Let The Games Begin: Fun Activities For Teaching QI

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Disclosures

• Susan Wu has stock in Eli Lilly. Jennifer Maniscalco, Ronen Zipkin, Kathleen Ostrom, Joyce Koh, and Vivian Lee have no financial relationships to disclose.
• The presenters listed above will not be discussing any off-label or unapproved treatments.
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Objectives

By the end of the workshop, participants will be able to:

- Describe the requirements for quality improvement education in (undergraduate and) graduate medical education programs
- Demonstrate quality improvement theory principles using interactive games
- Integrate interactive games into a quality and safety curriculum
Aims For Improvement

1999: “To Err is Human: Building a Safer Health System”
   - Brought tremendous public attention to the crisis of patient safety

2001: “Crossing the Quality Chasm: A New Health System for the 21st Century”
   - Detailed explanation of the huge divide between what we know to be good health care and the health care people actually receive

Aims For Improvement - IOM

1. Health care must be **safe** (the system, not just the individual)
2. Health care should be **timely** (prompt attention)
3. Health care must be **effective** (should match science)
4. Health care should be **efficient** (reduce waste/cost)
5. Health care should be **equitable** (does not discriminate)
6. Health care should be **patient-centered** (culture, specific needs)
Practice Based Learning and Improvement
- Systematically analyze practice using quality improvement methods, and implement changes with the goal of practice improvement

Systems Based Practice
- Work in inter-professional teams to enhance patient safety and improve patient care quality
- Advocate for quality patient care and optimal patient care systems
- Participate in identifying system errors and implementing potential systems solutions

Little ambiguity
1. All residents must be involved in a quality improvement project
2. Residents must be active learners and participants in this process
3. Residents should receive appropriate training related to QI methodology

Room for interpretation
1. How should residents/learners be exposed to the concepts of QI?
2. What is the best way to facilitate their learning of QI?
Quality Improvement

Understanding the challenges of a trainee QI curriculum...

1. Adult learning principles
2. Experiential learning
3. Practical and fun
4. Forming the framework for how you can teach this at your institution to your learners
5. Exposing the learners to the different steps in the QI process

CHLA Resident QI Curriculum

<table>
<thead>
<tr>
<th>PL-1</th>
<th>Complete 3 Institute for Healthcare Improvement QI modules and “Safe and Sound” patient safety training</th>
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<tbody>
<tr>
<td>PL-2</td>
<td>Participate in a year-long QI project (option to join existing project or start a new one)</td>
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<tr>
<td>PL-3</td>
<td>Present QI project during morning resident conference (include aim statement, process map, fishbone, PDSA, follow-up items)</td>
</tr>
<tr>
<td>ALL</td>
<td>Attend 4 required noon conferences throughout the year:</td>
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<tr>
<td></td>
<td>• Introduction to QI</td>
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<tr>
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<td>• Process mapping</td>
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<td>• PDSA</td>
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<td>• Measurement/Run charts</td>
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</table>
CHLA Fellow QI Curriculum

- 9 month curriculum
- Required completion of 3 IHI modules
- Monthly 1 hour sessions:
  - 10 minutes didactic
  - 25 minutes game/interactive exercise
  - 25 minutes time to work in groups
- Each fellow assigned to QI project group (some new, some existing)
- Each group is interdisciplinary and has minimum 1 physician mentor, 1 non-physician mentor, and 1 QI “coach”
- Oral presentation of storyboard during fellows conference
- Presentation at QI poster session in June

Games for Quality Improvement*

1. Being able to understand the processes of the system and their interactions
2. Being able to have good ideas for change
3. Being able to test changes in action (PDSA cycle)
4. Create support structures for change
5. Address resistance to change
6. Support teamwork and collaboration

* The Game Guide: Interactive Exercises for Trainers to Teach Quality Improvement in HIV Care, August 2006
UNDERSTANDING THE PROCESS

PROCESS P.I.

