

# **The Concentration of Health Care Spending: Little Ado (yet) About Much (money)**

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**Montreal, May 30, 2012**

# Health Care Spending is Skewed

**Each year, less than 10% of the population encounter severe health events that require intensive medical care.**

Health care spending is skewed in British Columbia: 5% of population use 30% of physician care— particularly multiple chronic conditions (Morgan & Cunningham, CAHSPR 2011; Reid et al 2003)

Health care spending is skewed in Manitoba: 1%pop use \$35% of acute, physician, meds, - within each age-sex strata & near death (Shapiro & Roos, 1986; Deber & Lam, 2009)

Health care spending is skewed in the United States: 1%pop use \$20% of total system and it is less concentrated over time (Stanton & Rutherford 2009, Cohen & Yu, 2012)

# Why look at individuals' health care costs?

## Public policy and media concern.:

“

- ▶ 1% of the population accounts for 49% of combined hospital and home care costs;
- ▶ 5% of the population accounts for 84% of combined hospital and home care costs. “

(OHA/OACCAC/OFCMHAP,  
Ideas and opportunities for bending health care cost curve, June 2011, p5)

“ We should better understand the characteristics of these heavy users and what could be done to improve the efficiency of their care.”

(Don Drummond, Benefactors Lecture, November 2011, p11)

# Why look at individuals' health care costs?

The Ontario Ministry of Health and Long Term Care asked ICES to examine the concentration of health spending in Ontario and help to understand some of the characteristics:

## Constraints:

Rapid response request (< 6 weeks)

Costing available for some sectors (hospital, physician, medications) more than others (community sector)

Work with existing cost data - a few years old

# Purpose of this analysis

Measure and describe the health care system utilization and costs in one year of life for the entire population of Ontarians with OHIP eligibility.

Review distribution and concentration of costs.

Suggest implications for policy and practice.

# Overview of Our Methods

**Population:** Residents of Ontario alive and eligible for OHIP on their birthday between January 1 and December 31, 2007. Includes only those with a valid health card number (IKN) and identifiable using the Registered Persons Database (RPDB).

**Follow-up:** Total health care costs in year following birthday in 2007. (max follow-up to December 31, 2008)

**Health Care Utilization Types:** Includes all health care system encounters in the 1 year follow-up period: Acute, emergency department and same day surgery, inpatient rehabilitation, complex continuing care, long term care homes, home care, ODB medications, physician services

**Costs:** Unit costs paid by MOHLTC

# Overview of Methods

**Costing:** Sector-specific weighted attributable service-related costs expressed in nominal costs at the time of service (1/1/07-31/12/08).

- Hospital based services MOHLTC OCDM (Ontario Cost Distribution Methodology) actual unit costs for each care type and the corresponding case mix weighted activity (e.g. acute care episode, CCC Rug-weighted patient day).
- LTC services are per diem amounts less resident copayments.
- ODB, home care and physician services are according to fee paid by the MOHLTC recorded in OHIP/ODB or average provincial service-specific cost reported by the MOHLTC FIM branch (e.g. average cost for home care physiotherapy visit).

Excludes inpatient mental health, oncology and renal ambulatory care services, non-fee-for-service physician costs (e.g. capitation, alternative funding payments). *Work in progress.*

Note: These methods are robust and ensure that the data are representative of current care cost distributions and patterns although the prices are expressed in 2007-2008 nominal dollars.

