Realising the potential of shared digital medication records

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Accurate medication records accessible in all healthcare settings are critical to patient safety

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Safe medicines management is fundamental to the delivery of high quality care. But the complexity of care provision makes this far from straightforward, and medication errors still occur at an unacceptably high rate, contributing to an estimated 712 deaths every year in the English NHS alone.[1]

Linking medicines information from all care settings into a shared digital medication record (SDMR) or "single version of truth" accessible to all health and care clinicians has the potential to substantially reduce medication errors and improve patient safety. Two developments mean that the NHS in England will soon have the tools required to make this a reality.

First, sharing healthcare data between primary and secondary care will be enhanced by the ongoing adoption of electronic prescribing across hospitals in England, overcoming the previous barriers associated with the mixed economy of paper prescribing in secondary care and digital systems in general practices. Second, an agreed medication interoperability standard will be mandatory across NHS England's digital systems by April 2023. The lack of interoperability, or a common language for all systems to use, has been a longstanding technical obstacle to reliable sharing of medication data across different healthcare services and settings. After April, all NHS providers in England, including general practices and hospitals, will need to ensure their systems are compliant.[2]

The development of a single consolidated digital medication record would also enable patients to access to their complete medicines record to corroborate and contribute to the accuracy of that record and to make decisions in relation to their own care. International evidence and experience broadly support patient access to electronic health records,[3] although evidence on health outcomes is mixed.[4] Digital and health literacy issues must be considered in the development of SDMRs,[5-7] including measures to prevent the digital exclusion of groups such as older adults and some patients from ethnic minority backgrounds.

Creating the technical capability to share medication data across healthcare settings will not be enough to ensure widespread and safe adoption. Technical development needs to align with changes in working practice to ensure that any new medication records are usable, improve patient outcomes including reducing avoidable harm, and reduce administrative work to free up clinician time.[8] Healthcare workers' contribution to the design of the record is important. Patients must also participate in the design of patient facing interfaces and structures of governance, as public understanding of who is viewing and using their medicines data is vital to maintain trust. Agreement on custodianship and clinical responsibility for medication data will be essential to ensure that records are accurate and to resolve inconsistencies in prescribing decisions.

The ability to view and share accurate medicines information across diverse healthcare settings will enable better therapeutic decisions, enhance shared decision making, and reduce risk of medication errors at transitions of care as patients move between different healthcare services.[9] To maximise the potential offered by SDMRs, a strategic approach to their design and development is required.[10] Technologists and system manufacturers can now collaborate using the agreed interoperability standards to develop shareable records. A co-design approach with clinicians and patients is needed to reduce the risk of unintended consequences that compromise patient safety and to ensure that information is presented consistently to minimise misinterpretation.

Clinical leaders and policy makers at all levels across regional, acute, and community settings should prioritise the changes to practice, process, and governance required to realise the potential of SDMRs. Development and implementation will be iterative and should occur in parallel with evaluation to establish the benefits and identify any avoidable harm.

Work has already begun on development in regions across the United Kingdom, most notably in Somerset and Lancashire, with early planning under way in Scotland and Wales. Similar approaches to shared medicines information are being implemented internationally, including in Austria, Denmark, Germany, and Switzerland.[10 11] In Australia and the United States, SDMRs are already helping to reduce patient harm by, for example, reducing overuse of prescribed opiates.[12 13]

"Medication without harm" was the clarion call of the latest World Patient Safety Day.[14] Clinicians and patients in England will soon be able to access shared medication records, and both need to work with technical colleagues, suppliers, and leaders to make this a reality.

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