

Household Food Insecurity in Canada: A Guide to Measurement and Interpretation

Introduction

In recent years, a large body of evidence on the scale and impact of household food insecurity in Canada has been established. As this knowledge base has grown, so too has reporting on food insecurity by government agencies, public health groups, community organizations, and mainstream media. With great data comes great responsibility; statistics on household food insecurity are often misreported or simplified in ways that neglect important nuances in data collection and analysis. Clear communication on data sources, measurement constructs, and represented populations is essential to disseminating food insecurity data that correctly informs the audience and has the power to drive policy change.

The aim of this guide is to build the capacity of knowledge users in understanding how food insecurity is measured in Canada, how data on food insecurity can be accessed and analyzed, and how to interpret and report on this data in accurate and meaningful ways. This need is particularly timely given the recent release of *Opportunity for All – Canada’s First Poverty Reduction Strategy*, which includes food insecurity among a suite of indicators to track progress on poverty in Canada.¹ The *Strategy* plans to create an online dashboard with up-to-date data on these indicators and alludes to improvements in the regular monitoring of household food insecurity. In a context of more accessible statistics and government interest in food insecurity, strong capacity to work with this data can shape its position on the national agenda.

Monitoring of Household Food Insecurity in Canada

Household food insecurity has been monitored in Canada since 2005, when a standardized scale of measurement was added to the Canadian Community Health Survey (CCHS).² Administered by Statistics Canada, CCHS is a national, cross-sectional survey that collects health information on a sample of 130,000 Canadians every two years (known as one cycle).³ Survey respondents represent Canadians aged 12 years and older living in the ten provinces and three territories, and exclude persons living on First Nations reserves or in institutions, full-time members of the Canadian forces, and those in some remote regions of Quebec. This sample is designed to capture 97-98% of the Canadian population, with slightly lower coverage rates in the North (Northwest Territories-96%, Nunavut-93%, and Yukon-94% in 2017-18).³ The current coverage rate in Nunavut marks a notable improvement in sampling design; prior to 2013, coverage in the territory was limited to the ten largest communities, representing only about 70% of Nunavut’s population.⁴

Content included on a given cycle of CCHS is classified as *core* or *optional*.³ *Core content* is asked of all respondents, while *optional content* is at the discretion of provinces and territories to include for their residents. The scale used to measure household food insecurity, the Household Food Security Survey Module (HFSSM), has been included as *core content* on some cycles of CCHS (2007-08, 2011-12, 2017-18) and as *optional content* on the intervening cycles.⁵ As each *optional content* cycle thus far has been subject to some provinces and/or territories opting out of measurement, national data on household food insecurity is lacking the consistent monitoring necessary to rigorously inform policy responses.

Household Food Security Survey Module

The HFSSM (see Appendix A) is a standardized and validated scale of food insecurity severity that measures ***inadequate or insecure access to food due to financial constraints***. While food security is often broadly conceptualized as the state when *'all people, at all times, have physical and economic access to sufficient, safe and nutritious food that meets their dietary needs and food preferences for an active and healthy life'*, the measure of household food insecurity on the HFSSM is not capturing the absence of these conditions. Rather, it is focused on the ability of a household to afford the food it needs.^{2,6}

The HFSSM was developed by the U.S. Department of Agriculture (USDA) for use in the United States, and was subsequently approved by Health Canada to become the measurement tool for household food insecurity in Canada.² In its seminal 2007 report, *Canadian Community Health Survey Cycle 2.2, Nutrition (2004): Income-Related Household Food Security in Canada*, Health Canada details the first use of the module, sharing the evidence behind methodological adaptations and the earliest national and provincial prevalence estimates of household food insecurity as defined by the HFSSM.² This report still stands as a key resource on how HFSSM data is collected, analyzed, and interpreted in the Canadian context.

The module itself consists of 18 questions on the experiences of food insecurity in a household over the previous 12 months. These experiences range from worrying about running out of food before there is money to buy more, to the inability to afford a balanced diet, to missing meals, and in extreme cases, going a whole day without eating because of a lack of food and money for food. The questions on the HFSSM distinguish between the experiences of adults and children.² Ten questions, termed the *adult scale*, focus on overall household conditions and adults' specific experiences. The remaining eight questions, termed the *child scale*, are administered to households with members under 18 years of age to assess children's experiences of food insecurity. Capturing the unique experiences of adults and children is in line with evidence on the allocation of scarce resources under conditions of food insecurity; adults often endure greater levels of food deprivation in order to maximize the availability of food for their children.

