Canadian Community Health Survey, Cycle 2.2

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Presentation overview

- Statistics Canada data sources on food
- Data sources on nutrition
- Overview of CCHS 2.2 on nutrition
  - Objectives and background
  - Questionnaire Content
  - Data Processing & Validation
  - Dissemination
    - Data files
    - Releases
    - Other initiatives
Survey of Household Spending (SHS)

- Income Statistics Division, Statistics Canada
- Annual survey
- Collects information on household spending patterns, including food.
- Very general information on food expenditures (amount spent on food in stores and restaurants)
Food Expenditure Survey (FOODEX)

- Income Statistics Division, Statistics Canada
- Data collected occasionally
- Provides detailed information on food expenditures (food shopping diaries)
- The FOODEX will become part of the SHS redesign – data will be available more frequently.
Food Statistics

- Agriculture Division, Statistics Canada
- Time series going back to 1960
- Food available for consumption calculated on a per capita basis, using a commodity level supply-demand model
- A second, experimentally adjusted, series accounts for probable losses in production, stores, households and restaurants
- Thus, food availability does not equal food consumption, though historically the latter term was used
- Expect to see differences between Food Statistics and CCHS 2.2.
Canadian Health Measures Survey (CHMS)

- Physical Health Measures Division
- In collection 2007 to 2009
- Planned sample size = 5000
- Food frequency questionnaires
- Biomarkers of nutritional status
CHMS biomarkers include:

- Red blood cell folate (folic acid)
- Vitamin B12
- Vitamin D
- Calcium
- Iodine
- Phosphorus
- Potassium
Population Health Surveys

- National Population Health Survey (NPHS)
  - e.g. frequency of consuming fruit and vegetables, soft drink consumption, type of milk drunk, food insecurity

- Canadian Community Health Survey (CCHS)
  - e.g. frequency of consuming fruit and vegetables, food insecurity
Canadian nutrition surveys

- Nutrition Canada, 1972
  - National population based data on food consumption
  - Related nutrition assessment
  - Physical and biological measurements
Provincial nutrition surveys in each province between 1989-99
Canadian Community Health Survey
CCHS 2.2
CCHS 2.2: Objectives

- **Estimate the distribution of** usual dietary intake in terms of:
  - food groups, dietary supplements, nutrients and eating patterns
  - for a representative sample of Canadians at provincial and national levels

- **Measure the prevalence of** household food insecurity among various population groups in Canada

- **Gather** anthropometric measurements
  - body height and weight

- **Collect correlate information**
  - physical activity
  - selected health conditions
  - socio-demographic characteristics
CCHS 2.2: Background

- Conducted between January and December 2004
- Household population, all ages
- Survey stratified by 10 provinces and 15 age-sex groups corresponding to Dietary Reference Intake groupings
- 76.5% response rate
- Information from over 35,000 respondents
- Over 10,000 second dietary recalls
- Face to face personal interview
CCHS 2.2: General Health Component

- General Health (12+)
- Physical Activity (12+)
- Children’s Physical Activity (6 - 11)
- Sedentary Activity (12 - 17)
- Self Reported Height and Weight (10% sample, 18+)
- Measured Height and Weight (2+)
- Vitamin and Mineral Supplements (all)
- Household Food Security (all)

- Fruit and Vegetable Consumption (6 mo.+)
- Women’s Health (9+)
- Chronic Conditions (all)
- Smoking (12+)
- Alcohol Consumption (12+)
- Socio-Demographics (all)
- Labour Force (15 - 75)
- Income (all)

(Target age groups given in parentheses)
What’s new?

Measured height and weight

- Most surveys use self-report, open to biases, so we directly measured height and weight without announcing results to respondent
- We also asked 10% of sample to self-report height and weight
What’s new?

Children’s physical activity

- Children engage in different types of physical activity than adults
- 2001/02 WHO Study of Health Behaviours in School-aged Children
- Definition: *Increases heart rate and makes you out of breath some of the time*
- Class time/free time at school, organized activities and unorganized activities
- Ages 6 to 11
What’s new?

Household Food Security

● Adapted from USDA Household Standard Food Security/Hunger Survey Module (thus cannot be compared with food security scores from earlier cycles of CCHS)

● Measures uncertainty about ability to afford food for adults in the household, for any children within the household, and for the respondent

● Analysts may use a special household weight available on request
What’s new?

24-hour dietary recall

- All foods and beverages consumed from midnight to midnight the previous day
- Modified USDA Automated Multiple-Pass Method (AMPM)
- 1st interview (24-hour Recall and General Health Component)
  - Face to face
  - 2D model booklets
- 2nd interview (24-hour Recall)
  - Telephone
  - 3 to 10 days after the first recall
  - Not on same day of week as first recall
Step 1: Quick List

Please tell me everything you had to eat and drink all day yesterday, Tuesday, from midnight to midnight. Include everything you had at home and away, even snacks, coffee, soft drinks, alcoholic beverages and water. I'll ask you for specific details and amounts of the foods in a few minutes. At this time, just tell me what you had.

