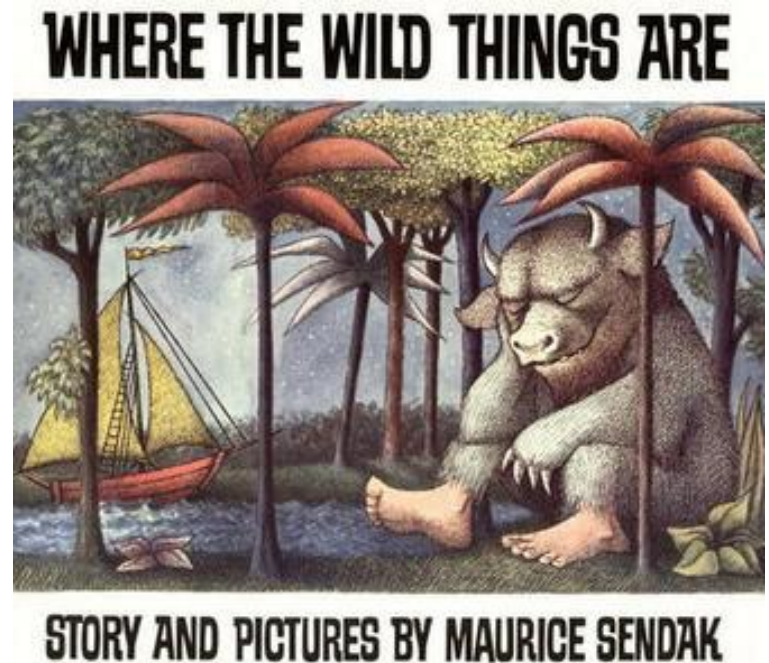


Boomerangst: Is Canada Afflicted? *Will Canada be Able to Afford its Aging Population?*

- Canada's demographic future
- where the fears are – health care costs, especially long term care
- (also public pensions...)

Michael Wolfson, uOttawa

**Acknowledgements: Bonnie-Jeanne Macdonald, Russ Robinson &
COA Experts Panel on Income Security, CIHR grant, John Hirdes**





“OK Boomer”?

“To portray America as riven by generational warfare, young against old, is therefore an exaggeration. Worse, it obscures a deeper divide, of class rather than age. ...The big problem of the American welfare state is not that the old get too much, but that the rich do.” (Economist, January 11, 1997)

NATIONAL

War of the ages

The generational divide is society's new battleground, pitting boomers against millennials and everyone in between. Who's really to blame?

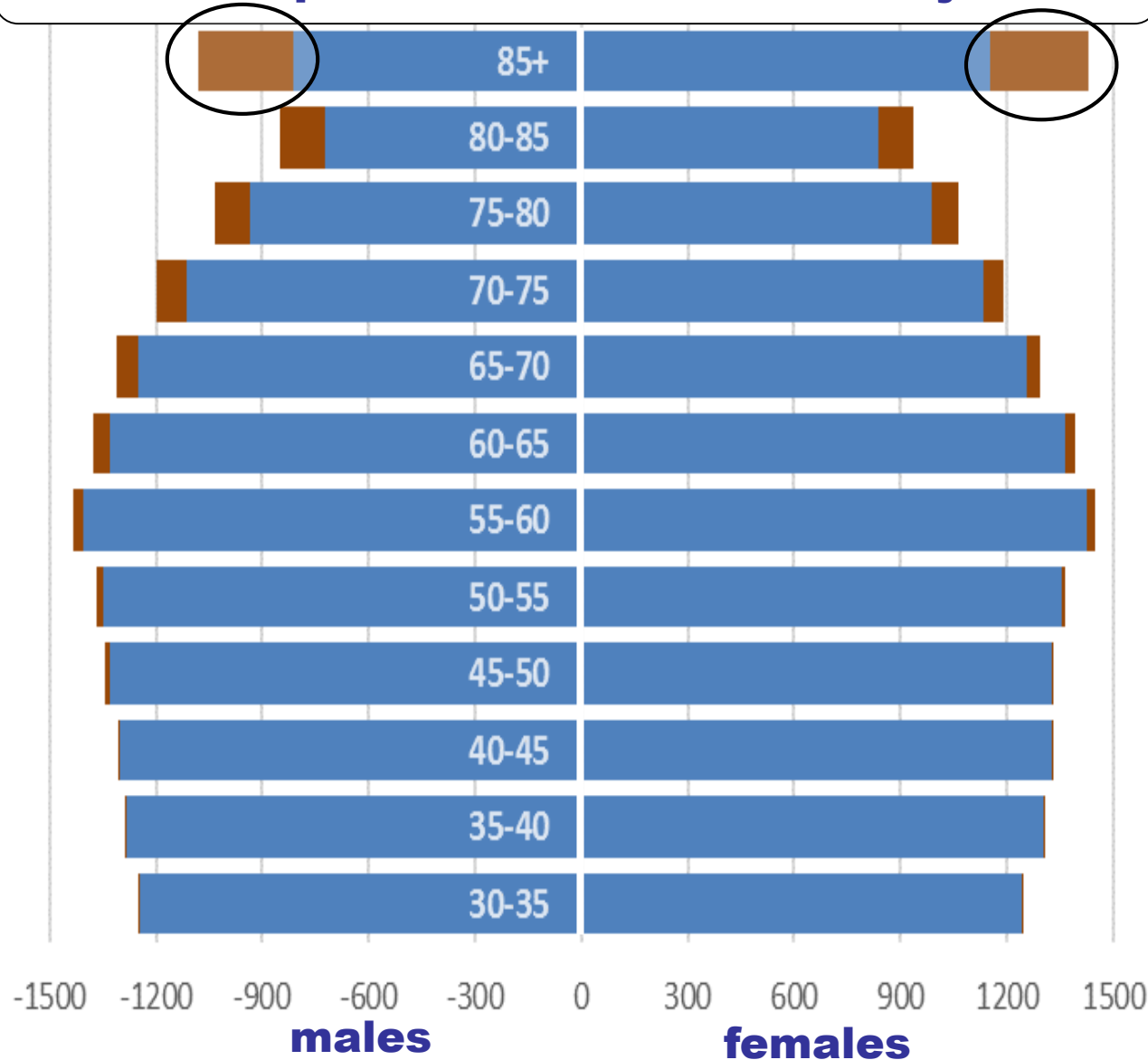
MARIE-DANIELLE SMITH | FEBRUARY 1 2020

**We Can
Expect to be
Living Longer,
So There Will
Be
Significantly
More
Canadians
Age 85+**

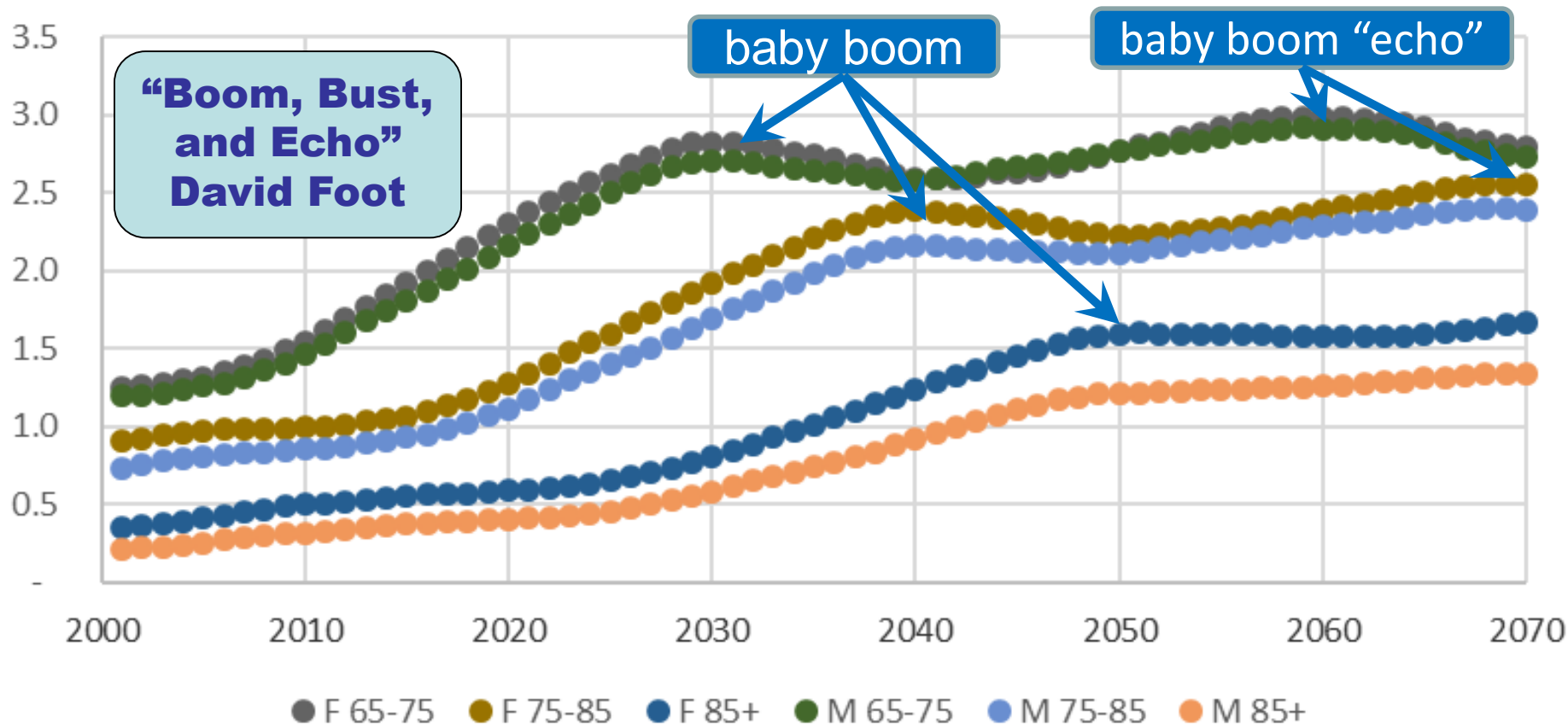
**(according to Stat
Can's middle
scenario)**

