Quality Improvement:
Getting Started, Making Changes, Getting Results

Joy Goebel RN PhD
Marie Bakitas RN PhD
Karen Kehl RN PhD

Disclosures
Joy Goebel, Marie Bakitas and Karen Kehl have no real or perceived conflicts of interest that relate to this presentation.

Objectives
• Compare and contrast QI with research and EBP
• Discuss tools and measurement in QI projects
• Begin the process of planning a QI project using the Plan, Do, Study, Act (PDSA) model
Improving Care

Improving care requires a systematic process of defining problems in order to identify potential causes with the goal of developing strategies to improve care.

This process requires being able to measure care.

Quality Improvement

(Shirley et al 2011)

- The purpose of QI is to improve internal processes and practices with a specific patient group or organization
- QI protocols are less formal and rigorous and may change throughout the course of a QI project
- Data Collection in QI is usually rapid cycle and uses minimal to moderate time and resources

<table>
<thead>
<tr>
<th>Quality Improvement</th>
<th>Evidence Based Practice</th>
<th>Research</th>
</tr>
</thead>
<tbody>
<tr>
<td>Purpose</td>
<td>Improve patient care</td>
<td>Change practice/ implement best practice</td>
</tr>
<tr>
<td>Methods</td>
<td>PDSA, FADE, Six Sigma</td>
<td>Numerous models</td>
</tr>
<tr>
<td>Level</td>
<td>Unit, Institution</td>
<td>Individual practitioner, Institution, Population</td>
</tr>
<tr>
<td>Change of:</td>
<td>Process, Practice</td>
<td>Understanding</td>
</tr>
<tr>
<td>Participant consent</td>
<td>Not usually needed</td>
<td>Sometimes</td>
</tr>
<tr>
<td>Dissemination</td>
<td>Usually internal (unit, agency), May be published</td>
<td>Usually be internal (unit agency) or external (publication or presentation)</td>
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Quality Improvement Tools

There are numerous tools to examine care processes. These tools guide the collection of data in order to identify possible problems. Tools provide a way to display data.

Cause-and-Effect Fishbone Diagram

A cause-and-effect or fishbone diagram helps to organize a lot of information that may relate to a problem.

A benefit of this diagram is that different levels of "cause" can be identified. There generally are categories of "cause" such as people, processes, management, equipment, and environment.
Control Charts

Control charts are useful to show the variation that occurs with a particular quality measure of interest. Control charts show how the subject of interest changes over time and whether a process is stable and “in control.”

A control chart has an upper limit of control, a lower limit, and a line that represents an average. Data are plotted in real time and a nurse can tell if the number of events is heading toward or exceeding either the upper or the lower control line in order to make adjustments in care.
Histograms

A histogram provides a function similar to the control chart in displaying the frequency of events.

PC-NCT Multi-Site Aggregate Report

**Spiritual Concerns**

Number of Concerns over Time by Health Factor Type

multi-site report

Multi-Site Report

Symptoms Domain Assessed Using PC-NCT in 2012

Dyspnea

Pain

Number of Visits
Characteristics of Measures

- Clinically relevant
- Actionable
- [http://as800.chcr.brown.edu/pcoc/](http://as800.chcr.brown.edu/pcoc/)
- [http://prc.coh.org/res_inst.asp](http://prc.coh.org/res_inst.asp)

Types of Measures

- Process measure – what you do to the patient
  - Did the nurse ask about whether you have pain?
- Outcome measure – benefit to the patient
  - Did the care you received from the palliative care team improve your pain?

<table>
<thead>
<tr>
<th>Measurement for Research</th>
<th>Measurement for Learning and Process Improvement</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Purpose</strong></td>
<td>To discover new knowledge</td>
</tr>
<tr>
<td></td>
<td>To bring new knowledge into daily practice</td>
</tr>
<tr>
<td><strong>Tests</strong></td>
<td>One large &quot;blind&quot; test</td>
</tr>
<tr>
<td></td>
<td>Many sequential, observable tests</td>
</tr>
<tr>
<td><strong>Biases</strong></td>
<td>Control for as many biases as possible</td>
</tr>
<tr>
<td></td>
<td>Stabilize the biases from test to test</td>
</tr>
<tr>
<td><strong>Data</strong></td>
<td>Gather as much data as possible, &quot;just in case&quot;</td>
</tr>
<tr>
<td></td>
<td>Gather &quot;just enough&quot; data to learn and complete another cycle</td>
</tr>
<tr>
<td><strong>Duration</strong></td>
<td>Can take long periods of time to obtain results</td>
</tr>
<tr>
<td></td>
<td>&quot;Small tests of significant changes&quot; accelerates the rate of improvement</td>
</tr>
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Institutional Review Board

- Will your project require IRB review?
  - Is it "research"?
  - Does it involve "human subjects"?

