

# Breakfast with the Chiefs

Re-focusing from Efficiency to Appropriateness:  
The Value of Understanding Variation in Healthcare

June 10, 2014



Hospitals and health  
system funding need  
to shift focus  
from improving  
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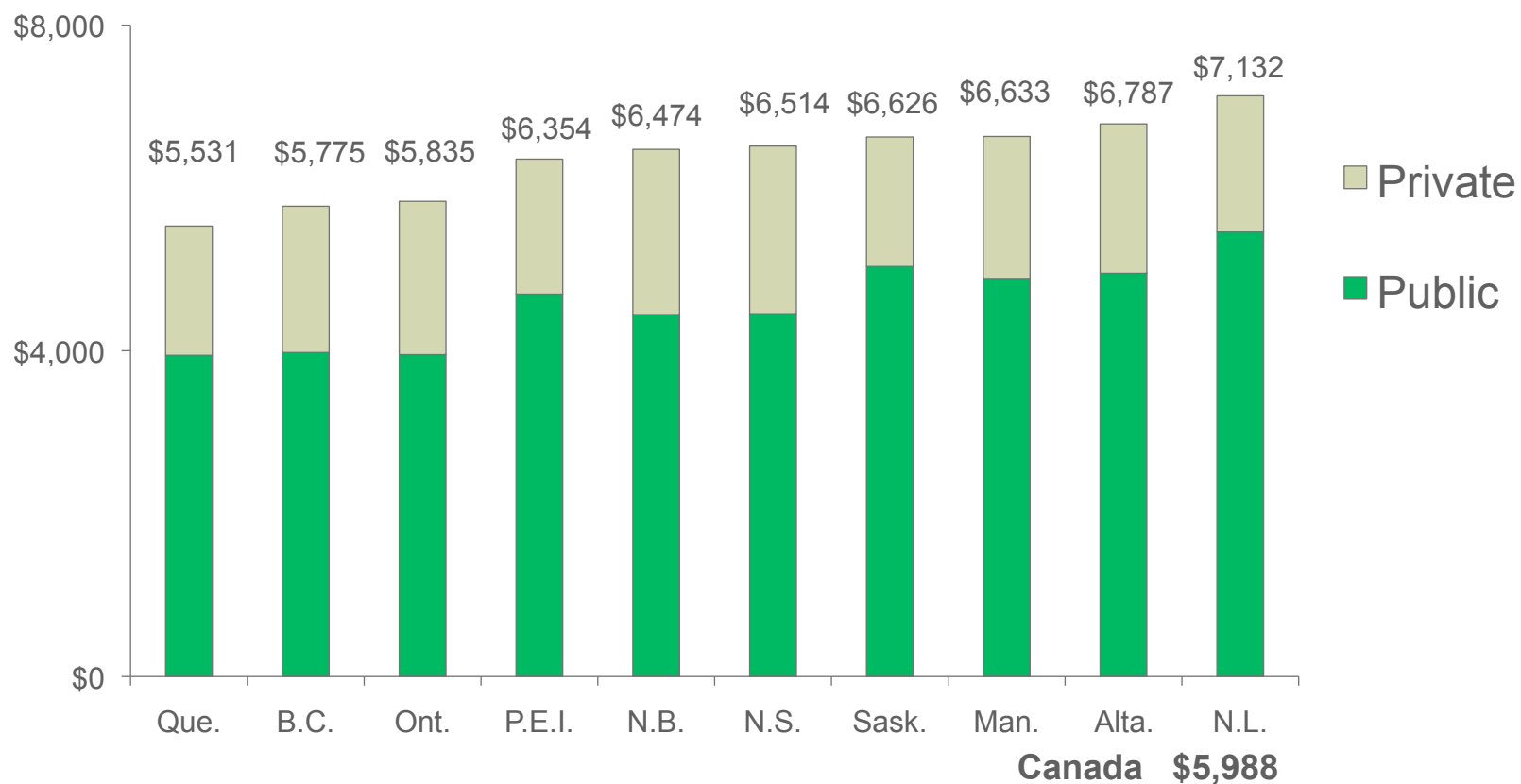
## Re-focusing from Efficiency to Appropriateness: The Value of Understanding Variation in Healthcare

- Ontario hospitals have focused on becoming the most efficient hospitals in Canada
  - Shortest length of stay in acute care
  - Lowest worked hours per RIW weighted case
- Need (and demand) for health care will increase faster than our ability (or willingness) to pay for it
  - Ongoing search for more cost-effective ways to respond to needs
- Diminishing returns from efficiency, and greater awareness of evidence-based health care, will force attention to appropriateness
  - E.g. Choosing Wisely Canada
- To both:
  - Reduce costs
  - Improve quality

Ontario hospitals  
are running out of  
opportunities to  
further improve  
efficiency to  
reduce costs

