Translational Research:
from bench to bedside

Kaiser Permanente
SCAL Regional Nursing Research Program
May 10, 2012

June L. Rondinelli
RN, MSN

Cecelia L. Crawford
RN, MSN. DNP(c)
At the end of this presentation, the learner will be able to:

- Outline the research process
- Describe two differences between Quality Improvement, Evidence-Based Practice, Research, and Translational Research
- Discuss the structure, process, and outcomes involved in Translational Research
The Concept of Research

Research is not isolated activities or tasks

- Surveys, interviews, and observations
- Data collection
- Statistical analysis
- Improvement processes
- Evidence-based practice changes

Research is a *rigorous, reproducible, and systematic process* that may involve all or part of the above.
The Process of Knowledge Development

(Omery, 1998)

Data                   Facts                         Information                                                   Knowledge

The research process IS the systematic process that produces scientific knowledge
Confusion over Research

Confusion exists concerning the differences and similarities of:

- Research Process
- Quality Improvement Process
- Evidence-Based Practice Process

The different intents, structures, processes, and outcomes is what separates QI from EBP from Research:

- Who, what, when, where, why, and how

What are the differences?
Quality Improvement

A *structured* process that

- **Evaluates** a specific system’s strengths & limitations, systems parts, and resulting outcomes
- **Overarching intent** of QI initiatives is to *improve* system specific (i.e. local) processes and patient outcomes
- **Asks** “What is happening and can it be improved?”
- **Final product** = *information*, not new knowledge
QI Example

A structured evaluation process with an iterative flow

- IHI Small Tests of Change
- PDSA (Plan, Do, Study, Act)
  - What is happening?
  - Can it be improved?

- Resulting process and outcome information is evaluated
- Changes made for further improvement of processes and outcomes
- Revised processes are re-evaluated and changed on a continuous basis for further improvement
Evidence-Based Practice

A systematic process

- Implements and evaluates interventions stemming from new knowledge generated by research
- Overarching intent of EBP changes is to integrate scientific discoveries into healthcare practice
- Asks “What is known?” and “What can be done with this knowledge?”
- Final product = systems change and outcome improvement in patient populations
What is known: Hourly rounding by nurses resulted in
- decreased patient call light use
- increased patient satisfaction
- reduced patient falls

Systematic integration of the new knowledge into nursing practice
Implementation of hourly rounding intervention

Final product
- Nurse rounding protocols
- Manager rounding protocols
- Leadership rounding protocols

American Journal of Nursing, September 2006, 106(9), 58-70
Research

A *rigorous & systematic* process

- **Generates** new knowledge through the application of basic scientific principles and theory development
- Overarching intent of research is *description, prediction, and control*
- Asks “What is not known?”
- Final product = *new knowledge* that can be generalized in appropriate patient populations
Research Examples

A systematic process

What is not known:
Unavoidable Pressure Ulcers: A Causal Model
(Primary Investigator: Anna K. Omery, 2010; Gretchen Summer, NCAL Primary Investigator)

- Retrospective chart review
- Adult ICU patients
- Statistical analysis of variables

Descriptive, predictive, & controlled

Scientific knowledge via a rigorous and systematic research process

- Data
- Facts
- Synthesized Information
- Knowledge

Final product = New knowledge that can be generalized for adult ICU patients in the United States at risk of development HAPU
What is Translational Research?

Research that translates scientific discoveries and advances from the bench or laboratory into a clinically germane application

- *National Institutes of Health*

Scientific investigation of methods, interventions, and variables that influence adoption of evidence-based practice by individuals and organizations to improve clinical and operational decision making in health care. This includes testing the effect of interventions on promoting and sustaining evidence-based practice

- *Titler, 2004*
"A systematic investigation that has as its purpose the development of generalizable knowledge that explains or improves clinical practice(s) sourced from evidence (including theory testing) or previous research."