- Federal Common Rule
  - "Research" is defined as "a systematic investigation, including research development, testing and evaluation, designed to develop or contribute to generalizable knowledge."

Research Requiring IRB Review

<table>
<thead>
<tr>
<th>Probably requires review</th>
<th>Probably does not require review</th>
</tr>
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<tbody>
<tr>
<td>Designed to contribute to generalized knowledge</td>
<td>Designed to gain knowledge to improve care in a particular setting</td>
</tr>
<tr>
<td>Plan to disseminate beyond the agency</td>
<td>Plan to disseminate within the agency</td>
</tr>
<tr>
<td>Conditions are other than standard care</td>
<td>Conditions are based on standard care with an improvement</td>
</tr>
<tr>
<td>Risks of participation exceed those of usual care</td>
<td>Risks of participation are the same as usual care</td>
</tr>
<tr>
<td>Information collected goes beyond routine care</td>
<td>Information collected is part of routine care</td>
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How to get started?

"We can’t solve problems by using the same kind of thinking we used when we created them.”
- Albert Einstein
PDSA – the Three Questions

• **The three questions:**
  • What are we trying to accomplish?
    • The aims statement
  • How will we know if the change is an improvement?
  • What changes can we make that will result in improvement?

Plan-Do-Study-Act (PDSA)

• **Plan** - the change to be tested or implemented
  • Determine the clinical issue
  • Search for best practice
    • Accepted clinical guidelines
    • Systematic reviews
    • Other research evidence
  • Develop project proposal
    • Plan location, time, who will be involved, how the change will take place, what data needs to be collected

• **Do** - carry out the test or change
  • Plan the change to be tested or implemented

• **Study** - data before and after the change and reflect on what was learned
  • Analyze data
  • Compare results to predictions
  • Summarize what was learned

• **Act** - plan the next change cycle or full implementation
  • Carry out the plan
  • Document observations
  • Record data
Plan for Whom?
- Who are you planning for?
  - Yourself, programmatic, leadership, query or mandate
- What the stakeholder is most concerned about?
  - Costs, quality, query, mandate
- Do you need to make a business case?
  - Use stakeholder to define other parameters (e.g., time and ROI)

Identify the Problem?
- Is data available?
  - Medical charts, administrative (drugs and procedures), facility surveys
- What data collection is feasible?
  - Hard and often unrealistic step
- Can others’ experience inform how to characterize the problem?
  - Talk to patients, families, clinical teams
  - Look at what is published, especially quality measures (process and outcome)

Recruiting an Implementation Team
- Who
  - Representation of all parties who will be impacted
    - Nurses
      - RN, On-call, LPN/LVN, CNA
    - Social workers
    - Counselors
    - Medical directors
    - Pharmacy
    - Volunteers
    - Patient/family
- When
  - Team should be formed during the PLAN stage so they fully understand the implementation plan
- How
  - Clinical release time
  - Rewards for participation
Implementation Team Roles

- Project leader
- Champions
- Change leaders
- Data collectors

Do

Do find out who needs to approve the project
- Administration
- Unit managers
- Practice council
- Institutional review board

Tailoring Change to Organization Resources

- Leadership support
- Multidisciplinary cooperation
- Decision-making style
- Organization size and divisions
- Location
- Competition
- Documentation system
- Technology
Do

- Engage implementation team
- Collect baseline data
- Begin practice change
- Document outcomes
- Record responses to change

Dos and Don’ts of Implementation

- **Do** pilot the change with one team, group, unit, etc.
  - Gives you the chance to
    - Tailor the change to your organization
    - Discover implementation issues
    - Determine if the change is beneficial in your setting

- **Don’t** try to change too much at the same time
  - Too many processes
  - Too much of the organization

