University of Nebraska Medical Center
DigitalCommons@UNMC

Posters and Presentations: Physical Therapy

Physical Therapy

2-2020

Reaching the Summit: From exposure to immersion in quality improvement in physical therapy education

Tami Struessel
University of Colorado Anschutz Medical Campus, tami.struessel@cuanschutz.edu

Nicole M. Sleddens
University of Nebraska Medical Center, nicole.sleddens@unmc.edu

Katherine J. Jones
University of Nebraska Medical Center, kjonesj@unmc.edu

Follow this and additional works at: https://digitalcommons.unmc.edu/cahp_pt_pres

Part of the Physical Therapy Commons

Recommended Citation

Struessel, Tami; Sleddens, Nicole M.; and Jones, Katherine J., "Reaching the Summit: From exposure to immersion in quality improvement in physical therapy education" (2020). *Posters and Presentations: Physical Therapy*. 19.
https://digitalcommons.unmc.edu/cahp_pt_pres/19

This Conference Proceeding is brought to you for free and open access by the Physical Therapy at DigitalCommons@UNMC. It has been accepted for inclusion in Posters and Presentations: Physical Therapy by an authorized administrator of DigitalCommons@UNMC. For more information, please contact digitalcommons@unmc.edu.

Reaching the Summit: From Exposure to Immersion in Quality Improvement in Physical Therapy Education

Tamara S. Struessel, PT, DPT, OCS, MTC
Nicole M. Sleddens, PT, MPT, CEEA
Katherine J. Jones, PT, PhD

Learning Objectives

1. Describe the Institute of Medicine (IOM) Competencies as a system to achieve patient centered care
2. Discuss key quality improvement (QI) concepts and skills (related to CAPTE and minimum skills)
3. Analyze how key educational frameworks can be used to design and evaluate a QI curriculum
4. Outline a curriculum for teaching QI concepts in your setting

Disclosure

- The speakers have no conflicts to disclose.

IOM Competencies

Work in Interdisciplinary Teams

Employ Evidence Based Practice

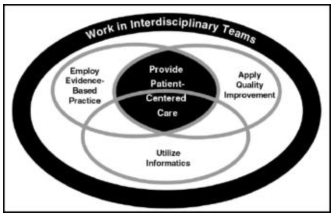
Provide Patient Centered Care

Apply Quality Improvement

Utilize Informatics

Institute of Medicine. *Health Professions Education: Bridge to Quality*. Washington, DC: The National Academies Press; 2003; p. 3.

Core Competencies


Work in Interdisciplinary Teams
Employ Evidence-Based Practice
Provide Patient-Centered Care
Apply Quality Improvement
Utilize Informatics

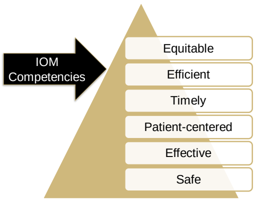
Institute of Medicine. *Health Professions Education: Bridge to Quality*. Washington, DC: The National Academies Press; 2003; p. 46.

Rationale Behind Competencies

Rules for 21st Century Health System

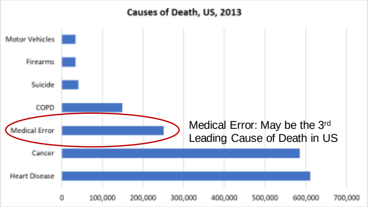
1. Care is based on continuous healing relationships.
2. Care is customized according to patient needs and values.
3. The patient is the source of control.
4. Knowledge is shared and information flows freely.
5. Decision making is evidence-based.
6. Safety is a system property.
7. Transparency is necessary.
8. Needs are anticipated.
9. Waste is continuously decreased.
10. Cooperation among clinicians is a priority.

Six Aims of System Redesign



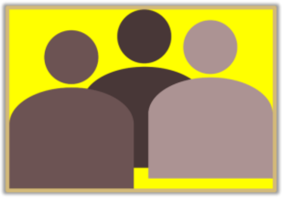
IOM. Crossing the Quality Chasm. Washington, DC: National Academy Press; 2001.

Why do we need system redesign and core competencies?



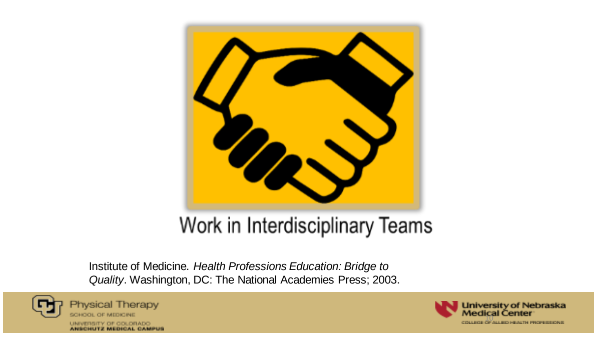
Medical Error: May be the 3rd Leading Cause of Death in US

Makary MA, Daniel M. Medical error—the third leading cause of death in the US. BMJ 2016;353:i2139.



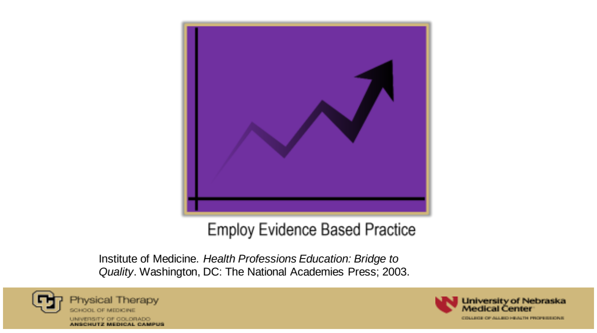
Provide Patient Centered Care

Institute of Medicine. *Health Professions Education: Bridge to Quality*. Washington, DC: The National Academies Press; 2003.



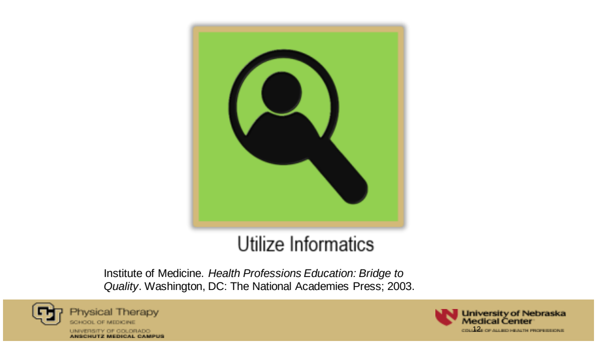
Work in Interdisciplinary Teams

Institute of Medicine. *Health Professions Education: Bridge to Quality*. Washington, DC: The National Academies Press; 2003.



Employ Evidence Based Practice

Institute of Medicine. *Health Professions Education: Bridge to Quality*. Washington, DC: The National Academies Press; 2003.

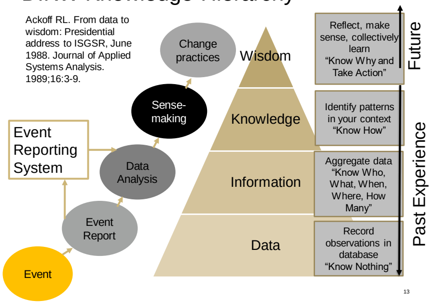


Utilize Informatics

Institute of Medicine. *Health Professions Education: Bridge to Quality*. Washington, DC: The National Academies Press; 2003.

DIKW Knowledge Hierarchy

Ackoff RL. From data to wisdom: Presidential address to ISGSR, June 1988. Journal of Applied Systems Analysis. 1989;16:3-9.



Event

Event Report

Event Reporting System

Data Analysis

Sense-making

Change practices

Wisdom

Knowledge

Information

Data

Reflect, make sense, collectively learn "Know Why and Take Action"

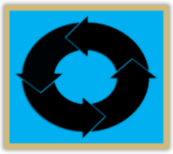
Identify patterns in your context "Know How"

Aggregate data "Know Who, What, When, Where, How Many"

Record observations in database "Know Nothing"

Future

Past Experience



Apply Quality Improvement

Institute of Medicine. *Health Professions Education: Bridge to Quality*. Washington, DC: The National Academies Press; 2003.

Definitions: QA vs. QI

Quality Assurance (QA)

- Benchmark-Maintain
- Accreditation Criteria

Quality Improvement (QI)

- Continuous change (No limit)
- Goal of making improvements at the systems level

What is Quality?

"The degree to which health services for individuals and populations increase the likelihood of desired health outcomes and are consistent with current professional knowledge."

Institute of Medicine (IOM). (2001). Crossing the quality chasm: A new health system for the 21st century. Washington, DC: National Academy Press.

Donabedian's Quality Assessment Framework

Donabedian A. An Introduction to Quality Assurance in Health Care. New York: Oxford University Press; 2003.

Structure	Process	Outcome
How care is delivered, organized, financed People, equipment, policies/procedures Equivalent to system design, determines average quality of care a system can deliver	Tasks performed that are intended to produce an outcome Most closely related to outcomes Causal relationship between process & outcomes	"Ultimate Validator" Changes in individuals and populations due to health care Require time to develop, multifactorial, random component

PROFESSIONAL DOCUMENTS AND ACCREDITATION REQUIREMENTS

CAPTE

7D38

- “Participate in activities for ongoing assessment and *improvement of quality services*.”

