Electronic Prescribing:

Briefing for Doctors

Introduction

Electronic prescribing (ePrescribing) systems can help improve the safety and efficiency of healthcare by aiding the choice, prescribing, administration and supply of medicines.

The safety and effectiveness of ePrescribing systems depends on all staff groups being actively engaged in their development and use.

Benefits of ePrescribing include:

- Prescribers accurately and clearly enter complete medication orders.
- As they do this the system can provide relevant patient information, for example on allergies, as well as details about drugs. ePrescribing systems can also offer advice or warnings as prescribing takes place.
- Prescription data can be stored securely and communicated to other members of the healthcare team without the risk of paper records being lost.
- Pharmacists can access drug orders remotely using the computer, and check and amend as required.
- Nurses who administer medicines have clear and legible medication orders. The system may help them to prepare for drug rounds, confirm the identity of patients, and record administration.
- Medication records can be accessed remotely by healthcare professionals.

Not all ePrescribing systems fully support all these aspects of medicines use, but most do to some degree.

ePrescribing systems provide a full audit trail and the data they hold allow many innovative uses that can help in medicines management and support a culture of reflective practice.

ePrescribing is a powerful and important innovation for the whole care team. When ePrescribing projects are being planned it is important that all healthcare professional groups are involved and that they remain involved as the system comes into use.

A successful initial implementation is the start, not the end, of running a successful system.

Hospital doctors are primary users of ePrescribing systems.

Senior doctors may decide what should be prescribed, but the generation of the actual in-patient prescription is often delegated. Twenty four hours a day junior doctors write orders for regular and 'when required' medication as well as stat doses. A proportion of their prescribing is done out-of-hours, as part of on-call cover, and patients may be in wards spread around the hospital site.

ePrescribing systems provide fast, reliable access to the patient's current medication record, and allow doctors to review and prescribe remotely. It also allows pharmacists to screen new orders and communicate with prescribers without visiting the ward. This may change doctor-pharmacist working relationships.

The experience in trusts that have implemented ePrescribing systems is that doctors who are computer literate find that switching from paper drug charts to keyboards and drop-down menus is not a problem. At first, prescribing using ePrescribing can take a bit longer than on paper because the right product (drug, strength and formulation) must be located and then picked from the drug dictionary.

However, the benefits in terms of consistent, legible and fully specified orders, and remote working, soon outweigh any initial difficulties as doctors learn to navigate their way through the prescribing screens.

Senior doctors, who tend to prescribe less, may find it harder or more uncomfortable to adapt to the more structured process, and miss the 'whole picture' provided by a paper drug chart. Some may be unconvinced of ePrescribing benefits and avoid using it.

Nevertheless, both junior and senior doctors have reported many positive aspects for ePrescribing. These include: no lost charts; no 'annoying bleeps' from nurses and pharmacists querying incomplete or illegible prescriptions; the ability to prescribe and review in-patient and discharge medication remotely; no more rewriting of drug charts every two weeks; the use of predefined 'order sets'; the ability to check medication prescribed by juniors; quick access to in-patient and discharge medication history in out-patient clinics and A&E; and online access to trust and other prescribing guidance.

At the ward and trust level, ePrescribing can be a valuable tool in audit and research. For example, the infection control team can gain more detailed antibiotic use data than is readily available with a paper-based prescribing system.

Clinical Decision Support

ePrescribing systems provide various degrees of clinical decision support (CDS) to help prescribing and administration of medicines. CDS ranges from the very basic – access to a drug dictionary – to the more complex, such as checking medication orders against patients' laboratory results.

CDS can be roughly divided into two areas: decision constraint, stopping people doing daft things, and decision support, guiding and informing users.

Initial ePrescribing implementations will usually have limited decision support – focused mostly on constraints – but, with experience, more active support, warnings and context-specific guidance can be added.

Doctor participation in planning the move to ePrescribing

As key users, doctors must be involved in the development of ePrescribing. Key areas they should contribute to include:

- How the needs of specific clinical specialties are to be accommodated within a hospital-wide ePrescribing system.
- How medical colleagues can be kept informed and committed to the project.
- How the implementation will be phased, for example which ward(s) or clinic(s) will have it first and how the switch from paper will be accomplished safely.
- How ePrescribing should interface with other clinical information systems such as electronic health records, the patient administration system, PACS and clinical pathology.
- How ward and out-patient clinic procedures should change.
- How, when, to whom (all locums?) and, possibly, by whom, training will be given.
- What support services will be available for medical staff both during the initial implementation phase and throughout the life of the system.

