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Electronic health records: Failed promises, successful praxis
The LOUIS project (Learning from Organisations Using Information Systems)

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LOUIS: In-depth study of three e-health approaches to the enhancement of clinical care and its delivery [08/1602/131]

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1: UCL Medical School
2: Centre for Health & Social Care, University of Leeds
3: The Whittington Hospital NHS Trust
4: UCL Interaction Centre
5: Laindon Health Centre, Essex

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- Trish Greenhalgh, Deborah Swinglehurst, Pippa Bark & Geoff Wong on the meta-narrative review of electronic patient records
- Ashik Shah, Lacey Colligan, Janet Anderson, Dipak Kalra & all in the North Central Community Based Anti-Coagulant and Stroke Prevention Services
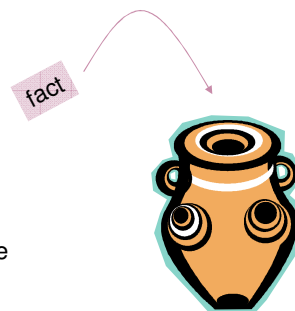

Electronic patient records

Meta-narrative review of the electronic patient record (EPR) in organisations

• Searched 5000 abstracts and identified >500 relevant books and papers

• Final synthesis inc. 23 previous systematic reviews + 85 primary studies

- Techno-utopian vision: persistent belief in the merits of EPR despite research evidence lacking and *many* documented cases of 'failure'
- Recursivity: context affects use of the system, use of the system changes the context
- Materiality: different affordances of paper and electronic
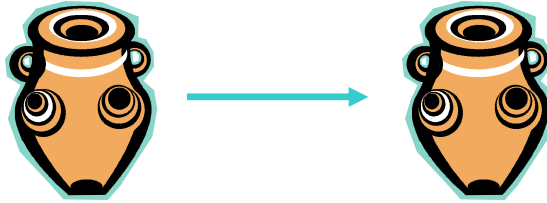- EPRs are not an agreed and agreeable common account, but communicative, boundary objects

Model 1: The patient record as a container of facts
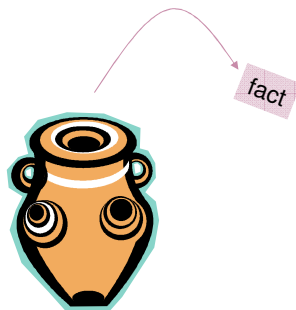

A health care professional collects data about a patient. These facts are entered into the record.

The record, containing facts, is shared

Electronic patient records can be moved
and shared more easily and more
reliably than paper records

Facts about a patient are available to
another health care professional to
use.

fact

Model 2: The patient record as a tool supporting activity

Patient records are tools that support activity – they are contextualised to the particular job done by particular health care professionals

Interaction between health care professionals involves 'translation' and negotiation, *not* an agreed common perspective

Should electronic patient records support communication between particular health care professionals?
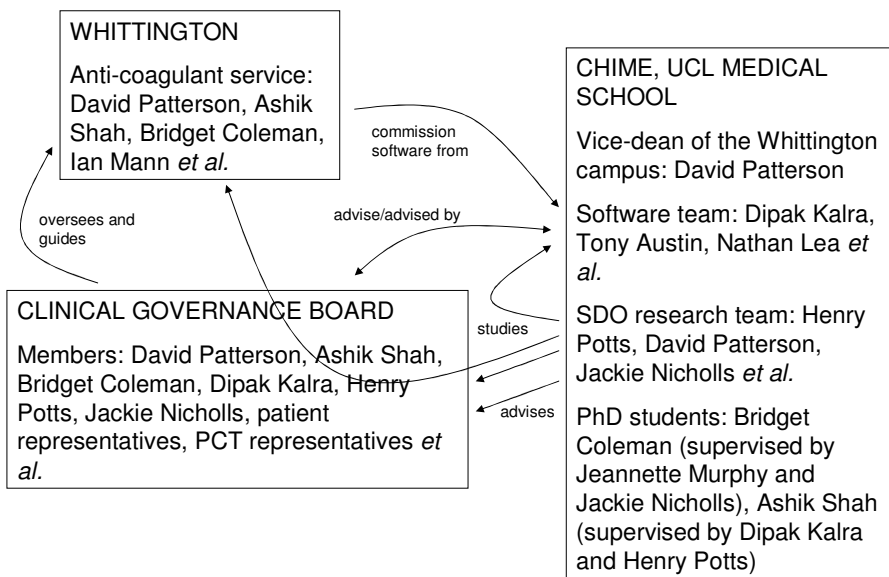