Classification of Food Security Status

Food insecurity is assessed at the household level. Based on the number of food insecure experiences (known as affirmative responses) reported on the HFSSM, households are classified as either food secure or food insecure. Households that are food insecure can be further classified by level of severity to account for the range of experiences that food insecurity may include. The thresholds that define household food security status vary based on the organization that is analyzing the data.

Health Canada Classification System

Canada's official classification system defines food secure households as those with zero or one affirmative response on either the adult or child scale of the HFSSM.² Conversely, food insecure households are those with two or more affirmative responses on either of the scales. Health Canada further classifies food insecure households as experiencing either *moderate food insecurity* or *severe food insecurity* (see Table 1). Among households with children, this system considers the adult and child scale as distinct entities and uses the results of both scales to classify the household. In cases where the adult and child statuses are discordant (e.g., adults = severe, children = moderate), the household status is that of the more severe classification.

PROOF Classification System

PROOF's classification system applies similar principles to that of Health Canada, in analyzing the adult and child scales separately and retaining the same thresholds for moderate and severe food insecurity.⁷ However, PROOF defines an additional level of food insecurity – *marginal food insecurity* – which shifts the definition of food secure households to only those with zero affirmative responses on the HFSSM (see Table 1). Marginally food insecure households report at least one affirmative response on either the adult or child scale. This classification decision is based on the substantial body of research demonstrating that even a single affirmative response is sufficient for vulnerability to the negative health outcomes associated with food insecurity.⁸ When PROOF reports on the total prevalence of food insecurity in Canada, households experiencing marginal food insecurity are included in the estimate. The most recent national data (2012) indicate that 4.1% of households in Canada, or about 543,700 households, experienced marginal food insecurity, so the decision to count this group as food insecure adds substantially to the overall prevalence of household food insecurity.⁷

Table 1. Determination of household food security status based on HFSSM in Canada

Household Status	18-Item Household Food Security Survey Module	
	10-Item Adult Food Security Scale	8-Item Child Food Security Scale
Health Canada^a		
Food secure	No more than 1 affirmative response	No more than 1 affirmative response
Moderate food insecurity	2 to 5 affirmative responses	2 to 4 affirmative responses
Severe food insecurity	6 or more affirmative responses	5 or more affirmative responses
PROOF^b		
Food secure	No affirmative responses	No affirmative responses
Marginal food insecurity	No more than 1 affirmative response	No more than 1 affirmative response
Moderate food insecurity	2 to 5 affirmative responses	2 to 4 affirmative responses
Severe food insecurity	6 or more affirmative responses	5 or more affirmative responses

^a Adapted from: Health Canada Office of Nutrition Policy and Promotion (2007).

^b Adapted from: Tarasuk, V., Mitchell, A., & Dachner, N. (2013).

Note: In rows with more than one condition for classification, meeting *either* condition is sufficient for classification into the category. In cases where a household meets the conditions of two different classifications (i.e. discordant statuses on the child and adult scale), the household status is that of the more severe classification.

Accessing Data on Household Food Insecurity

As the administrator of CCHS, Statistics Canada is the source of raw data from the HFSSM. Data access is tightly controlled, with the survey data made available for analysis by different user groups in three different ways. The *Public Use Microdata File* contains anonymized data of select variables from a given CCHS cycle and is available through post-secondary institution subscriptions or directly from Statistics Canada for purchase.⁹ The *Master File* contains all data from a CCHS cycle, but is only available to Statistics Canada employees and approved members of university Research Data Centres.² The *Share File* contains the same variables as the *Master File*, but this file only includes data for those respondents who have consented to have their data shared with health authorities (about 95% of respondents). This file is accessible by provincial and territorial Ministries of Health and Health Canada.² The *Share File* and *Master File* are weighted to produce comparable results.

Analyzing Data on Household Food Insecurity

Estimating Household-Level Prevalence

Food insecurity, as measured by the HFSSM, is assessed at the household level. When analyzing this data, household weights developed by Statistics Canada can be applied to produce a population-representative sample of Canadian households for each survey year.¹⁰ These weights shape the data to reflect the true distribution of household types included in CCHS, given that the sampling design and response rates may yield a sample that over or under represents certain groups, potentially skewing results. This process assigns a weight to each respondent in the final sample, which corresponds to the number of households in the entire covered population that are represented by that respondent.