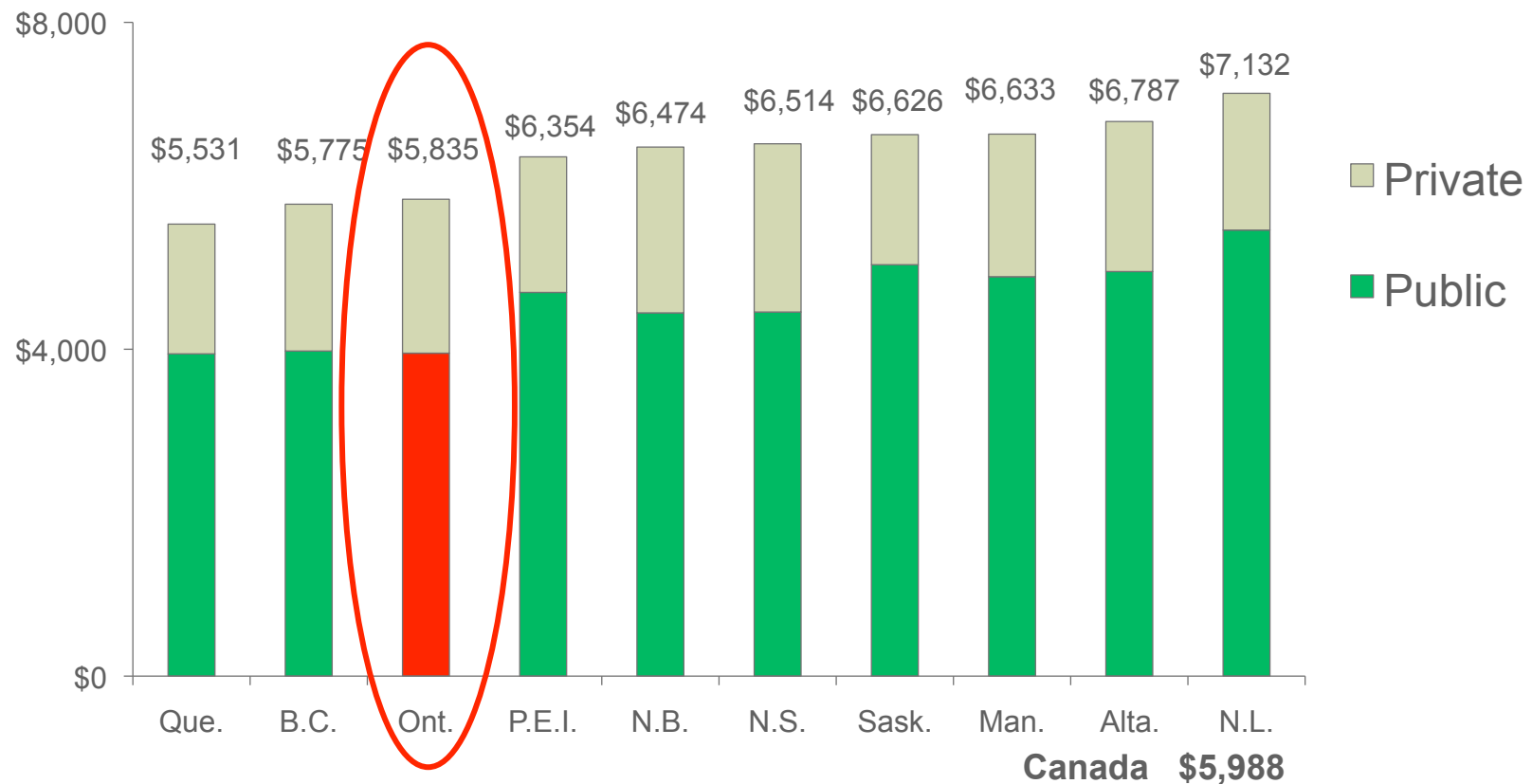
# Health Spending per Capita

Total Health Spending per Capita, by Province, 2013f

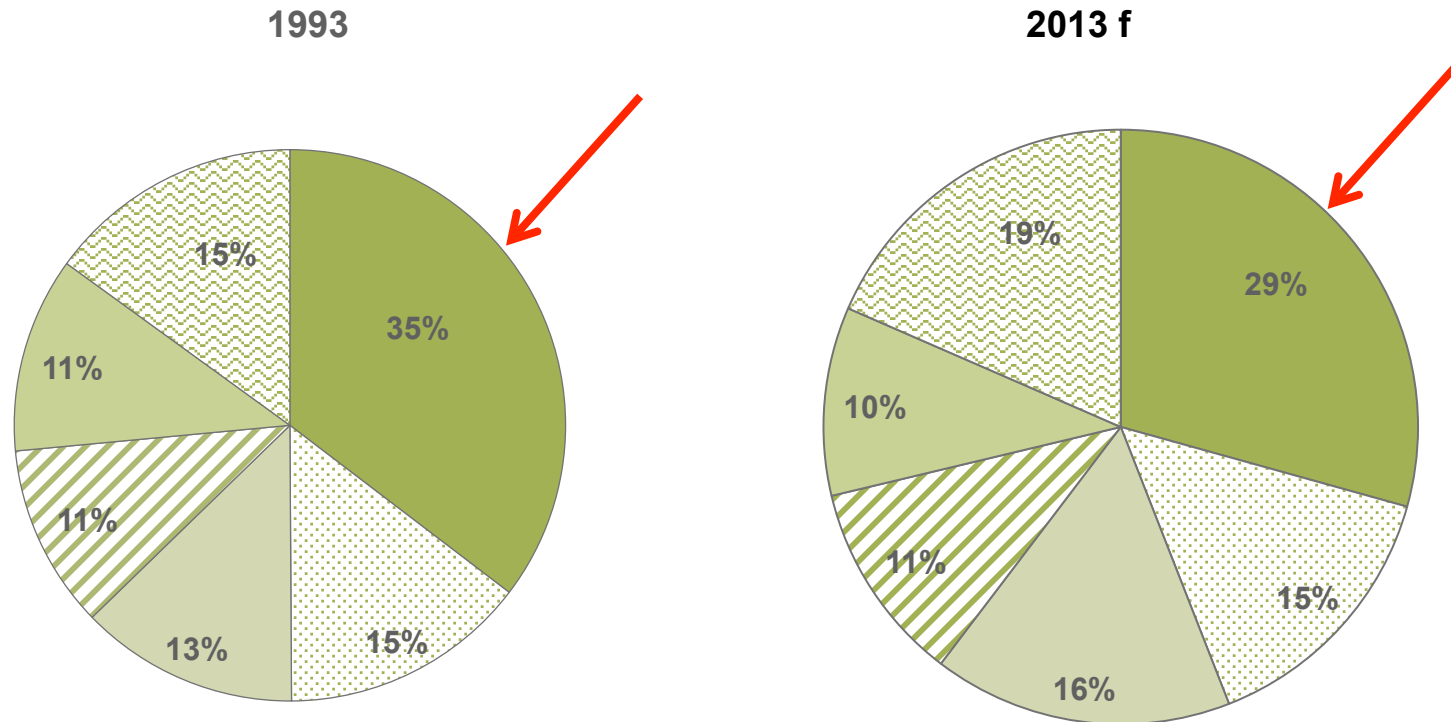


# Ontario Has Lowest **Public** Health Spending per Capita of all the provinces

Total Health Spending per Capita, by Province, 2013f



# Proportion of health spending on hospitals in Canada has declined in the last decade from 35% to 29%



Hospitals
  Physicians
  Drugs
  Other Professionals
  Other Institutions
  Other Expenditures

**Note:** f: forecast. **Source:** National Health Expenditure Database, CIHI.

# Per Capita hospital spending is growing significantly more slowly in Ontario than other provinces.

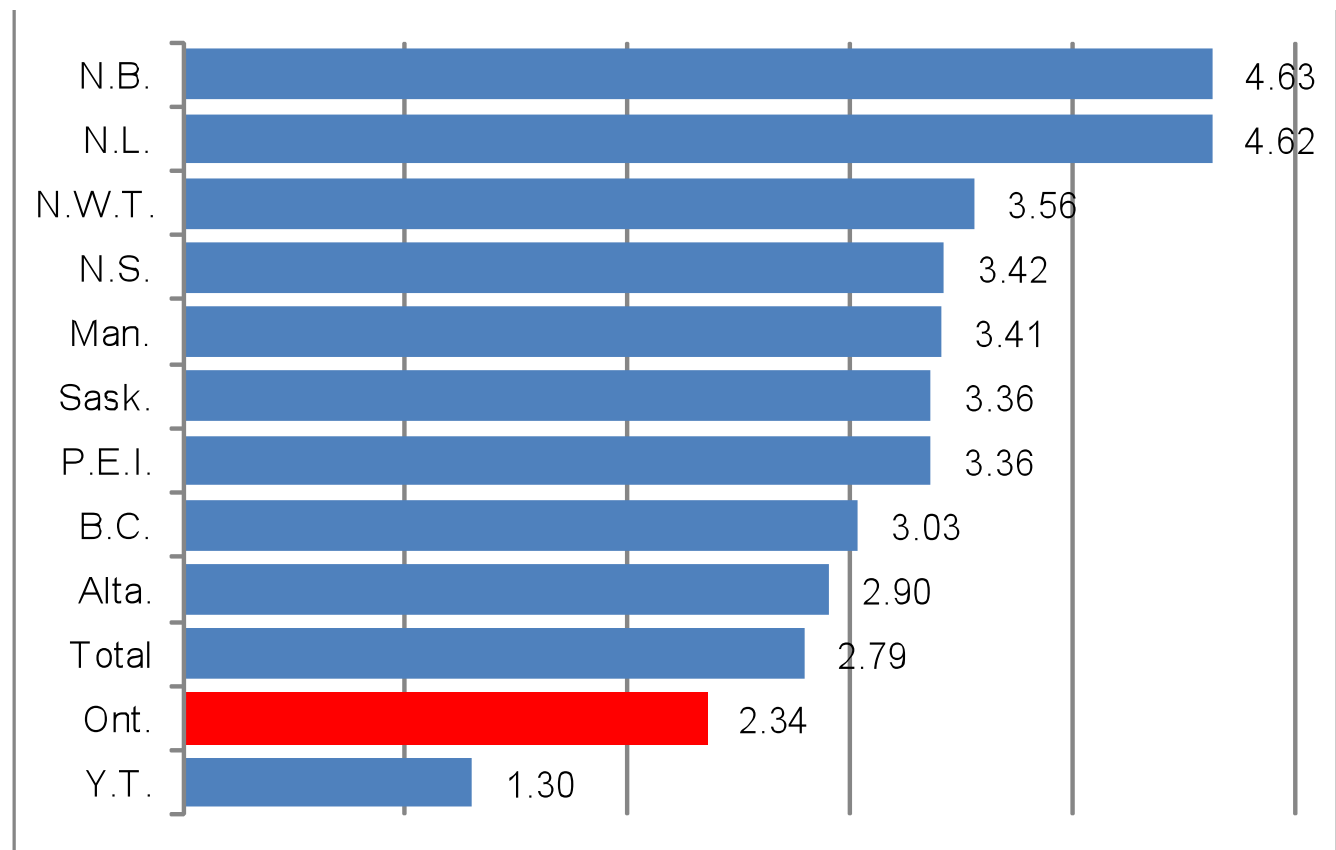
- Change in Age/Gender Standardized Per Capita Hospital Expenditure 1996 to 2011
- From 1996 to 2011, Ontario has had the lowest % increase in per capita hospital expenditures
- In 2011, only Quebec had lower per capita hospital expenditures

Province /Territory	1996	2011	\$ Increase 1996 to 2011	% Change
Nunavut	—	\$ 3,914		
NWT	\$ 1,154	\$ 3,078	\$ 1,924	167%
Nfld. Lab.	\$ 808	\$ 2,398	\$ 1,591	197%
Alberta	\$ 604	\$ 1,960	\$ 1,356	225%
New Brunswick	\$ 797	\$ 1,822	\$ 1,025	129%
Yukon	\$ 649	\$ 1,800	\$ 1,151	177%
Nova Scotia	\$ 723	\$ 1,691	\$ 968	134%
Manitoba	\$ 749	\$ 1,670	\$ 921	123%
PEI	\$ 754	\$ 1,652	\$ 898	119%
BC	\$ 683	\$ 1,556	\$ 873	128%
Saskatchewan	\$ 587	\$ 1,548	\$ 961	164%
Canada	\$ 677	\$ 1,508	\$ 832	123%
Ontario	\$ 696	\$ 1,377	\$ 681	98%
Quebec	\$ 639	\$ 1,318	\$ 680	106%

# Ontario has lowest number of hospital beds per 1,000 population of all the provinces

- Ontario has also been reducing its hospital capacity
- Now has lowest number of hospital beds per 1,000 population of all the provinces