[ENTER THE NAME OF EACH FOOD ON A SEPARATE LINE. USE COMMENT, TIME, AND OCCASION FIELDS ONLY IF RESPONDENT PROVIDES DETAILS.]
Step 2: Forgotten Foods

Your answers are important, so we’d like this list to be as complete as possible. Please look at the list of foods (in the front of the booklet) people often forget.

In addition to the foods you have already told me about, did you have any coffee, tea, soft drinks, milk, juice or water?

1. Yes
2. No
3. Had other food(s)
Step 3: Time and Occasion

**Sandy Smith (35, F).**

What would you call this eating occasion?

[The first time the respondent reports an occasion that does not fit available categories, direct the respondent to the yellow page of the food model booklet and read the entire occasion list.]

<table>
<thead>
<tr>
<th>Occasion</th>
<th>Code</th>
</tr>
</thead>
<tbody>
<tr>
<td>Breakfast</td>
<td>1</td>
</tr>
<tr>
<td>Lunch (dinner)</td>
<td>2</td>
</tr>
<tr>
<td>Supper (dinner)</td>
<td>3</td>
</tr>
<tr>
<td>Brunch</td>
<td>4</td>
</tr>
<tr>
<td>Snack</td>
<td>5</td>
</tr>
<tr>
<td>Drink</td>
<td>6</td>
</tr>
<tr>
<td>Feeding (infant only)</td>
<td>7</td>
</tr>
<tr>
<td>Extended consumption</td>
<td>8</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Row</th>
<th>RECFoodName</th>
<th>RECComment</th>
<th>RECTime</th>
<th>RECOccasionOS</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Toast</td>
<td></td>
<td>7:00AM</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>XXX</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Step 4: Details

SANDY SMITH (35, F), N1.001.IN:01.001

Toast, 6:00 AM, breakfast

Was it white, wheat, whole wheat, rye, pumpernickel, multigrain or something else?
Step 4: Details

Amounts

Units

SANDY SMITH (35, F),
Toast, 8:00 AM, breakfast
How many slices of this toast did you actually eat?

1. Slice
2. Snack size slice
3. Very thin/Diet slice
4. Thin slice
5. Regular slice
6. Thick/Large slice
91. Other, Specify
Step 4 : Details

How much yogourt did ANNA SMITH actually eat?

<table>
<thead>
<tr>
<th>Amounts</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>YogurtAmt: 1</td>
<td>YogurtUnit: 5</td>
</tr>
</tbody>
</table>

- 1. Teaspoon
- 2. Tablespoon
- 3. Cup
- 4. Millilitre
- 5. Container
- 6. Tube
- 7. Weight ounce
- 8. Gram
- 9. B1
- 10. B2
- 11. B3
- 12. B4
- 13. B5
- 14. G1
- 15. G2
- 16. G3
- 17. G4
- 18. G5
- 19. G6
- 20. G7
- 21. G8
- 22. M1
- 23. M2
- 24. M3
- 25. M4
- 26. M5
- 27. M6
- 28. M7
- 29. M8
- 30. M9
- 91. Other, Specify
Step 5: Final probe

SANDY SMITH (35, F),

Do you remember anything else you ate or drank yesterday - even small amounts, anything you ate in the car, at meetings or while shopping, cooking or other household chores?

1. Yes
2. No
CCHS 2.2: Food Coding & Validation

- On-going support from Health Canada (HC)

- Food coding:
  - Special training for Stat Can coders
  - On-site supervision by HC nutrition expert

- Food validation:
  - Validation strategy elaborated in conjunction with HC
  - On-site validation by HC nutrition experts
  - Access to additional HC expertise for specific issues
## CCHS 2.2: Food Coding – results

### Total Food Items...

<table>
<thead>
<tr>
<th>Category</th>
<th>Count</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Originally Reported</td>
<td>742,080</td>
<td>100%</td>
</tr>
<tr>
<td>Autocoded</td>
<td>411,782</td>
<td>55.5%</td>
</tr>
<tr>
<td>Manually Coded</td>
<td>329,677</td>
<td>44.4%</td>
</tr>
<tr>
<td>Requiring Direct Health Canada Examination</td>
<td>621</td>
<td>0.1%</td>
</tr>
</tbody>
</table>
# Derived variables (nutrients) from 24-hr recall