Application of these household weights allows for the estimation of the proportion and number of Canadian households who reported food insecurity in a given year or CCHS cycle, as well as analysis on the household and contextual factors associated with food insecurity.⁸ In addition to national estimates, the household weights can be applied to generate prevalence estimates at the provincial or territorial level. However, the household weights have not been calibrated for use at sub-provincial/territorial levels, rendering it difficult to assess the representativeness of weighted estimates at the local or regional level.¹¹

Estimating Individual-Level Prevalence

As household food insecurity is a strong, independent predictor of individuals' health and well-being, it is important to monitor not only household-level prevalence, but also the prevalence of individuals exposed to household food insecurity.⁸ Reporting on food insecurity at the individual level is often the preferred unit of measurement for lay publications and status reports, yet estimating the total number of individuals living in food insecure households is challenging because CCHS only samples Canadians aged 12 and older. Using person weights (a concept similar to household weights, but shaping the sample's data to reflect the distribution of *individuals* included in CCHS), population-representative prevalence estimates can be generated for the number of individuals aged 12 and older living in food insecure households. These person weights have been calibrated for smaller units of geography, so individual prevalence estimates are available for sub-provincial/territorial areas. A major disadvantage of using person weights to estimate the number of individuals living in food insecure households is that it does not account for children under age 12.⁸ Thus, this method significantly underestimates the total number of people affected by household food insecurity and neglects the heightened vulnerability of younger children.

To address this, the total number of individuals living in food insecure households can be estimated through household composition data and household weights. Data on the composition of food insecure households (e.g., couple with no children under 18, lone parent with two children) can be used to elicit the total number of individuals in each household, and the subsequent application of household weights will shift the estimate to be population-representative. The same process can be used to determine the number of individuals living in food secure households. Comparing the number of individuals living in food insecure homes with the sum of these two figures makes it possible to estimate the proportion of individuals living in food insecure households. For example, using household composition data and household weights on 2012 data, it can be estimated that there were about 1.15 million children under 18 living in food insecure households, while there were about 5.82 million children under 18 living in food secure households.¹² This means that 1.15 million of the almost 7 million children in Canada covered by CCHS, or 16.5%, were exposed to food insecurity in that year.

Interpreting Data on Household Food Insecurity

Generalizability to Vulnerable Populations

While the HFSSM facilitates the measurement of household food insecurity in Canada, its use is not without limitations. As the module is administered through CCHS, the survey sample's omission of populations with a higher risk of food insecurity likely underestimates the true scale of the problem. Excluded from the survey coverage are persons living on First Nations reserves or in institutions, full-time members of the Canadian forces, and those in some remote regions of Quebec.

While the excluded groups comprise only 3% of the Canadian population, the CCHS sample omits the more than 300,000 status First Nations peoples living on-reserve, who make up nearly half of Canada's status First Nations peoples.^{3,13} The 2008-10 First Nations Regional Health Survey indicated that 54.2% of households in First Nations communities experienced food insecurity^a, with 14.1% of these households being severely food insecure.¹⁴ The story in other omitted communities follows suit – Nunavik, a remote Inuit region of Quebec not included in CCHS, reported 42.5% of residents aged 6 and older had low or very low food security^b in 2012.¹⁵ Similarly, as CCHS uses households as its unit of sampling, it omits the 235,000 Canadians who experience homelessness at some point in a given year and are more vulnerable to food insecurity than the general population.^{16,17,18,19} CCHS's omission of high risk populations provides impetus for other survey programs in these communities to begin or continue collecting data on household food insecurity via the HFSSM or a related context-specific tool.

