IDENTIFYING CLINICAL RESEARCH QUESTIONS THAT FIT PRACTICE PRIORITIES

Module I: Identifying Good Questions
Objective

• Describe how to find good clinical questions for research.
Identifying good clinical questions is necessary to answer the following:

- **Do we have the science** to support patient care decisions?
- Do we know **where** to find it and **how** to use it?
Where do I look to find GOOD Clinical Questions?

- Consider your own patient care setting:
  - What have you encountered in taking care of patients this week that caused you to ask, “Why do we do it this way?”
- Use a system to capture these questions that occur at the point of care:
  - Post-it® Notes system to jot down and track questions
  - Focus Group method to brainstorm topics of interest to staff
  - Research priorities identified by professional associations
  - National guidelines, benchmarks or quality indicators
Post-It© Notes System

• Jot down clinical questions on a Post-it© note as they arise on the unit
• Stick the notes on a board in a central location
• Staff can view, edit or add to the collection of questions
• During unit based research or PI meetings, these questions can be reviewed, discussed and prioritized for future research
Focus Group Method

• During unit research or clinical practice committee meetings use a flip chart to brainstorm potential ideas for research
• Identify moderator to lead the brainstorming session
• Include a multidisciplinary group of participants when possible
• Break the work into 2 sessions:
  1. Brainstorm a list of potential questions
  2. Narrow the list down to the top 4-5 ideas based on interest
# How to get the Brainstorming Started in the Focus Groups

<table>
<thead>
<tr>
<th>Identify the following for your patient care area:</th>
<th>Examples</th>
</tr>
</thead>
<tbody>
<tr>
<td>Patient care situations that are high risk or of high clinical benefit</td>
<td>Cardiac arrest, falls</td>
</tr>
<tr>
<td>Important clinical outcomes</td>
<td>Infection, pain</td>
</tr>
<tr>
<td>High volume situations</td>
<td>IV insertion, urethral catheter care</td>
</tr>
<tr>
<td>High organizational relevance</td>
<td>Length of stay, patient satisfaction</td>
</tr>
<tr>
<td>Regulatory requirement</td>
<td>Hand washing, restraint use</td>
</tr>
<tr>
<td>Key organizational goal / objectives</td>
<td>CMS Indicators (e.g. medication reconciliation)</td>
</tr>
</tbody>
</table>
Examples of Identified Research Priorities from Professional Practice Associations

AACN’s Research Priority Areas
• Effective and appropriate use of technology to achieve optimal patient assessment, management, and/or outcomes
• Creating a healing, humane environment
• Processes and systems that foster the optimal contribution of critical care nurses
• Effective approaches to symptom management
• Prevention and management of complications

ONS Research Priority Areas
• Health promotion
• Cancer symptoms and side effects
• Effects of treatment
• Long-term survivorship
• End of life issues
• Psychosocial and family issues
• Nursing-sensitive patient outcomes
Examples of Research Priorities from National Guidelines, Benchmarks or Quality Indicators

- Patient and Family Engagement
- Safety
- Care Coordination
- Palliative and End-of-Life Care
- Equitable Access
- Elimination of Overuse
- Population Health
- Infrastructure Supports

AHRQ Patient Safety Indicators (PSIs)
- Death among surgical inpatients with serious treatable complications
- Iatrogenic pneumothorax
- Postoperative wound dehiscence
- Accidental puncture or laceration
- Complication/patient safety for selected indicators

AHRQ Inpatient Quality Indicators (IQIs)
- Abdominal aortic aneurysm (AAA) repair mortality
- Hip fracture mortality rate
- Mortality for selected surgical procedures
- Mortality for selected medical conditions
Tips for Finding a Clinical Research Question

• Where to Look:
  – Begin with the patient and the care you provide
  – Brainstorm with peers at both the unit and organization level
  – Use research agendas of national organizations

• Narrow down the choices:
  – High risk
  – High volume
  – High benefit
  – Something that excites you!
Examples of Clinical Questions

• Is the monitoring lead we choose to view the same for all patients, or is it selected based on diagnosis?
• Should hyper-oxygenation always be provided prior to endotracheal suctioning?
• Should we use dye in enteral feedings to identify pulmonary aspiration?
• Should we use hypothermia units to lower temperatures in febrile patients?
IDENTIFYING CLINICAL RESEARCH QUESTIONS THAT FIT PRACTICE PRIORITIES

Module II: Prioritizing The Questions
Objective

- Describe how to prioritize clinical questions for potential research projects.
Process for Evaluating Questions

• Once the list of clinical questions has been created, the next steps are:
  – “Triaging” the clinical questions
  – Focusing your questions
  – Prioritizing your questions
Step One: “Triage” the Questions into one of the Following Groups

- **Staff Development Questions**
  - Example: How do I interpret an elevated pCO2 in COPD?

