


What Makes a Good Research Question?

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Disclosures

- I have no competing interests connected with this presentation.
- The presentation involves no experimental or off-label uses of medical interventions.

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Presentation extras at end of the handout:
More details on extra slides
References from literature
Online resources

Please hold your questions to the end.

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Goals

- Help learning scholars find questions that empower passion for research.
- Help mentors guide those new to scholarly work to develop their own questions into successful studies.
- Provide frameworks to guide process.

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Investigator goals




- A question that is researchable
- A study that is doable
- Results that are publishable
- A sustainable program of inquiry

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The Life of the Question


- Find
- Refine
- Define
- Design
- Align



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Find the question



Research is organized curiosity.

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Draw your inspiration and questions from

Your Work	Your Patients	The Literature
<ul style="list-style-type: none"> • Daily practice • Teaching • Problems • Reflection • Colleagues 	<ul style="list-style-type: none"> • Clinical questions • Patient questions • Differences • Dilemmas 	<ul style="list-style-type: none"> • Reviews • Cochrane • Guidelines • Consensus • Trial Registry • Evidence Gaps

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	Family Medicine	Rural Practice
Scope of practice		
Comprehensive care		
Dr-Pt Relationship		
Pt-Centered Care		
Continuity of Care		
Community Context		
Team Care		

Primary Care

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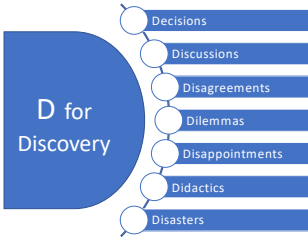
Questions across the landscapes of rural practice

Alaska – Sitka, Kodiak	Your Roles?
Medical Officer of Health	Sports medicine
Port quarantine officer	Occupational Health
College Medical Director	Hospital Leadership
Occupational Health	Trauma
Sex Worker care	Schools
Military-Civilian Practice	Churches
Ethnic groups	Remote care supervision

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Draw questions



Keep a Question Journal for 2 weeks

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Questions everywhere

“It ain’t so much the things we don’t know that gets us into trouble as it is the things we know for sure that just ate so.”

- Samuel Clemens

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Passion for the question – 3 Ps

Patients or populations
Problem
Process

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Research Topic

Antibiotic treatment
of otitis media
in children

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OM Study - Patients

"I want to improve the care of
little kids with a common illness
and reduce their suffering.
Otitis Media is a common
problem."

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OM Study - Problem

"I want to reduce the
unnecessary use of antibiotics in
the community.
OM is a common reason for
unnecessary antibiotic use in
primary care."

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OM Study - Process

"I am interested in shared
decision making between
doctor and parent.
The choice of antibiotic
treatment for OM is a classic
example."

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Refine the question

KEEP
CALM
and formulate your
RESEARCH
QUESTION

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PICOS


- Patient, Problem, or Population
- Intervention
- Comparison
- Outcomes
- Study Design

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Define the Study Question

In children with OM,
does antibiotic treatment
improve parent satisfaction?



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Define the Study Question

In children with OM,
does antibiotic treatment
improve parent satisfaction?

2-5-yr pts in FM office
AOM w/o Hx AOM or SOM past 6 mos
Rx at 1st appt vs. contingent rx to take home to start if sx worsen or persist past 24 hrs
Need to find a validated scale from lit.
How much change in what sx is clinically meaningful?
Parent/Primary caregiver who brings pt to appt

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Define the question

“No subject, no matter how complicated, when studied in greater depth, does not get more complicated.”
A. Einstein

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Design the study around the question

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FINER criteria for study

- Feasible
- Interesting
- Novel
- Ethical
- Relevant

(See more detail in extra slides in handout.)