Challenges with generalizability also occur due to the common practice of reporting prevalence estimates at the national and provincial/territorial levels. These prevalence estimates are essentially population averages, and by definition therefore, subsets of the population will have rates of food insecurity above or below the average. Importantly, the provincial/territorial prevalence estimates are not indicative of the rates of food insecurity in individual communities with highly-concentrated vulnerable populations. Data from Ontario can demonstrate this distinction; its provincial prevalence of household food insecurity in 2013 and 2014 was 12.5% and 11.9% respectively, while its census metropolitan areas' (CMA) prevalence in 2013-14 ranged from 10.0% in Ottawa-Gatineau^c to 17.6%^d in Peterborough, revealing considerable variation.²⁰

A more extreme example of this is seen in Nunatsiavut, an Inuit region in Labrador. In 2013-14, 61.1% of households in Nunatsiavut reported experiencing some level of food insecurity^e over the last month.²¹ Yet, when using provincial-level data, Newfoundland and Labrador is often heralded as a food insecurity success story. The province saw a sharp drop in food insecurity prevalence among social assistance recipients in the years following its 2006 Poverty Reduction Strategy, and it had the lowest prevalence of food insecurity (13.4%) among Atlantic provinces in 2012, its most recent measurement period.^{12,22} Marked prevalence differences within jurisdictions highlight the need to consider local-level data in the narrative of household food insecurity in Canada.

^a As measured via a nine-question module derived from the Household Food Security Survey Module, retaining the same classification system as Health Canada (moderate and severe).

^b As measured via a six-question module derived from the Household Food Security Survey Module, with a differing classification system of "high or marginal food security", "low food security", and "very low food security".

^c Ottawa-Gatineau is a Census Metropolitan Area that crosses provincial boundaries, containing respondents from Ontario and Quebec.

^d Use estimate with caution – coefficient of variation 16.6-33.3%.

^e As measured via 'a range of questions about the ability of households to afford food and experiences with food over a one-month period'. Households were classified as food secure, marginally food insecure, moderately food insecure, or severely food insecure, although thresholds for these classifications are not specified.

Comparability to Other Classification Systems

While the United States and Canada both use the HFSSM to estimate food insecurity prevalence, it is important to recognize that their differing classification systems do not allow for valid comparisons of published estimates. The USDA classification system in the United States uses more conservative thresholds, whereby food insecure households are those with three or more affirmative responses on the HFSSM (recall, Health Canada sets this threshold at two affirmative responses, and PROOF at one affirmative response).²³ Food insecurity is further classified by levels of severity, termed *low food security* and *very low food security* (see Table 2).

Notably, the USDA thresholds are based on the number of affirmative responses across the full HFSSM, rather than the adult and child scales discretely. While the USDA reports on categories termed *households with low food security among children* (two or more affirmative responses on the child scale) and *households with very low food security among children* (five or more affirmative responses on the child scale), these thresholds are not considered when determining the household status. A limitation of this full scale approach is that it assumes the HFSSM is capturing a single phenomenon across all questions, given the evidence that children are protected from food insecurity by adults in the household accepting more severe levels of hunger.^{2,24,25} Though it is very rare for children to experience more severe food insecurity than other household members, some research indicates that the protective role of adults is dependent on the number and age(s) of children in the household.^{24,25} To prevent potential misclassification that may understate the true prevalence of food insecurity among children, USDA researchers have independently proposed the adoption of a new classification system that considers the adult and child scale discretely, similar to those used in Canada.²⁵

Table 2. USDA determination of household food security status based on HFSSM

Household Status	18-Item Household Food Security Survey Module
Households with children	
Food secure	No more than 2 affirmative responses
Low food security	3 to 7 affirmative responses
Very low food security	8 or more affirmative responses
Households without children	
Food secure	No more than 2 affirmative responses
Low food security	3 to 5 affirmative responses
Very low food security	6 or more affirmative responses

Adapted from: Coleman-Jensen, A., Rabbitt, M.P., Gregory, C.A., & Singh, A. (2017).

Comparability to Other Instruments

To address the time and response burden associated with the 18-question module, shortened screening tools have been derived from the HFSSM, some of which have been validated for use among certain populations (i.e. HIV patients, low-income families with young children).^{26,27,28,29,30} While these briefer modules are suitable where circumstances necessitate them, they often do not assess or do not allow for rigorous measurement of the level of severity of food insecurity, and prevalence estimates derived from shortened tools are not comparable to those drawn from the full module. As such, the full HFSSM remains the gold standard of household food insecurity measurement.

