

Update from CPCSSN

Richard Birtwhistle MD MSc FCFP John A. Queenan PhD

The Canadian Primary Care Sentinel Surveillance Network (CPCSSN) has grown tremendously since it was first described in 2011,¹ when CPCSSN was establishing core principles and procedures to ensure privacy, security, validity, and representativeness of data. CPCSSN continues to develop solutions to using electronic medical records (EMRs) for reporting, research, and surveillance. CPCSSN is a network of networks, with 11 university-affiliated primary care (PC) research networks and almost 1200 PC practitioners contributing data from 1.5 million Canadians. CPCSSN practices are representative of PC practices using EMRs. Typical of PC, patients are older and there are more women and fewer young to middle-aged men.²

CPCSSN excels at ensuring the security and privacy of depersonalized health data. CPCSSN data are housed at Queen's University's Centre for Advanced Computing (CAC). The CAC provides logged and monitored access control, the latest firewall and virtual private network technology, and access to high-performance computing and storage. CPCSSN adheres to provincial and federal privacy legislation, and ethics approval was obtained from all participating university research ethics boards. Direct patient identifiers are stripped from the data extracted before transfer to the CAC. Our efforts were awarded the 2013 Innovation Award by the International Association of Privacy Professionals.

CPCSSN has developed validated case definitions for 8 chronic diseases³ and reported on the prevalence of 6.⁴⁻⁹ **Table 1**⁴⁻¹⁰ shows CPCSSN prevalence estimates for these 8 conditions plus obesity. Case definitions are also in progress for atrial fibrillation, heart failure, myocardial infarction, asthma, chronic pain, and herpes zoster.

Since 2008 data have been extracted every 3 months. The technology now exists to increase the frequency to weekly or daily, creating the opportunity to use EMR data to study acute infectious disease like influenza and provide more immediate information to practices.

Various studies are using CPCSSN data. Regional networks are using their data for local studies (eg, identifying patients at high risk of hospitalization or developing links with provincial data). CPCSSN also collaborates with research organizations (eg, Canadian Institute for Military and Veterans Health Research, identifying and following military families and veterans in PC; Canadian Institutes of Health Research SPOR networks, developing an EMR frailty index).

Important information is often missing or difficult to find in EMRs.¹¹ Demographic data and other risk factors such as

Table 1. Prevalence of chronic disease in the database

CONDITION	PREVALENCE, %
Chronic obstructive pulmonary disease ⁹	4.0
Diabetes ⁷	8.2
Dementia in those older than 65 y ⁵	7.3
Depression ⁸	14.0
Hypertension ⁶	22.8
Osteoarthritis ⁴	14.2
Obesity ¹⁰	30.8
Epilepsy	0.8
Parkinson disease in those older than 65 y	1.0

smoking are often not easily found.^{12,13} CPCSSN has been working with practitioners to improve the data that practices receive and can use to monitor and improve care for their patients.^{14,15} A Web-based data presentation tool was developed for practices to generate reports on management of chronic disease, screening rates, etc. It also allows practitioners to re-identify their patients who require follow-up.

Data quality is improving as EMR technology is increasingly adopted and systems are created to code and store data. CPCSSN is at the forefront of these developments in Canada.

Dr Birtwhistle is Professor in the Centre for Studies in Primary Care and **Dr Queenan** is an epidemiologist for the Canadian Primary Care Sentinel Surveillance Network, both in the Department of Family Medicine at Queen's University in Kingston, Ont.

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Sentinel Eye is coordinated by CPCSSN, in partnership with the CFPC, to highlight surveillance and research initiatives related to chronic illness prevalence and management in Canada. Please send questions or comments to Dr Richard Birtwhistle, Chair, CPCSSN, at richard.birtwhistle@dfm.queensu.ca.

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