

Measuring and monitoring food insecurity in Canada

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Food Poverty: Measuring, Monitoring and Making a Difference
Edinburgh, January 15, 2016.

Acknowledgement: This research is funded by a programmatic grant from the Canadian Institutes of Health Research.

The evolution of food banks and food insecurity measurement:

1981: First food bank established.

1987: Canadian Association of Food Banks formed.

1989: First national compilation of food bank statistics, 'HungerCount'.

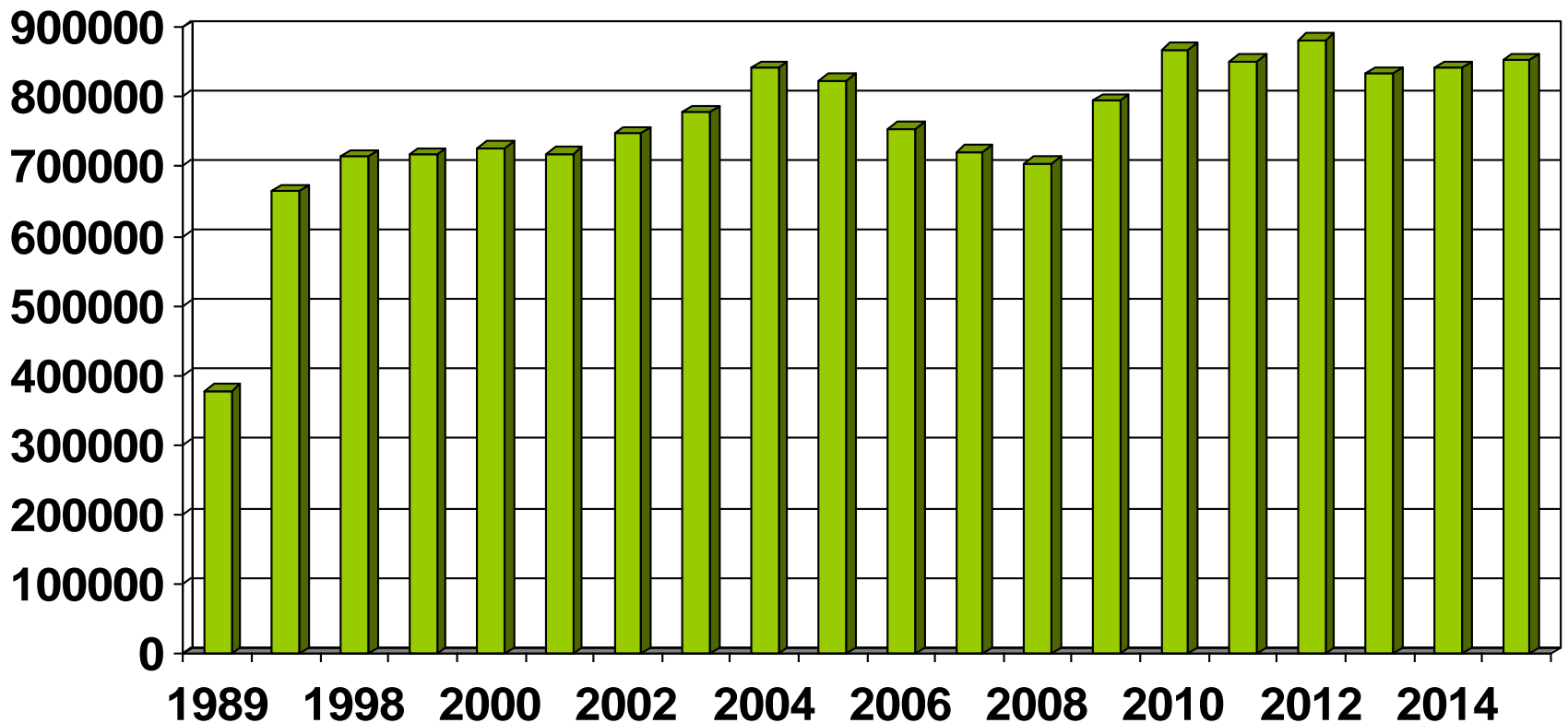
1997: Annual release of 'HungerCounts' begins..

1980

1990

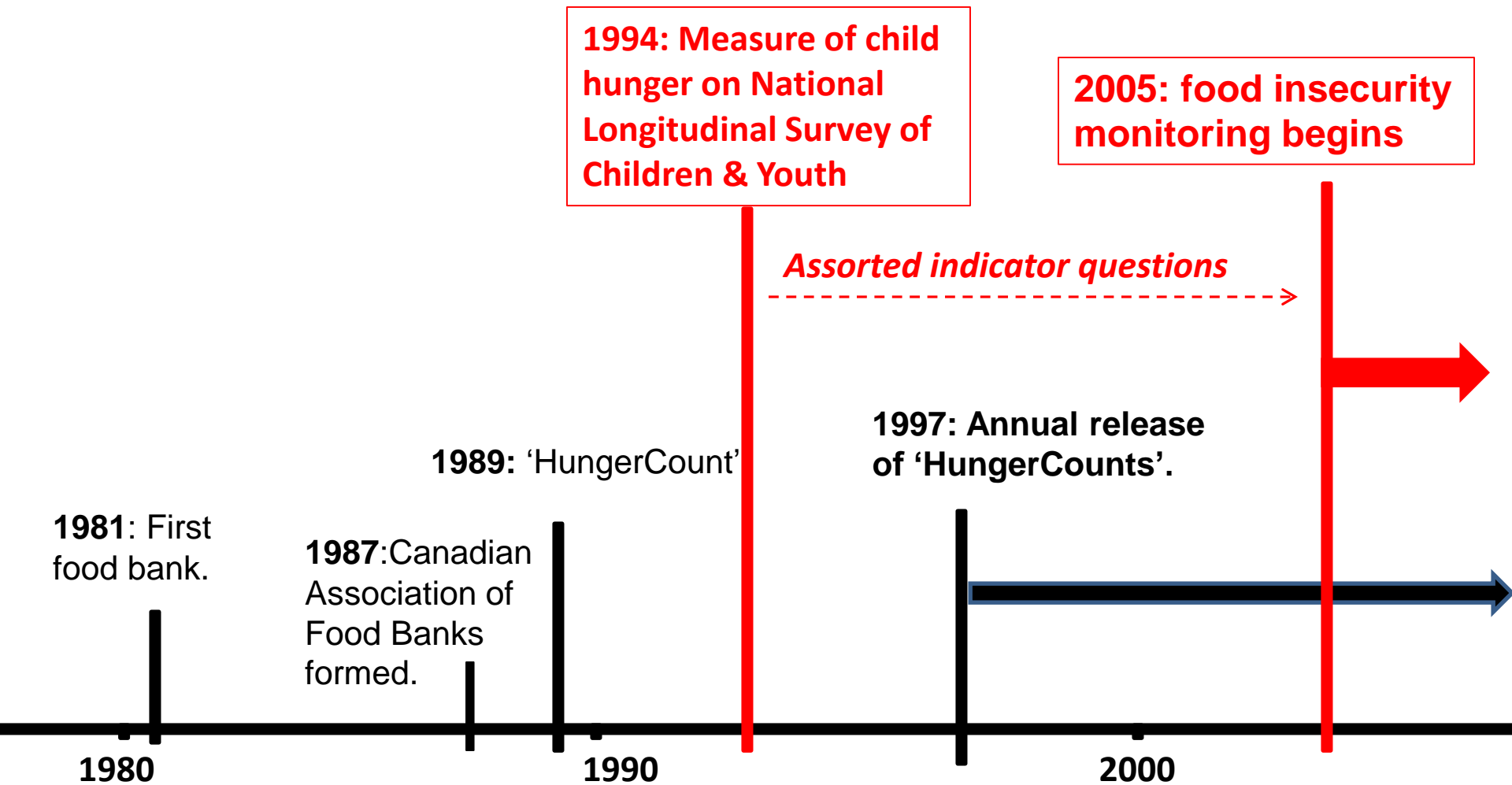
2000

'HungerCounts': number of Canadians receiving assistance from food banks in March, 1989-2015



Source: Canadian Association of Food Banks/Food Banks Canada, 'HungerCounts' 2002-2015.

The evolution of food banks and food insecurity measurement:



What exactly are we measuring?

Household food insecurity, as measured in Canada:

insecure or inadequate access to food due to financial constraints

- not the opposite of food security

“Food security exists when all people, at all times, have physical and economic access to sufficient, safe and nutritious food to meet their dietary needs and food preferences for an active and healthy life.” (Canada’s Action Plan on Food Security, 1998)

Food insecurity indicator questions on national surveys:

1994 – National Longitudinal Survey of Children and Youth:

Has your child ever experienced being hungry because the family has run out of food or money to buy food?

1.2%

1996 – National Population Health Survey (household food insufficiency):

Which of the following best describes the food situation in your household?

- a) always enough food to eat*
- b) sometimes not enough food to eat, or*
- c) often not enough food to eat?*

4.0%

Food insecurity indicator questions on national surveys:

1998 – National Population Health Survey:

In the past 12 months, did you or anyone in your household

- 1) *worry that there would not be enough food to eat because of a lack of money?*
- 2) *not eat the quality or variety of foods that you wanted because of a lack of money?*
- 3) *not have enough food to eat because of a lack of money?*

Response options: yes/no



10.4%

2000-01– Canadian Community Health Survey:

In the past 12 months, how often did you or anyone in your household

- 1) *worry that there would not be enough food to eat because of a lack of money?*
- 2) *not eat the quality or variety of foods that you wanted because of a lack of money?*
- 3) *not have enough food to eat because of a lack of money?*

Response options: often, sometimes, never



14.7%

What was learned from our administration of indicator questions?

- Irrespective of the questions asked, vulnerability was associated with the same household characteristics :
i.e., low income, reliance on social assistance, renting vs owning one's dwelling, lone parenthood, and Aboriginal status.
- All questions were associated with poorer self-rated health status and more chronic disease.

Limitations:


- Absence of any data on the validity of the measurements meant uncertainty about the meaning of the prevalence estimates.
- Lack of comparability across indicators meant no ability to observe changes in prevalence or assess the effects of policy interventions.

Household Food Security Survey Module

(administered on the Canadian Community Health Survey since 2004)

18 questions, differentiating adults' and children's experiences over last 12 months:

- Worry about not having enough food
- Reliance on low-cost foods
- Not able to afford balanced meals
- Adults/children skip meals
- Adults/children cut size of meals
- Adults/children not having enough to eat
- Adult lost weight
- Adults/children not eating for whole day



“because
there wasn't
enough
money to buy
food?”

The Household Food Security Survey Module:

- Developed by US Department of Agriculture in 1990s, for monitoring purposes in US.
- Assessing food insecurity of household.
- Designed to scale population across singular dimension of severity, determined by number of affirmative responses.
 - 18 questions selected because of their discriminatory powers, based on detailed analysis of responses to a broader set of 50+ questions (including questions on coping behaviours).
- Administration time (approximate):
 - 1 minute for 80-85% of sample (food secure, no affirmatives)
 - 4 minutes for food-insecure households with children

Household food insecurity status:

Status	Interpretation	10 item adult scale	8 item child scale
Food secure	No report of income-related problems of food access.	No items affirmed	No items affirmed
Marginal food insecurity	Some indication of worry or an income-related barrier to adequate, secure food access.	Affirmed no more than 1 item on either scale	
Moderate food insecurity	Compromise in quality and/or quantity of food consumed by adults and/or children due to a lack of money for food.	2 to 5 positive responses	2 to 4 positive responses
Severe food insecurity	Disrupted eating patterns and reduced food intake among adults and/or children.	6 or more positive responses	5 or more positive responses

The thresholds applied to classify levels of food insecurity, and the labelling of resultant categories is arbitrary.

USDA's coding:

Household food insecurity = ≥ 3 affirmatives

	10-item adult scale	8-item child scale
Food secure	0-2 affirmatives	0-1 affirmatives
Low food security	3-5 affirmatives	2-4 affirmatives
Very low food security	≥ 6 affirmatives	≥ 5 affirmatives

Survey vehicle for food insecurity monitoring in Canada: Canadian Community Health Survey (CCHS)

- Conducted annually by Statistics Canada to monitor the health of the population.
- Surveys a nationally representative sample of approximately 65,000 Canadians, 12 years of age and older
 - Omits people living on reserves and in institutions, members of the Armed Forces, and people who are homeless.
- Food security module is not always part of the common content, and on years when it has been optional, some provinces and territories have opted out.

