Effective use of ICT in healthcare

Northern Ireland
Electronic Care Record

June 2014
Traditional information storage solution
We need good ICT tools!

“Information technology is no longer perceived as just a supporting tool, but has become a strategic necessity for developing an integrated healthcare IT infrastructure that can improve services and reduce medical errors”

NIECR – an amazing journey

• Building on slow progress / poor experiences
• Now catching up, 4 years of strong investment
• Evidence for effectiveness
• Realising our vision – the NIECR
  – Many separate clinical systems
  – One virtual record
• Practical implementation
• Capability and benefits
• Look to the future
The problem was in accessing information

- Many disparate clinical systems
- Multiple log-on’s to lots of different password protected systems
- Only access to a single clinical domain or service
- Ever increasing amounts of clinical time devoted to locating information
- Preventing effective and timely decision-making
“if I am called to assess a patient in A&E, I will have access to what they have been able to tell the triage nurse, what the patient can tell me, and information from any previous A&E visit to our hospital. That’s it. I will not know any recent blood tests done by their GP, if they have been to any other A&E departments recently, what drugs they’re on, if they’re waiting for an outpatient appointment for a related complaint: all of this information exists, but it is in different systems and maybe in different hospitals and I am unable to get at it when needed in order to best treat the person sitting in front of me”
The real answer is...

- to provide care professionals with a comprehensive care record, for every patient using HSCNI services, which includes clinically relevant information, assembled from electronic systems located anywhere in the service and presented in real-time via a single, web based, easy to use computer system accessible from anywhere in HSCNI.
HSC NIECR Background

• ECR has been strategic HSC objective since 2005

• No significant HSC research until Summer 2008

• Initial leadership from a senior member of the regional eHealth team (Des O’Loan)

• Gathered a group of motivated senior clinicians, international site visits

• Can we do it? – Yes, we can
Getting Mobilised

- Lobbying followed, DHSSPS, Minister, other senior stakeholders

- Director of Public Health for N Ireland as SRO

- Regional ICT Programme Board approved a Proof of Concept in BCH, Ulster Hospital & two GP Practices

- Contract Oct 2009, Live Jan 2010

- Evaluation completed and case approved for regional roll-out
Benefits seen in proof of concept ECR

• 97% of users were very satisfied or satisfied with the ease of use

• 97% of clinicians surveyed found the PoC system useful and 100% would recommend the system to a colleague

• 74% of doctors surveyed reported that the ECR use helped them to make the right diagnosis quicker and 84% agreed ECR use had contributed to a better clinical outcome at least once during the evaluation period.

• 33% of clinicians had found at least one occasion where use of the ECR had prevented an adverse event, such as an allergic reaction.

• In an outpatient audit the ECR avoided unnecessary review appointments in 6.8% of patients seen and a marked reduction in requests for imaging and laboratory tests.
Impacts on an endocrinologist

• Joined up view is invaluable

• Marked increase in efficiency

• Realisation of the extent of investigative duplication

• More focused and informed ‘requester’ of laboratory and imaging services

• Makes pattern recognition so much easier
  – Hypothyroidism
  – Hypercalcaemia

• Less worry and massive increase in job satisfaction

• Increased patient satisfaction because of better, faster and safer care
SE Trust Pharmacy audit of ECR

• Total elapsed time to resolution and medicines reconciliation reduced from 3 hrs 45 mins to 22 mins - ECR is 10 times faster than previous method.

• Actual work time reduced from 40 minutes to 11 minutes - ECR is 4 times faster.
Roll-out of the NIECR - 1\textsuperscript{st} Birthday in a few days

• Insert ECR 6 minute video
Something more portable perhaps
NIECR - Connecting the Healthcare Ecosystem

• **Communicate & Share**
  – Hospital (Inpatient, Outpatient and Day Cases)
  – Emergency Care
  – General Practice
  – Out of Hours Service
  – Community and Social Services
  – Ambulance Service

• **100% Web based**
  – Zero desktop requirements
  – Workstation
  – Laptop
  – Mobile devices, for example; iPad

• **Access anywhere**
  – In hospital
  – Out of hospital
  – From home
Some expected benefits & savings

