section Exam
- Encouraged, Performed
- Encouraged, Not Performed
- Not Encouraged

Epidural
- Encouraged, Performed
- Encouraged, Not Performed
- Not Encouraged

Very Fast Labor
- Encouraged, Performed
- Encouraged, Not Performed
- Not Encouraged

Convenience
- Encouraged, Performed
- Encouraged, Not Performed
- Not Encouraged
Biobehavioral Nursing and Nursing Process and Skills II (RN Level)

Mertie Potter, DNP, PMHNP-BC
Mimi O’Donnell, DNP, RN
Creative Curriculum Re-Design: Pilot Implementation and Outcomes of Quality & Safety Curriculum Integration in First Year Nursing Courses.

Brant J. Oliver, PhD, MS, MPH, APRN-BC; Mertie Potter, DNP, APRN-BC; Mimi O’Donnell, DNP, RN
School of Nursing, MGH Institute of Health Professions, Boston, MA, USA

OBJECTIVE
To describe the implementation and outcomes of a pilot applied healthcare improvement science curriculum integration in generalist nursing courses.

BACKGROUND
- IOM Nurse of the Future report calls for nurses to become "clinician-scholar-improvers."
- Nursing faculties are challenged by lack of training and experience in healthcare improvement science and by significant cost and credit hours constraints.
- Efforts to integrate IHI Open School courses have been limited due to scope and complexity of the Basic Certificate program, suggesting a need for a basic primer.
- Coaching approaches have been used in healthcare improvement to facilitate and guide clinical improvement teams, and this approach could be adapted to educational settings.

PROGRAM
- Materials and activities include five online IQS modules, assessment quizzes, a clinical microsystem assessment (MAT) exercise (Johnson et al., 2003), and pre-/post-evaluations.

Introduction to Quality and Safety (IQS)

Contributing Faculty: Brant J. Oliver, PhD, NP, MS, MPH
Assistant Professor, School of Nursing, MGH Institute of Health Professions
For more information about Dr. Oliver, click here.

About the IQS Learning Series
Quality & Safety has evolved as a core competency and expected practice characteristic for professional nursing. The IQS Learning Series, originally developed for RN students in ARSH Synthesis II, and later adopted for other IHI courses, provides concise and practical introduction to critical aspects of quality and safety for frontline clinical practice with a strong emphasis on applied quality improvement, i.e., "how to actually do it rather than just describe it." The concepts and skills you will learn here will help you assess and improve frontline healthcare delivery systems as part of your professional nursing practice.

Learning Activities
A series of five IQS learning modules provides an introduction to quality and safety in healthcare. Each module is brief (30-35 minutes), narrated by leading experts, and focuses on a specific competency area. These modules will touch upon critical aspects of quality and safety with a specific focus on applied quality improvement (QI). Each recorded module is accompanied by a PowerPoint slide set which you can download as a study guide or use as notes to accompany the recorded sessions.

IQS is a basic, condensed introduction, positioned to precede the IHI Open School modules...

Online quizzes and exam question bank with real-time feedback and item analysis for students and instructors.

% students perceiving MAT assignment effective
% students satisfied with MAT exercise
Perceived % change in content knowledge (pre-/post IQS modules)
Mean QI intervention and measurement knowledge proficiency
Mean clinical microsystems content knowledge proficiency

CONCLUSIONS & IMPLICATIONS
- Minimal structural, resource, and workload demands with rapid implementation in one year.
- Favorable initial knowledge and perceived skill development and satisfaction results.
- Practical, context-specific design method which has potential for replication in other health professions education settings.

MGH Institute of Health Professions
A graduate school founded by Massachusetts General Hospital
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Benchmarking helps to empower improvement collaboratives...

Figure 3  Median corrected body mass index (BMI) of adults >24 years of age at US Adult Care Programs, 2005. Each bar represents a separate adult care programme caring for more than 40 patients. Lung transplant patients censored. BMI adjusted for differences among programmes in patient age, gender, use of pancreatic enzymes, race/ethnicity, income from zip code, and BMI 7 years ago. Those programmes highlighted in yellow represent sites where adult nutritional benchmarking visits occurred.
PDSA and Improvement Measurement Simulation-Based Learning

**Simulation Exercise: Mr. Potato Head**

Credit:
- Adapted by Steve Harrison, Sheffield MCA, Sheffield, UK (2013)
- Adapted for collaborative simulation with real time measurement dashboard and registry (B. Oliver, 2015, 2016) & playbook (M Godfrey (2015)).

**Imagine that building Mr. Potato Head is improving the quality of diabetes care in a primary care setting...**

**The PDSA Cycle**

4. **ACT**
   - What changes are to be made?
   - Next cycle?
   - Action based on prior results

3. **STUDY**
   - Complete data analysis
   - Compare to predictions
   - Summarize what was learned

2. **DO**
   - Carry out the plan
   - Document problems and unexpected observations
   - Begin data analysis

1. **PLAN**
   - Objective (goal)
   - Outcome predictions
   - Implementation plan (who, what, where, when, how)
   - Measurement plan

Successive PDSA cycles for Improvement

**Speed & Accuracy**

Hospital Admissions

Hospital Admissions
Microsystem Teams for the PDSA Simulation...

