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RESEARCH METHODS

FOR COMPARATIVE EFFECTIVENESS RESEARCH

GROUP TECHNICAL ASSISTANCE

FEBRUARY 1, 2017

COLORADO FOUNDATION FOR PUBLIC HEALTH AND THE ENVIRONMENT

GROUP TA OBJECTIVES

1. DESCRIBE THE SCIENTIFIC PROCESS AND HOW THIS APPLIES TO COMPARATIVE EFFECTIVES RESEARCH (CER).
2. INTERPRET WHERE CER FALLS WITHIN THE SPECTRUM OF DIFFERENT TYPES OF RESEARCH.
3. DESCRIBE THE DIFFERENCE BETWEEN QUALITATIVE AND QUANTITATIVE DATA COLLECTION AND WHAT METHODS WILL PRODUCE WHICH TYPE OF DATA.
4. IDENTIFY THE TYPE OF RESEARCH PARTNERS YOUR PROJECT MAY REQUIRE.
5. PLAN FOR HOW TO ENGAGE PATIENTS AND/OR COMMUNITY MEMBERS AS EQUAL PARTNERS IN RESEARCH.



SCIENTIFIC PROCESS & COMPARATIVE EFFECTIVENESS RESEARCH (CER)

CER APPLIES SPECIFIC PARAMETERS TO THE SCIENTIFIC PROCESS

TRADITIONAL SCIENTIFIC PROCESS

Find a question or problem you want to address

Hypothesize or think of possible answers

Test your hypothesis through a standard protocol that collects unbiased data

Analyze your data to see if you were right or wrong, and share what you learn

CER PROCESS

Find a question that asks if one proven effective thing is better than another proven effective thing (comparators) for a specific group of people.

Use your experience and evidence-based research to explain why you think one of the things will benefit the group of people rather than the other thing.

Come up with a test or study to prove if your approach is right or wrong.

Analyze your data and share what you learn with the world. Think about using what you learn to revise process, questions and tests to find the best answers for your group.

THE CER DIFFERENCE: A CAUTIONARY TALE



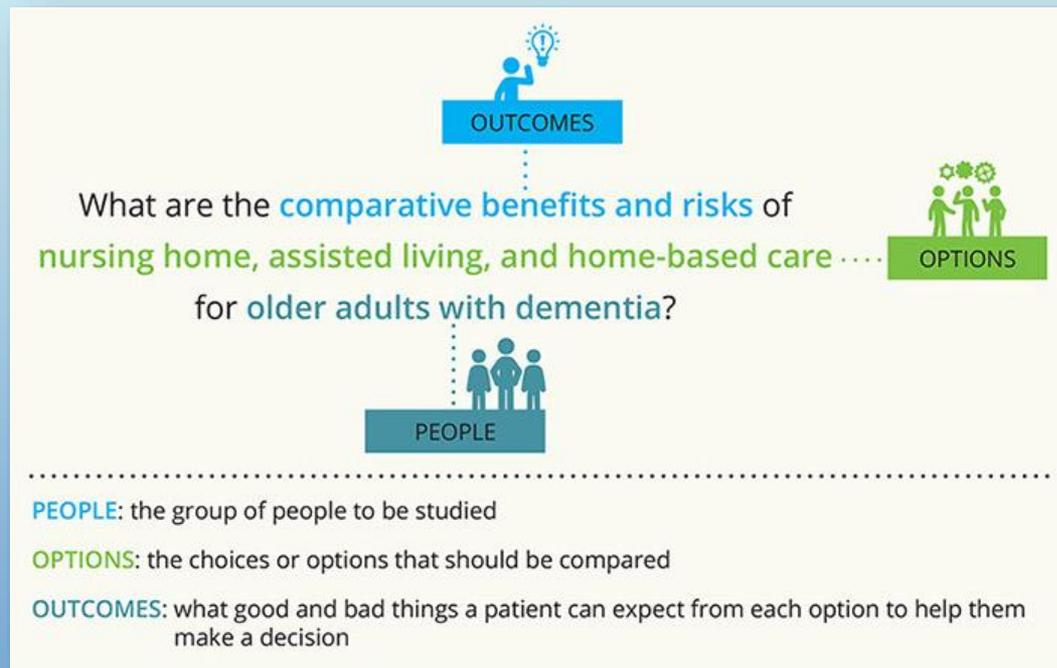
What works?

