Population Grouping Methodology

The Canadian Institute for Health Information (CIHI) has developed a population grouping methodology using Canadian data, designed specifically to meet the needs of Canada's health care systems.
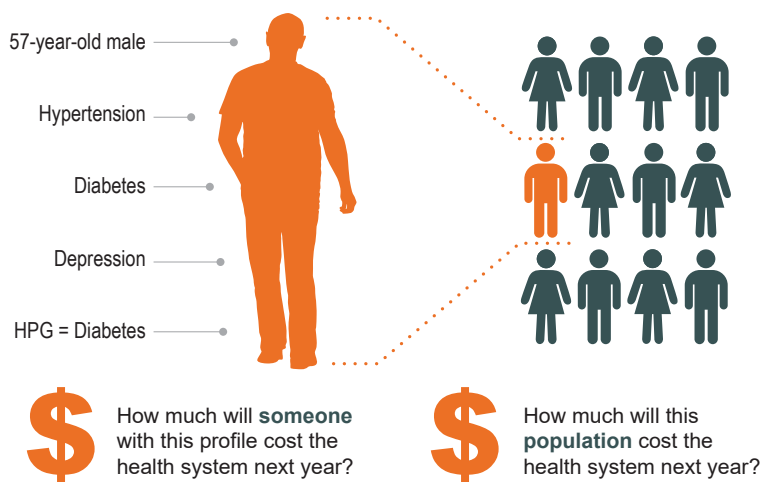
Overview of the methodology

The population grouping methodology builds clinical and demographic profiles for each person in a population, including health system non-users.

- **Clinical profile:** Summarizes all health conditions — including longitudinal chronic diseases — identified from inpatient, day surgery, emergency department, hospital clinic, continuing care, home care, physician claims and primary care administrative data.
  - **Health profile group (HPG):** Using the full clinical profile, an individual's most complex and clinically relevant health condition is identified.
- **Demographic profile:** Comprises age and recorded sex/gender information captured in the insured person's data. This data includes information maintained by the provinces/territories on all persons eligible to receive publicly funded health services.

These profiles predict person-level health care needs. "Health care need" is measured using a set of indicators, such as the following:

- **Predicted health care costs:** Includes both current and expected future costs to the health system.
- **Predicted use of selected health system resources:** Includes number of primary care visits, number of emergency department visits, the probability of entering long-term care and the probability of inpatient hospitalization for pneumonia or acute infectious/parasitic respiratory disease.

Clinical classification and predictive indicators
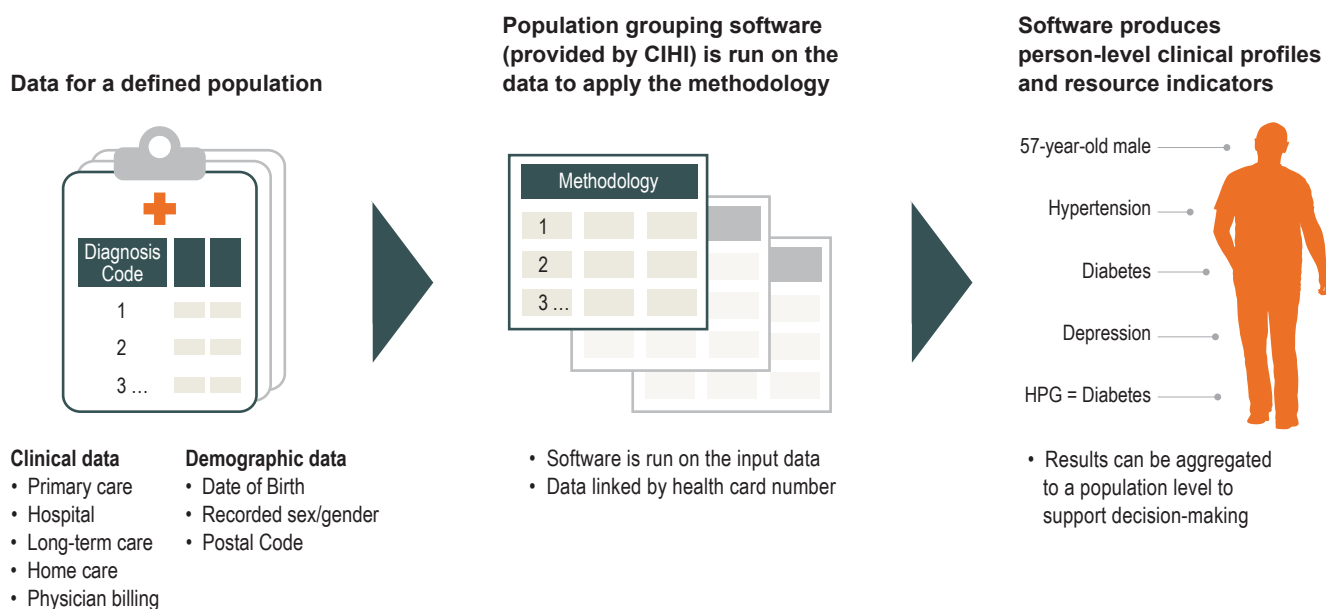

57-year-old male
Hypertension
Diabetes
Depression
HPG = Diabetes

$ How much will **someone** with this profile cost the health system next year?

$ How much will this **population** cost the health system next year?

CIHI

Software and data requirements

Clients who have access to the following data can apply the methodology using CIHI-developed software:

- Clinical data — person-level linkable diagnosis and functional status data over a consecutive 2-year period; data from patient-level physician billings and on primary care visits, inpatient stays, day surgeries, emergency department visits, hospital clinic visits, home care and continuing care services

- Demographic data — person-level linkable; data about insured persons (i.e., individuals who have a valid health card number)

Software inputs and outputs

Data for a defined population

Population grouping software (provided by CIHI) is run on the data to apply the methodology

Software produces person-level clinical profiles and resource indicators

Methodology
1
2
3 ...

Diagnosis Code
1
2
3 ...

57-year-old male
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Clinical data
- Primary care
- Hospital
- Long-term care
- Home care
- Physician billing

Demographic data
- Date of Birth
- Recorded sex/gender
- Postal Code

- Software is run on the input data
- Data linked by health card number

- Results can be aggregated to a population level to support decision-making

Relevance for health care in Canada

CIHI's population grouping methodology will

- Enable health system planners and policy-makers to receive real-time evidence to support decision-making;

- Help CIHI and its clients monitor population health and diseases;

- Predict health care utilization patterns and explain variations in health care resource use;

- Provide a foundation for funding models; and

- Facilitate standardization of populations for interjurisdictional analysis.

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