- Surgeon
- Timer
- Recorder
- Observer

What we aim to achieve...

- **"Build it right"** (adhere to the evidence based practice guideline)
- **"Build it fast"** (optimize access to care)
- **"Do it consistently"** (optimize reliability)
- **"Continuously improve"** (optimize value)

We will simulate a microsystem level improvement collaborative...

- 1 Baseline cycle and successive PDSA cycles
- Simulate rapid cycle improvement in separate microsystems
- Track performance (building speed and accuracy score) using Run Charts and descriptive displays
- Cascade measures and simulate an improvement collaborative - compare gender, balanced measures
- Benchmarking
- Playbooks
**POTATO HEAD REGISTRY: Mesosystem Performance Dashboard (Collaborative after 4 PDSA cycles)**

**Average Efficiency by Trial in Seconds (All Microsystems)**

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<th>Trial</th>
<th>Efficiency</th>
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<tr>
<td>1</td>
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<td>2</td>
<td>32</td>
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<td>3</td>
<td>36</td>
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<tr>
<td>4</td>
<td>36</td>
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**Average Accuracy Score (All Microsystems)**

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<th>Accuracy</th>
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<td>2</td>
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<tr>
<td>3</td>
<td>2.8</td>
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<tr>
<td>4</td>
<td>2.9</td>
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</table>

**Average Efficiency vs. Average Accuracy**

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<tr>
<th>Trial</th>
<th>Efficiency</th>
<th>Accuracy</th>
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<tr>
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<td>2.8</td>
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<tr>
<td>4</td>
<td>36</td>
<td>2.9</td>
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</tbody>
</table>

**Mean Efficiency by Trial (All Microsystems)**

- **Males:**
  - Trial 1: 63
  - Trial 2: 45
  - Trial 3: 43
  - Trial 4: 58

- **Females:**
  - Trial 1: 38
  - Trial 2: 43
  - Trial 3: 47
  - Trial 4: 44

- **Total:**
  - Trial 1: 101
  - Trial 2: 98
  - Trial 3: 90
  - Trial 4: 102

**Mean Accuracy Score by Trial (All Microsystems)**

- **Males:**
  - Trial 1: 31
  - Trial 2: 25
  - Trial 3: 36
  - Trial 4: 45

- **Females:**
  - Trial 1: 23
  - Trial 2: 22
  - Trial 3: 29
  - Trial 4: 29

- **Total:**
  - Trial 1: 54
  - Trial 2: 47
  - Trial 3: 65
  - Trial 4: 74

**Mean Efficiency by Category (4 Trials Combined)**

- **Total Efficiency:**
  - Male: 2.0
  - Female: 2.3
  - Overall: 2.3

**Mean Accuracy by Category (4 Trials Combined)**

- **Total Accuracy:**
  - Male: 2.6
  - Female: 2.9
  - Overall: 2.9

**Accuracy vs Efficiency**

- **R² = 0.3863**

**Average Efficiency by Microsystem (4 Trials)**

- **Micro1:**
  - Male: 40.8
  - Female: 20.8
  - Overall: 36.3

- **Micro2:**
  - Male: 31.5
  - Female: 31.5
  - Overall: 31.5

- **Micro3:**
  - Male: 40.8
  - Female: 36.3
  - Overall: 36.3

- **Micro4:**
  - Male: 66.0
  - Female: 31.5
  - Overall: 40.8

- **Micro5:**
  - Male: 2.0
  - Female: 2.5
  - Overall: 2.3

- **Overall:**
  - Male: 52.0
  - Female: 32.4
  - Overall: 35.6

**Average Accuracy by Microsystem (4 Trials)**

- **Micro1:**
  - Male: 2.6
  - Female: 2.9
  - Overall: 2.8

- **Micro2:**
  - Male: 2.3
  - Female: 2.3
  - Overall: 2.3

- **Micro3:**
  - Male: 2.5
  - Female: 2.5
  - Overall: 2.5

- **Micro4:**
  - Male: 3.0
  - Female: 2.9
  - Overall: 2.9

- **Micro5:**
  - Male: 2.0
  - Female: 3.9
  - Overall: 2.9

- **Overall:**
  - Male: 2.6
  - Female: 2.9
  - Overall: 2.9
Benchmarking helps to empower improvement collaboratives...

Accelerating the rate of improvement in cystic fibrosis care: contributions and insights of the learning and leadership collaborative

Marjorie M Godfrey,1 Brant J Oliver2

ABSTRACT
Introduction The Learning and Leadership Collaborative (LLC) supports cystic fibrosis (CF) centres’ responses to the variation in CF outcomes in the USA. Between 2002 and 2013, the Cystic Fibrosis Foundation (CFF) designed, tested and modified the LLC to guide frontline staff efforts in these efforts. This paper describes the CFF LLC evolution and essential elements that have facilitated increased improvement capability of CF centres and improved CF outcomes.

