The rise and fall of an empire: critical reflections on the National Programme for IT in England

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08/12/2011
NHS CRS & NPfIT, AT, Brunel
Overview

- Need for EHRs
- EHRs internationally
- National Programme for IT in England
- Our evaluation
  - Background
  - Aims
  - Methods
  - Preliminary findings
  - Conclusions
  - Lessons learned
  - Next steps
Major challenges facing healthcare systems internationally

- Changing demographics: ageing populations
- Increasing numbers of people living with long-term conditions
- Spiralling healthcare costs
- Ongoing concerns about the safety, quality and inefficiency of healthcare
Drive to implement electronic health record systems (EHRs)

- EHRs are now considered central to the delivery of safe, high quality, efficient healthcare (IOM 2009)

- EHRs are now being introduced throughout the world: North America, Europe, Australasia, Middle East, etc

- Many of these initiatives have tended to be small-scale, but these are now increasingly national-scale endeavours (Canada & USA examples)
A digital, longitudinal record of a patient’s health and healthcare interventions that is available to healthcare providers across a range of clinical settings (Robertson et al. 2010)

- Overlaps EMR and EPR

- NHS CRS in the context of England
Other countries

- **Canada**: A federal organisation: Canada Health Infoway; Infoway investment; each province & Territory its own suited EHR; a national jurisdiction approves and funds

- **USA**: ONC HIT; HITECH Act; achieving meaningful use of EHRs through incentives and REC (regional exchange centres); adopting certified EHR technology, 27 B$ over 10 years; educating 4000 experts; national standardisation vs local customisation
Thousands of different, small-scale, NHS IT systems in use; mostly not clinical

IT use and expertise in NHS England patchy - wide local variations

No means of securely exchanging confidential healthcare information between NHS settings

increasing concerns about retaining a healthcare service that remained “free at the point of care”
The history of NHS IT policy

1983  Griffiths Report
1993  Management Information Systems
1998  Information for Health
2000  The NHS Plan
2000  ERDIP (Electronic Record Demonstration Project)
2002  Delivering 21st Century IT Support for the NHS
2004  Better Information, Better Choices, Better Health
2004  National Programme for IT
2008  NHS Informatics Review (‘Swindells Report’)
2010  Liberating the NHS: An Information Revolution
Background to start of NPfIT – a political ‘vision’

1998: “If I live in Bradford and fall ill in Birmingham then I want the doctor treating me to have access to the information he needs to treat me.” (Rt. Hon. Tony Blair, NHS Conference, London, July 2, 1998)

2002: NPfIT ‘vision’ approved by Tony Blair at an un-minuted 10-minute briefing in Downing Street
Original scope for NPfIT

- Provide Prescriptions Service
- Provide Bookings Service
- Build Life-long Health Record Service

Pervasive national electronic infrastructure (N3)
~50 million patients

~8.5 thousand GP practices

167 acute hospital Trusts

58 mental health Trusts

129 NHS Foundation Trusts, which have greater autonomy from Department of Health control and may choose to opt-out of the NPfIT
Time scales & initial cost estimates

- When the NPfIT started, it was hoped that this would result in universal electronic health records and secure data exchange throughout NHS England by 2010...

- This was a compromised time scale as the PM (reportedly), wanted EHRs in place before the 2005 General Election

- Cost estimates were: ~£6.2 billion; then raised to £ 12.7 b
Continuing expansion of NPfIT

Pervasive national electronic infrastructure (N3)

- **Original Scope**
- **Additional Scope**
The NHS CRS delivery structure in 2010
(Robertson et al. 2010)

*BT took over 8 Trusts with Cerner Millennium from former Southern LSP, Fujitsu, plus has a new contract for 4 acute and 25 RiO sites in the Southern area*
First independent multi-facet evaluation of the NHS programme to implement EHR systems into secondary care Trusts throughout England

Overall aim: To conduct a formative and summative evaluation of the implementation and adoption of the NHS’ (Detailed) Care Record Service into secondary care in England to inform policy & practice

Interim aim: To identify early lessons from implementation in early adopter sites
Work Package 1 (qualitative, longitudinal)
Implementation, deployment and organisational learning
LSP roll-out teams, software suppliers, members of the NHS Trust implementation team and trainers/support staff. Relevant documents