Household Food Insecurity in Canada, 2012

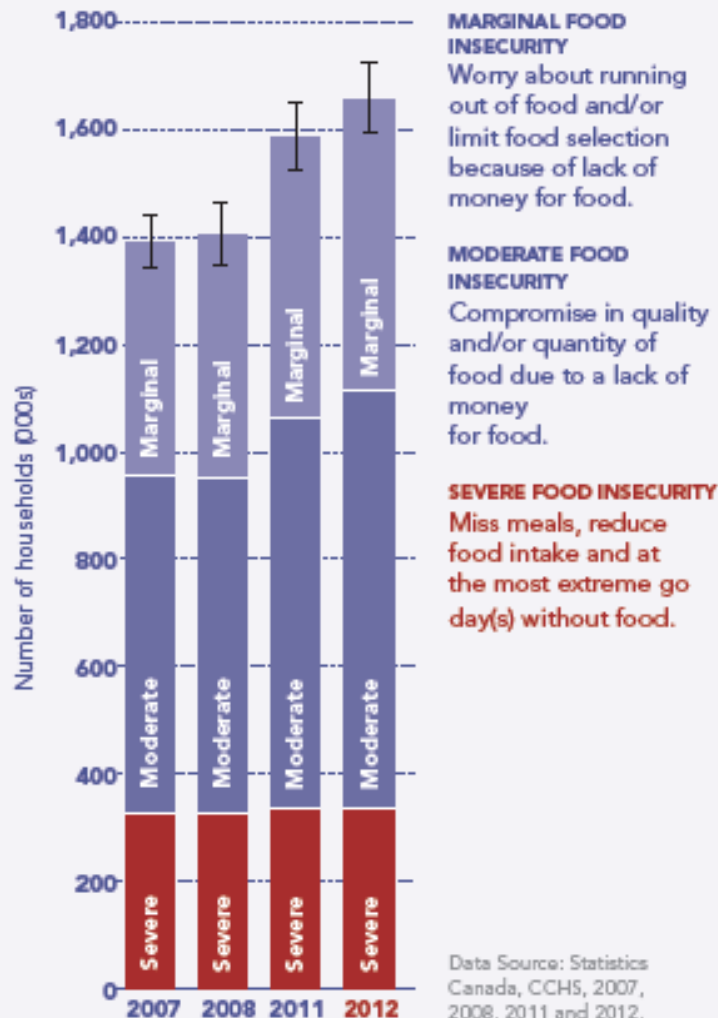
1.7 million
Canadian households
experienced food insecurity

This amounts to nearly
one in eight households



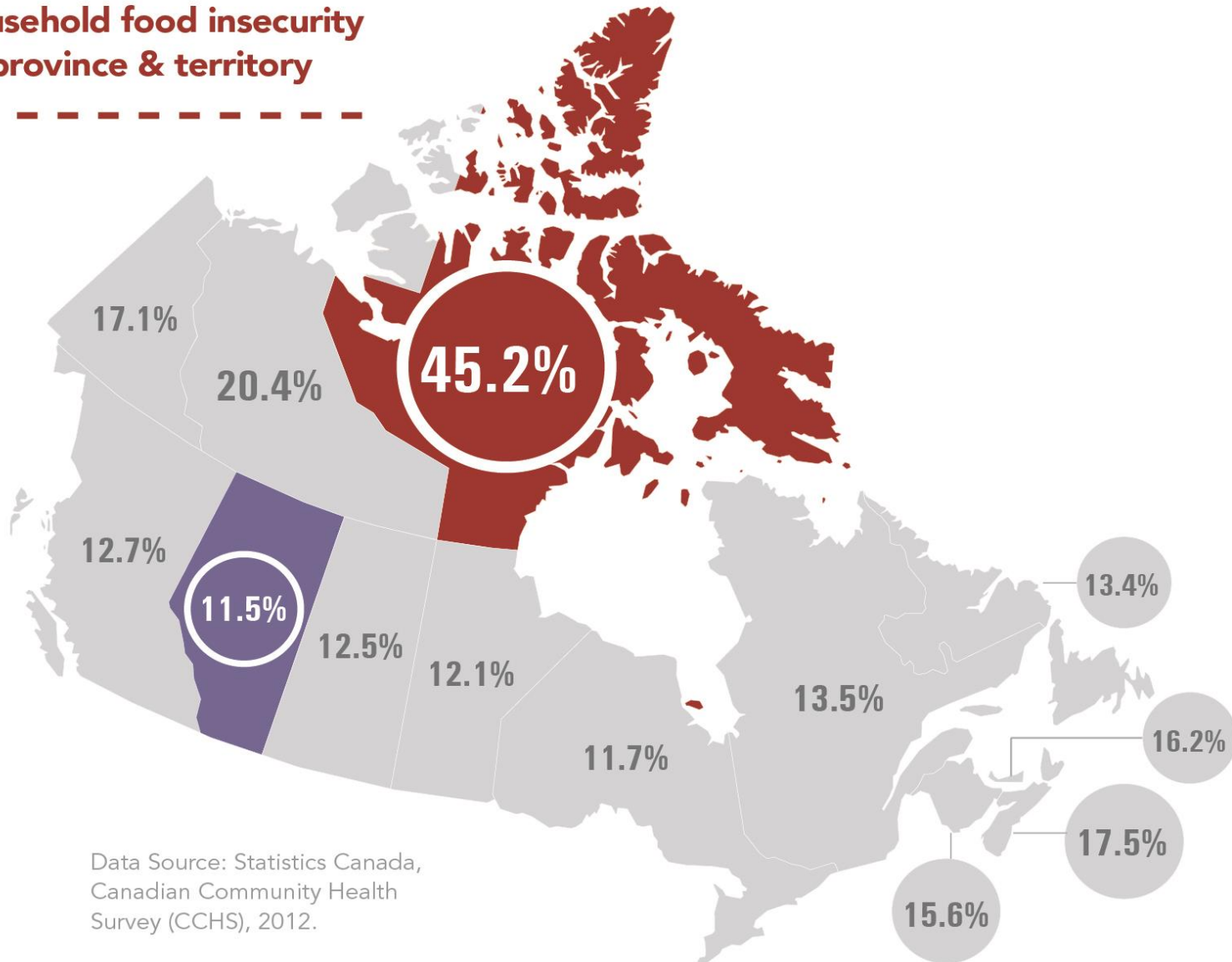
4 million
individuals, including
1.15 million children

Household food insecurity



2012

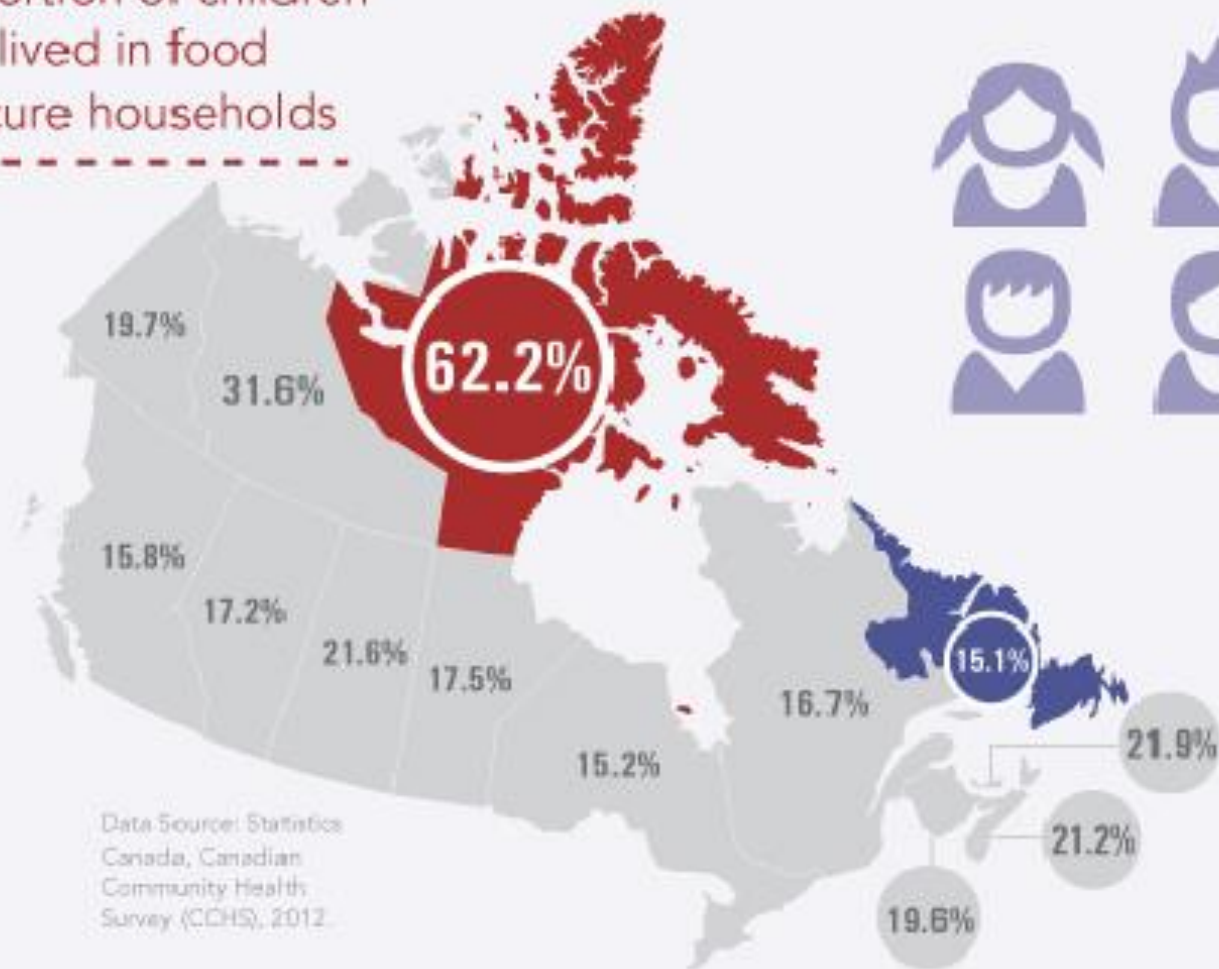
**Household food insecurity
by province & territory**



Data Source: Statistics Canada,
Canadian Community Health
Survey (CCHS), 2012.

2012

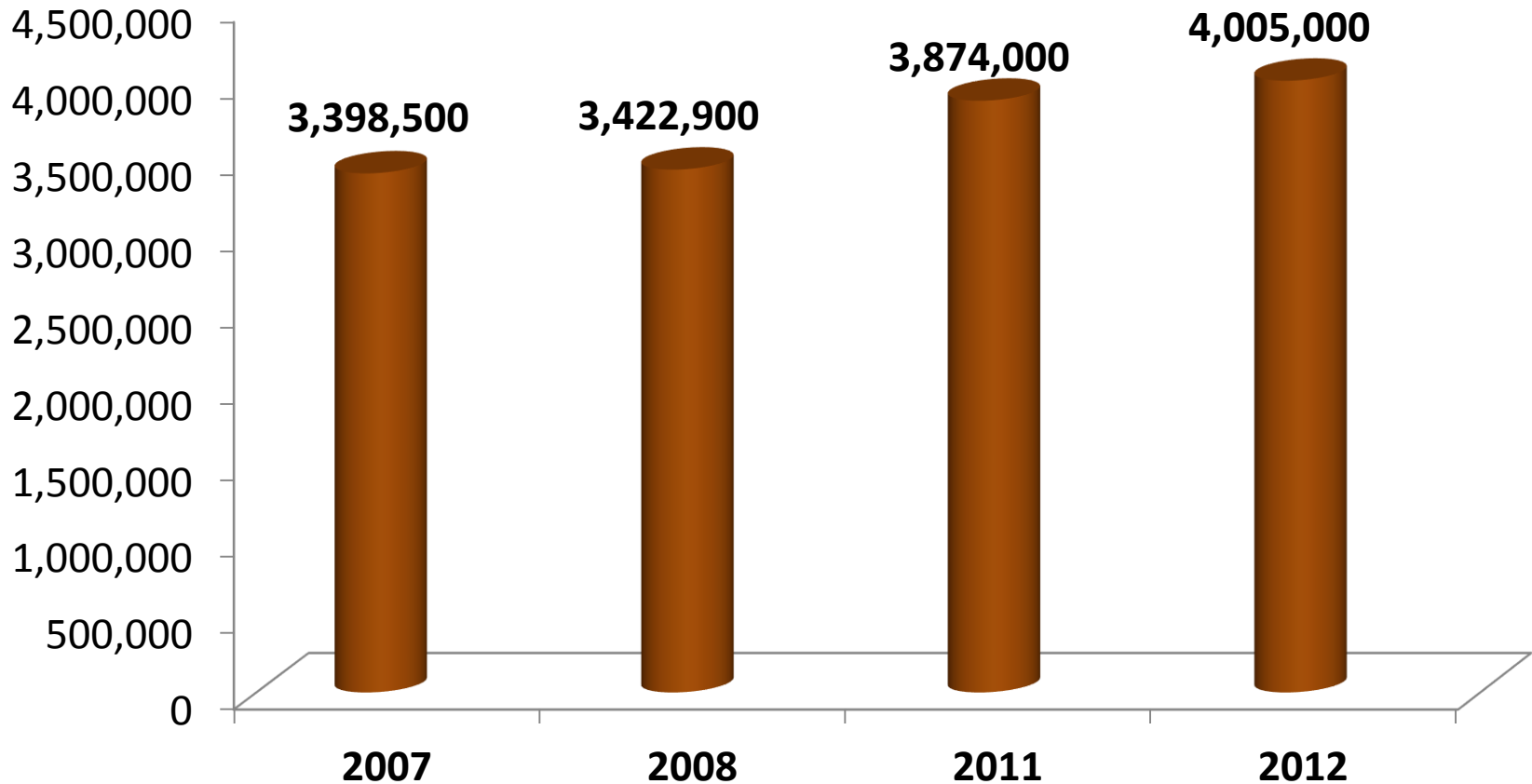
Proportion of children
who lived in food
insecure households



Data Source: Statistics
Canada, Canadian
Community Health
Survey (CCHS), 2012.

