

Patient safety through e-prescribing

E-Health Insider online reader feedback

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Introduction

The following feedback was provided by readers of E-Health Insider ahead of the 30 April, patient safety through e-prescribing round table

1. GP response

Dear editor

I am a GP with an interest in prescribing.

I suggest that it is implemented across all sectors of the hospital at the same time, we currently get some electronic discharges from our local trust but about a third come on paper, you then need different systems running in parallel, and I see some IT phobic people taking the paper route, this leads to more errors.

It will need implementing for out and in patients too (a bit like us GPs needing to record home visit prescriptions).

From general practice the benefits that I see:

- Formulary management is easier.
- Record keeping is quicker.
- Record of who started something, and when and why stopped (later just implemented in EMIS).
- Automatic allergy/intolerance warnings.
- Standard doses as first choice is quicker and helpful if you can't remember.
- Warnings about weekly dosing e.g. methotrexate.
- Searching for whom has had a drug when issues of safety are issued.
- Audit of appropriate prescribing against disease coding.

2. GP response 2

As a GP who has been using EMIS for the last 18 years – I have become dependent on e-prescribing to check for interactions and to have information on dose and side effects available as I prescribe. When I talk to hospital doctors I am constantly amazed that they are expected to prescribe for very sick patients with poor kidney function etc without the benefit of e-prescribing. It is desperately needed.

We also benefit from an innovation that was long overdue when it came a year or so ago and that is a system of warning when particularly hazardous medication is prescribed and also a system that checks whether necessary monitoring – fbc's etc has been done. All doctors should have this facility.

3. GP response 3

I work in a GP Health Centre and benefit from electronic prescribing – information on formulary, cost, interactions and allergies are available and occasionally flagged up if I erroneously prescribe. However I try to be careful not to rely on the system to protect me from my mistakes. I have the back up of qualified and trained dispensers on site and work in an environment of continuity of care and professional responsibility for my actions.

The hospital environment is much different with prescribing for individual patients being shared by many clinicians, now including specialist nurses. I am concerned that electronic prescribing is being introduced as a solution for other problems in the secondary care sector that have not yet been resolved – communication and responsibility for patient care being paramount. Are the patient records and summaries suitable for these changes?

4. Industry response

Decision support with prescribing has been available and helping prescribers working out of hours for many years, but one area we are waiting for is the national roll out of the GP summary on the Summary Care Record. At the moment clinicians working out of hours do not get the full safety benefit of e-prescribing unless the drug and allergy history has been entered on the Adastral system previously. We are working with connecting for health to integrate the SCR into Adastral and once coded drug and allergy information is available on the SCR we can then use this to avoid drug errors. At night this information could save lives.

One area which we have realised would have been impossible without e-prescribing is the monitoring of independent nurse prescribers. Employers are meant to be monitoring independent nurse prescribers to make sure they are prescribing within their competence levels. With e-prescribing it is very simple to run a report of prescriptions issued by the nurse prescriber against the Read coded diagnosis.

Lynn has mentioned EPS but this will not be valuable to out of hours services until EPS 2 phase 2, where prescriptions can be signed digitally and the patient can collect them from any open pharmacy. With the current release the patient has to nominate the pharmacy they wish to use, but their normal daytime pharmacy is unlikely to be open during the out of hours period. Currently patients who have spoken to a clinician over the telephone, and who need medication, still have to travel to the clinician at the base to collect the prescription. EPS2 phase 2 will certainly improve the patient experience once it is available.

Dr Alex Yeates

Medical Director, Adastral Software Ltd

5. NHS consultant response

Given the current EPR systems on offer – Lorenzo and Millennium – do not support any form of medication record at present let alone e-prescribing, it will be very difficult to have any form of constructive dialogue.

6. IT consultant response

This will be a very interesting conversation. Tools such as those developed by FDBE are very important. Recent research has shown that pharmacists using these tools trigger approximately 2 million 'events' classified as *serious* per year. My perception is that there is a difficult relationship between prescribers and pharmacists. But again the research suggests that pharmacists are helping to avert 5,000 potential deaths per year.