- **Clinical Care Questions**
  - Example: Do blood glucose values using point of care testing correlate with central lab values?

- **Standards & Care Process Questions**
  - Example: Are the urethral catheters left in according to guidelines?

- **Questions for Administrative / Clinical Leadership**
  - Example: Do nurses provide better care if they are allowed to take a nap on night shift?

Eliminate Questions that Can be Answered by Education or Administration
Step Two: Prioritize the Clinical Questions

- Staff Development Questions
- Clinical Care Questions
- Standards & Care Process Questions
- Questions for Administrative / Clinical Leadership

Prioritize the Clinical Questions
Be Pragmatic When Prioritizing

The most ideal clinical questions are those with:

- High institutional priority
  - Addresses regulatory requirements
  - Meets key organizational goals / objectives
  - Addresses balanced score card targets

- Large number of subjects available

- Important clinical outcomes

- No requirement for additional funding or equipment

- Existing tools for measurement (questionnaires)

- The least amount of outside work required (outside usual care routines)
How To Prioritize Clinical Questions

Use a systematic approach to align clinical questions with unit and institutional priorities.

<table>
<thead>
<tr>
<th>Identify:</th>
<th>Examples:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gaps in unit quality care metrics</td>
<td>Blood stream infection rates</td>
</tr>
<tr>
<td>Gaps in the science supporting national guidelines</td>
<td>Code blue response times</td>
</tr>
<tr>
<td>New therapeutic opportunities to improve care</td>
<td>Which hemostasis device is best for preventing hematomas and bleeding?</td>
</tr>
</tbody>
</table>
Institutional Priorities Are Often Based On National Indicators:

- National Quality Forum (NQF) priorities
- Centers for Medicare and Medicaid Services (CMS) indicators
- Professional Practice Organizations
  - (e.g. American Hospital Association; American Heart Association)
- National Clinical Practice Guidelines
Institutional Priorities are Reflected on the Balanced Score Card (BSC)

- Balanced score cards show measures of quality
  - Clinical Quality
  - Customer Service / Satisfaction
  - Work Culture Quality
  - Financial Balance
- Many BSC indicators are publicly reported data
- Balanced score cards exist across care settings (acute, ambulatory and community settings)
Balanced Scorecards Identify Priorities

**CLINICAL QUALITY & INTERNAL BUSINESS**
Goal: Foster enhanced clinical care and new program development to improve quality patient safety, and efficiency.

**CUSTOMER SERVICE**
Goal: Continuously improve customer service for both internal and external customers.

**WORK CULTURE**
Goal: Continuously improve the work culture consistent with the DUHS value proposition.

**FINANCES**
Goal: Generate sufficient resources to reinvest in people, technology, buildings, research, and education.
Institutional Priorities are Set Using National Guidelines

ACC/AHA 2005 Guideline for the Diagnosis and Management of Chronic Heart Failure in the Adult

AHA/ACC Guideline suggests obtaining daily weights to monitor heart failure exacerbation
## Rating Clinical Feasibility and Priority For Clinical Questions

<table>
<thead>
<tr>
<th>Priority Evaluation Criteria</th>
<th>N/G Feeding</th>
<th>Family Visit</th>
</tr>
</thead>
<tbody>
<tr>
<td>• <strong>High clinical benefit / impact</strong></td>
<td>++</td>
<td></td>
</tr>
<tr>
<td>– Important clinical outcomes / high risk</td>
<td></td>
<td></td>
</tr>
<tr>
<td>– High volume patient care situation</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• <strong>High fiscal benefit / impact</strong></td>
<td>+</td>
<td></td>
</tr>
<tr>
<td>• <strong>High organizational relevance</strong></td>
<td>+</td>
<td></td>
</tr>
<tr>
<td>– Regulatory requirement</td>
<td></td>
<td></td>
</tr>
<tr>
<td>– Key organizational goal / objectives</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• <strong>Eliminates time consuming activities with little value added to patient care.</strong></td>
<td>+++</td>
<td></td>
</tr>
<tr>
<td>• <strong>Least amount of energy expenditure to accomplish</strong></td>
<td>++</td>
<td></td>
</tr>
<tr>
<td>• <strong>High priority area on BSC</strong></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

