# Qualitative research design: Principles & methods

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# Session Overview

# Learning objectives

Aim: To provide an introduction to qualitative research, it's underpinning principles and methodological approach

By the end of this session you should be able to:

- Define the main features of the qualitative approach to research and provide examples of where and how it might be applied

- Understand the theoretical basis of qualitative research and the relative strengths of qualitative and quantitative modes of enquiry

- Recognise key concepts in the qualitative research process: design, data collection and analysis

# Session Plan

1. Defining qualitative research
2. Qualitative research design
3. Qualitative interviews
4. Qualitative analysis
5. Appraising qualitative research

# Useful resources

- Pope C & Mays N (2006) Qualitative research in health care *(Third Edition)*. Wiley-Blackwell.
- Pope, C., & Mays, N. (1995). Qualitative Research: Reaching the parts other methods cannot reach: an introduction to qualitative methods in health and health services research. *BMJ, 311(6996), 42-45*.
- Kuper, A., Reeves, S., & Levinson, W. (2008). An introduction to reading and appraising qualitative research. *BMJ, 337*.
- Mays, N., & Pope, C. (2000). Qualitative research in health care: Assessing quality in qualitative research. *BMJ, 320(7226), 50-52*.
- Malterud, K. (2001). Qualitative research: standards, challenges, and guidelines. *The Lancet, 358(9280), 483-488*.
- Malterud, K. (1993). Shared understanding of the qualitative research process. Guidelines for the medical researcher. *Family Practice, 10(2), 201-206*.
- Green, J., & Britten, N. (1998). Qualitative research and evidence based medicine. *BMJ, 316(7139), 1230-1232*.
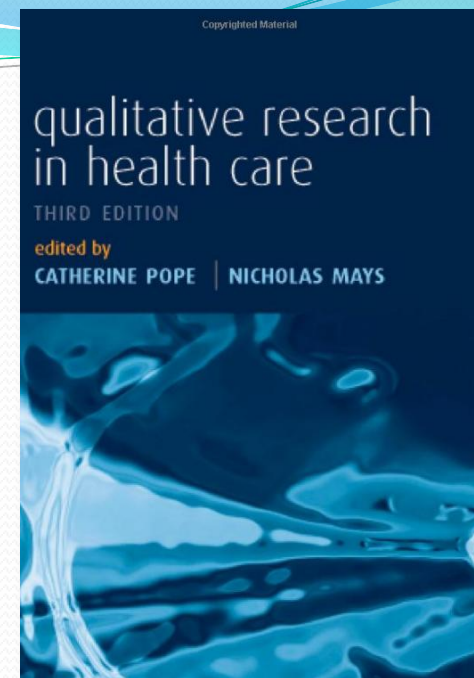
# 1. Defining qualitative research

# For Discussion

- How would you define qualitative research?

- Why do you think researchers use qualitative methods?

# Defining qualitative research

- Qualitative research is concerned with deriving meaning (defining categories of meaning and their relationships):
  - It is typically employed in the collection and analysis of non-numerical data.
  - It is mainly applied to **what**, **how** and **why** questions.
  - Often exploratory in nature and seeks to generate novel insights or develop new theory
- Key concepts:
  - Interpretative
  - Iterative
  - Reflexive
  - Flexible
- Traditionally employed in the social sciences, but contribution to research in health care domain is increasingly well established

# Qualitative and quantitative research

- Originally this has been a point of contention, but the emerging view is that the two are complementary:
  - Choice of method depends upon purpose and theoretical stance.
  - Most research questions can be addressed either qualitatively or quantitatively
- Note that qualitative data can be quantified and much quantitative data can be re-specified as categories.
  - Qualitative data can be coded and summarised statistically
  - There are statistical methods for discovering latent factors
- Qualitative research has often been defined relative to quantitative research, leading to several common (pre)conceptions regarding qualitative research:
  - "Subjective" (biased)
  - "Anecdotal" (unstandardised; unreliable)
  - "Non-generalisable" (context-specific)
  - "Unscientific" (has limited value as evidence)

# Qualitative approach: epistemology

➢ Theoretical stance drives choice of methods

- Experimental science is based upon a "**positivist**" stance
  - There is a discoverable, measurable, objective truth
  - Presumes that relevant variables/categories can be specified for measurement and their relationship is deterministic
  - Leads to empiricism: the testing of hypotheses based upon observation
- Considering phenomenon that have a social component means understanding the perspective of the individual and their context
  - A "**social constructivist**" stance: there is no objective reality beyond people's construction of the world
  - The act of the researcher becomes one of sense-making (constructing meaning)

# 2. Qualitative research design

# Appropriate research questions

- Typically qualitative research addresses questions involving:
  - What is X?
  - What are the different types or (sub-)classes of X?
  - What might influence X?
  - How does X react to specific circumstances and why?
  - What is the history of X or How has X developed over time?
  - What do people think about X?
  - ...rather than: How prevalent is X? What is the strongest predictor of X? or How does X vary across sub-units?

# Main qualitative data sources

- Interview/focus group transcripts
- Observational/ethnographic field notes
- Documentary evidence relevant to the context of study (e.g. board reports; organisational policies & standard operating procedures)
- Relevant existing literature/published sources
- Other: photographic evidence, diagrammatic representations of workplace layout/staff time and motion patterns, etc.