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Align studies with personal goals

- What do you want to learn?
 - With whom do you want to work?
 - Where does this study fit in your larger agenda?
 - What study outcome do you expect?
 - What impact do you want?
-
- Check against your “Professional mission statement”

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Research is a human enterprise

- What do you want to do?
- Interview patients
 - Review research reports
 - Analyze data sets
 - Conduct surveys
 - Observe clinicians
 - Visit patient homes
 - Facilitate focus groups

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Align the question with team goals

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Summary

Method	Motivation	PICOS	FINER
<ul style="list-style-type: none">• Find• Refine• Define• Design• Align	<ul style="list-style-type: none">• Patients• Problem• Process	<ul style="list-style-type: none">• Problem/Pt• Intervention• Comparison• Outcomes• Study	<ul style="list-style-type: none">• Feasible• Interesting• Novel• Ethical• Relevant

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Create a Program of Inquiry



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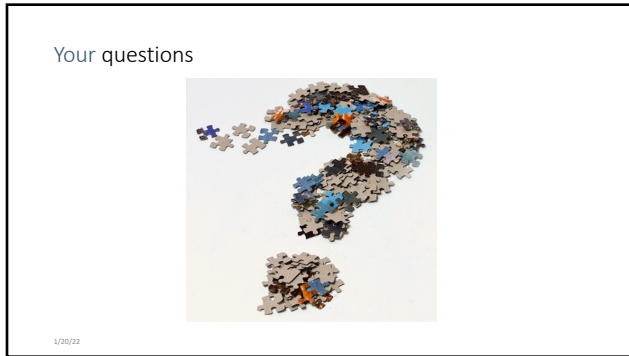
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Following the question

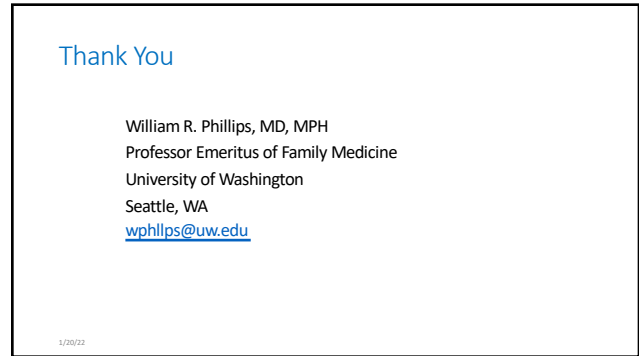
“Knowledge is having the right answers.
Intelligence is asking the right questions.
Wisdom is knowing when to ask the right questions.”
- Richard Feynman

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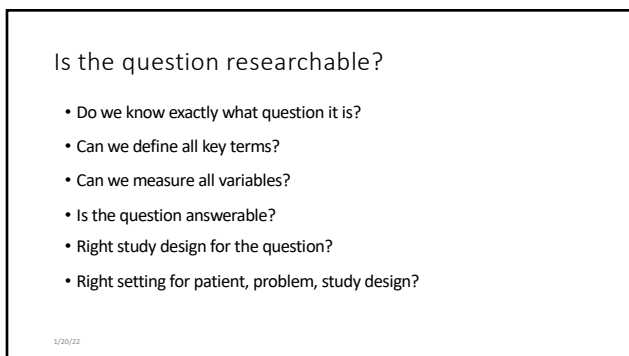
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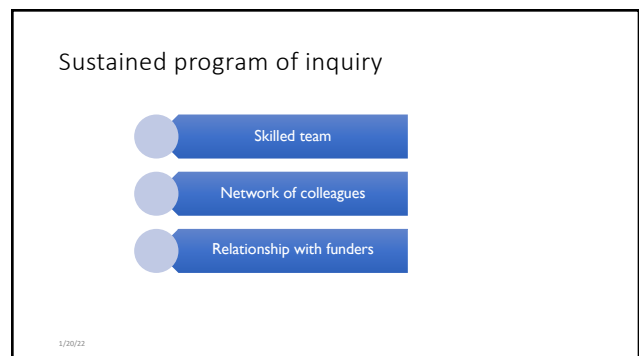
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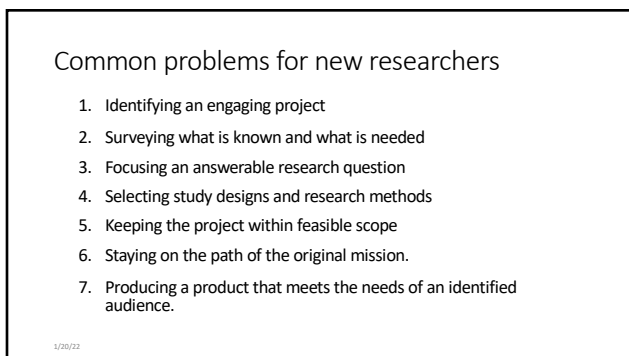
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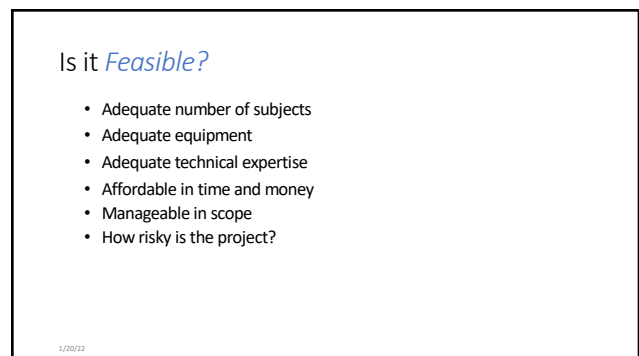
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Is it *Interesting?*

