

Patient safety through e-prescribing

Executive summary of a round table jointly organised by

E-Health Insider

and

British Computer Society Health Informatics Forum

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Participants

Dr Glyn Hayes, GP and Chairman, previous Chairman of the BCS Health informatics Forum, gave his first-hand experience as a GP and former clinical director of GP systems supplier.

Jon Hoeksma, Reporter, Editor E-Health Insider, offered insight based on reporting of the UK health IT sector (authored report)

Professor Nick Barber, Pharmacist and Academic, Professor of Pharmacy, University of London, visiting professor in patient safety, Harvard University, provided insight into the current research base on clinical safety and e-prescribing.

Dr Maureen Baker, GP, National Clinical Lead for Patient Safety, NHS Connecting for Health, provided an overview of the CfH patient safety programme and its planned future development.

Graham Moule, Pharmacist, JAC Computing, gave the insight of a specialist supplier of hospital pharmacy systems into the development of e-prescribing and challenges for the future.

Professor Tony Avery, GP, Professor of Primary Healthcare, University of Nottingham, detailed where the main risks to patient safety arise in prescribing and the primary care experience.

Dr John Parry, GP, Clinical Director, TPP, provided the perspective of a leading GP systems provider.

Neil Kirby, Pharmacist (seconded to EPR team), Salford Hospitals NHS Trust, provided the perspective of a hospital in the midst of a complex e-prescribing project and the practical challenges.

Pete Marsh, Chemical Biologist and NHS IT Professional, Director of Wirral Health Informatics. Pete Marsh gave a presentation to the panel detailing the experience of Wirral in implementing e-prescribing over the past 15 years and the patient safety benefits this was found to have delivered.

Dr Brian Robson, GP, Clinical Director for e-Health NHS National Services, Scotland, outlined how the Scottish NHS is approaching e-prescribing as part of its patient safety programme.

Polly Shepperdson, Healthcare Researcher, Product Manager, First DataBank Europe (FDBE), contributed the perspective of a leading drug knowledge base supplier on the role of clinical decision support within e-prescribing.

Ewan Davis, Primary Care IT Expert and Consultant, Woodcote Consulting, gave the insight of someone who has worked for a series of suppliers closely involved in e-prescribing and electronic transfer of prescriptions.

Dr Jonathan Meadows, GP, Clinical Safety Lead EMIS, gave the perspective of a hospital clinician who had subsequently become a GP and is now the clinical safety lead of a leading GP system supplier

India Hardy, NHS IT Professional, Head of Electronic Prescribing Project Chelsea and Westminster Hospital NHS Trust, detailed the experience of her trust's current e-prescribing implementation.

Introduction

The focus of the first joint E-Health Insider/British Computer Society Health Informatics Forum (HIF) round table was how to use electronic prescribing to improve patient safety. The event sought to examine what lessons the primary care experience of e-prescribing could offer secondary care professionals working to develop acute sector e-prescribing.

The participants in the day-long event were a high-level panel of experts from academia, pharmacy, and GP and pharmacy system suppliers. IT professionals with experience of prescribing implementations took part, as did representatives of NHS Connecting for Health and the Scottish national e-health programme.

Chaired by Dr Glyn Hayes, the ex-chair of the BCS HIF, the panel examined what the acute sector could learn from primary care, which, since the 1980s, has steadily introduced computer systems and moved towards e-prescribing. Two years ago, 95% of all prescriptions in primary care were being electronically generated. The improved legibility of printed prescriptions has been the key patient safety benefit achieved.

Defining e-prescribing

One of the main themes discussed by the panel was the nature of the differences between e-prescribing in primary and secondary care. This was summarised by Professor Tony Avery: “In primary care we’re talking about order to supply and in secondary care about order to administer.”

Patient safety focus

The two sectors each have a different perspective on how e-prescribing can improve patient safety. In primary care the focus has been about the decision on what drug to prescribe. In secondary care it has been on safe administration as part of an end-to-end process.

Current state of English NHS hospital e-prescribing

Very few UK hospitals have implemented e-prescribing across their entire sites. One panellist estimated that only five English hospitals have done so, although up to a third may have implemented e-prescribing on one or two wards. Several observed that e-prescribing was a long-term project.

Perfection the enemy of the good?

A recurring theme in discussions was that the greater complexity of e-prescribing in secondary care made it inherently more difficult to scope, reach agreement on and implement. Several panellists spoke in favour of breaking e-prescribing down into manageable ‘bite-sized chunks’, and building in incremental steps. It was said that too often it appeared progress was stymied by attempting to achieve perfection rather than aiming at incremental benefits.