<table>
<thead>
<tr>
<th></th>
<th>Alcohol (+ % of total energy)</th>
<th>Thiamin</th>
</tr>
</thead>
<tbody>
<tr>
<td>Energy (kilocalories)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Carbohydrate, total (+ % of total energy)</td>
<td>Calcium</td>
<td>Riboflavin</td>
</tr>
<tr>
<td>Sugars (total)</td>
<td>Phosphorous</td>
<td>Total Niacin Equivalent</td>
</tr>
<tr>
<td>Fibre, total dietary</td>
<td>Magnesium</td>
<td>Vitamin B6</td>
</tr>
<tr>
<td>Fat (total lipids) (+ % of total energy)</td>
<td>Iron</td>
<td>Vitamin B12</td>
</tr>
<tr>
<td>Fatty Acids, Saturated, Total (+ % of total energy)</td>
<td>Zinc</td>
<td>Naturally Occurring Folate</td>
</tr>
<tr>
<td>Fatty Acids, Monounsaturated, Total (+ % of total energy)</td>
<td>Sodium</td>
<td>Folic Acid</td>
</tr>
<tr>
<td>Fatty Acids, Polyunsaturated, Total (+ % of total energy)</td>
<td>Potassium</td>
<td>Folate (Dietary Folate Equivalent)</td>
</tr>
<tr>
<td>Fatty Acids, Polyunsaturated, 18:2, Linoleic (+ % of total energy)</td>
<td>Vitamin A (Retinol Activity Equivalents)</td>
<td>Total Folacin</td>
</tr>
<tr>
<td>Fatty Acids, Polyunsaturated, 18:3, Linolenic (+ % of total energy)</td>
<td>Vitamin D (MCG)</td>
<td>Caffeine</td>
</tr>
<tr>
<td>Cholesterol</td>
<td>Vitamin C</td>
<td>Moisture</td>
</tr>
<tr>
<td>Protein (+ % of total energy)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Other nutrition related variables

- Salt consumption
- Location of food preparation
- Eating occasion (+ time of consumption)
- BNS food groupings
- Canadian Food Guide food groupings (4 groups + other food category)
What’s new?
Vitamin and Mineral Supplements

- Vitamin and mineral supplements were included in the general health component
- Release date expected in early winter 2008
Why a supplement module?

- Supplement use contributes to meeting nutrient requirements
- Assessments of inadequacy should be based on total usual dietary intake of nutrients from all sources
- Supplement use is recommended for some age/sex groups
- Who consumes supplements is of interest to policy-makers
CCHS 2.2 supplement module

- Vitamin and mineral supplement consumption during the past 30 days
- Supplements consumed
- Frequency
- Amount
VMSD_01
In the past month did you take any vitamins or minerals?

1 yes
2 no

VMSD_13
In the past month, how many different vitamin and mineral products did you take?

_ _ (number 1 to 40)
CCHS 2.2: Questionnaire

**VMDD_1A**

Is a Drug Identification Number (DIN) available for this product?

DIN, or

product name and description
CCHS 2.2: Questionnaire

VMDD_3
In the past month, how often did you usually take this supplement?
   _ _ _ (times 1 to 300)

VMDD_N3
Reporting Unit
  1 Per day
  2 Per week
  3 Per month
CCHS 2.2: Questionnaire

VMDD_4 (if taken weekly or monthly)
On the days that you took it, how many times did you usually take this supplement?

_ _ _ Times (1 to 99)

VMDD_5
How many pills or tablets, capsules or teaspoons did you usually take each time?

_ _ _ Number (1 to 999)
## CCHS 2.2: Questionnaire

**VMDD_N6**

**Reporting unit**

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Tablet</td>
</tr>
<tr>
<td>2</td>
<td>Capsule</td>
</tr>
<tr>
<td>3</td>
<td>Teaspoon</td>
</tr>
<tr>
<td>4</td>
<td>Tablespoon</td>
</tr>
<tr>
<td>5</td>
<td>Drop</td>
</tr>
<tr>
<td>6</td>
<td>Injection</td>
</tr>
<tr>
<td>7</td>
<td>Other</td>
</tr>
</tbody>
</table>
Data collection and processing

Collected DIN (66%)

DPD Match

No DPD Match (3%)

No DIN (31%)

Manual Coding
Validation

- Outlier detection and validation were conducted by Statistics Canada and Health Canada
- Problems were identified in relation to consumption frequency, dosage and dosage form
- Approximately 3% of records required a non-DIN edit
Vitamins and minerals

- Carbohydrates (total)
- Calcium
- Fiber
- Folic acid
- Iron
- Linoleic acid
- Linolenic acid
- Magnesium
- Niacin
- Phosphorous
- Potassium
- Riboflavin
- Sodium
- Thiamin
- Vitamin A
- Vitamin B6
- Vitamin B12
- Vitamin C
- Vitamin D
- Vitamin E
- Zinc
CCHS 2.2: Data access and type of support
CCHS 2.2: File structure

