There is a growing need to address care management, patient experience and costs, for individuals with non-communicable disease (NCD) and particularly those with multiple NCDs or multimorbidity. Multimorbidity is known to be associated with high costs and gaps in quality of care and its prevalence is expected to increase dramatically due to the aging population and improved survival. This study aims:

1. To determine the prevalence of multimorbidity in Ontario
2. To evaluate the demographic and clinical characteristics of the multimorbid population
3. To describe the trends in multimorbidity
4. To assess the feasibility of using administrative databases to measure and conduct research on multimorbidity

Data Sources & Study Population

Data sources included but were not limited to:
- CHI Discharge Abstract Database: for inpatient hospitalization records
- Ontario Health Insurance Plan claims: for physician billings
- Registered Persons Database: for basic demographics
- ICES validated disease cohorts derived from administrative record

The study population included all eligible Ontario residents who met the following criteria on either April 1, 2003 or April 1, 2009:
- aged 0 to 105 years; and
- at least one of the following conditions: cardiac arrhythmia, acute myocardial infarction, hypertension, chronic coronary syndrome, congestive heart failure, stroke, asthma, chronic obstructive pulmonary disorder, diabetes, osteoporosis, rheumatoid arthritis, osteo- and other arthritis, depression, dementia, cancer, or renal failure.

- Cohort size in 2003: 5,263,845
- Cohort size in 2009: 6,639,089

MEASURES & ANALYSES

Measures
- Baseline characteristics: Age, Sex, Income Quintiles (based on the average household income value by Dissemination Area) Ethnicity Concentration (denoting the % of recent immigrants or self-identified as visible minority by geographic area), Dependency Quintiles (includes % of the population 65+, ratio of 0-14 or 65+ population to 15-64 population, and % of population 15+ not participating in labour force)
- Prevalence of each of 16 conditions and most common combinations
- Number of conditions (1, 2, 3, 4 and 5+)

Analyses
- Univariate analysis
- Prevalence estimation
- Bivariate analysis: comparison of the prevalence of multimorbidity
- By year of study (2003 vs. 2009)
- By patient characteristics

RESULTS

Prevalence estimation
- Multimorbid population
- Top conditions or clusters
- Proportion of cohort with top conditions or clusters
- Number of clusters accounting for 50% of cohort
- Number of clusters accounting for 80% of cohort

Top conditions or clusters
- Asthma (29.2%)
- Arthritis (24.2%)
- Hypertension (16.7%)
- Depression (14.7%)
- Cancer (6.2%)

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