# Types of qualitative research study

- Ethnography/observation
- Case study
- Action research/participative enquiry
- Qualitative interview study
- Market research
- Focus groups
- Expert consensus development/Delphi study
- Discourse/conversation analysis
- Research synthesis
- Development of grounded theory
- Narratives/historical/longitudinal descriptions

# Medical rationale for qualitative approach

Malterud, K. (2001). Qualitative research: standards, challenges, and guidelines. *The Lancet, 358(9280), 483-488.*

QUALITATIVE RESEARCH SERIES

Qualitative research series

## The art and science of clinical knowledge: evidence beyond measures and numbers
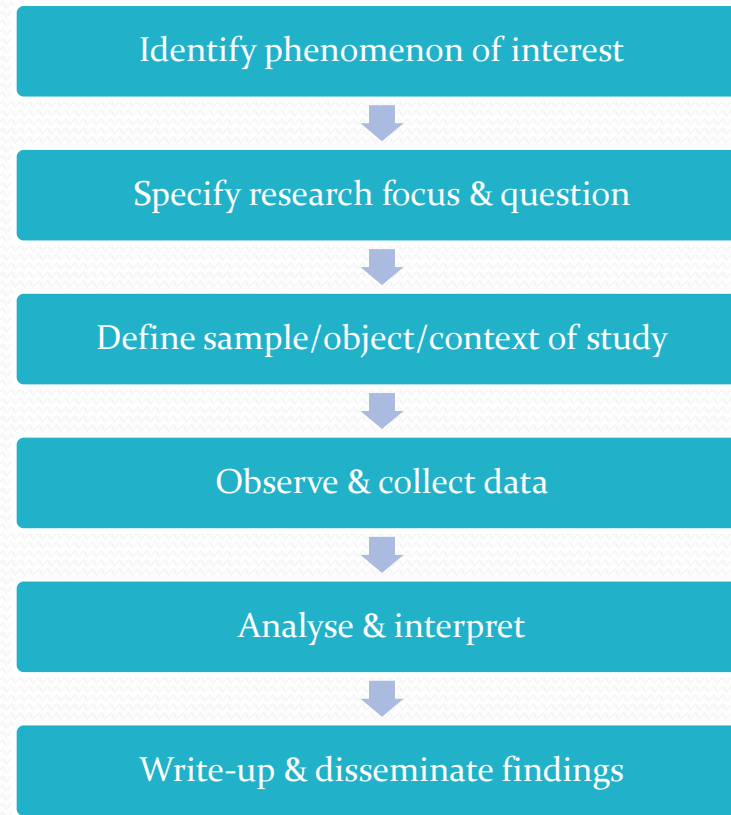
Kirsti Malterud

Medical doctors claim that their discipline is founded on scientific knowledge. Yet, although the ideas of evidence based medicine are widely accepted, clinical decisions and methods of patient care are based on much more than just the results of controlled experiments. Clinical knowledge consists of interpretive action and interaction—factors that involve communication, opinions, and experiences. The traditional quantitative research methods represent a confined access to clinical knowing, since they incorporate only questions and phenomena that can be controlled, measured, and counted. The tacit knowing of an experienced practitioner should also be investigated, shared, and contested. Qualitative research methods are strategies for the systematic collection, organisation, and interpretation of textual material obtained from talk or observation, which allow the exploration of social events as experienced by individuals in their natural context.

# A simple generic model of the research process

Identify phenomenon of interest

↓

Specify research focus & question

↓

Define sample/object/context of study

↓

Observe & collect data

↓

Analyse & interpret

↓

Write-up & disseminate findings

# Qualitative research: An iterative process of enquiry



Identify phenomenon of interest

Specify research focus & question

Define sample/object/context of study

Observe & collect data

Analyse & interpret

Write-up & disseminate findings

Refer to relevant literature & theory

Refine research focus in light of emergent findings

Iterate sampling & data collection towards saturation ("theoretical sampling")

Iterative cycles of analysis and interpretation with reference to external sources and internal data

Test and iterate interpretations using input from key stakeholders

Malterud, K. (1993). Shared understanding of the qualitative research process. Guidelines for the medical researcher. *Family Practice, 10(2), 201-206.*

## Shared Understanding of the Qualitative Research Process. Guidelines for the Medical Researcher

KIRSTI MALTERUD

Malterud K. Shared understanding of the qualitative research process. Guidelines for the medical researcher. *Family Practice* 1993; **10**: 201–206.
The qualitative research process is presented and discussed as a model, emphasizing matters frequently experienced as unfamiliar by the medical researcher. This model represents a prescriptive methodology, implying underlying values on construction of scientific knowledge intersubjectivity—is considered as essential. Various stages of the rese drawing attention to matters that influence analysis and the paths to k tions and theoretical frames of reference. Principles and procedures rela as decontextualizing and recontextualizing, are explained. The structure researcher's responsibility to give access to all levels of the research pro tific inquiry. Such principles should probably more often be explicitly qu sorts of medical research.

### INTRODUCTION

Until recently, research methods and paradigms from the natural sciences have dominated the scene of medical research. However, when it comes to the

mentally dif research, the quire specifi differs from

### RESEARCH REPORT

## Challenges to the Practice of Evidence-Based Medicine during Residents' Surgical Training: A Qualitative Study Using Grounded Theory