2012 Hospital Beds (All Types) per 1,000 Population

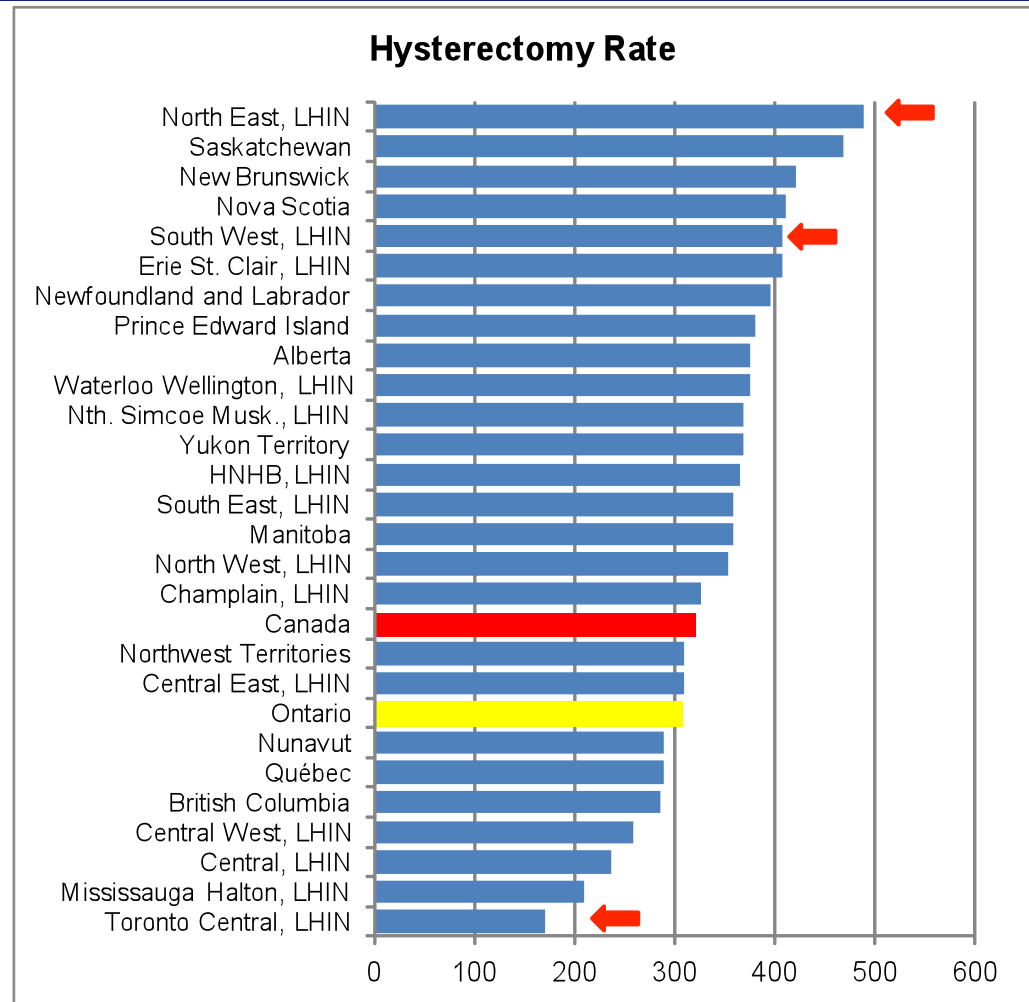


Enormous variation  
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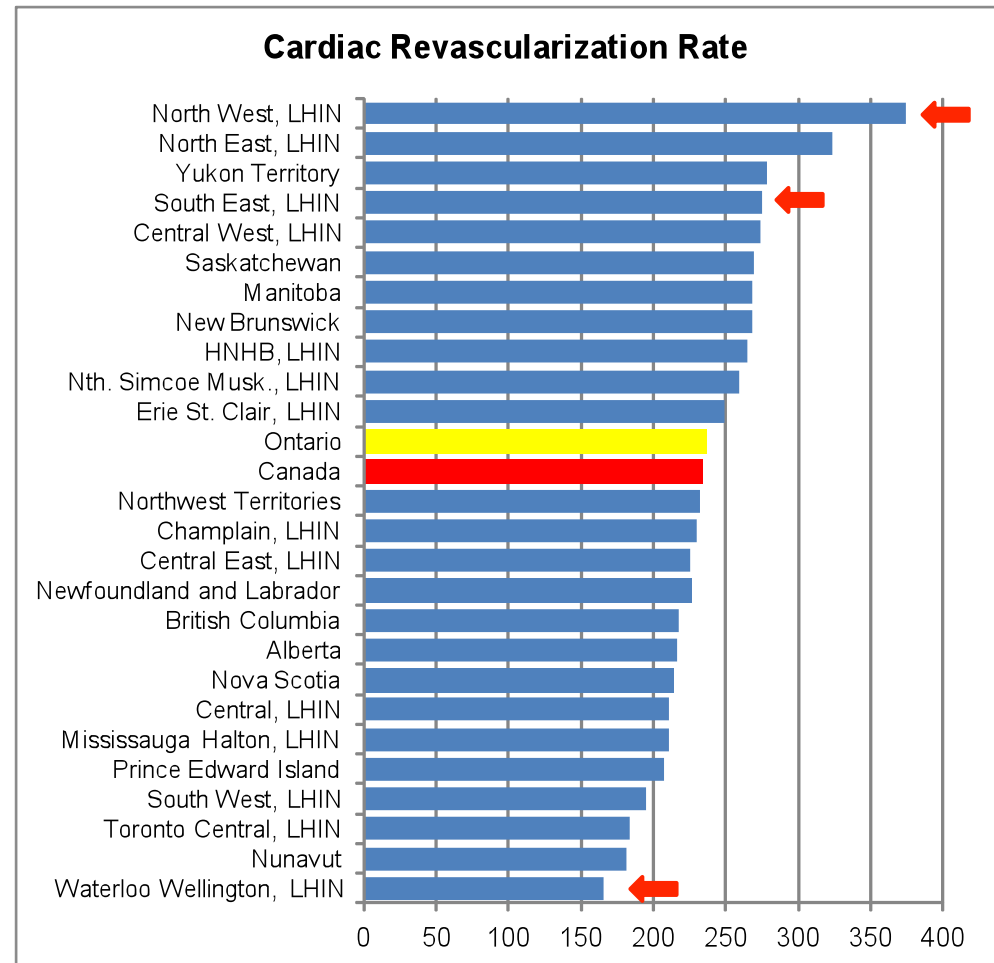
# Variations in Health Care in Canada – Hysterectomy Rates

- Within Ontario, age/gender standardized hysterectomy rates for residents of the NE LHIN are 3 times the rates for Toronto residents
- Hysterectomy rate for SW LHIN more than twice the rate for Toronto residents
- Per 100,000 Age/Gender Standardized Population



# Variations in Health Care in Canada – Cardiac Revascularization Rates

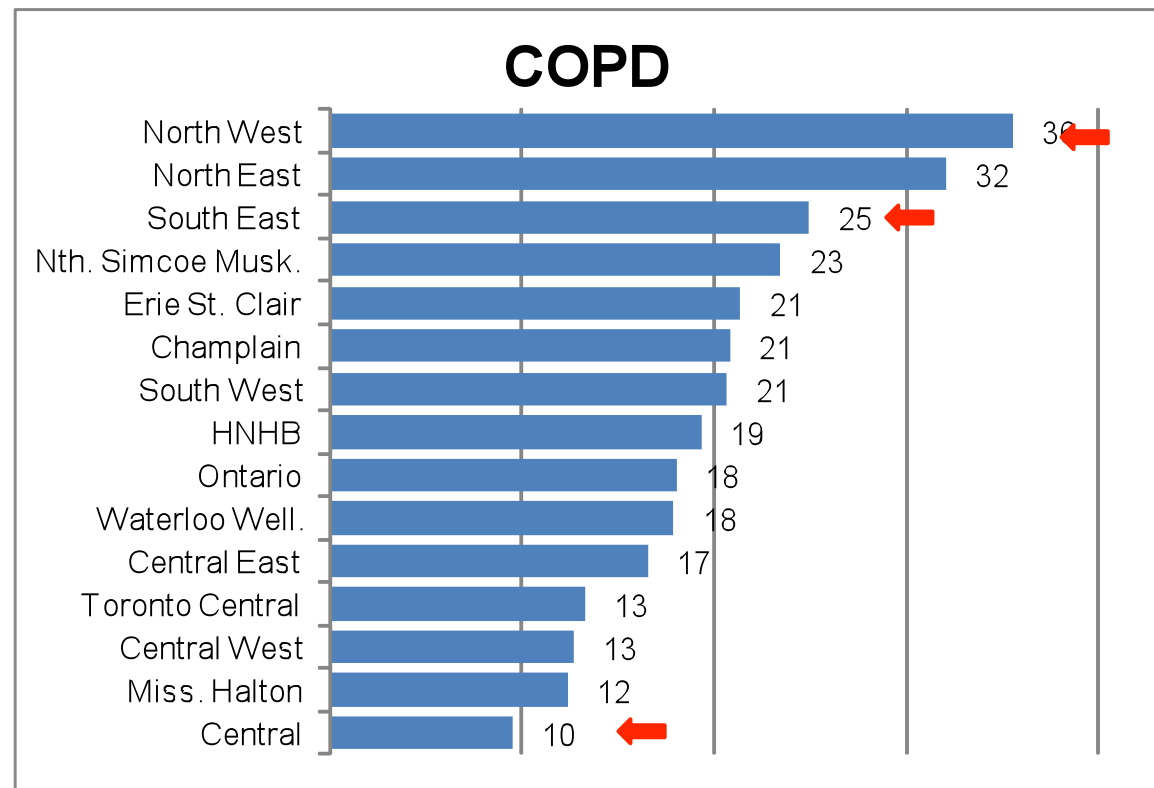
- Residents of NW LHIN have double the revascularization rate of residents of the Waterloo Wellington LHIN
- Residents of SE LHIN (& CW LHIN) have revascularizations rates 50% higher than WW LHIN
- Per 100,000 Age/Gender Standardized Population



