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Strong foundations: making medications safer and more effective



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In Canada, we like to believe that our health system is among the best in the world. In many ways, it is. But there are aspects of our system that have fallen far behind the standard of practice in other countries. One of the laggards is the way we manage medications, which has an impact on patient safety, medication adherence and ultimately patient outcomes.

This is the second article in the Strong Foundations series that examines five non-negotiable foundations that will support and sustain a truly integrated healthcare ecosystem for Canadians. Its focus is the opportunity to tackle medication management challenges by enabling electronic communication between prescribing physicians, pharmacists, insurers and patients.

Five non-negotiables for Canadian healthcare

- 1** **Enable secure and convenient electronic communication among a patient's care team,** including primary care providers, specialists, pharmacists and patients themselves.
- 2** **Tackle medication management challenges by removing silos between prescribing physicians, pharmacists, insurers and patients.** This can be accomplished by automating complex workflows and providing all members of the care team with access to a complete medication profile.
- 3** **Create mechanisms for patients to interact as fully engaged partners with the healthcare system.** This includes access to health records, the ability to contribute to those records, channels to communicate virtually with clinical providers, and tools to book appointments online.
- 4** **Bridge gaps between community and acute care settings** so that patients receive treatment in the most appropriate place, reducing the demand for acute care and ensuring that patient data is available to support continuity of care.
- 5** **Drive improved outcomes by equipping self-regulating clinical professions with performance information.** When every physician has access to tools that make it easy to deploy clinical evidence in their practice, supported by real time information on how they measure up against best practices, quality of care will advance.

Electronic prescribing is fundamental

Electronic prescribing is fundamental to medication management. In most OECD countries, electronic prescribing has become the norm.

Electronic prescribing in other developed countries:

| | England | United States | Sweden | Denmark |
|--------------------------------|---------|---------------|--------|---------|
| % of prescriptions ePrescribed | 43% | 73% | >90% | >99% |

[Source: European E-Prescriptions: Benefits and Success Factors, June 2016, Oxford Internet Institute, University of Oxford]

Furthermore, in some States in the US, there are statutes that prohibit prescribing on paper. For example, New York State mandated that practitioners must prescribe electronically. In Maine, an act to prevent opiate abuse by strengthening prescription monitoring of controlled substances was introduced which requires that opioid prescriptions be sent electronically.

Why has Canada been so slow?

I believe a major barrier to technology adoption is the fact that our Constitution assigns jurisdictional responsibility for healthcare to the Provincial governments. For many decades, that was a distinct advantage because healthcare decisions were made regionally, close to the people that were receiving the services. Supported by Federal transfer payments, the Provinces funded health care services that were truly world class for many years.

Yet over the last two decades, just as information technology became increasingly important for coordinated and effective care delivery, Canada has slipped in international rankings. Could there be a cause and effect relationship here?

Information technology shows very strong economies of scale: proven, effective solutions can be adopted and applied on a large scale with relatively small incremental costs because hardware is so inexpensive. However, system requirements and standards that are different for each Province have made eHealth solutions very difficult to deliver on a national scale. The resulting patchwork of systems are costlier to manage, maintain and expand than a national platform would be. Several Provinces have worked diligently to implement drug information systems but have not succeeded in delivering electronic prescribing. National pharmacy retailers and software vendors are understandably reluctant to conform to 10 different provincial standards given the cost and complexity that would represent.

The result: everyone waits on the sidelines for a national standard solution to emerge. That is until recently.

Addressing the opioid crisis

Large-scale opioid abuse is a crisis affecting North America – stemming from both prescription and illicit drugs. The costs to human life and to the Canadian healthcare system are massive in scale. In 2016, over 2,800 Canadians died due to opioid overdose.

Medical professionals nationwide are assessing their own practices and professional and government bodies are improving awareness and data tracking among prescribers. The 2017 Canadian Guideline for Opioids for Chronic Non-Cancer Pain documents best practice for opioid prescribing, with a scope that includes non-pharmacologic treatments, non-opioid medication options, more frequent monitoring of patients and patient education.

These efforts seem to be having some effect. CIHI reports a 9% reduction in defined daily doses of opioids from 2012 to 2016¹. During this same time period, the number of people who were prescribed opioids fell from 132 to 125 per thousand population. Yet deaths from opioid overdose are on the rise, coinciding with the rise in availability of illicit fentanyl in Canada. Clearly more has to be done.

Dr. Jamie Meuser, executive director of professional development and practice for the College of Family Physicians of Canada offers this observation: “We doubt very much that [the high level of opioid prescribing] has to do with Canadians being different, having more pain than people elsewhere in the world. We think it probably has to do with how we’ve been programmed to prescribe.”

While there are no silver bullets to end the opioid crisis, ePrescribing will contribute a great deal to the solution by eliminating fraudulent handwritten prescriptions; providing better information at point of care; and providing enhanced support and surveillance for narcotics monitoring programs.

