Report on the findings
of the
Oral Health Module
of the
Canadian Health Measures Survey
2007-2009

http://www.healthcanada.gc.ca/ocdo
Introduction

- Background to the Canadian Health Measures Survey (CHMS);
- Results from the Oral Health Component of the survey;
- Implications.

http://www.fptdwg.ca/English/e-documents.html
Canadian Health Measures Survey (CHMS)

Objectives

Estimate the numbers of individuals in Canada with selected health conditions, characteristics, exposures

Estimate the distribution and distributional patterns of selected diseases, risk factors and protective characteristics

Monitor trends based on available historical data

Ascertain relationships among risk factors, protection practices, and health status

Explore emerging public health issues

Determine validity of self / proxy data

Collected key information relevant to the health of Canadians in two phases:

1st - household questionnaire
2nd - direct measurements

http://www.statcan.ca/english/concepts/hs/measures.htm
Overview of the CHMS

Sample size: approximately 5,600 respondents

5 Age / Sex groups:
  • 6-11, 12-19, 20-39, 40-59, 60-79

2 year collection (March 2007 – February 2009)

15 sites (350 to 375 respondents per site)

1 collection team (various team members)

Department of National Defence linkages

First Nations/Inuit Involvement in sub group studies

http://www.statcan.ca/english/concepts/hs/measures.htm#3
Measures

Self / Proxy
- Health Status
- Nutrition and Food Consumption
- Medication Use
- Health Behaviours
- Childhood Development
- Environmental Factors
- Socio-Economic Information

Physical
- Anthropometry
- Cardio-respiratory Fitness
- Musculoskeletal Fitness
- Physical Activity
- Oral Health Exam
- Biological Sample collection

http://www.statcan.ca/english/concepts/hs/measures.htm#2
Survey Included:

- 722 QUESTIONS;
- 100 DIRECT PHYSICAL MEASURES;
- 120 BIOPHYSICAL ANALYTES;
- 12 ENVIRONMENT CANADA WEATHER/POLLUTION INDICATORS;
- CONSENT TO LINK WITH PROVINCIAL HEALTH RECORDS.
Dollars Spent, Insurance rates

Dollars spent: 12.8 billion in 2009 (CIHI)

- 62% have private dental insurance
- 6% have public insurance
- 32% have no dental insurance (pay out of pocket)

Income affect

- 78% higher income, privately insured
- 50% lower income, do not have dental insurance
Utilization Rates

- Have seen a dental professional in the last year: 75%

- Highest Utilization Rate: 95% (Privately insured children)

- Lowest Utilization Rate: 18% (Edentulous older adults)

- Note: 84%: 12→19 year old utilization rate

  68%: 20→39 year old utilization rate
Time Lost from Work, School or Normal Activities.

- 39% Canadians experience time loss;
- 2.26M School days / 4.15M Work days were lost;
- 98% of time loss reported by those who visited;
- 35% visited outside work, school or normal activities.
Self Reported Outcomes.

- 84% report their oral health is good or excellent;
- 12% avoid foods because of their teeth / mouth;
- 12% report having pain in the last year;
- 17% avoid visiting because of costs. (50% among young adults with no insurance).

Smoking Prevalence

Smokers: 20%
Past Smokers: 27%
Never Smokers: 53%
Preventive Dental Behaviours

- 73% brush at least twice a day;
- 28% report they floss 5 times or more a week;
- Sealants:
  - Children → 32% (mean 2.88)
  - Adolescents → 51% (mean 3.51)
Children → 6 - 11 year olds

- Prevalence of Decay: 57%
- dmft / DMFT: 2.5
- DMFT: 0.5

Note:

DMFT of those with decay: 2.1
Untreated caries: 0.4 teeth
(14.7% of disease)

6 year old - prevalence and dmft / DMFT:
(WHO) 47% / 2.5
Adolescents → 12 - 19 year olds

- Prevalence of Decay: 59%
- DMFT: 2.49

Note:

- Untreated caries: 16%
- 12 year old -prevalence and DMFT (WHO): 39% / 1.0
## Adults - DMFT