Reporting Data on Household Food Insecurity

Unlike in the United States, where the USDA releases a comprehensive annual report on food insecurity every Fall, there has so far been no regular, annual reporting of food insecurity statistics in Canada.³¹ To date, information on household food insecurity has been published by a variety of groups, including government agencies, academic research programs, public health groups, and community organizations. A summary of resources on food insecurity produced by Health Canada, PROOF, Public Health Agency of Canada, and Statistics Canada is provided in Appendix B. More systematic, timely reporting on Canadian food insecurity data is promised as part of the dashboard being mounted by the federal government to monitor Canada's progress towards poverty reduction.¹

Common Errors in Reporting

With numerous groups working to share food insecurity information, it can be challenging for knowledge users to understand how to appraise and synthesize all of the available data. When reporting on food insecurity statistics, it is important to identify how food insecurity is defined (e.g., *Has marginal food insecurity been included?*) and precisely what the figures are measuring (e.g., *Does this figure refer to the number of food insecure children, or the number of children living in food insecure households?*). Common errors in the reporting of food insecurity statistics include: not using the definition of food insecurity that corresponds to the HFSSM measurement (i.e. the insecure or inadequate access to food due to financial constraints); not specifying the age range that a prevalence estimate covers (i.e. all Canadians, only Canadians 12 years and older, or only Canadians 18 years and older); not clarifying which levels of severity are included (i.e. marginal, moderate, and/or severe); and misreporting household-level figures as individual-level. Rigorous reporting that reflects the true scale of household food insecurity in Canada is a key component in advocating for evidence-based public policy reforms.

PROOF is a CIHR-funded, interdisciplinary research program working to identify effective policy interventions to reduce household food insecurity in Canada. Inquiries regarding the measurement, analysis, and interpretation of household food insecurity data can be directed to proof@utoronto.ca. For more information, visit proof.utoronto.ca or follow us on Twitter [@proofcanada](https://twitter.com/proofcanada).

References

- ¹ Employment and Social Development Canada. (2018). *Opportunity for All – Canada’s First Poverty Reduction Strategy*. Ottawa, ON: Government of Canada.
- ² Health Canada Office of Nutrition Policy and Promotion. (2007). *Canadian Community Health Survey Cycle 2.2, Nutrition (2004): Income-related household food security in Canada*. Ottawa, ON: Ministry of Health.
- ³ Statistics Canada. (2018, June 25). Canadian Community Health Survey – Annual Component (CCHS): Detailed information for 2017. Retrieved from: <http://www23.statcan.gc.ca/imdb/p2SV.pl?Function=getSurvey&SDDS=3226>
- ⁴ Statistics Canada. (2012, November 27). Canadian Community Health Survey – Annual Component (CCHS): Detailed information for 2012. Retrieved from: <http://www23.statcan.gc.ca/imdb/p2SV.pl?Function=getSurvey&Id=135927>
- ⁵ Health Canada. (2017, August 8). Monitoring Household Food Insecurity over Time. Retrieved from: <https://www.canada.ca/en/health-canada/services/food-nutrition/food-nutrition-surveillance/health-nutrition-surveys/canadian-community-health-survey-cchs/household-food-insecurity-canada-overview/monitoring-household-food-insecurity-over-time-household-food-insecurity-canada-overview-health-canada.html>
- ⁶ Food and Agriculture Organization. (1996). Rome Declaration on World Food Security. Rome, IT: United Nations. Retrieved from: <http://www.fao.org/docrep/003/w3613e/w3613e00.htm>
- ⁷ Tarasuk, V., Mitchell, A., & Dachner, N. (2013). *Household food insecurity in Canada, 2011*. Toronto, ON: Research to identify policy options to reduce food insecurity (PROOF). Retrieved from: <http://proof.utoronto.ca/resources/proof-annual-reports>
- ⁸ Tarasuk, V., Li, T., Mitchell, A., & Dachner, N. (2018). The case for more comprehensive data on household food insecurity. *Health Promotion and Chronic Disease Prevention in Canada*, 38(5), 210-213.
- ⁹ Statistics Canada. (2018, November 7). Canadian Community Health Survey: Public Use Microdata File. Retrieved from: <https://www150.statcan.gc.ca/n1/en/catalogue/82M0013X>
- ¹⁰ Statistics Canada. (2010, June 14). Canadian Community Health Survey: Household Weights Documentation. Retrieved from: http://www23.statcan.gc.ca/imdb-bmdi/pub/document/3226_D57_T9_V1-eng.htm.
- ¹¹ Association of Public Health Epidemiologists in Ontario (APHEO). (2011, April 11). The Canadian Community Health Survey (CCHS). Retrieved from: <http://core.apheo.ca/index.php?pid=201>
- ¹² Tarasuk, V., Mitchell, A., & Dachner, N. (2014). *Household food insecurity in Canada, 2012*. Toronto, ON: Research to identify policy options to reduce food insecurity (PROOF). Retrieved from: <http://proof.utoronto.ca/resources/proof-annual-reports>
- ¹³ Statistics Canada. (2018, July 25). Aboriginal Peoples in Canada: First Nations People, Métis, and Inuit. Retrieved from: <https://www12.statcan.gc.ca/nhs-enm/2011/as-sa/99-011-x/99-011-x2011001-eng.cfm>
- ¹⁴ First Nations Information Governance Centre (FNIGC). (2012). *First Nations Regional Health Survey (RHS) 2008/10: National report on adults, youth, and children living in First Nations communities*. Ottawa, ON: FNIGC.
- ¹⁵ Statistics Canada. (Updated 2018, October 24). *Table 41-10-0010-01 Food security, Inuit population, by Inuit region of residence*. CANSIM (database).
- ¹⁶ Gaetz, S., Dej, E., Richter, T., & Redman, M. (2016). *The state of homelessness in Canada 2016*. Toronto, ON: Canadian Observatory on Homelessness Press.
- ¹⁷ O’Campo, P., Hwang, S.W., Gozdzik, A., & Schuler, A. (2017). Food security among individuals experiencing homelessness and mental illness in the At Home/Chez Soi trial. *Public Health Nutrition*, 20(11), 2023-2033.
- ¹⁸ Tarasuk, V., Dachner, N., Poland, B., & Gaetz, S. (2009). Food deprivation is integral to the ‘hand to mouth’ existence of homeless youths in Toronto. *Public Health Nutrition*, 12(9), 1437-1442.
- ¹⁹ Holland, A.C., Kennedy, M.C., & Hwang S.W. (2011). The assessment of food security in homeless individuals: A comparison of the Food Security Survey Module and the Household Food Insecurity Access Scale. *Public Health Nutrition*, 14(12), 2254-2259.
- ²⁰ Tarasuk, V., Mitchell, A., & Dachner, N. (2016). *Household food insecurity in Canada, 2014*. Toronto, ON: Research to identify policy options to reduce food insecurity (PROOF). Retrieved from: <http://proof.utoronto.ca/resources/proof-annual-reports>
- ²¹ Nunatsiavut Government. (2017, May 23). Household Food Security Survey Results Released. Retrieved from: <http://www.nunatsiavut.com/wp-content/uploads/2017/05/NEWS-RELEASE-Food-security-survey-results-released.pdf>