# Variation in Hospital Care in Ontario

## COPD

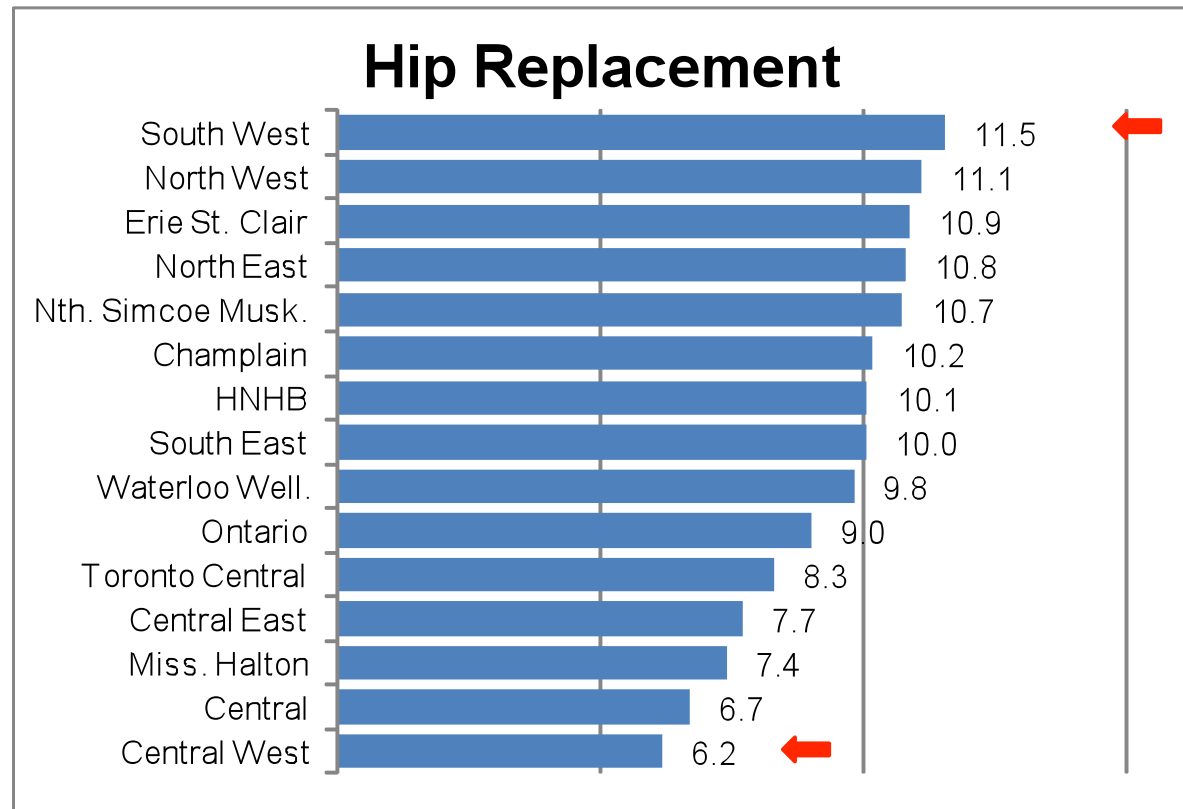
- Rate of hospitalization for COPD is 3.6 times higher for NW LHIN residents than for Central LHIN residents
- Rate of hospitalization for COPD is 2.5 times higher for SE LHIN residents than for Central LHIN residents
- Hospitalizations per 10,000 Age/Gender Standardized Population



# Variation in Hospital Care in Ontario

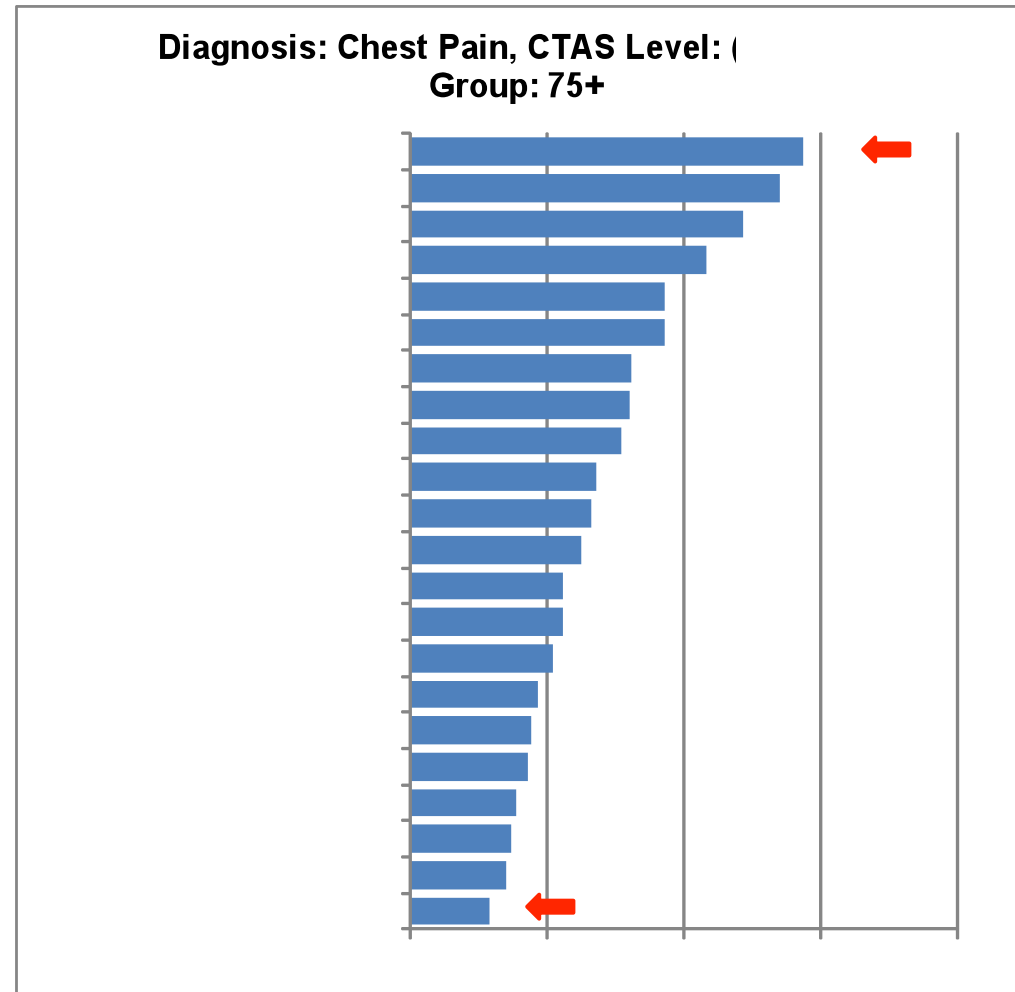
## Hip Replacement

- Rate of hospitalization for hip replacement for South West residents is almost double the rate for Central West residents
- Similar wait times: SW wait time is 220 days, CW wait time is 234 days
- Hospitalizations per 10,000 Age/Gender Standardized Population



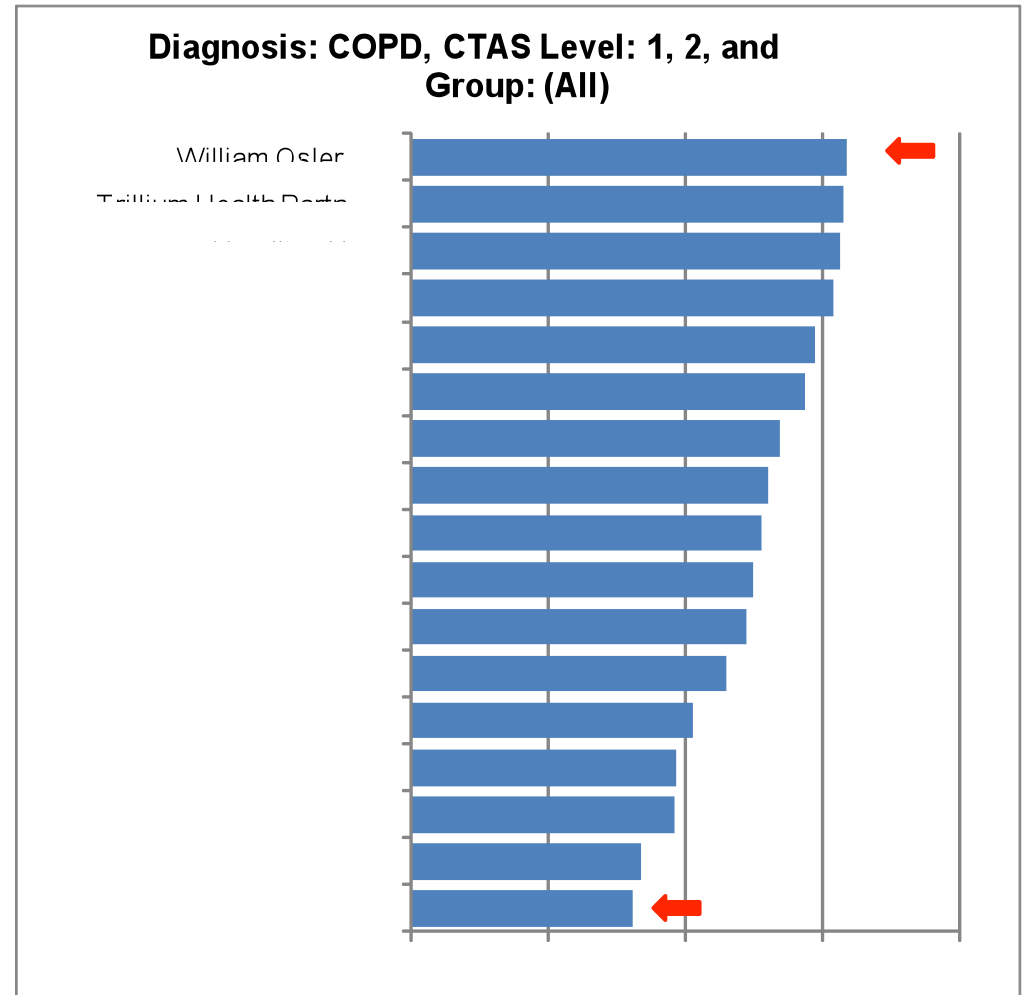
# Admission Through ED: % of ED Chest Pain Patients Admitted to IP Acute Care