## Part 1

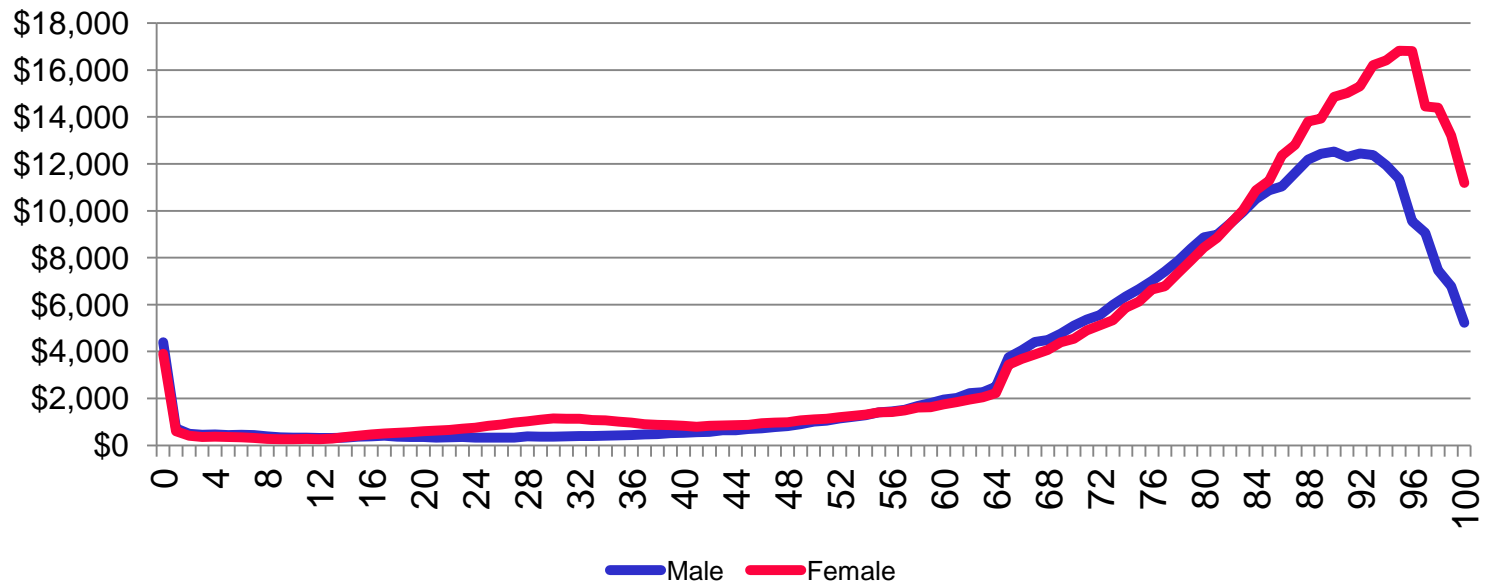
We measured and summed (for all health sectors) the total health system cost for everyone and ranked 13.7 million individual's data in order of total health system cost.

We identified groups representing 1%, 5%, 10% and 50% of the total population with the highest health care spending.

We separately analyzed the same distributions within 3 age groups: 0-17, 18-64, 65 and over



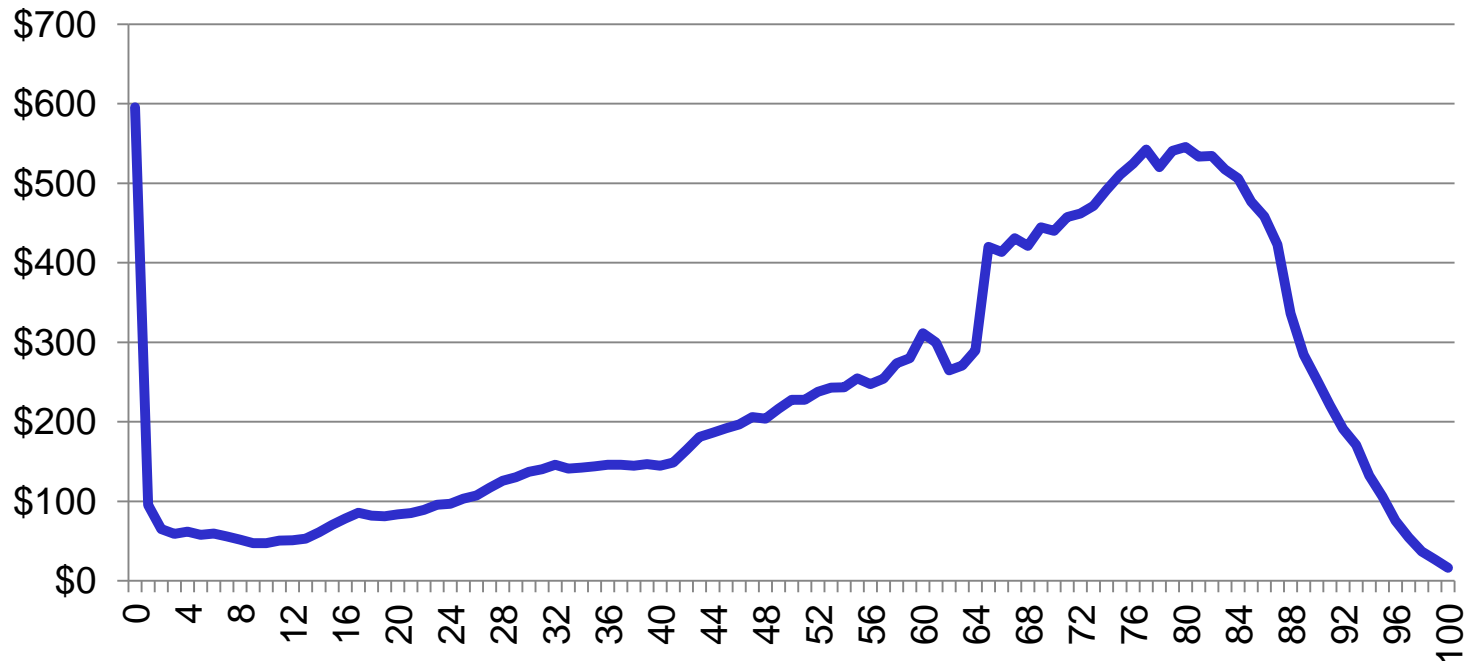
**Figure 1. Average Annual Total Health System Cost by Age & Sex Ontario 2008-09**



