

Do electronic medical records improve quality of care?

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YES Electronic medical records (EMRs) have had a positive effect on patient care and the work lives of family physicians.

Over the past few decades our medical knowledge has increased. More investigative and treatment options are available; as a result our patients are living longer and we are dealing with more chronic conditions. Family physicians cannot “know all things” nor can we be “all things to all patients.” To adequately address our patients’ complex needs, we need good sources of information and good relationships, including access to a multidisciplinary team of professionals and other specialists. We need tools that improve access to information and relationships. We have had to transform how we practise, and the EMR, with its associated information technology, has facilitated that transformation. It is no longer the early adopters or innovators who are using the EMR, as 75% of physicians responding to the 2014 National Physician Survey were using EMRs.¹ Of those, 65% indicated that patient care improved and less than 5% indicated a negative effect on the quality of care they provided.¹ However, there are still a few laggards who will argue against using EMRs. They will argue that there is no evidence EMRs have a positive effect on the health of their patients, or that implementing EMRs in their practices will reduce efficiency and negatively affect their patient flow.

Better informed

The EMR technology gives health care providers information in formats that were not possible with paper charts. Primary care providers can now view and print graphs of values such as weight, cholesterol levels, and blood pressure, tracking changes over time. The EMR improves attainment of chronic disease management, prevention, and screening targets, as shown in studies that demonstrated improved quality measures.² Electronic medical records can provide treatment goals or alerts to remind providers when certain prevention and screening maneuvers are due or out of date. The EMR also provides access to information and resources that point primary care providers toward the best approach to the various conditions they encounter in practice. With improved access to laboratory data there is a reduction in duplication and costs.³ Disease

outcomes can be improved, as shown by a randomized clinical trial of 21 practices that demonstrated a reduction in blood pressure in patients with hypertension who received screening for and advice on high-risk drinking, alcohol abuse, or alcohol dependence through an EMR intervention.⁴ Numerous resources and tools, such as assessments for drug interactions, Framingham calculators, and body mass index calculators, can be accessed quickly to better inform clinicians and their patients. These benefits are not lost on patients, as patients’ perceptions of the quality of care that they receive have been positively associated with the use of EMRs.⁵

The structured EMR data provide the potential to access point-of-care data that can be used to inform practice and conduct research. With meaningful use, including standard and consistent data entry in specific fields, the EMR data provide the physician with valuable practice-level information. This information can be used for practice-level interventions such as identifying patients who have not received bowel cancer screening or mammograms. The information provides feedback to the primary care providers about the quality of their care, such as screening rates and preventive target achievements. Point-of-care EMR data can be used to study issues in primary care, as demonstrated by the work of the Canadian Primary Care Sentinel Surveillance Network. Detailed analysis of EMR data on medications used in the primary care setting provides new information such as drug repurposing signals, as demonstrated in a recent study that identified a decrease in mortality in cancer patients treated with metformin.⁶

Improved relationships

The EMR improves communication and relationships between family physicians and their multidisciplinary team members.⁷ Chart summaries, medical notes, and consultation letter templates provide consultants and various team members with legible, structured information. The prescriptions are in a clear and structured format, which reduces medical errors in prescribing.³ Electronic medical records facilitate requests and task assignment to various team members. Booking schedules are easily accessed by clinical staff, clinicians, and, in some cases, patients who might be able to book appointments remotely. Electronic medical records might also improve communication with patients

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through the use of patient portals and personal health records, which more effectively engage patients in managing their own care.⁸

Beneficial effect on work flow

The effect of EMRs on the work lives of family physicians has been positive, as demonstrated by physicians' largely favourable perceptions of EMRs.^{1,9} Although the implementation of an EMR can lead to a subjective feeling of increased time requirements by family physicians, studies have found that implementation does not result in a significant decrease in patient access³ or a loss of billings.¹⁰ Canadian EMR research suffers from variation in vendors, study context, methods, and outcome measures. However, despite these deficiencies, studies are emerging that demonstrate numerous benefits of the EMR.³ The EMR allows clinicians to see a larger number of patients through better access to comprehensive patient histories that include clinical data, which might help physicians spend less time searching for results and reports.³ The perceived benefits include remote access to patient charts, improved laboratory result availability, medication error alerts, and reminders for preventive care.

Conclusion

We now have a critical mass of EMR users.¹ We are at a tipping point and the positive effect will escalate with increased knowledge of how to use EMR systems in a meaningful way to their full potential, as well as improved system interoperability, with seamless exchange of information from one system to another.¹ 🌱

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Competing interests

None declared

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CLOSING ARGUMENTS – YES

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- Electronic medical records improve quality of care, patient outcomes, and safety through improved management, reduction in medication errors, reduction in unnecessary investigations, and improved communication and interactions among primary care providers, patients, and other providers involved in care.
- Electronic medical records improve the work lives of family physicians despite some subjective concerns about implementation costs and time. Electronic medical records have been demonstrated to improve efficiencies in work flow through reducing the time required to pull charts, improving access to comprehensive patient data, helping to manage prescriptions, improving scheduling of patient appointments, and providing remote access to patients' charts.
- Electronic medical records capture point-of-care data that inform and improve practice through quality improvement projects, practice-level interventions, and informative research.

The parties in these debates refute each other's arguments in rebuttals available at www.cfp.ca. Join the discussion by clicking on Rapid Responses at www.cfp.ca.

NO Do electronic medical records (EMRs) improve care? There was certainly a lot of hope that they would, and quite a lot of money and effort expended based on that hope. Electronic medical records were specifically identified as critical to quality improvement activities.¹ The Romanow reports had recommended the establishment of electronic health records for all Canadians.¹ The First Ministers committed to accelerating the implementation of these electronic records as part of their 2003 accord on a 10-year plan to transform health care.² Various policies supporting and subsidizing EMRs have been implemented in most Canadian provinces, and as a result, most family physicians currently report using EMRs.³

Little evidence of improvement

However, there is still little conclusive evidence that