Professor Tony Avery said one of the key lessons of the primary care experience was that “we’ve been able to do this in incremental bits over 15 or 20 or more years, and to go at the pace people are prepared to go at.”

However, a persuasive counter-argument to the 'chunk it down' approach was offered by Pete Marsh of the Wirral who gave a presentation on how his trust has become England's leading hospital in the use of e-prescribing and outlined the patient safety benefits this has enabled. He argued that e-prescribing was hard and success depended on long-term leadership, commitment and investment.

Similarly, India Hardy, said Chelsea and Westminster, who are working on implementing an end-to-end solution, covering prescribing to dispensing and supply, had bitten the bullet and decided to do it 'all in one go'.

Mapping and aligning business processes

One of the key messages from the acute sector participants was on the high degree of complexity of hospital processes and workflow, and the extent to which they are unique to each hospital and even ward and department. Often these are not accurately mapped. Combined these factors have frequently militated against transplanting a successful implementation from one institution to another.

Standardisation vs. local configuration

It was noted that a general characteristic of successful hospital implementations that have occurred has been the high degree of local customisation and configuration they have had over an extended period of time.

By contrast Ewan Davis said a key factor in the successful spread of e-prescribing in primary care was standardisation of products, albeit to tackle more standardised processes: "You had a standard product... the economics didn't allow for anything else."

Engagement with clinicians

While primary care offered a coherent user group, in hospitals this begins to quickly break down once you get outside hospital pharmacy. India Hardy said one problem was that key users were hard to engage with. "You want someone quite experienced to be working on the system design, but there's no such thing as an experienced junior doctor."

Engagement with suppliers

Another recurring theme drawn from the primary care experience was the need to avoid monopolies and ensure competitive innovation, with engagement from customers.

Graham Moule said one of the unfortunate consequences of the centralised NHS IT programme – and the shift towards primary care trust responsibility for primary care IT – was that it had removed this direct relationship with customers.

Common medication record

One idea discussed by the panel as a potentially useful incremental step, would be to provide a complete list of a patient's current medications, recorded in a standard way. This was described as a 'doable' good starting point for e-prescribing.

Electronic decision support for prescribing

Another specific issue that panellists were asked to discuss was decision support. The round table felt decision support systems were good in principle but difficult to get right. Automated clinical decision support on e-prescribing was identified as part of a much broader trend towards protocolised medicine, which offered significant patient safety benefits.

The panel welcomed news that NHS Connecting for Health is now working on developing an 'alerting framework' to ensure a consistent approach across the NHS.

Conclusions and recommendations

Conclusions

The primary care experience can only partly inform that of the acute sector, where the nature of prescribing and drug administration is very different. However, the past 20 years has shown that much can be achieved by taking incremental steps; ensuring local ownership of systems; not trying to do too much at once; and focusing on specific problems.

In the hospital sector, only a handful of English hospitals have yet fully installed e-prescribing systems, though up to a third have installed some elements in some wards. The number of full implementations has stagnated over the period of the NHS IT Programme

In hospitals, prescribing is a complex process rather than the one-off act. In order to be effective, e-prescribing systems should cover both prescribing and the administration of drugs; though not necessarily pharmacy systems in the first instance.

The principal challenges to successful implementations are less about technology and more about clear executive and clinical leadership and commitment to change processes over a sustained period of time. Implementation of e-prescribing is a long-term change agenda.

There is little evidence that wholly standardised e-prescribing systems can be implemented into English hospital trusts. Instead, systems require a significant degree of customisation and local configuration. In addition, the implementation of e-prescribing is heavily dependent on the implementation of other hospital systems – specifically pharmacy, medicines management and patient administration systems, order communications.

Recommendations

- Priority should be given to the development of e-prescribing in hospitals.
- The panel recommended that all hospital trusts urgently review at board level their plans to introduce e-prescribing and examine their options.
- The panel recommended that the NHS National Programme for IT should review its priorities around e-prescribing and get it back to the top of the agenda.

- As a useful interim step, the panel recommended that consideration should be given to the development of a combined single medication record containing up-to-date details of all a patient's current medications.
- The panel also recognised there are quite significant difficulties around the evidence base and getting studies published and publicised and called for steps that would significantly encourage publication of those sorts of results.
- The panel also called for better mechanisms to be developed to share information and experience in developing and implementing e-prescribing in the NHS.
- The panel thought the concept of including an individual prescriber and administrator's competencies as part of smart cards or role-based access, or competency-based access control was an important and valuable idea that should be further explored.
- The panel agreed that something needed to be done on the issue of standardising drug naming and drug databases.