7D43

- “Participate in practice management, including marketing, public relations, regulatory and legal requirements, risk management, staffing, and *continuous quality improvement*”

http://www.capteonline.org/uploadedFiles/CAPTEorg/About_CAPTE/Resources/Accreditation_Handbook/CAPTE_PTStandardsEvidence.pdf

---

Minimum Required Skills of PT Graduates at Entry-Level

Quality Improvement

- “Participate in *quality improvement program* of self, peers, and setting/institution”
- “Describe the relevance and impact of *institutional accreditation*”

https://www.apta.org/uploadedFiles/APTAorg/About_Us/Policies/BOD/Education/MinReqSkillsPTGrad.pdf

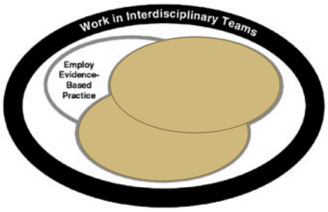
---

Professional Behaviors

Problem Solving

- Post Entry-Level
  - Participates in formal *quality assessment* in work environment

https://dpt.duhs.duke.edu/sites/dpt.duhs.duke.edu/files/ProfessionalBehaviors.pdf

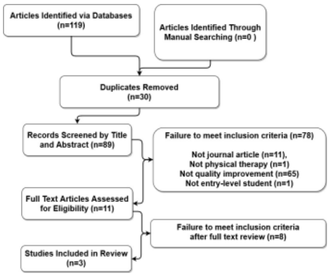

Work in Interdisciplinary Teams
Employ Evidence-Based Practice

Institute of Medicine. *Health Professions Education: Bridge to Quality*. Washington, DC: The National Academies Press; 2003;p. 46.

WHAT IS HAPPENING IN PT EDUCATION NOW?

Scoping Review

The objective of this scoping review was to examine the literature on quality improvement in physical therapy education, with the specific objectives of identifying (1) education activities in quality improvement methods in physical therapy curricula, (2) the developmental level of that education using the University of Toronto framework, and (3) the extent of evaluation of that education using Kirkpatrick's framework.



Articles Identified via Databases (n=119)

Articles Identified Through Manual Searching (n=0)

Duplicates Removed (n=30)

Records Screened by Title and Abstract (n=89)

Failure to meet inclusion criteria (n=78)

Not journal article (n=11),
Not physical therapy (n=1)
Not quality improvement (n=65)
Not entry-level student (n=1)

Full Text Articles Assessed for Eligibility (n=11)

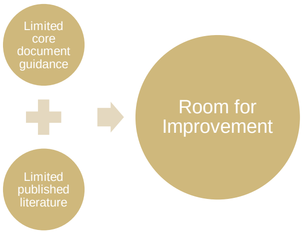
Failure to meet inclusion criteria after full text review (n=8)

Studies Included in Review (n=3)

Results

1. Meyer KP, Willett G. Are physical therapy clinical instructors teaching the Institute of Medicine core competencies? An exploratory investigation using student perceptions. *J Allied Health.* 2007;36(4):e293-312.
2. Dobson RT, Stevenson K, Busch A, Scott DJ, Henry C, Wall PA. A quality improvement activity to promote interprofessional collaboration among health professions students. *Am J Pharm Educ.* 2009;73(4):64.
3. Shrader S, Thompson A, Gonsalves W. Assessing Student Attitudes as a Result of Participating in an Interprofessional Healthcare Elective Associated with a Student-Run Free Clinic. *J Res Interprof Pract Educ.* 2010;1(3).

Summary



Limited core document guidance

Limited published literature

Room for Improvement

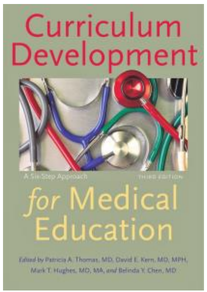
Key Educational Models

- Kern's 6 Step Approach to Curriculum Development
- University of Toronto (AKA IPEC) Framework for the Development of Interprofessional Education Values and Core Competencies
- Miller's pyramid and prism of assessment
- Kirkpatrick Four Levels of Learning Evaluation TM

Key Curricular Models

- **Kern's 6 Step Approach to Curriculum Development**
- University of Toronto (AKA IPEC) Framework for the Development of Interprofessional Education Values and Core Competencies
- Miller's pyramid and prism of assessment
- Kirkpatrick Four Levels of Learning Evaluation TM

Kern's 6 Step Approach to Curriculum Development



Curriculum Development

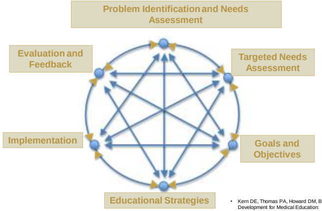
A Six-Step Approach

THIRD EDITION

for Medical Education

Edited by Patricia A. Thomas, MD, David E. Kern, MD, MPH, Mark T. Hughes, MD, MA, and Belinda Y. Chen, MD

Kern's 6 Step Approach to Curriculum Development



Problem Identification and Needs Assessment

Targeted Needs Assessment

Goals and Objectives

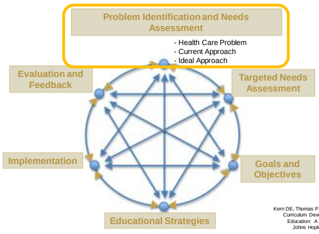
Educational Strategies

Implementation

Evaluation and Feedback

- Kern DE, Thomas PA, Howard DM, Bass EB. Curriculum Development for Medical Education: A Six-step Approach. Johns Hopkins Press; 1998.
- Bennett AAFP Family Medicine Presentation

Kern's 6 Step Approach to Curriculum Development



Problem Identification and Needs Assessment

- Health Care Problem
- Current Approach
- Ideal Approach

Targeted Needs Assessment

Goals and Objectives

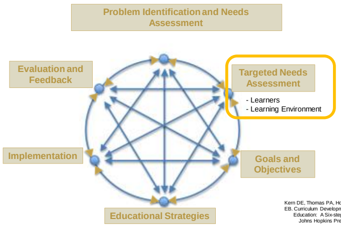
Educational Strategies

Implementation

Evaluation and Feedback

Kern DE, Thomas PA, Howard DM, Bass EB. Curriculum Development for Medical Education: A Six-step Approach. Johns Hopkins Press; 1998.

Kern's 6 Step Approach to Curriculum Development

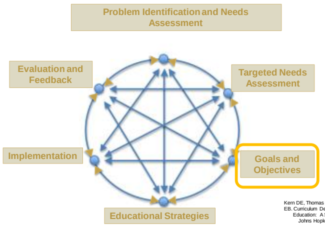

Problem Identification and Needs Assessment
Targeted Needs Assessment
- Learners
- Learning Environment
Goals and Objectives
Educational Strategies
Implementation
Evaluation and Feedback

Kern DE, Thomas PA, Howard DM, Bass EB. Curriculum Development for Medical Education: A Six-step Approach. Johns Hopkins Press; 1998.

Physical Therapy SCHOOL OF MEDICINE UNIVERSITY OF COLORADO ANSCHUTZ MEDICAL CAMPUS

University of Nebraska Medical Center COLLEGE OF ALLIED HEALTH PROFESSIONS

Kern's 6 Step Approach to Curriculum Development

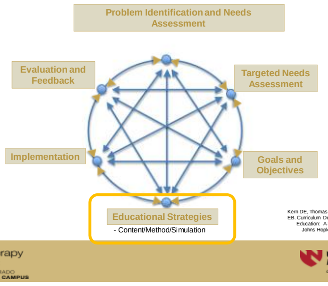

Problem Identification and Needs Assessment
Targeted Needs Assessment
Goals and Objectives
Educational Strategies
Implementation
Evaluation and Feedback

Kern DE, Thomas PA, Howard DM, Bass EB. Curriculum Development for Medical Education: A Six-step Approach. Johns Hopkins Press; 1998.

Physical Therapy SCHOOL OF MEDICINE UNIVERSITY OF COLORADO ANSCHUTZ MEDICAL CAMPUS

University of Nebraska Medical Center COLLEGE OF ALLIED HEALTH PROFESSIONS

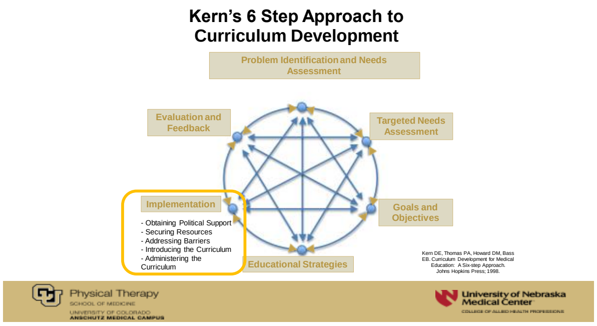
Kern's 6 Step Approach to Curriculum Development


Problem Identification and Needs Assessment
Targeted Needs Assessment
Goals and Objectives
Educational Strategies
- Content/Method/Simulation
Implementation
Evaluation and Feedback

Kern DE, Thomas PA, Howard DM, Bass EB. Curriculum Development for Medical Education: A Six-step Approach. Johns Hopkins Press; 1998.