**Most people are healthy throughout their lives and incur their highest costs later in life. This is borne out in higher average costs for just about every sequential age.**

\*note increase at age 65 in spending attributable to ODB coverage at age 65

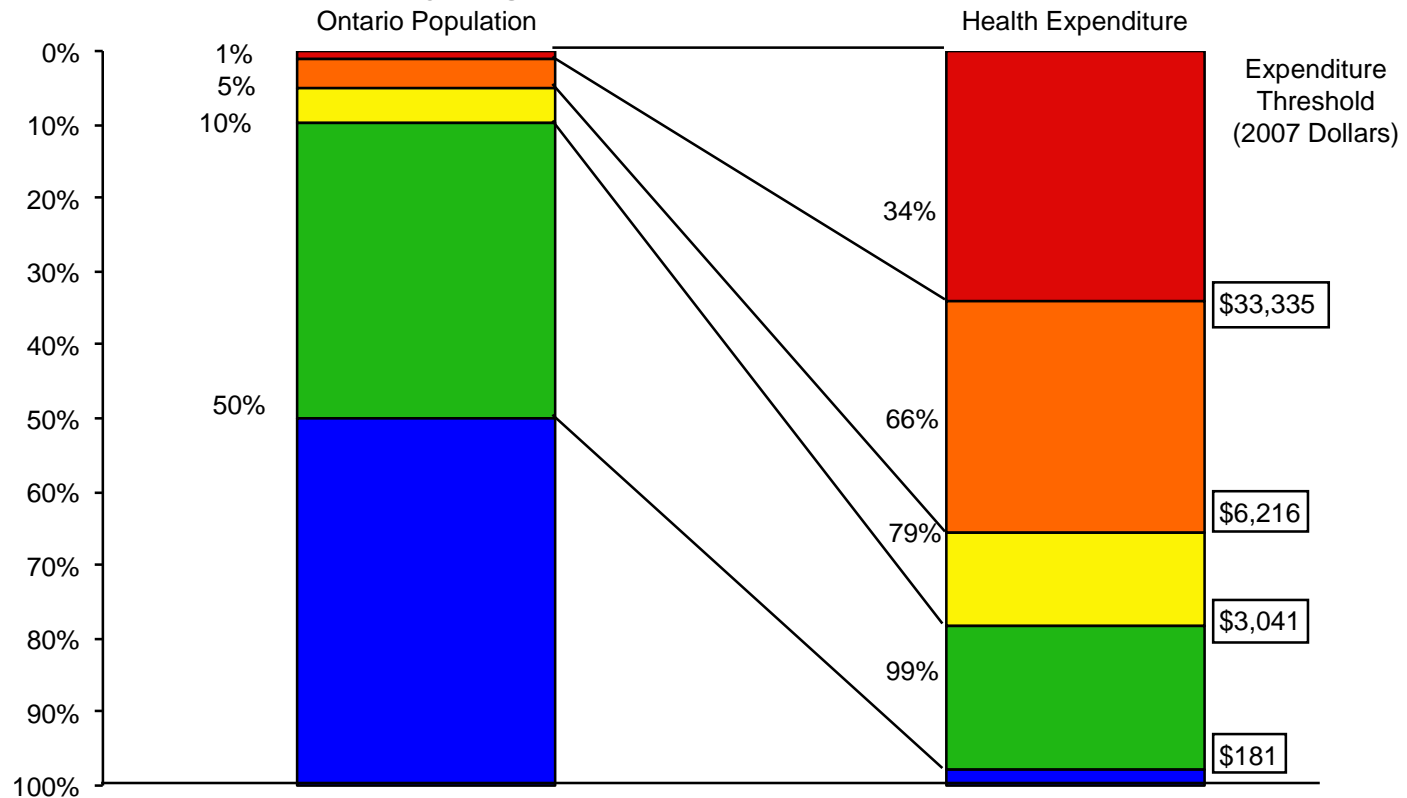
**Figure 2. Total Annual Health System Cost by Age  
Ontario 2008-09 (\$Millions)**



