International Journal of Population Data Science

Journal Website: www.ijpds.org

Linking Pan-Canadian Administrative and Clinical Registry Data to gain insights across the continuum of care

Wu, J¹, Gnidziejko, N¹, and Turner, M¹

¹Canadian Institute for Health Information

Introduction

Data linkages expand the potential of discrete national health databases to follow patients across the health care continuum. Novel linkages across health care sectors, jurisdictions, and over time provide a deeper understanding of a patient's journey and can facilitate health systems performance evaluation to ultimately improve patient-level health outcomes.

Conclusion/Implications

Canada's many health-related data assets, when combined through effective linkage, can provide tremendous potential for performing longitudinal, patient-oriented analyses in a pan-Canadian setting. Using administrative and cost data to augment the clinical information in the registry data proves to be useful for informing improvements in health and health services.

Objectives and Approach

The objective was to increase the value of pan-Canadian administrative and cost data using novel linkages to longitudinal patient-based clinical registries. One such example is a data linkage comprised of three national data holdings to examine inpatient care and associated costs during ten years of chronic dialysis treatments. Patient data on dialysis treatment changes from the longitudinal clinical registry were linked to episodic inpatient hospitalization and corresponding cost data. Effect of various cofactors on the risk of hospitalization, as well as the cost burden of such hospitalizations on the health system, were examined.

Results

Effective data linkage can facilitate analyses of a broader spectrum of outcomes adjusted for a broader set of patient characteristics and treatment modalities. Linking dialysis patient registry data to administrative inpatient care data showed that patient-specific covariates significantly affect the risk of dialysis patients being hospitalized. These findings were consistent for hospitalizations for dialysis-related infections, a highly preventable complication amongst dialysis patients. The rate of hospitalization of dialysis patients in Canada ranged from 1.1 to 1.4 hospitalizations per patient-year on dialysis. Linking to cost data showed that the average estimated cost for these hospitalizations (\$13,634 per patient year on dialysis) was more than double that of the general population. These and other insights can be achieved more quickly and efficiently using data linkages.