Physical Therapy SCHOOL OF MEDICINE UNIVERSITY OF COLORADO ANSCHUTZ MEDICAL CAMPUS

University of Nebraska Medical Center COLLEGE OF ALLIED HEALTH PROFESSIONS



Kern’s 6 Step Approach to Curriculum Development

Problem Identification and Needs Assessment

Targeted Needs Assessment

Goals and Objectives

Educational Strategies

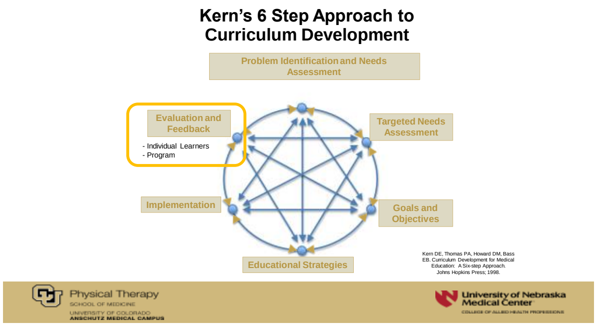
Implementation
- Obtaining Political Support
- Securing Resources
- Addressing Barriers
- Introducing the Curriculum
- Administering the Curriculum

Evaluation and Feedback

Kern DE, Thomas PA, Howard DM, Bass EB. Curriculum Development for Medical Education: A Six-step Approach. Johns Hopkins Press; 1998.

Physical Therapy
SCHOOL OF MEDICINE
UNIVERSITY OF COLORADO
ANSCHUTZ MEDICAL CAMPUS

University of Nebraska Medical Center
COLLEGE OF ALLIED HEALTH PROFESSIONS



Kern’s 6 Step Approach to Curriculum Development

Problem Identification and Needs Assessment

Targeted Needs Assessment

Goals and Objectives

Educational Strategies

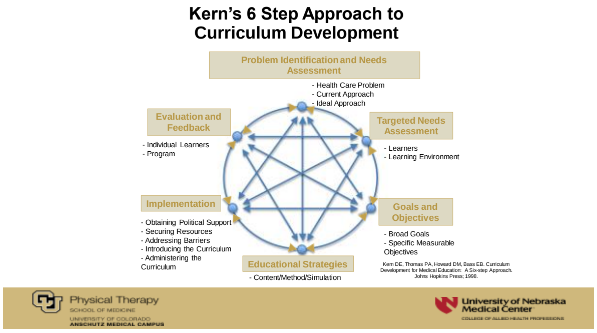
Implementation

Evaluation and Feedback
- Individual Learners
- Program

Kern DE, Thomas PA, Howard DM, Bass EB. Curriculum Development for Medical Education: A Six-step Approach. Johns Hopkins Press; 1998.

Physical Therapy
SCHOOL OF MEDICINE
UNIVERSITY OF COLORADO
ANSCHUTZ MEDICAL CAMPUS

University of Nebraska Medical Center
COLLEGE OF ALLIED HEALTH PROFESSIONS



Kern’s 6 Step Approach to Curriculum Development

Problem Identification and Needs Assessment
- Health Care Problem
- Current Approach
- Ideal Approach

Targeted Needs Assessment
- Learners
- Learning Environment

Goals and Objectives
- Broad Goals
- Specific Measurable Objectives

Educational Strategies
- Content/Method/Simulation

Implementation
- Obtaining Political Support
- Securing Resources
- Addressing Barriers
- Introducing the Curriculum
- Administering the Curriculum

Evaluation and Feedback
- Individual Learners
- Program

Kern DE, Thomas PA, Howard DM, Bass EB. Curriculum Development for Medical Education: A Six-step Approach. Johns Hopkins Press; 1998.

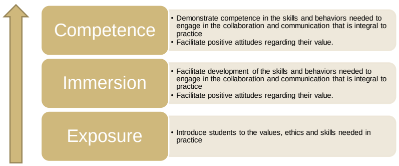
Physical Therapy
SCHOOL OF MEDICINE
UNIVERSITY OF COLORADO
ANSCHUTZ MEDICAL CAMPUS

University of Nebraska Medical Center
COLLEGE OF ALLIED HEALTH PROFESSIONS

Key Educational Models

- Kern’s 6 Step Approach to Curriculum Development
- **University of Toronto (AKA IPEC) Framework for the Development of Interprofessional Education Values and Core Competencies**
- Miller's pyramid and prism of assessment
- Kirkpatrick Four Levels of Learning Evaluation TM

University of Toronto (AKA IPEC) Framework for the Development of Interprofessional Education Values and Core Competencies

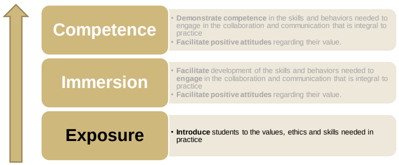


Competence
- Demonstrate competence in the skills and behaviors needed to engage in the collaboration and communication that is integral to practice
- Facilitate positive attitudes regarding their value.

Immersion
- Facilitate development of the skills and behaviors needed to engage in the collaboration and communication that is integral to practice
- Facilitate positive attitudes regarding their value.

Exposure
- Introduce students to the values, ethics and skills needed in practice

University of Toronto (AKA IPEC) Framework for the Development of Interprofessional Education Values and Core Competencies

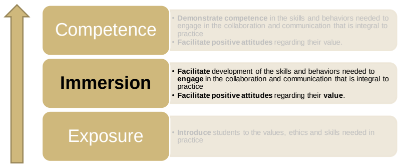


Competence
- **Demonstrate competence** in the skills and behaviors needed to engage in the collaboration and communication that is integral to practice
- **Facilitate positive attitudes** regarding their value.

Immersion
- **Facilitate** development of the skills and behaviors needed to **engage** in the collaboration and communication that is integral to practice
- **Facilitate positive attitudes** regarding their value.

Exposure
- **Introduce** students to the values, ethics and skills needed in practice

University of Toronto (AKA IPEC) Framework for the Development of Interprofessional Education Values and Core Competencies

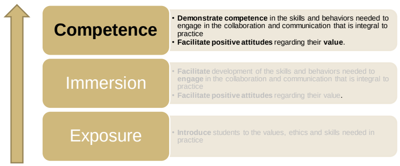


Competence
- **Demonstrate competence** in the skills and behaviors needed to engage in the collaboration and communication that is integral to practice
- **Facilitate positive attitudes** regarding their value.

Immersion
- **Facilitate** development of the skills and behaviors needed to **engage** in the collaboration and communication that is integral to practice
- **Facilitate positive attitudes** regarding their **value**.

Exposure
- **Introduce** students to the values, ethics and skills needed in practice

University of Toronto (AKA IPEC) Framework for the Development of Interprofessional Education Values and Core Competencies

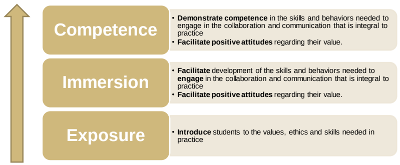


Competence
- **Demonstrate competence** in the skills and behaviors needed to engage in the collaboration and communication that is integral to practice
- **Facilitate positive attitudes** regarding their **value**.

Immersion
- **Facilitate** development of the skills and behaviors needed to **engage** in the collaboration and communication that is integral to practice
- **Facilitate positive attitudes** regarding their value.

Exposure
- **Introduce** students to the values, ethics and skills needed in practice

University of Toronto (AKA IPEC) Framework for the Development of Interprofessional Education Values and Core Competencies



Competence
- **Demonstrate competence** in the skills and behaviors needed to engage in the collaboration and communication that is integral to practice
- **Facilitate positive attitudes** regarding their value.

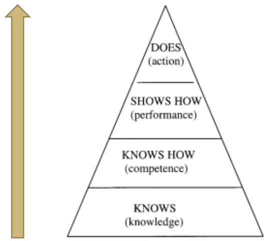
Immersion
- **Facilitate** development of the skills and behaviors needed to **engage** in the collaboration and communication that is integral to practice
- **Facilitate positive attitudes** regarding their value.

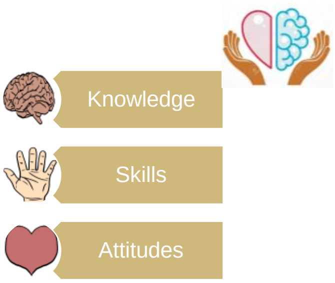
Exposure
- **Introduce** students to the values, ethics and skills needed in practice

Key Curricular Models

- Kern’s 6 Step Approach to Curriculum Development
- University of Toronto (AKA IPEC) Framework for the Development of Interprofessional Education Values and Core Competencies
- **Miller's pyramid and prism of assessment**
- Kirkpatrick Four Levels of Learning Evaluation TM

Miller’s Pyramid of Clinical Competence

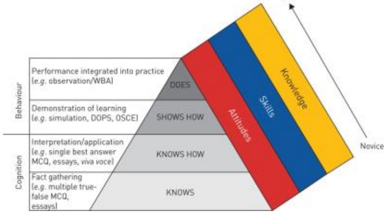




- Knowledge
- Skills
- Attitudes

www.123rf.com

Miller's pyramid and prism of assessment.