Methods CF centre improvement teams across the USA have participated in 11 LLCs of 12 months’ duration since 2002. Based on the Dartmouth Microsystem Improvement Curriculum, the original LLC included face to face meetings, an email listserve, conference calls and completion of between learning session taskbooks. The LLCs evolved over time to include...

INTRODUCTION
The Learning and Leadership Collaborative (LLC) supports cystic fibrosis (CF) centres’ responses to the variation in CF outcomes in the USA.1 Between 2002 and 2013, the Cystic Fibrosis Foundation (CFF) designed, tested and modified the LLC to guide frontline staff efforts in these efforts. We report here the implementation and outcomes of 11 sequential CFF supported improvement collaboratives that involved over 90% of the US CF care centres during this 10 year period. We include essential elements to consider in designing, executing and assessing improvement collaboratives.

Figure 3 Median corrected body mass index (BMI) of adults >24 years of age at US Adult Care Programs, 2005. Each bar represents a separate adult care programme caring for more than 40 patients. Lung transplant patients censored. BMI adjusted for differences among programmes in patient age, gender, use of pancreatic enzymes, race/ethnicity, income from zip code, and BMI 7 years ago. Those programmes highlighted in yellow represent sites where adult nutritional benchmarking visits occurred.

Primary Care I-III Integration

Patricia Reidy, DNP, FNP-BC
Clara Gona, PhD, FNP-BC
Jason Lucey, MS, FNP-BC
APPLYING THE FORMULA FOR IMPROVEMENT (Batalden)

The (Simulated) *IHP Community Health Center*

**Primary Care I:** Evidence synthesis assignment for assigned population & condition.

**Primary Care II:** Context assessment using 5P method for simulated clinic using real data sources.

**Primary Care III:** Simulated intervention and real time measurement.

Generalizable Scientific Evidence + Particular Context → Measured Performance Improvement

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Objective
To assess the effectiveness of an healthcare improvement science curriculum using simulation in a graduate nurse practitioner program.

A Challenge to Prepare “Clinician-Leader-Improvers”
- Challenges include lack of faculty training in improvement methods and constraints on credit hours and faculty workload.
- This pilot project describes rapid integration of improvement science curriculum into a graduate nurse practitioner primary care education program.
- Our approach utilized a consultative-support method intended to create minimal organizational disruption and have low impact on cost and credit burden to students.
- We utilized applied learning exercises linked across three semesters and used simulation to make the work as “real-life” as possible.
- Students worked in the same improvement team across all three semesters, simulating an actual primary care practice engaged in improvement work.

Healthcare Improvement Curriculum Integration and Evaluation
- Utilized simulated clinical microsystems and patient populations.
- Formula for Improvement framework (Batalden & Davidoff, 2007).
- Three applied exercises (one per semester) linked together in sequence.
- Work culminated in final poster presentation linking all three assignments.
- Assignments: (1) Evidence synthesis; (2) clinical microsystem 5P context assessment; (3) PDSA cycles with linked data analyzed with Run Charts.
- Evaluation with QIKAT questionnaire at four time points: (1) baseline; (2) semester 1; (3) semester 2; and (4) semester 3 (end of program).
- ANOVA to assess for significant changes over time.
- Initial cohort (n=23) completed QIKAT results only (2015)
- Second cohort now underway will collect QIKAT at all four time points.

Conclusions: Initial pilot feasible, second cohort started
- Results suggest initial feasibility
- Results suggest wide variation of knowledge and skills assessed via QIKAT
- Inference limited by single time point in initial pilot but is supportive of continuation
- Second cohort will provide more comprehensive data for longitudinal analyses by collecting QIKAT data at 4 time points over the 3 semester program.
<table>
<thead>
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<th>Skill</th>
<th>Extremely</th>
<th>Reasonably</th>
<th>Somewhat</th>
<th>Not at all</th>
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<tr>
<td>Effective meeting skills</td>
<td>17.39%</td>
<td>60.87%</td>
<td>21.74%</td>
<td>0.00%</td>
</tr>
<tr>
<td>Working in teams</td>
<td>21.74%</td>
<td>73.91%</td>
<td>4.35%</td>
<td>0.00%</td>
</tr>
<tr>
<td>Organizational planning (Gantt charts, agendas)</td>
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<tr>
<td>Defining global and specific aims</td>
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<td>39.13%</td>
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<tr>
<td>Linking short and long term measures</td>
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<td>30.43%</td>
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<td>Analyzing data</td>
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<td>Run Charts</td>
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<td>13.04%</td>
<td>47.83%</td>
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<tr>
<td>Synthesizing generalizable scientific evidence</td>
<td>8.70%</td>
<td>30.43%</td>
<td>47.83%</td>
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<tr>
<td>Critically appraising scientific evidence</td>
<td>8.70%</td>
<td>52.17%</td>
<td>30.43%</td>
<td>8.70%</td>
</tr>
</tbody>
</table>
Outcomes Measurement

Margie Sipe, DNP
Brant Oliver, PhD, MS, MPH, APRN-BC

Available to all students in all programs...
RN Hand-Offs: ED to Inpatient Unit

Global Aim: Improve the staff nurse’s perception of the RN hand-off between the emergency room and inpatient units.