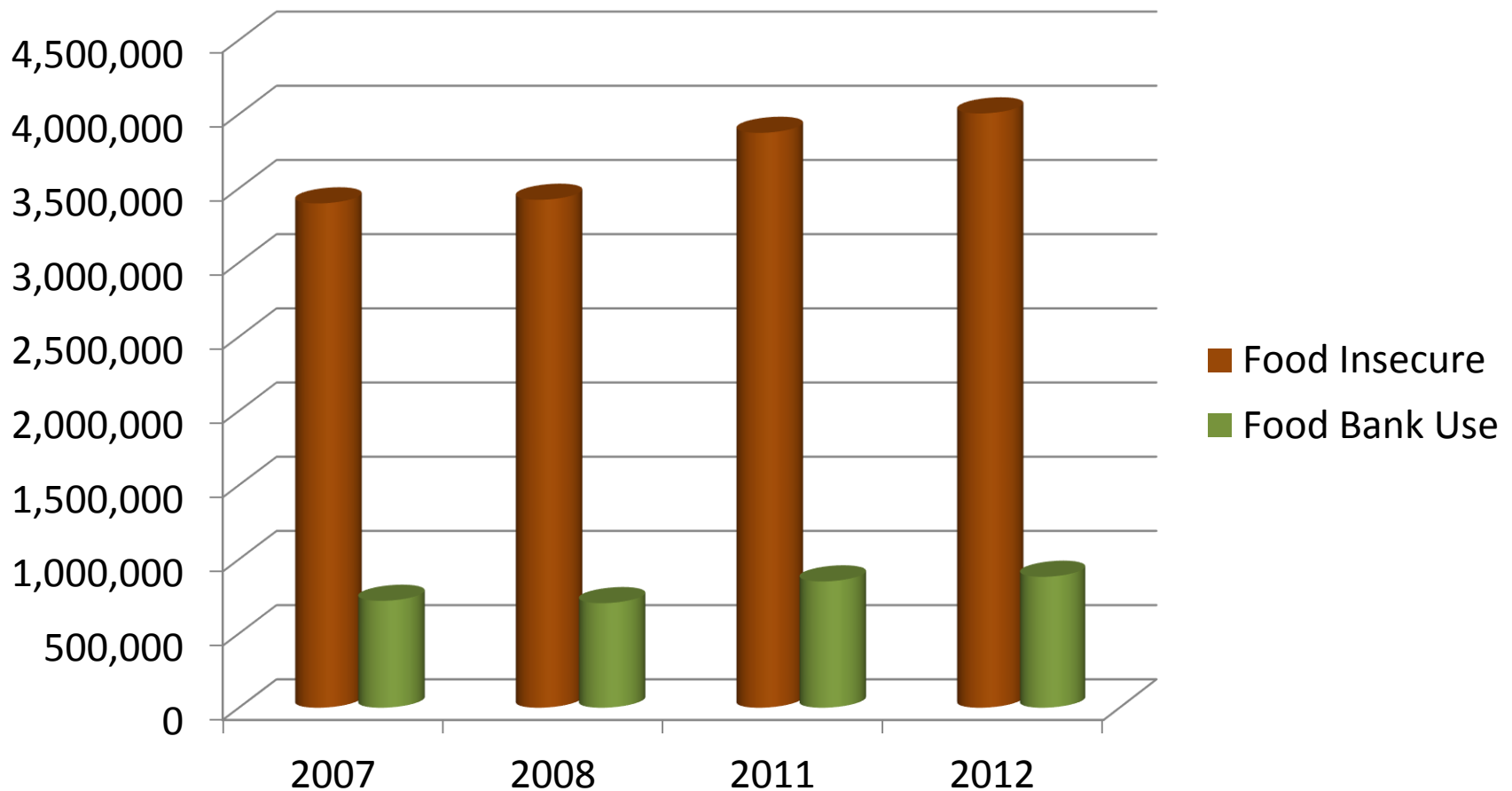


Number of people living in food-insecure households in Canada, 2007 - 2012



Data Sources: Statistics Canada, Canadian Community Health Survey (CCHS), 2007, 2008, 2011 and 2012, and Food Banks Canada, HungerCount, 2007, 2008, 2011 and 2012.

Number of people living in food-insecure households vs number reported to be helped by food banks in March of respective year.

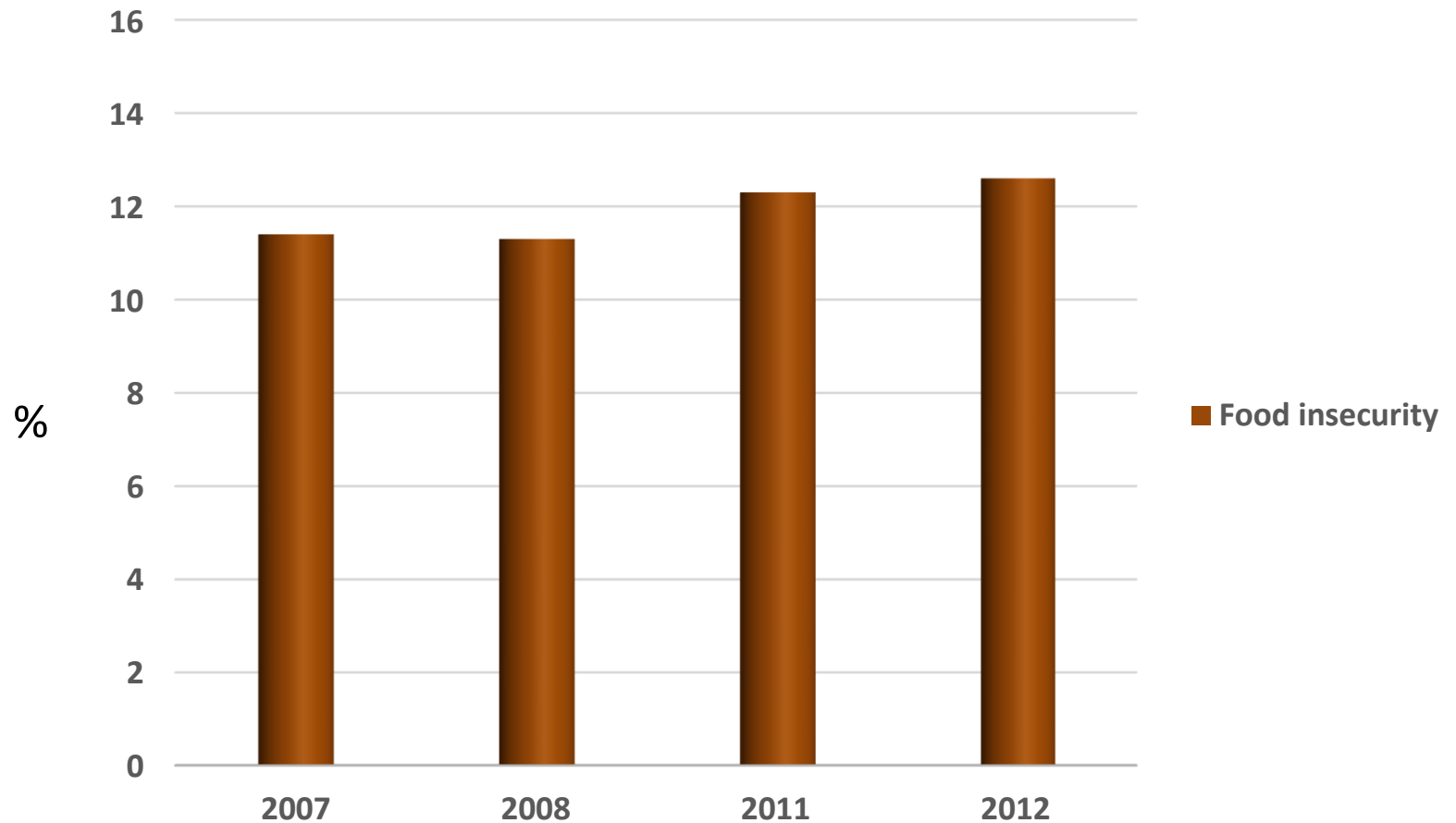


Data Sources: Statistics Canada, Canadian Community Health Survey (CCHS), 2007, 2008, 2011 and 2012, and Food Banks Canada, HungerCount, 2007, 2008, 2011 and 2012.

Relationship between food insecurity and food bank use?

- Most people affected by food insecurity do not seek charitable food assistance.
 - disconnect between help offered and perceived needs of food insecure.
 - arbitrary nature of charitable service provisioning renders it inaccessible to many.
- Food bank users are a relatively small, non-representative subset of food insecure population.
- Changes in the number of people using food banks are not a sensitive indicator of changes in food insecurity prevalence.

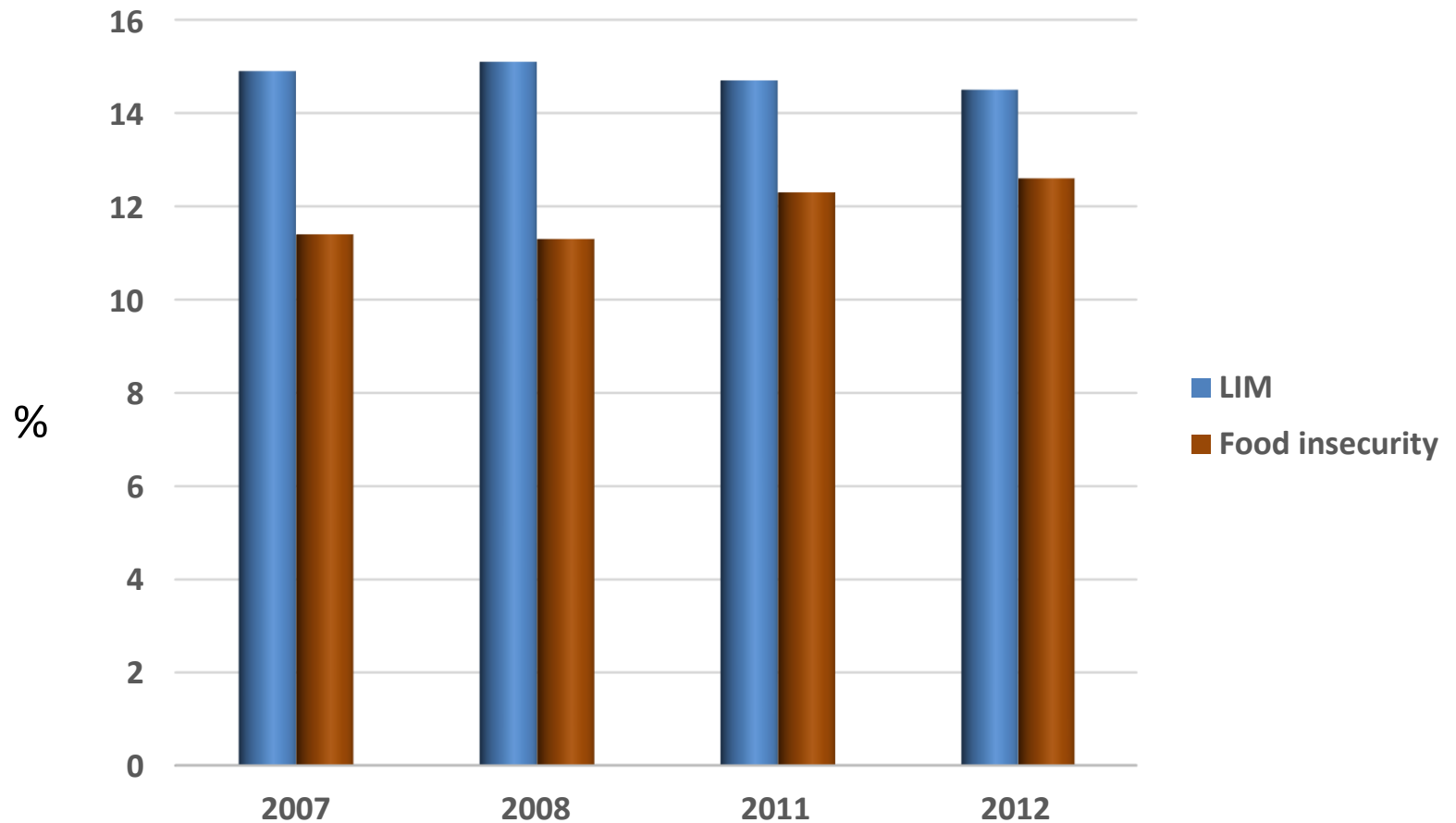
National prevalence of household food insecurity and poverty (defined as income < Low-Income Measure), 2007, 2008, 2011, 2012.



LIM: 50% of median household income, adjusted for household size.

Source: PROOF calculations from CCHS 2007-08, 2011-12 and Statistics Canada. CANSIM. Table 111-0015 Family characteristics, Low Income Measures (LIM), by family type and family type composition.

National prevalence of household food insecurity and poverty (defined as income < Low-Income Measure), 2007, 2008, 2011, 2012.