Objectives

- Demonstrate approach to document work processes
- Recognize the importance of engaging all disciplines in change efforts
- Understand the role of process variation in outcomes and waste
- Identify several types of waste
Small group activity: Process mapping

- Break into 4 groups
- Assign roles: lead interviewer, scribe, reporter
- Each group will create a process map for one patient, from the care team member’s point of view
  - Ideally, the team follows the care team member to the patient care area and documents: where they go, what they go, how long it takes
  - If not enough time, can accomplish by interviewing
- Use interview guide to get started
Identifying waste

• Waste = Anything that does not add value
  – Some are required, some not required and can be eliminated
• Examples:
  – Time (ie waiting)
  – Defects (ie needing re-do something done wrong)
  – Motion (ie walking back and forth to supply room, med room)
  – Transportation (ie moving unneeded items)
  – Inventory (ie too many nurses on low census unit)
  – Processing (ie unneeded signatures)
  – Overproduction (ie making too many admission packets)

Understanding variation

- Where might different people be doing things differently/inconsistently?
- Where are things not happening as they should 100% of the time?
- What are they doing instead?

• Some variation in care is expected and appropriate
• Variation means that some patients are not receiving good care
• Variation shows that same outcome can be achieved with different care
• Variation can indicate health disparities
• Opportunities for improvement
Small group activity: Process map

- Use BLUE sticky notes to identify areas of waste/redundancy
- Use PURPLE sticky notes to identify areas with high variation
- Use PINK sticky notes to identify 1-2 key leverage points

UNDERSTANDING PROCESSES

INSANITY: Doing the same thing over and over and expecting a different result. - Albert Einstein

PLAN-DO-STUDY-ACT

TENNIS BALL TOSS
Objectives

- Learn how to approach improving a process
- Learn how to build on knowledge gained from one test in designing a second test
- Learn how multiple testing cycles lead to improvement
- Learn the concept of “breakthrough” improvement

What are we trying to accomplish?

How will we know that a change is an improvement?

What change can we make that will result in an improvement?
TENNIS BALL TOSS

- Get in a circle of 15-20 people.
- One person starts by tossing the tennis ball to someone else who hasn’t yet touched it, remembering who they threw it to.
- The person who starts must be the last person to touch the ball.
- If the ball is dropped, the process starts over with the clock still running.
- One of the facilitators will be the time keeper.
- Document your time on the chart provided.

MEASURING FOR CHANGE

SKITTLES GAME
Objectives

- Know that variation is expected any time you measure something
- Recognize that variation is related to the structure of a system and not how individuals perform
- Identify components and concepts of run charts

SKITTLES GAME

1. Shake skittles bag with left hand 3 times
2. Hold medicine cup with right hand
3. Insert medicine cup into skittles bag
4. Obtain full cup then level off with left hand
5. Place contents of cup onto paper plate
6. Inspectors will count green skittles
7. Recorder writes number of green skittles on chart and plot.
8. Dump skittles back into the bag, and repeat
Run Chart Rules

Rule 1: A Shift: 6 or more

Rule 2: A Trend 5 or more

Rule 3: Too many or too few runs

Rule 4: An astronomical data point

Provost LP, The Data Guide

CHANGE MANAGEMENT

SELLING SPREAD
Objectives

- Understand some of the challenges in implementing change
- Demonstrate how to present change concepts in a way that appeals to more people

Reasons We Resist Change

- Ego, personal autonomy
- Stability of existing routine
- Hinders work flow
- Tunnel vision
- Real or perceived limit on resources
- Accumulation of rules and changes
- Lack of negative consequences
Factors affecting how people approach change

- **Relative Advantage:** Is this change going to be better than what’s in place? How?
- **Simplicity:** Is this going to be easy to learn and use?
- **Compatibility:** Is this change consistent with our values and needs?
- **Trialability:** Will people have a chance to test this idea in a safe setting?
- **Observability:** Will we be able to see the effects of the change relatively quickly?
- **(Evidence:** degree to which this is supported by literature)

