
GUIDING PRINCIPLES FOR PHYSICIAN ELECTRONIC MEDICAL RECORDS (EMR) ADOPTION IN AMBULATORY CLINICAL PRACTICE

The following principles outline what is important to physicians and why as they make the decision to adopt electronic medical record systems (EMRs) in ambulatory clinical practice.

Physician adoption of the EMR has the potential to transform patient care and the quality of health statistics and health research in Canada, as long as the right conditions are met and the guiding principles outlined here are adhered to. Adoption of EMRs in clinical ambulatory practices will lead to significant improvements in data comprehensiveness, clinical relevance and quality — and this, in turn, will lead to improved clinical decision support, core data sets and health statistics that meet the primary goal of enhancing health care delivery, treatment and outcomes.

PRINCIPLES

General Policy

- **Privacy.** A physician's ethical and legal responsibility as data steward of the patient's

medical information must be protected and enhanced.¹

- **Choice.** There must be appropriate independence of choice that respects physicians' professional and business autonomy. Physicians must be free to choose the EMR product that best meets the needs of their practice model, type and size.
- **Voluntary.** Physician adoption of EMRs must be voluntary, not mandated or coerced.
- **Non-discriminatory.** Programs designed to offset physicians' costs or encourage them to adopt EMRs must be non-discriminatory (i.e., not tied to a single EMR product or health

¹ For more detail on the physician's ethical responsibilities as data steward of patient information please refer to the *CMA Code of Ethics*, *CMA Health Information Privacy Code (2004)*, *Guiding Principles for the Optimal Use of Data Analytics by Physicians at the Point of Care (2016)*, *Guiding Principles for the Optimal Use of Data Analytics by Physicians at the Point of Care (2016)*, and *Guiding Principles for Physicians Recommending Mobile Health Applications to Patients (2015)*.

care practice model). While such restrictions may be attractive to some payors and administrators, they discriminate against physicians who do not meet their criteria and risk creating two “classes” of physicians and patients.

- **Outcome-related incentives.** Incentives for EMR adoption should be tied to clinical benefits and outcomes, not driven by cost containment. Financial incentives or bonuses that are tied to clinical outcomes may encourage EMR utilization and optimize the use of these systems in ambulatory clinical practices.

Financial

- **Unrestricted.** Funding for EMRs in physician offices must be equally available to all physicians, and not restricted to a single EMR product or physician practice model.

- **Funding.** Cost analyses have determined that the majority of the benefits from EMRs accrue to the health care system (i.e., payors and patients) and not to individual physicians. It is only reasonable that those who benefit most should assume the costs.

- **Comprehensive.** The cost of implementing an EMR system goes beyond acquisition of hardware and software. Funding for physician adoption of EMRs must be comprehensive and include costs associated with the initial purchase, as well as implementation, change management, ongoing operation, and evergreening of the system.

- **Save harmless.** Early adoptors who need to update or replace their existing systems, as well as physicians whose EMR vendor goes out of business, must not be disadvantaged. These physicians must not be penalized or excluded from funding programs, and should

be provided with the necessary transition support.

Business

- **Vendor sustainability.** Vendor stability is critical to EMR adoption by physicians. This can be achieved through vendor compliance with technical and business requirements that address fiscal sustainability as well as EMR product quality, technical standards and capabilities.

- **Due diligence.** Because physician practices vary in type, size and needs, there is no “one-size-fits-all” EMR solution. Physicians must assess the needs of their individual practice to determine the best product.

- **Workflow re-engineering.** Implementation of EMRs in ambulatory clinical practice may require workflow adjustment or re-engineering. Assessments of workflow and practice needs must be part of EMR change management programs.

- **HR impact.** Adoption of EMRs in ambulatory clinical practices will have an impact on human resources. Provision should be made for physician and office staff retraining, retention and turnover.

- **Support and service agreements.** Physician use of EMRs in ambulatory clinical practice requires appropriate support and service agreements not only to provide the necessary infrastructure and connectivity, but also to guarantee ongoing, accessible and reliable technical support. Physicians must be able to access patient records in their EMR system at all times, regardless of where the records are physically stored (e.g., off-site with an alternate service provider, or onsite in a local client server).