- In highest volume Ontario EDs, % of ED patients with Chest Pain admitted to IP care ranges from 6% to almost 30%
- An ED patient with chest pain is 5 times more likely to be admitted to IP care at HHS than at SMGH
- EDs with > 400 Chest Pain Visits/Yr in 2012/13



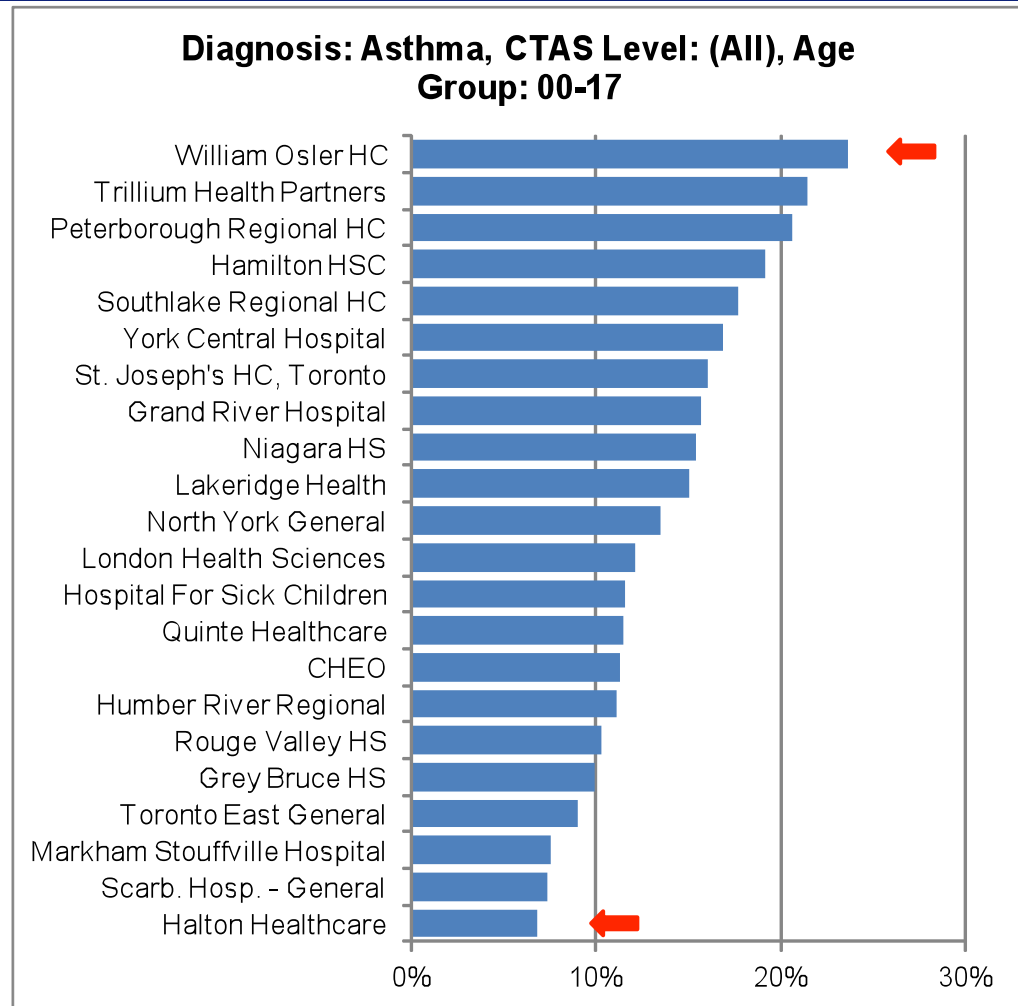
# Admissions Through ED: % of CTAS 1, 2 & 3 COPD ED Patients Admitted to IP Acute Care

- % of ED CTAS 31-3 (urgent & emergent) patients with COPD admitted to IP care ranges from 32% to almost 63% in highest volume Ontario EDs
- A COPD patient is twice as likely to be admitted to IP care at WOHC than at QHC
- EDs with > 600 COPD Visits/Yr in 2012/13



# Admissions Through ED: % of ED Paed. Asthma Patients Admitted to IP Acute Care

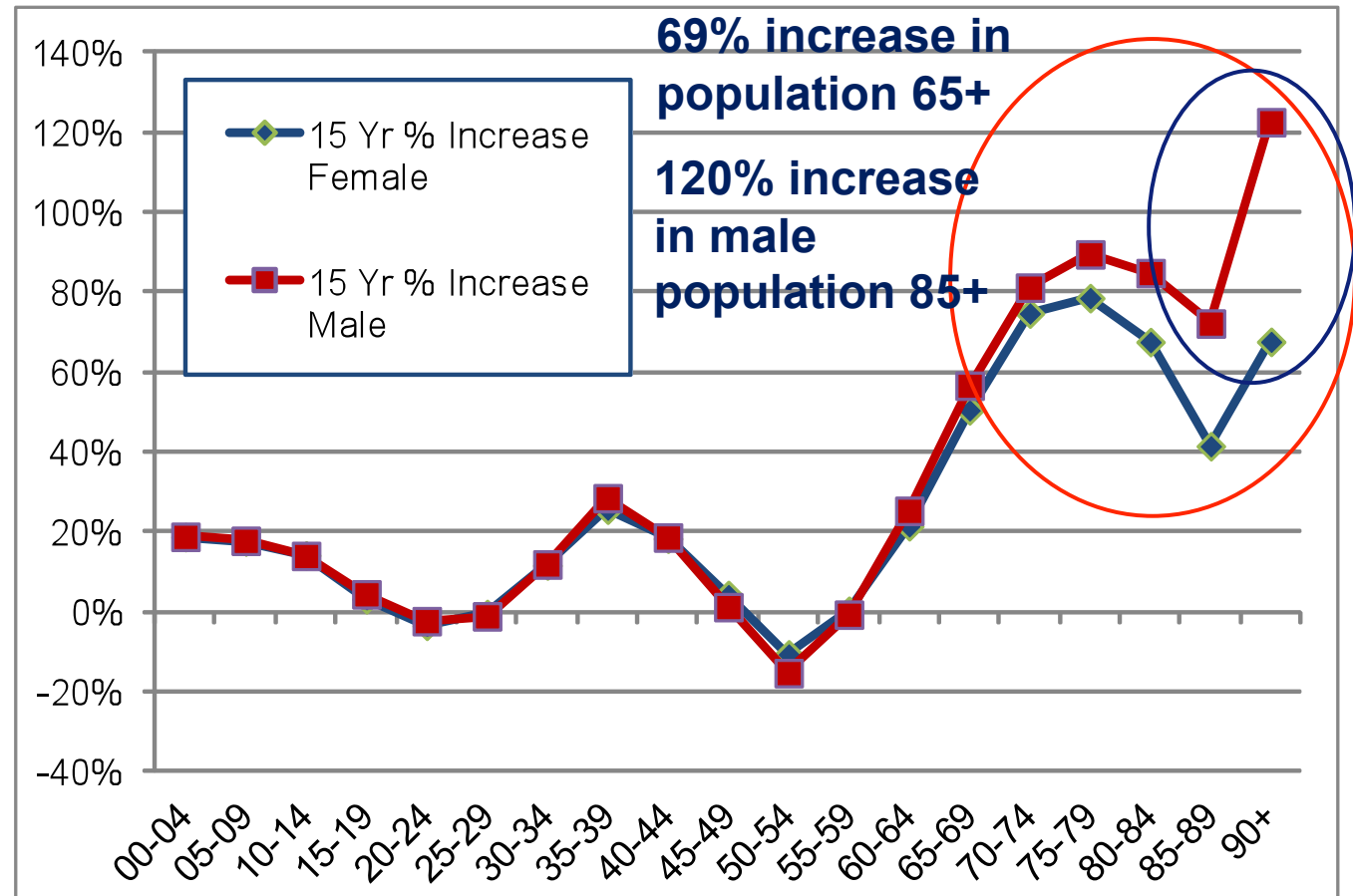
- % of Paediatric ED patients with Asthma admitted to IP care ranges from 7% to 22% in highest volume Ontario EDs
- A paediatric ED patient with Asthma is 3 times more likely to be admitted to IP care at William Osler than at Halton Healthcare
- EDs with > 200 Paediatric Asthma Visits in 2012/13