- HS + R24
- HS
- VSD
- VDC
- FDC
- R24
- FID
- FRL
- Detailed information for vitamin and minerals
- Recipes (FRL)
- Ingredients (FID)
- 2 days of data
Understanding CCHS 2.2 data needs

24 hr recalls

1st recall

- Represents one-day (or "daily") intake
- Use for point estimates (e.g. means)
- Variances must be estimated with a method such as bootstrap
- 1 data file

30% 2nd recall

- Both days required to represent "usual intake"
- Use for conclusions related to distributions (e.g. percentage of people drinking less than a specific amount of milk)
- Requires use of SIDE program and complex set of 8 data files
Health Canada’s Interpretative Guide to CCHS 2.2

The Canadian Community Health Survey (CCHS) 2.2, Nutrition Focus:
A Guide to Accessing and Interpreting the Data
Health Canada’s Food security report

The Canadian Community Health Survey (CCHS) 2.2, Nutrition Focus: Income-Related Household Food security in Canada
Health Canada’s / Statistics Canada’s Compendium of tables

The Canadian Community Health Survey (CCHS) 2.2, Nutrition Focus: Nutrient Intakes from food
Health Canada’s / Statistics Canada’s Compendium of tables

- Volume 1 of 3
- 13 nutrient distributions at the national, regional and provincial levels
- Based on the share file
- HC publications
  - [http://www.hc-sc.gc.ca/fn-an/surveill/nutrition/commun/cchs_focus-volet_escc_e.html](http://www.hc-sc.gc.ca/fn-an/surveill/nutrition/commun/cchs_focus-volet_escc_e.html)
CCHS 2.2 Data Releases by Statistics Canada

- **Wave 1 - July 6, 2005**
  - General health component (except vitamins and minerals)
  - 2 articles at the release
    - “Adult obesity in Canada: Measured height and weight”
    - “Overweight Canadian children and adolescents”
CCHS 2.2 Data Releases by Statistics Canada

- Wave 1 - July 6, 2005
- Other articles
  - “Trends in adult obesity”
  - “Regional differences in obesity”
CCHS 2.2 Data Releases by Statistics Canada

- **Wave 2** — July 6, 2006
  - 24-hour recall component
  - Initial I-Pub
    - “Canadians Eating Habits”
  - Other articles
    - “Sodium consumption at all ages”
    - “Obesity and eating habits of the aboriginal population” (January 08)
CCHS 2.2 Data Releases by Statistics Canada

- **Wave 3 – January 2008**
  - Vitamin & mineral supplements
  - Updates to variables
    - Linolenic acid
    - Vitamin D
    - Sugar
CCHS 2.2: Cansim Tables

- By age group and sex for Canada and provinces
- For population aged 1 and over
  - Past-month vitamin & mineral supplements consumption
  - Reported occasion of food consumption
  - Location of food preparation
- For population aged 4 and over
  - Percentage of total energy intake from:
    - Fat
    - Protein
    - Carbohydrates
CCHS 2.2: Other Data & Support Initiatives

CCHS 2.2 - User Support Group
  • Sponsored by the Office of Nutrition Policy and Promotion – Health Canada

Statistics Canada’s Workshop
  • Includes a component on SIDE software (for variance analysis)

SIDE software
  • Available from the Iowa State University
  • Available for RDC analysts
For more info on getting access to this data

Data Access Unit
Population Health Surveys
Health Statistics Division
Statistics Canada

cchs-escc@statcan.ca

http://www.statcan.ca/english/concepts/hs/index.htm
Links

- Survey of Household Spending (SHS)
  [www.statcan.ca/english/sdds/3508.htm](http://www.statcan.ca/english/sdds/3508.htm)
- Food Expenditure Survey (Foodex)
  [www.statcan.ca/english/sdds/3503.htm](http://www.statcan.ca/english/sdds/3503.htm)
- Canadian Health Measures Survey (CHMS)
  [www.statcan.ca/english/sdds/5071.htm](http://www.statcan.ca/english/sdds/5071.htm)
- National Population Health Survey (NPHS)
  [www.statcan.ca/english/sdds/3236.htm](http://www.statcan.ca/english/sdds/3236.htm)
- Canadian Community Health Survey (CCHS)
  [www.statcan.ca/english/sdds/3226.htm](http://www.statcan.ca/english/sdds/3226.htm)
- Canadian Community Health Survey 2.2 – Nutrition
  [www.statcan.ca/english/sdds/5049.htm](http://www.statcan.ca/english/sdds/5049.htm)
Questions, Comments