The Journey so Far in Developing a Canadian Population Grouping Methodology

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Introduction
In April 2015 the Canadian Institute for Health Information (CIHI) released the alpha (initial) version of its population grouping methodology and software. It is the first grouping methodology developed in Canada that has every person registered for public medicare as its target population, and looks at the population over an extended period of time and over multiple healthcare settings. The methodology consists of a case mix classification accompanied by predictive indicators of morbidity burden.

Population grouping methodologies have been used in some Canadian provinces for many years. The applications include population segmentation, risk adjustment, and funding. However, until this past April the only available methodologies were developed outside of Canada based on non-Canadian data. The motivation for CIHI to develop a population grouping methodology was repeated requests from CIHI clients for a made-in-Canada population grouping methodology.

Methods
The initial release of the Canadian population grouping methodology and software is the result of two years of development work. Initial discussions on CIHI offering a national population grouping methodology included the possibility of licensing an existing proprietary methodology. In 2012 the pros and cons of "buy versus build" were debated and resulted in a decision made that CIHI would build a methodology.

Discussions early in the project involved the question of whether the case mix classification should be mutually exclusive (i.e. a person is assigned to only one case mix group) or whether it should be additive (i.e. a person can be assigned to multiple case mix groups). The merits of both approaches were debated. A decision was made to proceed with the development of an additive classification as the foundation of the grouping methodology, and that development of a mutually exclusive classification would follow at a later phase.

Debate was also held on which sectors of clinical data were critical to include in the methodology. Specialized data on functional status and mental health for sub-populations are not collected comprehensively across all provinces. However, pan-Canadian comparisons using the population grouping methodology outputs requires that the scope of input data be consistent across provinces.

The project involved the gathering, organizing and analysis of person-level clinical and financial information from hospital and primary care. This proved to be particularly challenging for the registry data and for primary care data. Collection standards are not consistent across provinces. In particular, the available primary care data consists of physician billing data. Those data are not collected for the purposes of research, and so considerable quality checks and cleaning was required.

Results
The project thus far has resulted in an alpha version of the methodology that contains an additive classification. It also contains two cost weights, one retrospective and the other prospective, that reflect variations in total healthcare cost for hospitals and physicians, based upon a person's morbidity.

Conclusions
Feedback on the alpha release of the methodology indicates that the development project has been a success so far. There is more work planned to refine and enhance the methodology: expansion of the scope of the healthcare settings and data that are used in the methodology, implementation of a mutually exclusive classification, incorporation of socioeconomic factors into the predictive indicators, development...
and implementation of more predictive indicators, and client training and support. The beta release of the methodology is planned for October 2015, followed by version 1.0 in the spring of 2016.

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