

# Opportunity beckons for electronic medical record data

Alan Katz MB ChB MSc CCFP FCFP

The Canadian Institutes of Health Research (CIHR) have embraced the learning health system (LHS)<sup>1,2</sup> as a model for improving the health of Canadians,<sup>3</sup> to the extent that it has made the LHS a fundamental component of the CIHR's Strategy for Patient-Oriented Research (SPOR) SUPPORT Unit Phase II call for proposals.<sup>4</sup> The call should have closed in May but has been delayed due to the coronavirus disease 2019 (COVID-19) pandemic. Only previously funded units are eligible to apply for renewal of their funding. The SPOR SUPPORT units will need to build or maintain "a data platform that incrementally adds relevant datasets within their jurisdiction and equitably provides that data to researchers, policy makers and other SPOR stakeholders, upon request and in a timely manner, in support of POR [patient-oriented research]"<sup>5</sup>; however, the call makes no specific mention of the importance of electronic medical record (EMR) data. It might be that the CIHR assumes that EMR data are included in the data platforms mentioned above, but considering the current lack of EMR data in most provincial, territorial, and national data platforms in Canada, it seems more likely to be a regrettable omission.

## Importance of community-based data

Most health care in Canada is provided by community-based providers. Primary care provided by family physicians and nurse practitioners makes up most of that health care. The availability of trustworthy data is recognized as a key system requirement for an LHS.<sup>1</sup> While there is variation across the provinces and territories in the penetration of EMRs, most family doctors now use EMRs in their practices, as recommended by the 2019 College of Family Physicians of Canada's Patient's Medical Home model.<sup>6</sup>

## Accessing EMR data beyond direct patient care

The potential of EMR data as a tool for improving patient care has been widely recognized at the practice-patient interface (the micro level), where initiatives such as the College of Family Physicians of Canada's Practice Improvement Initiative support family physicians in implementing quality improvement.<sup>7</sup>

At the meso level, Canada is well served by the Canadian Primary Care Sentinel Surveillance Network (CPCSSN).<sup>8</sup> This voluntary network of more than 1300 family doctors across 254 sites extracts EMR data on 1 960 085 patients (as of October 2019), cleans it using unique data definitions and algorithms, and aggregates the data for research and surveillance in a central data repository.<sup>9,10</sup>

What Canada currently lacks are population-based EMR data linkable to the wealth of population-based data housed in numerous provincial and national data repositories (ie, data that are analyzable at the macro level).

## Macro-level health data

In October 2018, the CIHR funded the SPOR Canadian Data Platform (CDP), with a 7-year mandate to build on a network of the federal, provincial, and territorial organizations that work in the field of data access to make the data-access processes consistent across the country.

By making it easier for researchers to access data, the CDP will enable more studies to be conducted that include information from multiple provinces and territories, which will strengthen research and lead to better decision making for health care and social service provision. The CDP does not hold data itself, but facilitates the distributed analyses where data are currently held. One of the goals of the CDP is to support provincial and territorial data centres in acquiring additional data to support multijurisdictional studies.


Currently, provincial data centres have limited EMR data holdings. Because the custodians of EMR data are predominantly independent fee-for-service providers, there is no recognized governance approach to the acquisition of EMR data other than through the voluntary participation of providers in CPCSSN. The EMR data held by provincial CPCSSN nodes, such as the Manitoba Primary Care Research Network, can potentially be linked to the other provincial holdings, as they are in Manitoba. The Manitoba Primary Care Research Network EMR data are added quarterly to the Manitoba Population Research Data Repository housed at the Manitoba Centre for Health Policy in Winnipeg. Researchers can then access these data, which are linked to other provincial health and social data with the appropriate permissions, for research to improve the health of Manitobans. This process provides an easily available one-stop process to access the EMR data. As the other provincial data holdings mature, opportunities will open up for the CDP to support interjurisdictional research that includes EMR holdings in multiple jurisdictions.

## Infrastructure to support EMR data repositories

Although CPCSSN represents a unique and valuable resource for Canadian primary care quality improvement and research at the micro and meso levels, the network lacks the infrastructure support to become a macro-level population-based national resource linkable across

multiple jurisdictions. The current CIHR SPOR funding opportunities should, however, be exploited by primary care researchers. In addition to the call for proposals for the renewal of SPOR SUPPORT units referred to earlier, it is widely expected that the jurisdictional SPOR Primary and Integrated Health Care Innovations (PIHCI) networks will also be renewed when the current grants expire.