**Total spending is a composite of both average spending for a given population (here by age) and the number of people in that group.**

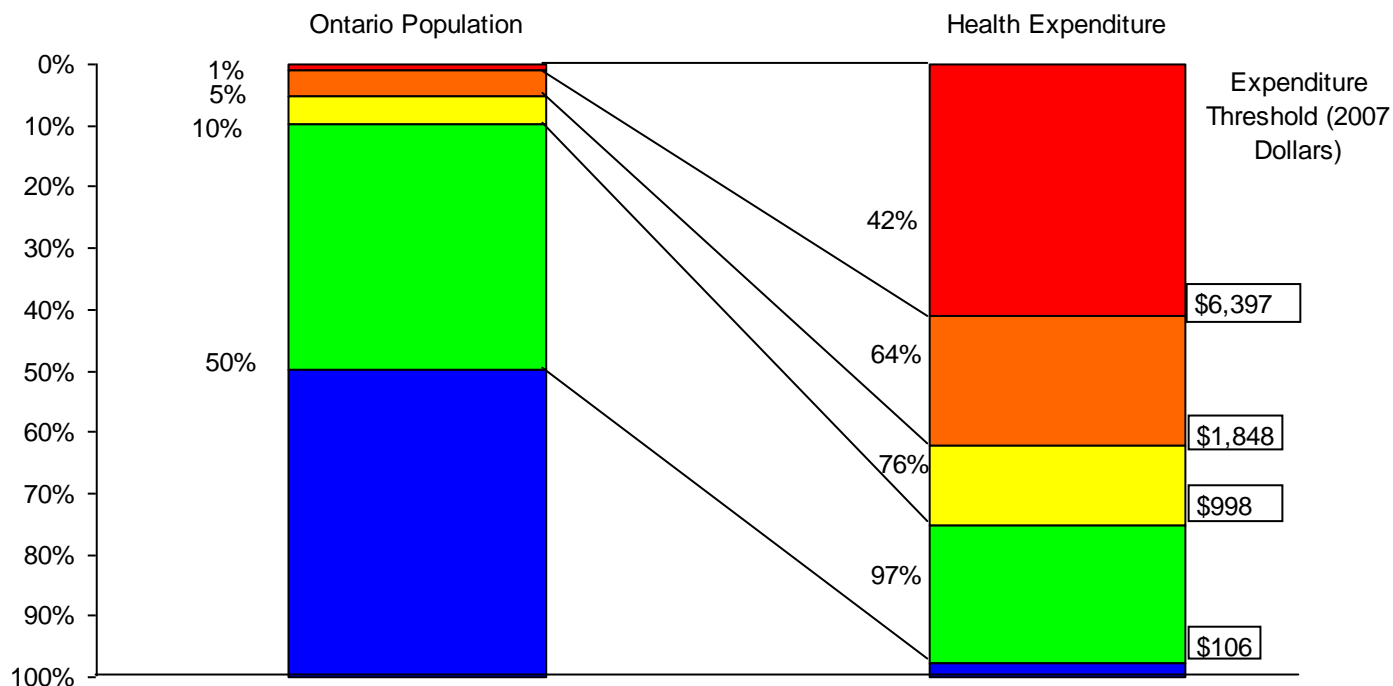
\* Note dip in spending at in ages 62-64 attributable to larger birth cohorts in 1946-47 relative to 1948-49 (first years of baby boom) and increase in costs for medication (ODB) claims at age 65

**Figure 3. Health Care Cost Concentration:  
Distribution of health expenditure for the Ontario population,  
by magnitude of expenditure, 2007**