Expert
Novice
Behaviour
Cognition
Performance integrated into practice (e.g. observation/WBA)
DOES
Demonstration of learning (e.g. simulation, DOPS, OSCE)
SHOWS HOW
Interpretation/application (e.g. single best answer MCQ, essays, viva voce)
KNOWS HOW
Fact gathering (e.g. multiple true-false MCQ, essays)
KNOWS
Attitudes
Skills
Knowledge

Rob Primhak, and Neil Gibson Breathe 2019;15:163-166

©2019 by European Respiratory Society

Miller's prism of clinical competence (aka Miller's pyramid).
Based on work by Miller GE, The Assessment of Clinical Skills/Competence/Performance; Acad med. 1990. Adapted by Mehay/Burns, UK. 2009
https://breathe.ersjournals.com/content/15/3/163.full

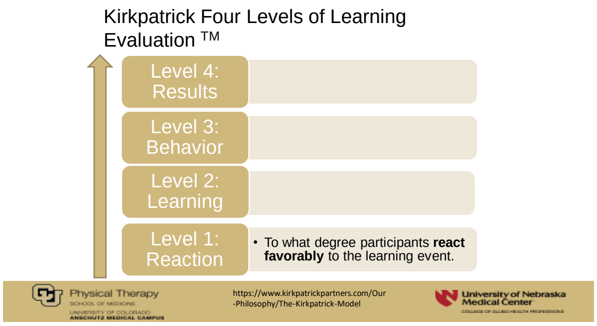
Key Curricular Models

- Kern's 6 Step Approach to Curriculum Development
- University of Toronto (AKA IPEC) Framework for the Development of Interprofessional Education Values and Core Competencies
- Miller's pyramid and prism of assessment
- **Kirkpatrick Four Levels of Learning Evaluation ™**

Kirkpatrick Four Levels of Learning Evaluation ™

Level 4: Results	To what degree targeted outcomes occur, as a result of learning event(s) and subsequent reinforcement.
Level 3: Behavior	To what degree participants apply what they learned during training when they are back on the job.
Level 2: Learning	To what degree participants acquire the intended knowledge, skills and attitudes based on their participation in the learning event.
Level 1: Reaction	To what degree participants react favorably to the learning event.

https://www.kirkpatrickpartners.com/Our-Philosophy/The-Kirkpatrick-Model



Kirkpatrick Four Levels of Learning Evaluation ™

Level 4: Results

Level 3: Behavior

Level 2: Learning

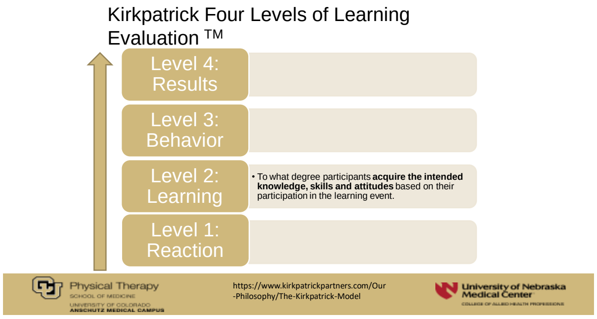
Level 1: Reaction

- To what degree participants **react favorably** to the learning event.

Physical Therapy
SCHOOL OF MEDICINE
UNIVERSITY OF COLORADO
ANSCHUTZ MEDICAL CAMPUS

https://www.kirkpatrickpartners.com/Our-Philosophy/The-Kirkpatrick-Model

University of Nebraska Medical Center
COLLEGE OF ALLIED HEALTH PROFESSIONS



Kirkpatrick Four Levels of Learning Evaluation ™

Level 4: Results

Level 3: Behavior

Level 2: Learning

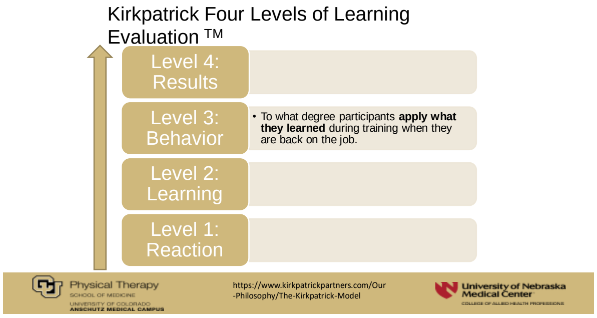
- To what degree participants **acquire the intended knowledge, skills and attitudes** based on their participation in the learning event.

Level 1: Reaction

Physical Therapy
SCHOOL OF MEDICINE
UNIVERSITY OF COLORADO
ANSCHUTZ MEDICAL CAMPUS

https://www.kirkpatrickpartners.com/Our-Philosophy/The-Kirkpatrick-Model

University of Nebraska Medical Center
COLLEGE OF ALLIED HEALTH PROFESSIONS



Kirkpatrick Four Levels of Learning Evaluation ™

Level 4: Results

Level 3: Behavior

- To what degree participants **apply what they learned** during training when they are back on the job.

Level 2: Learning

Level 1: Reaction

Physical Therapy
SCHOOL OF MEDICINE
UNIVERSITY OF COLORADO
ANSCHUTZ MEDICAL CAMPUS

https://www.kirkpatrickpartners.com/Our-Philosophy/The-Kirkpatrick-Model

University of Nebraska Medical Center
COLLEGE OF ALLIED HEALTH PROFESSIONS

Kirkpatrick Four Levels of Learning Evaluation ™

Level 4: Results
- To what degree **targeted outcomes occur**, as a result of learning event(s) and subsequent reinforcement.

Level 3: Behavior

Level 2: Learning

Level 1: Reaction

https://www.kirkpatrickpartners.com/Our-Philosophy/The-Kirkpatrick-Model

Kirkpatrick Four Levels of Learning Evaluation ™

Level 4: Results
- To what degree **targeted outcomes occur**, as a result of learning event(s) and subsequent reinforcement.

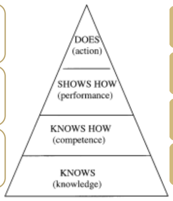
Level 3: Behavior
- To what degree participants **apply what they learned** during training when they are back on the job.

Level 2: Learning
- To what degree participants **acquire the intended knowledge, skills and attitudes** based on their participation in the learning event.

Level 1: Reaction
- To what degree participants **react favorably** to the learning event.

https://www.kirkpatrickpartners.com/Our-Philosophy/The-Kirkpatrick-Model

U.Toronto	Miller's Pyr	Kirkpatrick
Competence	DOES (action)	Level 4: Results
Immersion	SHOWS HOW (performance)	Level 3: Behavior
Exposure	KNOWS HOW (competence)	Level 2: Learning
	KNOWS (knowledge)	Level 1: Reaction



Key Curricular Models

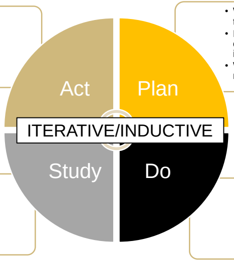
- Kern’s 6 Step Approach to Curriculum Development
- University of Toronto (AKA IPEC) Framework for the Development of Interprofessional Education Values and Core Competencies
- Miller's pyramid and prism of assessment
- Kirkpatrick Four Levels of Learning Evaluation TM

CURRICULUM THREAD FOR IMPLEMENTATION OF QUALITY IMPROVEMENT IN PHYSICAL THERAPY EDUCATION

What is “Entry-level” for QI in DPT Education?

Exposure, Immersion or Competence?

QI Methods...Plan Do Study Act



- Adapt plan and re-test
- Adopt change and test on larger scale
- Abandon change

- What are we trying to do?
- How will we know a change is improvement?
- What data do I need to collect?

- Analyze and interpret data as a team
- Compare results to your goal

- Small test of change
- Collect data
- Address problems/ barriers

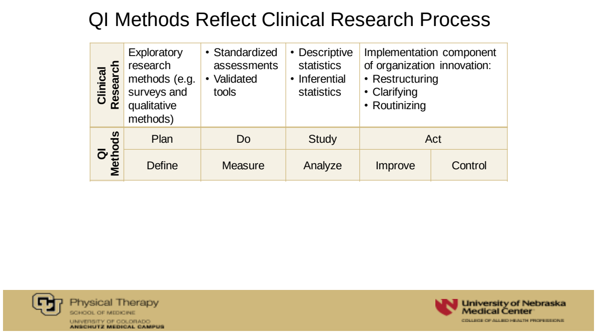
Institute for Healthcare Improvement. http://www.ihi.org/resources/Pages/Tools/PlanDoStudyActWorksheet.aspx

QI Methods...DMAIC

Define	Measure	Analyze	Improve	Control
Define the problem and objectives	How will we measure what we want to improve	Map the process and compare to best practice and/or guidelines	Identify needed improvements (gaps between current process and best practice)	Audit and monitor to sustain improvements

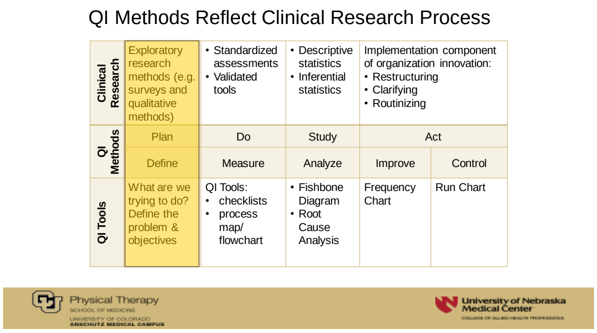
LINEAR/DEDUCTIVE

Johnson JK, Sollecito WA. McLaughlin & Kaluzny’s Continuous Quality Improvement in Health Care. Fifth Edition. Burlington, MA: Jones & Bartlett Learning; 2020.



