

## Appendix 1 (as supplied by the authors): Cost estimation

Healthcare costs are derived from the perspective of Ontario's Ministry of Health and Long-Term Care. The costing methodology computes costs for services utilized during encounters with the publicly funded healthcare system, with the approach to costing differing based on the type of encounter.<sup>1</sup> Table 1, summarizes the databases used to identify healthcare utilization and the costing approach for each health sector. The databases and costing algorithm used in this study are held and maintained by ICES.

### Administrative databases to identify healthcare use and methods for cost estimation

Cost sector	Database Source	Description of database	Method of cost estimation
<b>Hospital</b>			
Inpatient acute care	CIHI Discharge Abstract Database (CIHI-DAD)	Demographic, administrative and clinical data on acute care hospital separations in Ontario.	Resource intensity weights (RIW) <sup>2</sup> multiplied by cost per weighted case (CPWC)
Emergency room visits	National Ambulatory Care Reporting System (NACRS)	Captures administrative, demographic and clinical data for emergency department and ambulatory care visits in Ontario.	RIW x CPWC
Same day surgery	NACRS CIHI Same Day Surgery (CIHI-SDS)	Contains administrative and patient-level clinical and demographic data for day surgery hospitals in Ontario.	RIW x CPWC
Outpatient clinic visits	NACRS		RIW x CPWC
<b>Physician services</b>			
Fee for service claims and shadow-billed claims	Ontario Health Insurance Plan (OHIP)	Claims data for services provided by eligible providers (includes physicians, nurse practitioners, and laboratories).	Claims-based: billed costs per visit and services provided based on the province's approved rates.
Primary care capitation based models	Client Agency Program Enrolment	Contains information on individuals enrolled in a primary care model in Ontario	Capitation payments: base rate multiplied by age-sex multiplier, with adjustment for relevant premiums
<b>Complex Continuing Care</b>	Continuing Care Reporting System (CCRS)	Captures administrative, demographic, clinical and functional data on individuals receiving continuing care services in designated facilities (hospitals and long-term care homes) in Ontario.	Cost derived from case mix index, number of days in care and resource utilization groups: weighted length of stay (LOS) multiplied by cost per weighted day (CPWD).
<b>Long-term Care</b>	CCRS		Cost estimated from fixed per diem costs based on payment rates set by the province multiplied by LOS.
<b>Rehabilitation</b>	National Rehabilitation Reporting System (NRS)	Contains administrative, demographic and other client-level data from participating adult inpatient rehabilitation facilities and programs across Ontario	Rehabilitation cost weights (RCW) x rehabilitation CPWC

<b>Cost sector</b>	<b>Database Source</b>	<b>Description of database</b>	<b>Method of cost estimation</b>
<b>Mental health care</b>	Ontario mental health reporting system	Captures data on individuals receiving adult mental health services in designated inpatient facilities in Ontario.	Cost derived from case mix index, number of days in care and resource utilization groups: weighted length of stay (LOS) multiplied by cost per weighted day (CPWD).
<b>Home Care</b>	Home Care Database (HCD) Resident Assessment Instrument-Home Care (RAI-HC)	Contains administrative, demographic and other client-level data on provincially funded home care services.	Standard cost per service multiplied by the number of hours (or visits) of service.
<b>Prescription drugs</b>	Ontario Drug Benefit	Captures claims for prescriptions dispensed to Ontarians eligible for the Ontario Drug Benefit program (primarily individuals $\geq 65$ years)	Total costs paid by the provincial health plan for eligible individuals.
<b>Non-physician</b>	OHIP		Billed costs per visit and services provided by eligible non-physician providers.
<b>Laboratory</b>	OHIP		Costs based on established diagnostic tests fees (technical and professional fees)
<b>Assistive device</b>	Assistive Devices Program (ADP)		Amount paid by the province to individuals for high-cost medical equipment.

\*CIHI - Canadian Institute for Health Information

## References

1. Wodchis WP, Bushmenev K, Nikitovic M, McKillop I. Guidelines on Person-Level Costing Using Administrative Databases in Ontario [Internet]. 2013: [http://www.hsprn.ca/uploads/files/Guidelines\\_on\\_PersonLevel\\_Costing\\_May\\_2013.pdf](http://www.hsprn.ca/uploads/files/Guidelines_on_PersonLevel_Costing_May_2013.pdf) Last Accessed: May 23, 2018
2. Canadian Institute for Health Information. Case Mix: <https://www.cihi.ca/en/submit-data-and-view-standards/methodologies-and-decision-support-tools/case-mix> Last Accessed: November 2, 2018