• Reducing delays at every stage of patient journey
• Reduction in Inpatient length of stay
• Increased Outpatient clinic capacity
• Reduction in Outpatient review appointments
• Decrease in number of bed days used by patients with long term chronic conditions
• Avoidance of acute admissions
• Volume of patient testing reduced
• Avoidance of potential adverse clinical incidents
• Improved medicines management
• ECR since July 4th - by the numbers
  – 250,000 Unique Patients’ Records Accessed
  – 950,000 Accesses to Patient Records
  – 195 Million Messages Stored
  – 2 million Patient Centre Documents Accessed
  – 13,000 Drug Accesses per Week
  – 100,000 Print Requests
  – 250,000 Radiology Reports Viewed
  – 3.3 million Cumulated Laboratory results
  – 1250 eReferrals per Week
Regional Context

• Funding devolved, revenue and capital
• Capital £9m, revenue £2m
• Single governance structure and single regional development team for NI
• Single NI Programme Board had expert support and funds
  – But....
  – Competing agendas, other developments in train
  – Different technical strategies at organisational level
Information Governance

• Initial Refusal on information sharing across organisational boundaries

• Intervention with all Trust Chief Executives, agreed to and executed data sharing agreements

• General Practice information = drugs and allergies
Consent and Privacy model

• Information campaign with opt out option

• Patients asked for explicit consent to view records

• Role based access based on users status and determines level of information available

• Privacy overrides for situations where verbal consent is not possible e.g. Medical emergencies, unconscious patients, new referrals.
Consent and Privacy model

• System audits all activity and users from login to logout.
• Audit trails can be viewed by system administrator
• If privacy seal is broken system generates an email and audit trail to the privacy officer
Additional interfaces will be brought in over time

“CORE” Data Items

Northern Ireland Electronic Care Record
Northern Ireland Electronic Care Record

Information for better care

Upgrade to Clinical Portal V7.4.8 (April)
ECS – ECR Migration Complete (May)
Data Quality Admin Function (May)
eReferrals Triage Solution – NHSCT Pilot (May-June)
Results Acknowledgment (May-July)
RISOH (June/July)
Flowsheets, Shared Worklists, Alerts & Notifications (June – September)
Upgrade to Clinical Portal 8.x (October/November)
eReferrals Triage HSC Wide (October)

2014 Roadmap

SET PAS Consolidation (April)
Southern Area Integrated Care Plan Pilot (May - July)
Add Document and Document Alerts (May-June)
All GP CIS launching ECR (October – December)
KIS Project Underway (December)

2014 Integrations:
OOH Messages, Immediate Discharge (ST), LCID, Soscare, PARIS, Cardiology, Mater Documents, BOIS, Symphony BHSCT, ePEX, JAC, NIMATS, EDM, Sectra Liteview, PAS Pre-admissions, IP/OP Waiting Lists

#NIECR

Better, safer, faster care
- Careful clinical engagement
- Thoughtful (and time consuming) lobbying
- Clinical champions with something to show
- Bottom up / peer-to-peer
- Good foundation (infrastructure)
- Disseminate and build ‘evidence’
- Grow informed clinical champions
- Supporting innovation – and taking a risk
- Clinical champions identified (and funded) at organisational level
- Active, responsive N Ireland leadership team
I recently received the leaflet on NIECR. An excellent system and very useful.
I have a mixture of in and outpatients across 2 main hospital sites. When I am seeing patients I always have ECR open as it provides me with up to date information from that I may have been completely ignorant of. Just this morning it allowed me access to scans a patient had in another hospital and prevented me from duplicating a CT scan of chest.
The ECR allows for good communication with ACM’s, Specialist Nurses and District Nurses.
Access to ECR allowed us to see that patient has very recently left Lagan Valley Hospital, already had investigations and was being followed up as an outpatient by the same specialty team in the SE Trust. This meant no need to refer to the BHSCT equivalent. Patient very happy to discharge today rather than waiting over the weekend and beyond for unnecessary investigations.
“I am delighted to hear of the roll out!”
Difficulty lies in samples being sent from various sites and paper results getting back to me in a timely fashion. I am now able to get all my results no matter where they are sent from (GP or hospital). I can also easily look up any last letters or histopathology results, as well as planned appointments. This makes the patient journey as seamless as possible.
First day using this system and already saved a lot of time, money, effort and improved patient satisfaction in two cases.
It is very useful as a rapid source of info for what is going on with patients, frequently showing information not available elsewhere or not volunteered by the patient (important both for safety and preventing repetition).
Patients happy with use of ECR, because it gives me more information which is specific to them and avoids duplication of tests etc.
Very ill gentleman recently discharged from Lagan Valley Hospital. We could access discharge summary to learn that he was referred to Palliative care team and were forewarned about the sensitive complex family issues regarding his ongoing care. His family were pleased that we were well informed and could plan a more collaborative approach to his care needs with their involvement.
I really appreciate it and use it regularly on a daily basis. In fact, I would be lost without it now.
Being able to assess the patient’s most recent hospital discharge letter or clinic visit, detailing recent changes in their condition, treatment, ongoing management or medication can often prove invaluable, especially if the GP has never received a copy of this hospital visit.
Patients presume that we DO have access to their GP record, so are surprised to be asked for consent.
Minimal training and easy to use. Makes job easier as all information, e.g. results, are available, meaning less chance of missed information. If a patient has been treated in another hospital, the clinician is aware of the previous investigations and prescriptions.
Often we have no complete written chart and ECR is extremely valuable.
Seeing correspondence from other Trusts. e.g. referrals, pending or proposed investigations, avoids confusion and duplication. Patients expect that in 21st century we have a linked up NHS.
Patients appreciate that you are able to access their up to date history.
Being able to access laboratory reports of tests or scans, often long before the GP has received a written report, is often very helpful in the ongoing treatment of the patient.
I have found NIECR to be an excellent system and it has really helped my practice.
As a geriatrician carrying out comprehensive geriatric assessments, I have found it particularly useful for finding out more information on frail elderly patients who have been in several different hospitals and often cannot remember details of recent admissions. The more information we have at an earlier stage in a patient’s admission the easier it is to make appropriate decisions about discharge.
Just been reading the leaflet "Information for Better Care in Northern Ireland". Delighted this is happening.
Some patients feel that it takes the pressure off them and their families having to remember all the past medical history of an individual at a time when they are unwell, and family are not thinking straight – e.g. on an emergency admission to hospital in the early hours of the morning.
I have not met any patients yet that have refused access to their information via ECR.
ECR provides rapid access to previous patient data and has labs/radiology and letters all in one place. It also functions faster than the individual systems. It has helped achieve rapid access to patient info in clinic and during acute patient admissions.