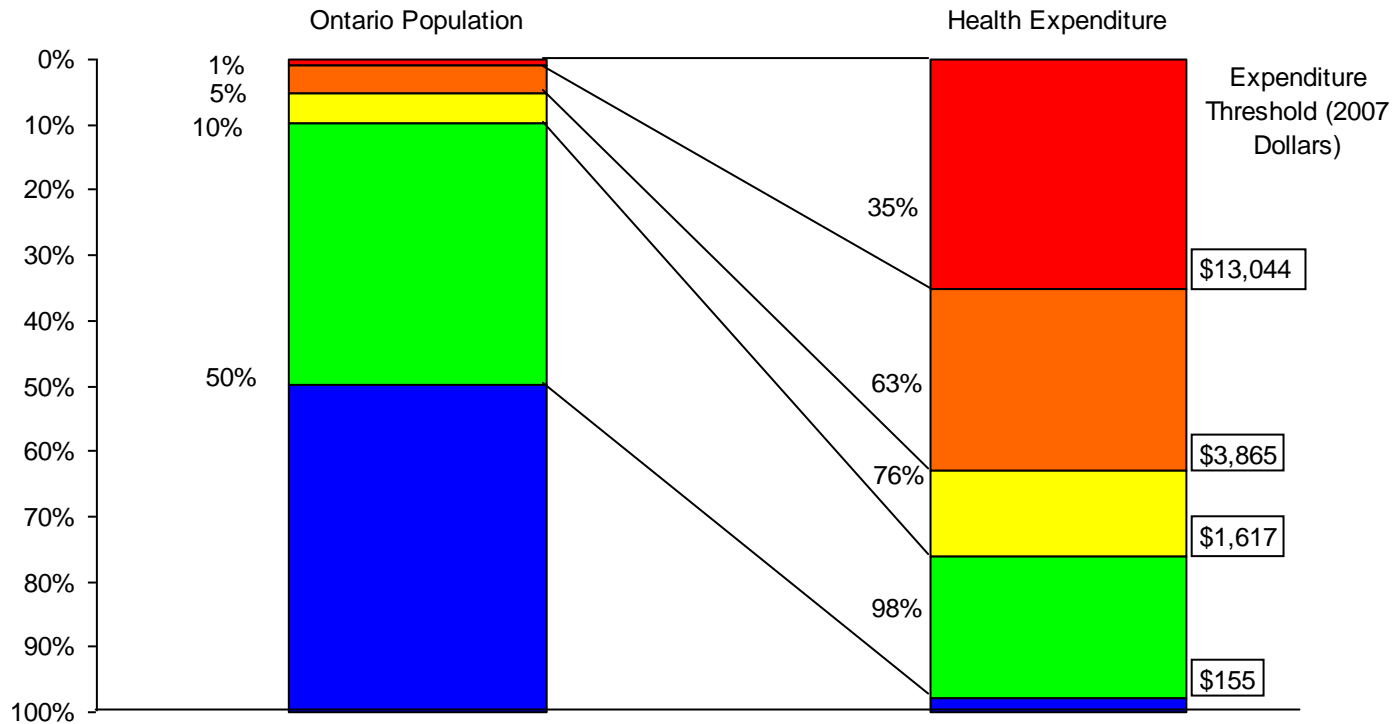
On average, health care spending is highly concentrated with the top 5% of the population (ranked by cost) accounting for 66% of expenditure

**Figure 4. Health Care Cost Concentration, Age 0 to 17 Years:  
Distribution of health expenditure for the Ontario population,  
by magnitude of expenditure, 2007**