Southern California Nursing Research Program, 2008
Transitioning to Translational Research

Most researchers use a two model worldview to frame research

- Research Studies
- Evidence-Based Practice (EBP) Projects

In 2008, the Kaiser Permanente (KP) Southern California Nursing Research Program moved to an single model format

- Translational Research
Translational Research

- Prioritizes Nursing Research Program personnel activities
- Highlights the sophistication of KP nurses researchers
- Aligns nursing research program & current KP projects with the community to expand grant funding & publication opportunities
- Assists in the dissemination of Nursing Research beyond nursing venues
Translational Research Model Development Team

Anna K. Omery, RN, DNSc, NEA-BC
Director of KP SCAL Regional Nursing Research

Joyce A Johnson, PhD, RN-BC
Director of SCPMG Nursing Education and Research

Cecelia L Crawford, RN, MSN
Project Manager III

June L Rondinelli, RN, MSN, CNS
Project Manager III

Regina M Valdez, MA
Senior Research Analyst
Uses the definition to embed EBP into a model illustrating Translational Research (TR)

Areas of Consensus:
- Team-centered with individuals who:
  - Have different areas of expertise
  - Come from multiple disciplines

Uses an iterative process
- from the Laboratory to the Patient and back

Aims to move knowledge from journals or academic setting to healthcare practitioners
Donabedian’s model proposes that each component has a direct influence on the next.
Translational Research is divided into three types:

- **T1**: Basic science potentially affecting practice
  - *bench to bedside/laboratory to human*

- **T2**: New knowledge tested in the clinical setting
  - *bedside to community/evidence to practice*

- **T3**: Implementation of evidence beyond the pilot and population(s) with testing systems change
  - *organizational or professional impact*
## TR Model Components

<table>
<thead>
<tr>
<th>Structure/ Type of Research</th>
<th>Process</th>
<th>Outcome/ Product of Research</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>T1</strong></td>
<td>Basic Science</td>
<td>New Knowledge</td>
</tr>
<tr>
<td>Basic Science; Theory development/ Basic Research</td>
<td>Basic Science</td>
<td></td>
</tr>
<tr>
<td><strong>T2</strong></td>
<td>Test evidence-based interventions in practice</td>
<td>Evaluation of findings of Integrative Reviews/ Systematic Reviews in a Population</td>
</tr>
<tr>
<td><strong>T3</strong></td>
<td>Implement and test systems change; best practice considering consumer factors</td>
<td>Guideline Development and Testing</td>
</tr>
</tbody>
</table>
TR Structure

T₁

T³

T²
TR Process

T\(^1\)

T\(^2\) T\(^3\)
TR Processes

- Conceptual Phase
- Design & Planning
- Collection of Data
- Analysis
- Dissemination of Findings
TR Outcomes

T¹O

T²O

T³O
### Southern California Nursing Research Committee
#### Translational Research Studies

<table>
<thead>
<tr>
<th>Study Title</th>
<th>Study Description</th>
<th>T Type</th>
<th>Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>Caring as perceived by patients and nurses</td>
<td>The purpose of this study is to describe the perceptions of patients and nurses related to caring in the 21st century to see if there are differences related to the changing healthcare environment.</td>
<td>T3</td>
<td>Continued</td>
</tr>
<tr>
<td>Education Alleviation</td>
<td>Develop and implement an evidence-based educational program for teaching adult patients with CHF and their families in the in-patient setting</td>
<td>T2</td>
<td>Continued</td>
</tr>
<tr>
<td>Enhancing Recovery after Cardiac Surgery</td>
<td>Evaluates the Effectiveness of Cognitive Behavior Therapy on biologic markers and depressive symptoms in patients recovering from Coronary Bypass Graft surgery.</td>
<td>T1</td>
<td>Continued</td>
</tr>
<tr>
<td>Giving Intimate Family Time (G.I.F.T.) Project</td>
<td>Improve patient-infant attachment and exclusive breastfeeding via skin-to-skin contact and time alone during the postpartum period.</td>
<td>T2</td>
<td>Continued</td>
</tr>
<tr>
<td>Hourly Rounding: An Action Research Study</td>
<td>The purpose of this study is to determine what differences in selected short and long-term organizational, professional and patient outcomes result from the implementation of the hourly rounding using different implementation strategies.</td>
<td>T3</td>
<td>Continued</td>
</tr>
</tbody>
</table>