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- ²² Research to identify policy options to reduce food insecurity (PROOF). (Updated 2018, February 22). Household Food Insecurity in Canada. Retrieved from: <https://proof.utoronto.ca/food-insecurity/>
- ²³ Coleman-Jensen, A., Rabbitt, M.P., Gregory, C.A., & Singh, A. (2017). *Household food security in the United States in 2016*. Washington, DC: United States Department of Agriculture, Economic Research Service.
- ²⁴ Nord, M., & Bickel, G. (2002). *Measuring children's food security in U.S. households, 1995-99*. Washington, DC: United States Department of Agriculture, Economic Research Service.
- ²⁵ Coleman-Jensen, A., & Nord, M. (2014). Improving food security classification of households with children. *Journal of Hunger & Environmental Nutrition*, 9(3), 318-333.
- ²⁶ USDA Economic Research Service. (2012). U.S. Household Food Security Survey Module: Six-Item Short Form. Retrieved from: <https://www.ers.usda.gov/media/8282/short2012.pdf>
- ²⁷ Hager, E.R., Quigg, A.M., Black, M.M., Coleman, S.M., Heeren, T., Rose-Jacobs, R.,...Frank, D.A. (2010). Development and validity of a 2-item screen to identify families at risk for food insecurity. *Pediatrics*, 126(1), e26-e32.
- ²⁸ Young, J., Jeganathan, S., Houtzager, L., Di Guilmi, A., & Purnomo, J. (2009). A valid two-item food security questionnaire for screening HIV-1 infected patients in a clinical setting. *Public Health Nutrition*, 12(11), 2129-2132.
- ²⁹ Swindle, T.M., Whiteside-Mansell, L., & McKelvey, L. (2013). Food insecurity: Validation of a two-item screen using convergent risks. *Journal of Child and Family Studies*, 22, 932-941.
- ³⁰ Gundersen, C., Englehard, E.E., Crumbaugh, A.S., & Seligman, H.K. (2017). Brief assessment of food insecurity accurately identifies high-risk US adults. *Public Health Nutrition*, 20(8), 1367-1371.
- ³¹ USDA Economic Research Service. (2018, September 5). Household Food Security: Annual Reports. Retrieved from: <https://www.ers.usda.gov/topics/food-nutrition-assistance/food-security-in-the-us/readings/#reports>.

