MEDICAL EDUCATION RESEARCH & SCHOLARSHIP

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Overview

• Introductions
• Clinical vs Education Research
• Medical Education Research & Scholarship
• Research & Education Development Cycles
• Activity & Real World Examples
Types of Research

Clinical Research

• Study of health and illness in people
• How to prevent, diagnose, and treat illness
• Controlled settings (Protocols)
• Scientific approach

Education Research

• Study of education and learning processes
• Describe, understand, and explain how learning takes place
• Naturalistic & (Semi-controlled) settings
• Social Science & Scientific approach
Medical Education Research & Scholarship

• **What (Purpose)** – Contribute new, peer-reviewed resources and outcomes that advance the field of medical education

• **Why (Goal)** – Improve educational outcomes & (indirectly) improve clinical & patient outcomes
Research & Development Cycles

Research Process

- Research Question
- Literature Review
- Study Design
- Data collection & analysis
- Logistics & IRB Approval
- Dissemination

Development Cycle (Curriculum, Assessment, & Instruction)

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

See: *Curriculum Development in Medical Education* by David E. Kerns et al
Medical Education Research Development Cycle
ACTIVITY

Think about an educational dilemma in your life…
Step 1: Problem Identification

- **PICO**
  - Population, Intervention, Comparator/Control, Outcome
  - PICO – quantitative
  - PO – qualitative / descriptive

- **Kirkpatrick's Four-Level Training Evaluation Model**
  - **Reaction** - perceptions of training
  - **Learning** - change in knowledge (educational outcomes)
  - **Behavior** - change in actions
  - **Results** – clinical/patient outcomes
Step 1: Example

- What would be your research question? May start with a thought and refine question as you go…

- Ours was “Does a 2 hour workshop using the 5 Cs model improve pediatric residents’ skill in communicating with consultants?”

- Kirkpatrick level? Ours was change in action – but using simulation
Step 2: Targeted Needs Assessment

- What is already known about your topic of interest?
  - Search engines: PubMED, Web of Science, EBSCOhost*, ERIC, etc.

- Who is the targeted learner group?
  - Ideal and actual characteristics of the group?
  - Ideal and actual characteristics of their environment?
Step 2: Example

- What is known and who are you targeting?

- In our example – communication skills specifically targeted in competencies; documented poor PC-specialist communication in peds; validated tool created for ED use
Step 3: Goals and Objectives

- **Quantitative Methodology**
  - Describe, explain, predict
  - Identify relationships (variables)
  - Test theory

- **Approaches**: Cross-sectional, Cohort, Case-Control, Randomized Control, etc.

- **Qualitative Methodology**
  - Explore, discover, construct
  - Identify patterns (themes)
  - Increase understanding; Build theory

- **Approaches**: Ethnography, Phenomenology, Grounded Theory, Case Study

- **Survey Methodology** *
  - Describe
Step 3: Example

- How would you study your question?
- For us – performance before and after intervention
Step 4: Educational Strategies

- **Content**
  - What do you need to run your intervention?
  - What does your data collection instrument need to measure?
    - *Is there an existing tool you can use?*

- **Methods**
  - Who will conduct data collection?
  - Who will conduct data analysis?

- **Logistics & IRB**
  - Who are the participants?
  - Where is the study going to take place?
  - Who needs to approve the study?
Step 4: Example

• What is your intervention and what approvals do you need?

• Intervention is 2 hour workshop based on 5 Cs. Got exemption from IRB. Also needed to create “test” by writing and piloting 2 cases.
New Submission Guidance

General guidance on submitting a new study can be found under the "Initial Submission Guidance and Documentation" section.

- Emory IRB Submission Type Guidance Chart
- OHRP Human Subject Decision Charts
- Humanitarian Use Device (HUD) Checklist

Clinical Study Tools, Templates and Checklists
- Please see the "Clinical Study Initiation and Tools" section for more details.

Departmental Review Help
- Please look for the correct Departmental Approval section for more details.

Lay Summary Guidelines
- Biomedical
- Sociobehavioral

Protocol Guidelines
- Biomedical
- Sociobehavioral
- Retrospective Chart Review
- Secondary Data/Specimen Analysis

Frequently Asked Questions

Adverse Events and Unanticipated Problems
Amendments/Modifications
CITI Online Course/Modules
Closing Out A Study - When and How?
Consent Process and Documents
Data Transfer Agreements
Departmental Approval - What Should I Select in the Smartform?

Departmental Approval is required for all new study submissions. This review helps inform the IRB about the adequacy of the facilities, the qualifications of the investigators, and the scientific merit of the study.

Currently only Departments that start with an ASTERISK (*) are associated with approvers. The Department is selected in the "Required Reviews" page of the eIRB Smartform.

- If you are a faculty member conducting research:
  - Item 1 in this section should auto-populate with the PeopleSoft department with which the PI is affiliated. If the department that has auto-populated the smartform is incorrect or does not start with an ASTERISK (*), please see the Departmental Approvers list to determine the most accurate department to provide the required review.
  - Please select only ONE department in the "Required Reviews" section unless your department has instructed you otherwise. If you select more than one department, your study will be delayed. If two...
Step 5: Implementation

- **Quantitative Methodology**
  - Describe, explain, predict
  - Identify relationships (variables)
  - Test theory

- **Methods**: Tests, Assessments, Questionnaires (Surveys*), Rating Scales, etc.

