



Institute of Health Policy, Management & Evaluation
UNIVERSITY OF TORONTO

The Canada Health Transfer: Moving from a Per-Capita to a Needs-Based Formula

Gregory P. Marchildon

Professor and Ontario Research Chair in Health Policy and System Design

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IHPME

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Background

- Collaboration with economist Haizhen Mou
- Focus on federal transfer system (CHT + CST + Equalization)
- Concern about policy purpose of CHT in context of policy purpose of CST and Equalization
 - Equalization focused on revenue-side (generating capacity) while health transfer was an expenditure-side transfer – to lever provinces into new and expensive program (although differing cost structures not dealt with at time)
- “Old” transfer with residual equalization
- New per capita transfer and distributional impact
 - Chapter in *How Ottawa Spends* (2013)
 - *Article in *Canadian Public Policy* (2014), Vol. 30, no. 3 (Sept. 2014): 209-23 – doi:10.3138/cpp.2013-052
 - https://muse.jhu.edu/journals/canadian_public_policy/v040/40.3.marchildon.html
 - Forthcoming chapter on transfer system in book (UTP) on equalization and fiscal federalism in Canada

Conditional Transfers and CHT: Policy Purpose

- *Implement and sustain universal health coverage for medically necessary services (Medicare)
- *Reduce vertical fiscal gap to better align fiscal capacity with expenditure responsibilities
- Ensure that substates adhere to high-level national standards
 - 5 criteria of Canada Health Act
 - Public administration (s. 8)
 - Comprehensiveness (s. 9)
 - Universality (s. 10)
 - Portability (s. 11)
 - Accessibility (s. 12) → user fees and extra billing



Provincial Health Spending Patterns

(Marchildon and Di Matteo, *Bending the Cost Curve in Health Care*)

Common Features

- Spending phases, 1975-2015 (real average annual growth)*
 - 1975-91 – accelerate (2.7%)
 - 1991-96 – brake (-0.5%)
 - 1997-2010 – accelerate (3.3%)
 - 2010-15 – brake (-0.6%)
- Common cost drivers
 - Health sector price inflation
 - General inflation
 - Technology
 - Pharmaceutical prices

*CIHI, National Health Expenditure Trends, 1975-2015

Differences

- Average annual growth rate of real per-capita health spending, 1975-2011
 - From 3.4% in NL to 1.7% in QC
 - Atlantic provinces all at high end
 - More populous provinces (ON, BC, QC) at low end
- Very different geographic and demographic distributions
- Variable cost drivers
 - Population growth
 - **Aging**
 - **Rural and remote delivery**
 - Drug coverage plans

Age Adjusted CHT

$$aaCHT_i = \sum_{i=1}^{10} CHT_i * \frac{\sum_{j=1}^{20} \left[\left(\frac{\sum_{i=1}^{10} pexp_{ji}}{\sum_{i=1}^{10} n_{ji}} \right) * n_{ji} \right]}{\sum_{i=1}^{10} \sum_{j=1}^{20} \left[\left(\frac{\sum_{i=1}^{10} pexp_{ji}}{\sum_{i=1}^{10} n_{ji}} \right) * n_{ji} \right]}$$

i = province

j = age category

n_{ji} = provincial population by age group

CHT_i = Canada Health Transfer by province i

$aaCHT_i$ = age adjusted CHT by province

$pexp_{ji}$ = provincial expenditure by age group

Method: calculating age-adjusted CHT formula

1. Calculate what should be the total provincial Medicare (hospital + physician spending) based on the national average Medicare expenditure in each age group, and the province's population in each age group
2. CHT allocation is based on the share of the province's age-based provincial expenditure (step 1) and the sum of these hypothetical provincial expenditures in the 10 provinces

Impact of Age-Adjusted CHT for 2014-15

(gain or loss in \$ per capita based on CHT of C\$899)