Appendix A – CCHS Household Food Security Survey Module

The following questions are about the food situation for your household in the past 12 months.

Q1. Which of the following statements best describes the food eaten in your household in the past 12 months, that is since [current month] of last year?

1. You and other household members always had enough of the kinds of foods you wanted to eat.
2. You and other household members had enough to eat, but not always the kinds of food you wanted.
3. Sometimes you and other household members did not have enough to eat.
4. Often you and other household members didn't have enough to eat.

Don't know / refuse to answer (Go to end of module)

Question Q1 is not used directly in determining household food security status.

STAGE 1: Questions 2-6 - ask all households

Now I'm going to read you several statements that may be used to describe the food situation for a household. Please tell me if the statement was often true, sometimes true, or never true for you and other household members in the past 12 months.

Q2. The first statement is: you and other household members worried that food would run out before you got money to buy more. Was that often true, sometimes true, or never true in the past 12 months?

1. Often true
2. Sometimes true
3. Never true

Don't know / refuse to answer

Q3. The food that you and other household members bought just didn't last, and there wasn't any money to get more. Was that often true, sometimes true, or never true in the past 12 months?

1. Often true
2. Sometimes true
3. Never true

Don't know / refuse to answer

Q4. You and other household members couldn't afford to eat balanced meals. In the past 12 months was that often true, sometimes true, or never true?

1. Often true
2. Sometimes true
3. Never true

Don't know / refuse to answer

IF CHILDREN UNDER 18 IN HOUSEHOLD, ASK Q5 AND Q6; OTHERWISE, SKIP TO FIRST LEVEL SCREEN

Now I'm going to read a few statements that may describe the food situation for households with children.

Q5. You or other adults in your household relied on only a few kinds of low-cost food to feed the child(ren) because you were running out of money to buy food. Was that often true, sometimes true, or never true in the past 12 months?

1. Often true
2. Sometimes true
3. Never true

Don't know / refuse to answer

Q6. You or other adults in your household couldn't feed the child(ren) a balanced meal, because you couldn't afford it. Was that often true, sometimes true, or never true in the past 12 months?

1. Often true
2. Sometimes true
3. Never true

Don't know / refuse to answer

FIRST LEVEL SCREEN (screener for Stage 2): If AFFIRMATIVE RESPONSE to ANY ONE of Q2-Q6 (i.e., "often true" or "sometimes true") OR response [3] or [4] to Q1, then continue to STAGE 2; otherwise, skip to end.

STAGE 2: Questions 7-11 - ask households passing the First Level Screen

IF CHILDREN UNDER 18 IN HOUSEHOLD, ASK Q7; OTHERWISE SKIP TO Q8

Q7. The child(ren) were not eating enough because you and other adult members of the household just couldn't afford enough food. Was that often, sometimes or never true in the past 12 months?

1. Often true
2. Sometimes true
3. Never true

Don't know / refuse to answer

The following few questions are about the food situation in the past 12 months for you or any other adults in your household.

Q8. In the past 12 months, since last [current month] did you or other adults in your household ever cut the size of your meals or skip meals because there wasn't enough money for food?

1. Yes
2. No (Go to Q9)

Don't know / refuse to answer

Q8b. How often did this happen?

1. Almost every month
2. Some months but not every month
3. Only 1 or 2 months

Don't know / refuse to answer

Q9. In the past 12 months, did you (personally) ever eat less than you felt you should because there wasn't enough money to buy food?

1. Yes
2. No

Don't know / refuse to answer

Q10. In the past 12 months, were you (personally) ever hungry but didn't eat because you couldn't afford enough food?

1. Yes
2. No

Don't know / refuse to answer

Q11. In the past 12 months, did you (personally) lose weight because you didn't have enough money for food?