And the issue will  
become a bigger  
problem as population  
grows and ages

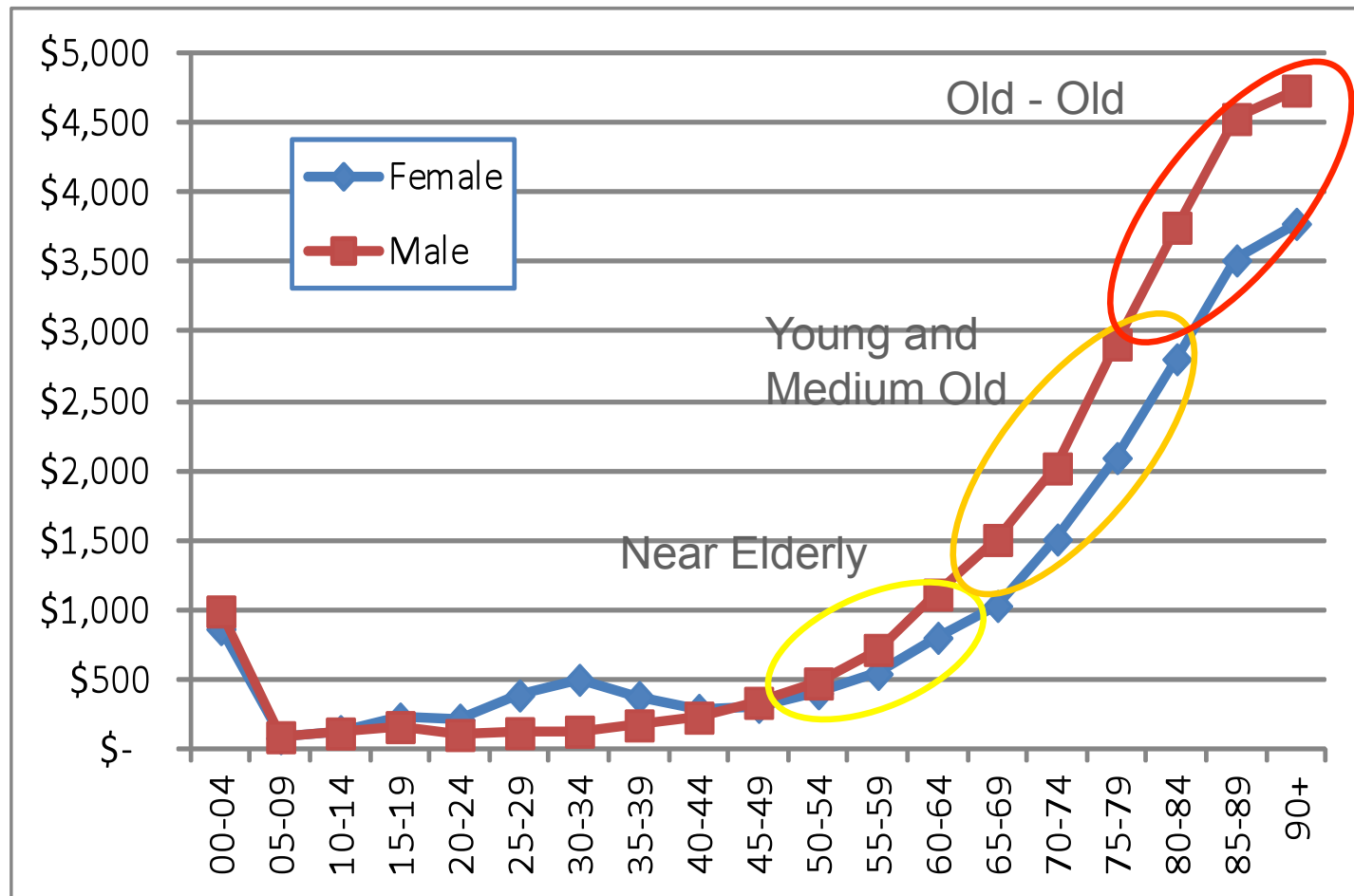
# Projected % Change in Population by Age/Gender Cohort 2014 to 2029

- Projected increase in Ontario population from 2014 to 2029 is 18%
- Growth of just over 1% per year
- But growth is not evenly distributed across age groups



# Average Annual Per Capita Acute Care Hospital Cost by Population Age and Gender

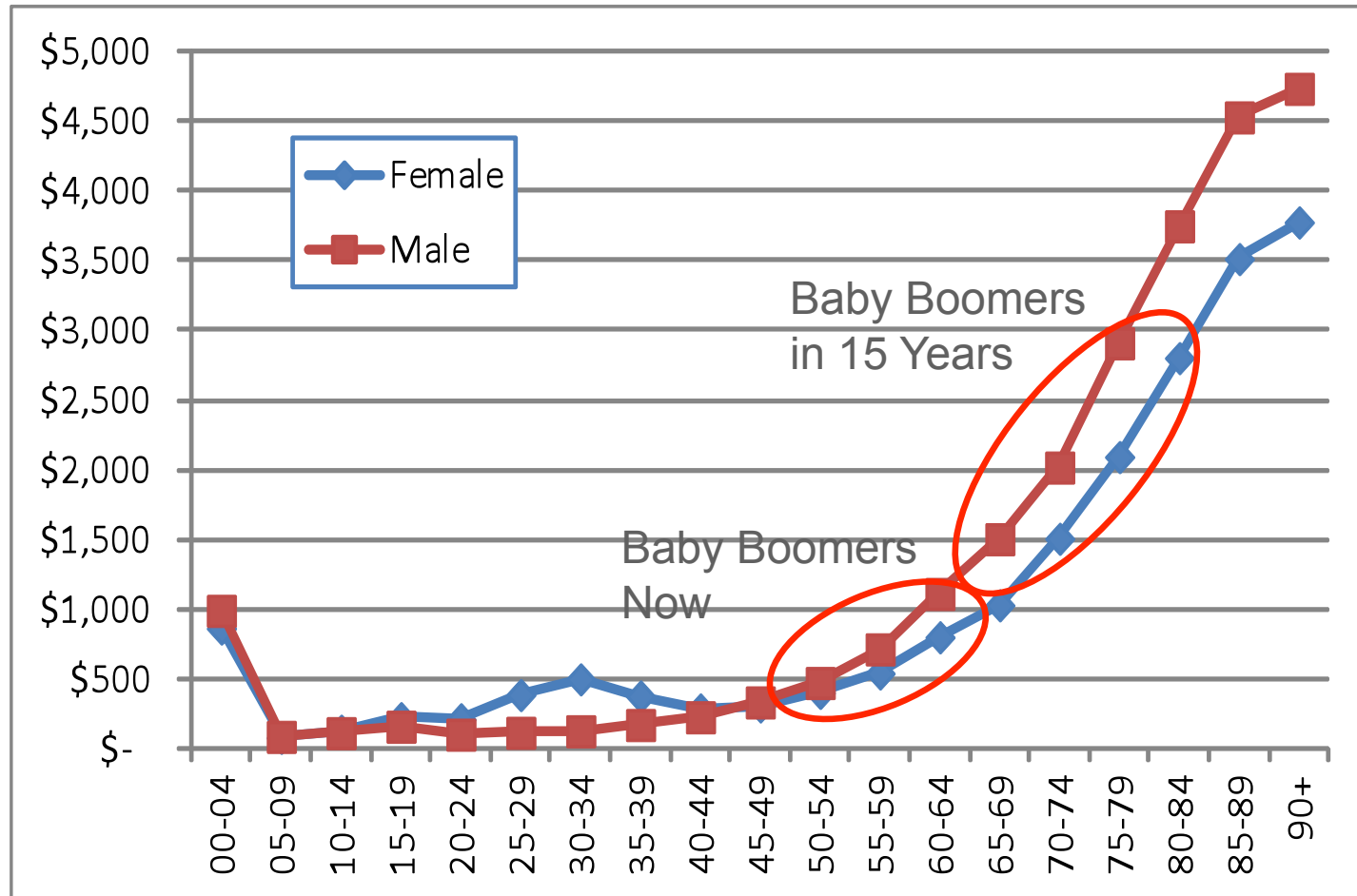
- Increase in number of people over 65 will put growing pressure on health system
- Move from relatively low cost use as 'Near Elderly' to increasingly higher cost use of hospital care when age past 65 years.
- Growth in 'Old - Old' even more dramatic increase in demand and costs



# Other Perspectives on Aging of Population

■ Aging of baby boomers in 15 years means:

- Shift of fastest growing age cohort from low cost to high cost
- Loss of most experienced senior staff
- Switch of baby boomer from source of taxation revenue to consumers of tax funded health care



Need new models of  
payment that reward  
providers for  
improving quality,  
and reducing  
unnecessary care

## Variations in Health Care, Patient Preferences & High-Quality Decision Making

- “Variations in practice should disturb physicians not merely because they may indicate wasteful practices but because of the possibility that such **variations** do **not** optimally serve **the best interests of patients**.
- The health care system should **allow variation** in practice, provided that variation is **based on patient clinical differences** and preferences **rather than on other factors such as payment method, geography, or system proclivities**.”

Harlan M. Krumholz, MD, SM.