Rogers, *Diffusion of Innovations*, 1962

**“Selling Spread” Game:**
How do new products or processes become the norm?
Driverless cars...

- Video 1
- Video 2

“Selling Spread” Game:
What did we learn?
Rogers’ Five Categories of Adopters

- **Innovators**
  - Beta-testers, introduce new ideas, take risks, can be seen as “out there”

- **Early Adopters**
  - Logical, data-driven, opinion-leaders

- **Early Majority- Tipping Point**
  - Deliberate and embrace, start diffusion to the masses

- **Late Majority**
  - Skeptical, adopt out of peer pressure, economic need, convenience

- **Laggards**
  - No other alternative; can also halt change

**SELLING SPREAD**

**WRAPPING UP**

**EFFECTIVE DEBRIEFING**
Why is debriefing important following an experiential learning activity?

How does debriefing relate to teaching and learning?

Kolb Learning Cycle

https://www.verbaltovisual.com/sketchnoting-for-experiential-learners-vtv-episode16/
## Debriefing Experiential Learning in 5 steps

<table>
<thead>
<tr>
<th>Step</th>
<th>Description</th>
<th>Example Questions</th>
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<tbody>
<tr>
<td>1.</td>
<td>Experiencing</td>
<td>Engages in shared activity</td>
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<tr>
<td></td>
<td></td>
<td>What is going on?</td>
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<td>2.</td>
<td>Publishing</td>
<td>Shares observation and emotional reactions</td>
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<tr>
<td></td>
<td></td>
<td>What did you observe?</td>
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<tr>
<td></td>
<td></td>
<td>How did you feel about it?</td>
</tr>
<tr>
<td>3.</td>
<td>Processing</td>
<td>Systematic examination, reconstruct interactions and identify patterns</td>
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<tr>
<td></td>
<td></td>
<td>How do you account for that?</td>
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<tr>
<td></td>
<td></td>
<td>How or why was that significant?</td>
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<tr>
<td>4.</td>
<td>Generalizing</td>
<td>Use principles to generalize to real world</td>
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<tr>
<td></td>
<td></td>
<td>What did you learn?</td>
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<tr>
<td></td>
<td></td>
<td>What does that help explain?</td>
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<tr>
<td>5.</td>
<td>Applying</td>
<td>Plan practical use of learning</td>
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<td></td>
<td></td>
<td>How can you apply it to your project?</td>
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What?  
So What?  
Now What?
How was your experience?  
How can you incorporate these games?  
What challenges do you anticipate?

<table>
<thead>
<tr>
<th>Challenges</th>
<th>Some Solutions</th>
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<tbody>
<tr>
<td>Curriculum Capacity</td>
<td>• Incorporate into existing activities</td>
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<tr>
<td></td>
<td>• Restructure clinical teaching units and/or models of care</td>
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<td></td>
<td>• Team-based approach to projects</td>
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<tr>
<td></td>
<td>• “Spill-over” educational value</td>
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<tr>
<td>Curriculum Fragmentation</td>
<td>• Recurring curriculum elements</td>
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<tr>
<td>Faculty Capacity</td>
<td>• Train the Trainer Initiatives</td>
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<td></td>
<td>Transform them into teachers of QI, not experts in QI</td>
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<td></td>
<td>• Utilize non-MD content experts or educators</td>
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<td>• Provide incentives – APT process</td>
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<tr>
<td>Limited Resources</td>
<td>• Collaborate – Institutional level curricula</td>
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<tr>
<td></td>
<td>• Incorporate trainees into ongoing organizational projects</td>
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<td></td>
<td>• Leverage accreditation requirements</td>
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Unintended Educational Consequences

• Changes in what trainees learn
• Altered clinical workflow or creation of new work
• Loss of opportunities for teaching and learning
• Reduced autonomy related to clinical decision making
• Decreased opportunity to develop competency in specific skills