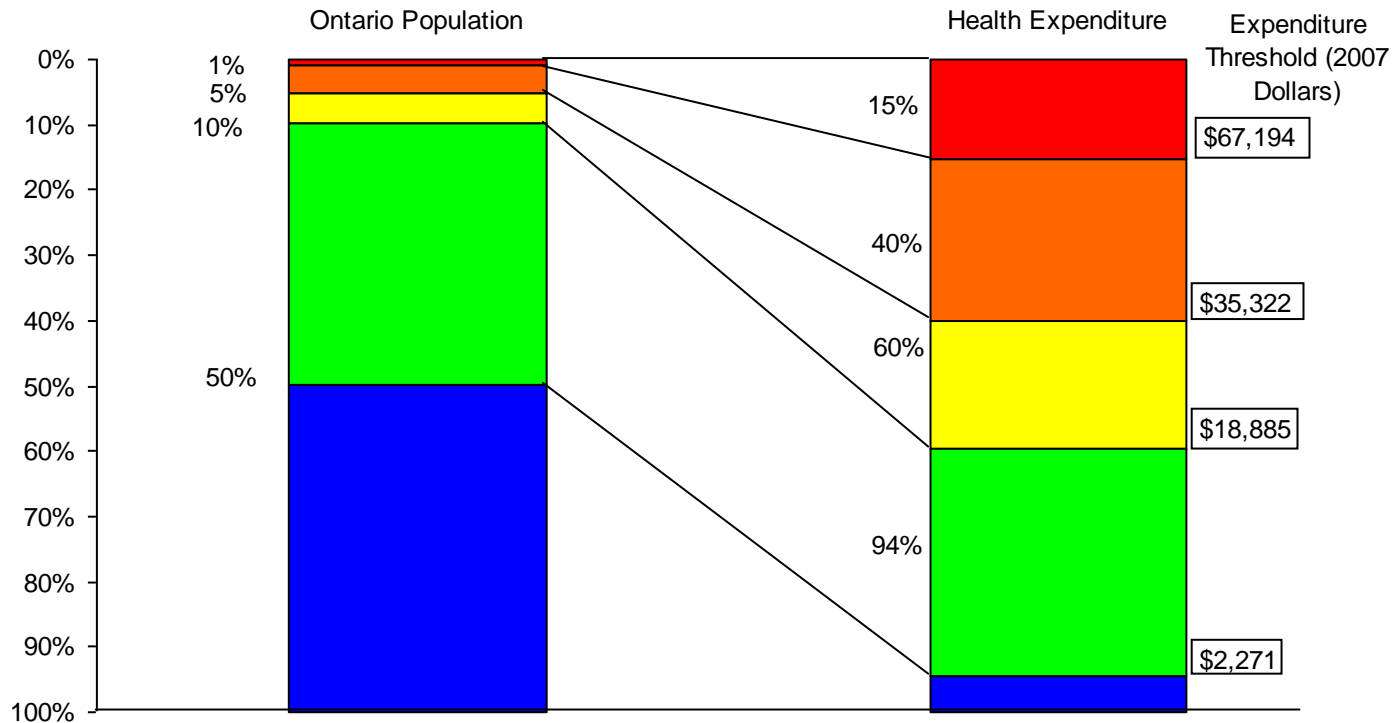


Within different age groups, the concentration of health care costs is highest for children, with the top 1% of the population accounting for 42% of spending in this age group.

**Figure 5. Health Care Cost Concentration, Age 18 to 64 Years:  
Distribution of health expenditure for the Ontario population,  
by magnitude of expenditure, 2007**



**Figure 6. Health Care Cost Concentration, Age 65 to 100 Years:  
Distribution of health expenditure for the Ontario population,  
by magnitude of expenditure, 2007**



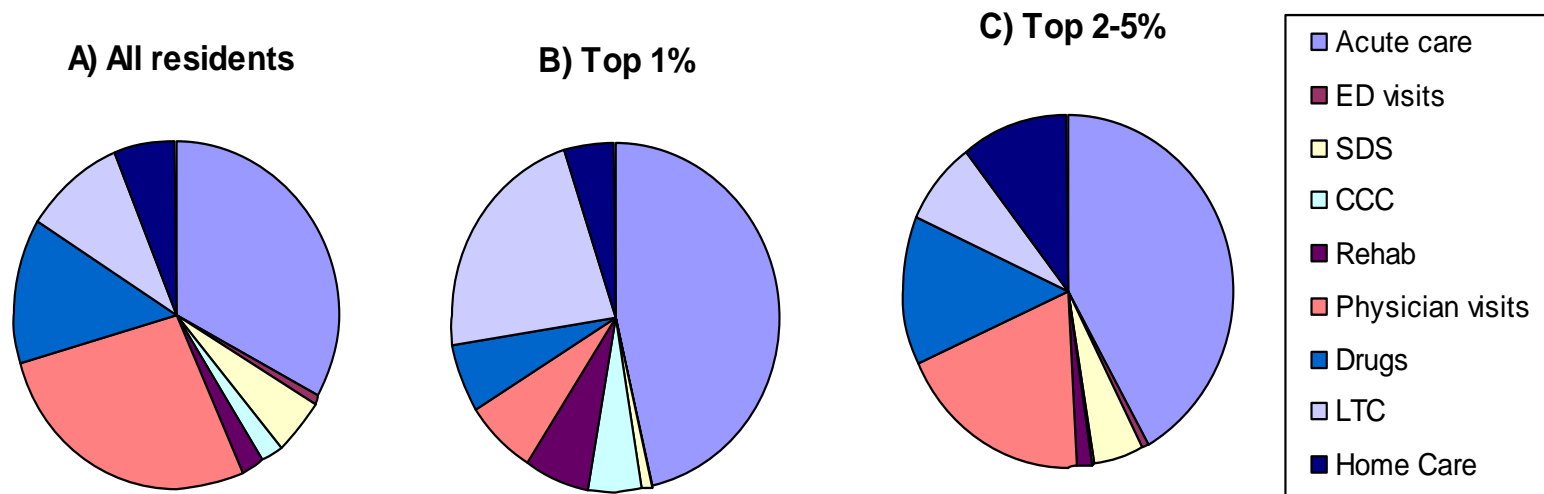
Costs are least concentrated for older adults with the top 1% accounting for only 15% of costs in this age group – this is because most older people require more health care services.