---

O = not present  
++ = moderately present  
+++ = highly present  
+ = slightly present
IDENTIFYING CLINICAL RESEARCH QUESTIONS THAT FIT PRACTICE PRIORITIES

Module III: Identifying the Type of Question: Evidence-based Practice (EBP) Process Improvement (PI), and Research
Objective

• Describe how to identify types of clinical questions
What IS the Goal of Process Improvement, Research and Evidence-Based Practice?

So that care provided to patients is based on scientific evidence and meets patient needs…

To improve clinical outcomes!
Focus your question - What do you really want to know? Is it…

• To evaluate existing quality of care delivery systems?
• To evaluate a process change for improvement?
• To develop new knowledge or address a gap in science?
• To evaluate how existing knowledge is being used?
What You Want To Know Should Define The Type Of Question

1. Questions that seek to answer a system issue, evaluate processes of care or improve care delivery are:
   - Process Improvement questions
   - Quality assurance; quality improvement questions
   - Healthcare delivery science questions

2. Questions that seek to answer something new or generate new knowledge about an un- or under-explored area of patient care are:
   - Research questions
   - Scientific inquiry questions

3. Questions that focus on how well existing science is used in care are:
   - Evidence-based practice questions
   - Implementation science questions
Clinical Questions – Is it PI/QI, Research or EBP?

<table>
<thead>
<tr>
<th>Title</th>
<th>Type of Project</th>
</tr>
</thead>
<tbody>
<tr>
<td>Patients’ perceived educational needs during treatment for Acute Myeloid Leukemia</td>
<td>PI/QI  x</td>
</tr>
<tr>
<td>Protocol for measuring PTTs for patients with central lines on heparin drips</td>
<td>Research  x</td>
</tr>
<tr>
<td>Groin complications following cardiac cath</td>
<td>EBP  x</td>
</tr>
<tr>
<td>Structured Rounding in the CCU</td>
<td>EBP  x</td>
</tr>
<tr>
<td>Use of oral care to prevent VAP</td>
<td>EBP  x</td>
</tr>
<tr>
<td>Med reconciliation regarding continuation of chronic pain management in ICU patients</td>
<td>EBP  x</td>
</tr>
<tr>
<td>Wake up in the morning: &quot;sedation/vap research&quot;</td>
<td>EBP  x</td>
</tr>
</tbody>
</table>
What is Evidence-Based Practice (EBP)?

The conscientious, explicit, and judicious use of [existing] scientific evidence to make decisions about the care of individual patients.

EVIDENCE-BASED PRACTICE FRAMEWORK

Step 1: Formulate a question
Step 2: Identify articles and other evidence-based resources that answer the question
Step 3: Critically appraise the existing evidence to assess its validity
Step 4: Apply the evidence
Step 5: Re-evaluate the application of evidence and areas for improvement

http://www.biomed.lib.umn.edu/learn/ebp/mod01/step1.html
Formulating the EBP Question

Use **PICO** to remember the steps:

- The **P**atient’s disorder or disease
- The **I**ntervention or finding under review
- The **C**omparison intervention (if applicable—not always)
- The **O**utcome
PICO - Exercise

Clinical Question

“In a 55-year-old man with a 35-year-old history of chronic smoking, would the administration of bupropion as compared to a nicotine replacement therapy (NRT) be a better therapy in causing long-term abstinence from smoking?”
PICO - Exercise

In this question, what is the:

- **Patient’s** disorder or disease?
  - 35 yr. history of smoking

- **Intervention** under review?
  - Bupropion therapy

- **Comparison** intervention?
  - Nicotine replacement

- **Outcome** of interest?
  - Abstinence from smoking
PICO – Tool to Frame EBP Questions

• EBP - evaluates use or adoption of existing evidence in practice

• **BUT**
  – What if evidence shows that one treatment is better?
  – Or, what if evidence shows that either treatment is effective as long as one or the other is used?

