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Developing population segments with different levels of complexity and primary health care needs: An analysis using health administrative data in British Columbia, Canada

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Objectives

Population subgroups can be used to organize health services and understand the quality of health care. Most commonly, populations have been defined by specific diseases (e.g., health care received by diabetes patients), patient age (e.g., elderly populations), or life-stage (e.g., end-of-life care). However, these subgroups may not adequately capture the complexity and/or health care needs of different patient groups (e.g., multi-morbidity, frail elderly). Our objective is to use health administrative data to develop population segments based on patients' primary health care needs.

Approach

Our development process occurred in three stages. First, we examined examples of population segmentation in the peer reviewed and grey literature to develop principles for our population segments. Second, we held a workshop with primary care patients, decision-makers, clinicians and researchers to seek their input on important considerations for the population segments. Third, we used health administrative data (physician claims, hospitalisations) to develop population segments for the British Columbia (BC, Canada) population. Segments were based on diagnosis codes over a two year period; for each segment we examined health care use and costs, overall and by service type, in 2014-15.

Results

We designed our segments to be mutually exclusive, capture the vast majority of people who use primary care services, and range from healthy patients (fewer primary care needs) to more complex patients (more extensive needs). Stakeholders were supportive of population segmentation approach and suggested in-

corporating patient vulnerability and primary care involvement such that segments would range from patients whose needs could be fully met in primary care to those who require additional services such as specialists/acute care. Our first iteration includes three segments: stable (≤ 1 chronic condition, needs met by primary care); multi-morbid (≥ 2 chronic conditions, needs mostly met by primary care); and complex (≤ 1 chronic condition and presence of a health care event associated with the management of this condition suggesting the patients' needs not fully met by primary care).

Conclusion

We developed population segments designed to account for patient complexity and primary health care needs; as such, segments provide more information than traditional indices of morbidity burden based on counts of chronic conditions. These segments will be used to report information on the quality of primary care. We plan to include validation studies using additional variables (e.g. socio-economic factors, level of vulnerability from patient surveys) so that segments more accurately represent the level of complexity and patients' primary health care needs.

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