Mohit Bhandari, MD, MSc, Victor Montori, MD, MSc, P. J. Devereaux, MD, Sonia Dosanjh, MSW, Sheila Sprague, and Gordon H. Guyatt, MD, MSc
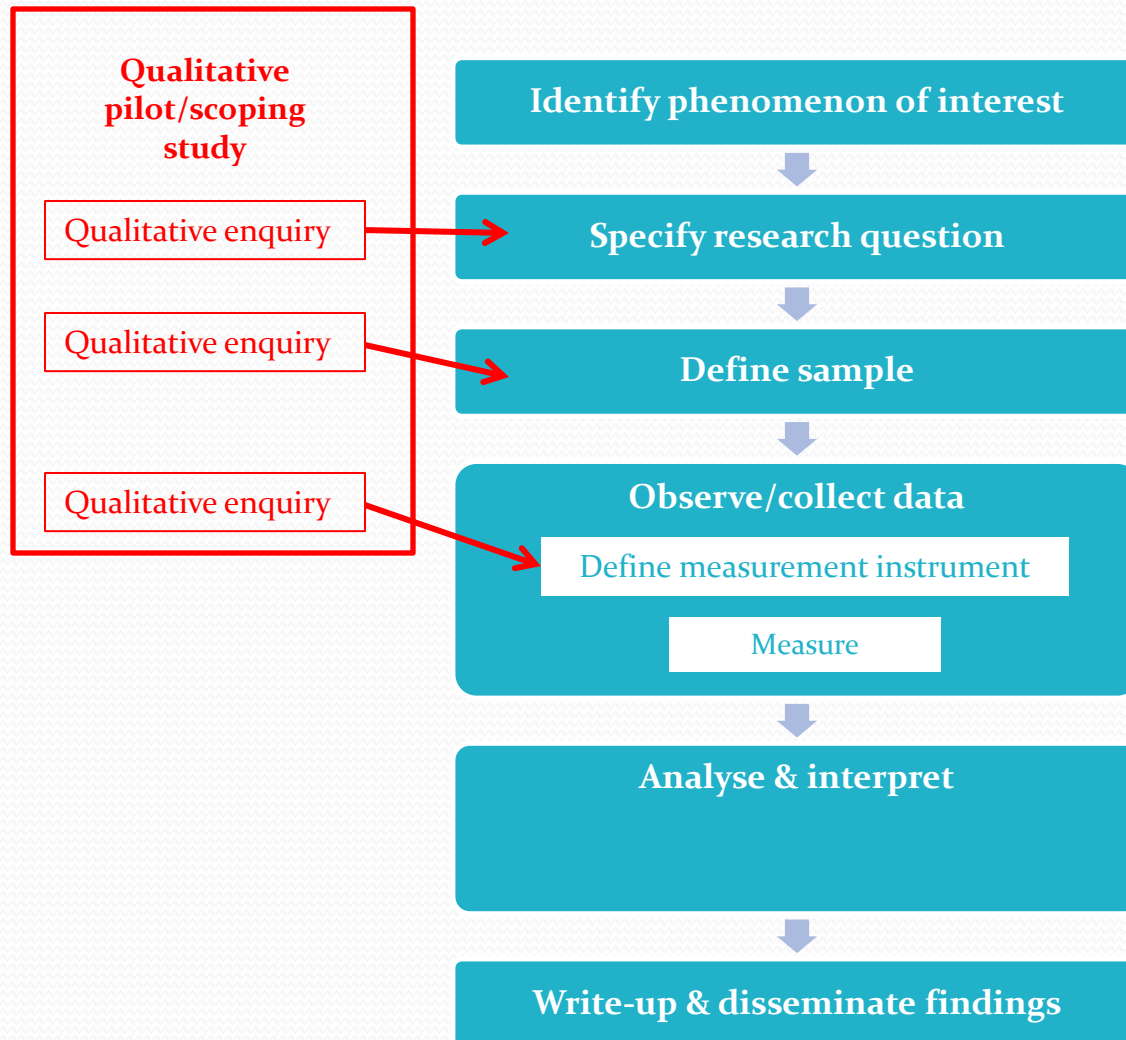
ABSTRACT

**Purpose.** To examine surgical trainees' barriers to implementing and adopting evidence-based medicine (EBM) in the day-to-day care of surgical patients.
**Method.** In 2000, 28 surgical residents from various subspecialties at a hospital affiliated with McMaster University Faculty of Health Sciences in Ontario, Canada, participated in a focus group ($n = 8$) and semistructured interviews ($n = 20$) to explore their perceptions of barriers to the practice of EBM during their training. Additional themes were explored, such as definitions of EBM and potential strategies to implement EBM during train-ing. The canons and procedures of the grounded theory

perceived their lack of education in EBM, time constraints, lack of priority, and fear of staff disapproval as major challenges to practicing EBM. Moreover, the lack of ready access to surgical EBM resource materials proved to be an important additional factor limiting EBM surgical practice. Residents identified several strategies to overcome these barriers to EBM, including hiring staff surgeons with EBM training, offering coursework in critical appraisal for all staff, improving interdepartmental communication, and providing greater flexibility for EBM training.

# Qualitative enquiry as a preliminary to experimental research

# Qualitative enquiry as a preliminary to experimental research

## Thrombolysis for acute ischaemic stroke: consumer involvement in design of new randomised controlled trial

Liedeke Koops, Richard I Lindley

### Abstract

**Objectives** To determine whether consumer involvement would help to solve some of the ethical problems associated with research into thrombolysis for acute ischaemic stroke, with its inherent risk of fatal intracranial haemorrhage.
**Design** Quantitative and qualitative research.
**Setting and participants** Consultation phase: three meetings were held to discuss the planned research, and participants completed a questionnaire. Qualitative work: focus group meetings explored the issues raised during the consultation phase. Design of information leaflets for patients and relatives: trial materials were drafted during the consultation phase and revised in the light of feedback from the focus group meetings and review by patients and carers on

## Qualitative research in evidence-based medicine: Improving decision-making and participation in randomized controlled trials of cancer treatments

Suzanne Audrey  School of Social and Community Medicine, University of Bristol, Bristol, UK