1. Yes
2. No

Don't know / refuse to answer

SECOND LEVEL SCREEN (screener for Stage 3): If AFFIRMATIVE RESPONSE to ANY ONE of Q7-Q11, then continue to STAGE 3; otherwise, skip to end.

STAGE 3: Questions 12-16 - ask households passing the Second Level Screen

Q12. In the past 12 months, did you or other adults in your household ever not eat for a whole day because there wasn't enough money for food?

1. Yes
2. No (IF CHILDREN UNDER 18 IN HOUSEHOLD, ASK Q13; OTHERWISE SKIP TO END)

Don't know / refuse to answer

Q12b. How often did this happen?

1. Almost every month
2. Some months but not every month
3. Only 1 or 2 months

Don't know / refuse to answer

IF CHILDREN UNDER 18 IN HOUSEHOLD, ASK Q13-16; OTHERWISE SKIP TO END

Now, a few questions on the food experiences for children in your household.

Q13. In the past 12 months, did you or other adults in your household ever cut the size of any of the children's meals because there wasn't enough money for food?

1. Yes
2. No

Don't know / refuse to answer

Q14. In the past 12 months, did any of the children ever skip meals because there wasn't enough money for food?

1. Yes
2. No

Don't know / refuse to answer

Q14b. How often did this happen?

1. Almost every month
2. Some months but not every month
3. Only 1 or 2 months

Don't know / refuse to answer

Q15. In the past 12 months, were any of the children ever hungry but you just couldn't afford more food?

1. Yes
2. No

Don't know / refuse to answer

Q16. In the past 12 months, did any of the children ever not eat for a whole day because there wasn't enough money for food?

1. Yes
2. No

Don't know / refuse to answer

End of module

Appendix B – Selected Resources on Household Food Insecurity

Health Canada

Health Canada has developed resources that explain the [measurement](#) and [monitoring](#) of food insecurity in Canada and has prepared [graphics](#) to illustrate trends in food insecurity. These documents can be a great starting point for learning about the history and structure of the HFSSM and the prevalence of moderate and severe food insecurity over time. Health Canada's resources have presented household-level food insecurity data from 2011-12, broken down by province/territory, household composition, and socio-demographic characteristics (e.g., main source of income, immigrant status, home ownership).

Public Health Agency of Canada

PHAC offers [a section on food insecurity](#) within its Canadian Best Practices Portal that includes links to data sources, government reports, resource guides on related topics (e.g., local government and communications toolkits), and systematic reviews. PHAC has recently taken a step towards creating original food insecurity content with the release of its [Health Inequalities Data Tool \(HIDT\)](#). This interactive platform allows users to select from a variety of social and health indicators and demographic stratifiers (e.g., income, education level, immigrant status) and generate national or provincial/territorial level graphs and data tables that display measures of inequality. Food insecurity is included as a social inequity indicator and as such, users can generate graphs that present food insecurity inequalities by 15 different stratifiers, including age group, cultural/racial background, and functional health, among others. The HIDT operates primarily at the individual level; it matches characteristics of CCHS respondents (2009-2012)³¹ with their household food security status to present the proportion of individuals in a given group (i.e. recent immigrants, bisexual men) who lived in moderately or severely food insecure households. Generated graphs and their corresponding summary data tables can be downloaded for external use.

Statistics Canada

Beyond the raw data discussed in the main text, Statistics Canada offers summary data through its [CANSIM tables](#), which include rates of food insecurity (moderate and severe) from 2007-08 and 2011-12 that can be organized by province/territory or certain household characteristics (e.g., living arrangement, presence of children). Overviews of these statistics are also shared through fact sheets on the [2007-08](#) and [2011-12](#) data and [an issue of Statistics Canada's Health at a Glance series](#).

PROOF

PROOF seeks to improve the accessibility of food insecurity data through their [status reports](#), which monitor trends in food insecurity in Canada in an easy-to-understand, comprehensive manner. These reports contain summary data that is often unavailable through other public information sources, positioning PROOF as the unique provider of food insecurity statistics for certain vulnerable populations and from years in which the HFSSM was optional content. PROOF also builds on its knowledge translation strategy through [fact sheets](#) and [webinars](#), which enable food insecurity information to be shared with relevant stakeholders and the public. In contrast to the aforementioned sources, PROOF resources include marginal food insecurity in their analyses and derive estimates of the total number of individuals in food insecure households, allowing for prevalence measures that provide a more comprehensive picture of the state of food insecurity in Canada.