JAMA. 2013;310(2):151

# Reflections on Geographic Variations in U.S. Health Care

- “The key take-home message is that we believe that there is **enormous scope for improving the efficiency and quality of US health care**. The Dartmouth research suggests that **improvements in both cost and quality** can be achieved by supporting **new models of payment that reward providers for improving quality, managing capacity wisely, and reducing unnecessary care.**”

**Jonathan Skinner and Elliott Fisher (5/12/2010)**

[http://www.dartmouthatlas.org/downloads/press/Skinner\\_Fisher\\_DA\\_05\\_10.pdf](http://www.dartmouthatlas.org/downloads/press/Skinner_Fisher_DA_05_10.pdf)

Can HSFR, HBAM  
and QBP Funding  
provide incentives to  
best address the  
issue of  
appropriateness of  
care?

# How Does the Ontario Health Care Funding System Address Variation?

## MOHLTC HSFR Educational Slides:

- “Prior to developing HBAM, the Ministry and stakeholders established a set of guiding principles. The principles stated that HBAM was to:
  - Provide an evidence-based distribution of funding to LHINs within the government’s budget limits
  - Recognize provider characteristics that are accepted to affect the cost of providing care
  - Maintain patient freedom to choose their health service providers
  - Ensure stability in funding from year to year
  - Facilitate health sector integration
  - Encourage quality improvement in health outcomes
  - Be simple to understand and communicate”

## HBAM Service Models

- HBAM service models compare actual weighted activity for a community with the “expected” weighted activity
- MOHLTC HBAM Educational Slides:
  - “What does “Expected” mean in HBAM?”
    - The term “Expected” is used in a statistical sense, referring to an “Average”
    - “Expected” service is an average level of service based on case mix, age, SES and rurality specific to the patients to which an organization provides service
    - In this context, “Expected” does not mean optimal”

## 2008 MOHLTC Presentation of Strength of HBAM

“The model’s strength comes from its focus on individual health care needs and it’s about ***the entire population of Ontario***. We associate the appropriate costs with those services and then we get a good picture about what is going on with ***the entire population***.”

“Some of the highlights of the model, so that you can begin to understand how we do it: We create a profile ***of every last Ontarian***; all 12.5 million Ontarians have a profile that is built through the information sources we have that we can identify, where individuals get their care.”

“We also have people in this profile who have blanks. ***There are lots of us in Ontario who don’t use the health care system. It’s important to understand where the needs are and where they’re not.*** We also look at that.”

# 2012/13 HBAM Acute Service Model Results – ED and Acute Care

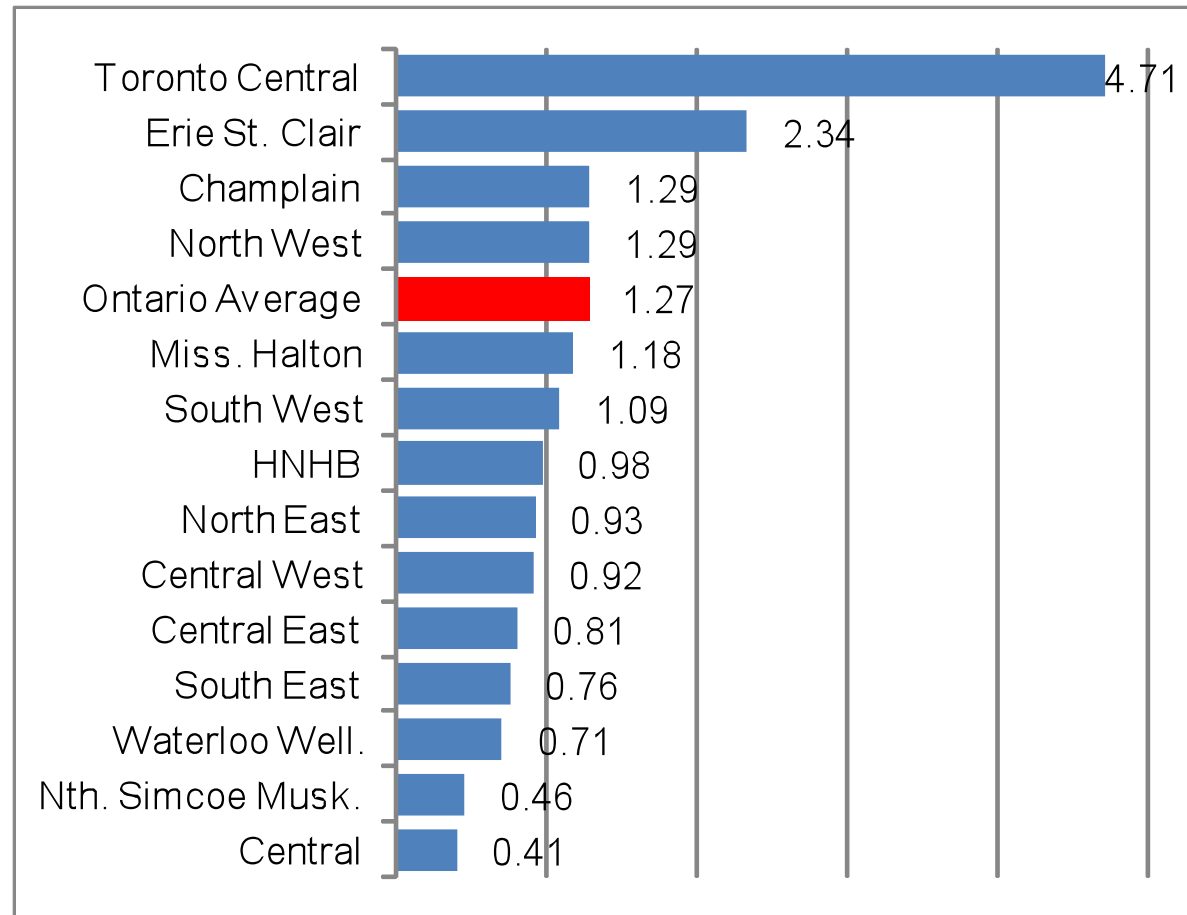
- Despite significant variation in utilization rates, HBAM Service Model Results show service provided in almost all LHINs is within 1% of expected

LHIN Name	2012/13 ED Weighted Activity		
	Actual	Expected	Ratio of Actual to Expect.
Erie St. Clair	13,820	13,594	101.7%
South West	23,897	23,988	99.6%
Waterloo Well.	11,717	11,891	98.5%
HNHB	29,001	28,744	100.9%
Central West	11,221	11,217	100.0%
Miss. Halton	16,828	16,993	99.0%
Toronto Central	24,896	24,788	100.4%
Central	23,540	23,685	99.4%
Central East	25,254	25,446	99.2%
South East	12,339	12,369	99.8%
Champlain	24,954	25,091	99.5%
Nth. Simcoe Musk.	10,341	10,337	100.0%
North East	17,586	17,471	100.7%
North West	8,911	8,687	102.6%

LHIN Name	2012/13 Acute Care Weighted Activity		
	Actual	Expected	Ratio of Actual to Expect.
Erie St. Clair	77,641	77,297	100.4%
South West	154,608	153,519	100.7%
Waterloo Well.	71,953	72,519	99.2%
HNHB	210,901	210,095	100.4%
Central West	67,016	67,529	99.2%
Miss. Halton	109,450	110,174	99.3%
Toronto Central	314,437	313,699	100.2%
Central	148,713	149,280	99.6%
Central East	146,589	147,069	99.7%
South East	73,448	72,791	100.9%
Champlain	168,891	168,803	100.1%
Nth. Simcoe Musk.	50,151	50,319	99.7%
North East	95,224	95,679	99.5%
North West	39,570	39,748	99.6%

# Rehab Beds per 1,000 Population Aged 65 and Older

- Large variation in availability of rehab beds per population across LHINs
- Efficiency in acute care very dependent on access to post-acute services



# HBAM 2012/13 Inpatient Rehabilitation Service Model Results

- Most LHINs actual rehab activity was within 1% of HBAM expected
  - Toronto Central provided slightly less activity than expected
  - Central East (with one fifth the beds per population as Toronto Central) provided 6% more activity than expected

LHIN Name	Actual Rehab Wtd Cases	Expected Rehab Wtd Cases	Actual Over Expect.
Central Total	4,012	4,003	100%
Central East Total	3,450	3,259	106%
Central West Total	835	830	101%
Champlain Total	4,250	4,231	100%
Erie St. Clair Total	2,224	2,235	100%
HNHB Total	3,486	3,482	100%
Miss. Halton Total	3,239	3,167	102%
North East Total	1,430	1,470	97%
North West Total	646	661	98%
NSM Total	846	937	90%
South East Total	1,011	1,043	97%
South West Total	2,464	2,498	99%
Toronto Central Total	7,248	7,311	99%
Waterloo Well. Total	1,194	1,211	99%
Grand Total	36,335	36,338	100%

## HBAM Service Model – Person Profile

### Original Description:

- “A person profile is created *for each Ontario resident*”
- Necessary for a true population-based model
- Requires mechanism to assign every person to a category reflecting their need for care
  - “Population Risk Adjustment Grouper” (e.g. Johns Hopkins Aggregates Diagnosis Groups, used by ICES)