Specific Aim: Select minimal elements (accurate MD orders, safety concerns, allergies, meds given) of the “Hand-off Information Checklist” tool will be utilized as part of the hand-off process 70% of the time by July 1, 2012.

MEASURES AND DATA

Nurse perception Baseline: n = 32 Post Pilot: n = 29

Compliance with hand-off communication tool (Pilot period: May 23rd – June 24th)

CONCLUSIONS & IMPLICATIONS

• While the tool did not impact the perception related to specific communication elements, the new process served as a mechanism for verbal communication when conducting the hand-off, thereby allowing the nurses an opportunity to ask questions.

• Compliance with the tool improved after it was modified (easier to use), however, overall compliance was still low.

• The improvement team will continue to test/modify the hand-off communication tool in order to maximize compliance and guide the new hand-off process.

• As a next step and in order to support this QI effort, the pilot will spread to include more units.

• The pilot demonstrated that verbal hand-offs improve the ability to ask questions and ensure safe transitions, however, further study is indicated in order to evaluate outcomes against a larger population.

• A verbal hand-off will become the standard of practice.
Interprofessional Education & Practice

**IMPACT**: Interprofessional Model for Patient- and Client-Centered Teams

**Purpose**: Prepare students for helping to change healthcare delivery through readiness for interprofessional collaborative practice.

**Content**: Built around the core competencies defined by the Interprofessional Education Collaborative (IPEC Report, 2011)

- Values and ethics
- Interprofessional Communication
- Teams/Teamwork
- Roles and responsibilities
IMPACT

- Nursing (Masters Program)
- Physical Therapy (Masters and DPT)
- Communication Sciences
- Occupational Therapy
- Physician Assistant Studies (starting 2016)
- 250-300 students per cohort
IMPACT QI Integration: 2015-16

• Context specific brief primer (Introduction to Quality & Safety)

• Interprofessional Teams of students and faculty mentors work on applied experiences in various contexts

• Applied exercises: Process mapping, Reason Swiss Cheese model (error), Fishbone diagrams, reflection exercises, simulation

• Built in evaluations: knowledge, satisfaction

• Dissemination: IHI Scientific symposium, article in progress
Two-year pilot results of healthcare improvement curriculum integration into the interprofessional IMPACT Practice health professions education program at the MGH Institute of Health Professions: 2015-2016.

Brant J. Oliver, PhD, MS, MPH, APRN-BC; Mary Knab, DPT

Objective
To describe pilot implementation and outcomes of a QI curriculum integration effort in an interprofessional health professions education program over a two year period.

MGH Institute IMPACT Practice Program
- Mission: Prepare students for helping to change healthcare delivery through readiness for interprofessional collaborative practice.
- Five health professions at MGH Institute (PT, OT, Nursing, PA, CSD).
- Graduate students from three professions (PT, CSD, Nursing) were participating in IMPACT at the time of this pilot.
- Three semester program: Pilot was employed in the second semester.

Healthcare Improvement Curriculum Integration
- The director of IMPACT and a faculty expert in healthcare improvement, developed an online learning system and related applied QI assignments.
- First year graduate students in nursing, physical therapy, and speech language pathology participated together (N=352).
- The pilot intervention lasted 14 weeks (one academic semester).

Results: Improved Knowledge
- Two cohorts: Roughly equal in 2015 (n=186) and 2016 (n=166).
- Students were equally represented by discipline in each cohort and across cohorts.
- Reported QI experience was not significantly correlated with performance (r=0.21)
- Mean post-exposure knowledge quiz proficiency scores did not differ significantly between cohorts (p=0.35) or disciplines (p=0.31).
- Mean QI knowledge improved significantly post-exposure (see Figures 2 & 3 above), compared to pre-exposure baseline across knowledge domains (p<0.05).

Conclusion: Successful Pilot
- Results support basic feasibility and a detectable, statistically significant learning effect in basic quality & safety concepts across domains, cohorts, and disciplines.
- Further study now warranted to assess applied knowledge and sustainability.

Figures: Participant Characteristics and Program Results (N=352)

Figure 1. Reported QI experience level prior to IMPACT.

Figure 2. QI knowledge by domain prior to IMPACT program.