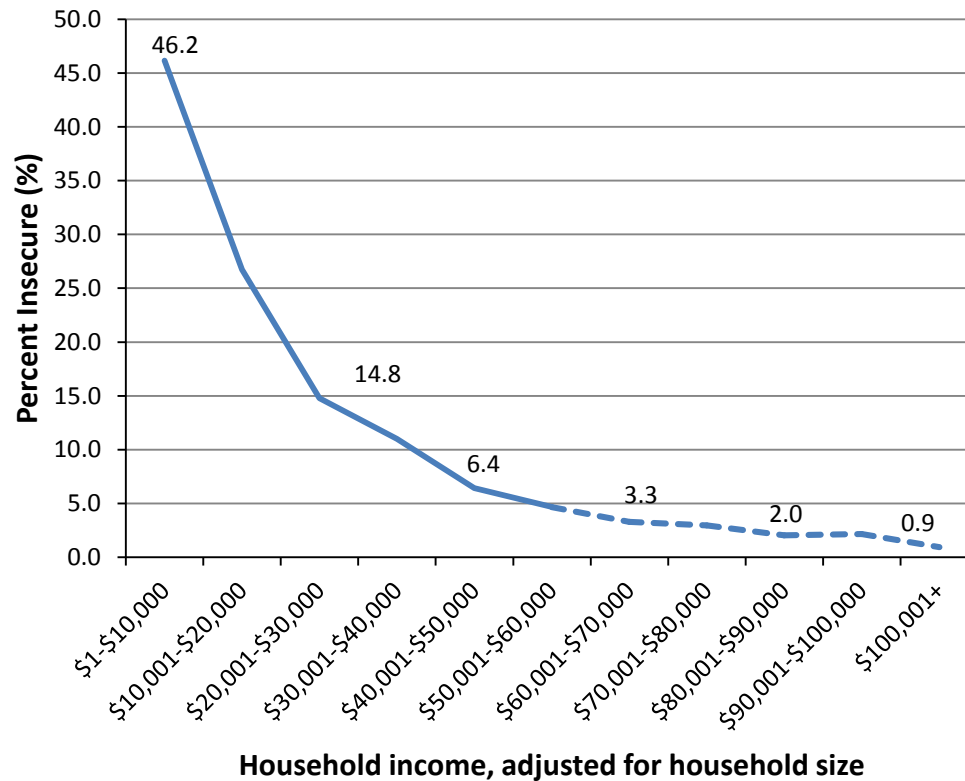


LIM: 50% of median household income, adjusted for household size.

Source: PROOF calculations from CCHS 2007-08, 2011-12 and Statistics Canada. CANSIM. Table 111-0015 Family characteristics, Low Income Measures (LIM), by family type and family type composition.

Relationship between food insecurity and household income:

Prevalence of food insecurity by household income
(CCHS 2011)

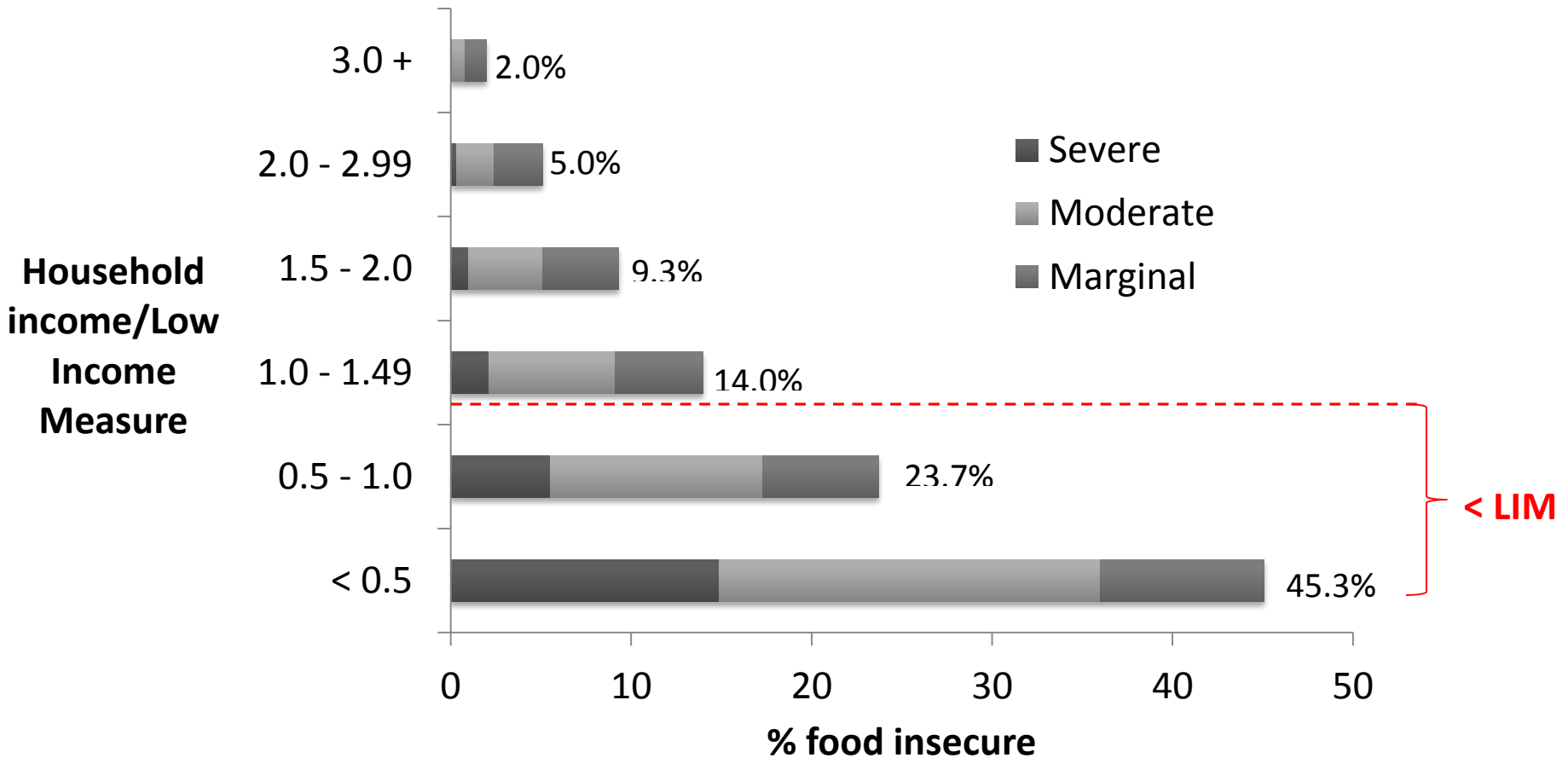


Food insecurity captures material deprivation.

the product of

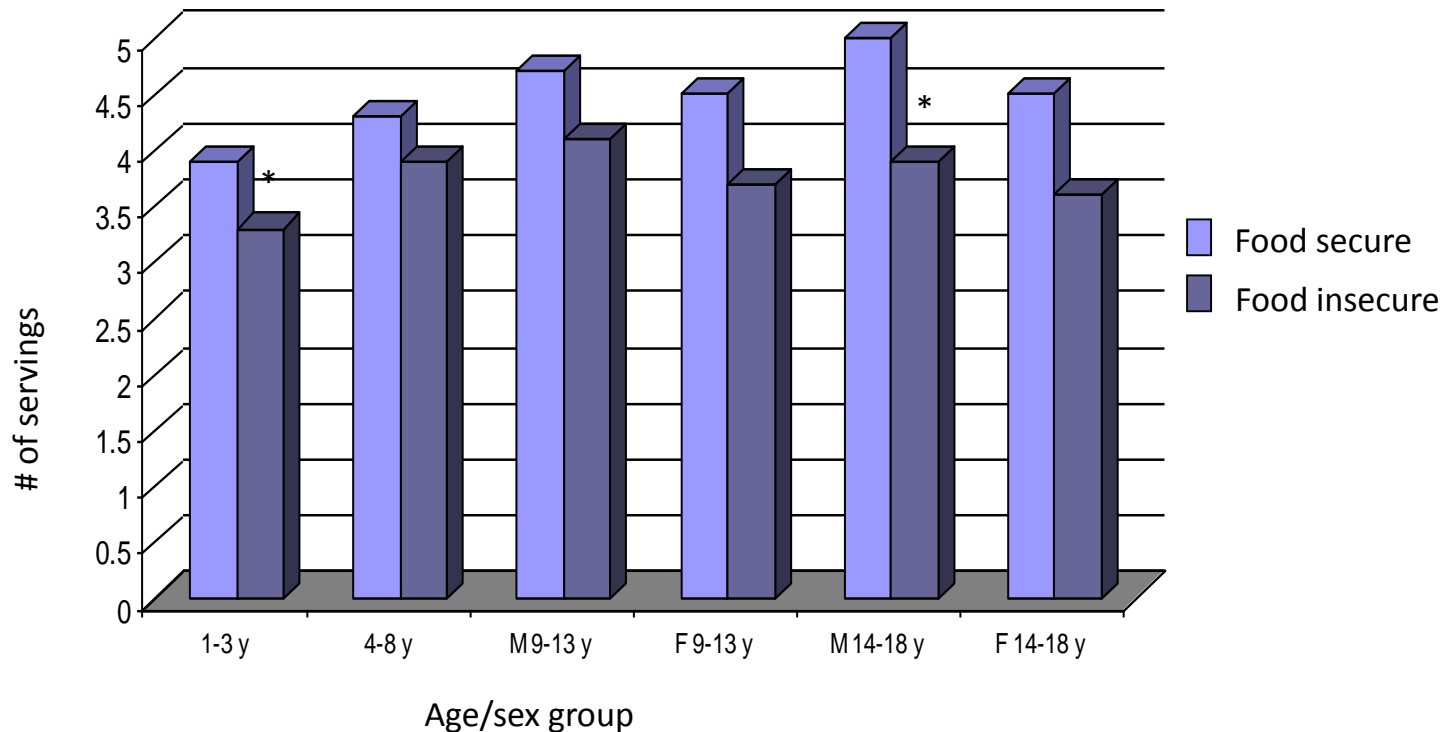
- income (size, security, stability)
- assets, savings
- access to credit
- shelter costs
- other expenses (food, medications, debt, etc)

Relationship between food insecurity and poverty, considering household income relative to Low Income Measure (LIM)



FOOD INSECURITY, NUTRITION, AND HEALTH

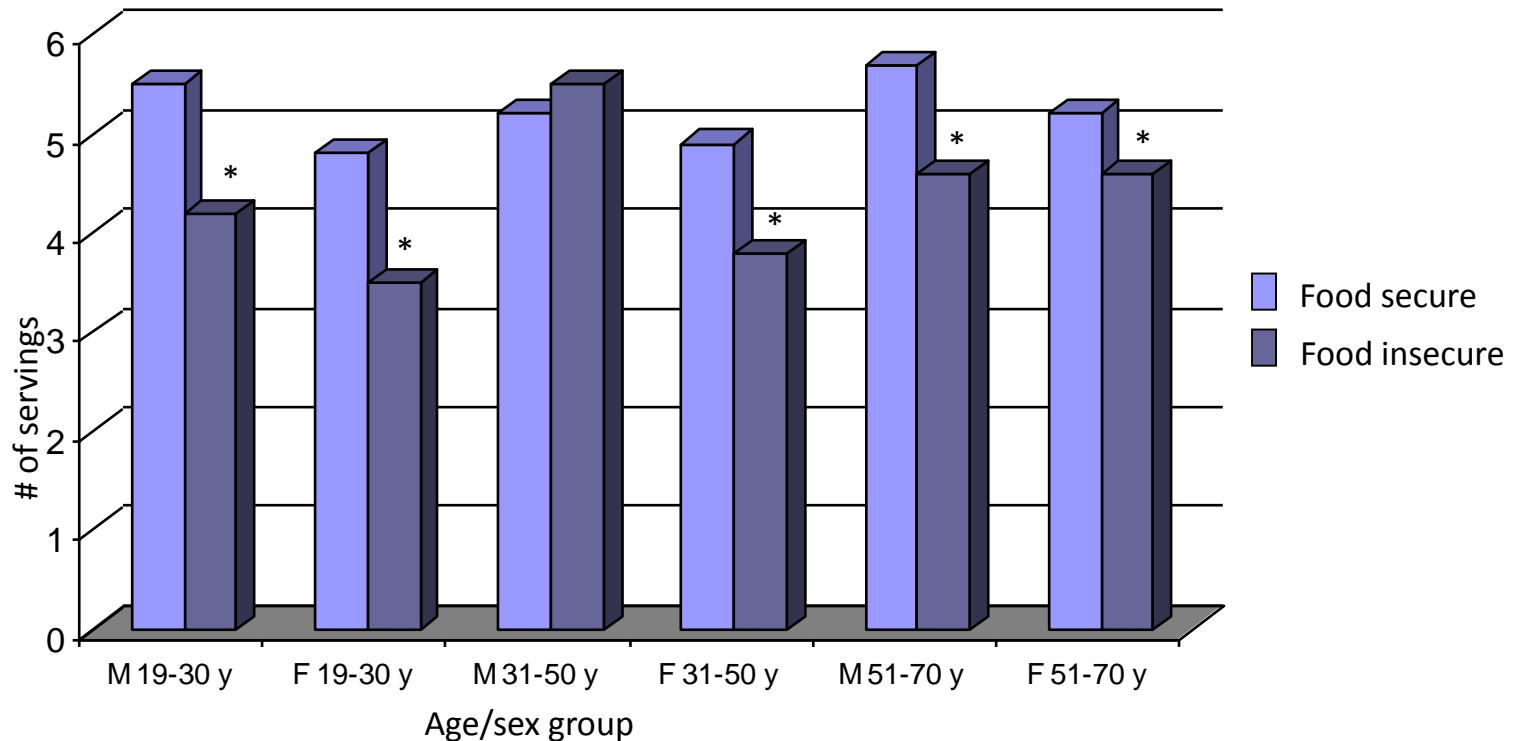
Children's fruit and vegetable consumption, servings per day by food security status



Food insecurity here includes only moderate and severe food insecurity.

