

## Editorial

### NIECR - a quiet revolution.

If someone was to ask you to consider important advances in medicine, perhaps like me, you would think of Fleming's discovery of penicillin in the 1940s or the introduction of the portable defibrillator by Pantridge and team in the 1960s. I wonder if you would include today's health gadgets like the *Fitbit*.<sup>(1)</sup>

Another, quieter gradual revolution is going on in Northern Ireland at the minute.<sup>(2)(3)</sup>

When I started my Consultant career in 1995, it was quite commonplace for a query from a general practitioner to require access to the notes which might take about a month to arrive back with me from Medical Records (who knows what journey those notes went on).

My answer to the query would then be dictated on to a cassette tape which would then join a row of similar tapes in a little plastic rack until my secretary reached the correct one. If the GP, frustrated by the delay, rang to find out what was happening, my secretary had to listen to the entire tape from the beginning to find the right segment.

All of this seems faintly ludicrous some 20 years later, sitting in my home office, dictating into a desk microphone and watching these words appear a second later on my PC.

The 6 Trusts in Northern Ireland are responsible for the healthcare of 1,800,000 people. Care is becoming more complex and often patients will attend more than one hospital site during their treatment. Many patients require intricate medication schedules which are changed frequently by general practitioner or hospital doctor. The "analogue era" of the 1990s can no longer meet our needs.

The Northern Ireland Electronic Care Record project was initially mooted in 2005 as a solution to these problems. It was recognised that one Trust alone could not afford to develop the infrastructure required for a viable project. In 2008, site visits to innovative centres in the USA and Canada led to a regional ICT programme board approving a "proof of concept" trial involving case records in Belfast City Hospital, Ulster Hospital Dundonald and 2 large family practices. The project went "live" in January 2010.

The aim of NIECR was to provide a single portal for viewing multiple sources of clinical information via a single logon to a single system which would eventually replace the multiplicity of laboratory, imaging, clinical and pharmacy applications that one must switch between to have a meaningful clinical encounter.

Converting information held in isolated proprietary systems proved to be a major hurdle for NIECR but so far, more than 16 separate patient information systems have been incorporated into the dataset and there are plans to incorporate not only imaging reports but also the digital image files themselves.

Consent to release of data and auditing of access formed a central part of the project with administrators able to review audit trails, especially in the setting of a "break the glass" privacy override.

5000 patient records were reviewed in the "proof of concept" phase. 78% of accesses were with full patient consent and 20% were with privacy overrides. 120 patients opted out of the system through their family practice – none opted out from a clinical setting. 74% of doctors surveyed felt that the new system led to a more rapid and correct diagnosis and 33% reported occasions when the system drew attention to a possible adverse event such as prescribing medication with a history of allergy.

Following the successful evaluation phase, NIECR started rolling out across the province in 2012. The system works using a master patient index number based on a unique 10 digit "H&C" number – old hospital number prefixes like CAH, AH or RV are becoming relics of the past.

Since roll-out, the system has become widely adopted throughout the province and the statistics are quite staggering:

#### STATISTICS UP TO SEPTEMBER 2014 <sup>(4)</sup>

Patient Records accessed – 2.45 Million

Cumulative Lab Results Viewed – 8.75 million

eReferrals Viewed – 2600 per week

Medications Viewed – 17,500 per week

Oncology MDM Letters Viewed – 1800 per week

Radiology Reports Viewed – 800,000

Patient Centre Documents Opened – 4.86 million

ECR launches from Out of Hours Centres in first 2 weeks since implementation – 2,000

Print Requests – 257,000

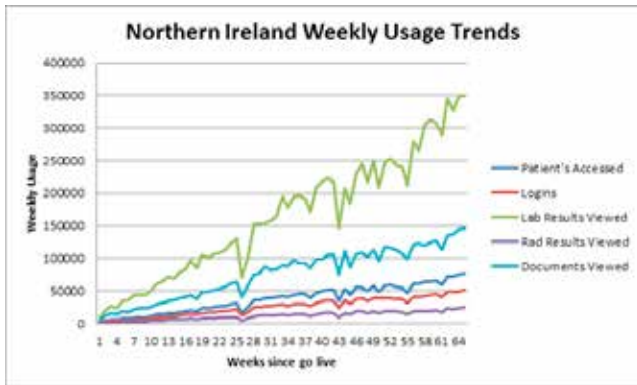


Fig 1. Weekly usage of the NIECR system.

Perhaps the most noteworthy advances are the trends towards electronic referrals to hospitals from GPs and the ability of Out of Hours and A&E departments to view full hospital records and medication lists (the latter are updated *twice daily*).

Increasingly, inter-hospital video-linked multi-disciplinary meeting discussions are being documented on the system.

Long term plans for NIECR include inbuilt care pathways and personal access <sup>(4)</sup> which just makes me wonder how long it will be until the device on my wrist uploads my daily heart rate, sweat biochemistry and step count to my GP – I might have some explaining to do at my next clinic appointment.

John Purvis  
Honorary Editor

#### ACKNOWLEDGEMENTS

I am grateful to Professor Roy Harper for his assistance in preparing this editorial.

#### REFERENCES

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2. Harper R, OLoan D. NI Electronic Care Record (ECR). <http://www.slideshare.net/healthcareisi/ni-electronic-care-record-des-oloan> Last accessed October 2014.
3. Northern Ireland Electronic Care Record (NIECR). [www.youtube.com/watch?v=GiILB54LgPE](http://www.youtube.com/watch?v=GiILB54LgPE) Last accessed November 2014.
4. Harper R. personal communication.

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