### Abstract
**Background:** Since the 1990s there has been increasing emphasis on 'evidence-based medicine'. The randomized controlled trial is widely regarded as the 'gold-standard' study design for evaluating interventions. However, placing too strong an emphasis on a phase III trial, to the neglect of earlier development and piloting work, may result in weaker interventions that are more difficult to evaluate and less likely to be implemented.
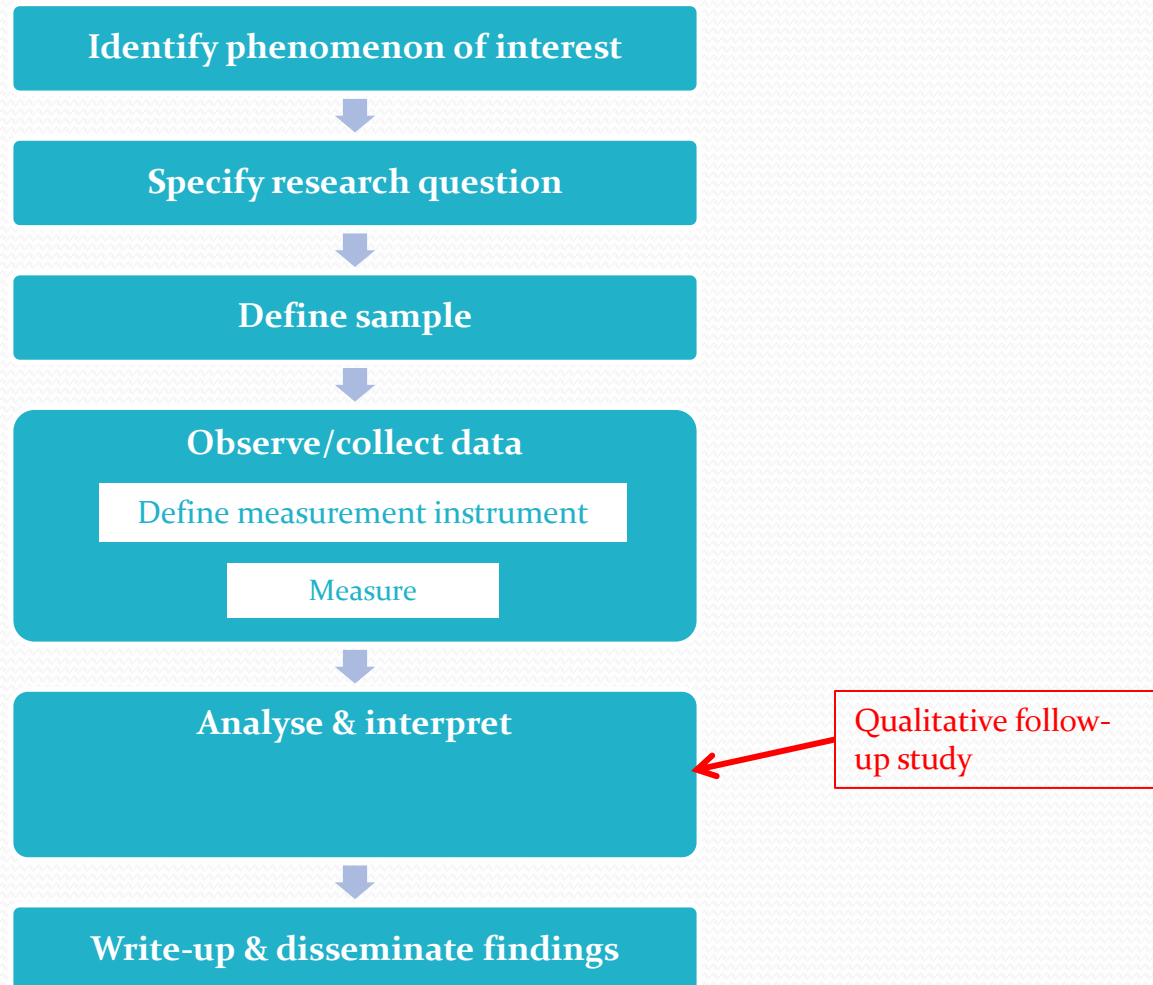**Aim:** To illustrate the benefits and outcomes of qualitative research at the early stages of the research continuum.
**Setting/Participants:** Two cancer studies are evaluated in which the best treatment option is uncertain: ASPECTS

"These studies illustrate the value of qualitative research, particularly during the earlier phases of the research continuum.  Such research may generate hypotheses, strengthen the development and implementation of interventions and enhance their evaluation: all of which are essential to evidence-based medicine."

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# Qualitative enquiry to interpret findings from experimental research

Identify phenomenon of interest

↓

Specify research question

↓

Define sample

↓

Observe/collect data

Define measurement instrument

Measure

↓

Analyse & interpret

Qualitative follow-up study

↓

Write-up & disseminate findings

# From trial data to practical knowledge: qualitative study of how general practitioners have accessed and used evidence about statin drugs in their management of hypercholesterolaemia

Karen Fairhurst, Guro Huby

Department of Community Health Sciences (General Practice), University of Edinburgh, Levinson House, Edinburgh EH8 9DX
Karen Fairhurst, *lecturer*
Guro Huby, *research associate*

Correspondence to: Dr Fairhurst Karen.Fairhurst@ed.ac.uk

## Abstract

**Objectives** To explore how general practitioners have accessed and evaluated evidence from trials on the use of statin lipid lowering drugs and incorporated this evidence into their practice. To draw out the practical implications of this study for strategies to integrate clinical evidence into general medical practice.

**Design** Qualitative analysis of semistructured interviews.

**Setting** General practices in Lothian.

**Subjects** 24 general practitioners selected to obtain a heterogeneous sample.

**Results** Respondents were generally aware of the evidence relating to the use of statins in secondary prevention of coronary heart disease, but they were less clear about the evidence in primary prevention. The benefits of statins in secondary prevention were clearer to them and the social and economic issues

## Introduction

Use of evidence from clinical trials to underpin routine practice is seen as a key part of achieving a cost effective health service that offers consistent high quality care.[1][2] Evidence based medicine requires doctors to appraise clinical trials critically to determine the best way of managing a patient's clinical problem.[3] Evidence based medicine is seen as particularly problematic in general practice, where clinical problems are presented in complex social and psychological contexts.[4] Although support for the principle of evidence based medicine has been identified among general practitioners,[5] recognised barriers exist to its implementation. Studies that have explored how general practitioners access evidence and translate this into practice suggest that strategies based on critical appraisal might fail because they are based on unrealistic models of how "evidence" is accessed and evaluated.[5-8]