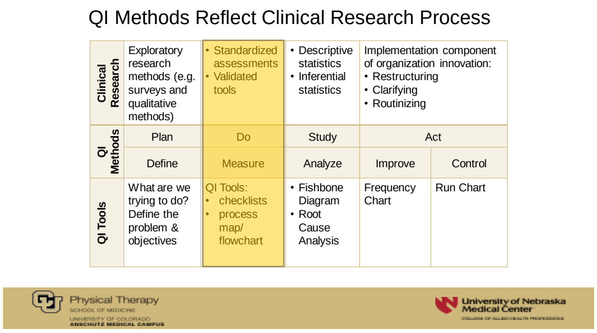
QI Methods Reflect Clinical Research Process

Clinical Research	Exploratory research methods (e.g. surveys and qualitative methods)	• Standardized assessments • Validated tools	• Descriptive statistics • Inferential statistics	Implementation component of organization innovation: • Restructuring • Clarifying • Routinizing	
QI Methods	Plan	Do	Study	Act	
	Define	Measure	Analyze	Improve	Control



QI Methods Reflect Clinical Research Process

Clinical Research	Exploratory research methods (e.g. surveys and qualitative methods)	• Standardized assessments • Validated tools	• Descriptive statistics • Inferential statistics	Implementation component of organization innovation: • Restructuring • Clarifying • Routinizing	
QI Methods	Plan	Do	Study	Act	
	Define	Measure	Analyze	Improve	Control
QI Tools	What are we trying to do? Define the problem & objectives	QI Tools: • checklists • process map/ flowchart	• Fishbone Diagram • Root Cause Analysis	Frequency Chart	Run Chart



QI Methods Reflect Clinical Research Process

Clinical Research	Exploratory research methods (e.g. surveys and qualitative methods)	• Standardized assessments • Validated tools	• Descriptive statistics • Inferential statistics	Implementation component of organization innovation: • Restructuring • Clarifying • Routinizing	
QI Methods	Plan	Do	Study	Act	
	Define	Measure	Analyze	Improve	Control
QI Tools	What are we trying to do? Define the problem & objectives	QI Tools: • checklists • process map/ flowchart	• Fishbone Diagram • Root Cause Analysis	Frequency Chart	Run Chart

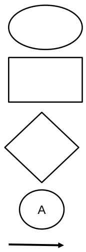
QI Tool...Process Map/Flowchart

Powerful tool for making a process visible

- Compare and contrast actual process to intended process (agree on level of detail; high level vs. detailed)
- Clarifies suppliers of inputs and customers (internal and external)
- Identifies unexpected variation and complexity that may benefit from simplification and standardization
- Identifies areas in which additional data may be needed
- Final map/flowchart creates a shared mental model of the process for team members and can be used in training new team members

Johnson JK, Sollecito WA. McLaughlin & Kaluzny's Continuous Quality Improvement in Health Care. Fifth Edition. Burlington, MA: Jones & Bartlett Learning; 2020.

Map/Flowchart Symbols



Ovals represent structures, information, or action that starts a process

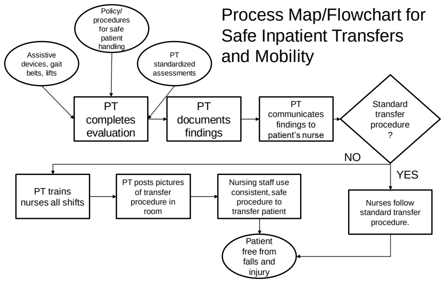
Rectangles represent tasks/activities in the process; multiple arrows may enter a box but usually only one arrow leaves the box

Diamonds represent decisions (Yes/No Question) in the process

Circles with letters or numbers identify a break in the Flowchart, which is continued on the next page

Arrows illustrate the direction or flow of the process

Process Map/Flowchart for Safe Inpatient Transfers and Mobility


Policy/ procedures for safe patient handling
Assistive devices, gait belts, lifts
PT standardized assessments
PT completes evaluation
PT documents findings
PT communicates findings to patient's nurse
Standard transfer procedure ?
NO
YES
PT trains nurses all shifts
PT posts pictures of transfer procedure in room
Nursing staff use consistent, safe procedure to transfer patient
Nurses follow standard transfer procedure.
Patient free from falls and injury

SIPOC for Gait Belt Usage in Safe Patient Transfers and Mobility

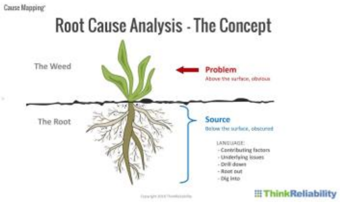
Supplier	Inputs	Process	Output	Customers
• Patient Safety Committee • Central Supply and Laundry	• Policy/procedure for safe patient handling: all clinical staff apply a gait belt to any patient who is not independent in mobility and transfers. • Adequate supply of clean gait belts	House-keeping ensures a clean gait belt is available on a hook by the head of the bed every time they are in the room.	Gait belts are used in 100% of assisted falls decreasing the likelihood of injury to patients and staff during assisted falls.	• Patient and Family • All clinical staff who perform patient transfers • Organization • Healthcare System

QI Methods Reflect Clinical Research Process

Clinical Research	Exploratory research methods (e.g. surveys and qualitative methods)	• Standardized assessments • Validated tools	• Descriptive statistics • Inferential statistics	Implementation component of organization innovation: • Restructuring • Clarifying • Routinizing	
QI Methods	Plan	Do	Study	Act	
	Define	Measure	Analyze	Improve	Control
QI Tools	What are we trying to do? Define the problem & objectives	QI Tools: • checklists • process map/ flowchart	• **Root Cause Analysis** • **Fishbone Diagram**	Frequency Chart	Run Chart

Root Cause Analysis (RCA)

- Retrospective, structured investigation of adverse events, near misses, Sentinel events (Wald & Shojania, 2001)

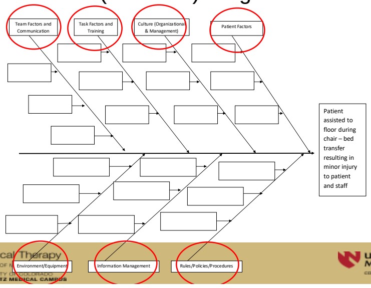

Cause Mapping
Root Cause Analysis - The Concept
The Weed
Problem
Above the surface, obvious
The Root
Source
Below the surface, obscured
LANGUAGE:
- Contributing factors
- Underlying issues
- Drill down
- Root out
- Dig into
ThinkReliability

Root Cause Analysis (RCA)

- Key Processes in RCA toolbox (Battles et al., 2006; Nicolini et al., 2013)
  - Systematic reporting of events w/ action priority based on stratification of risk
  - Structured organization of data with timeline (*what happened*)
  - Group reflection ("*sensemaking conversation*") by those most knowledgeable about situation (*must include front line providers*)
    - *Identify root causes using causal statements, fishbone diagram (why 5x)*
    - *What can be done to prevent it from happening again?*
    - *Design action plan to prevent recurrence with focus on SYSTEM CHANGES AND STRENGTH of potential actions*

(Amo, 1998; Nicolini et al., 2011)

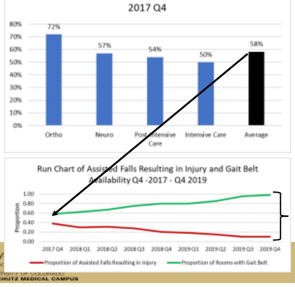
Fishbone (Ishikawa) Diagram


Team Factors and Communication
Task Factors and Training
Culture (Organizational & Management)
Patient Factors
Patient assisted to floor during chair – bed transfer resulting in minor injury to patient and staff
Environment/Equipment
Information Management
Rules/Policies/Procedures

QI Methods Reflect Clinical Research Process

Clinical Research	Exploratory research methods (e.g. surveys and qualitative methods)	• Standardized assessments • Validated tools	• Descriptive statistics • Inferential statistics	Implementation component of organization innovation: • Restructuring • Clarifying • Routinizing	
QI Methods	Plan	Do	Study	Act	
	Define	Measure	Analyze	Improve	Control
QI Tools	What are we trying to do? Define the problem & objectives	QI Tools: • checklists • process map/ flowchart	• Root Cause Analysis • Fishbone Diagram	**Frequency Chart**	**Run Chart**

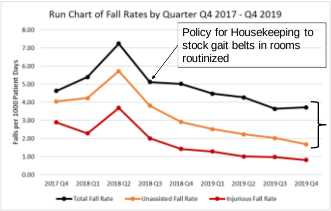
Frequency Chart and Run Chart



Baseline assessment of gait belt availability = 58% across all patient rooms

As availability of gait belts increased, assisted falls resulting in injury decreased

Run Chart Example



Policy for Housekeeping to stock gait belts in rooms routinized

Difference between total fall rate and unassisted fall rate accounted for by increase in assisted falls due to increasing availability of gait belts

Reference for Gait Belt Usage

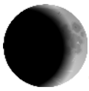
- The odds of falling unassisted are nearly 7 times greater if nurses do NOT identify gait belts as a fall risk reduction intervention as compared to if they do recognize them as an intervention

- The odds of an assisted fall resulting in injury are nearly 4 times greater if a gait belt is NOT used as compared to if a gait belt is used.