- **Qualitative Methodology**
  - Explore, discover, construct
  - Identify patterns (themes)
  - Increase understanding; Build theory

- **Methods**: 1-1 Interviews, Focus Groups, Observations, etc.

- **Survey Methodology**
  - **Methods**: Questionnaires, Interviews
Step 5: Example

- How would you analyze your data?
- Did ratings of simulated consult calls before and after workshop. Also looked for inter-rater reliability to strengthen results, as well as time of consult calls.
Step 6: Evaluation and Feedback

- Conferences
  - AAMC – Research In Medical Education (RIME)
  - ACGME
  - AMEE (Association for Medical Education in Europe)
  - CCME (Canadian Conference on Medical Education)

- Resource Publications
  - MedEdPORTAL

- Journal Publications
  - Academic Medicine
  - Medical Education
  - Teaching & Learning in Medicine
Step 6: Example

• How would you disseminate this?

• Ours was presented at several national meetings – ESPR, APPD, and a manuscript has been submitted (and so far rejected)
Association Between Study Quality and Publication Rates of Medical Education Abstracts Presented at the Society of General Internal Medicine Annual Meeting

Authors

Disclaimer – Focus was on Quantitative Studies
References


Resources at Emory

• **Step 2: Targeted Needs Assessment / Literature Review**
  - Emory Woodruff Health Sciences Center Library - [http://health.library.emory.edu/](http://health.library.emory.edu/)
  - [http://health.library.emory.edu/resources/find-information/systematic-reviews.html](http://health.library.emory.edu/resources/find-information/systematic-reviews.html)
  - "Ask a Librarian" - [http://health.library.emory.edu/about/contact/ask.html](http://health.library.emory.edu/about/contact/ask.html)
  - Mia S White - *Medical Education & Technologies Informationist*

• **Step 4: Educational Strategies / Logistics & IRB Approval**
  - Complete CITI Training! - [http://www.irb.emory.edu/training/courses/citi.html](http://www.irb.emory.edu/training/courses/citi.html)
  - Emory IRB - [http://irb.emory.edu/forms/review/index.html](http://irb.emory.edu/forms/review/index.html)
  - **NOTE**: Research involving Emory Medical Students must be approved by Curriculum Committee (Contact: Dr. Erica Brownfield)

• **Step 3: Goals and Objectives / Study Design & 5: Implementation / Data Collection & Analysis**
  - Qualitative Methods and Data Analysis Workshops ($) - [https://www.sph.emory.edu/departments/gh/continuing-ed/](https://www.sph.emory.edu/departments/gh/continuing-ed/)
  - Quantitative Methods and Data Analysis Support (Free & $) - [http://medicine.emory.edu/research/internal-research-resources/research-resources/biostatistical-support.html](http://medicine.emory.edu/research/internal-research-resources/research-resources/biostatistical-support.html)
Resources at Emory

• **Steps 1 – 6: Med Ed Research Consultations**
  - Residents/Fellows/Faculty – Dr. Ulemu Luhanga
  - Faculty/Administration – Dr. Hugh Stoddard

• **Steps 1 – 6: Medical Education Courses**
  - Medical Students – M4 Medical Education Elective / Capstone
  - Residents/Fellows – Medical Education specialty track (PENDING)
Other Resources

• Resources for educators (JGME: RIP OUTS):
  http://www.jgme.org/page/ripouts

• Annotated Bibliography of Journals for Educational Scholarship:
  https://www.aamc.org/download/456646/data/annotated-bibliography-of-
  journals-march-2016.pdf
THANK YOU!

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Summary of Research Study Designs

- Study Design
  - Descriptive (PO)
    - Survey (Cross-sectional)
  - Qualitative
    - Ethnography (shared patterns, culture)
      - Phenomenology (essence of experience)
      - Grounded Theory (theory from data)
      - Case Study (in-depth understanding)
  - Quantitative (PICO)
    - Experimental
      - (RCT) Parallel Group
    - Observational
      - Cohort Study (prospective)
      - Cross Sectional (Survey)
      - Case-Control (retrospective)

Adapted from: http://www.cebm.net/study-designs/
Biostatistical Support and Basic Courses

Department of Medicine Data Analytics & Biostatistics Core (DAB)
Provides biostatistics & study design, clinical data extraction, and biomedical informatics faculty-level guidance. Available to Department of Medicine only.

Cost: Options are available both for investigators who have funding to allocate toward DAB core services as well as investigators, with a preference toward junior investigators, who do not have funding available.

More information: contact Chad Robichaux at 404-727-8365 or click to submit a request.

ACTSI: Biostatistics, Epidemiology & Research Design (BERD)
Provides comprehensive biostatistical and epidemiological support including protocol development, statistical analysis plan and sample size/power calculations. Research faculty are also available to solve novel innovative problems in the areas of design of experiments, clinical trials and in longitudinal cohort studies. Support from BERD is intended for small pilot projects.

Cost: No cost, but investigators MUST cite “Supported by the National Center for Advancing Translational Sciences of the National Institutes of Health under Award Number UL1TR000454” in any publications, press release, or other document or invention resulting from direct or indirect ACTSI support.

More information: contact Alanla Foster at 404-727-9734 or request a free consultation.

Institute for Quantitative Theory and Method:
Graduate Students: The Institute for Quantitative Theory and Method offers a statistic help desk for graduate students.
Email: quantm.help.desk@gmail.com to schedule an appointment.