**(ignore minus signs
for males; it is a trick
to get Excel to make
this graph)**

Population (000s), Projected to 2050, with and without Expected Declines in Mortality Rates

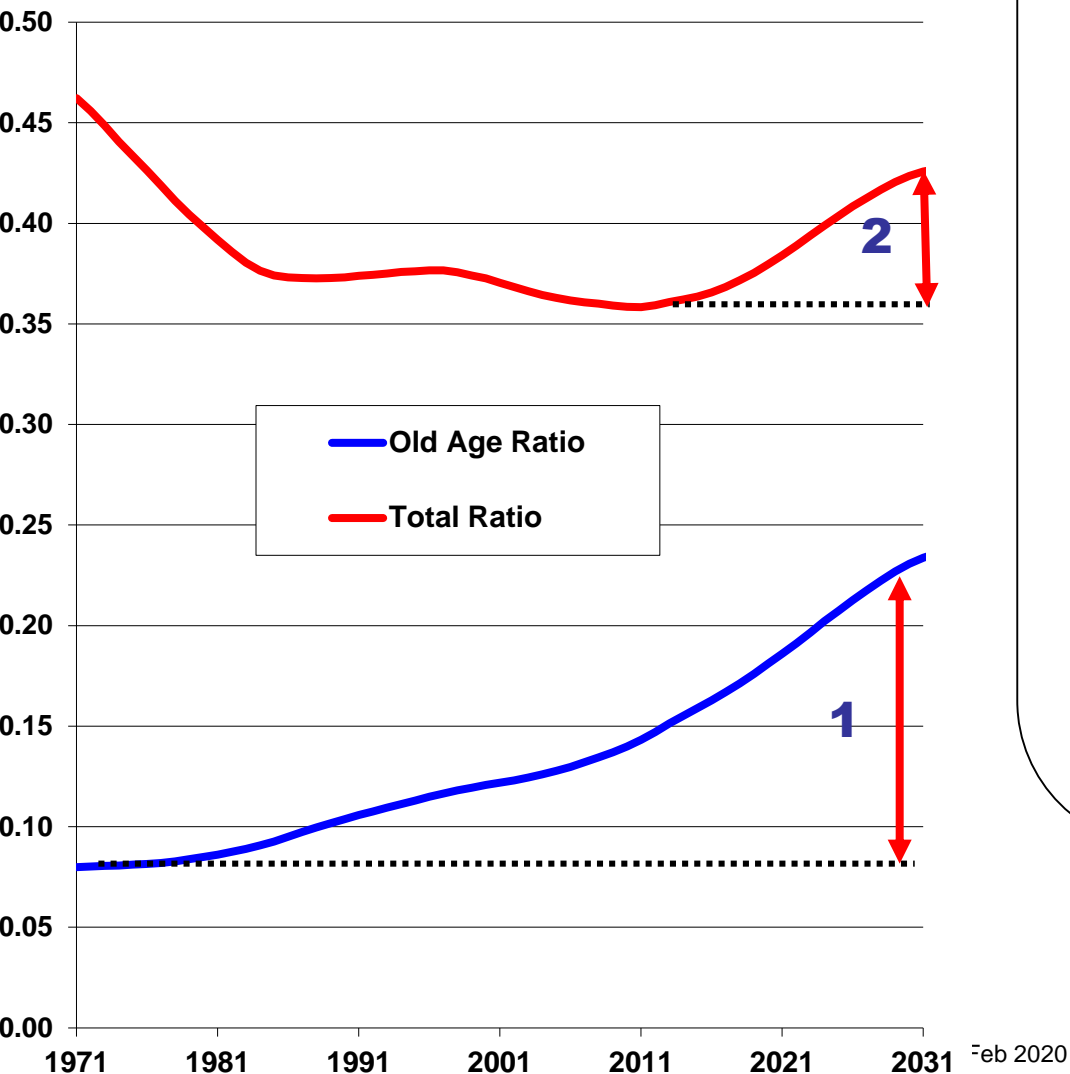


Projected Population (millions) by Age Group and Sex



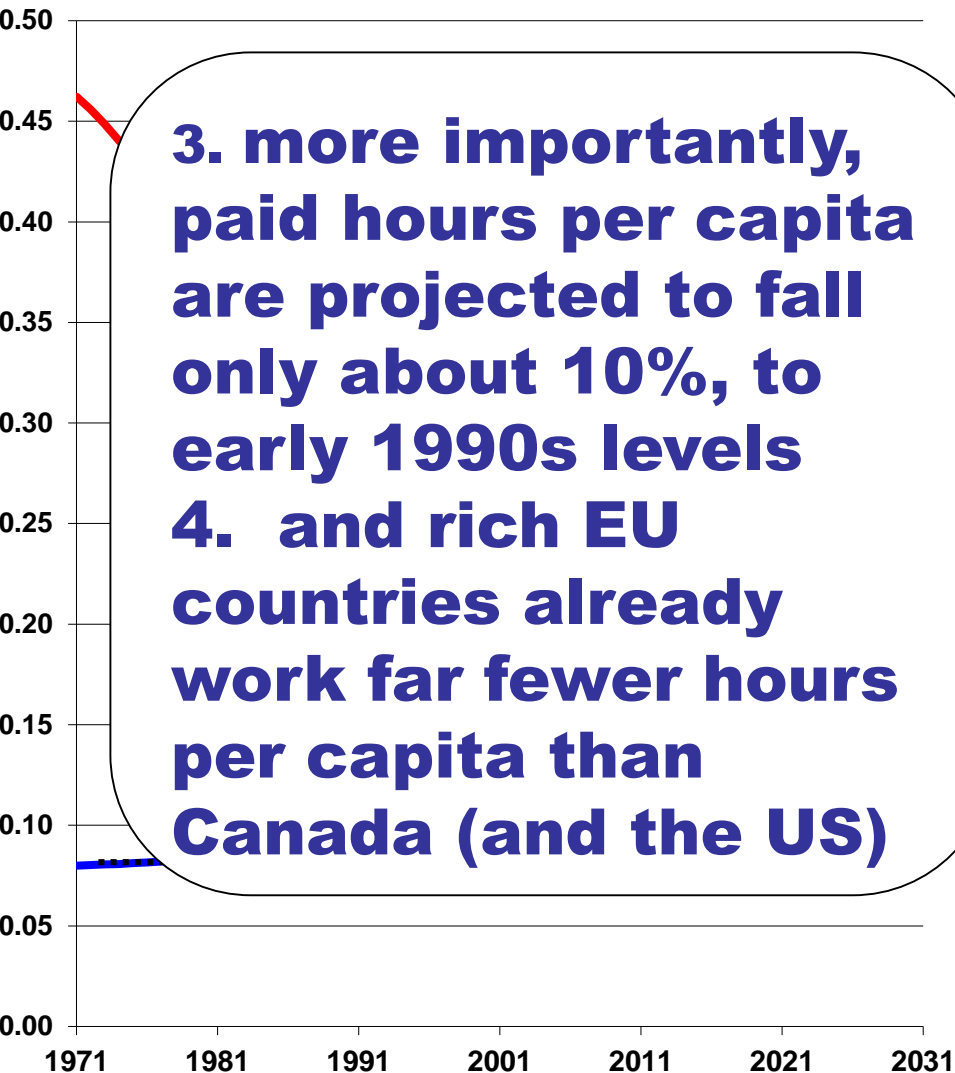
- peak of the “baby boom” reaches ages 65 to 74 around 2030
- they reach ages 75 to 84 10 years later around 2040, and ages 85+ after 2050
- children of the baby boom (“echo”) reach 65+ around 2060

