

**Conference:** 2022 Canadian Doctoral Nursing Network Conference

**Title:** Using primary care electronic medical record data in British Columbia, Canada to implement an electronic frailty index

**Presenting Author:** Manpreet Thandi<sup>1</sup>, RN, MSN, MPH, PhD(c)

**Academic Institution Affiliation:** University of British Columbia, School of Nursing

**Stage in Doctoral Program:** Doctoral Candidate

**Email:** [manpreet.thandi@alumni.ubc.ca](mailto:manpreet.thandi@alumni.ubc.ca)

**Sources of Funding for Research:** Canadian Institutes of Health Research, Canadian Nurses Foundation

**Co-Authors:** Sabrina T. Wong<sup>1,2</sup>, RN, PhD; Jennifer Baumbusch<sup>1</sup>, RN, PhD; Morgan Price<sup>3</sup>, MD, PhD

1. School of Nursing, University of British Columbia
2. Centre for Health Services and Policy Research, University of British Columbia
3. Department of Family Practice, University of British Columbia

**Abstract** (Word Count: 300)

**Background.** Primary care settings can help reverse frailty if detected early enough. Yet, there is no standardized method to detect frailty in Canadian primary care settings. An electronic frailty index (eFI) developed in the UK automatically calculates frailty scores using electronic medical record (EMR) data.

**Purpose:** The purpose of this research is to use EMR data to classify frailty severity in British Columbia primary care settings. This research addresses three questions: (1) Does the eFI represent the construct of frailty from the perspectives of primary care clinicians and older adults in British Columbia? (2) Can frailty factors be represented by standardized clinical terminologies? (3) Can an eFI derived from Canadian primary care EMR data be validated and implemented into practice?

**Methods.** Using a mixed method sequential approach, this research consists of three sub-studies. In sub-study 1, a Delphi approach using 4 rounds of questionnaires will allow a panel of experts (physicians, nurse practitioners, nurses, allied health, patients) to develop a list of factors reflecting frailty. In sub-study 2, two complementary mapping techniques will generate representation of frailty factors to ICD-9 codes and LOINC terminologies, and free text terms commonly used in EMR documentation. Sub-study 3 will develop a frailty algorithm based on codes from sub-study 2. Criterion validity of the eFI will be evaluated with a retrospective cohort design using EMR data for patients >65 to determine whether increasing eFI scores are associated with increased primary care visits, multi-morbidity, and polypharmacy. The data source for study 3 will be the BC Canadian Primary Care Sentinel Surveillance Network.

**Conclusion.** It is anticipated that this study will result in the implementation of a modified and validated eFI that can automatically classify frailty severity using EMR data in primary care, resulting in earlier detection of frailty, and improved patient and system level outcomes.