

**COST OF PUBLIC HEALTH SERVICES FOR ONTARIO RESIDENTS  
INJURED AS A RESULT OF A MOTOR VEHICLE ACCIDENT  
(APPLIED HEALTH RESEARCH QUESTION)**



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## **CONTEXT**

In accordance with the Ontario Insurance Act, the Lieutenant Governor in Council has the legal authority to recover certain health care costs incurred by the Ministry of Health and Long-Term Care (MOHLTC) in treating individuals injured in automobile accidents that occurred in Ontario. The Commission has collected about \$142.3 million annually from automobile insurance companies since 2006 and about \$80 million per year from 1996 to 2005, both estimated without evidence on the full costs of automobile accidents to the Ontario public health care system. To validate the adequacy of the current assessment amount, the MOHLTC sought to determine the cost of public health care services provided to Ontario residents injured as a result of a motor vehicle accident (MVA).

## **OBJECTIVES**

The objectives of this study are to determine the health care cost for individuals injured in motor vehicle accidents; estimate the total annual direct cost to the Ontario public health care system for individuals injured in motor vehicle accidents; and provide evidence on the amount recoverable by the provincial government from motor vehicle accident insurers under Ontario's Insurance Act.

## **METHODS**

The Ontario residents admitted to an emergency department or acute care hospitals for MVA between April 1, 2007 and March 31, 2014 were identified using administrative databases. Using a person-level-costing method capturing individual-level health system utilization data, the increase in health care-related costs in the two subsequent years after an MVA (2011/12 and 2012/13) were compared to the year prior to this event (2010/11) for each individual. These differences were also compared against those of other Ontario residents without an MVA, matched on age, sex, health conditions and geographic profile. Based on these estimates, the attributable costs for each individual with an MVA, as well as the total system cost all individuals attributed to MVA cases, were calculated. The observed attributable cost data (2007-2014) were used in a linear regression modelling to estimate up to 11 years of attributable costs arising due to MVAs.

## **FINDINGS**

The number of hospital visits each year for an MVA-related condition ranged from 66,625 to 70,595 and remained fairly consistent each year from April 1, 2007 to March 31, 2014. The estimated attributable cost per MVA individual in the first year following a motor vehicle accident in 2011/12 was \$3,134 and averaged \$2,958 over seven years from 2007-2012. In the first year, over 75% of this total was devoted to hospital costs and approximately 20% went to physician costs. In the second year, costs were distributed more evenly across physician, hospital, drug, community care and other costs. The average second year costs were just under \$600 and declining by approximately \$50-70 per year thereafter. The total present value of MVA-attributable costs over 11 years was \$5,495 per case. Using a total of 69,724 incident MVA cases in 2013/14, the total expected costs for MVAs in 2013/14 (net actuarial liability) are \$383,099,805.

## **CONCLUSIONS**

The study employed a robust and rigorous approach to estimating total health system costs associated with treatment in the Ontario health care system for MVAs. The results of this research captures the vast majority of health care costs for publicly funded health care services, although not all publicly funded health care services that are not in provincial administrative databases. Despite these limitations, this report provides the first systematic evidence on the direct costs to the Ontario public health care system for individuals injured in MVAs.

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