For whom?

Under what circumstances?

Compared to what?

In real world settings



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METHODS & STUDY DESIGNS

QUALITATIVE VS QUANTITATIVE



Examples:

- Ideas that can be grouped into themes
- Stories that demonstrate an issue in a community
- Integration (or not) of something new into cultural norms

Data used to describe why the statistics came out the way they did and to make the findings from a study meaningful to a population.



Examples:

- Increased or decreased blood pressure levels
- More or less pain
- Higher or lower income

Statistics are used to analyze data to make sure the numbers are meaningful.

SMALL STUDIES VS BIG STUDIES

Small Studies

Help to formulate ideas, learn more about issues, gather input from people who the study impacts and generally **lead** to a more robust and relevant big study or test.

Examples:

Pilot studies, feasibility tests, demonstration studies, etc. run tests or studies on small scales to see what problems might arise and fix them before going big.

Big Studies

Take a sub-sample of a population that can statistically represent the entire population and use them to find the answer to the big question.

Generally

Both big and small studies can use statistics to prove that the findings are valid.

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RESEARCH PARTNERS

WHO DOES YOUR PARTNERSHIP BRING TO THE TABLE

PARTNERS IN RESEARCH

Researchers

Define the way the question is answered by explaining the kinds of statistical methods are most appropriate and what types of measures have been proven to be able to answer the question.

Find other research that can help answer the question or define the comparators in a CER study.

Patients

Define what is important to answer and how that answer will impact them.

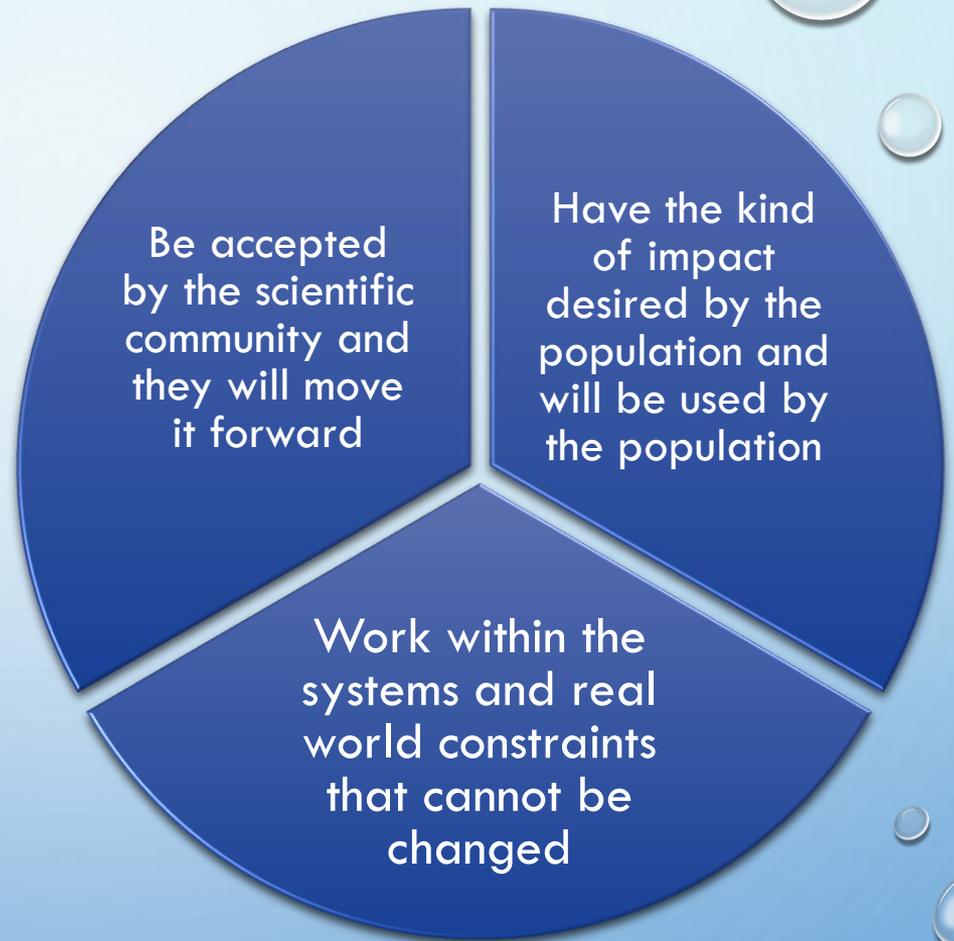
Provide input about if the methods used to collect and share data will work for them.

