A study of Information Management in the Patient Surgical Pathway in NHSScotland

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Research Aim

AIM:

to examine information management processes in the patient surgical pathway in NHSScotland to identify & report:

- examples of good practice
- areas for quality improvement / services re-design
- factors which promote (or not) successful implementations
Responsibility for the National Health Service of Scotland (NHSScotland) is devolved to the Scottish Government.

NHSScotland is organised in 14 regional NHS Boards.

Health-boards...

- oversee the provision of primary and secondary health-care services in the region
- have the responsibility to implement national policies at the local level.

Figure 1: Scotland NHS Health Boards
The eHealth Directorate:

- is part of the Scottish Government Health Department
- its mission is to define a national eHealth strategy
- oversees the delivery of the eHealth programme.

The eHealth programme aims to support:

- improvements of the ICT infrastructure and systems used throughout NHSScotland for information and records management,
- skills development and change processes, required for integrated healthcare delivery.
Mixed-Methods approach:

- Systematic review of preoperative processes in elective surgery

- Semi-structured interviews with stakeholders (Feb 2011-January 2013):

  25 General Practitioners (GPs) across 9 health-boards

  45 members of the preoperative multi-disciplinary team (MDT) in all 14 health-boards

  4 interviews with members of the eHealth patient programme, SCI Gateway (electronic referral) architect and NHS IT staff

  2 focus groups with GPs and EPR / preoperative MDT
Materials & Methods

Data Analysis:

- Process-mapping to model care pathways

- Qualitative analysis using DeLone & McLean’s model of Information Systems Quality as thematic framework

- Normalisation Process Theory (NPT, May et al., 2009) to interpret study findings

NPT is concerned with:

- **implementation** (social organisation of work)

- **embedding** (making practices routine elements of work)

- **integration** (sustaining embedded practices in their social contexts)
A majority of primary care practices used until recently, an Electronic Medical Records (EMR) system called GPASS (General Practice Administration System for Scotland)

- initially developed in the mid-80’s

- provided free of charge by the NHS National Services Scotland

Quality Outcomes Framework (QOF):

- General Medical Services contract introduced in April 2004

- QOF measures achievement against a range of indicators. Additional payments to each practice are calculated based on performance in relation to these targets.

- QOF provides GPs with defined financial incentives to record all healthcare episodes as accurately as possible
Policy Context / eHealth strategy (2008-2011):

- All GP practices had to migrate from GPASS to 2 alternative accredited commercial systems (EMIS™ & Vision/INPS™) by March 2012.

The procurement of primary care EMRs is now delegated to the 14 territorial NHS boards

In our sample:

- a majority of users (n=20/25, 80%) had switched to a new system within the last 6 years,

- including n=11 (44%) who had only switched to new systems within the last 2 years.
Results: Primary Care

EMR - III

Perceived benefits of systems:

- adequate support for information access and searching
- technology is up to date, and superior to previous systems
- EMR is flexible and provides adequate work-flow support
- information added value (key-work searches, information filtering, clinical summaries, classification)
- good support for record-keeping and performance monitoring
GP1: “general practice is driven by its contract and the contract is only operational because of the IT system... it relies on measuring, that’s what IT systems do so well and without that, we couldn’t do it”,

GP16: “you could not do the job of following the GP contract now without computer... it’s not as if you have a choice not to have computers... they are part of the job”,

Results: Primary Care

EMR - III

Perceived dis-benefits of systems:
- EMR is administratively cumbersome
- electronic prescribing functionalities are not optimum
- information navigation issues and unnecessary steps (e.g. multiple clicks)
- insufficient training and understanding of the system functionalities (e.g. alerts and decision support)

To summarise...
Policy Context: Electronic Referral management was identified as a critical enabler of the 18 weeks ‘Referral-To-Treatment’ target.

- defined as a key strategic eHealth policy priority under the NHS HEAT (Health, Efficiency, Access and Treatment) target programme.

- health-boards have the responsibility to ensure that primary care systems are able to send referrals via the national eReferral system (SCI Gateway) and that secondary care services are capable of receiving and triaging electronic referrals (eTriage).