Suggestions have been made that we will lower the drink driving limit so that 200,000 more motorists will be banned and 62 lives saved – in the context of above why is there any discussion that pharmacy will not be given access to NCRS?

I'd like to hear the panel's views on how tools can help in the difficult areas when patients are passed from professional to professional (again informed by my opening comments).

7. IT consultant response

Introduction

The Connecting for Health e-prescribing baseline specification (1) provides a definition for electronic prescribing (EP):

"The utilisation of electronic systems to facilitate and enhance the communication of a prescription or medicine order, aiding the choice, administration and supply of a medicine through knowledge and decision support, and providing a robust audit trail for the entire medicines use process."

This definition is helpful because it recognises that the process of electronic prescribing is not just about the capture and dissemination of prescription data, but also the use of decision support tools to 'add value' to the data and to facilitate the medicines management process. Indeed, the optimum use of decision support tools within an electronic prescribing system is essential to deliver benefits relating to safe prescribing.

Various studies in the US have demonstrated a positive impact of EP on medicine prescribing and administration errors (2,3). Furthermore, the UK Audit Commission's 'Spoonful of Sugar' Report (4) has highlighted the potential of information technology to resolve some of the routine errors that can occur in hospital medicines management.

However, despite a number of reported benefits for EP systems in hospitals, adoption of such systems has been slow, both in the US, the UK and elsewhere. In particular, progress has been slow

with the UK Connecting for Health e-prescribing programme. Clinical engagement workshops took place in the summer of 2006, leading to the publication of the e-prescribing baseline specification in early 2007 (5). However, since then, there has been little reported progress with this programme. This report will aim to review some of the issues that will be raised at the EHI/BCS round table discussion on 30th April.

Comparing secondary care e-prescribing and primary care e-prescribing

The Round Table Discussion Briefing Paper suggests that progress in 'e-prescribing' in primary care should be reviewed in order to learn lessons for the implementation of EP [e-prescribing] systems in hospitals.

Compared to hospital EP systems, the market for primary care systems is more mature, and, as the briefing paper states, is approaching a 100% adoption rate.

However, it should be borne in mind that what is termed 'e-prescribing' in primary care and secondary care are very different entities. It may therefore be difficult to compare like with like, and the lessons learnt from primary care "e-prescribing" may not be immediately applicable to the secondary care context.

Designers of hospital EP systems are concerned with the total medicines management process – from prescribing, to dispensing, to medicines administration, and monitoring, including clinical professional intervention at any point of the process. Most of the commercially available hospital EP systems at this time – for example, the JAC and Ascribe electronic prescribing modules, are designed in this holistic way.

However, 'e-prescribing' in primary care is not a closed loop process in the same way that hospital EP systems aspire to be. GP computer systems, such as EMIS and Synergy, provide clinical noting, prescribing decision support and documentation functions. However, in many cases, they still issue a paper FP10 prescription, which is given to the patient, and subsequently rekeyed into the pharmacy PMR, which employs similar decision support processes to the GP system. Moreover, while the Electronic Prescriptions Service (EPS) (electronic transfer of prescriptions) may automate the GP-pharmacy connection in primary care, the adoption of the EPS is currently sufficiently slow that this potential benefit is not being realised. Furthermore, the EPS has been designed simply as a transactional system, to support the current community prescribing and reimbursement procedures; there is no functionality to support the clinical role of community pharmacists within the primary care team.

The lessons learnt in the development of 'e-prescribing' systems in primary care may not, therefore, be applied in an analogous way to secondary care.