Like the SUPPORT units, the PIHCI networks are provincial structures funded through SPOR, with one in each jurisdiction. The current networks have strong leadership provided by primary care researchers in most jurisdictions, leadership that often overlaps with that of the local CPCSSN regional network. Because both the SPOR CDP and the SUPPORT units are mandated to support other SPOR entities, there appears to be an opportunity to include the support of local CPCSSN nodes through a PIHCI network renewal. This support would recognize the fundamental importance of EMR data to the development of an LHS in Canada. A successful LHS model seems doomed to fail without the inclusion of robust support for EMR data.

The SPOR funding that supports the grants for the SUPPORT units and the PIHCI networks is usually “directed” by specific requirements, such as those described above for the SUPPORT unit renewal applications. Now is the time for the primary care community to advocate for the inclusion of EMR infrastructure support as a necessary requirement for the PIHCI network renewal grants. This funding could be a game changer if it facilitates the inclusion of linkable population-based EMR data in the provincial data centre holdings across Canada. Filling this gap could transform the Canadian health data landscape. 

**Dr Katz** is a family physician and health service researcher in Winnipeg, Man, and Director of the Manitoba Centre for Health Policy.

#### Acknowledgment

**Dr Katz** is Scientific Lead of the Manitoba Primary Care Network and the Manitoba SPOR PIHCI Network funded by CIHR, and a co-principal applicant for the SPOR CDP.

#### Competing interests

None declared

#### Correspondence

**Dr Alan Katz**; e-mail [akatz@cpe.umanitoba.ca](mailto:akatz@cpe.umanitoba.ca)

The opinions expressed in commentaries are those of the authors. Publication does not imply endorsement by the College of Family Physicians of Canada.

#### References

1. Friedman C, Rubin J, Brown J, Buntin M, Corn M, Etheredge L, et al. Toward a science of learning systems: a research agenda for the high-functioning learning health system. *J Am Med Inform Assoc* 2015;22(1):43-50. Epub 2014 Oct 23.
2. Krumholz HM. Big data and new knowledge in medicine: the thinking, training, and tools needed for a learning health system. *Health Aff (Millwood)* 2014;33(7):1163-70.
3. Canadian Institutes of Health Research [website]. *Background: modernizing health services and policy research training for greater impact*. Ottawa, ON: Canadian Institutes of Health Research; 2020. Available from: <https://cihr-irsc.gc.ca/e/50024.html>. Accessed 2020 June 23.
4. Canadian Institutes of Health Research. *Funding opportunity details. SPOR SUPPORT Unit Phase II*. Ottawa, ON: ResearchNet; 2019. Available from: <https://www.researchnet-recherchenet.ca/rnr16/vwOpprnttyDtls.do?prog=3167&view=currentOpps&type=EXACT&resultCount=25&sort=program&next=1&all=1&masterList=true>. Accessed 2020 Jun 26.
5. Health Research Services; Research Office for Administration, Development and Support. *CIHR other: SPOR SUPPORT Unit phase II*. Hamilton, ON: McMaster University. Available from: <https://research.mcmaster.ca/funding/cihr-other-spor-support-unit-phase-ii/>. Accessed 2020 Jun 24.
6. College of Family Physicians of Canada. *A new vision for Canada. Family practice—the Patient's Medical Home 2019*. Mississauga, ON: College of Family Physicians of Canada; 2019. Available from: [https://patientsmedicalhome.ca/files/uploads/PMH\\_VISION2019\\_ENG\\_WEB\\_2.pdf](https://patientsmedicalhome.ca/files/uploads/PMH_VISION2019_ENG_WEB_2.pdf). Accessed 2020 June 23.
7. College of Family Physicians of Canada [website]. *The Practice Improvement Initiative (Pii)*. Mississauga, ON: College of Family Physicians of Canada; 2020. Available from: [www.cfpc.ca/pii](http://www.cfpc.ca/pii). Accessed 2020 June 23.
8. *Canadian Primary Care Sentinel Surveillance Network* [website]. Kingston, ON: Canadian Primary Care Sentinel Surveillance Network; 2016. Available from: <http://cpcssn.ca>. Accessed 2020 June 23.
9. Birtwhistle R, Williamson T. Primary care electronic medical records: a new data source for research in Canada. *CMAJ* 2015;187(4):239-40. Epub 2014 Nov 24.
10. Queenan JA, Williamson T, Khan S, Drummond N, Garies S, Morkem R, et al. Representativeness of patients and providers in the Canadian Primary Care Sentinel Surveillance Network: a cross-sectional study. *CMAJ Open* 2016;4(1):E28-32.

This article has been peer reviewed. *Can Fam Physician* 2020;66:559-60

La traduction en français de cet article se trouve à [www.cfp.ca](http://www.cfp.ca) dans la table des matières du numéro d'août 2020 à la page e202.