Figure 3. QI knowledge by domain AFTER exposure to IMPACT.
VAQS Fellowship

- Pre-/Post-doctoral nurses (DNP, PhD, DNSc)
- Interprofessional with physicians
- IHP affiliation with WRJ VAMC site in VT
- IHP faculty senior scholar, Fellows are adjunct faculty
- Opportunities in research, teaching, mentorship roles

Expanding to other disciplines, we have some psychologists and pharmacists…

www.vaqs.org
The VA Quality Scholars Fellowship offers nurses the unique opportunity to improve veteran healthcare quality through innovation, teaching, and research. An important goal of this interdisciplinary fellowship is to develop nurses and nurse practitioners who will be able to advance the scientific basis of healthcare improvement. This advanced program combines a broad curriculum with an individualized approach to meet the needs of each healthcare professional's interests. Three positions per year are available at each site for nurses who have been accepted into a DNP or PhD program or have completed their doctoral degree.

VA Quality Scholars Fellowship
Pre- & Post-Doctoral Fellowship for Nurses
Advancing the Scholarship of Healthcare Improvement

About the Program
The VAQS program was established in 1998 to train physicians in improving healthcare quality and value. VA assets such as a national health system, extensive academic affiliations, and administrative structure allowed for the creation of a collaborative network aimed to improve healthcare quality for veterans. In 2000, the nursing component was added to VAQS. Mentoring is a critical component of this two-year program which links individualized training at each of eight sites with cross-site learning experiences convened by faculty of the Houston Center for Training in Healthcare Quality.

“The VAQS program offers an advanced curriculum covering a wide range of content including theory, models, methods, teamwork and leadership for improvement. Yet each fellow individualizes the program to meet their professional needs. I was able to accomplish my planned professional goals, but I was surprised to find myself in the best interprofessional training program in the country. This program is a national model for developing clinical leaders who can create value in health systems today and in the future.”
Suzie Milton, RNC-OB, PhD, NEA-BC 2012

www.VAQS.org
Designing an Applied Educational Program in QI for a VANAP-GE Residency Program

Connie Cowley, DNP, RN, CPHQ, NE-BC; Brant Oliver PhD, MS, MPH, APRN-BC
White River Junction, Vermont (VISN 1)

Setting
- White River Junction VAMC (VISN1)
- MGH Institute of Health Professions, Boston, MA
- VA Nursing Academic Partnership-Graduate Education Grant (VANAP-GE)
- Grant awarded by Office of Academic Affiliations

Background
- While QI educational programs proliferate, little is known about their relative effectiveness
- Promising strategies can be found in the literature however, analysis of various programs show that the ability to generalize suffers from lack of theoretical foundations, program components, contextual details, and evaluation methods
- The award of a VANAP-GE Grant provided a unique opportunity to design an educational program with explicit explanation of theoretical foundations, program details, and evaluation strategies

Aims
To provide education and practice in the tools and methods of healthcare QI to enable NP Residents to lead a microsystem improvement project
- Evaluate student mastery of methods and evaluate contextual factors of the learning environment, and effectiveness of implementation strategies

Methods
- Review of literature, review of theories relevant to a QI educational program,

Framework for Course

Learning – Constructivist Theory
Encouraging students to use active techniques (experiments, real-world problem solving) to create more knowledge and then to reflect on and talk about what they are doing and how their understanding is changing. The teacher makes sure s/he understands the students' preexisting conceptions, and guides the activity to address them and then build on them.

Improvement Model

Program Details
- 6 month course
- NPs in a 1 year residency
- Group-based coaching / review sessions every 3 weeks
- Ongoing coaching by 2nd Year VAQS Fellows
- VA projects in Primary Care Clinic
- Guided learning / Scaffolding of project through FOCUS PDSA model
- Add content within scaffolded sessions

Evaluation
- Evaluation of cognitive learning through pre-post testing (kirkpatrick – short-term)
- Realist evaluation of context
- Evaluation of Implementation – long-term

Limitations
- Reliance on coaches
- Available knowledge of faculty

Conclusions / Future Recommendations
- Education is a necessary component for participation in QI efforts
- A theory-based approach holds promise of success
- Implement and evaluation program
A Framework Analysis of Authentic Leadership Behaviors Among Experienced Nurse Executives

Catherine Alexander DNP, MPH, RN
VA Quality Scholars Program, White River Junction, Vermont

BACKGROUND

Nursing leadership behaviors that promote and sustain a healthy work environment (HWE) are not well understood in the healthcare literature. In 2005 the American Association of Critical Care Nurses released The AACN Standards for Establishing and Sustaining a Healthy Work Environment (HWE) and recommended authentic leadership (AL) as one of the six standards necessary to achieve a HWE. Since the release of the standards in 2005 few studies have offered guidance for leaders in how to effectively translate the constructs of AL into nursing leadership practice and education. Therefore, this study sought to define the four constructs of authentic leadership (self-awareness, transparency, balanced processing, and moral leadership) from the perspective of the nurse executive and identify and describe the behaviors executives use to promote a HWE.

AIMS

1. Identify and describe essential behaviors that support a HWE from the perspective of the experienced nurse executive.
2. Determine if the essential behaviors of the experienced executive align with the constructs of authentic leadership.