Adoption of e-prescribing in hospitals

The slow adoption of EP systems, both in the US and the UK, has probably been for a number of reasons:

- a) In all centres, EP represents a major culture change, and this is a barrier to adoption. EP implementers consistently report that good change management and stakeholder engagement are vital to a successful implementation of an EP system within a hospital or health provider organisation. Often this is dependent on the interpersonal dynamics of project team members and stakeholders. In most successful EP installations, there is a strong local project team driving the implementation process.
- b) In the US, EP has developed at specialist university hospitals, where there are considerable health informatics resources. It has been suggested that EP will not become widespread in the US until more public money is invested to produce a standard decision support data resource, with agreed data standards, which can be used to support EP adoption across the country (6).
- c) In the UK, EP has been adopted in a few centres, due to the influence of a small number of opinion leaders (mainly within the pharmacy profession).
- d) In the UK, a limited number of software providers have the appropriate domain expertise to produce fit-for-purpose hospital EP software, and this expertise is in short supply within the IT industry.
- e) The adoption of the Connecting for Health programme has led to a slow-down of innovation in the UK. Many NHS Trusts that were considering an EP implementation when Connecting for Health began abandoned these plans, pending the release of the national programme hospital prescribing solution. However, EP advocates in some NHS Trusts are now becoming frustrated by the slow progress of the CfH and some are considering making alternative arrangements.

Benefits of e-prescribing

A review of published experience of EP applications in the UK (7) has indicated that electronic prescribing implementations have resulted in the following benefits:

- Availability of a fully electronic prescribing history.
- Improvement in legibility and completeness of prescriptions.
- Improvement of hospital business processes due to electronic dissemination of prescriptions.
- Availability of electronic decision support tools at the point of prescribing.
- Comprehensive audit trail of prescribing decisions made.
- Reduction in the rate of medication errors.

However, it is likely that the extent to which EP benefits are realised is dependent on the way the systems are designed and implemented.

At present, however, there is a dearth of quantitative information on EP system performance in the UK. The only centre where a thorough quantitative analysis has been performed and published is at

Charing Cross Hospital (8). Given that the healthcare context is markedly different in the UK compared to the US, quantitative evaluation of EP systems in a UK setting is a pressing need.

Data support

In the US, the production of national data standards have been identified as the key to EP development (6). In the UK, the dm+d has been developed to support drug data concepts for EP systems and these terms are being mapped into the Multilex Drug Data File, the leading third party data solution in the UK. In addition to this, the CfH e-prescribing development of the structured pharmaceutical care record is a key development, as this will enable many medicines management processes that are specific to hospitals. Also, work is being conducted by a number of bodies, including First DataBank Europe Ltd, the producer of Multilex, to contextualise decision support based on triggers from the electronic patient record, and thus to reduce the problem of "warning fatigue".

Conclusions and recommendations

- A well-designed hospital EP system should support the entire medicines management process, not just the prescribing process
- While there may be lessons to be learnt from primary care IT from a technical or deployment perspective, primary care "e-prescribing" is very different to the solution required for secondary care, and implementers should be cautious about extending the design principles of current primary care systems to proposed secondary care principles. There is no substitute for the involvement of experienced secondary care clinical professionals in the design of secondary care EP systems.
- The structured pharmaceutical care record (SPCR) proposed by the Connecting for Health e-prescribing programme is probably a key development. This will enable rich functionality for medicines management in hospitals, and will enable new ways of working by all hospital staff involved in medicines management. The SPCR could also be used to support electronic intervention monitoring by community pharmacists, as proposed in the recently published Government White Paper on pharmacy services. As such, the SPCR could provide a link between secondary care and primary care medicines management software.
- Adoption of EP systems in hospitals has been slow. This has been as much to do with political and financial issues, as with uncertainty about the potential benefits, or concern about potential risks.
- Anecdotal evidence suggests that hospital EP systems provide various benefits. However, there are few studies where these potential benefits are analysed quantitatively. There is a need for publication of more quantitative data (preferably from a number of pilot hospitals) in order to fully evaluate the impact of EP systems on patient safety in the UK context, and inform future design decisions.

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- "Principles of Electronic Prescribing" by S.J. Goundrey-Smith (ISBN: 978-1-84800-234-0) will be published by Springer Science in July 2008