Old Age and Total “Dependency” Ratios (Body Counts)

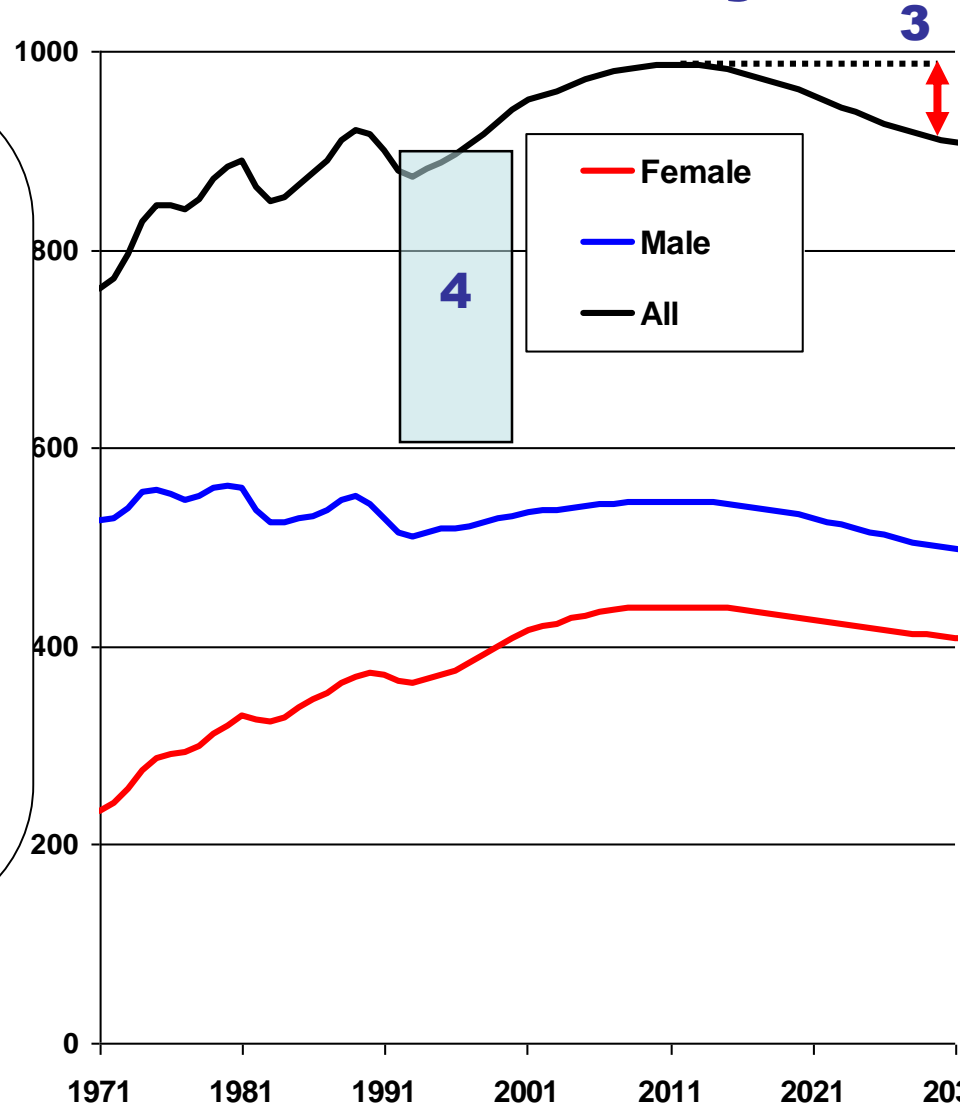


1. yes, the ratio of the population age 65+ will increase to almost 25% by 2031
2. but there will be fewer young people (age < 18) so the “total dependency ratio” will not increase by nearly as much

Old Age and Total “Dependency” Ratios (Body Counts)



Per Capita Annual Hours of Paid Work in the Economy



Grey Tsunami and Demo Doom?

- Canada's "body count" old age demographic ratio will increase substantially as the baby boom cohort reaches age 65
- but using a more relevant measure, paid hours per capita, Canada's level
 - is projected to fall by less than 10%
 - and will remain about 30% higher than a number of wealthy EU countries that today already have higher (conventionally measured) old age "dependency" ratios

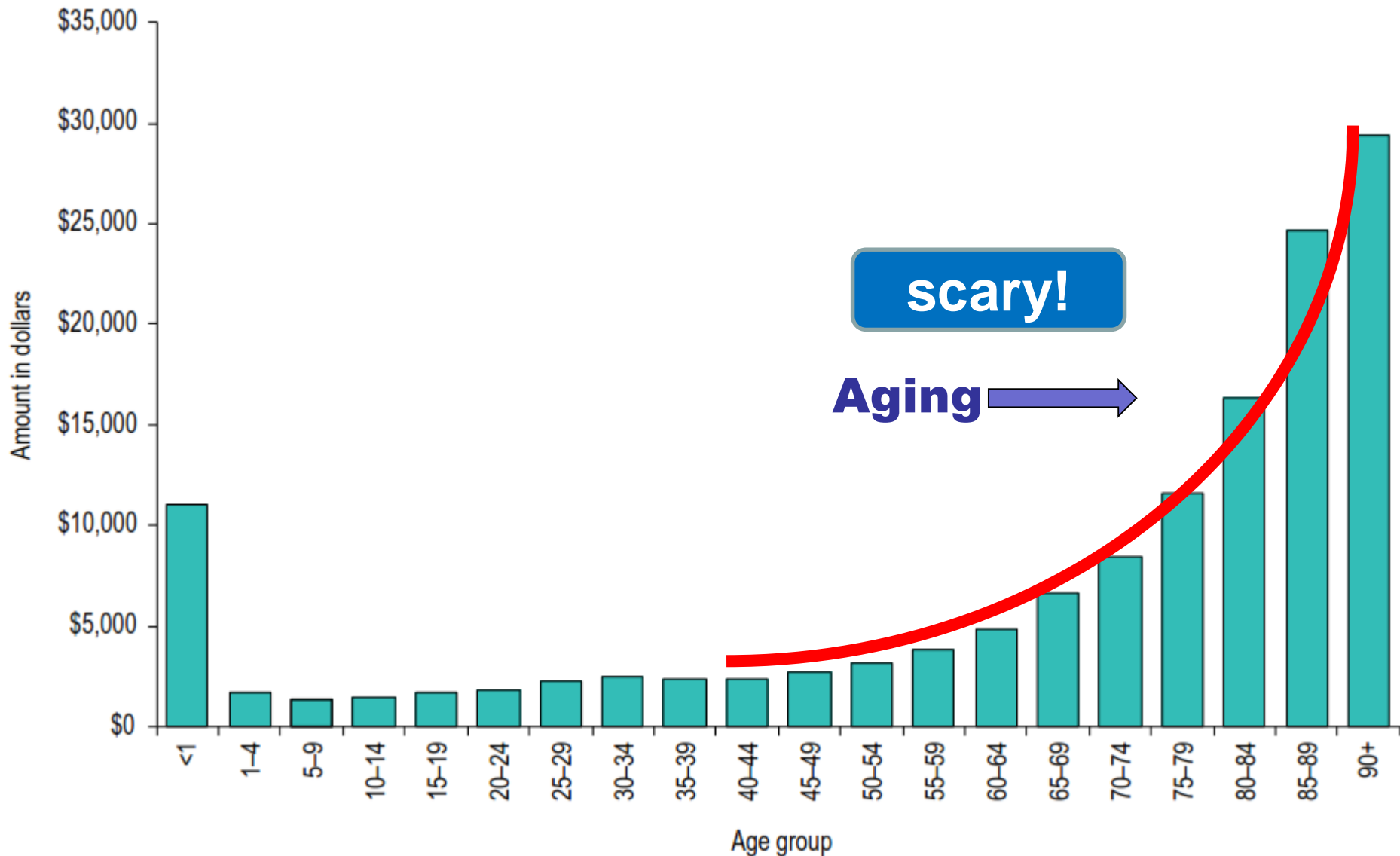
(n.b. this analysis is over a decade old; unfortunately it has not been updated, and funding for the underlying LifePaths model was cut)

What About Public Health Care?