*Significant difference between food-secure & food-insecure subgroups, $p < 0.05$

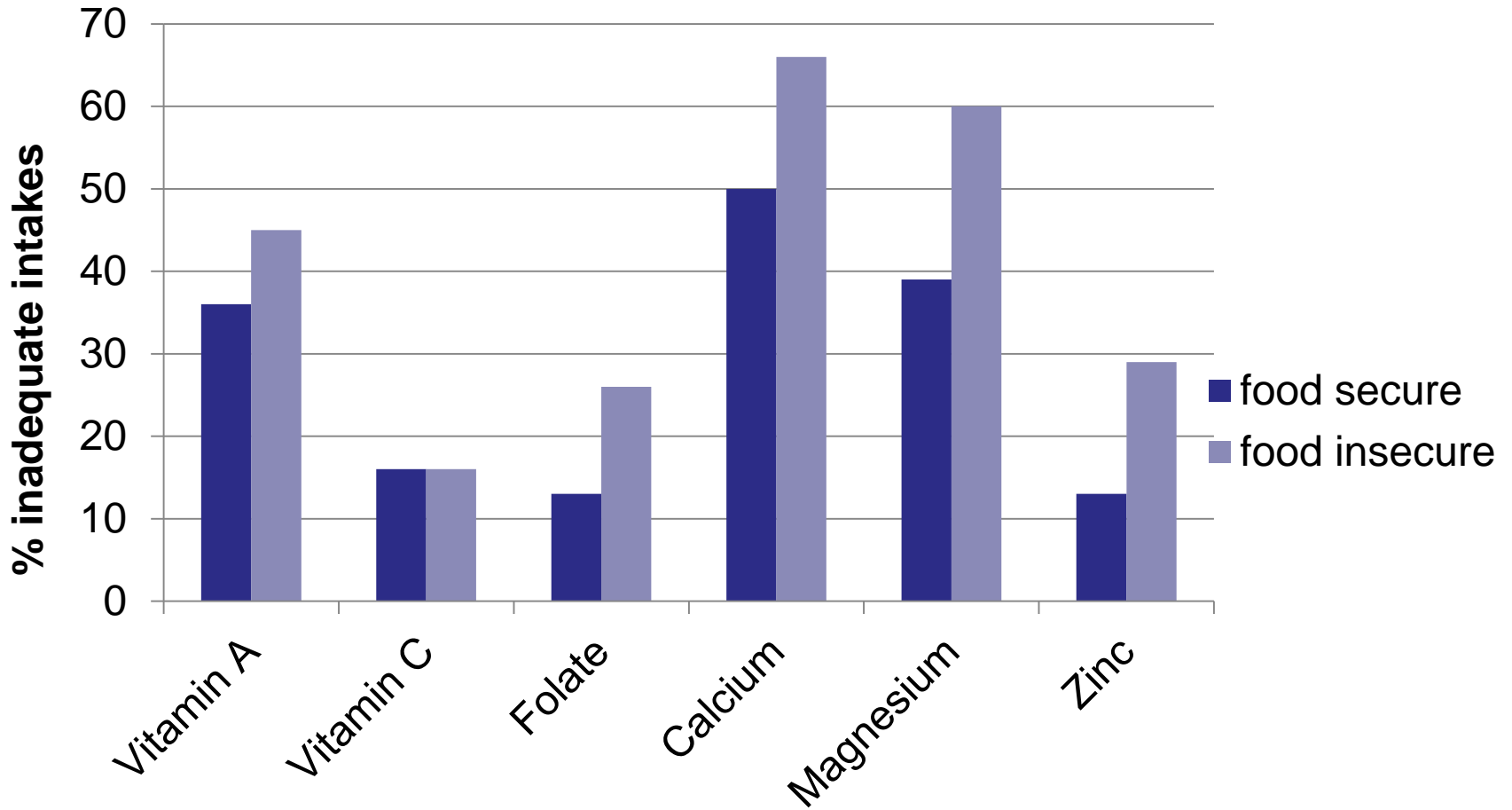
Adults' fruit and vegetable consumption, servings per day by food security status



Food insecurity here includes only moderate and severe food insecurity.

*Significant difference between food-secure & food-insecure subgroups, $p < 0.05$

Prevalence of nutrient inadequacy by food security status, individuals ≥ 9 years of age in Canada



Note: food insecure defined as ≥ 3 affirmatives.

(Kirkpatrick et al, J Nutr 2015)

Comparison of the dietary intakes of Canadians by household food security status (CCHS 2004):

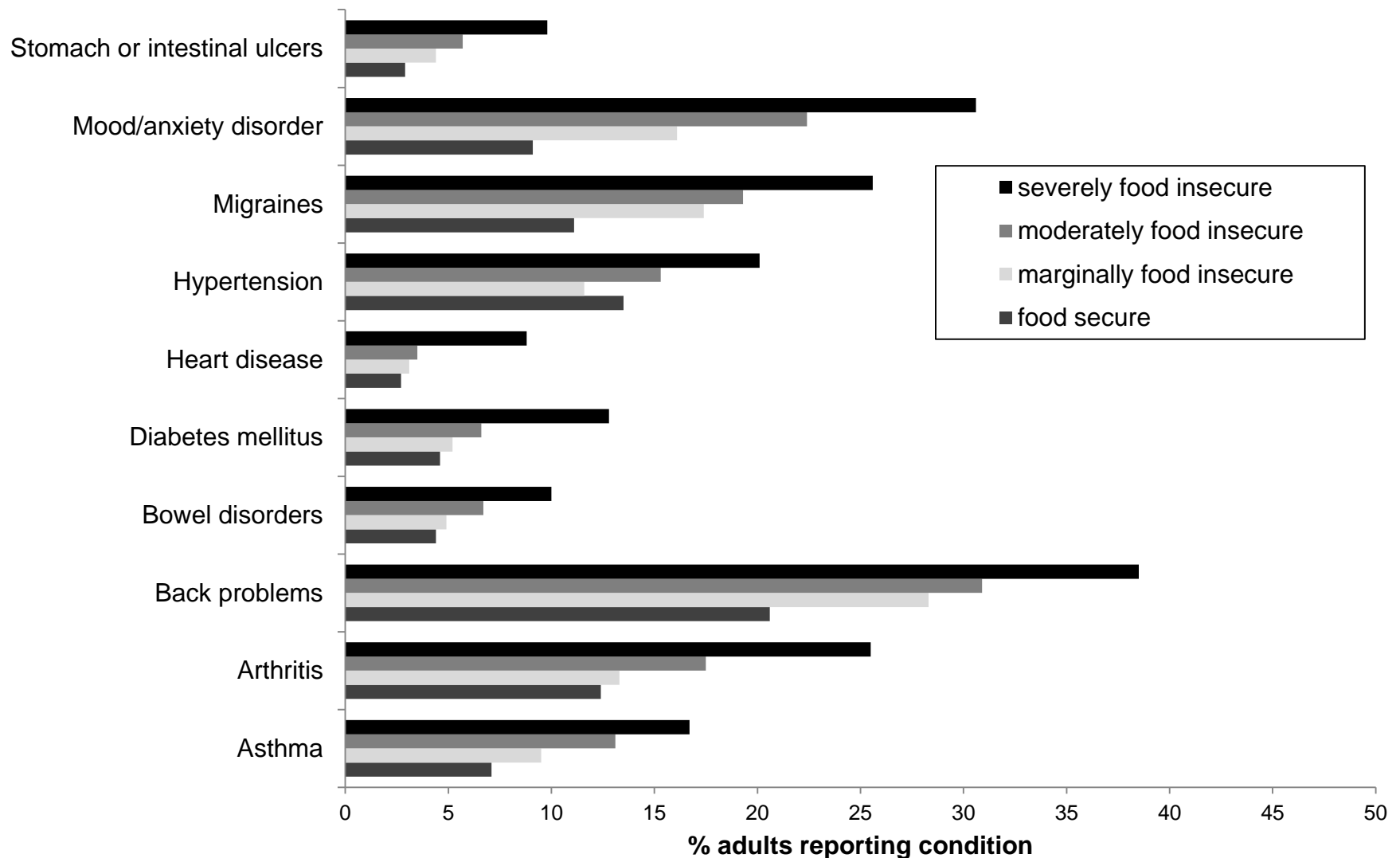
- Little evidence of dietary inadequacies among young children in Canada, and few differences in relation to household food security status.
- Adults and adolescents in moderately or severely food insecure households had
 - poorer quality diets (i.e., fewer servings of milk products, fruits and vegetables, and for some groups, meat and alternatives)
 - higher risk of inadequate nutrient .

Food insecurity in childhood takes a lasting toll on health.

Analyses of National Longitudinal Survey of Children and Youth (10+ years of follow-up):

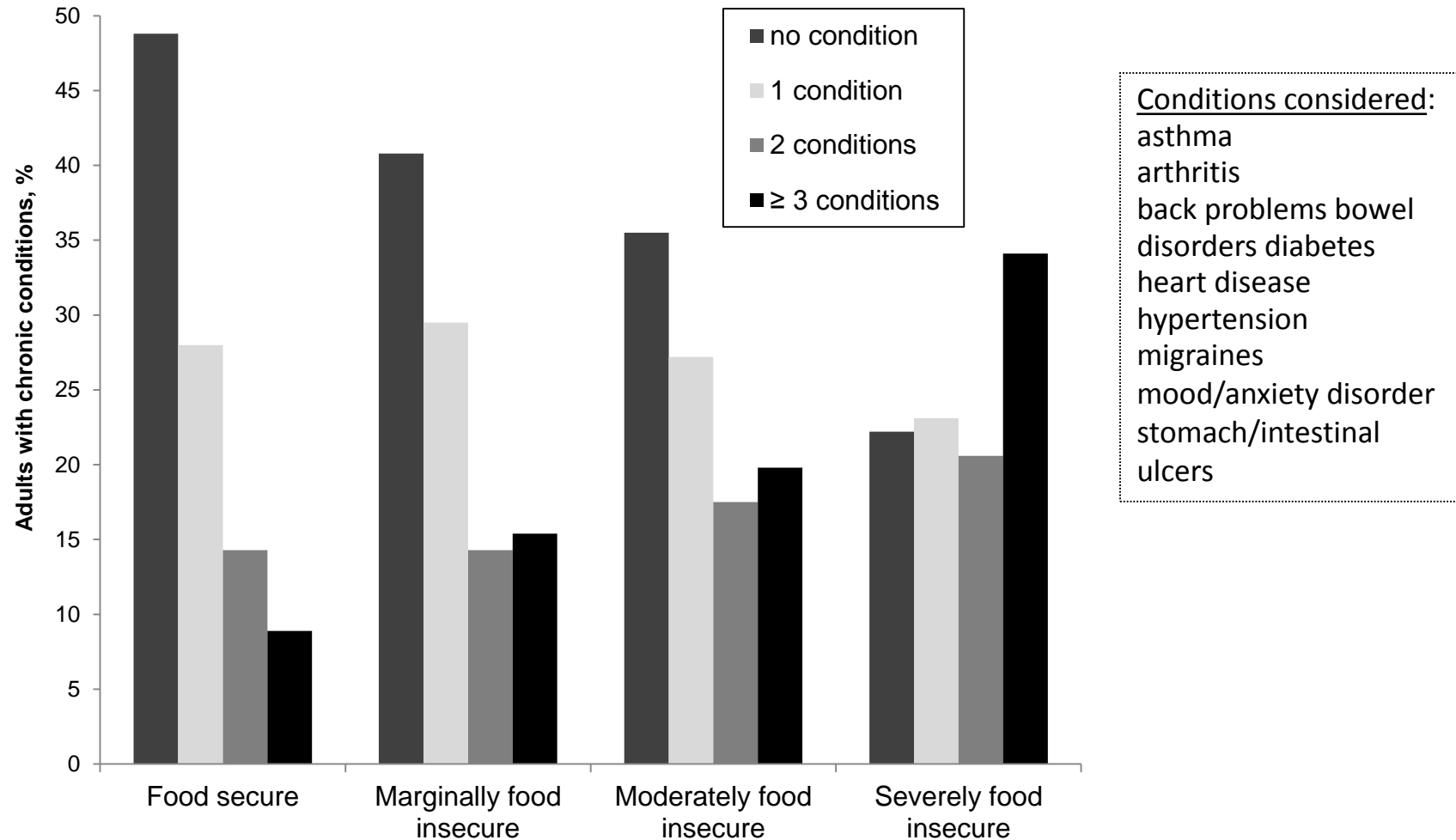
- Children and youth who experienced hunger (ever) were more likely to have poorer health.
- More extensive exposure to hunger was associated with higher odds of chronic conditions, including asthma.
- Child hunger predicted depression and suicidal ideation in late adolescence and early adulthood.
- These effects persist even after taking into account household socio-demographic characteristics (including income and education) and baseline health status.

Prevalence of selected chronic conditions among adults, 18-64 years of age, by household food security status (Canadian Community Health Survey, 2007-08).

