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Introduction to Research

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Introductions

- Name
- Why OBGYN?
- Where did you grow up?
- Where is the favorite place you have traveled to?
Topic Covered This Week

- Conceptualization of Research Topics and Formulation of Specific Aims
- Ethics in Global Health Research
- Study Design
Topics Covered Today

- Importance of Clinical Research
- Conceptualization of Research Topics
- Generation of Research Questions
Workshop Goals

1) Provide an overview of key issues:
   - Conceptualization
   - Formation
   - Study implementation
   - Ethics and IRBs
2) Clarify first steps in initiating projects

3) Assist participants in identifying general research themes vs. issues specific clinical research / practice
Orientation

- **What will not be covered today**
  - Detailed research methodology
  - Sampling strategies
  - Statistical analysis
  - How to write a research proposal
  - Manuscript publication
Role of clinical research

- Research can:
  - Identify issues unique to clinical settings
  - Illustrate causal pathways
  - Suggest direction for intervention
  - Inform policy
  - Build capacity
  - Create community of peers

Image by US Army Africa
Why Research Matters

Improves understanding of health and illness:
Knowledge base generated from years of basic and clinical research

Determines which interventions work:
Ensures best use of limited resources

Bridges gap between academics and policy makers:
Translates findings into practice
Types of health research

- Lab-based/basic sciences
- Clinical
- Public Health
- Health Services Research
- Implementation Science

Image by US Army Africa
Getting started: Overview of the research process

- Conceptualizing the idea – what is the question?
- Study site?
- What is known on the subject? >> reading
- Refining & writing down the idea – specific aims, concept note
Taking a closer look...
Finding your focus:

- Which aspects of your discipline interest you most?
- What have you observed that you have questions about?
- What articles have you read that have raised questions in your mind?
Conceptualizing Research Topics

- Broadly define the area of research
- Are not the same as the title of your research study
- Need further work to become feasible research projects
Research Topics need narrowing to become feasible projects

E.g.

TOPIC: Facility-based deliveries in Ethiopia

RQ: What are the factors that prevent pregnant women from delivering in health care facilities in Ethiopia?
Conceptualizing Research Topics

- Where are the gaps in the literature?
  - By topic (what is not being looked at?)
  - Methods (what is not being done?)
  - Populations (who is not being studied?)
  - Comparisons (who is not being compared?)
Asking the Right Question

Idea

Application

Hypotheses/Objectives

Proposal

Result

Research

Grant

$$$

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Finding a great idea

- The 3 Cs:
  - **Curiosity** to investigate and question situations
  - **Critical thinking skills** to refine your curiosity into a clearly stated idea
  - **Courage** to have “bad ideas”
Conceptualizing Research Topics

- Sources of literature
  - Published manuscripts
  - Abstracts
  - Conference proceedings
  - Expert consultations
Where to start?

- Read, read, read
- Detailed literature searches
- Attend seminars, conferences and presentations
- Discuss subject area with peers and seniors
- Listen
- Ask questions
Refining research topics

- Discuss with fellow researchers
- Discuss with stakeholders
- Assess what is most critical to learn
- Assess research resources available
- “The Ideal” may not be realistic
Questions to Ask Yourself

Is this a good idea?

1. Has it been done?

2. Who cares?/ So what?

3. Can it be addressed using appropriate research methods?

4. Will it stimulate interest by others
Research Questions

Examples?
Each Study is Only One Piece of the Puzzle
Specific Aims

- The **Overall Objective** is the main question that the researcher seeks to answer.

- There may be three to five **Specific Aims** underneath that overall objective, driven by **Hypotheses**.

- Within the specific aims may be **Study Objectives**, or exactly what you plan to do to achieve the broader aims.
Writing Specific Aims/Objectives

- **KEEP THEM SIMPLE**
- **S** -- specific
- **I** -- immediate (why do this project now?)
- **M** -- measurable (what data will you gather?)
- **P** -- practical (realistic/feasible?)
- **L** -- logical (build to achieving goal)
- **E** -- evaluable (significance, how assess impact?)

*Proposal Planning and Writing 2nd edition, Oryx Press, 1998*
Refining Your Specific Aims

- Are your aims descriptive vs. why? Fishing vs. hypothesis driven?
- Do the aims link to the central hypothesis?
- Is each aim tied to a working hypothesis?
- Is each aim needed?
- Is there a relative balance between specific aims with effort and anticipated outcomes?
- Does the ability to meet one aim depend on the outcome of another?
Problems with Specific Aims and Significance

Problems with specific aims:
- Too ambitious, too much work proposed
- Unfocused aims, unclear goals
- Limited aims and uncertain future directions

Problems with significance:
- Not significant nor exciting nor new research
- Lack of compelling rationale
- Incremental and low impact research

http://www.ninds.nih.gov/funding/grantwriting_mistakes.htm
Research Protocol

- Exactly WHO is going to do WHAT, WHEN, WHERE & HOW?

- On completing the study, WHAT data should be analyzed - analysis shells
Sections of a Protocol

- Hand out
- Objective
- Specific aims
- Background
- Study team expertise
- Methodology
- Data analysis plan