- public expenditures currently at ~7% GDP
- let's look first overall
- then a bit on hospitals
- more on long term care (LTC)



Provincial / Territorial Per Capita Government Health Expenditures (\$) by Age Group, 2015

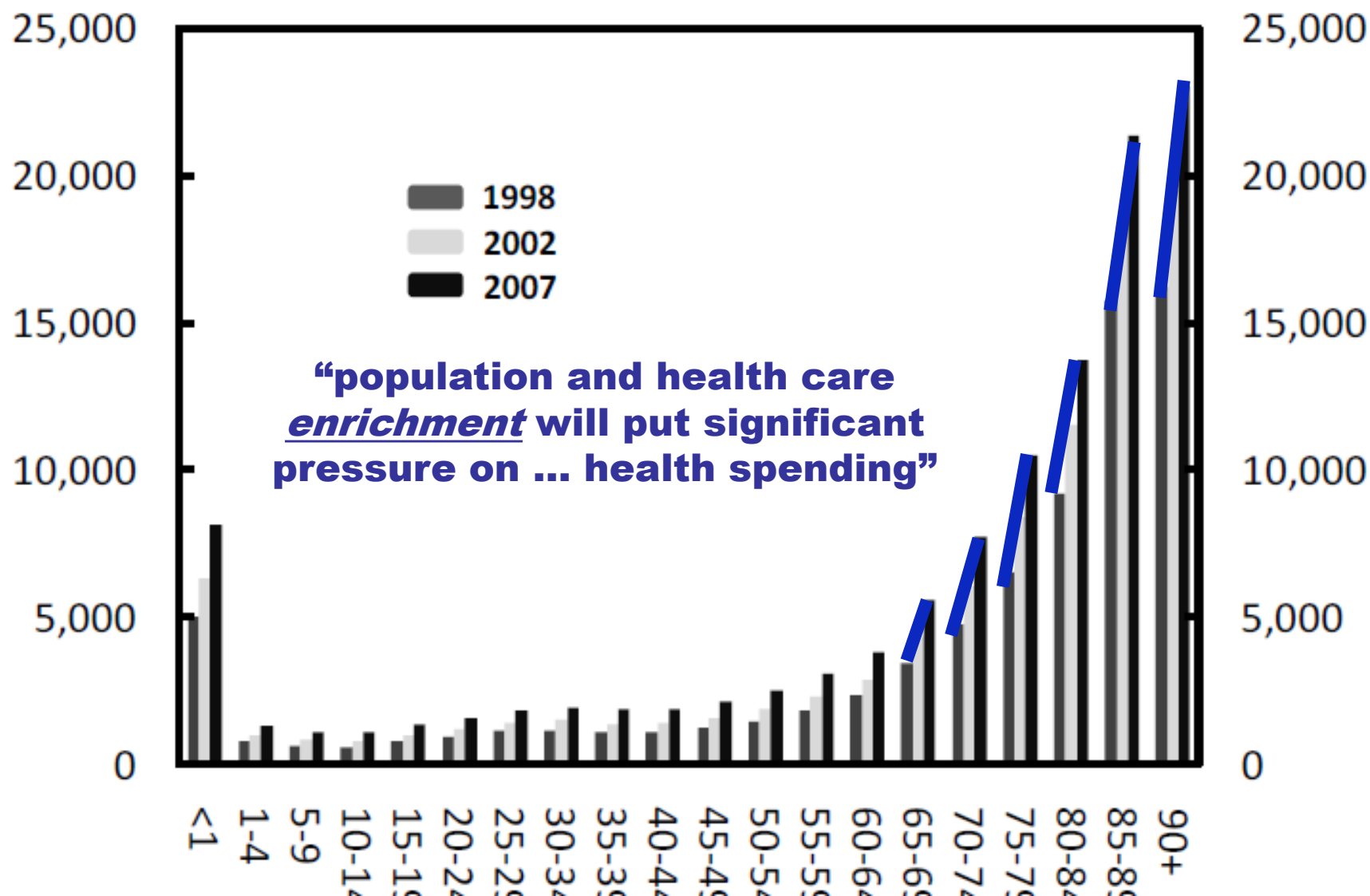


Provincial-Territorial Government Health

Expenditures by Age Group

(Parliamentary Budget Office,
Fiscal Sustainability Report, 2010)

(Dollars per capita)



Consider Small Area Variations

Component of Statistics Canada Catalogue no. 82-003-X
Health Reports

Article

Variations by health region in treatment and survival after heart attack

by Helen Johansen, Julie Bernier, Philippe Finès,
Susan Brien, William Ghali and Michael Wolfson
for the Canadian Cardiovascular Outcomes Research Team

May, 2009



Statistics
Canada

Statistique
Canada

Produced by the
Institute for Clinical Evaluative Sciences
with the support of the Heart and Stroke Foundation of Ontario

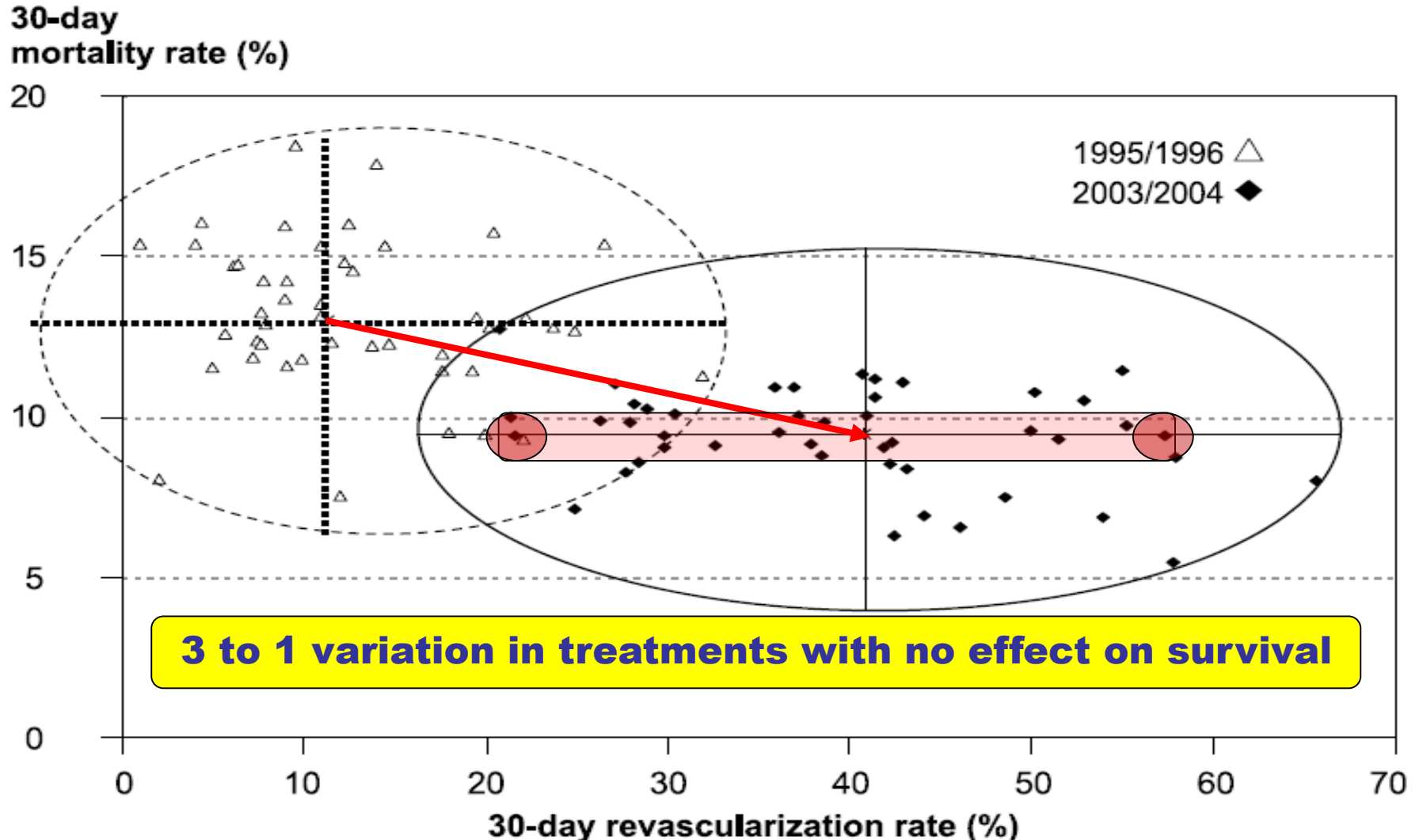


the dots”