# A pragmatic approach to mixed designs?
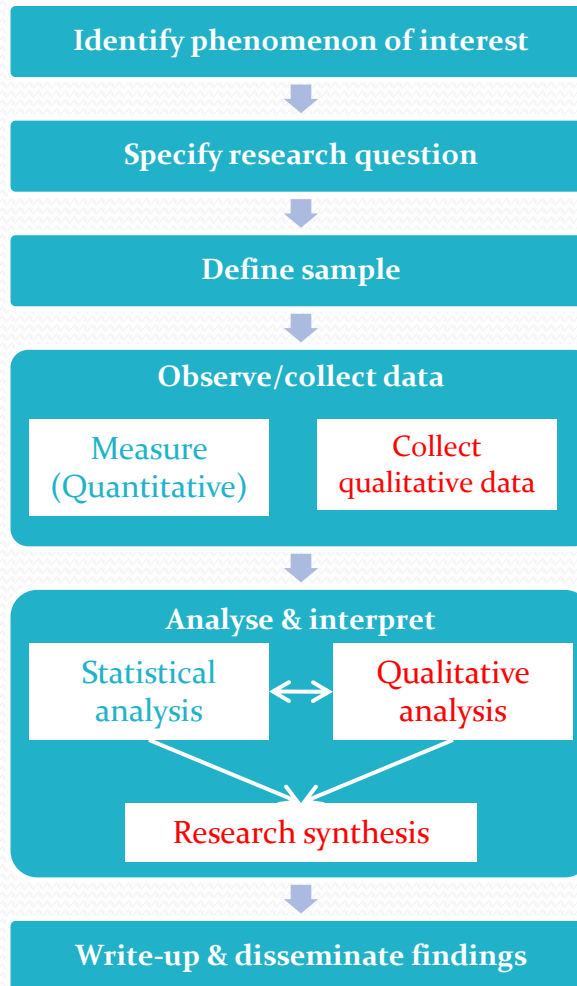
FOR DEBATE

For debate

# Factors affecting uptake of childhood immunisation: a Bayesian synthesis of qualitative and quantitative evidence

Karen A Roberts, Mary Dixon-Woods, Ray Fitzpatrick, Keith R Abrams, David R Jones

Falls in levels of measles, mumps, and rubella (MMR) immunisation in the UK and the continuing debate on how to respond to this situation emphasise the importance of identifying and understanding the factors that affect the uptake of recommended childhood immunisations. Both qualitative and quantitative evidence could be useful in this process. We aimed to explore the feasibility and value of an approach to formal synthesis of qualitative and quantitative evidence in the context of factors affecting the uptake of childhood immunisation in developed countries. We used a Bayesian approach to meta-analysis. Evidence from 11 qualitative and 32 quantitative studies of factors affecting uptake of childhood immunisation was combined and assessed. We conclude that use of either qualitative or quantitative research alone might not identify all relevant factors, or might result in inappropriate judgments about their importance, and could thus lead to inappropriate formulation of evidence-based policy. Further development of our methods might enable rigorous synthesis of qualitative and quantitative evidence in this and other contexts.

The importance of understanding the factors affecting the uptake of childhood immunisation has become evident in

able to provide an explanation of the causes of a problem—eg, by investigation of the perspectives of

# Example of different research questions and approaches in a single area 1

- Studying complex health and service delivery interventions:

  1. How effective has the intervention been in improving clinical outcomes and productivity?

  2. How effective has the programme been in improving patient experience?

  3. How do different staff groups perceive the programme?

  4. What was the planned change, what actually happened and why?

  5. What types of challenges and enabling factors are important in achieving change in clinical work systems?

  6. How does the new system influence staff behaviour and local work place culture?

# Example of different research questions and approaches in a single area 2

- Studying complex health and service delivery interventions:

  1. How effective has the intervention been in improving clinical outcomes and productivity? (quantitative: evaluative – quasi-experimental design)
  2. How effective has the programme been in improving patient experience? (mixed methods evaluation: satisfaction survey & structured interviews)
  3. How do different staff groups perceive the programme? (qualitative; semi-structured interviews)
  4. What was the planned change, what actually happened and why? (qualitative: description/narrative; case study & review of documentary evidence)
  5. What types of challenges and enabling factors are important in achieving change in clinical work systems? (qualitative: exploratory; unstructured interviews and focus groups)
  6. How does the new system influence staff behaviour and local work place culture? (qualitative: ethnographic observation)

# 3. Qualitative interviews

# Sampling in qualitative research

- Sampling in qualitative research is often **purposive:**
  - Maximum variation vs. Homogenous sampling
  - Extreme, deviant and critical case sampling
- *Theoretical sampling* involves re-sampling/extending data collection to explore emerging areas of interest from the analysis (which may not have been pre-specified during the project conception phase)
  - This makes the qualitative research process extremely flexible.
- *Saturation* occurs when no new categories of meaning emerge from subsequent data collection/interviews
- Note that this implies that analysis occurs in parallel with sampling and data collection, not sequentially:

| Data collection | Analysis |
|---|---|

time

Data collection

Analysis

time
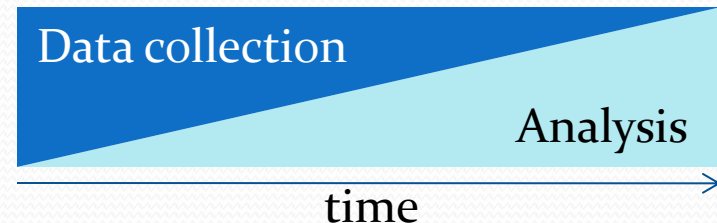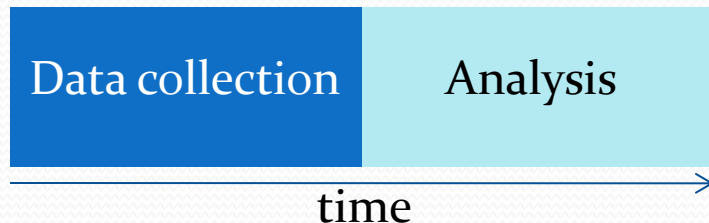
# Structured vs. semi-/un-structured data collection

- Structured (standardised) data collection:
  - Employs set questions/items/categories so that every respondent supplies similar type of information.
  - Important if you want to compare sub-groups.
- Un-structured/semi-structured:
  - Allows elaboration and exploration of new themes not specified prior to data collection.
  - In clinical research practice, un-structured data collection is rare/impossible, so most data is semi-structured in some way.