Last Update: April 30, 2009

http://nursingpathways kp.org/scal/research/
“Effectiveness of an intervention in prevention of falls among patients in home health”

- Effectiveness of an educational intervention
- Increase nurse and patient awareness of fall prevention in the home
- Improve knowledge-base for effective interventions for patients at high risk for falls
“A Recipe for Excellent Nutrition: An Enteral Feeding Bundle”

Test evidence-based interventions in practice

Evaluation of findings of Integrative Reviews/ Systematic Reviews in a Population

Outcome Improvement in Populations

Consistent selection of bundle elements – every patient, every time

Validate that standardization of the feeding process can greatly benefit patients and improve clinical outcomes
T1/ T2: New Knowledge + Outcomes Improvement

“Pre-albumin Screening to Decrease Hospital Acquired Pressure Ulcers”

- Decrease rate of hospital acquired pressure ulcers by
  - Monitoring pre-albumin levels
  - Intervening timely and appropriately by maximizing patients nutritional regimen

- Overall goal is to improve the patient's quality of life, decrease pain, decrease cost & length of stay
Identify successful structures, tools, and processes in both implementing and sustaining rounding behaviors by staff nurses.

Study Aim: present generated evidence of valuable hourly rounding strategies to providers who care for a variety of hospitalized populations.
T2/ T3: Outcomes Improvement + Systems Change

“CalNOC Partners to Reduce Patient Falls Project (TRIP)”

- Testing an evidence-based intervention to create a systems change
- A multi-site study aimed to reduce the incidence of patient falls and severity of falls using evidence-based coaching, education, and consultation to implement assessment and prevention methods based on clinical effectiveness data
TR Model Implementation

Development and implementation of models such as the TR Model can result in a strategic infrastructure giving a voice to nursing research activities within large integrated healthcare systems.

- Adaptation and dissemination through the Southern California KP Nursing Research Website
- Poster/Podium/Web Presentations
- Publications
- Quarterly Update at Nursing Research Committee Meeting

http://nursingpathways.kp.org/scal/research
Integration of scientific discoveries into nursing practice

Research studies & EBP Projects no longer viewed as separate entities

- Distinct research studies which are seeking clearly defined outcomes
- Able to differentiate quality improvement projects from research studies
Research Success

Connecting with other Translational Research Programs

- Department of Research & Evaluation, KP Southern California, SCPMG
- Southern California Clinical & Translational Science Institute, USC
Successful research studies always have these two elements:

- A committed research team (not one or two people) with a passion for the clinical problem
  - Teams members with various talents, expertise, and research experience

- An expert researcher to ensure a systematic and research-based approach, who is either:
  - Part of the research team OR
  - A consult for the research team
Contact Information

Anna K. Omery, RN, DNSc
Director of Nursing Research
KP SCAL Regional Nursing Research Program
626-405-6346
Anna.K.Omery@kp.org

Cecelia L. Crawford, RN, MSN
Project Manager III
Translational Research
KP SCAL Regional Nursing Research Program
626-405-5802
Cecelia.L.Crawford@kp.org

Gretchen J. Summer
Director of Nursing Research
KP NCAL Regional Nursing Research Program
510-987-3639
Gretchen.J.Summer@kp.org
For more information please contact:

Nursing.Research@kp.org
http://nursingpathways.kp.org/ncal/research/index.html

Gretchen.J.Summer@kp.org
http://nursingpathways.kp.org/ncal/research/nursingresearchprogram/index.html
QUESTIONS?
References


References

NIH (National Institutes of Health)


References


References


References


References to Consider