METHODS

Study Design. This is a descriptive qualitative study used key informant sampling of 17 experienced nurse executives from across the United States. Data was collected using a semi-structured, open-ended interview questionnaire. Frame work analysis was used to analyze the data. Data was inductively coded and then grouped together to create themes. Relationships between the four constructs of AL were identified and described.

Sample: 29 experience nurse executives were initially selected to participate in the study. Inclusion criteria included nurse executives who were in senior leadership positions and had held this position for greater than five years. 19 nurses responded to the request to participate in the study (69% response rate). 17 interviews were completed within the designated time frame.

RESULTS

Self Awareness

Theme: Presence, self-reflection, core values

Self awareness allows nurses to establish open, honest communication with others, express your true self, and facilitate the development of trust. To be authentic requires a genuine understanding of one's core values.

Type of Hospital

Academy
Acute Care
Community
Rehabilitation

Highest Level of Education

DNP
MSN
BA
Associate

Participant Location

New England
West Coast
South
MidWest

DISCUSSION

Self awareness: Presence is defined as the public identity of who we are and the private self that we believe ourselves to be. Self awareness is the ability to recognize one's strengths and weaknesses, and to understand how one's emotions, beliefs, and behaviors impact others.

Transparency: Trust and authenticity are facilitated by transparency. Leaders who are open about their motivations, goals, and intentions are more likely to build trust with their team.

Balanced Processing: Leadership involves making decisions based on a combination of emotion and reason. Leaders who can balance these two elements are more likely to make effective decisions.

Moral Leadership: Authentic leaders exhibit strong values and principles, and are committed to ethical behavior.

LIMITATIONS

The findings from this study represent the opinions of 17 nurse executives from major acute care medical centers in the US. Generalizability is limited because the majority of participants work in a major academic or acute care setting and may not share the opinions of nurse executives who work in other healthcare settings. Also, the average age of study participants was 60 years old. Future research should include executives from a broader range of healthcare settings and younger nurses in order to identify and develop strategies to prevent generational bias. Also, findings from this study reflect the personal perceptions of the nurse leaders and do not include the perceptions of other staff who work for them. Therefore, a conclusion cannot be drawn to determine if the behaviors observed by staff accurately reflect what is described by the nurse executives in this study.

CONCLUSION

This qualitative study sought to identify and describe what experienced nurse executives believed were essential behaviors in creating and sustaining a HWE and determine if these behaviors align with the four constructs of authentic leadership (self-awareness, transparency, balanced processing, and moral leadership). Preliminary results suggest that there is alignment between nurse executive leadership behavior and the four constructs of authentic leadership. However, data from this study also identified unique behaviors specific to nursing leadership practice that operate within the theoretical framework of authentic leadership found in the business literature. Analysis of this study indicates that the theory of authentic leadership and associated behaviors may be a useful framework for leaders to build a HWE as outlined in the literature report AACN Standards for Establishing and Sustaining Healthy Work Environments (2005).
Qualitative study of 23 women in the maternity care program (1 invalid phone), 12 consented to be called, 11 interviews done

Age range- 26-39, 3 primigravida, 8 multigravida

4 currently pregnant 7 delivered (1 SAB)

Themes
  - Awareness and communication
  - Navigation of the VA system
  - Feeling cared for and respected
Implications

• Understanding the patient’s perspective is integral to optimizing the quality of the maternity care coordination program.

• Results of this study will inform and provide direction for maternity care coordination quality improvement projects.

• QI Targets:
  o Billing
  o Awareness of covered benefits
  o Consistency of program
  o Risk assessment individualized to needs of veteran
  o Outreach OB community and VA
VA Rural Health Scholars (VARHS)

With New Grant, MGH Institute Nursing Students to Work with Veterans in Rural Vermont and New Hampshire

5 Year, $3.4M academic-clinical partnership grant for Masters level NPs from MGH Institute

VANAP-GE program funded by VA (OAA)

Pre-graduate NP rotations

Post-graduate NP residency

"Clinician-leader-improver" model to increase access, quality, and leadership for rural underserved primary care.

MGH Institute Press Release (Spring 2015)
**National VA Nursing Academic Partnership Program (VANAP)**
- Administered by the Office of VA Academic Affiliations (VA OAA), supports innovative nursing academic-clinical partnerships at undergraduate and graduate levels.
- VANAP programs provide academic and clinical education for nursing students and development of residency programs.

**The VANAP for Graduate Education (VANAP-GE) Program**
- An academic-clinical partnership between the MGH Institute of Health Professions School of Nursing in Boston, MA, and the Veterans Affairs Medical Center in White River Junction, VT.

  - Three Program Phases:
    1. “Rural Health Scholars” track at the MGH Institute School of Nursing.
    2. “Clinician-Leader-Improver” post-graduate NP residency program.
    3. Evaluation of impact on primary care workforce, capacity, and access.