# Guidance for qualitative research interviews

- Plan access, time and environment for the interview
- Best to record interviews for later transcription.  Alternative = rely upon memory/limited notes; or take another researcher along to act as scribe.
- Use an interview plan/schedule:
  - Ranging from simple list of themes/topics to full sequence of questions with elaborative prompts, standardised instructions and possibly quantitative items.
  - Ensures standardisation of data collection and that each respondent has an equal opportunity (if this serves the research goals and type of analysis chosen)
- Establish rapport and context to orient the interviewee
- Be aware of when you are deviating from the topic guide, its potential value to your research and how much "air time" you devote to exploring tangents

# Minimising bias in the interview process

- Try to avoid closed questions (yes/no answers) and leading questions that constrain the range of the interviewee's response:
  - × Leading: "Tell me about the negative aspects you experienced".
  - × Closed: "Did the treatment work for you?"
  - ✓ Open: "What was your experience of the treatment?"
- Note you can also lead with your body language, facial expressions and amount of time you devote to a topic in the interview.
  - This latter can have consequences for quantitative content analysis and is a good reason to have a clear, balanced interview plan
- Be aware of potential power relationships (and how you set up the interview environment)
- Be aware of how your own perspective, judgements and responses can influence the interviewee

# Interview example: Surgical swab counting

**Interviewer: Have you actually had any personal experience with a retained swab?**

Respondent: Not with the retained but I had with a lost swab....at the end of the case we couldn't find a swab. Halfway through at the end of one stage of that operation we couldn't find a swab. And never found it, couldn't find it anywhere. And we x-rayed the patient and did everything like that and still couldn't find it. And even now I think, 'Oh my God, whatever happened to that?'

**Interviewer: Do you have any views on the current methods that we're using for swab counting?**

Respondent: I dislike the way they count five, plus five, plus five. And I think that's because I trained in the Southern Hemisphere where you do not do that. You keep a running total, so you count to that total, you know, and -

**Interviewer: Yeah, that makes sense.**

Respondent: To me, I just like that. So I don't like that. I don't like the red tags that they have on swabs because I think they're not x-ray detectable. And if they fell into the patient you'd never find them.

**Interviewer: No, yeah.**

Respondent: And I dislike how people use those as a backup. If the count is wrong, yeah, you shouldn't have to be using a safety net to, yeah, but -

**Interviewer: And because you know you've got that safety net you might -**

Respondent: Yeah, I think people rely on it. If it's wrong, I'll just count my ties, and, so -

**Interviewer: Yeah, and I guess they're quite easily lost as well -**

Respondent: Yeah.

**Interviewer: Because they're tiny, aren't they?**

Respondent: They are tiny and they can fall on the floor or anything, yeah.

**Interviewer: So in your opinion, who is responsible for ensuring that the swab count is correct?**

Respondent: Me. If I'm the scrub nurse, me.

**Interviewer: Right. And in your opinion, who is responsible for ensuring that there's nothing left inside the patient?**

Respondent: Me and the surgeon, because he'll only look if I tell him to, yeah, yeah.

**Interviewer: Do you think that having several cases of retained swabs at this trust in 2 years is a problem?**

Respondent: Yes, yes, a huge one, yeah.

# Interview Schedule: Developing Questions

- **Useful knowledge elicitation techniques (and types of prompts):**
    - **Descriptive** questions e.g. *"what does your role involve? Can you describe....?"*
    - **Structural** questions explore how the person makes sense of the world e.g. *"what was your understanding of why that happened?"*
    - **Clarifying/paraphrasing** questions test your interpretation of the interviewee's perspective *"so you take the view that.......?"*
    - **Elaborative** questions probe for deeper meaning and understanding: *"Can you tell me more about......?"*
    - **Contrast** questions allow participants to make comparisons as a means of elaboration e.g. *"what do you think about practice X compared with practice Y...?"*
    - **Boundary probing/challenging** *questions explore the extent to which an individual believes a statement is true: "Is that true in all scenarios? Are there any instances when that is not true?"*
    - **Evaluative** questions – to express their appraisal or assessment e.g. *"how effective do you think this method is...?"*

# 4. Qualitative analysis

# Different approaches to data analysis

- Thematic analysis
- Template/framework analysis
- Content analysis (quantitative)
- Grounded theory:
  - Constant comparative method
  - Iterative coding
  - Theoretical sampling
- Discourse analysis
- Case study (triangulation on a specific context/object/process/group)

# General sequence of qualitative analysis

Fragment data into meaningful units

⬇

Open coding (descriptive)

⬇

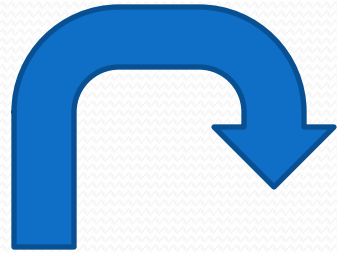Organise codes into categories and develop definitions of categories

⬇

Refine and structure categories into hierarchies and groups

⬇

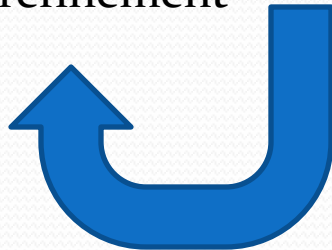Search for links between categories and disconfirming evidence

⬇

Derive models and theory for reporting

Check interpretation with stakeholders

Iterate category refinement

# Inductive & deductive reasoning

- **Deductive reasoning**: Application of prior knowledge/pre-existing models to interpret current experience
  - Does the data suggest our (stable/prior) hypothesis is accepted or rejected?
  - Relevance to qualitative analysis: applying a pre-formulated framework to the data and assessing the degree to which the data fits
  - e.g. "Template" or "framework" analysis

- **Inductive reasoning**: updating prior knowledge to take account of current experience
  - Does our current understanding of the data suggest a new model/hypothesis that may be more appropriate/a better fit?
  - Relevance to qualitative analysis: constantly evolving an interpretative framework to fit the data as our understanding of the data develops
  - e.g. Development of theory that is "grounded" in the data