Venema DM, Skinner AM, Nailon R, Conley D, High R, Jones KJ. Patient and system factors associated with unassisted and injurious falls: An observational study. BMC Geriatrics. 2019;9(1):348. doi: 10.1186/s12877-019-1368-8. PMID: 31829166

Resources for QI Tools

- The Memory Jogger II Healthcare Edition: A Pocket Guide of Tools for Continuous Improvement and Effective Planning.
- The Lean Six Sigma Pocket Toolbook: A Quick Reference Guide to 100 Tools for Improving Quality and Speed.
- Johnson JK, Sollecito WA. McLaughlin & Kaluzny’s Continuous Quality Improvement in Health Care. Fifth Edition. Burlington, MA: Jones & Bartlett Learning; 2020.



Phases

Early: Faculty teach IOM concepts & QI basics

Middle: Curricular application of QI Concepts

Late: Student application

	Exposure	Immersion	Competence
EARLY	Faculty teach IOM competencies and QI basics		
MIDDLE	Curriculum application of QI concepts in research methods and practice management.		
LATE	Apply QI tools in service learning or clinical education settings		

*Portney & Watkins. Foundations of Clinical Research, 3rd ed. Upper Saddle River, NJ: Pearson Education Inc; 2009.

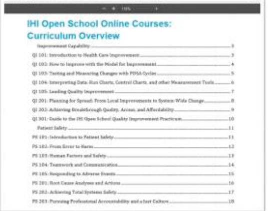
Exposure

Introductory content lecture/Interactive

- **WHY IS IT IMPORTANT? (the HOOK)**
  - ✓ Scope of the problem of medical error (To Err is Human; current estimates) and IOM Competencies as strategy to address the problem
    - *Suggested reading: Crossing the Quality Chasm Executive Summary (https://www.ncbi.nlm.nih.gov/books/NBK222271)*
  - ✓ Relatively few clinical PTs conducting QI and *taking a seat at the QI table* within their organizations
- **Examples of Definitions/Terms:**
  - ✓ Definitions of QI vs. QA
  - ✓ Introduction to QI in context of Clinical Research (in "Research Methods" class
  - ✓ QI Models and Tools
  - ✓ Definitions of types of measures (Outcome, Process, Balancing)

Exposure

Institute *for* Healthcare Improvement Open School



IHI Open School Online Courses: Curriculum Overview

Improvement Capability	3
QI 101: Introduction to Health Care Improvement	3
QI 102: How to Improve with the Model for Improvement	4
QI 103: Testing and Measuring Changes with PDSA Cycles	5
QI 104: Interpreting Data: Run Charts, Control Charts, and other Measurement Tools	6
QI 105: Leading Quality Improvement	7
QI 201: Planning for Spread: From Local Improvements to System-Wide Change	8
QI 202: Achieving Breakthrough Quality, Access, and Affordability	9
QI 301: Guide to the IHI Open School Quality Improvement Practicum	10
Patient Safety	11
PS 101: Introduction to Patient Safety	11
PS 102: From Error to Harm	12
PS 103: Human Factors and Safety	13
PS 104: Teamwork and Communication	14
PS 105: Responding to Adverse Events	15
PS 201: Root Cause Analyses and Actions	16
PS 202: Achieving Total Systems Safety	17
PS 203: Pursuing Professional Accountability and a Just Culture	18

36 Courses and other resources are **FREE for individual students, residents, and faculty**

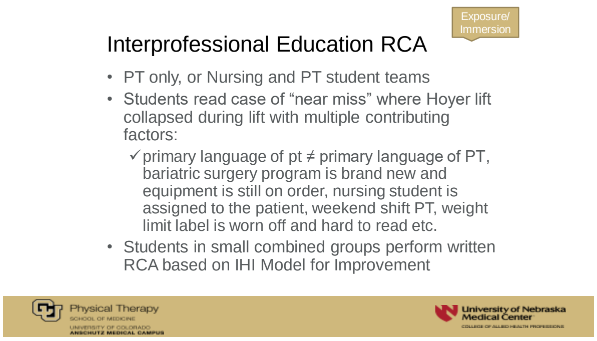
Exposure

QI Olympics (Hansen, MedEdPORTAL)

Total Session Time	2hr 15 min
Introduction and Overview of the Model for Improvement	10 min
Personal QI Worksheet (completion and discussion)	10 min
QI Team Building Game 1	50 min
QI Team Building Game 2	50 min
Full Group Debriefing	15 min

- ✓ Example team building game: The Egg Drop
  - *Team task: design egg packaging to best protect the egg during drop*
  - *Outcomes: (1) Egg breaking or not (2) Package score* = weight (g) + height (cm)+ cost ($)*
  - *Teams provided limited building materials; each material assigned a "cost"*
  - *Specific design change tested and PDSA worksheet completed for each attempt*

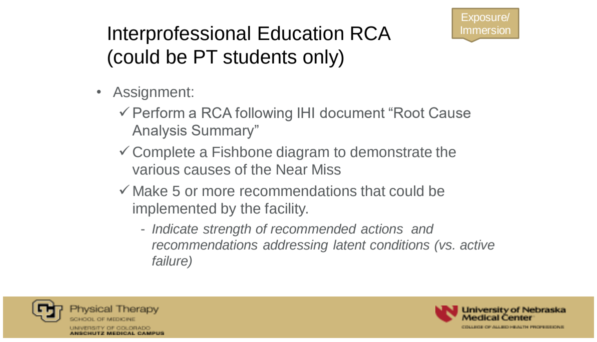
Hanson E, Rosenbluth G, McPeak K. QI Olympics: a game-based educational activity in quality improvement. *MedEdPORTAL*. 2013;9:9421. https://doi.org/10.15766/mep_2374-8265.9421



Exposure/ Immersion

Interprofessional Education RCA

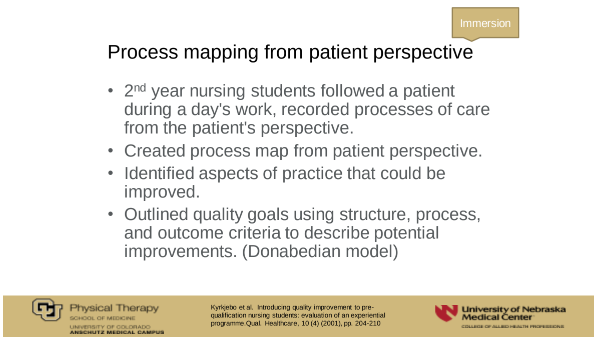
- PT only, or Nursing and PT student teams
- Students read case of “near miss” where Hoyer lift collapsed during lift with multiple contributing factors:
  - ✓ primary language of pt ≠ primary language of PT, bariatric surgery program is brand new and equipment is still on order, nursing student is assigned to the patient, weekend shift PT, weight limit label is worn off and hard to read etc.
- Students in small combined groups perform written RCA based on IHI Model for Improvement



Exposure/ Immersion

Interprofessional Education RCA (could be PT students only)

- Assignment:
  - ✓ Perform a RCA following IHI document “Root Cause Analysis Summary”
  - ✓ Complete a Fishbone diagram to demonstrate the various causes of the Near Miss
  - ✓ Make 5 or more recommendations that could be implemented by the facility.
    - *Indicate strength of recommended actions and recommendations addressing latent conditions (vs. active failure)*



Immersion

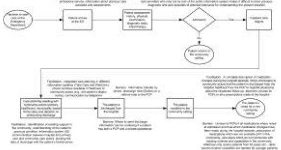
Process mapping from patient perspective

- 2nd year nursing students followed a patient during a day's work, recorded processes of care from the patient's perspective.
- Created process map from patient perspective.
- Identified aspects of practice that could be improved.
- Outlined quality goals using structure, process, and outcome criteria to describe potential improvements. (Donabedian model)

Kyrkjebo et al. Introducing quality improvement to pre-qualification nursing students: evaluation of an experiential programme.Qual. Healthcare, 10 (4) (2001), pp. 204-210

Immersion

Kyrkjebo et al, Student nurses: Process mapping from patient perspective



Karolinska Institute, Sweden. Example above Johnson et al BMJ Qual Safety 2012

Copyright © BMJ Publishing Group Ltd and the Health Foundation. All rights reserved.

BMJ Quality & Safety

Kyrkjebo et al. Introducing quality improvement to pre-qualification nursing students: evaluation of an experiential programme.Qual. Healthcare, 10 (4) (2001), pp. 204-210

Immersion

Act
Plan
Study
Do

Clinical Education PDSA activity

- Students identify a “problem” during Clinical Education
  - ✓At individual level and MEANINGFUL to THEM
  - ✓How to know it’s a problem?
    - - *Practice deviates from known “best practice”*
    - - *Outcomes (of some identified item) have declined from previous*

Immersion

Act
Plan
Study
Do

Clinical Education PDSA activity

- Develop a mini-individual (personal) QI project.
  - ✓Obtain/create data to help form measures (outcome, process, balancing)
- Complete 2 rounds of PDSA
- Reflect and write brief summary of experience
- Submit assignment on Learning Management System (Canvas, Blackboard)
- Examples: Difficulty including standardized outcome measures during evaluations, high personal cancellation rate, inefficiency in documentation etc.