Stakeholders

Define how the question, comparators and results play out in the real world and existing systems that are in place.

Find other resources and existing evidence to support and sustain the work.

**ALL OF THESE
PARTNERS ARE
NEEDED TO ENSURE
THE RESEARCH WILL:**



CROSS-TRAINING IS IMPORTANT

Researchers

Trained to understand how the issue and research impacts patients and stakeholders so that their research is applicable to the real world and not just a lab setting.

Patients

Trained to understand systems, research protocols and the history of medical and research ethics. They can define and carry out portions of the research themselves which will ensure patients are not just research subjects.

Stakeholders

Trained to understand how the systems and real world constraints they work within can be best represented in the research and how the findings can be used by the population.

WHAT ROLES ALLOW PARTNERS TO ENGAGE THROUGHOUT THE SCIENTIFIC PROCESS?

Research Phase	Possible roles for Patients, Researchers and Stakeholder Partners
Formative stage	Partners plan project, form team, and develop shared mission and decision-making structure
Study selection/design	Partners incorporate community priorities, insights, and assets, emphasizing rigor and community feasibility, acceptability, context, cultural factors, and local knowledge
Funding	Partners co-develop grant and equitable division of funds based on contributions to project
Implement study, analyze and interpret data	Partners collaborate on all efforts; traditional analysis supplemented with community-driven questions and local relevance of findings
Disseminate Findings	Partners are coauthors and co-presenters, disseminating to academics, research participants, involved communities, and policy makers
Translate research into practice and policy	Partners mobilize the community to use findings to advocate for policy change, enhance local resources, and improve local practices
Sustain team, benefits, and resources	Sustainability built into work from inception; partners honor initial commitment to continue partnership and work beyond funding cycle

RESOURCES

Research 101 Training & Resources

- Various trainings and tools from designed for community and academic partnerships
- Modules focus on the following topics: Formulate a Research Question, Study Designs, Statistical Data Analysis, and Proposal Development
- <http://portals.tracs.unc.edu/index.php/research101>

Basic Research Concepts Training

- Online training to help develop a foundational understanding of design and methods, and get all partners using a common language to discuss research
- <http://ori.hhs.gov/education/products/sdsu/index.html>

Evidence-Based Public Health Course

- Online training modules about how to identify the best available evidence, searching scientific literature and more, designed for public health professionals and researchers
- <http://prcstl.wustl.edu/training/Pages/EBPH-Course-Information.aspx>

Making Sense of Research and Evidence

- Online training modules about developing and using evidence-based research, including clinical trials and systematic reviews, designed for those newer to research
- http://training.cochrane.org/sites/training.cochrane.org/files/uploads/ALOIS_modules/making_sense_of_research_and_evidence/story.html5.html

Community Based Participatory Research Resources

- List of online courses, tools, literature reviews, and more about CBPR
- Helpful when seeking best practices for partner engagement throughout the process
- <http://depts.washington.edu/ccph/commbas.html>

Camp Boot

- Designed as a 5-day, 40-hour training to prepare community residents as lay researchers with the capacity to partner with academic researchers to co-design and co-implement health-related studies
- https://ccph.memberclicks.net/assets/Conference/Presentations/highfield%20I_ccph2014_presentation.pdf

PCORI Methodology Report Glossary

- Definitions of terms used by PCORI to provide parameters for scientific rigor in their funded research
- <http://www.pcori.org/assets/2013/11/PCORI-Methodology-Report-Appendix-H.pdf>

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QUESTIONS?

THANKS FOR JOINING US!