# Example of hierarchical coding in a word processor

| Category | Theme | Subtheme | Statements / Quotes |
|---|---|---|---|
| Impact (continued) | Efficiency (continued) | Time wasting | Seeking help to interpret an unknown abbreviation may take up to half an hour's time. (Surgical Nurse) (55) |
| | | Space saving | Abbreviations save space when writing on the forms. Sometimes there is not enough space on the forms to spell out words. (Geriatrician) (50) |
| | Patient safety | Incidents & medical error | Incidents due to misinterpretation of abbreviations are unlikely because the nurses always ask the person who wrote the abbreviation, or, if this person is unavailable, a colleague. (All participants) (68) |
| | | | There is a potential for medication errors, when symbols meet with poor handwriting. (Internist) (74) |
| | | Awareness | Staff members are aware of the risk of misinterpreting abbreviations. They always ask someone else, if they are not sure about the meaning. (Surgical Nurse) (59) |
| | | | It is possible to misinterpret an abbreviation, when you think you know the meaning and don't question it. (Surgical Nurse) (58) |
| | | Error avoiding | Sometimes abbreviated medication names are easier to understand than the full name, particularly when using chemical names. (Internist) (64) |
| | Confusion | Babel of languages | Even though most abbreviations are understandable within the specific context, a considerable amount of guesswork is required. (Surgical Nurse) (44) |
| | | | Most doctors struggle with abbreviations used by colleagues from other departments or specialties. (Geriatrician) (47) |
| | | Affected groups | For staff members, who speak German as a second language, abbreviations are difficult to understand, even if they speak excellent German. (Internist) (36) |
| | | | Local abbreviation habits are difficult for agency and bank nurses. (Nurse, Internal Medicine) (37) |

# Analysis of Interview Fragment

| Extract (s) | Open Coding/Sub-themes | Master Themes |
|---|---|---|
| I: In your experience, what are the main problems and issues faced by a Scrub Nurse trying to conduct a swab count?<br><br>R: Yes, for me it's... you know, if your Circulating Nurse is not paying attention, really, and not being there because, you know, they should work as a team.  We generally do find, as I said earlier, some that are not always focused and paying attention, you constantly have to watch your swab board and if you, you know, if you're using a lot of swabs, with the patient bleeding, that you have to focus then, and you know.<br><br>And the other thing is just, mostly, you know, if, you're not that familiar with your instrumentation and the surgeon is hassling you, sort of, you know, "Oh we need to close, we need to close, you know, can I have this," and some would... sometimes just, you know, go, "Oh, just give me the needle, give me the needle," so you cannot focus on your count and such if you're getting all this hassling from them, you know.  So, that is... that, as I said earlier, if you have more than one surgeon and they want to get through this wound, want to close, yes, we do have.  And especially now, not that I do it much, but in plastics with flaps and things really, doing quite a long and quite fiddly work with small swab, and that is as, you know, you push a swab into a wound and nobody sees, it gets soaked up in blood and it's just difficult. | Lack of teamwork<br><br>individual technical skills and concentration vs group performance<br><br>Technical skills<br><br><br>Technical performance<br><br><br>Leadership<br>Time constraints and pressures vs prioritisation of tasks<br><br><br><br>Comparison with other surgical contexts and technical performance | Risk determinants linked with Inter-professional relationships<br><br><br>Time pressures, coupled with leadership styles compromise focus on swab counts .<br><br><br>Risk determinant as a function of variations between applied surgical contexts |

# Output: Hierarchical coding grid

Figure 12: Coding grid

# Example output: Content analysis

**Table 2**

Performance obstacles of ICU nurses identified in the qualitative and quantitative studies. The quantitative study findings (last column) have been previously reported in the Nursing Research Journal (Gurses and Carayon, 2007).

| Main categories | Performance obstacles | Qualitative study | | Quantitative study |
| --- | --- | --- | --- | --- |
| | | Number of times this obstacle mentioned in interviews | Causes identified by nurses | Number and percentage of respondents who have experienced the obstacle |
| Physical work environment | Insufficient space to sit down and do paperwork | 8 | - Poor physical environment design<br>- Insufficient work space for nurses during day shifts since nurses share the same work space with other care providers (physicians, medical students) | 71 (26%) |
| | Rooms of two patients assigned to a particular nurse not close to each other. | 4 | - Patient locations are not always taken into account while assigning patients to nurses at the beginning of the shift. | 31 (11%) |
| | Noisy work environment | 7 | - Too many alarms<br>- Phones constantly ringing<br>- A lot of conversations in the unit during day shift<br>- Most nurses give report in the common workspace area rather than bedside, leading to a lot of noise in the common work area. | 124 (46%) |
| | Crowded work environment | 10 | - Many people (physicians, medical students, families) in the unit during day shifts | 100 (37%) |
| | Disorganized patient rooms | 2 | - Previous shift's nurse leaving the room disorganized. | 46 (17%) |
| Family relations | Distractions from family members | 6 | - Family in the unit visiting and asking questions/ interrupting during handoff report<br>- Many members of the family come to visit, rather than the immediate family, leading to considerably increased workload for nurses | 115 (42%) |
| | Spending too much time to meet family needs | 15 | - Family visits too long<br>- Help from social worker to communicate with family not available in a timely manner | 96 (35%) |