- **Risk management strategies** (liability and insurance) tied to EMR adoption must address the privacy, security, business continuity and professional liability requirements of physician practice in an electronic environment.

Change management and transition

- **Critical to success.** To fully realize the benefits from EMR adoption, the move from paper to electronic records requires change management support and services geared specifically to physician EMR adoption.
- **Ongoing.** Change management is a key success factor in driving both uptake and optimal utilization of EMRs in ambulatory clinical practice. To realize the full benefits of EMR adoption on health care outcomes, physician change management programs must be ongoing, not one-time.
- **Comprehensive.** Comprehensive change management for physicians who adopt EMRs must include the tools and services to assist with system needs assessment, EMR selection, implementation, workflow adjustment, and training for physicians and staff, as well as suggestions to maximize use of the EMR.
- **Physician driven and designed.** Change management must meet the real and individual needs of physicians as they move to an EMR-based practice. This requires flexibility (not one-size-fits-all), “just in time” capacity and delivery, and a mechanism for evaluating the program.
- **Payor funded and delivered.** Delivery and costs of these programs should be borne by payors as part of any physician EMR funding programs or agreements.

Usability and human factors

- **User interface and usability.** User interface and usability of EMR systems are critical success factors for physician acceptance and optimal utilization of EMRs in clinical practice.
- **Workflow.** EMR adoption requires changes to physician workflow, such as history-taking and charting. Done properly, workflow changes related to EMRs should result in administrative efficiencies and improved clinical outcomes.
- **Core principles of practice must be respected.** The EMR must allow the physician to practice comprehensive care, efficiently manage patients with multiple problems and respect the doctor-patient relationship where the patient’s values, wishes, advance directives and physical and social function are integral to medical care.
- **Training and education.** Training in the use, benefits, shortcomings and opportunities of an EMR must become part of the medical education curricula in all stages of physician practice: undergraduate, postgraduate and continuing medical education.
- **Standardized data.** Large data sets that record every observation are unworkable in practice. The EMR must allow the physician to record and access data in a standardized way.
- **Data quality.** Data quality is critical to patient care. Physicians require access to accurate, clinically relevant data. Inaccurately recorded and unfiltered data does not benefit patient care.

Clinical patient care

- **Management of patient records.** EMR systems allow physicians to quickly access and manage patient data in an organized fashion (e.g., search, sort and retrieve data, spot trends, or flag charts). This leads to more efficient practices and enhances care delivery.
- **Referrals and patient summaries.** The ability to transmit referral requests and reports electronically using an EMR greatly facilitates the consultation process. Core clinical data sets generated from the EMR can be used to share or hand off patient care among providers, facilitating both continuity of care and emergency access to relevant data.
- **Drugs and lab reports.** Physician use of an EMR permits drug and lab data to be recorded and shared more accurately and efficiently. Benefits to patient care include automated prescription renewals, quick identification of patients affected by drug alerts, and collation of lab data to show trends.
- **Decision support.** EMR adoption in ambulatory clinical practice makes clinical decision support (i.e., access to timely, appropriate, evidence-based information) possible at the point of care. This has the potential to enhance patient safety, care delivery and health outcomes.
- **Patient values and autonomy.** Patient values and autonomy cannot become secondary to the "data management" requirements of the EMR. An EMR must provide the same (or better) standards of patient confidentiality as traditional paper-based records.
- **Accessibility.** Patient data must always be collected and stored in an EMR with the primary goal of improving individual patient

care. Data accessibility for clinical care is more important than compiling a large common data set.

Health Research

- **Standardized data.** Primary care is driven by symptoms, not diagnoses, and both must be recorded in the EMR in a standardized way.
- **Clinical coding.** Primary care disorders are low-prevalence and will require a high degree of precision when data are coded.
- **Evidence-based care models.** The episode-of-care data model demonstrates how symptoms and symptom clusters evolve over time. It is possible to derive the sensitivity and specificity of symptoms and symptom clusters to improve pre-test likelihood and avoid unproductive testing.
- **Core and aggregate data.** Standardized data means that core data sets can be combined, and their aggregation allows identification and analysis of rarer conditions.