“Better, safer, faster care”
Very useful when Out of Hours, after asking patient consent, especially for elderly patients who might not give accurate past medical history.
Our main use of ECR is to track our patients who use a 24 hour helpline. We use ECR to check if they are still in A&E or to find out which ward they have been admitted to. We can now quickly find out this information and let the consultant team know, saving us a lot of time and unnecessary phone calls.
I really find it useful in helping me to organise my practice. It is an excellent front-end portal to labs/letters/XR reports
I use the system to check current patients on the Stroke unit in UHD. It allows me in advance to identify patients who will be referred to my team allowing me then to be more efficient in the multi-disciplinary team meeting. Now I do not have to attend every meeting as I can contact the ward and ask about specific patients. This saves a lot of time.
It allows us to see who else has been involved in the patient’s care and therefore contact relevant parties as required.
I use ECR to manage and prepare for outpatient clinics. It allows me to easily check if the patient has other hospital appointments which may overlap and cause them added hospital visits. On some occasions we can coincide appointments that are within department.
I would strongly recommend this system and find it a very valuable tool.
I have been using ECR for a couple of years now. I find it invaluable at clinics, ward rounds, answering patient queries to ensure you have up to date information when you need it. I didn’t receive any training just played around with it until I found out how it worked!
Patients believe that it is a good thing that this information is accessible by those who need to have access to it, in order to better treat the patient at the time.
It saves a lot of clinical time being able to access this information from one site rather than having to log on and off multiple slower systems. It allows me to see other Trusts’ information. This is incredibly useful as a significant number of my patients are simultaneously attending clinics here and at South Eastern Trust.
ECR should be available more widely e.g. in nursing homes where NHS staff are increasingly working.
“If I have an email from OOH GP regarding a patient contact, the ECR allows me to check if they were admitted or not, sometimes saving an ineffective visit.”
Printing out and discussing a patient’s U&E blood results with a GP enabled a swift and safe change in medication treatment of heart failure exacerbation.
ECR means that I make more informed decisions about a patient's treatment, whether in the acute setting of A+E or in the clinic. It seriously reduces duplication of tests and trials of management, as patients often attend multiple different hospitals, which currently do not communicate with each other at all.