Canada

connect

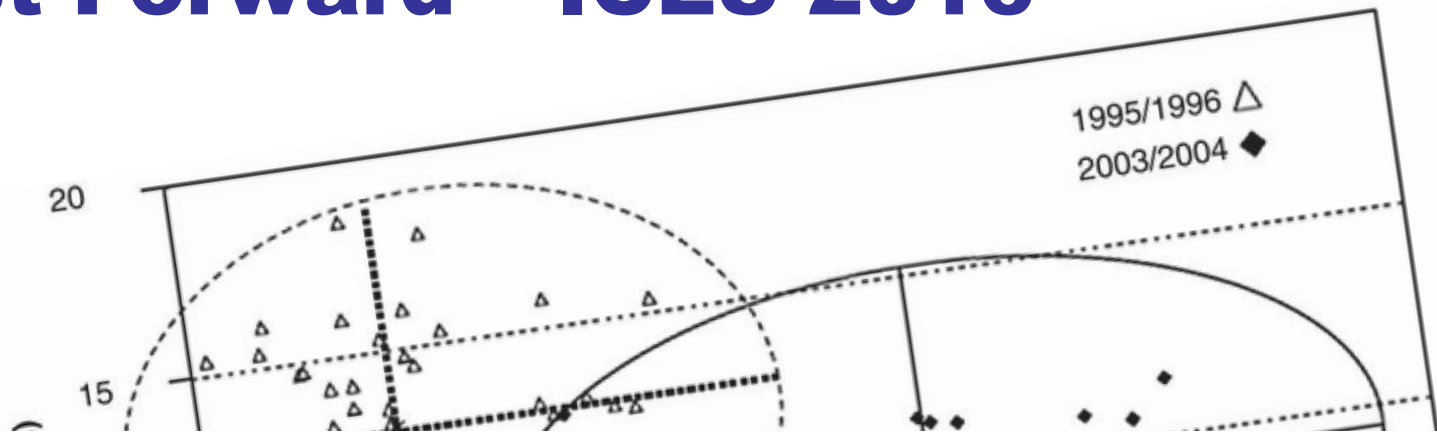
Heart Attack Survival in Relation to Treatment by Health Region, Seven Provinces



Important Caveats for the AMI → Revascularization → Mortality Results

- other clinical aspects of treatment not taken into account, e.g. thrombolysis, post discharge Rx
- no risk factors considered – e.g. obesity, physical fitness, smoking, hypertension, lipids
- no socio-economic factors considered
- n.b. in related analysis, co-morbidity (Charlson Index) was included, with one-year (versus 30 day) mortality follow-up – results essentially unchanged
- revascularization is also intended to relieve symptoms, but no health-related quality of life (HRQoL) data available

Fast Forward – ICES 2016



Is the Growth of Post-AMI Coronary Angiography and PCI Driven by Evidence or by Improved Service Availability?

Nonetheless, the utilization of coronary angiography and PCI is still likely driven by variations in hospital access to on-site cardiac catheterization and PCI facilities, **irrespective of clinical evidence** (Yeh et al. [2010](#)). For example, as demonstrated in Fig. 1 below, wide variations in revascularization post-AMI still exist, suggesting the presence of unexplained factors driving utilization beyond

Fig. 1
Thirty-day revascularization and 30-day mortality rates of acute myocardial infarction patients, seven provinces (NS, NB, QC, ON, Man, Sask, AB), 1995/1996 and 2003/2004 (Stats Canada [2009](#))

Grey Tsunami of Health Care Costs?

- heart attack example: major unexplained variations remain \Rightarrow there is opportunity for substantial expenditure reductions without any adverse effects on population health
- primary care reform (plus scope of practice: physicians \rightarrow nurse practitioners) + pharmacare
- \Rightarrow opportunities for major cost savings
- what about long term care (LTC = home care and nursing homes)?



LTC Projection Method

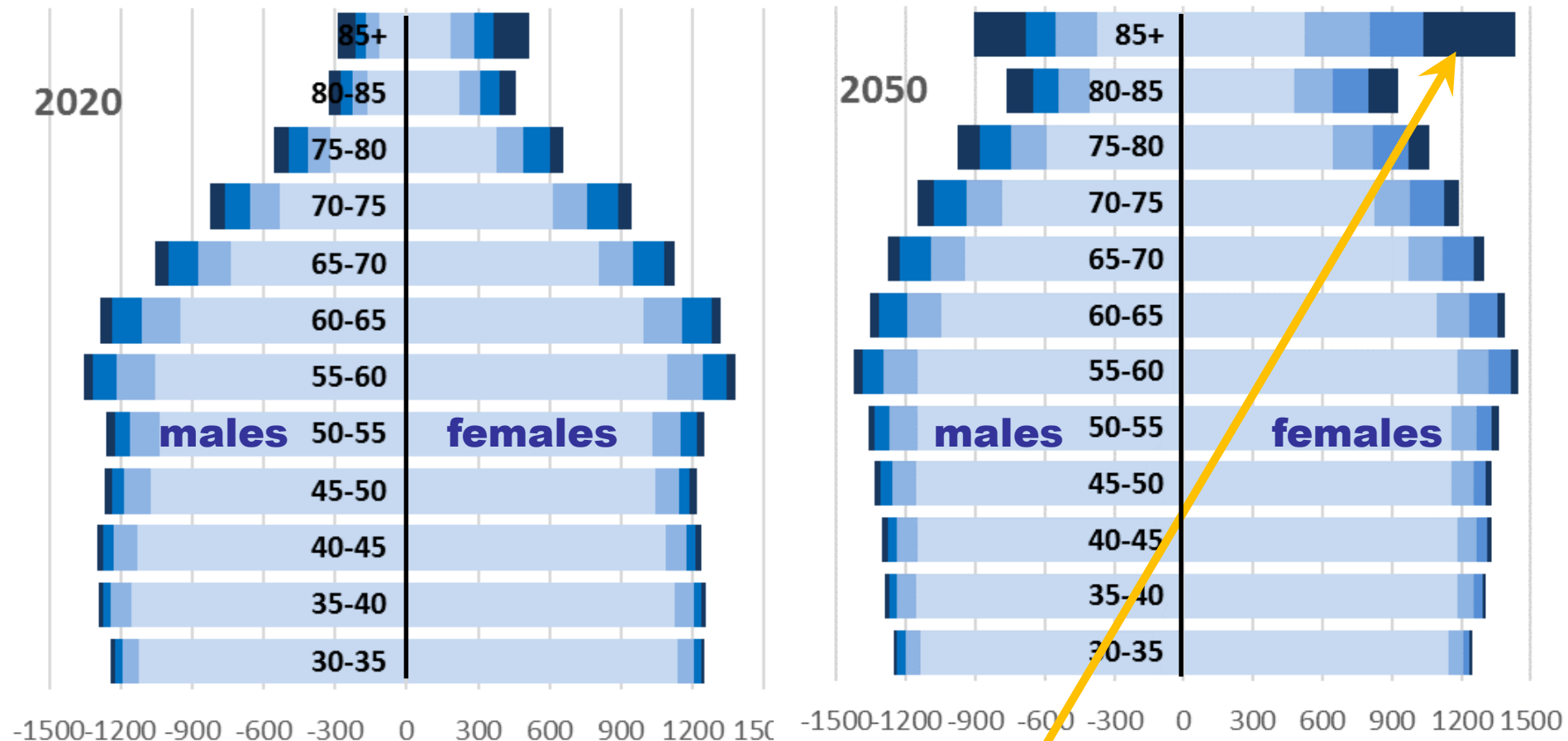
- use Statistics Canada's LifePaths model
 - was widely used for pension policy analysis
 - unfortunately mothballed after 2010 (budget cut)
 - but source code still available (for brave geeks 😊)
 - major thanks to Bonnie-Jeanne MacDonald
- sophisticated disability dynamics estimated using 1994 to 2008 NPHS (Geoff Rowe)
 - recalibrated to recent CCHS
 - using simplified mild / moderate / severe disability classification cross-walked between McMaster HUI and interRAI (thanks to John Hirdes)
- private pay retirement residences – population estimates - 2011 census (collective dwellings)