Steps for Do

- Determine implementation team
  - Who will you ask for which role?
- Begin communication of change
  - Awareness campaign
  - Staff education (who, what, when, where)
- Tailor to organizational resources
- Get all appropriate approvals
- Begin practice change
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Study

- Examine the measures, did they measure what we wanted?
- Compare outcomes after practice change to previous outcomes
- Determine costs of the change

Study

- Complete the analysis
  - How will you display the results
- What does the data from our trial implementation tell us?
- Summarize what was learned

Act

- Decide if outcomes are worth the cost of change
- What action are you going to take as a result of this cycle (adopt, adapt, abandon)?
- Describe what modifications to the plan will be made for the next cycle from what you learned
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Act
• Make any necessary changes in plan
• Re-pilot, if necessary
• Begin cycle again to implement on a wider basis
• Are we ready to implement the change?

Act
• What documentation is required to capture the memory?
• Policy
• Process flowcharts
• Supporting documents
• Who needs to be mentored, trained and coached?
• Establish future plan (what should we be improving next)

Example QI Projects
• QUEST for Pain Relief (M. Bakitas)
• VA Quality Improvement Resource Center (J. Goebel)
• QI in Home Hospice (K. Kehl)
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The Cycle of Improvement

- Change Policy & Improve Practice
- Clinical Challenges
- Evidence from Systematic Study
- QI (PDSA) & Research

Improving Pain and Symptom Management

- 5th V/S JCAHO standards
- EBP/PEP Publications
- Patient suffering unnecessary pain
- Pain Assessment & Management
- QI & Research (e.g. *Q.U.E.S.T.)

Q.U.E.S.T. for Pain Relief
Co-Investigators: Bookbinder/Bakitas

- Quality, Use of Pain Research & Evidence-Based Practice for Solutions to Treat Patients with Pain
- Goal: Form clinical/researcher linkages to improve pain care through research conduct and utilization
- Outcomes: Identified problem of neuropathic pain & value of clinician/researcher partnerships

Funding: Purdue Frederick/Oncology Nursing Foundation Clinical Scholars Program (1999-2000)
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Palliative Care Improvement

Study/Check: Identify why are you measuring?

- What will you do with the information?
  - Improve care in a single agency
  - Generalize to the population
  - Publication, presentation
- Drives the approvals needed
  - IRB, informed consent, HIPAA
Identify Available Measures:
Try not to Recreate the Wheel

Vision for QI Measures*

• Patient focused, family centered, clinically meaningful and manageable, psychometrically valid, reliable, and responsive.
• Initial focus on quality improvement and accountability. (e.g. HCAPS)
• Measures must incorporate patient and family perspective.
• Examine both the process and outcomes.
• Future research is needed to understand interrelationship.

*Adapted from TOOLKIT: http://as800.chcr.brown.edu/pccs/

VA Palliative Care Centers
Centers for End of Life Care (CELC) (J. Goebel)

• Promise Center
  • Bereaved family survey
• Implementation Center
  • ELNEC for Veterans
  • EPPEC for Veterans
• Quality Improvement Resource Center
  • Development of EHR templates to collect data about key processes of quality of care
Bereaved Family Survey
Overall, how would you rate the care that [patients name] received in the last month of [his/her] life?

- Excellent
- Very Good
- Good
- Fair
- Poor

Quality Improvement Resource Center
• Development of EHR tools to standardize and improve palliative care
• EHR tools allows the collection of data to examine for processes over time
• EHR tools provides an opportunity for QI on patient level, facility level, VISN level or national level
Example QI Projects

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QI in Home Hospice (K. Kehl)

- Measure: Patients with documented pain >3 will have pain reduced to <3 within 48 hours.

Baseline Results for Pain Follow Up Within 48 Hours

Post-Implementation Results for Pain Follow Up Within 48 Hours
Intervention

- Education – All RN staff within one week
- Dedicated time in office to call patients who had pain >3

Changes

- Instead of dedicated staff office time:
  - Per diem nurse to call
  - LPN to call
  - On-call nurse to call within 24 hours

- Final decision:
  - Case manager will call within 24 hours
  - If requested by case manager, on-call nurse will call same day after hours
Conclusions

• QI is an integral part of state of the science palliative care
• QI poses challenges and opportunities for clinicians