• Based on the evidence available, an EBP project should evaluate whether existing evidence has been adopted in practice
What is Process Improvement (PI)?

• PI evaluates *how well* the evidence is being applied or used in practice

• Use of analytical decision making tools to *make observations of care processes* and determine when these processes are working effectively and when they are not.

• Variation is present in any process; deciding when the variation is acceptable and when it needs correction is the key to quality control.

W. Edwards Deming
PROCESS/QUALITY IMPROVEMENT FRAMEWORK

For quality and process evaluation use a systematic approach:

D – Define the problem
M – Measure existing practice and identify gaps
A – Analyze
I - Implement a process change
C – Control the long term implementation of change

When engaging in system and process evaluation, “No framework is canonical”

Example of a Process Improvement Question

“For patients admitted with an acute myocardial infarction and with a history of smoking, are we effectively delivering education about smoking cessation strategies and outpatient resources prior to discharge from the acute care setting in accordance with guidelines?”

How well am I performing and documenting care according to evidence-based guidelines?
Measures of Quality and Variation in Process Outcomes

- Process control charts are one way to assess variation in quality.
- A control chart shows “how well” by showing the variation in a measurement over time.
NC PREVENT AVOIDABLE READMISSIONS COLLABORATIVE
Mar 2012 - Mar 2013

COLLABORATIVE TOOLS AND STRATEGIES
- IHI “Creating an Ideal Transition Home to Reduce Avoidable Rehospitalizations” model
- Hospital self assessment and analysis of 5 readmissions
- Key changes:
  - Enhanced assessment of patient post-hospital needs
  - Effective teaching and enhanced patient learning
  - Ensure post-hospital care follow-up

COLLABORATIVE GOALS
- Decrease all-payor hospital wide 30 day readmission rates by 20%
- Provide medication reconciliation at 95% of discharges from hospital
- Additional hospital specific goals based on hospital assessments of readmission patterns
What if evidence is inconclusive regarding which therapy is better?

In this PICO question, what is the:

- **Patient’s** disorder or disease? - 35 yr. history of smoking
- **Intervention** under review? - Bupropion therapy
- **Comparison** intervention? - Nicotine replacement
- **Outcome** of interest? - Abstinence from smoking
Inconclusive Evidence…Not EBP, Not PI
What is Research?

A systematic investigation (including development, testing and evaluation) designed to develop or contribute to new, generalizable knowledge.”

U.S. Department of Health and Human Services, n.d [45CFR 46.102(d)] [21 CFR 50.3(k)] [2 CFR 312.3]
The Research And PI Processes
Use A Similar Systematic Approach:

1. Identify and focus the clinical question
2. Review existing literature and validate the gap in science
3. Develop a feasible and realistic protocol to address the gap
4. Collect and manage data (enrollment processes)
5. Analyze the results
6. Discuss results in the context of existing science
7. Implement new knowledge into practice and monitor effects over time!
PI and Research: Same or Different?

PI:
- Identify a system or process problem
- Track the clinical problem
- Goal: to identify trends in practice
- Results used for improved performance at the site
- PI with intent to share externally-
  - IRB!
- Example:
  - Smoking cessation
  - Peripheral IV dressings

Research:
- Intent to generalize (publish!)
  - IRB
- Usually clinical problem or gap in knowledge
- Using what we know (existing data) to explore, compare or test a new concept or intervention
- Use existing data before gathering new data:
  - PI data
  - Pilot studies
  - The Literature
Example of a Research Question

“In a patient admitted for acute myocardial infarction and with a history of smoking, what educational strategy is most effective in promoting smoking cessation at 3, 6, and 12 months following discharge from the acute care setting?”

What educational strategy is best, given that existing evidence on outcomes using various strategies is not consistent?
Enlist the Help of Expert

- **DTNI:** email [dtni@mc.duke.edu](mailto:dtni@mc.duke.edu)
  919-668-2344
- **DUSON ORA:**
  919-684-5376
- **DUHS Research Nurse Scientist:**
  919-613 6406