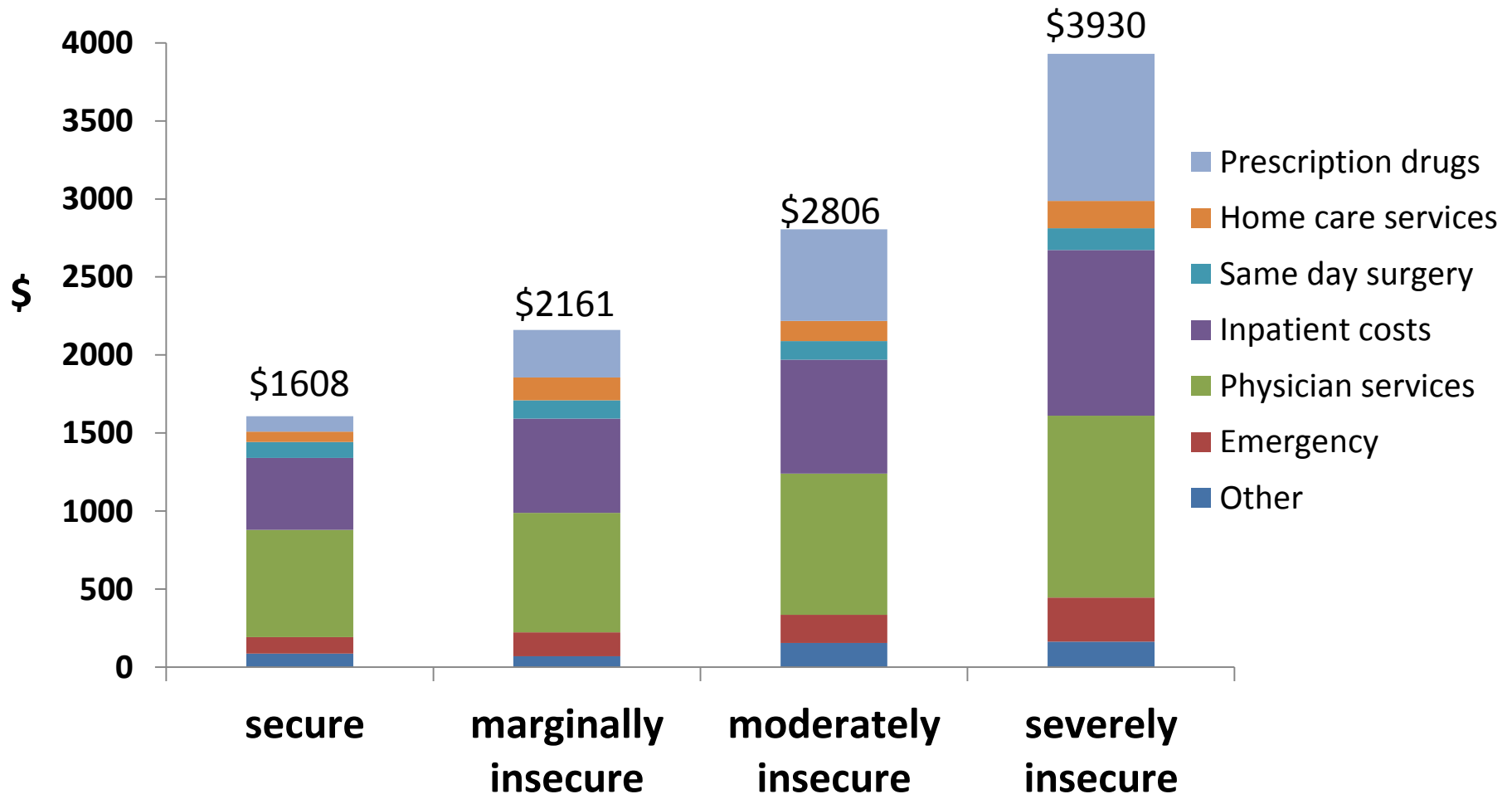


(Adapted from Tarasuk V, Mitchell A, McLaren L, & McIntyre L. Chronic physical and mental health conditions among adults may increase vulnerability to household food insecurity. *Journal of Nutrition*. 143(11), 1785-93.)

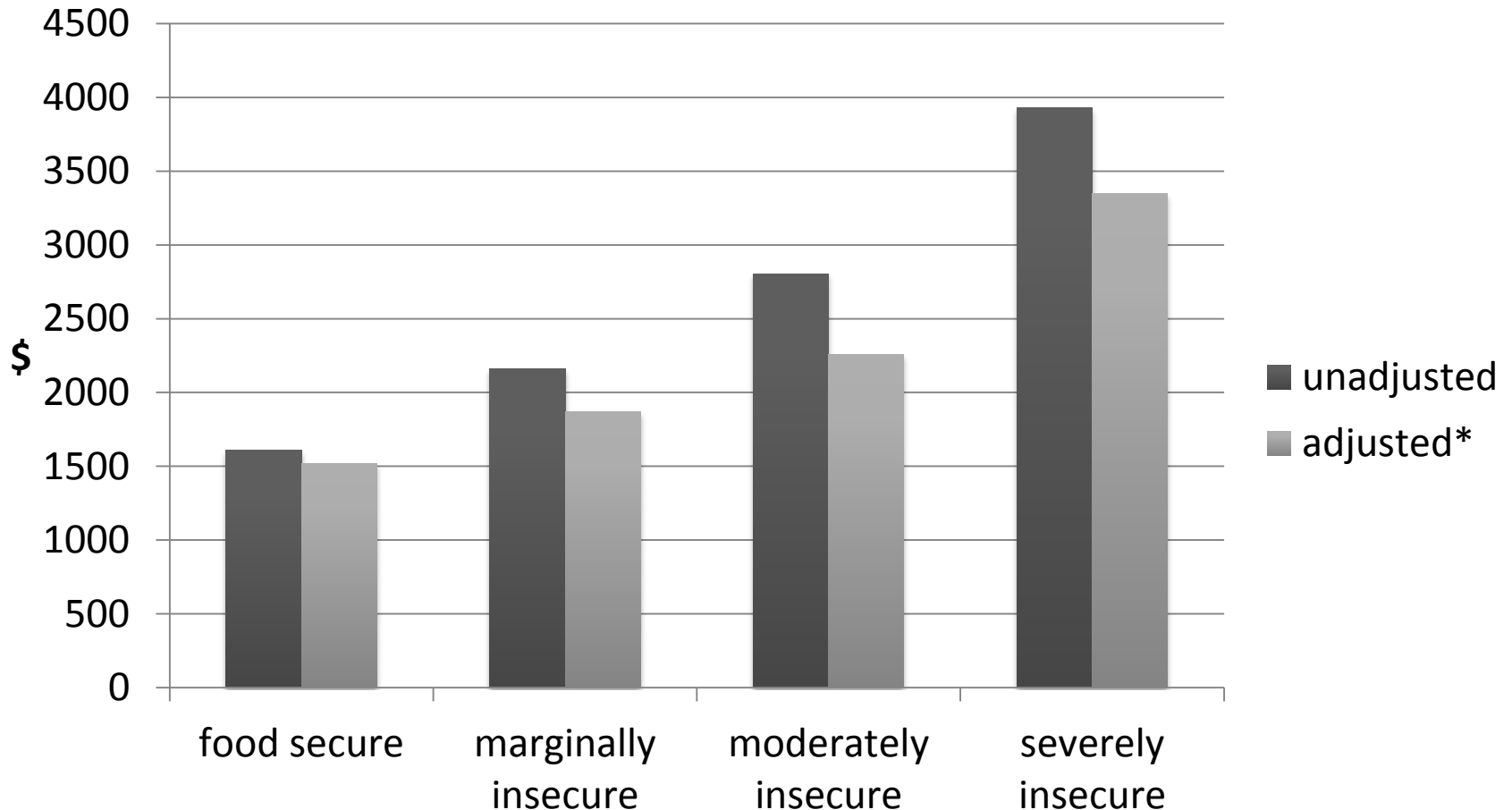
Prevalence of number of chronic conditions among adults, 18-64 years of age, by household food security status (Canadian Community Health Survey, 2007-08).



Average health care costs per person incurred over 12 months by Ontario adults (18-64 years of age), by household food insecurity status (n=67,033) :



Average 12-month health care costs per person by Ontario adults (18-64 years of age), by household food insecurity status:



*adjusted for age, sex, respondent's education, number of adults and children in household, homeownership, and neighbourhood income quintile.

Household food insecurity also relates to the probability of high-cost health care use.

- Top 5% of health care users account for 2/3 of total health care expenditures.

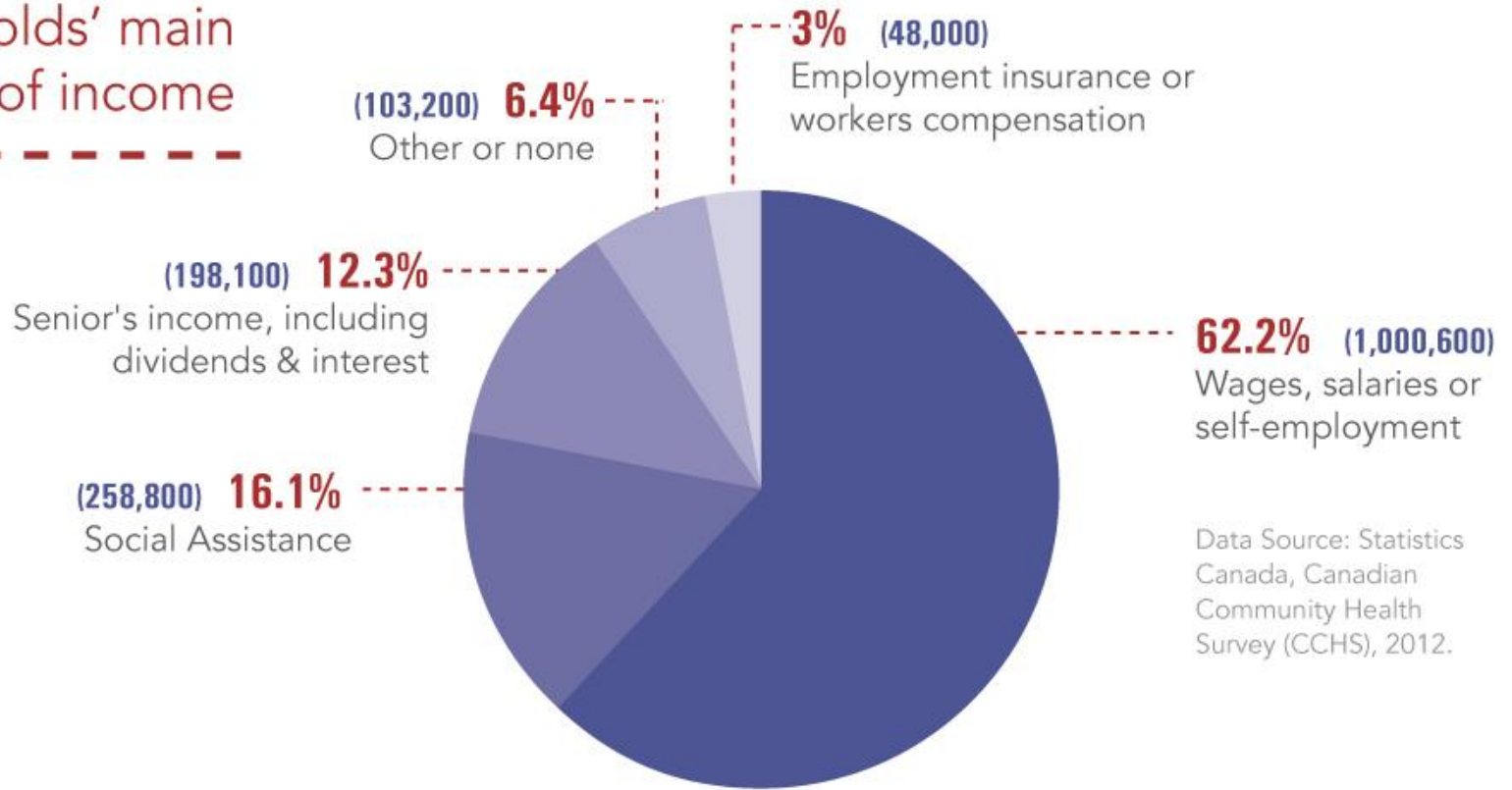
Analysis of relation between food insecurity status and health care use in following 5 years, among cohort of Ontario adults (n=55,734) :

- Food-insecurity → 46% greater odds of high-cost health care use in next 5 years, after taking into account other socio-demographic risk factors.
- Food insecurity = single strongest predictor of high-cost health care use.