Work Package 2 (qualitative, longitudinal)
Attitudes, expectations and experiences of NHS stakeholders
Interviews with patients, carers, healthcare professionals, managers, IT service providers, IT support personnel, administrative staff

Work Package 3 (mixed methods, longitudinal)
Organisational consequences: organisational workflow, professional roles and data quality
Record review; interviews with healthcare professionals and administrative staff involved in patient pathways; relevant documents; survey

Work Package 4 (mixed methods)
Assessment of costs of NHS CRS implementation
Estimating local implementation costs; NHS CRS cost categories. Relevant documents; interviews

Work Package 5 (quantitative, pre-post)
Assessing error, safety and quality of care
Quantitative measures of missing information in outpatient clinic records

Work Package 6
Organisational consequences and implications for future IT deployments and evaluations
Integration and summary of case study findings/conclusions; interviews with additional NHS CRS stakeholders; conclusions and recommendations for NHS policy and practice and future evaluations

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Methods

- **Design:** Prospective, longitudinal, multi-site case study evaluation

- **Sampling of cases:** Purposive sampling to recruit a diverse range of secondary care NHS Trusts in England and to include sites implementing all three applications

- **Settings:** 12 secondary care NHS Trusts (9 acute, 3 MH)
The Sociotechnical Framework *(Cornford et al. 1994)*

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<thead>
<tr>
<th>System Functions</th>
<th>Human Perspectives</th>
<th>Organizational Context</th>
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<tr>
<td><strong>Structure</strong></td>
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<td>Technical detail</td>
<td>Work conditions</td>
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<td><strong>Outcome</strong></td>
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Overview of complete dataset
(Takian et al. 2011)

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<tr>
<th>Total no. of site interviews (by WP)</th>
<th>Hours of on-site observations</th>
<th>No. of site other documents</th>
<th>Other data collected (e.g. field notes; outpatient surveys; CLICS surveys)</th>
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<tbody>
<tr>
<td>Total: 498</td>
<td>590</td>
<td>498</td>
<td>38 sets of field notes; 130 CLICS surveys; 4,684 outpatient surveys</td>
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<tr>
<td>WP1-3: 310</td>
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<td>WP4: 36</td>
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<td>WP5: 60</td>
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<td>WP6: 37</td>
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Current deployment of NHS CRS

- Relative successes in some aspects of NPfIT (e.g. N3 & PACS), the implementation of the NHS CRS far more complex than anticipated.

- As of November 2011:
  - NME: 8/219 Trusts (4%) live with limited Lorenzo functionality
  - The South: 17/45 (38%) Community and Mental Health Trusts live with RiO and 9/40 Acute Trusts (23%) live with Cerner Millennium
  - London: 6/32 Acute Trusts (19%) live with Cerner Millennium, and 8/10 (80%) Mental Health 30/31 Primary Care Trusts (97%) live with RIO.
Key findings

1. Local consequences of implementation

3. Assessing error, safety and quality of care

4. Wider contextual considerations
1. Local consequences of implementation

- **Multiple local visions:**
  - data-centric, business-centric, policy-centric

- **Complex supply chains:**
  - hospitals-LSPs-software suppliers-government

- **Lack of local control:** budgetary, contractual arrangements, customising software
“...it takes much longer to do anything than you think it’s going to take and there’s so many people involved, so many committees involved to get anything done at the supply side that it takes a long time to get things sorted and that’s unfortunate” 
(Interview, IT Manager, Site H).
“Two fundamental criticisms remain that the system is not, and what you see on the screen is not intuitive… the other criticism of it is the speed of the system that you don’t, when you expect to move from one field to another it is not instant and that is a big concern in a system where one feels instinctively that it ought to be”

(Interview, Healthcare Professional)
“What they [referring to healthcare professionals] usually do while they are in with the patient is, they make the notes as they go along and they are the record. They’ve raised concerns that they will be in with the patient and they are then going to have to come and type those notes up.”