- Interesting to you
- Interesting to other researchers
- Interesting to funding agencies
- Interesting to practitioners
- Who cares?
- What journal will publish this study?
- Will the results be a contribution – no matter what you find?
- Will it lead to subsequent questions?

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Is it *Novel?*

- Provides new findings
- Confirms or refutes previous findings
- Extends previous findings
 - New population
 - New application
 - Additional variable
- Addresses question from a primary care perspective

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Is it *Ethical?*

- Risks
- Risk/benefit ratio
- Informed consent
- Confidentiality
- IRB - Human Subject Protections
- Researcher vs. clinician role conflict
- Responsible relationship with community

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Is it *Relevant?*

- To scientific theory & knowledge
- To clinical practice – patient care
- To health policy
- To education and training
- To future research
- So what? Who cares? Why?

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Resources

Formulating Research Questions – PICOS

Haynes RB. Forming research questions. J Clin Epidemiol. 2006;59:881–6.
Richardson WS, Wilson MC, Nishikawa J, Hayward RS. The well-built clinical question: a key to evidence-based decisions. ACP J Club. 1995 Nov-Dec;123(3):A12-3
Sackett DL, Straus SE, Richardson WS, Rosenberg W, Haynes RB. Evidence-Based Medicine: How to Practice and Teach EBM, 2nd Ed. Edinburgh: Churchill Livingstone; 2000
Cochrane Collaboration. Rationale for well-formulated questions.
<http://www.cochrane.org/handbook/51/rationale-well-formulated-questions>.

Criteria for Research Questions - FINER

Hulley S, Cummings S, Browner W, et al. Designing clinical research. 3rd ed. Philadelphia (PA): Lippincott Williams and Wilkins; 2007.
Farrugia P, Petrisor BA, Farrokhyar F, et al. Practical tips for surgical research: Research questions, hypotheses and objectives. Can J Surg. 2010;53:278–81.

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Resources

ONLINE RESOURCES

U Southern California. Asking a Good Question (PICO). <http://www.usc.edu/hsc/ebnet/ebframe/PICO.htm>.
(Provides a link to the PICO worksheet and links to extensive EBM resources.)
U North Carolina. The Well-Built Clinical Question. <http://www.bsunc.edu/services/tutorials/ebm/Question.htm>.
(Part of online tutorial on principles of Evidence-Based Practice.)
Online PICO Evidence Search Engine on MEDLINE/PubMed
PICO A <http://pubmedhh.nlm.nih.gov/nlm/picostudy/pico3.html>
PICO B <http://pubmedhh.nlm.nih.gov/nlm/picostudy/pico2.html>

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