Projection Key Assumptions

- OAS / GIS effectively wage indexed
- individual income tax also wage indexed (to avoid bracket creep with current CPI indexing)
- “dynamic equilibrium” for disability prevalence \equiv ratio of HALE (health-adjusted life expectancy) to LE (life expectancy) generally constant
 - based on Stat Can study of 20-year historical data
- LTC (long term care) \equiv HC (home care) & NH (nursing home) services modules added
 - unit costs increase in line with overall average wages

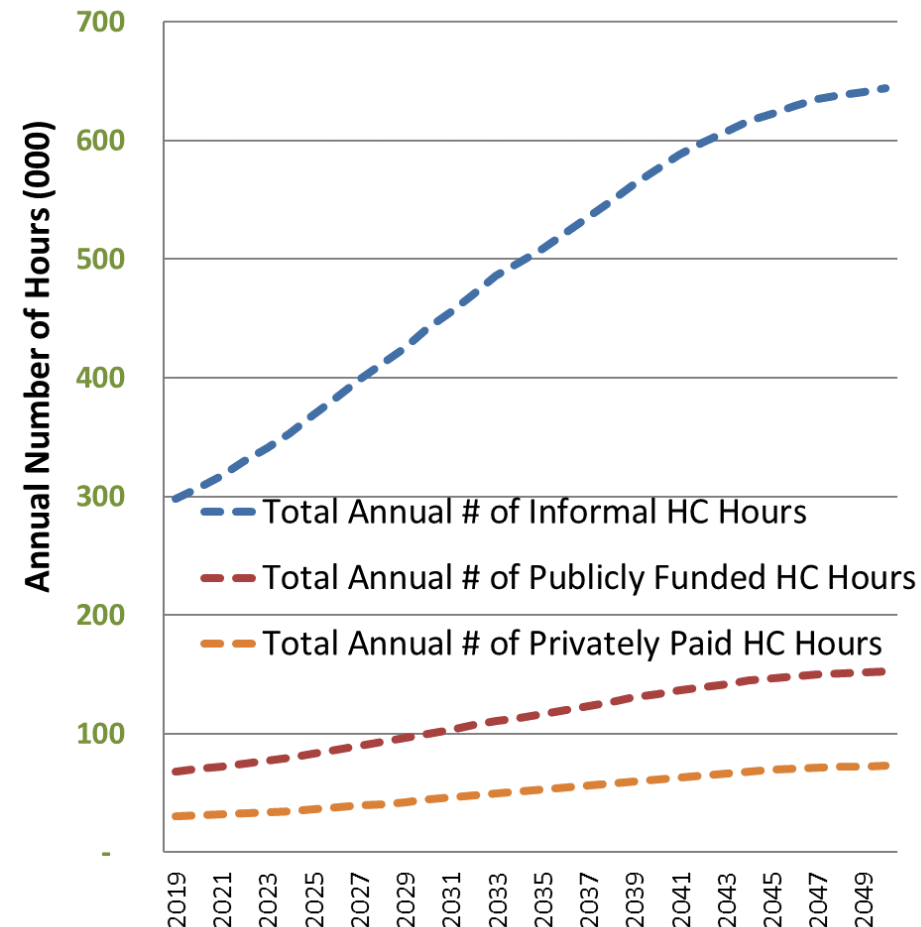
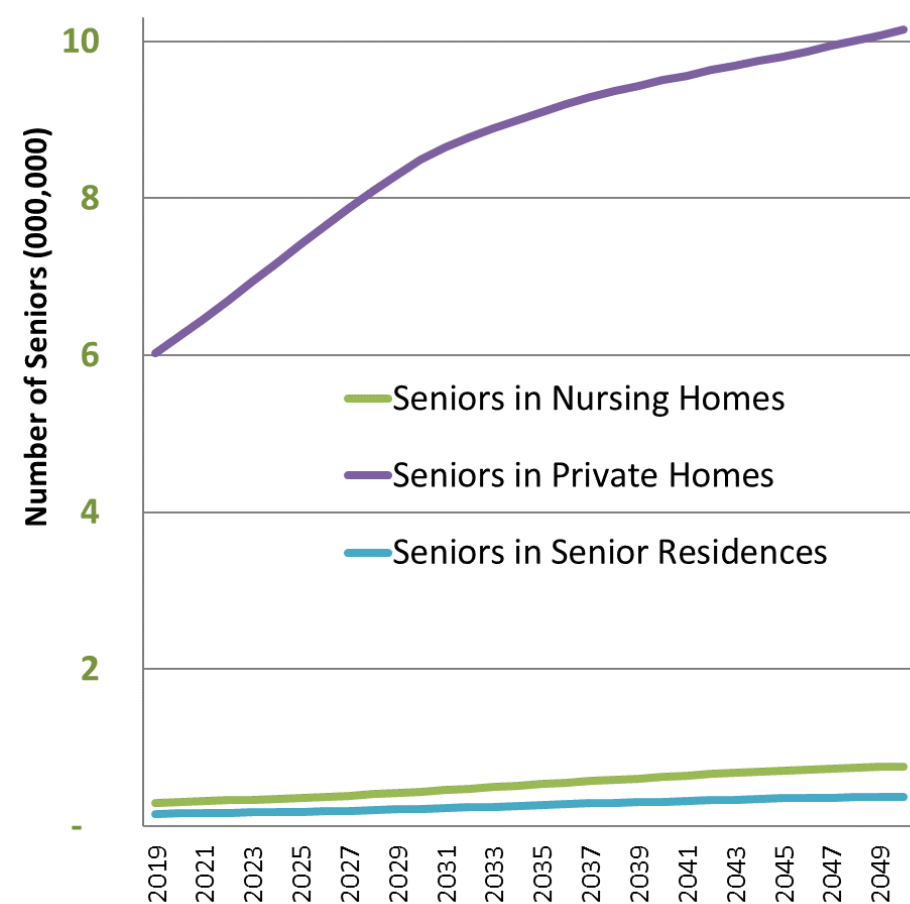
Projected Disability Trends Population (000s)

Pyramids (darker = more disabled)