North Central Community Based Anti-Coagulant and Stroke Prevention Services

- Warfarin has a narrow therapeutic range and requires close monitoring
- Historically, most UK services are hospital-based
- The North Central Services are community-based: patients attend clinics at GP surgeries or local pharmacies
- Multiple different contracts & arrangements involving Whittington NHS Trust, Barnet PCT, Islington PCT, Haringey PCT, Enfield PCT *et al.*
- Point-of-care blood tests
- Mostly common electronic patient record and decision support system
- Shared governance and training

Service successful so far

- Time in range comparable with hospital care
- Patient feedback mostly very positive in terms of greater convenience
- Commissioners and participating health care professionals happy
- Hope of fewer adverse events (but insufficient data)

WHITTINGTON

Anti-coagulant service: David Patterson, Ashik Shah, Bridget Coleman, Ian Mann *et al.*

commission software from

CHIME, UCL MEDICAL SCHOOL

Vice-dean of the Whittington campus: David Patterson

Software team: Dipak Kalra, Tony Austin, Nathan Lea *et al.*

oversees and guides

advise/advised by

SDO research team: Henry Potts, David Patterson, Jackie Nicholls *et al.*

CLINICAL GOVERNANCE BOARD

Members: David Patterson, Ashik Shah, Bridget Coleman, Dipak Kalra, Henry Potts, Jackie Nicholls, patient representatives, PCT representatives *et al.*

studies

advises

PhD students: Bridget Coleman (supervised by Jeannette Murphy and Jackie Nicholls), Ashik Shah (supervised by Dipak Kalra and Henry Potts)

Clinicians and patients as co-researchers, researchers as co-deliverers

- Balance between objective distance and participative insight, and we're much more towards the latter
- Desire to involve research participants, be they healthcare professionals or patients
- Action research – disseminating results and producing change
- "it is not improvement, critique or reflexivity that form the principal rationale of this strategy, but friction resulting from enabling participants to see their practices 'from under a different aspect' […] leading towards indeterminate outcomes." (Iedema 2008)

Problems occur at boundaries

- Patients in crisis adrift without anyone taking the lead over their care (GP, anti-coag. services, A&E, hospital clinics…)
- Problems when transferring patients from existing hospital-based services elsewhere into the community-based service
- Problems with IT available
  - *e.g.*, forthcoming EPR update accessed *via* a web browser: system compatible with Internet standards and thus Microsoft Internet Explorer 8 (4% market share) and MSIE7 (45%), as well as Firefox (22%), Safari (8%) *etc.*, but artefact arises on MSIE6 (18%), **but** MSIE6 is mandated for using Choose and Book and thus generally used by GPs

Way forward

- Not about records (facts), but about communication & knowledge
  - *e.g.*, propose improving training in the act of referral, with *pro forma* in EPR to be considered
- Praxis and co-working
  - *e.g.*, audit tool to support co-operation with GPs

Thank you for your attention.

Any question?

Abstract:

Policymakers present the electronic health record (EHR) as a panacea for reforming healthcare, yet the promises of numerous programmes have been challenged by failed adoptions. Research into EHRs is seen in health informatics, information systems research, computer-supported cooperative work (CSCW) and science & technology studies (STS). Thus, we carried out a meta-narrative review. This seeks to identify distinct research traditions, each with its own story of how research unfolded. We then use these to make sense of this diverse literature.

This suggests key factors in understanding EHR adoption. Much of the literature espouses a techno-utopian vision based on a model of technological determinism, but other research stresses co-evolution models, where technology adapts to context and context adapts to technology. The EHR should be seen as something that supports work rather than as a container of separable and objective knowledge. Attempts to integrate and standardise record-keeping can paradoxically lead to fragmentation.

Reflecting the review results, I describe a case study of a community-based anticoagulation service using an EHR and decision support. Here, design of the service and of the software is an ongoing, iterative process: I suggest praxis is a way of taming the co-evolution inherent in technology use. The service has used a variety of risk management approaches to identify threats to quality and patient safety. These threats are mainly at the edges of the service, reflecting dangers in organisational boundaries. Challenges lie in improving communication across those boundaries.