## Part 2

We examined the sector-specific proportion of total spending for:

- the total population
- the top 1% and 5% cost groups
- the top 1% by age group
- the top 1% for users and non-users of acute care

**Figure 7. Total System Spending by Sector in Entire Population and Among Top 1% and Top 2-5% of Spending**

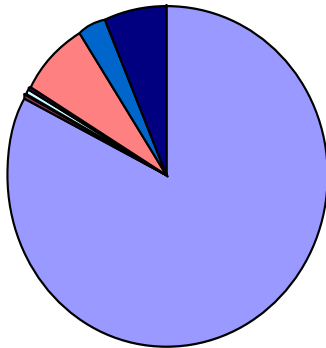


The largest costs are incurred in acute care (including physician services in acute care), physician and long-term care (LTC) institutional costs with the latter costs contributing relatively more in the highest 1% of the population.

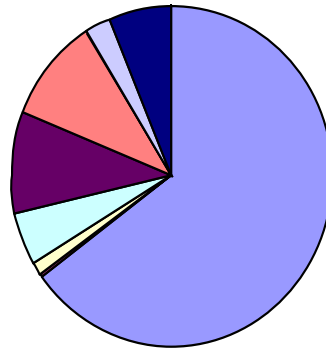


**Figure 8. Total System Spending by Sector in Different Age Groups in Top 1% of Spending**

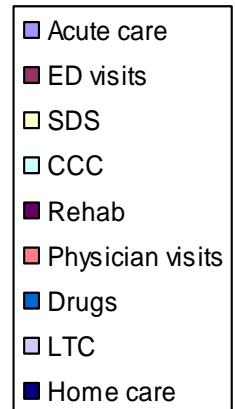
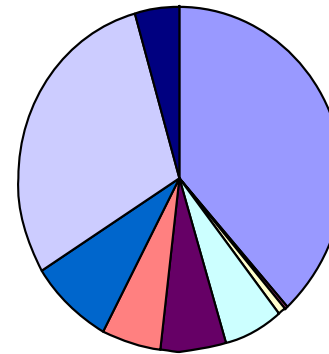
**A) Age 0 to 17 (N=4,518)**



**B) Age 18 to 64 (N=23,007)**



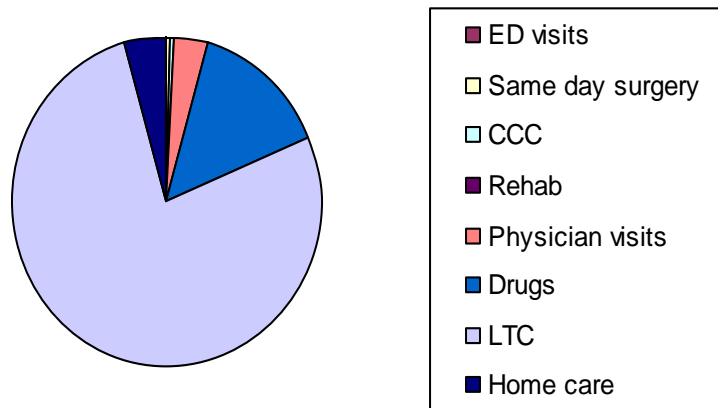
**C) Age 65+ (N=110,056)**



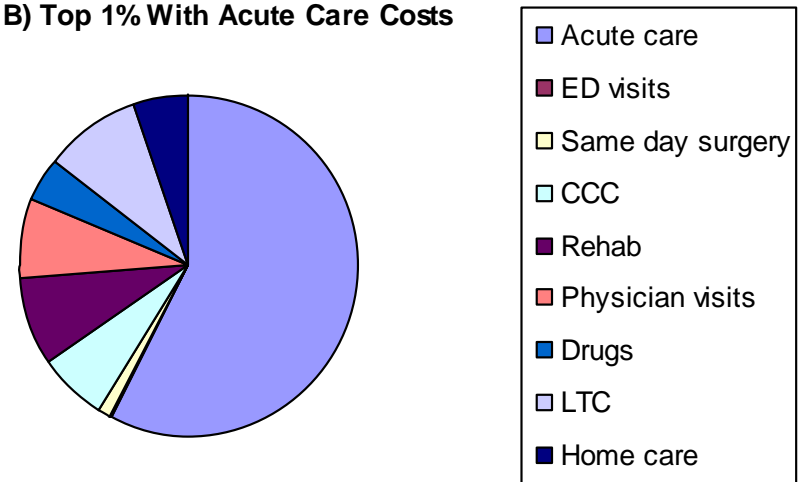
Among the population with the highest 1% of total system spending, costs for children are concentrated in acute care, for adults it is both acute and community while older adults incur majority of costs in acute and LTC.