# Example output: Theories and frameworks

**Table 3** Fifteen requirements for effective safety feedback for incident reporting and rationale as to how each has a positive impact upon operational safety

| Requirement | | Description |
|---|---|---|
| 01 | Feedback at multiple levels of the organisation | Feedback or control loops should operate at multiple levels of the organisation across individual teams, units or subdepartments. They should also operate across organisations. This allows lessons learnt in one particular context to be applied as broadly as possible in as many similar localities as possible. A single organisation might experience a rare incident, but all organisations can learn from it. |
| 02 | Appropriateness of mode of delivery or channel for feedback | Feedback should utilise a variety of modes, formats or channels to increase the awareness of as wide an audience as possible. Email bulletins, workplace leaflets, bulleting board postings, team briefings or safety newsletter publications can all be used to provide staff feedback. |
| 03 | Relevance of content to local work place and systems | The content of safety information fed back should be targeted to individual work system contexts so that operators receive only what is necessary and relevant to their operations. Feedback should be suitable and meaningful within the local context, with high-level guidelines and policy being directly translatable into specific actions and behaviour on the local level. |
| 04 | Integration of feedback within the design of safety information systems | The capability for useful feedback functions should be embedded within the design of risk-management IT systems and incident databases, in addition to reporting and analysis functions, so that the reporting community can access or generate customised reports to support local quality-improvement activities. |
| 05 | Control of feedback and sensitivity to information requirements of different user groups | Careful consideration needs to be given to how information, especially concerning safety incidents, will be presented to specific audiences, particularly the public and external audiences. |
| 06 | Empowering front-line staff to take responsibility for improving safety in local work systems | Effective feedback should support front-line staff, while illustrating how they can take responsibility for improving operational safety in their local working environment. Channels, mechanisms and forums should be provided to create diabgue and through which front-line staff can respond to feedback. |
| 07 | Capability for rapid feedback cycles and immediate comprehension of risks | The feedback loop, or a rapid response process, should complete quickly for immediate threats to safety, even if only to offer temporary solutions/workarounds or raise the profile of an issue in staff's awareness until a more detailed investigative process can be completed. Communication of an "unsolvable" safety issue to the reporting community can often prompt further reports and suggestions for solutions. |

# Example output: Ethnographic observation
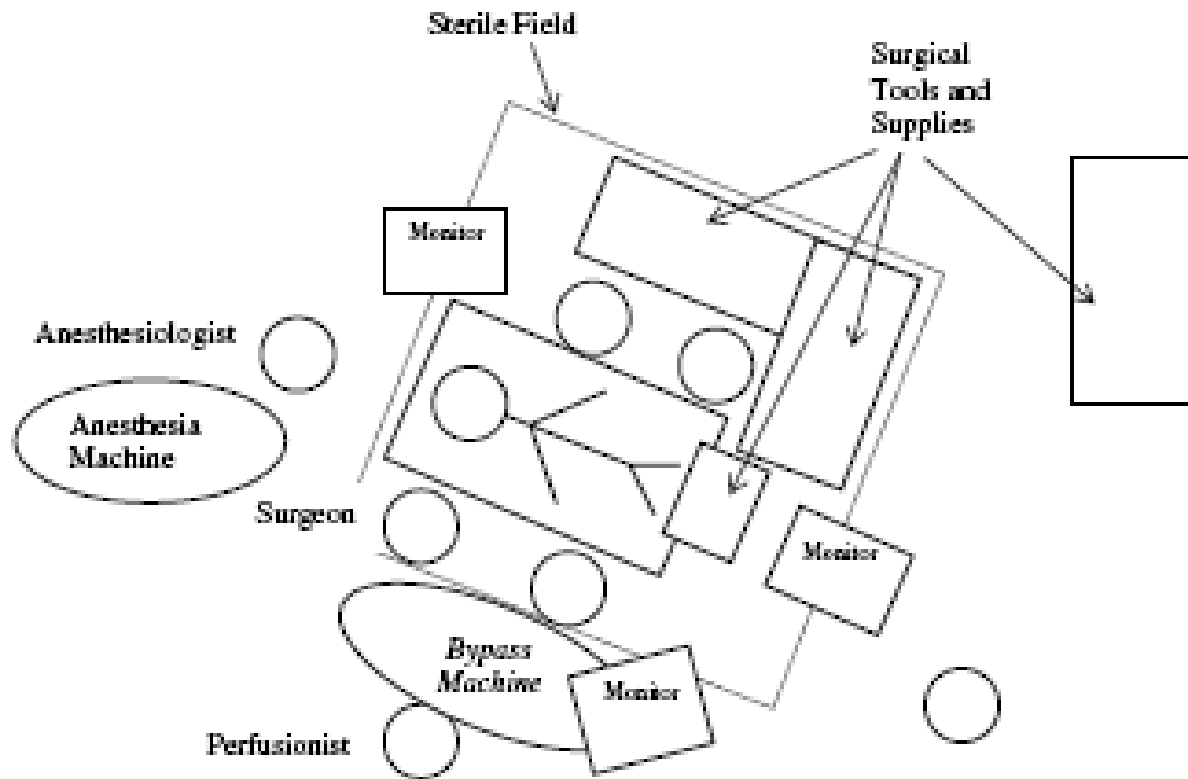


Fig. 1. The heart-room during on-pump CABG surgery. Circles in this diagram represent members of the surgery team.

# 5. Appraising qualitative research

# Evaluation of qualitative designs

- Traditional criteria: Reliability, validity and objectivity.
  - May not be appropriate: based upon positivist notions of generalisability, repeatability/standardisation and detachment of the researcher
- What alternative criteria are there?
  - Perceived usefulness/value by relevant stakeholder groups
  - Depth of analysis and grounding in the data
  - Degree of engagement with the phenomenon and context of study
  - Peer/stakeholder interpretation of meaning
  - Appropriateness of the terms of reference for the interpretation (e.g. Experience, evidence & theory)
  - Observation of best practice in qualitative design, analysis and reporting.

# Overview of CASP framework
## (UK Critical Appraisal Skills Programme)

1. Was there a clear statement of the aims of the research ?
2. Is a qualitative methodology appropriate?
3. Was the research design appropriate  to address the aims of the research?
4. Was the recruitment strategy appropriate  to the aims of the research?
5. Were the data collected in a way that addressed the research issues ?
6. Has the relationship between researcher and participants been adequately considered?
7. Have ethical issues been taken into consideration?
8. Was the Data analysis sufficiently rigorous?
9. Is there a clear statement of findings?
10. How valuable is the research?