

## **Diabetes Related Comorbidities: Problem Associated with the Use of Hospitalization and Physician Billings Records to Identify Cases.**

*Talbot PJ, Payne JI, MacInnis IC, Karlovic Z. Diabetes Care Program of Nova Scotia, Halifax, NS.*

It is difficult to ascertain the true burden of diabetes (DM) and related comorbidities in Canada. There are also methodological limitations underlying the literature about DM progression and resulting comorbidities. The National Diabetes Surveillance System (NDSS), established by the Federal Government, addresses this gap by using administrative health records (physician billings and hospital records) and standard case definitions to identify people as having DM and related comorbidities. These estimates are recognized to be crude given that they are not derived from clinical information. The Diabetes Care Program of Nova Scotia (DCPNS) maintains a population-based Registry of clinically-confirmed DM cases. The DCPNS Registry, the NDSS, and administrative health records (for alternative case definitions) were used to explore comorbidity status as defined by the 3 data sources.

Records from the DCPNS Registry were linked at the person-level to the NDSS (Cohort 1) and administrative health records (Cohort 2). Cohort 1 included 20,537 type 2 DM cases common to the DCPNS Registry and NDSS. Cohort 2 included 38,365 type 1 and 2 DM cases from the DCPNS Registry.

For cases common to the DCPNS Registry and NDSS, hypertension (HTN) prevalence rate was 57.5% in the Registry and 64.8% in the NDSS with an overall agreement of 73.3%. When corrected for chance, agreement was moderate ( $\kappa=0.44$ ).

Using the broadest administrative case definitions possible, agreement between the DCPNS Registry and administrative health records for HTN, retinopathy (RET), and chronic renal disease (CRD) was 69.8%, 78.0%, and 85.2%, respectively. Prevalence of HTN and RET was higher when using administrative health records versus the DCPNS Registry (HTN: 70.8% vs 56.7% and RET: 23.3% vs 3.0%). The reverse was true for CRD (9.2% vs 10.8%). When corrected for chance, there was slight to fair agreement across the comorbidities (HTN:  $\kappa=0.36$ , RET:  $\kappa=0.11$ , CRD:  $\kappa=0.17$ ).

The prevalence rates for comorbidity were not always that different between data sources; yet, the actual agreement was quite poor. For HTN, over 30% of cases were discordant, in part, because a significant proportion of known HTN cases in the DCPNS Registry were not identified using the administrative health data. These results raise concerns about the limitations of using administrative data to estimate the burden of comorbidity associated with DM.

*Oral poster presentation at the CDA/CSEM Professional Conference and Annual Meetings, Edmonton, AB (Oct. 20-23, 2010).*