Immersion/
Competence

Shrader, et al, Interprofessional Elective

Caring for the Community

- 2 credit hour elective
- MD, PA, Pharmacist, & PT students
- Eleven weekly 2 – hour lectures
- Interprofessional small group activities
- Patient care at student run free clinic 5 evenings per semester
- Quality improvement project related to student-run clinic
- Patient case presentation

Define
Measure
Analyze
Improve
Control

Immersion/
Competence

QI Methods Reflect Clinical Research

- Teach measurement of validity: predictive values of standardized fall-risk assessments
- Case Study of hospital comparing positive predictive value of three nursing fall risk assessments
- Reviewed records in past year
  - 26 patients fell
  - 37 patients did not fall
- Determined best tool using 2 cut points for each tool
  - John Hopkins Fall Risk Assessment Tool
  - Morse Falls Scale
  - Fall Risk Assessment Scoring System (FRASS)

FRASS Cutpoint at 15+ High Risk For Falls

Assessment Results	Did the patient fall?		
	Fall	No Fall	Total
+ Result (FRASS ≥ 15)	a = 17 (true +)	b = 8 (false +)	25
- Result (FRASS < 15)	c = 9 (false -)	d = 29 (true -)	38
	26	37	63

Sensitivity a/a+c 17/26 = 65% of fallers had + test (≥ 15)
Specificity d/d+b 29/37 = 78% of nonfallers had – test (< 15)
PV+ a/a+b 17/25 = 68% of those with + test (≥ 15) fell
PV- d/c+d 9/38 = 76% of those with – test (< 15) did not fall

Comparing Results of Three Tools

Tool (Cut Point)	Sensitivity	Specificity	+ Predictive Value	- Predictive Value
Johns Hopkins (6+)	100%	0%	41%	0%
Johns Hopkins (13+)	88%	41%	51%	83%
Morse (45+)	100%	24%	48%	100%
Morse (75+)	50%	70%	54%	67%
FRASS (8+)	100%	24%	48%	100%
FRASS (15+)	65%	78%	68%	76%

Students Decide!

- Form Groups of 5 – 6 students
- You are the PTs on this hospital's fall risk reduction team
- Which tool will you recommend the nurses use to screen for fall risk?
- Be prepared to provide a rationale for your decision

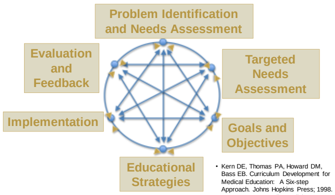
Application of Key Educational Models to Quality Improvement Curriculum

WORKSHOP

Reminder: Key Curricular Models

- Kern's 6 Step Approach to Curriculum Development
- University of Toronto (AKA IPEC) Framework for the Development of Interprofessional Education Values and Core Competencies
- Kirkpatrick Four Levels of Learning Evaluation TM
- Miller's pyramid and prism of assessment

Kern's 6 Step Approach to Curriculum Development



Problem Identification and Needs Assessment

Targeted Needs Assessment

Goals and Objectives

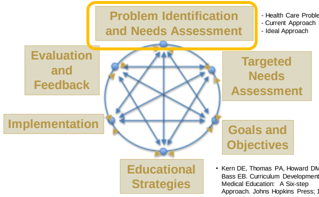
Educational Strategies

Implementation

Evaluation and Feedback

- Kern DE, Thomas PA, Howard DM, Bass EB. Curriculum Development for Medical Education: A Six-step Approach. Johns Hopkins Press; 1998.
- Bennett AAFP Family Medicine Presentation

Kern’s 6 Step Approach to Curriculum Development


Problem Identification and Needs Assessment
Targeted Needs Assessment
Goals and Objectives
Educational Strategies
Implementation
Evaluation and Feedback

- Health Care Problem
- Current Approach
- Ideal Approach

- Kern DE, Thomas PA, Howard DM, Bass EB. Curriculum Development for Medical Education: A Six-step Approach. Johns Hopkins Press; 1998.
- Bennett AAFP Family Medicine Presentation

Needs assessment

- **CAPTE criteria**
  - ✓ 7D38: Participate in activities for ongoing assessment and improvement of **quality** services.
  - ✓ 7D43 Participate in practice management, including marketing, public relations, regulatory and legal requirements, risk management, staffing, and **continuous quality improvement**
- **IOM competencies**

Overlap of Core Competencies for Health Professionals

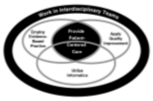

Work in Interdisciplinary Teams
Employ Evidence-Based Practice
Provide Patient-Centered Care
Apply Quality Improvement
Utilize Informatics

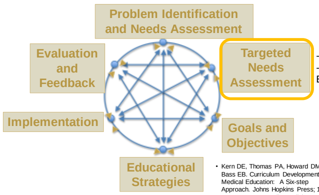
Figure 3-1 Relationship among core competencies for health professionals.

Activity #1: Problem Identification and Needs Assessment

- Create team…
- Who does the problem impact?
- How important is the problem qualitatively and quantitatively?
- What is the current approach to teaching this content?
- What is the “ideal” approach to teaching this content?
  - ✓ Things you’ve tried that have been successful w/QI?
  - ✓ Things you’ve tried with other content that you can apply to QI?
  - ✓ Other examples that we have presented?
  - ✓ Additional research?

Adapted from Bennett AAFP Family Medicine

Kern’s 6 Step Approach to Curriculum Development



Problem Identification and Needs Assessment

Targeted Needs Assessment

- Learners
- Learning Environment

Goals and Objectives

Educational Strategies

Implementation

Evaluation and Feedback

- Kern DE, Thomas PA, Howard DM, Bass EB. Curriculum Development for Medical Education: A Six-step Approach. Johns Hopkins Press; 1998.
- Bennett AAFP Family Medicine Presentation

Adapted from Bennett AAFP Family Medicine

Activity #2: Targeted Needs Assessment
Collecting relevant information…

- Informal Discussion with Faculty and other stakeholders
- Focus groups
- Questionnaires
- Audit of current performance
- Strategic planning session

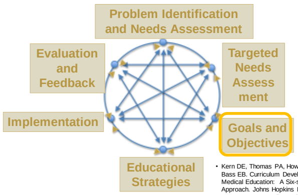
Adapted from Bennett AAFP Family Medicine

Activity #2: Needs Assessment of Targeted Learners

Learners	Learning Environment
Students? Faculty?	• Related existing curricula
• Experiences	• Barriers
• Expectations	• Resources
• Existing proficiencies (KSA)	• Inter-professional opportunities
• Preferred learning methods	• Clinical Education opportunities
	• Pro bono clinic

Adapted from Bennett AAFP Family Medicine

Kern's 6 Step Approach to Curriculum Development


Problem Identification and Needs Assessment
Targeted Needs Assess ment
Goals and Objectives
Educational Strategies
Implementation
Evaluation and Feedback

- Broad Goals
- Specific Measurable Objectives

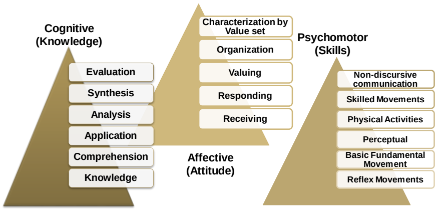
- Kern DE, Thomas PA, Howard DM, Bass EB. Curriculum Development for Medical Education: A Six-step Approach. Johns Hopkins Press; 1998.
- Bennett AAFP Family Medicine Presentation

Activity #3: Goals and Objectives

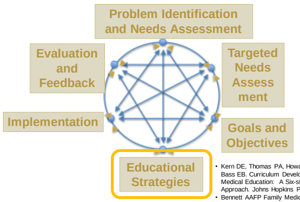
- Specific & Measurable…5 elements
  - Who will do how much of what by when?
- Objectives for Individual Learner and Program
- Objectives directed towards:
  - 1)Learner (KSA's) 2)Process 3)Outcome

	Learner (KSAs)	Process	Outcome
Individual Learner	Quantify what a student will know, perform, value (KSA) after training	Participate in designated learning activities	Apply QI processes in clinical environment
Program	Quantify what cohort will know, perform, value (KSA) after training	Educate Faculty through specific training	Prepare students to use QI skills in entry-level practice

Verb Selection


Cognitive (Knowledge)
Evaluation
Synthesis
Analysis
Application
Comprehension
Knowledge
Characterization by Value set
Organization
Valuing
Responding
Receiving
Affective (Attitude)
Psychomotor (Skills)
Non-discursive communication
Skilled Movements
Physical Activities
Perceptual
Basic Fundamental Movement
Reflex Movements

Kern's 6 Step Approach to Curriculum Development



Problem Identification and Needs Assessment

Targeted Needs Assessment

Goals and Objectives

Educational Strategies

- Content/Method/Simulation

Implementation

Evaluation and Feedback

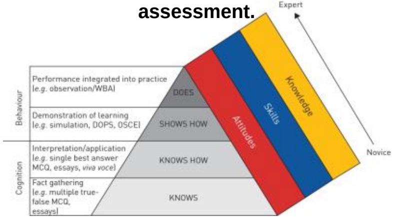
- Kern DE, Thomas PA, Howard DM, Bass EB. Curriculum Development for Medical Education: A Six-step Approach. Johns Hopkins Press; 1998.
- Bennett AAFP Family Medicine Presentation

University of Toronto (AKA IPEC) Framework for the Development of Interprofessional Education Values and Core Competencies: Keys

Competence	• **Demonstrate competence** in the skills and behaviors needed to engage in the collaboration and communication that is integral to practice • **Facilitate positive attitudes** regarding their **value**.
Immersion	• **Facilitate** development of the skills and behaviors needed to **engage** in the collaboration and communication that is integral to practice • **Facilitate positive attitudes** regarding their **value**.
Exposure	• **Introduce** students to the values, ethics and skills needed in practice

---

Miller's pyramid and prism of assessment.