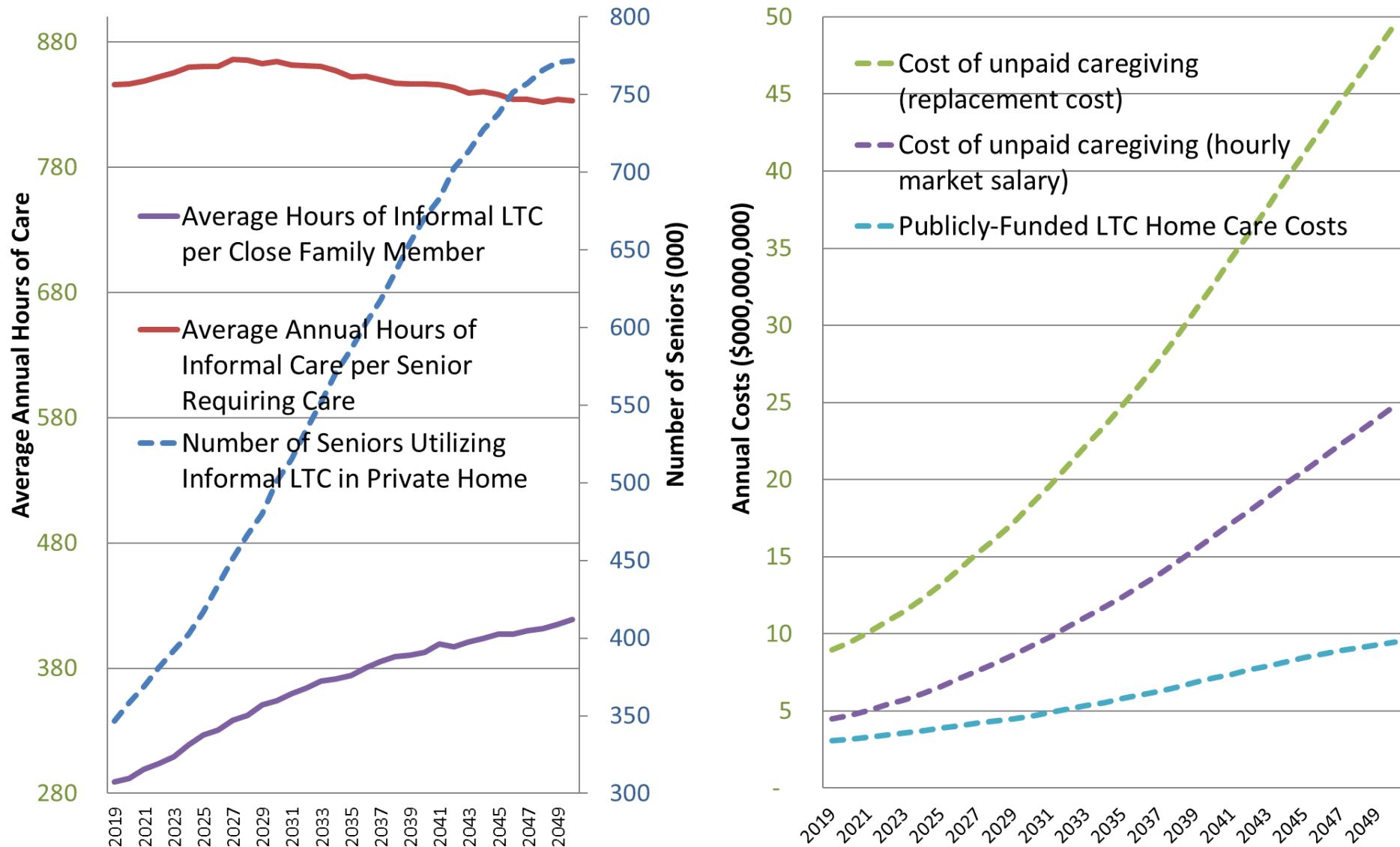
- dramatic increase for ages 85+
- n.b. ~30 years from now

Numbers of Seniors and Hours of Care



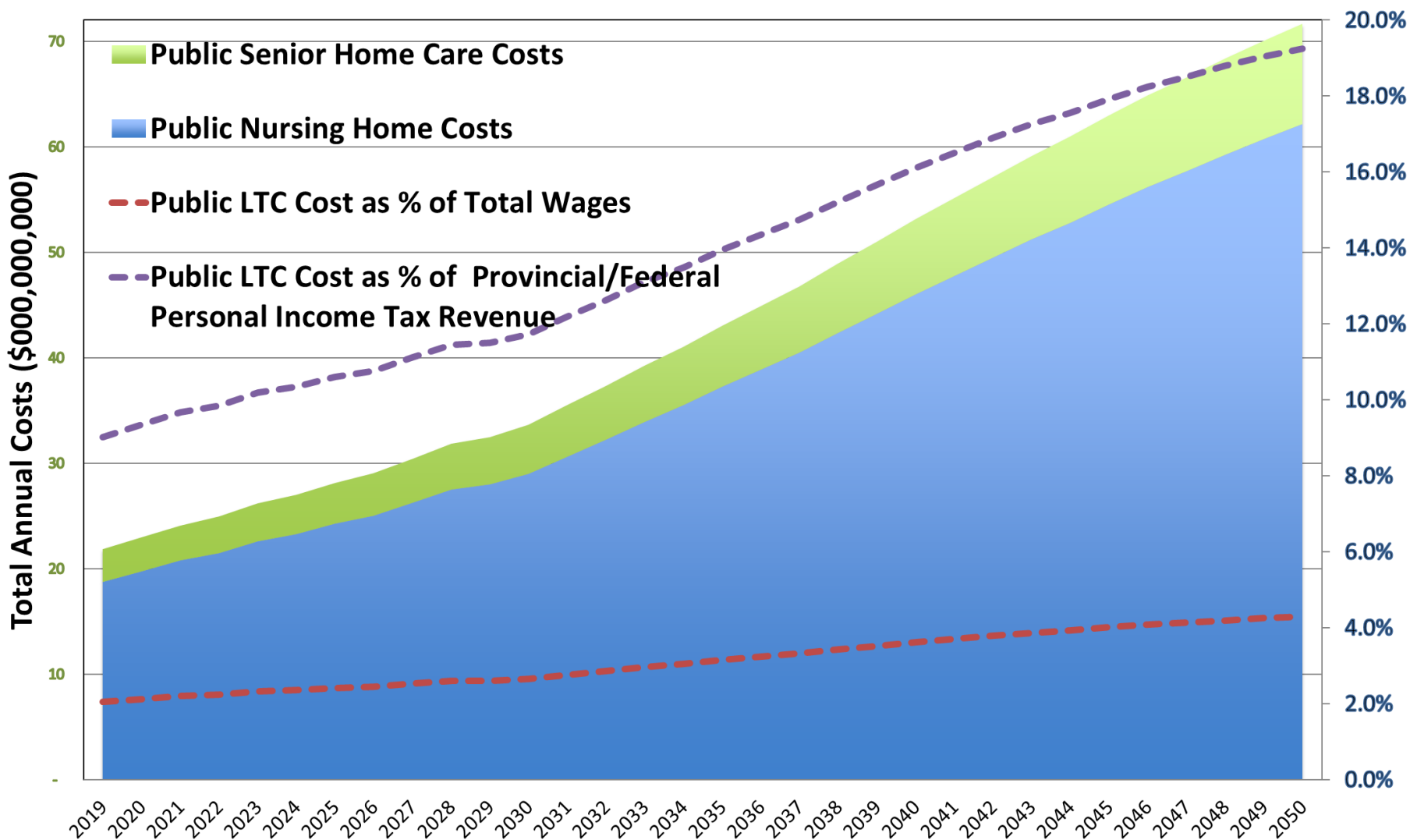
<https://www.nia-ryerson.ca/s/The-Future-Cost-of-Long-Term-Care-in-Canada.pdf>