POLICY INSIGHTS ARISING FROM ANALYSES OF MONITORING DATA

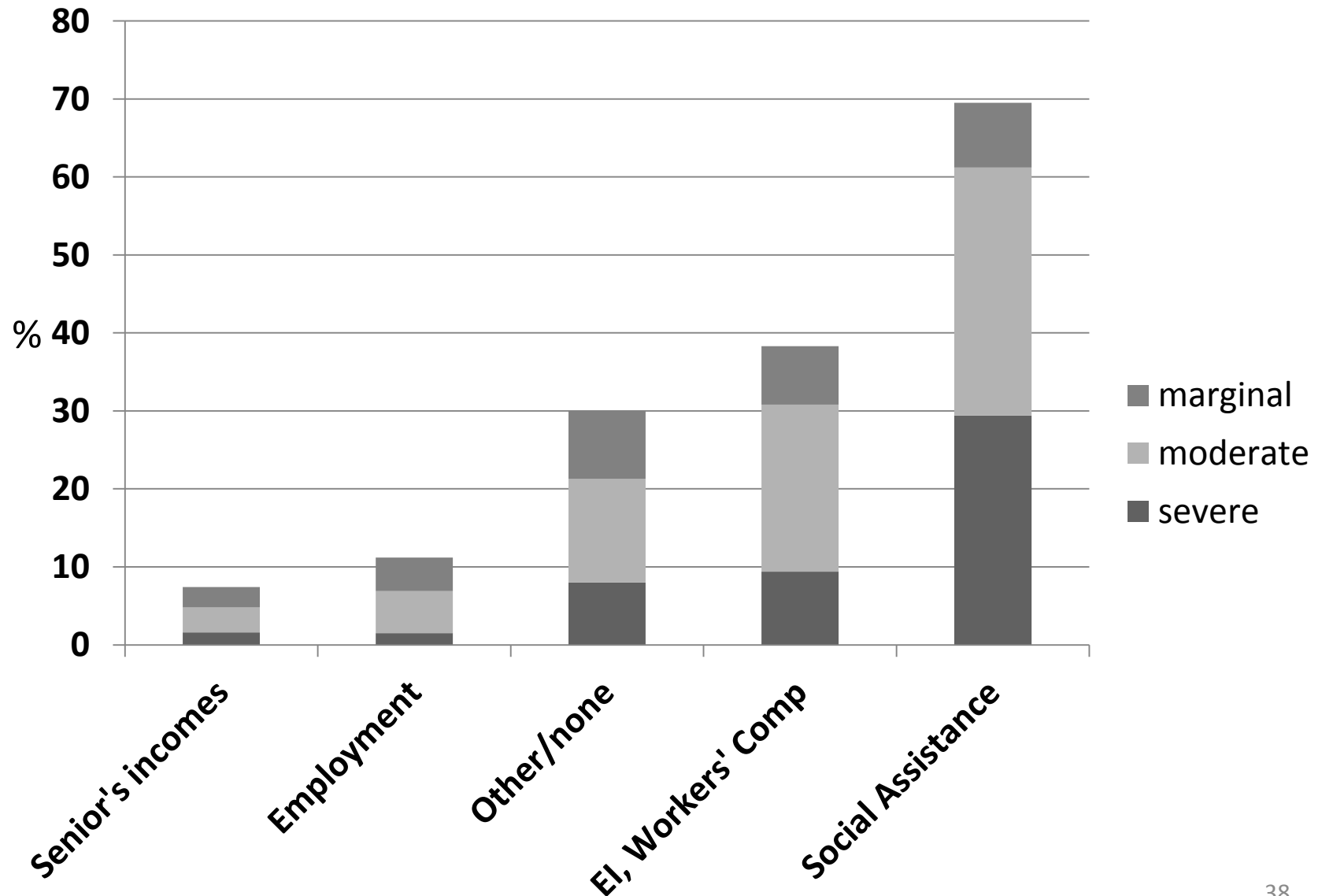
2012

Food insecure households' main source of income



Data Source: Statistics Canada, Canadian Community Health Survey (CCHS), 2012.

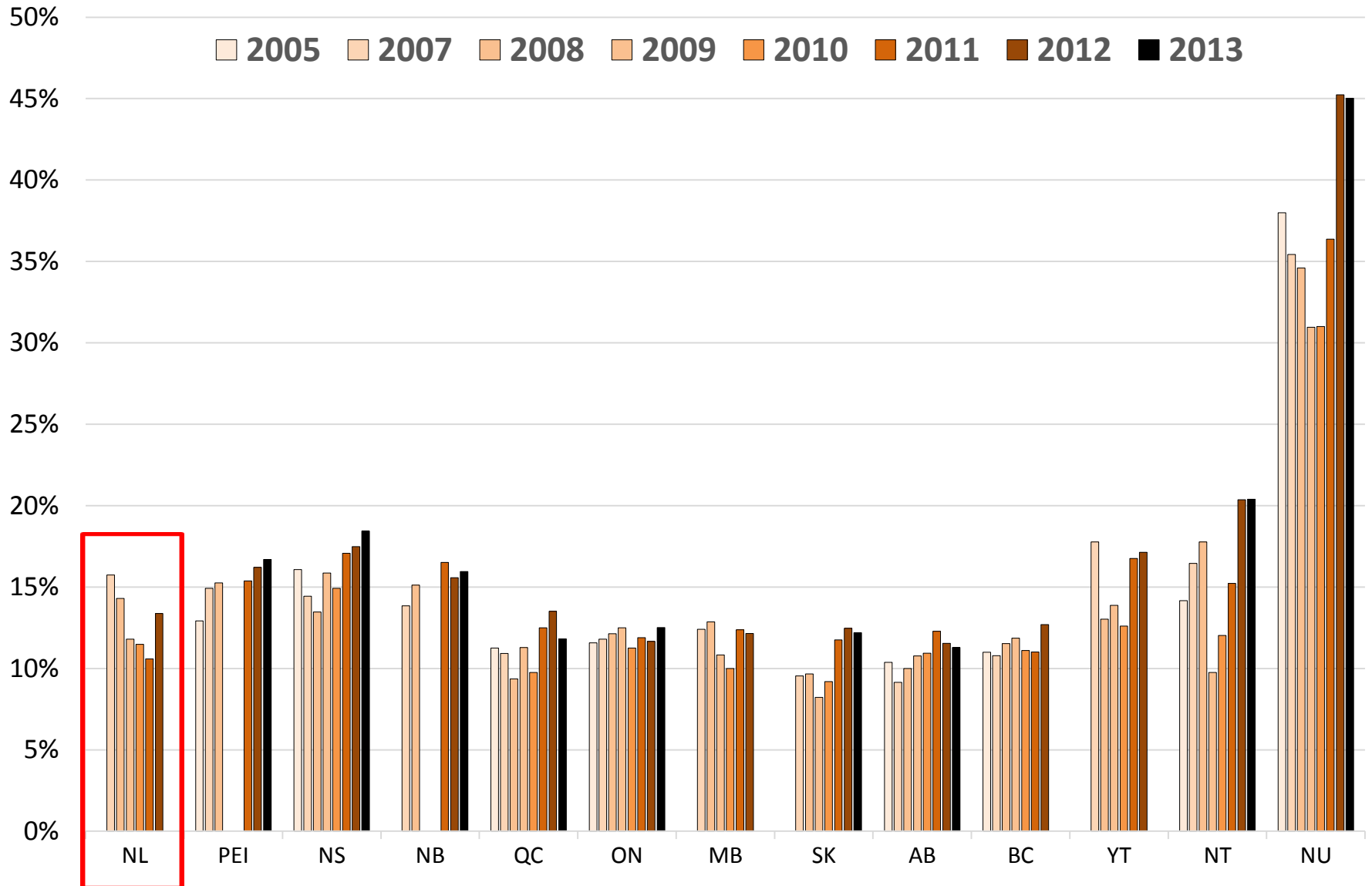
Prevalence of food insecurity by main source of income, 2012



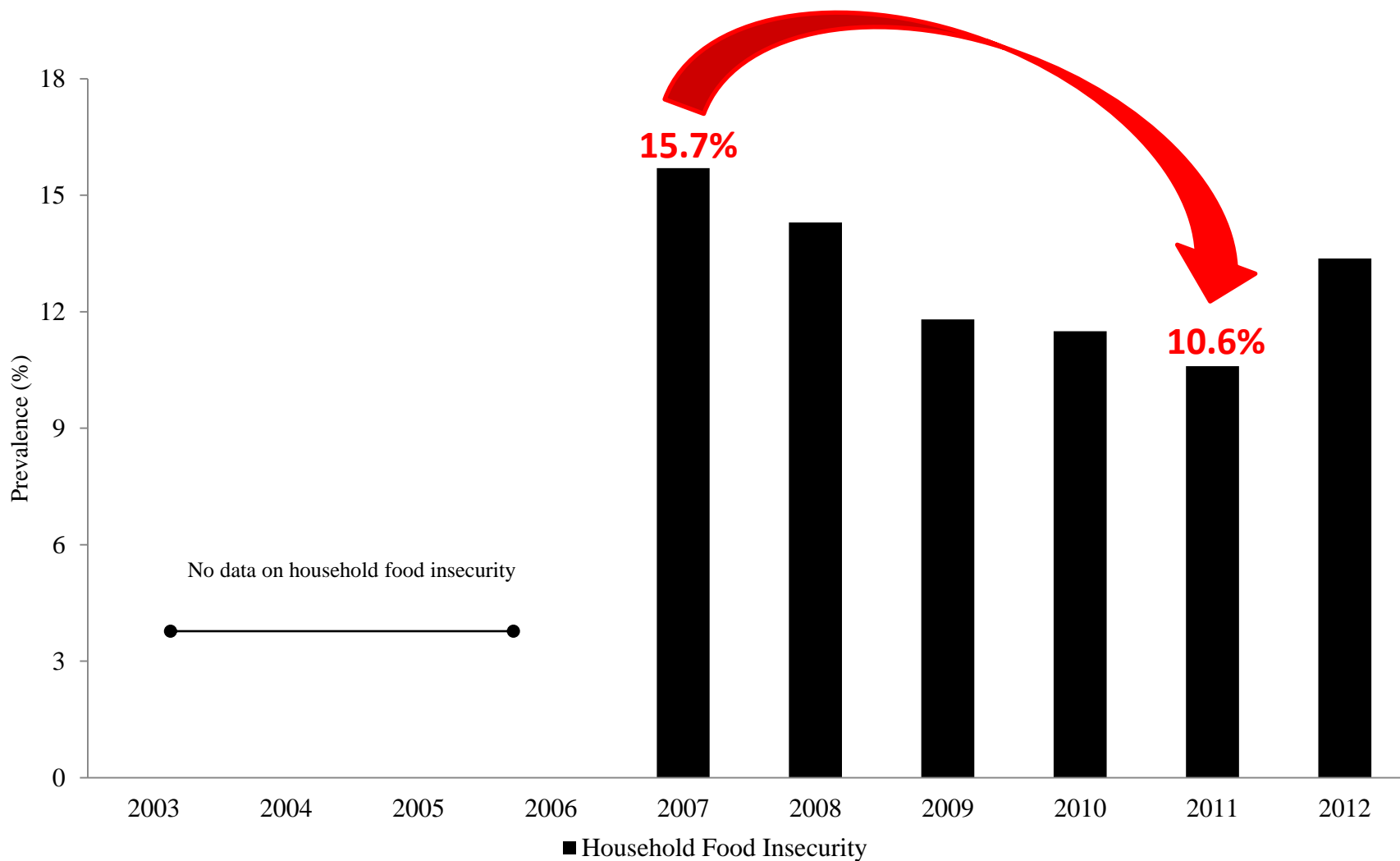
Policy interventions to reduce poverty among Canadian seniors have resulted in them having the lowest rate of food insecurity in the country.

- Seniors have guaranteed annual incomes, indexed to inflation.
- They also receive drug coverage, transit subsidies, 'seniors' discounts in retail outlets, ...
- Turning 65 drops the risk of food insecurity in half for low-income adults. (Emery, Fleisch and McIntyre. *How a Guaranteed Annual Income Could Put Food Banks out of Business*, University of Calgary SPP Research Papers, Dec 2013)

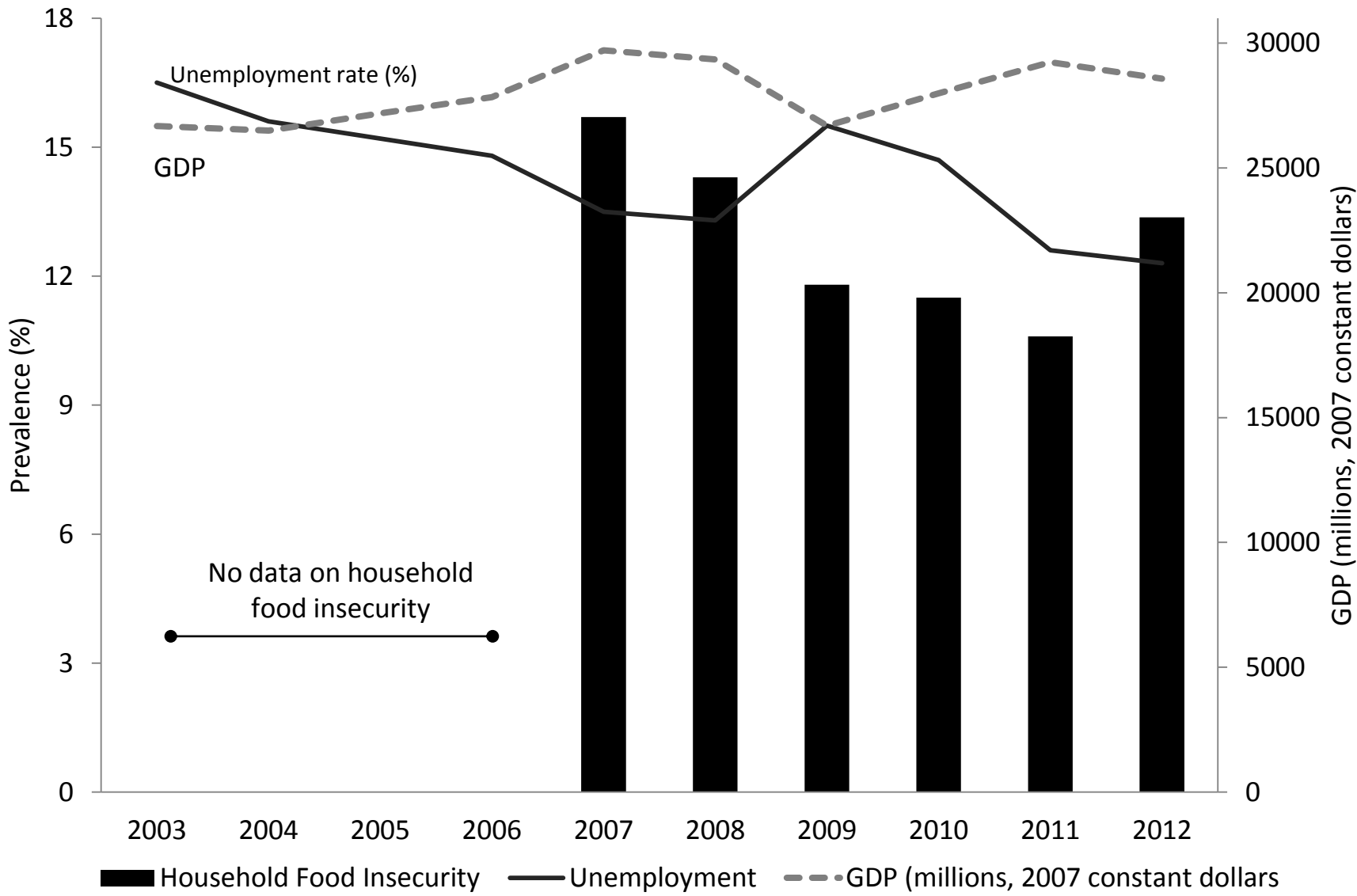
Prevalence of household food insecurity for individual provinces and territories, 2005 – 2013.



