A meta-narrative review of electronic patient records

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23 systematic reviews on the electronic patient record, so why do another one?

- No clear messages for practice and policy
- Research evidence growing, yet conclusions still:
  - evidence is conflicting
  - no definitive solutions
  - more research needed
- Gap between the rhetoric (be it Tony Blair ten years ago, or Barack Obama today) and the reality of ‘failed’ programmes
- Awareness of a broader literature, not indexed on Medline, not generally covered by existing reviews
Not just heterogeneity, not just mixed methods, but incommensurability

The meta-narrative approach

- Heterogeneity and pluralism
  - Problems of heterogeneity multiply with more complex questions, with multiple outcomes, varying systems and different methodologies – different paradigms
  - Various approaches developed to review broad methods
- Meta-narrative review (developed from the realist review)
- Use a historical and philosophical perspective as a pragmatic way of making sense of a diverse literature
Key questions (from Kuhn, “The structure of scientific revolutions”, 1962)

- What research teams have researched this area?
- How did they CONCEPTUALISE the problem?
- What THEORIES did they use to link problem with potential causes and impacts
- What METHODS did they define as ‘rigorous’ and ‘valid’?

Open-ended question

Explore the literature

- Research tradition A
  - Theoretical basis
  - Quality criteria
  - Evaluate, summarise

- Research tradition B
  - Theoretical basis
  - Quality criteria
  - Evaluate, summarise

- Research tradition C
  - Theoretical basis
  - Quality criteria
  - Evaluate, summarise

Meta-narrative map of underpinning traditions

Meta-narrative review (how to get started)
Meta-narratives on the EPR in an organisational context

- Health information systems (based in health informatics and EBM, literature generally covered in Cochrane-style reviews)
- Health services research (in the biomedical literature, but focus on change management)
- Patient safety (focus on error)
- Computer-supported cooperative work (developed from human-computer interaction)
- Information systems – positivist approaches
- Information systems – interpretivist approaches
- Information systems – technology-in-practice approaches (chiefly Orlikowski’s technology structuration)
- Critical sociology (feminist and Foucauldian)
- Actor-network theory (recursive, post-structuralist approach, including work of Marc Berg and recent papers from Norway)
Silos or interrelated?

Silos

- Most health informatics literature ignores socio-technical perspectives
- Technology structuration largely US organisational sociologists and doesn’t cite/is mostly not cited by European critical sociologists

Not silos

- Biomedicine meets socio-technical approaches
  - Cross-disciplinary appeals (Pratt et al.)
  - ‘Multilingual’ researchers (e.g. Berg)
- Socio-technical approaches aligning
  - CSCW and STS have common roots in ANT, Zuboff etc.
  - Links between CSCW and STS over the years (e.g. Suchman)
- Coming together of CSCW, STS and IS with newer researchers (e.g. Ellingsen)
- Østerlund draws on Orlikowski and Berg + brings in social psychology

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De Vaujany’s categorisation

Causalist (e.g. technological determinism)

Integrative and recursive – technology affects context and context affects technology (e.g. technology structuration)

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Berg (1999), *Comp Supp Coop Work*, 8: 373-401
Østerlund (2004), *J Center Inf Studies*, 8: 35-43
Synthesis: A set of tensions

- EPR as tool or container vs EPR as actor
- Cognitive view of the human subject (user as an information-processor or decision-maker) vs. relational view (user defined primarily by their position within a social/socio-technical system)
- Context as setting within which EPR is implemented vs context as the EPR-in-use
- Clinical work as decision-making vs clinical work as situated practice; and knowledge as transferable facts vs knowledge as information-in-context
- Process of change: logic of determinism vs logic of opposition
- Success as objectively and prospectively defined vs success as socially negotiated and context-specific
- Scale: bigger the better vs small is beautiful

Conclusions... and beyond the EPR?

- Techno-utopian dream: *a Big Computer solves everything*
- Gap between policymakers’ perspective and ‘coal face’ workers
- Failure of evidence-based approach
  - Search for evidence can be very blinkered
  - Gap between policymakers’ perspective and many researchers’
  - Gap between research results and conclusions
- Focus on outcomes is good, but can obscure details about how something works → Importance of the realist approach, of theory
- The RCT has limits, in treating the intervention as a ‘black box’ and in controlling for the context, when it’s the details of the technology and the context that matter
Or, as someone else recently put it...


“We also need to wean Government off the idea that IT projects can substitute for effective policy action. For too long, ministers have used IT as a displacement activity. IT must rather be seen as just one of the tools of modern management; and often not be the most important tool (so neither ministers nor voters should expect too much).

“To paraphrase the late Roger Needham, “if you think IT is the solution to your problem, then you don’t understand IT, and you don’t understand your problem either.””

(emphasis added)

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Reflection on the meta-narrative approach

- Very different picture to traditional Cochrane approach
- Rich array of theories and methods
- Systematic, but interpretive