Informal Hours and Costs of Care



<https://www.nia-ryerson.ca/s/The-Future-Cost-of-Long-Term-Care-in-Canada.pdf>

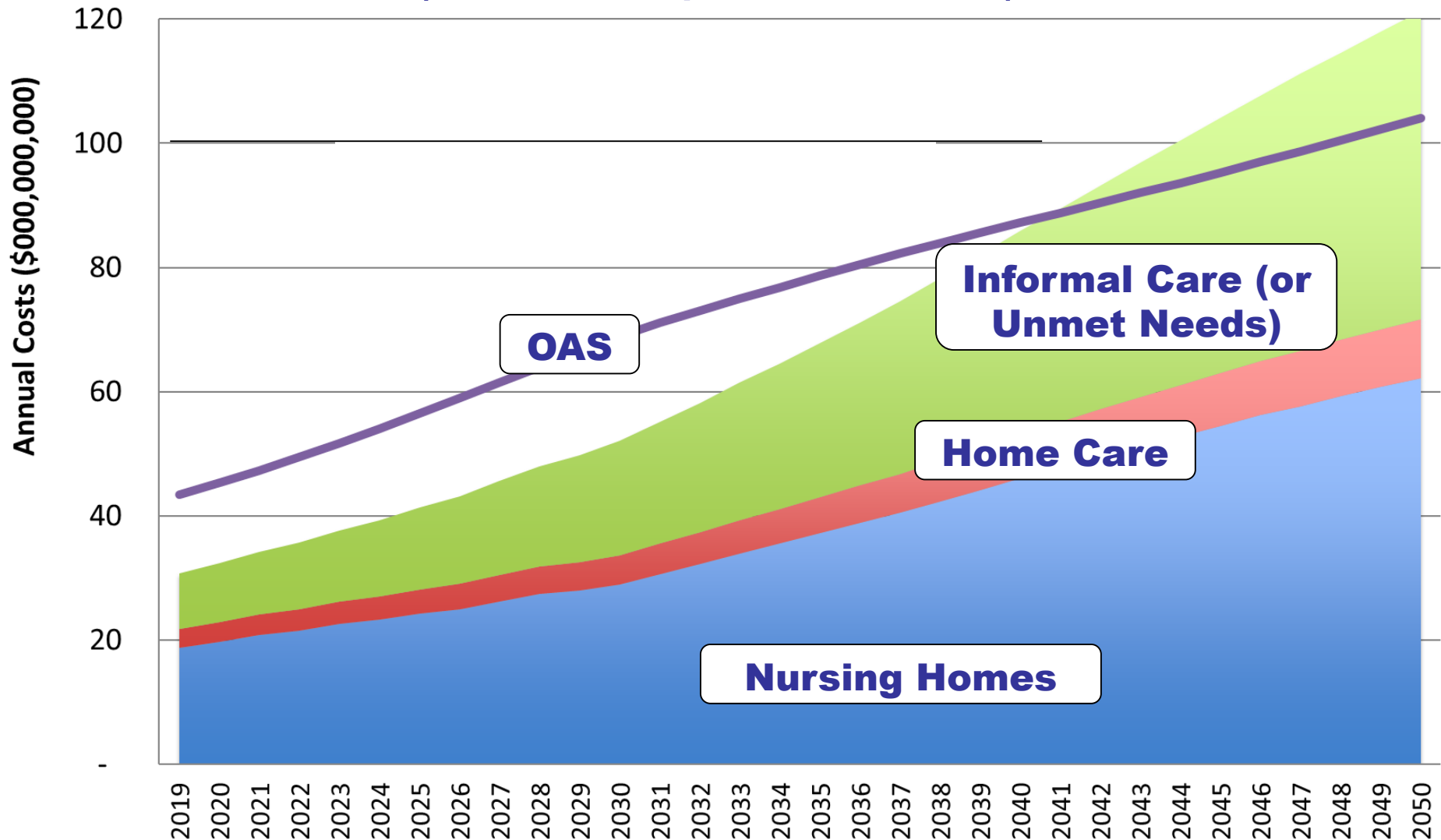
Projected Aggregate and Relative Costs



<https://www.nia-ryerson.ca/s/The-Future-Cost-of-Long-Term-Care-in-Canada.pdf>

Projected Total Costs (\$ billions) of Nursing Homes, Home Care, OAS and Informal Care

(valued at “replacement cost”)



Uncertainties – Projection Inputs

- current / recent patterns of LTC utilization
 - extrapolated from Ontario interRAI, CCHS, census
 - recall 2004 & 2017 Health Accords – no new data ☹
- current / recent provincial budget costs of LTC
 - last Residential Care Facilities survey 2014
 - OECD Health Accounts, hence CIHI, exclude non-health = the bulk of home care?
 - assume \$30/hour for HC, \$175/day for NH
- extent of unmet needs for LTC
 - recently in CCHS; previous survey questions changing, not designed for projection modeling
- who provides informal LTC care, and how much
- how does extent of care affect frailty progression

Uncertainties – Broader Future Unknowns

- new technologies: e.g. exoskeletons / GPS bracelets for dementia wandering / home sensors for falls / robot puppies
- breakthrough treatments for dementia
- retirement income *inadequacy* → cannot afford private LTC
- dramatic rise in antibiotic resistant infections
- long term slowdown in economic growth
- unexpected trends in life expectancy (LE) and compression or expansion of morbidity / frailty
- major declines in kin available for informal care



Uncertainties – Future Public Policies

- unavoidable pressures to increase PSW = personal support workers' wages (and training / credentials)
 - allow more immigration for PSWs (import labour)?
- more revenues from general taxation, or a move to (partial) social insurance pre-funding
- provinces fail to control hospital / physician / drug costs, so continue to lag even more in shifting funding from acute care to LTC
 - or provinces become more sophisticated re “LTC Lite”
- provincial differences in demographics and government cost controls lead to more pressures on fiscal equalization
- cities fail to adapt zoning and transportation such that LTC costs (especially home care) spiral up: “aging in place”(s) where services are expensive to deliver
- more prevention / avoiding isolation: better day care / multi-age dwellings / better respite care + family mediation

Bending the Cost Curve ?

- more obvious factors
 - control PSW wages
 - shift \$\$ from acute care (hospitals ALC = alternative levels of care) to long term care
 - pre-funding via social insurance ?
- speculative factors – new technologies
- built environment / housing / transportation
 - vast majority of public / media attention in the housing area is to the homeless and to young people not being able to afford a first home ⇒ less attention to looming issues for seniors needing care
 - n.b. multi-decade adjustment times ⇒ now is not too soon to start with smarter urban planning


Quick Digression on Urban Structure – Gravity Model

- longstanding theory: gravity model
 - population density and other urban characteristics are concentrated in urban core
 - tail off non-linearly with distance from the core
- future frail seniors now often living in suburban / lower density areas far from service
- if they “age in place” and lose drivers licenses ⇒
 - more social isolation
 - harder to provide in home and local community services

Is This What We Mean by “Walkability”?



Left to Market Forces, the Urban Core


An aerial photograph of a city at night, showing a dense urban core. The city is illuminated by streetlights and building lights, with a large stadium visible in the foreground. The city extends to the waterfront, where several ships are docked. The background shows a large body of water and a distant shoreline.

There are major pressures for density to increase dramatically closer to the urban core.

And Urban Sprawl Further from the Core



**How easy would it be to
“age in place” here,
especially without a
driver’s license**



**How much more
convivial would it be to
live (without a car) in
dwellings like these?**

**And how much more
efficient would it be to
provide home care and
various services?**



New Official Plan

The Building Blocks for a
Healthy Ottawa

What is a Healthy Built Environment?

The built environment is the physical and human-made world around us (e.g., roads, pathways, buildings, parks). A healthy built environment is the physical layout and design of communities that improves people's health through behaviour, lifestyle, and protection from health hazards.

1. Transportation Networks

The transportation system forms the veins of the City. It is fundamental to daily life, allowing people to get around to where they need to go, and connect with each other. The physical design of the transportation network impacts how people decide to travel - whether by automobile, transit, bicycle, other forms of wheeling, or on foot. This includes the design and layout of roads and streets, sidewalks and pathways, and the accessibility of public transit.

https://documents.ottawa.ca/sites/documents/files/op_discuss_paper_health_en.pdf



New Official Plan

The Building Blocks for a
Healthy Ottawa

2. Housing

Home is the place where people spend most of their time. It is where we connect with friends and family, eat meals, rest and sleep. Housing is a basic human right - but people experience different standards of housing.⁹⁰ The quality, cost, design, and location of a home, as well as the availability of local shops, services, amenities, and the surrounding transportation system, all affect people's satisfaction and enjoyment of their homes.

With the population aging, there will need to be more housing to help people age in place, in their community. A mix of housing options to meet needs across life stages are required throughout Ottawa's communities, and this includes providing affordable quality housing.



New Official Plan

The Building Blocks for a
Healthy Ottawa

5. Neighbourhood Design:

The design of neighbourhoods includes how land uses and transportation networks are arranged in relation to each other. Neighbourhood design also impacts the look and feel of a community, and influences lifestyles and behaviours, such as whether people choose to travel on foot, by bike, or by car. It involves the design of the public realm, which is for everyone, and can help create socially inclusive communities. Neighbourhood design affects how walkable communities are - people's transportation choices are influenced not only based on the transportation system, but also by the surrounding urban form. Neighbourhood design is often reflective of a community's time of construction and the main transportation types available at that time.

The "Ottawa Next; Beyond 2036" study identified that planning for future growth needs to include the building of spaces designed to foster social cohesion, given ongoing changes in demographics. This can be supported by planning for vibrant public spaces usable by all ages, cultures and communities, as well as providing access to schools, libraries and other social services, especially as densities increase. The study recommends transforming suburbs into more complete communities.

Inter-generational (In)Equity

- will future working age generations be willing to pay for baby boom cohort's LTC?
 - many are currently unhappy with inability to enter home ownership
- could pre-fund and organize LTC as a new category of social insurance
 - but then working age generation could end up paying twice, as fund would not cover 100% of LTC
- and inter-generational fairness is more complex
 - pre-funding \neq higher future capacity to fund LTC; as more household saving \neq higher economic growth
 - elephant in the room: bequest of global climate change / remediation and adjustment costs

Concluding Comments

- Canada's health care sector is (far too) often not being managed based on analysis of which expenditures generate the greatest health benefits
- the cost of inappropriate care and inefficiency in health care is possibly larger than the total impact of population aging over coming decades
- thus population aging can be relatively small as a factor accounting for future increases in health care expenditures in Canada, **except possibly LTC**
 - inadequate public policy attention
 - quintessentially horizontal policy issue – both across domains (health, transportation, social services, zoning) and across levels of government (fed / prov / municipal)

still, hopefully, not so wild after all 😊