Bringing electronic prescribing to the nation

In 2017, Canada Health Infoway launched a solution called PrescribeIT™ that went live in August. It offers a single, national solution that will integrate with provincial drug repositories and provider registries. To-date, six Provinces and a range of pharmacy retailers have expressed a willingness to get on board. This is Canada's best opportunity to close the electronic prescribing gap, compared to other developed countries.

Many are unaware of the full potential electronic prescribing offers to Canada's healthcare system, ranging from improved patient safety, to increased medication adherence, to better collaboration between providers. Particular benefits include:

- **Accurate transfer of medication orders** from physician EMR to pharmacy management system, which removes the possibility of transcription errors or illegible prescriptions that are common with manual prescribing.
- **Identity of the prescriber is confirmed** with two factor authentication, virtually eliminating fraudulent prescriptions. In the US, electronic prescriptions for controlled substances have increased 256% since 2015 because practitioners are fully assured that the electronic transmission of prescriptions directly from their EMR to a pharmacy prevents misuse and unintentional dispensing.ⁱ
- **Medication adherence improves.** Thirty percent of all prescriptions written in Canada are never filled.ⁱⁱ This statistic is similar to that observed in other countries prior to adopting electronic prescribing. After electronic prescribing is in place, other countries' experience demonstrates this rate drops down to 20%.
- **Effortless patient-centered communication between providers.** Communication between physicians and pharmacists is very cumbersome in Canada today because it relies on phone calls, voicemail and fax. With electronic prescribing, a pharmacist can message a physician to clarify any aspect of a prescription. The physician receives the message in their EMR in the context of the patient's chart, making it easy and convenient to reply.
- **More efficient renewals.** Requests from the pharmacy to the physician to renew a prescription are likewise more efficient and faster in the context of electronic prescribing. Responses are reduced from days to hours, improving convenience for patients as well.

New paradigm offers more than automation of current practice

Electronic prescribing is more than a simple duplication of the paper process. It allows new transactions that have no analog in the paper world. For instance, the physician EMR receives automatic notification from the pharmacy when a prescription is filled. This allows the medication profile the physician sees in the EMR to display adherence information. Similarly, when a physician discontinues a medication in the EMR, a stop order is sent to the pharmacy, taking the medication off the active list in the pharmacy management system.

These are the benefits offered by the version of PrescribeIT™ to be deployed to physicians and pharmacists this year.

But this is only the beginning. Once Canada has the ePrescribing platform in place, there is so much more that can be done.

Electronic prescribing trailblazers

“ Prescription transfers will happen more quickly. It comes in, the pharmacist can assess it, and then if there are questions about dosing or drug interactions, you can send a message back right to the doctor's screen and get that answered quite quickly. ”

Bill Coon,
first pharmacist to go live with PrescribeIT™

“ PrescribeIT is integrated into my electronic medical record, so it lets me send the prescription to my patient's pharmacy with one simple click – it's as easy as pressing send ”

Dr. David Mathies,
first physician to go live with PrescribeIT™



Giving care providers the full picture

One of the big limitations of our current system of medication management is that none of the care givers sees a complete record of the medications a patient is taking.

The patient is the ultimate integrator of medication therapy, usually by means of a slip of paper with a list of medications or a plastic bag filled with pill bottles.

The pharmacist does not see what prescriptions are filled in other pharmacies. And, in some Provinces, regulations and patient confidentiality agreements make data sharing between pharmacies challenging.

The physician only sees the prescriptions they have written personally. Those written by specialists, hospitals or walk-in clinics never get to the physician unless the patient shares the information and the physician takes the time to type it into the EMR.

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Some Provinces have created impressive drug repositories that have a complete record of the medications dispensed within their borders. Unfortunately, utilization of these valuable data sources by health providers is limited for reasons of convenience (i.e. the time it takes to log into another system is onerous) or lack of system access. Furthermore, these repositories lack information about unfilled prescriptions or discontinued medications, rendering them ineffective for addressing poor drug adherence.

Opening avenues to future healthcare frontiers

Once electronic prescribing is widely adopted and integration with provincial drug information systems is in place, Canada will have the ability to progress other important capabilities, such as medication reconciliation. This will allow synchronization between EMRs, hospital systems, pharmacy systems and provincial repositories. All members of a care team (including the patient) would have access to the complete medication history for the first time. The safety benefits of this are dramatic, as drug-to-drug interaction checking against the entire medication list for each patient will be possible within the EMR. Further, adherence information will be available to all, allowing a more proactive approach to patient education.

The time to act is now

We know from other countries that it takes years to spread adoption of ePrescribing across an entire health system. As a nation, we need to move quickly to incorporate ePrescribing into practice. Provinces, pharmacies, hospitals and physicians need to put this to the top of their priority list in a coordinated effort to improve the performance of our health system. Many lives are depending on it.



References

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