Level of adoption: in January 2011, the rate of electronic referrals across Scotland was estimated to be 98.8% and the electronic management of referrals was 81.4%
SCI Gateway, the national eReferral system

is designed to handle referrals directly from patient records held in GP systems and transferring these to secondary care systems

- protocol-driven system

- XML electronic document, based on standard issued by the Scottish Intercollegiate Guidelines Network (SIGN)
Primary Care - eReferral

- n=6/25 mixed feelings
- n=2/25 dissatisfied
- n=1/25 occasionally
- n=16/25 no opinion

broadly satisfied with SCI Gateway

- n=8/25 complete eReferral occasionally
- n=8/25 always complete eReferral themselves
- n=9/25 never complete eReferral

Key Lessons Learned & Areas for Improvement

Information Management in Primary Care

Information Management in Pre-Operative Clinics
Key Benefits:
- increased use of standard and guidelines during the referral,
- automated data entry
- immediate transfer of the referral request
- good usability
- clinical advice and decision support functionalities

Disbenefits:
- administratively cumbersome or slow
- information presentation and visualisation not always adequate
- more complex or time consuming than previous paper-based referrals
- lack of coherence across referral processes
- lack of feedback on referrals
Almost all GPs reported a substantial variability in the quality of discharge information:

- some letters still handwritten with GPs receiving an illegible carbon copy

- …not unusual for GPs to have to phone hospitals to receive confirmation of the information contained in the discharge letter

Delays could also be significant:

- an immediate discharge letter is handed directly to the patient - and it is not unusual for patients to return home after surgery without informing their GPs

- GPs may not know that the patients have had surgery at all until several months later
Three health-boards have implemented electronic preoperative information systems:

1- NHS Greater Glasgow and Clyde (GGC) have implemented a preoperative electronic document (eForm) with the support of the electronic patient record (EPR) programme

2- NHS Dumfries & Galloway have developed an in-house preoperative electronic form

3- NHS Tayside are using a hybrid system: paper-based integrated care pathway documents are scanned and stored electronically.
Rationalisation of preoperative clinics and standardisation of preoperative processes were undertaken as part of the Planned Care Improvement Programme (PCIP, 2006-2008)

eForm was developed in 2008/2009

Level of use: In January 2013, more than 90,000 preoperative assessments were reported completed via the electronic portal since its launch in 2009.
The system has embedded clinical guidelines and decision support functionalities agreed across the health-board during the PCIP consultation.

Main perceived benefits:

- Standardisation of preoperative processes (and documentation across the health-board)

- Enable nurses to complete a preoperative assessment and clinical consultants to access the document remotely from multiple sites.

- This is a substantial improvement as patients around the health-board may have their assessment and surgery at different hospitals, depending on surgical specialties and consultants’ operating lists.
Overall, staff at these 3 health-boards have reported improvements in clinical processes, particularly in terms of information-sharing among the MDT

- no inconvenience to patients during the consultation were reported

- ...however, potential clinical benefits for patients have not been evaluated to date.

- There is an overall lack of evaluation of service effectiveness of preoperative clinics across Scotland.
There have been significant improvement in streamlining information management processes in NHSScotland in recent years

- The use of electronic medical records in primary care is now universal

- The use of electronic referrals is also almost universal

- The NHS GCC electronic portal is an iterative step towards a virtual electronic patient record, aggregating information from heterogeneous data repositories and systems

- A combination of policy, setting targets, adequate resources and sustained engagement with stakeholders have been key factors in facilitating successful implementations
Key areas for quality improvement include:

- **Electronic discharge**: could provide improvement in discharge processes across all issues identified (variability, legibility, delays) but this would require major service redesign in hospitals.

- **Greater communication and coordination of processes** across primary care and secondary care are still required to develop a fully integrated surgical care pathway in NHSScotland.

- **The routine use of ICT with preoperative clinics** has the potential to improve the reporting of surgical outcomes in NHSScotland, but this has not been realised yet.
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Thank You
References


