



Introduction to Research in Your Medical Practice

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Health
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Overview

- What is research?
- What is the difference between research and quality improvement?
- Why should research be important to you and your practice?
- Where to start?
- What are the issues when supporting other people's research? – what's in it for you? what are you letting yourself in for?
- Over to Dimity ...



What is research?

A process of discovering new knowledge

Research uses systematic methods designed to generalise knowledge (it's 'scientific')

It starts with a hypothesis / prediction

It conforms to rules to ensure research is ethically conducted and does no harm

How research is designed and implemented will determine its value

There is a research plan / protocol

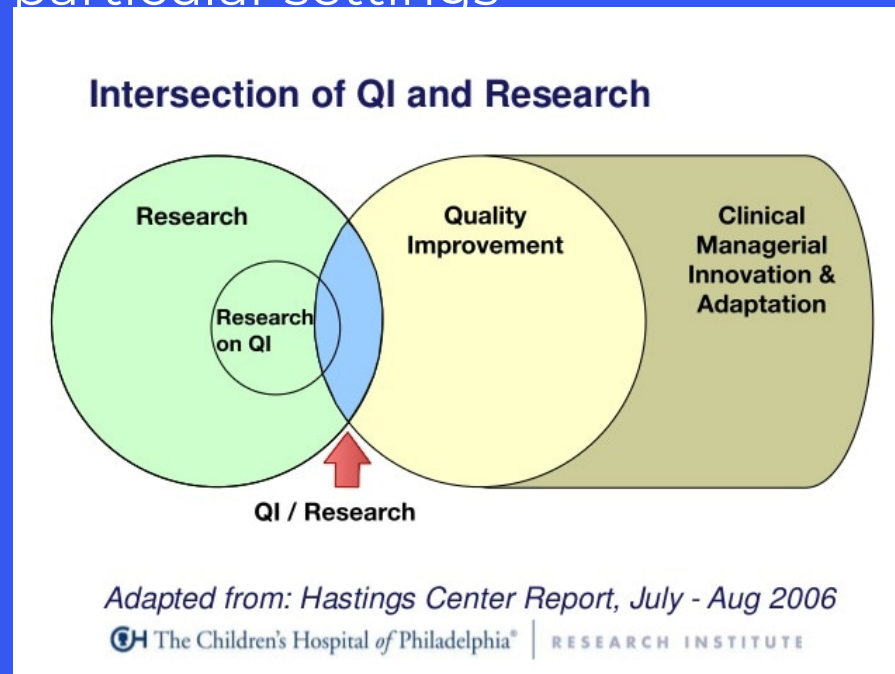
The results are intended to be useful to others



The difference between research and quality improvement

QI is integral to good clinical practice and is designed to bring about improvements in health delivery in particular settings

Research is not a necessity to good clinical practices and is designed to develop or contribute to generaliseable knowledge



Red flags - when QI is considered research:

- Intention to develop new knowledge (not implement existing knowledge)
- Follows a research design / method or has a clear research protocol to be followed
- Risk to participants greater than minimal
- Intention to publish/present

The difference between research and quality improvement

	Research	Quality Improvement
Purpose	Generalize knowledge	Implement knowledge
Starting point	Knowledge-seeking independent of routine care intended to test a hypothesis	Knowledge-seeking integral to ongoing management and delivery of health care
Design	'Rigid' protocol throughout the research	Adaptive & iterative (e.g. PDSA cycles)
Benefits	Intended to benefit future patients / care system	Directly benefits a process, system or program
Risks	Participants / subjects at 'risk'	Does not increase risk to patients, with exception of patients' privacy or confidentiality of data
Obligations	No obligation to participate	Responsibility to participate
End point	Answer a research question	Improve a program, process or system
Analysis	Prove or disprove a hypothesis or question	Compare to established standards
Adoption	No urgency to disseminate or adopt results	Rapid adoption into care delivery
Publication	Obligation to publish and share results	Encouraged to report and share insights

What is research in medical (general) practice and why is this important?

“Research that is done by, through and/or within general practice”

- To describe *in context* what you do, how you do it, what impact you are having, and what can be improved
- To develop evidence to support clinical decision-making – e.g. to influence guidelines so they are relevant to general practice (and not hospitals/specialists)
- To interpret data and evidence *through the lens* of your clinical experience
- To understand which interventions work (e.g. clinical trials - quantitative)
- To recognise how medical practices can best operate – social, financial, organisational, technological, cultural (e.g. health services research - qualitative)
- To assess and monitor issues related to care: access, quality, outcomes, cost & improvement



A recipe for good research

A clear and necessary research question

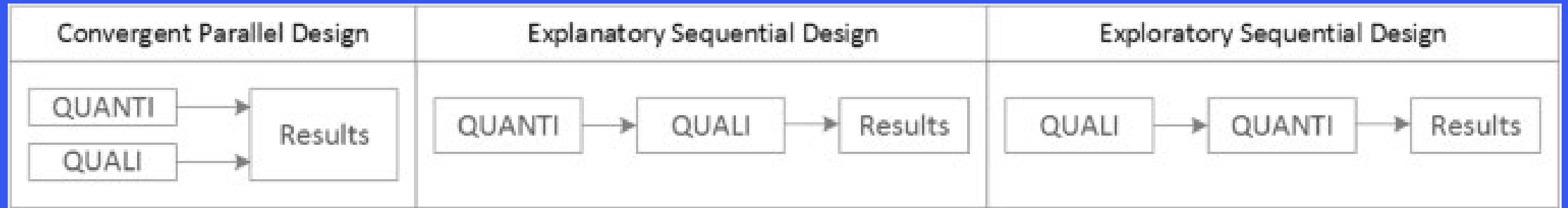
Ethical

The right choice of methods:

- descriptive (understanding 'what is') vs experimental (understanding 'what works' and why)
- true experiments have intentional interventions that need to minimise bias to understand causation and explain 'variance'
- sampling and randomisation
- precision (reliability) and validity (accuracy)
- mixed methods - triangulation of information from multiple data collection methods
- good data management



The Strength of Mixed Methods



- Explanation (e.g. especially to contrary / mixed results)
- Triangulation to corroborate findings
- Complementary / illustrative
- Strengthening observations

Where to start? Key issues and myths

Myths:

- *Anyone can do research irrespective of skills and experience*
 - Get an experienced researcher on your team
 - Obtain a position with an institution that has good research infrastructure
- *You can't learn how to do research from a book*
 - Hands on experience and training required, and a professional qualification if you want to specialise in research
- *Do it yourself statistics*
 - Get support from a biostatistician!
- *It will help better my career*
 - Commit to improving health and advancing knowledge

Issues:

- Obtaining research funding is (increasingly) difficult
- Funding to build research skills and capacity is limited
- Research in medical (general) practice needs a higher profile
- Research needs to be relevant and translate to meaningful impact
- Lack of co-design
- The 90:30:10 scenario in research 'maturity'

A healthy, thriving, productive research community will help to improve patient outcomes and healthier lives for all (including to practitioners themselves)

Supporting other people's research?

Motivators

- Altruism
- Collaborate as a partner in research of personal interest
- Increase knowledge / learning
- Improve patient care and clinical practice
- Gain resources to support new work
- Influence policy and practice

Issues

- Payment
- Protected time from patient care
- Research workload & excessive paperwork
- Poor communication on study objectives and with study team
- Mining your data
- Lack of relevance to clinical practice
- Exposure to risks in clinical practice (e.g. ineffective care and treatment)
- Reputational risks
- Understanding how data will be used and what will be published