Expert
Novice
Behaviour
Cognition
Performance integrated into practice (e.g. observation/WBA)
Demonstration of learning (e.g. simulation, DOPS, OSCE)
Interpretation/application (e.g. single best answer MCQ, essays, *viva voce*)
Fact gathering (e.g. multiple true-false MCQ, essays)
DOES
SHOWS HOW
KNOWS HOW
KNOWS
Attitudes
Skills
Knowledge

Rob Primhak, and Neil Gibson Breathe 2019;15:163-166

©2019 by European Respiratory Society

Miller's prism of clinical competence (aka Miller's pyramid).
Based on work by Miller GE, The Assessment of Clinical Skills/ Competence/Performance; Acad med. 1990. Adapted by Mehay/Burns, UK. 2009
https://breathe.ersjournals.com/content/15/3/163.full

Activity #4: Educational Strategies

- Where to include?
  - ✓PT only vs. Inter-professional?
  - ✓Potential courses: Research Methods/EBP, Practice Management, Clinical Education
    - - *Integrated vs. Standalone?*
  - ✓Classroom, lab, clinical education, service learning, pro bono clinic

Adapted from Bennett AAFP Family Medicine

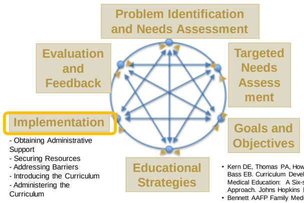
Activity #4: Educational Strategies

Method	Knowledge	Problem-Solving	Attitudes	Clinical Skills	Non-Clinical Behaviors
Readings	+++	+	+	+	
Lecture	+++	+	+	+	
Discussion	++	++	+++	+	+
Problem-based Learning	++	+++	+		+
Simulation	+	++	++	+++	+
Reflection/Review of Simulation Video	+			+++	+
Real Life Clinical Experience	+	++	++	+++	+++

+ = appropriate in some cases, useful as adjunct to other methods
++ = good match
+++ = excellent match

Adapted from: Kern DE, Thomas PA, Howard DM, Bass EB. Curriculum Development for Medical Education: A Six-step Approach. p.40. Johns Hopkins Press; 1998.

Kern's 6 Step Approach to Curriculum Development



- Obtaining Administrative Support
- Securing Resources
- Addressing Barriers
- Introducing the Curriculum
- Administering the Curriculum

Pilot Testing?

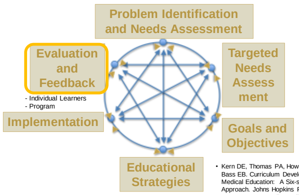
- Kern DE, Thomas PA, Howard DM, Bass EB. Curriculum Development for Medical Education: A Six-step Approach. Johns Hopkins Press; 1998.
- Bennett AAFP Family Medicine Presentation

Activity #5: Implementation

1. Identify resources
   a. Personnel
   b. Time
   c. Facilities and equipment
   d. Funding
2. Obtain support
   a. Deans, chairs, faculty, CIs, Preceptors, hospital administrators
3. Develop structure to support curriculum
   a. Dedicated faculty w/time to teach content
   b. Broader faculty participation
4. Anticipate barriers
   a. Personnel
   b. Time – competing demands
   c. Facilities and equipment
   d. Funding
   e. Attitudes
5. Plan to introduce curriculum
   a. Pilot test
   b. Phase-in
   c. Full implementation

Adapted from Bennett AAFP Family Medicine

Kern's 6 Step Approach to Curriculum Development



Problem Identification and Needs Assessment

Targeted Needs Assessment

Goals and Objectives

Educational Strategies

Implementation

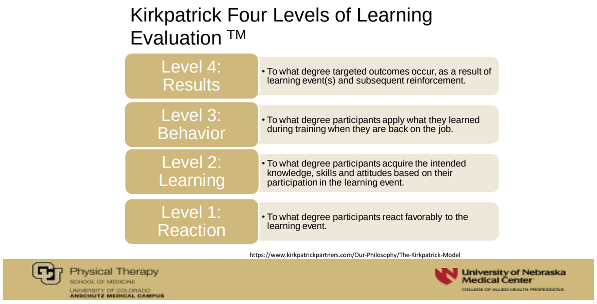
Evaluation and Feedback
- Individual Learners
- Program

- Kern DE, Thomas PA, Howard DM, Bass EB. Curriculum Development for Medical Education: A Six-step Approach. Johns Hopkins Press; 1998.
- Bennett AAFP Family Medicine Presentation

Return to Activity #3

- Remember back to objectives:
  - ✓How might they be assessed?

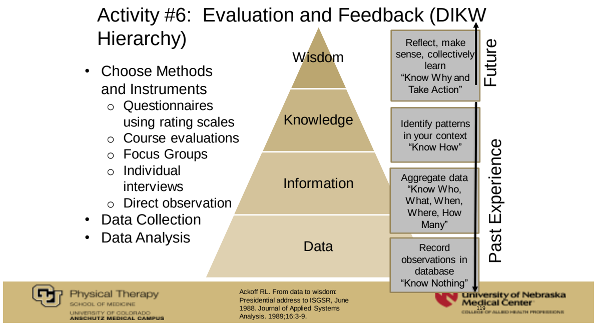
Adapted from Bennett AAFP Family Medicine



Kirkpatrick Four Levels of Learning Evaluation ™

Level 4: Results	• To what degree targeted outcomes occur, as a result of learning event(s) and subsequent reinforcement.
Level 3: Behavior	• To what degree participants apply what they learned during training when they are back on the job.
Level 2: Learning	• To what degree participants acquire the intended knowledge, skills and attitudes based on their participation in the learning event.
Level 1: Reaction	• To what degree participants react favorably to the learning event.

https://www.kirkpatrickpartners.com/Our-Philosophy/The-Kirkpatrick-Model

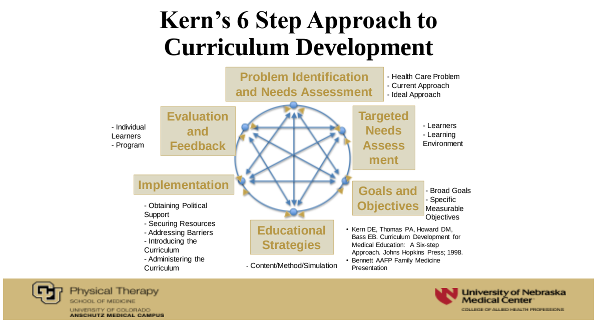


Activity #6: Evaluation and Feedback (DIKW Hierarchy)

- Choose Methods and Instruments
  - ○ Questionnaires using rating scales
  - ○ Course evaluations
  - ○ Focus Groups
  - ○ Individual interviews
  - ○ Direct observation
- Data Collection
- Data Analysis

Wisdom	Reflect, make sense, collectively learn "Know Why and Take Action"
Knowledge	Identify patterns in your context "Know How"
Information	Aggregate data "Know Who, What, When, Where, How Many"
Data	Record observations in database "Know Nothing"

Ackoff RL. From data to wisdom: Presidential address to ISGSR, June 1988. Journal of Applied Systems Analysis. 1989;16:3-9.



Kern's 6 Step Approach to Curriculum Development

Problem Identification and Needs Assessment
- Health Care Problem
- Current Approach
- Ideal Approach

Targeted Needs Assessment
- Learners
- Learning Environment

Goals and Objectives
- Broad Goals
- Specific Measurable Objectives

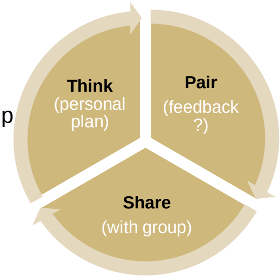
Educational Strategies
- Content/Method/Simulation

Implementation
- Obtaining Political Support
- Securing Resources
- Addressing Barriers
- Introducing the Curriculum
- Administering the Curriculum

Evaluation and Feedback
- Individual Learners
- Program

- Kern DE, Thomas PA, Howard DM, Bass EB. Curriculum Development for Medical Education: A Six-step Approach. Johns Hopkins Press; 1998.
- Bennett AAFP Family Medicine Presentation

Small group discussion



Think (personal plan)

Pair (feedback ?)

Share (with group)

Adapted from Bennett AAFP Family Medicine

In closing:

- Regulation is the floor (QA)
  - ✓ Institution: JCAHO, CARF, State Surveys
  - ✓ PT Program:
    - *CAPTE accreditation standards-minimum*
- Opportunities for curricular integration, unlimited

tami.struessel@cuanschutz.edu
nicole.sleddens@unmc.edu
kjjones57@gmail.com