- What the back-up and recovery procedures are, given that computers can and do stop working.
- Procedures for feeding back the new insights and lessons learned after periods of use to help in developing the system further.

ePrescribing systems can contribute to better healthcare

Reduction in the risk of medication errors as a result of:

- More legible prescriptions.
- The requirement for complete medication orders.
- Alerts for contra-indications, allergic reactions and drug interactions.
- Useful guidance for both inexperienced and experienced prescribers.

Process improvements as a result of:

- Improved communication between different departments and care settings.
- Reduction in paperwork-related problems - fewer unavailable or illegible drug charts.
- Clearer, and more complete, audit trails of medication administration.
- Data made available for analysis, including audit and research.

ePrescribing projects naturally divide into three phases; before, during and after implementation

Before is about establishing what is to be done, bringing the right people together and mobilizing appropriate resources. In almost all cases this is undertaken by a multi-professional steering group or project board where, together with pharmacists, nurses, managers and IT specialists, doctors must be well represented. It is important to attend the meetings and to discuss issues with senior and junior colleagues in different medical disciplines.

Senior clinicians must be well briefed on ePrescribing and understand the potential benefits as well as the scale of the change in practice it implies. They need to be given the opportunity to express any doubts or fears early on. For example, if there is a belief that

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ePrescribing is unsafe for particular drugs or settings, that it will increase particular types of error or that it will make some tasks take longer, then these issues need to be audited before implementation in order to provide a baseline for comparison.

Among the most important issues that the project board must consider, and to which senior doctors should contribute, is the phasing of the implementation. If it is a hospital-wide project, then how spread out or condensed will the implementation be? Should it be attempted over six months, or over two years? Probably the answer is somewhere in between, and it is wise to talk to other sites that have gone through this change before making a decision.

There may be other tricky timing issues to consider. When should implementation start in relation to the intake of junior staff, and how will implementation of ePrescribing interact with other concurrent change programmes?

During the change-over period from paper-based to ePrescribing, special care is needed to support people when they start to use the new system, and special care needs to be taken to ensure that the safety of care is monitored and maintained. If safety concerns are raised then they must be swiftly addressed. At the time of change-over, extra people will need to be available round the clock to transfer data to the new system, offer support to new users and deal promptly with issues or problems as they arise.

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If junior doctors have difficulties they need to be encouraged to make these known and not try to 'wing it' or take potentially risky shortcuts. Senior doctors, even if not routine users of the ePrescribing system, still need to devote some time to learn its features and offer support to their juniors.

Unplanned computer downtime is a relatively rare event but can be a source of anxiety for junior doctors, particularly if the crash happens out of hours. Everybody needs to know what the back-up procedures are, and to have practiced them.

After, when ePrescribing is established and in use, it still needs to be actively supported and managed. For example, as new staff join they need to be trained, given log-in rights and supported in their initial use. Over time new features will be introduced and software upgraded. For example, new levels of clinical decision support to help in prescribing or administration of medicines may be introduced some time after the initial roll-out.

An ePrescribing system needs active management throughout its life and doctors should take a central part in that process. As experience grows, doctors who use ePrescribing regularly may realise that some tasks are not as easy to do as they could be and may develop their own ideas for shortcuts or solutions, which should be fed into the development team.

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It may also become apparent that that some aspect of routine prescribing could usefully be changed. Perhaps particular drugs, or particular situations, do not fit well (or even safely?) into the ePrescribing system's structure. Certain drugs are frequently prescribed together in a fixed regime, in which case the prescribing process might be speeded up and compliance with best practice improved if these medicines are grouped together as an 'order set'. Finally, with experience there may be a feeling that there are too many, too few, or the wrong balance of, various information alerts and warnings for particular drugs.

A good ePrescribing support team, working together with the trust's Drugs and Therapeutics Committee (or equivalent), will capture such requests and insights and continue to adapt the ePrescribing system so as to gain extra benefits for patient safety and patient care while improving ease of use. However, they can only do this effectively if every prescriber – from the most junior doctor to consultant – makes it his or her business to feed back their ePrescribing problems, concerns and ideas.

ePrescribing in hospitals

This briefing is one of the outputs of a project commissioned by NHS Connecting for Health (NHS CFH). The project involved gathering experiences and opinions from people in a number of hospitals in England who had been part of the implementation of ePrescribing systems. The ideas presented here are based on the actual experiences of NHS staff who have worked on ePrescribing implementations.

A copy of the full report and briefings aimed at other staff groups can be found at: www.connectingforhealth.nhs.uk/eprescribing

Any comments or queries about the briefings or report should be directed to the ePrescribing programme at NHS CFH at eprescribing@nhs.net