**Figure 9. Breakdown of spending among top 1% of spenders with and without acute care costs.**

**A) Top 1% Without Acute Care Costs**



**B) Top 1% With Acute Care Costs**



Among those in the highest 1% of total system spending, 30% use no acute care – these individuals consume three quarters of their costs in LTC.

# Part 3

## Clinical Conditions that account for high expenditure

We examined the top 10 most prevalent Most Responsible Diagnoses among patients admitted to acute care who were in the top 1% of spenders

**Table 1. Top 10 CMGs Among Top 1% with Acute Admission in 2007-08, by Age Group.**

<b>Class</b>	<b>Top 10 CMGs</b>	<b>% of Total Acute Admissions</b>
<b>All ages</b>	Heart Failure without Cardiac Catheter	4.0%
	Chronic Obstructive Pulmonary Disease	3.8%
	Viral/Unspecified Pneumonia	2.4%
	Myocardial Infarction/ Shock/Arrest without Cardiac Catheter	2.1%
	Fixation/ Repair Hip/ Femur	2.1%
	Lower Urinary Tract Infection	1.8%
	Ischemic Event of Central Nervous System	1.5%
	General Symptom/ Sign	1.4%
	Palliative Care	1.4%
	Chemotherapy/ Radiotherapy Session for Neoplasm	1.4%

# Clinical Conditions that account for high expenditure by age group

- The clinical conditions in acute care for which people in the highest 1% of spending are treated include:
  - Children - cancers, low-birth weight premature infants and agranulocytosis
  - Adults - cancer and some chronic condition treatments (COPD, CHF, Diabetes, Cirrhosis), palliative
  - Older Adults - the addition of hip-fracture, stroke, MI, and arrhythmias and the prominence of CHF and COPD

# Conclusions

- 13.7 million Ontarian used \$23 billion in attributable health care services in 2007. 137,000 (1% of the population) used \$7.8 billion.
- Acute care still dominates spending, particularly among high cost patients.
- Physician care is distributed more uniformly across the entire population.
- LTC costs are significant, particularly in the highest cost populations and are the cause for most high costs among those who are not admitted to acute care.
- Notably with average lengths of stay of 2-3 years, LTC costs are also sustained over time (here we looked only at one year costs).

# Implications

- A 5% cost reduction for the top 5% of spenders would provide savings of \$760 million. A 10% reduction could amount to \$1.5 billion in savings.
- A 10% reduction in costs for the top 1% of spenders could amount to \$785 million in savings. A 15% reduction could amount to nearly \$1.2 billion in savings.
- If acute care costs alone were reduced by 10% for the top 1% of spenders, this could amount to \$360 million in savings. If LTC costs alone were reduced by 10% for this top 1%, \$177 million could be saved.

# Implications Cont.

- This is largely an actuarial exercise and clarifies the need for insurance (we don't know when or how much health care we're going to need).
- It doesn't really help us manage costs though. Managing costs requires attention to the ways in which there might be opportunities to:
  - ▶ better manage and coordinate physician care,
  - ▶ reduce or avoid unnecessary acute hospital admissions in hospital (but not reduce necessary treatments),
  - ▶ avoid/delay LTC admissions.
- Interventions should be targeted to specific identifiable populations.



# Current Ideas: Integrated Care

e.g.

**“Better integration of the system around the patient.** A critical recommendation is that there should be better integration of patient care, from primary care through physicians, to community care and, likely, public health.”

(Don Drummond, Benefactors Lecture, November 2011)

**“The Ministry of Health and Long-Term Care support creation of special units/programs in the community and Long-Term Care Homes for seniors with special needs.”**

(Walker Report, Caring for our Aging Population, June 2011)

# Current Ideas: Care Transitions

**e.g.**

“The Ministry of Health and Long-Term Care along with Local Health Integration Networks support through funding and/or policy changes the implementation of additional “Virtual Ward” models, where appropriate, advancing community discharge with professional and specialty supervision during the patient’s recovery.”

(Walker Report, Caring for our Aging Population, June 2011)

“The Panel recommends an initial, intensive focus on improving care transitions from acute to community settings to reduce unplanned readmissions.”

(Baker Report, Avoidable Hospitalizations Panel, November 2011)

# We need to know more about opportunity for improvements

- There needs to be an appreciation that there are different types of issues presenting within the 'High Cost Users' including for example:
  - ▶ Premature low birth-weight infants
  - ▶ Cancers
  - ▶ Chronic Diseases and Multiple Chronic Disease
  - ▶ End of Life/Palliative
- These different populations require different responses on the part of policy and providers.
- Improving the Value and Sustainability of health care spending requires appropriate and targeted responses to health issues and treatment that are amenable to improvement. We still know little about the care gaps/opportunities for improvement in these populations.