(Interview, Healthcare Professional, Site M).
The IT arm of the DoH

The legacy IT system

Doctors and allied health professionals

GPs

Patients

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2. Assessing error, safety and quality of care

- Controlled before-and-after study
  - outpatient management software

- No improvements in availability of clinically important information.
3. Wider contextual considerations

- **Progress slower than anticipated:** clinically-rich functionality limited, of 377 sites 78 (21%) had begun the process of implementing.

- **Gradual move from the initial top-down implementation model** to increase local involvement in decision making, coherent approach to interoperability still lacking.

- **Significant turnover amongst the senior staff** within the government coordinating the strategy.

- **Highly political and public** nature of the project; govt change
“… you’ve got bits of functionality implemented in very small areas….but you’re not seeing the rollout of that functionality to the rest of an organisation and how on earth are you going to progress if they’re not doing that…”

(Interview, Independent Sector)
Government responses

- Reorganisation
- Re-branding
- Expansion of remit
- Independent evaluations
NHS IT programmes: competing narratives

The policy story
- Central procurement
- Standardisation
- Tight governance
- State-of-the-art security
- Transparency
- Patients at the centre

The critical story
- State domination
- Loss of contingency
- Loss of local control
- Loss of workability
- Data overload
- Technology at the centre

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INFORMATION TECHNOLOGY, CONTROL AND POWER: THE CENTRALIZATION AND DECENTRALIZATION DEBATE REVISITED*

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ABSTRACT

This article addresses the conceptualization of power in relation to the use of computers in organizations. Commonly held views that the application of computer-based information systems leads to either a centralization or a decentralization of power and control have been subject to empirical confirmation.
The troubled NPfIT

National Audit Office

18th May 2011

£2.7 billion spent to date on Care Records Service “does not represent value for money”

“no grounds for confidence that the remaining planned spending of £4.3bn will be any different”
The Empire falls?

The rise and fall of England’s National Programme for IT

£12bn NHS computer system is scrapped... and it’s all YOUR money that Labour poured down the drain

- Sum would pay 60,000 nurses’ salaries for a decade
- Scheme replaced with cheaper regional alternatives
- Decision comes after report said IT system was not fit for the NHS

By DANIEL MARTIN
Last updated at 6:08 PM on 22nd September 2011

08/12/2011
Conclusions

- A top-down, centrally driven policy to deliver standardised electronic health record systems to diverse, local NHS organisations contributed to deployment delays and frustrations.

- The standardised approach has needed to evolve to permit greater flexibility and local choice in EHR systems and their delivery.

- There is a need to clarify the type and scale of detailed EHRs that are now wanted and affordable.

- A realistic timescale for achieving detailed EHRs must recognise that it is an incremental and iterative process, requiring active engagement from hospital clinicians and managers.

- This timescale for adoption and realisation of benefits is likely to be years, if not decades...
Heading back to the 1990s?

- 2011 IT review addresses some concerns about the future for the improved national NHS IT infrastructure already delivered by the NPfIT, and addresses NHS concerns about local NHS

- For example, how will NHS organisations afford to pay for new IT systems delivered outside existing NPfIT contracts and when those contracts end altogether in 2015

- How will the NHS hand back local responsibility for healthcare IT when most hospitals have low or no appropriate informatics experience and expertise

- What structures and mechanisms are to be in place to ensure the quality and safety of future NHS IT systems and how will interoperability be ensured
NHS plans £20bn emergency budget cuts

Mary Bowers

15 COMMENTS | RECOMMEND? (10)

The NHS is planning emergency budget cuts that could result in the loss of thousands of beds and tens of thousands of jobs, it has been reported.

According to documents obtained by *The Daily Telegraph*, the health service is planning £20 billion of cuts to cover the black hole left by the Government’s spending freeze.

The plans, released by ten Strategic Health Authorities, draw proposals for swinging cuts across hospitals and health clinics. These could include the sacking of up to 10 per cent of staff in some areas of the country, cutbacks to ambulance services and
Implementation and adoption of nationwide electronic health records in secondary care in England: qualitative analysis of interim results from a prospective national evaluation

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Implementation and adoption of nationwide electronic health records in secondary care in England: final qualitative results from prospective national evaluation in “early adopter” hospitals

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