Household food insecurity in Newfoundland and Labrador

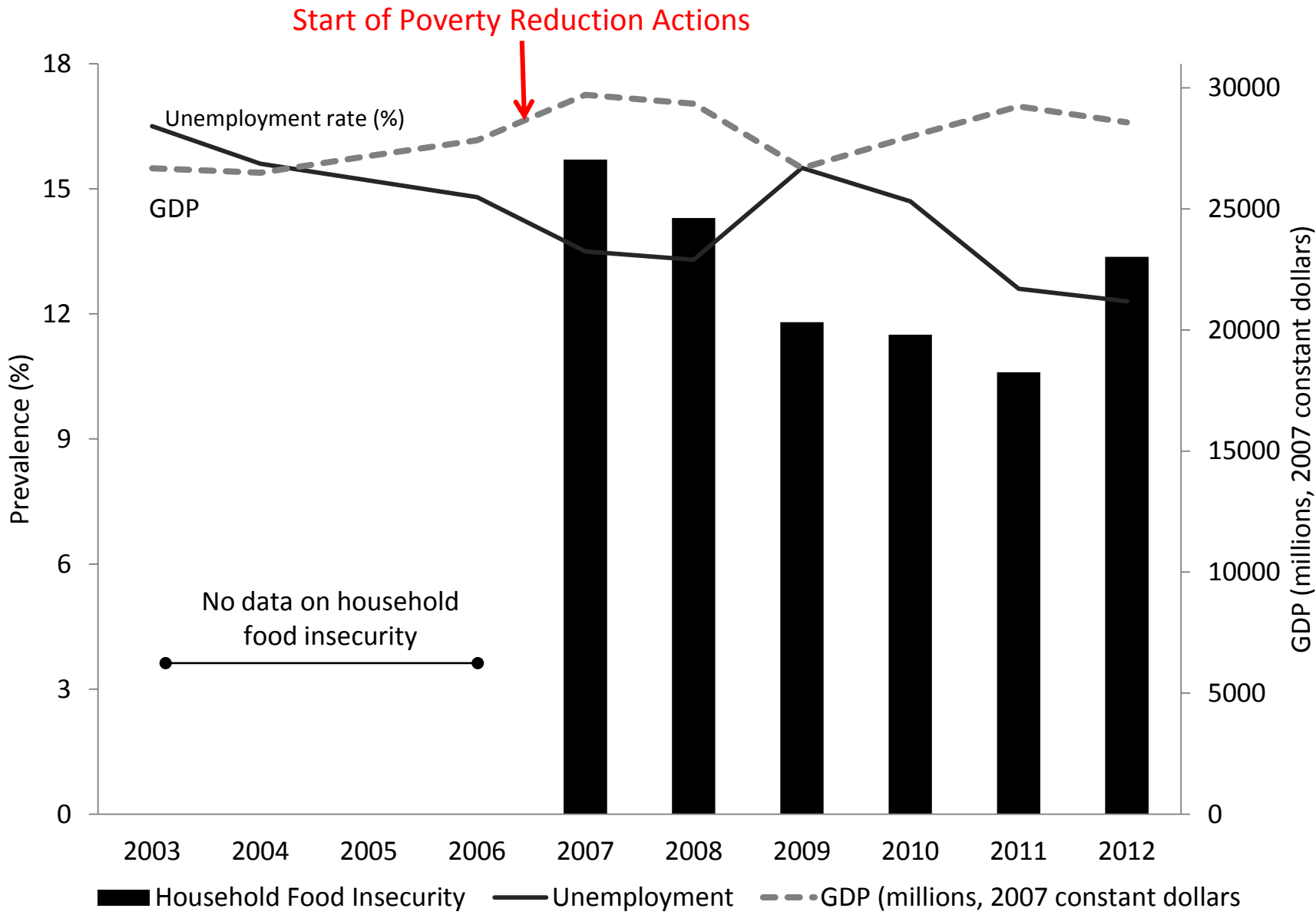


Food Insecurity in Newfoundland and Labrador

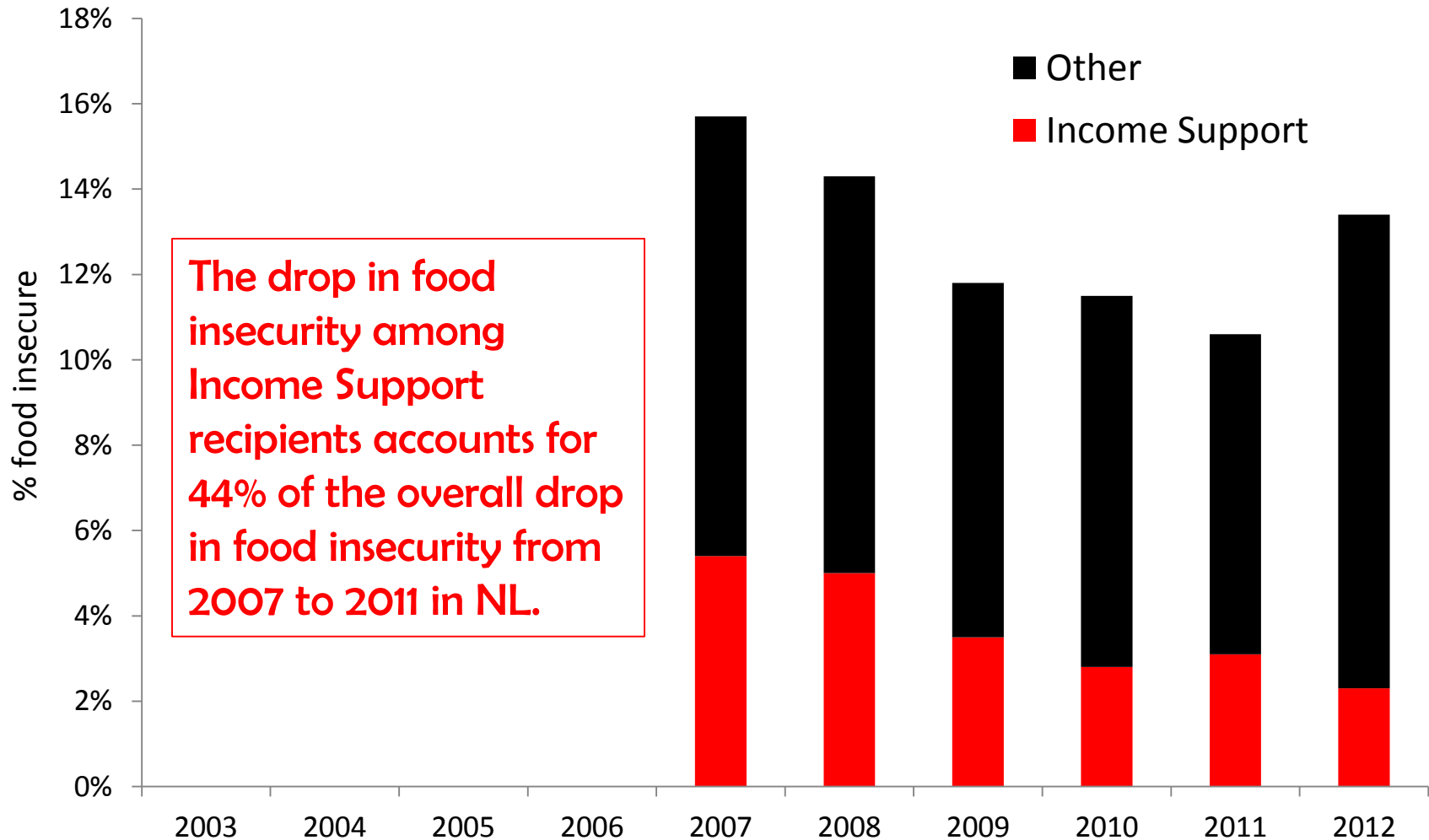


(Loopstra, Dachner & Tarasuk, *Canadian Public Policy*, September, 2015)

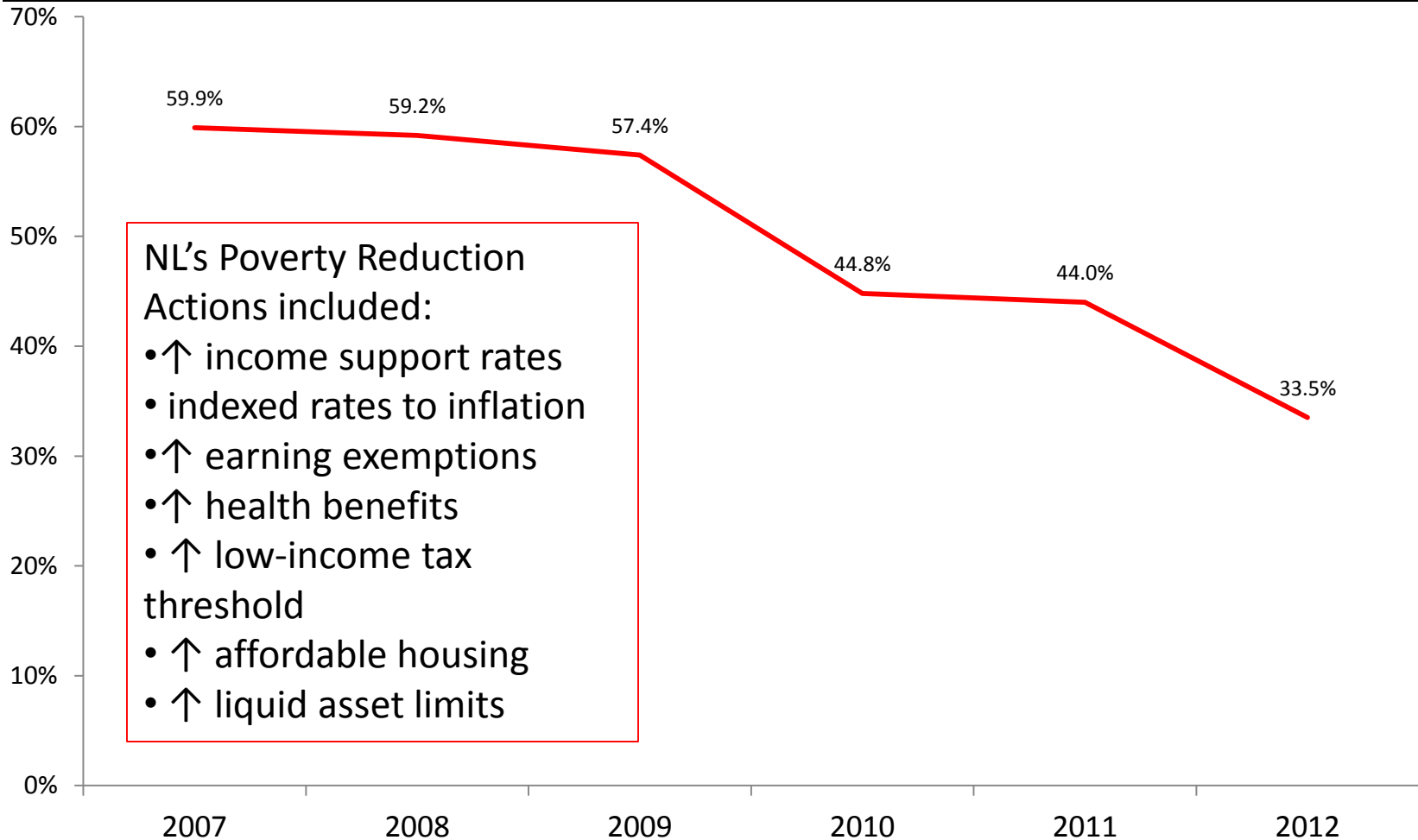
Food Insecurity in Newfoundland and Labrador



Contribution to total food insecurity prevalence in Newfoundland and Labrador by household source of income:



Prevalence of food insecurity among households in Newfoundland and Labrador reporting any income from social assistance.



Reflections on Canada's monitoring:

- Inclusion of module on a large, routine population survey has enabled extensive mapping of prevalence and severity across jurisdictions.
- Annual measurement has been critical in observing policy effects.
- Use of 18-item module has revealed importance of severity of food insecurity.
- Linkage with health administrative data is extending our understanding of health implications.

Reflections on Canada's monitoring, continued:

- Despite extensive documentation of the magnitude, nature, and health implications of food insecurity and evidence of the sensitivity of food insecurity to public policy interventions, addressing food insecurity is still not a public policy priority in Canada.
- Broad dissemination of monitoring results and public education regarding the meaning of these numbers are critical to uptake.

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Funding:

This research is funded by a programmatic grant from the Canadian Institutes of Health Research.

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