“Better, safer, faster care”
Every patient I have explained ECR to has been glad to hear that I have access to their comprehensive medical records.
I am very interested in the new idea of electronic records being available to all staff who need to access them, however I want to know if I will be able to have access to my own records. Are there any plans in place to allow patients to see what is on record about them?
Patients are happy not to have to answer the same questions continually.
Patients can often be attending a variety of specialities as well as their GP, and there can often be duplication of blood tests. ECR allows staff to use one system to gain an overall view of each patient’s record when preparing for clinics. This is very helpful in managing care with the patient at their clinic appointment.
“Thank you for making my job easier.”
I often do rapid access clinics, where the appointments are made at very short notice and the patient’s chart is not available. Having access to so much information on ECR makes these appointments much easier and beneficial for the patient.
Some patients have been surprised that this information was not already accessible and shared across Trusts/professions years ago!
It is very useful as a rapid source of info for what is going on with patients, frequently showing information not available elsewhere or not volunteered by the patient (important both for safety and preventing repetition).
“I really find it useful in helping me to organise my practice. It is an excellent front-end portal to labs/letters/XR-ray reports.”
Being able to access patient records in ED improves the assessment process, particularly when being assessed for stroke thrombolysis.
ECR saves time by avoiding phoning secretaries for outpatient letters or results of investigations.
In Out of Hours we frequently deal with patients who have been discharged from hospital and might have already given in their discharge letter. Having this information on ECR can aid more informed decision making about readmission or care in the community.
I have found NIECR to be an excellent system and it has really helped my practice.
The ECR makes my job easier. Often paper notes are not available or it is difficult to find relevant information. With ECR I can quickly find the information I am looking for. Having access to more of the patient’s letters etc, clearly improves patient safety, as I have all of the relevant information to hand and more appropriate decisions can be made. This prevents unnecessary repeat investigations and delays from trying to obtain records from another site.
ECR is very good for verifying discharge letters as we can review all results. Also when handling GP queries, with ECR we do not need to get hospital notes which can take days.
ECR makes my job safer as I am able to check the patients details as before I did not always have access to a full medical history. This complements talking with the patient or relative hence building a better more holistic picture.
From my experience, patients are usually more than happy for me to access their ECR record. Most patients seem to think that GPs have access to hospital records and vice versa anyway, and are often very surprised when told this is not the case.
My day to day practice is better and faster with the ECR. Efficiency is maximised and therefore so is patient safety. To have access to all the previous letters allows safe decisions to be made in poor historians.
I am very interested in the new idea of electronic records being available to all staff who need to access them, however I want to know if I will be able to have access to my own records. Are there any plans in place to allow patients to see what is on record about them?
My fellow partners in my GP practice, who do not have access to ECR, are now often asking me to check things for them too. Clearly the ability to have up to date information regarding my patients allows me to manage them much more effectively and safely.
I use the ECR on a daily basis. It is FANTASTIC. I have set it for all patients admitted to the urology wards. I can review bloods, previous letters and all scans on patients. This helps me with my consults as well as my own patients. I can also look up GP contact details if I need to contact them.
Training simple, interface intuitive and now I use only ECR, particularly at clinics. I have all details on patients at my fingertips in one system. This informs appropriate decision making without multiple systems, notes etc. I can anticipate questions about test results before patient enters room.
“Patients are aware and think it is marvellous that I can see a blood test result that a GP practice performed in recent days and give them the result without the need for them to contact GP. I look forward to roll out.”
It is useful to have all patient information on one system as it saves having to remember multiple passwords and obtaining access to other systems. This in turn reduces the amount of time we spend logging on to other systems and checking reports.
As ECR is linked to the GP surgery, I am also able to use this system to check blood results/urine samples/wound swabs etc. taken in the community and make safer clinical decisions with more information.
I am able to use this system to establish what has happened while in hospital, as often information provided by the patient is what they perceive and is not always an accurate representation. I am frequently checking blood results for the period they were in hospital, checking for new medications added and reviewing tests carried out.
Patient documents and blood results are quick and easy to access compared to our usual systems. Using ECR frees up on average 5 minutes per patient for me – this quickly adds up to hours saved over the day and week which can be better utilised for patient care and service development.
We have found ECR very helpful in accessing patients details and hospital attendances. We have also tried to contact patients, been unable to access and when checked on ECR they have been admitted. Highlighting deceased patients also saves an embarrassing call to relatives.
"I am very interested in the new idea of electronic records being available to all staff who need to access them, however I want to know if I will be able to have access to my own records. Are there any plans in place to allow patients to see what is on record about them?"
On visiting a patient, it became apparent that there were some medication discrepancies between what the Residential home were giving her and what she should have been getting. It became apparent that her GP had never received a copy of the last hospital discharge letter indicating the altered medications. On furnishing the GP with a copy of this, a new prescription was issued, the correct medications dispensed, and the patient received the correct dosage. In addition, this patient’s condition and bloods were more closely monitored until her condition normalised again.