### The “Clinician-Leader-Improver” Curriculum Overview

<table>
<thead>
<tr>
<th>Month</th>
<th>Clinical Seminar</th>
<th>Improvement Seminar</th>
<th>Leadership Seminar</th>
<th>Project with Coaching</th>
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<tbody>
<tr>
<td>September</td>
<td>“Military culture”</td>
<td>“Foundations of Improvement”</td>
<td>“Organizational Culture”</td>
<td>Orientation</td>
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<td>October</td>
<td>“Top Primary Care Diagnoses”</td>
<td>“Systems Literacy &amp; Clinical Microsystems”</td>
<td>“Organizational Behavior”</td>
<td>Assessment</td>
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<td>November</td>
<td>“Top VA Primary Care Diagnoses”</td>
<td>“Building Knowledge (Part I)”</td>
<td>“Learning Organizations”</td>
<td>Aims</td>
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<td>December</td>
<td>“Team-based practice”</td>
<td>“Change and human behavior”</td>
<td>“Team dynamics and communication”</td>
<td>Change Ideas</td>
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<td>January</td>
<td>“VA Informatics &amp; EMR”</td>
<td>“Building Knowledge (Part II)”</td>
<td>“Complex Organizations”</td>
<td>Measures</td>
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<td>February</td>
<td>“Common veteran specific exposures and risks”</td>
<td>“Variation (Part I): Measurement and Data analysis”</td>
<td>“Creating Conditions for Improvement”</td>
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<td>March</td>
<td>“Women’s Health”</td>
<td>“Building Knowledge (Part III)”</td>
<td>“Leadership Approaches”</td>
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<td>April</td>
<td>“Rural VA care”</td>
<td>“LEAN methods”</td>
<td>“Change Theory”</td>
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<td>May</td>
<td>“Minority care and inclusiveness”</td>
<td>“Statistical Process Control (SPC)”</td>
<td>“Personal Leadership Styles”</td>
<td>Reporting &amp; Recommendations</td>
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<td>June</td>
<td>“Preventive Care”</td>
<td>“SQUIRE guidelines”</td>
<td>“Emotional Intelligence”</td>
<td>Writing for Publication 1</td>
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<td>July</td>
<td>“Elder abuse”</td>
<td>“Reflective Practice”</td>
<td>“Difficult Conversations”</td>
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The VANAP-GE program is an academic-clinical partnership program funded by the Department of Veterans Affairs Office of Academic Affiliations (OAA). Post-doctoral nursing fellows and the nursing faculty senior scholar from the VA National Quality Scholars Fellowship (VAQS) participate in development, implementation, and other activities in collaboration with the VANAP-GE program.
Experiential learning for culture change and improvement...

Empowering nursing faculty to become scholar-improvers:
The Nursing Faculty QI Task Forces Initiative

Brant J. Oliver, PhD, MS, MPH, APRN-BC
Laurie Lauzon-Clabo, PhD, RN

February 22, 2015
Priority need areas identified...

• The Dean charged task forces to address priority (identified by multiple data sources).

1. Organization
2. Responsiveness
3. Advising
4. Technology
5. Administrative
6. Inclusiveness
# Linking Microsystem Teams to Longitudinal Measures

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<th>Course Evaluations</th>
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<td><strong>Responsiveness</strong></td>
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<td>Items 23, 27</td>
<td>Items 13, 20, 21, 22</td>
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<td>Items 40, 41</td>
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<td>Items 28, 30, 31, 34, 132, 149, 150, 151</td>
<td>Items 13, 20, 21, 22</td>
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*Acknowledgment: Alex Hoyt, PhD, RN, and SON Evaluation Committee (2014)*
Assessing our needs and attitudes...

- Did you participate in one of the Faculty Basic Applied QI Skills training seminars that Brant taught in the Spring?
  - Yes: 51.4% (19)
  - No: 48.6% (18)

- How important do you consider continuous quality improvement in your professional work?
  - Very important: 64.3% (24)
  - Important: 27.0% (10)
  - Somewhat important: 8.1% (3)
  - Not important: 0%

- How important do you feel continuous quality improvement is for nursing education?
  - Very important: 62.2% (23)
  - Important: 22.4% (8)
  - Somewhat important: 5.4% (2)
  - Not important: 10.0% (4)

- How much formal training and/or direct experience have you had with quality improvement?
  - A lot: 70.3% (26)
  - A little: 15.8% (6)
  - None: 13.9% (5)
Please rate how confident you are with your knowledge and skills in the following aspects of basic applied improvement science methodology AS OF RIGHT NOW:

- Effective meeting skills
- Working in teams
- Organizational planning (charter, agenda)
- Defining global and specific aims
- Cause and effect diagrams (fishbones)
- Creating a flow process diagram
- Creating a change idea
- Developing measures (conceptual & operational definitions)
- PDSA cycles
- Developing a data collection plan
- Developing short and long term measures
- Analyzing data
- Run Charts
<table>
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<th>PDSA 2</th>
<th>PDSA 3</th>
<th>PDSA 4</th>
<th>PDSA 5</th>
<th>PDSA 6</th>
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</thead>
<tbody>
<tr>
<td><strong>Organization</strong></td>
<td>Unified online calendar</td>
<td>Syllabus posted one week prior to start of semester</td>
<td>Coordinate exam and assignment dates across courses</td>
<td>Revised coordinated exam and assignment schedule linked to online calendar system</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td><strong>Technology</strong></td>
<td>Needs assessment (no intervention)</td>
<td>Implemented monthly faculty “Quick Tech Tips.”</td>
<td>IT Focus group session (no intervention)</td>
<td>Increased integration of instructional designers</td>
<td>Second IT focus group (no intervention)</td>
<td>Revised “Tech Tips” resource on faculty website</td>
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<tr>
<td><strong>Advising</strong></td>
<td>Assessment survey (no intervention)</td>
<td>“Online tools guide” for online advisor resources implemented</td>
<td>Online calendar tool developed to remind advising faculty of key dates</td>
<td>Explore use of validated advising quality questionnaire</td>
<td>Explore changes to existing advising guide to better assist advisors</td>
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<tr>
<td><strong>Responsiveness</strong></td>
<td>Increase use of faculty “away messaging” during vacations and time off</td>
<td>Student expectations and needs survey (no intervention)</td>
<td>Communication expectations tool developed for faculty to use with students</td>
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<td></td>
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<tr>
<td><strong>Inclusiveness</strong></td>
<td>Inclusiveness awareness survey and pilot continuing education session</td>
<td>ABSN program faculty training session (clinical instructors)</td>
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SON QI Action Committee

- "Leaner and Meaner"
- 5-8 faculty lead by QI faculty colleague
- Advanced methods
- Standing committee
- Academic component
- Act as resource, collaborator, improver
Innovation and Culture Change in Nursing Education:
Application of Microsystems Improvement Methods to Develop Better Educational Microsystems
Brant J. Oliver, PhD, MS, MPH, APRN-BC

Background
Just as healthcare has adopted and applied improvement methods from industry, so can education adapt methods from healthcare Microsystems improvement approaches to benefit educational services improvement.

Defining the “Educational Microsystem”
A group of people who work together in a specified educational setting or capacity on a regular basis to provide educational services to customers, who can be recognized as members of a discrete subpopulation of students, faculty, and/or administrators.

The MGH Institute Microsystems Improvement Journey
1. Academy for Improvement Science Virtual Hub Site (2014-present)
2. Educational Integration: Across Programs and Schools (2014-present)
4. Specialization and Focused Application: QI Action Committee (2015-16)
5. Linked to Fellowship (VAQS, 2013) and NP Residency (VANAP-GE, 2016)
6. Participation of VAQS post-doctoral fellows (as coach-consultants)

Conclusion and Implications
• The MGH Institute journey demonstrated successful pilot development, implementation, and evaluation of educational services improvement adapting clinical Microsystems concepts and methods from healthcare.
• The “educational microsystem” concept is worthy of further development and evaluation as an improvement method and as a vehicle for culture change in nursing education.
The MGH Institute Academy for Improvement Science Working Group

www.mghihp.edu
“Improvement work is not finished until it is published”
David Stevens, Editor Emeritus, BMJ Quality & Safety

Rapid Innovation in Improvement Science Education in Nursing (Curriculum Innovation)


Building the AIS Model

Theoretical Perspectives

Getting past the barriers to effective improvement science curriculum integration and bringing educational microsystems to life within nursing education contexts will require a careful balance of systems thinking, change psychology, culture shift, and robust participation by a large number of people involved in the work of nursing education. A number of theoretical perspectives which have been helpful to industry and healthcare can be similarly helpful to educational applications. First, Deming’s System of Profound Knowledge (SoP) is a systems management theory that aims to optimize system performance in a manner in which “everyone wins” (with everyone defined as both the producers and recipients of services and products). Deming’s theory builds upon four key premises: (1) appreciation of systems and processes in work; (2) discipline specific knowledge and theory, e.g., nursing, medicine, etc.; (3) knowledge of variation in systems performance; and (4) understanding and appreciation of the psychology of change. Second, Batalden’s work in healthcare improvement (SoP) which derives heavily from Deming, describes three factors critical for generating and sustaining healthcare improvement: (1) improved professional development; (2) improved customer (patient/population) outcomes; and 3) improved health of populations.

Educational Microsystems Improvement (SON QI Task Forces)

www.mghihp.edu
Reflections

• Quality improvement methods and models may have applicability in education innovation.

• Modified improvement coaching, adapted improvement collaborative models, and experiential learning approaches are promising and economical.

• Learning by doing, faculty ownership of the work, engagement of leadership, curriculum threads, and reflection/scholarship are critical elements.
Fostering Culture Change and Rapid Innovation in Healthcare Improvement Science Education in Nursing: Making the Case and Making it Happen

Brant J. Oliver, PhD, MS, MPH, APRN-BC

brant.j.oliver@dartmouth.edu