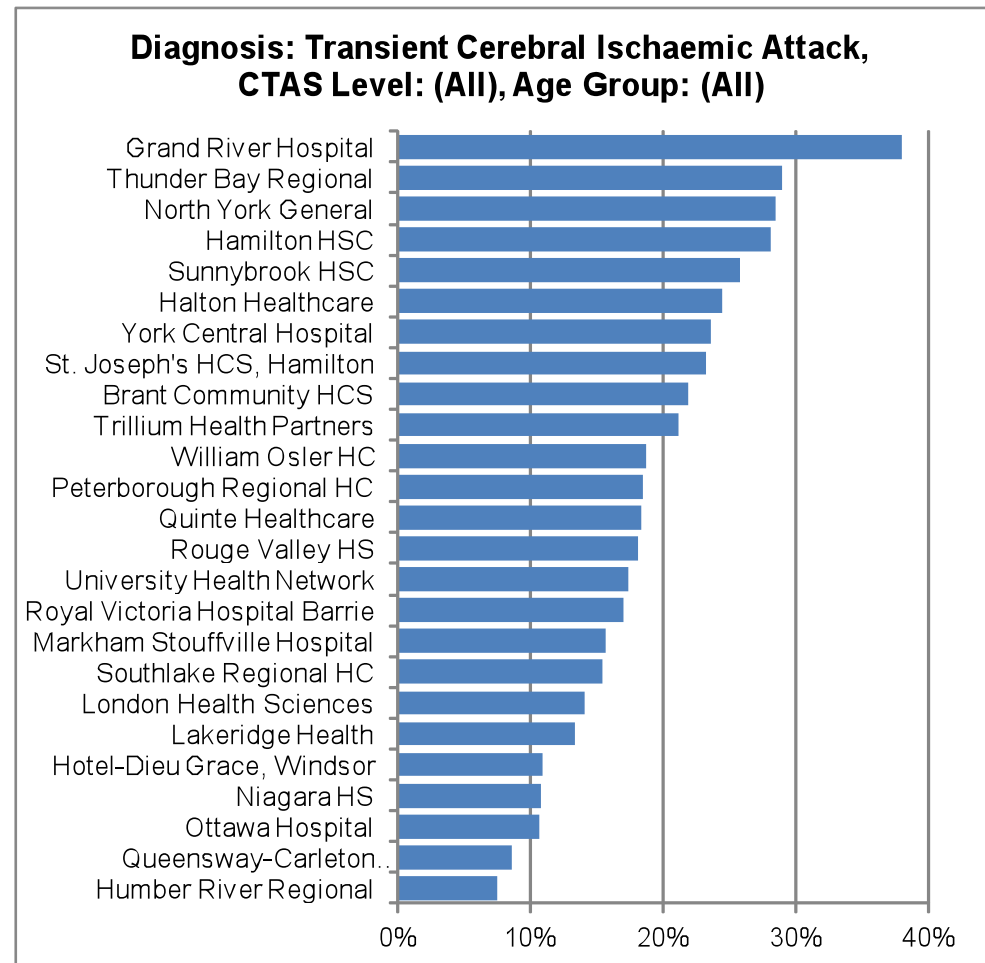
## HBAM Service Model – Person Profile

### Revised Description:

- “A person profile is created for each Ontario resident ***that received care funded by the Ontario Health Insurance Plan (OHIP) in an Ontario hospital.***”
- No longer looks at entire population, only hospital patients
- Compares intensity of service **per patient**
  - If admit patients who would not be admitted in other hospitals, can reduce average intensity of service and thus will be characterized as providing less ‘service’ than expected.
  - More likely to be characterized as under servicing the ‘population’

# % of ED TIA Patients Admitted to IP Acute Care – 2012/13 Hospitals > 200 Visits

- Admission of TIA patients presenting at ED varies from 8% to 38% in highest volume hospitals
- Other hospitals admit 80% of TIA ED patients



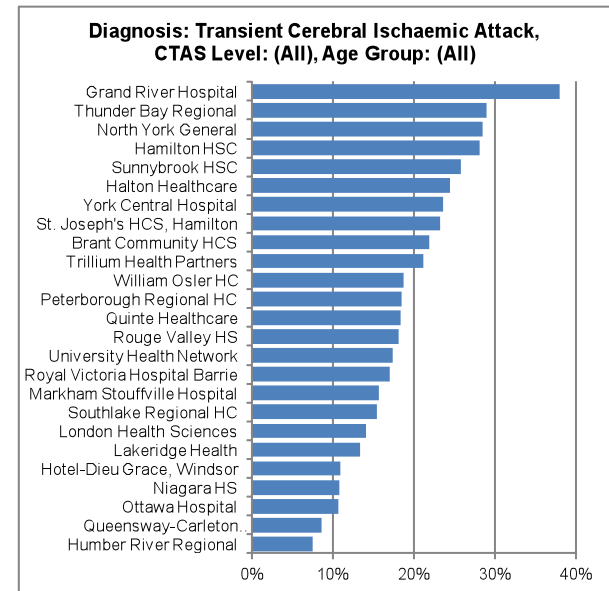
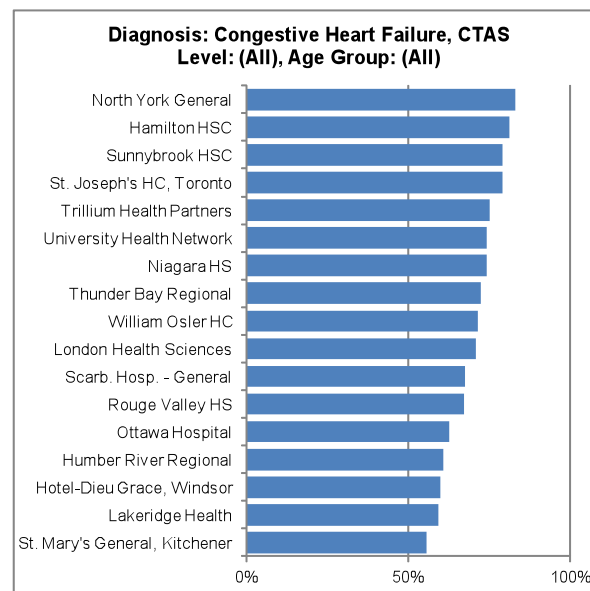
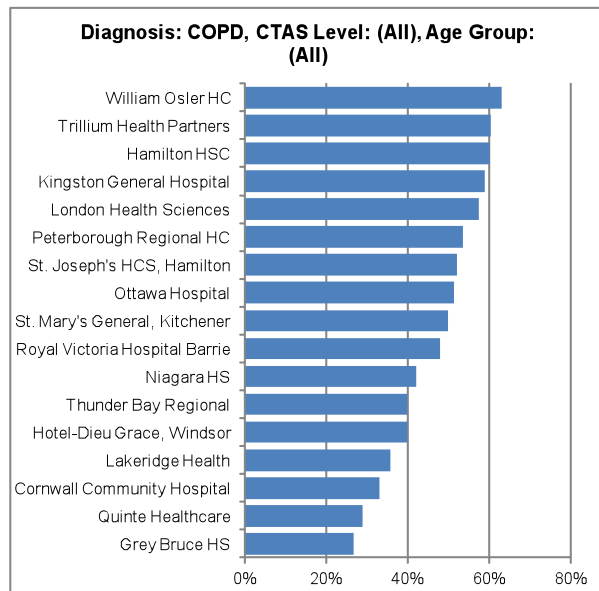
Also an issue of  
inadvertently  
perverse  
incentives within  
QBP funding

## HQO COPD Expert Panel – Incentives for Inappropriate Utilization

- “The Expert Panel recognized that in defining COPD patient groups largely based on utilization and disposition there is the potential for **perverse incentives** to be created when these groups are assigned “prices” in a funding methodology. The cost of an average admitted COPD patient is often more than 10 times the cost of treating and discharging a COPD patient in the ED. If prices for the QBP funding system reflect these costs, **care must be taken to ensure hospitals are not incentivized to admit greater proportions of patients for a higher payment.**
- The QBP funding system can potentially mitigate these risks through bundling payment across the ED and inpatient settings, and setting policies around appropriateness.”

# Variation in Admissions via ED for Selected QBP

- What drives variation in propensity to admit ED patients?
  - Severity of illness, comorbidities, availability of ambulatory and community resources, home support, physician practice, ...or funding system incentives?



Need for HBAM  
and QBP funding  
to more effectively  
address issues of  
variation in clinical  
practice

# Getting funding models to address variation and incent best practices

- Need to return to first principles
- A true population-based service funding methodology:
  - would be based on population need and
  - would incent appropriate system responses to need
- A true quality based procedure funding methodology:
  - would be based on best practices related to both:
    - Admission decisions and
    - processes of care
  - would be based on best practices for the full episode of care
  - would incent adoption of these evidence-based best practices
- Incentives in funding methodologies should be:
  - aligned with best practice evidence
  - transparent and easily understood
- Masking (or ignoring) variation in populations' use of health services is:
  - keeping us from addressing significant, potentially inappropriate variations in clinical practices
  - Leaves us focusing on cost reduction through increasingly elusive improvements in efficiency
- It is time to review the current Ontario approaches to health system funding reform with consideration of a return to and/or a more comprehensive adoption of:
  - the original, population need-based concept of the HBAM service model
  - the original evidence based best practice model of QBP funding model

Questions



Comments