ELECTRONIC MEDICAL RECORD: Developing an Optimal Interface for Optimal Care

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The electronic medical record (EMR) has tremendous potential to become a robust tool and advance the prevention and management of chronic disease. Although the rate of EMR use has increased substantially, its presence is limited and less coordinated in Canada than in other countries.

Practitioners have not been maximizing use of the EMR as a form of feedback to improve patient safety and care through alerts, reminders, and checkpoints (1). In fact, EMRs may be used to identify individuals requiring follow-up for continuity of care to monitor chronic conditions, and effective implementation could yield important health, social, and safety benefits as well as widespread efficiency and cost savings (2). EMRs can enable physicians to have access to key healthcare information from any point in the continuum of care. Importantly, it may act as an additional mechanism for pharmacovigilance in inpatient and outpatient settings by identifying and eliminating medication errors and potential drug interactions (2). However, it
must be integrated with a well-designed health information system. With improved coordination and decision support, EMRs can facilitate both chronic disease management and short-term preventive care (2). Preventive measures include identifying patients in need of specific services such as a screening exam, notifying providers to offer the service during visits, and reminding patients to schedule care (2).

Physicians have primarily used EMRs as “electronic paper records” for medication prescription, billing, and scheduling purposes (3). As a result, data quality suffers, and advanced features are not used. Furthermore, EMR use is not standardized since information is entered in different ways, and there are discrepancies in the ways physicians label information, with varying degrees of specificity and detail (1). This inability to code physician notes and clinical text is one limitation to EMR data usability. Inconsistencies are also evident when different EMR systems with different coding structures are used (4). Even within the same system, there is large variability in the level of accuracy and completeness of records (4). To augment interoperability across institutions, regions, and provinces, EMR data need to be merged (5). Barriers to EMR standardization and interoperability include a lack of awareness of EMR capability, concerns about privacy, and poor data quality. One of the biggest challenges is coordinating information to and from different stakeholders such as primary care physicians, specialists, hospitals and home-care providers. Therefore, EMR currently does not effectively address these limiting factors.

So, how exactly can EMR become more robust? The Canadian Institute for Health Information (CIHI) highlights a need for system reform to address existing gaps in data retrieval and classification (1). The EMR also lacks inclusion of the “patient voice”, quality of life measures, income, education level, and ethnicity, among other components.6 Given the significant role that various social determinants play regarding health outcomes, it is surprising that these measures are not reported on. Consequently, having patients use the EMR as communication, information and decision tool before, during and after
their visit may enhance their overall experience with the system (6). Nevertheless, even if EMRs conform to national CIHI standards, there needs to be an adequate translation of technology into clinician end-user practice to ensure productivity and high-quality care. Practices can be optimized through ongoing EMR education and engagement through quality improvement initiatives (3).

A homogenous EMR system may allow for more comprehensive clinical decision-making, by implementing guidelines and processing data to help clinicians understand patterns and form a sense of direction regarding disease progression (5). Therefore, generating consensus among EMR stakeholders is recommended to build a national research and policy agenda (7). We must better understand the organization and function of EMRs to optimize and advance clinical practice in this information age.

References