Province	Gain/Loss
BC	19
AB	-95
SK	4
MB	-15
ON	-9
QC	37
NB	70
NS	67
PE	59
NL	57

- “Medicare” costs rise with age
- Cost of treating multiple chronic conditions
- Cost of dying (last months of life)
- Cost is higher for males than females but trend the same
- National average of Medicare spending by age groups
- Based on demographic structure for 2014-15
- Would use Census to alter age projections for each province

Geographic Dispersion Adjusted CHT

$$gaCHT_i = \sum_{i=1}^{10} CHT_i * \left[\frac{n_i * \left(\frac{\sum_{i=1}^{10} CHT_i}{\sum_{i=1}^{10} n_i} \right) * (1 + 0.5r_i)}{\sum_{i=1}^{10} \left[n_i * \left(\frac{\sum_{i=1}^{10} CHT_i}{\sum_{i=1}^{10} n_i} \right) * (1 + 0.5r_i) \right]} \right]$$

i = province

n_i = provincial population

CHT_i = Canada Health Transfer by province *i*

gaCHT_i = Geographically adjusted CHT by province

r_i = % of remote population in province

pexp_{ji} = provincial expenditure

Method: calculating geographic dispersion-adjusted CHT formula

1. Additional 50% per funding for all individuals living > 80 km from population centre with at least 5,000 inhabitants
2. The final CHT allocation for a province depends on share of the province based on funding allocation in step 1

Percent of Population Defined as Remote

Province	Remote (%)
BC	9.0
AB	10.6
SK	23.6
MB	19.2
ON	1.9
QC	2.7
NB	9.2
NS	9.9
PE	0
NL	29.4

- Economies of scale and scope for secondary and tertiary acute care
- Increasing specialization puts premium on concentration of HHR
- Also biomedical, clinical and IT advances may increase capital investment relative to HHR
- Assured Access formula in AB (before 2008)
 - Additional 50% per capita funding for all individuals living > 80 km from population centre with at least 5,000 inhabitants
 - Only Canadian formula we could find that “corrected” for higher cost of service delivery

Impact of Dispersion-Adjusted CHT for 2014-15

(gain or loss in \$ per capita based on CHT of C\$899)

- Checked this against database of hospitals and location in Canada
- Largely consistent with 80 km threshold used by AB government
- Admittedly, less evidence-based than age structure calculation
 - Few good studies on subject
 - Requires additional work
- More difficult to predict given changing economics of hospital and medical care
- However, useful way to open a discussion on issue

Province	Gain/Loss
BC	13
AB	20
SK	77
MB	57
ON	-18
QC	-15
NB	13
NS	17
PE	-26
NL	102

Age and Geographic Dispersion Adjusted CHT

$$aCHT_i = \sum_{i=1}^{10} CHT_i * \left[\frac{n_i * aaCHT_i * (1 + 0.5r)_i}{\sum_{i=1}^{10} [n_i * aaCHT_i * (1 + 0.5r_i)]} \right]$$

i = province

n_i = provincial population

CHT_i = Canada Health Transfer by province

aCHT_i = age and geo adjusted CHT

aaCHT_i = age adjusted CHT by province

r_i = % of remote provincial population

pexp_{ji} = provincial expenditure

Impact of Age + Dispersion Adjusted CHT for 2014-15

(gain or loss in \$ per capita based on CHT of C\$899)

Province	Gain/Loss
BC	33
AB	-77
SK	81
MB	42
ON	-27
QC	22
NB	85
NS	86
PE	31
NL	165

- Higher share of seniors in total population = higher average per capita need for Medicare
- Longer distance from urban centre = higher average unit cost of meeting these health needs
- Effects not directly correlated
- But not surprised that expect to see some reinforcement in NB, NS and NL:
 - Seniors account for larger share of rural than urban population (15% vs. 13%)
 - Outmigration of younger people to cities
 - New immigrants' preference for cities

Conclusion

- Alternatives or additions?
 - Relative health needs index: premature mortality rates (e.g. PYLL), preventable mortality, treatable mortality, age-standardized mortality
 - Aboriginal population (per capita)
 - Priority (reform) areas
- Policy purpose under a new federal administration
- Age gaining momentum as factor among some premiers
- Division among provinces given differing demographics and geographic dispersion

