Comparison of public and private payments for direct-acting antivirals (DAAs) across Canada

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INTRODUCTION

Hepatitis C virus (HCV) infection is a global health issue associated with considerable morbidity and mortality (1). In Canada, HCV is estimated to infect around 1 in 100 individuals (1), the largest illness burden of any infectious disease (2). In 2011, direct-acting antivirals (DAAs) were approved by Health Canada for the treatment of HCV (3). DAA use rapidly increased, with total expenditure between January 2014 and June 2018 totalling $2.8 billion (4).

Canada does not have universal drug coverage (5). In 2016, 64% of Canadians were covered by a private drug plan, while the remaining 36% had coverage under public drug plans (6). Although each province structures public programs differently, in general, public plans across Canada cover those over 65 years of age, those of low socio-economic status, or those with high drug costs relative to income (catastrophic drug programs) (5). The plans vary in structures and formularies (drugs covered) by province. DAAs are an expensive class of medications with criteria for public and private coverage differing across Canadian provinces (7). Little is known about the current dynamic between public and private coverage across Canada. To date, the proportion of patients covered by public versus private insurance for DAAs across Canada is unknown. The objective of this study is to report the proportion of public and private DAA claims in Canada.

METHODS

We conducted a retrospective, cross-sectional study of all DAAs dispensed to outpatients in Canadian provinces between September 1, 2017 and
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August 31, 2018 using data from IQVIA, a multinational health information technology company, Geographic Prescription Monitor (GPM) database. The individual DAAs examined are listed in Table 1.

IQVIA’s GPM database includes aggregate prescription volumes from all payers (including those paid for out-of-pocket by the patient) and total prescription costs in all Canadian provinces (8). The source of information supporting IQVIA GPM is the IQVIA retail prescription database, which contains prescription transactions from Canadian drug stores for all branded and generic dispensed products. Over 75% of total prescriptions dispensed at the national level are captured by a panel of approximately 6,100 retail pharmacies. The captured prescription data is projected to be representative of national levels in Canada, with data extrapolated to represent the entire Canadian population. The monthly estimates are created using IQVIA’s patented geospatial projection methodology. These projections are representative of drug utilization at the provincial and national levels and are used regularly for research purposes (9–11). At the provincial level, the sampling error can reach slightly higher levels, although it will not exceed 5% to 10% in the vast majority of cases (IQVIA, personal communication, August 5, 2020).

We reported DAA claims and cost by province and payer over the entire 12-month period available (September 2017 to August 2018). In our study, public was defined as coverage under provincial drug plans and non-insured health benefits (NIHB) for First Nations and Inuit patients. Private was defined as drug coverage under private insurers or paid for out-of-pocket by the patient. We included out-of-pocket costs in this value because we believe most of these patients may have paid for DAAs up-front and were later reimbursed by their private insurer, likely making the true out-of-pocket costs for this expensive drug class very low.

RESULTS

We identified 134,384 prescription claims for DAAs in Canada between September 2017 and August 2018. The total cost of these claims was $840.6 million. Overall, 88.0% were covered by public payers (Table 2); however, this varied by province. Public DAA payments ranged from 60.3% (Québec) to 97.2% (Manitoba). Prince Edward Island did not have any claims.

INTERPRETATION

Nationally, the majority of DAA payments (88%) were by public payers. This proportion is higher than the average public coverage for other drugs in Canada where, overall, 42% of total prescription drug expenditures are financed by public programs (12). This stark difference is likely caused by two factors: 1) populations of patients with HCV are more likely to qualify for public drug coverage (eg,
older patients and/or marginalized populations who may be lower-income), and 2) potential cost-shifting by private drug plans. Due to the growing number of expensive drugs such as DAAs, private plans may shift beneficiaries to public programs (eg, catastrophic drug programs) to reduce costs (13).

We also observed a wide range among provinces, from 97.2% in Manitoba to 60.3% in Quebec. These differences are likely driven by the structure of the public drug programs. For example, in Manitoba, patients are covered automatically under the public program once out-of-pocket costs reach a certain threshold, whereas in Quebec, patients must opt-in (5).

There are limitations in our study design that warrant discussion. First, the IQVIA data source only includes aggregate prescription volumes without clinical information, such as associated indications (ie, number of people living with HCV), patient information (ie, age, sex), or location of dispensation (ie, long-term care or community). Second, this data source does not contain information from the Canadian territories. Third, the sampling error of this data source can reach slightly higher levels, although it usually does not exceed 5% to 10% in the vast majority of cases (IQVIA, personal communication, August 5, 2020). There is no suggestion from previous work that the sampling error would differ between private and public plans. Finally, each claim in this study is a prescription fill. Based on the short treatment course with DAAs (range 2 to 4 months), we believe that the pattern of use between private and public plans are likely similar (14). There was no significant difference in the utilization of specific DAAs by payer type.

Our results highlight that DAAs are more often publicly funded than most medications. The extent of public coverage is influenced by the structure of the public drug program in each province. This work indicates that for high-cost drugs, the weighting of public and private dynamic shifts more toward public payers. These findings provide insight into DAA access by province and quantify government expenditures on this important drug class.

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