NAPCRG 52nd Annual Meeting — Abstracts of Completed Research 2024.

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Title

Implementation of a novel linkage of primary care electronic medical record data with hospital data in South Eastern Ontario

Priority 1 (Research Category)

Big Data

Presenters

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Abstract

Context: Currently, primary care data, community data, and hospital data are not linked in Ontario, resulting in a disconnect in continuity of care. Combining these datasets in a consolidated data repository could result in an improved understanding of the care journey, support the healthcare needs of Ontario Health Team priority populations, promote continuity of care improvements across sectors, and decrease burden on emergency departments (EDs) and primary care providers.

Objectives: To link primary care electronic medical record (EMR) data with community and hospital data and to test the utility of the merged dataset through a targeted quality improvement (QI) intervention among high-risk patients with chronic obstructive pulmonary disease (COPD).

Datasets: Primary care EMR data from the Eastern Ontario Network and acute care, post-acute, and community mental health and addictions data from the Shared Health Integrated Information Portal.

Population and Intervention: Patients attending an academic family health team who were at risk of COPD-related ED visits were identified and targeted for a QI intervention in which patients saw a COPD Specialist for pulmonary function testing, action plan development, medication review, and education.

Results: Robust legal, privacy, and technical processes were developed and applied to securely link and merge datasets. Privacy risks were mitigated through a privacy impact assessment and execution of data use agreements between stakeholders. 1072 patients with COPD were identified within the merged dataset, 50% of whom visited the ED within two years. Risk factors (i.e., comorbid disease, smoking status) were determined to predict those at highest risk for future ED visits. Following patient review by clinician, 77 patients were deemed eligible. A total of 25 patients (32%) were booked for the intervention highlighting a simple pathway for patient care improvements in line with best practice guidelines.

Conclusions: Despite privacy, legal, and technical considerations when combining datasets from different sources, we were able to successfully and safely bridge the gap between primary care EMR and hospital data. We demonstrated the capacity to implement data-drive QI approaches to support patient care across health care sectors using the novel merged datasets. Overall, this project highlights a robust linkage process which can be scaled and spread across primary care clinics and health conditions.

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