<table>
<thead>
<tr>
<th></th>
<th>Younger Adults (20-39)</th>
<th>Adults (40-59)</th>
<th>Older Adults (60-79)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Decayed</td>
<td>0.81</td>
<td>0.45</td>
<td>0.37</td>
</tr>
<tr>
<td>Missing</td>
<td>0.39</td>
<td>2.42</td>
<td>5.57</td>
</tr>
<tr>
<td>Filled</td>
<td>5.65</td>
<td>9.43</td>
<td>9.72</td>
</tr>
<tr>
<td>TOTALS</td>
<td><strong>6.85</strong></td>
<td><strong>12.30</strong></td>
<td><strong>15.67</strong></td>
</tr>
</tbody>
</table>

- Overall prevalence of coronal caries: 96%
- Overall prevalence of root caries: 20%

Note: Jump in extractions from adults to older adults.
Root Caries

Prevalence Of History of Root Caries Among Dentate Adults.

- Adults (20-79): 20%
- Older Adults (60-79): 43%

Prevalence Of Adults (20-79) with Untreated Caries.

- Coronal: 20% (2.97 crowns untreated)
- Root: 7% (2.81 roots untreated)
Trauma and Incisors

- **Children:** 7%  
  (mean 1.21 teeth)

- **Adolescents:** 16%  
  (mean 1.32 teeth)

- **Adults:** 24%  
  (mean 1.66 teeth)
Periodontal Conditions → 20 - 79 year olds

- Debris (score 2&3): 27%
- Calculus (score 2&3): 11%
- Gingivitis (score 2&3): 32.3%
- Pocket (Depth 4+ mm): 20%
  - (16% → 4/5 mm)
  - (4% → 6 mm +)
- Loss of Attachment (4 + mm) 21%
  - (15% → 4/5 mm)
  - (6% → 6 mm +)
## Fluorosis → 6 - 12 year olds

<table>
<thead>
<tr>
<th>Normal teeth</th>
<th>Questionable&lt;sup&gt;1&lt;/sup&gt;</th>
<th>Very Mild</th>
<th>Mild</th>
<th>Moderate /severe&lt;sup&gt;2&lt;/sup&gt;</th>
</tr>
</thead>
<tbody>
<tr>
<td>60%</td>
<td>24%</td>
<td>12%</td>
<td>4%</td>
<td>&lt;0.3%</td>
</tr>
</tbody>
</table>

<sup>1</sup> Ill defined and could be due to antibiotic usage, infection, severe fever, trauma etc.

Note:
- Initial WHO central calibration
- Recalibration on first day of each new site
- Recalibration at mid point of each site
- Recalibration before end

<sup>2</sup> Statistics Canada criteria for withholding reporting value:
- Highly unstable numbers (<10)
- Coefficient of variation > 33.3%

For information regarding measures spread in data see the Statistics Canada web site: http://www.statcan.gc.ca/edu/power-pouvoir/ch12/5214876-eng.htm
Receipt of Care Related to Costs

- Avoid Visiting: 17%
  - 34.5% of lower income;
  - 8.8% of higher income;
- Declined Recommended Care: 16%
  - 29.7% of lower income;
  - 9.9% of higher income;
Health Outcomes

- Canadians from lower income families have 2x worse outcomes compared to higher income families related to:
  - DMFT among adolescents;
  - Ratio of decayed teeth to DMFT in adolescents/adults;
  - Edentulism;
  - Prevalence of untreated coronal and root caries;
  - Debris and calculus scores;
  - Severe attachment loss (≥6 mm);
  - Having 1 or more soft tissue lesions.

- Lower rates seen in:
  - Visiting;
  - Sealants;
  - Orthodontic care.

- Higher rates seen in:
  - Avoiding visits because of costs;
  - Declining care because of costs.
Note: 47% of lower income Canadians need 1+ types of treatment while 26% of higher income Canadians need 1+ types.
## National Canadian Comparisons

<table>
<thead>
<tr>
<th></th>
<th>1972</th>
<th>2010</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Visiting</strong></td>
<td>50%</td>
<td>74.5%</td>
</tr>
<tr>
<td><strong>Children (6-11)</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Prevalence – permanent teeth</td>
<td>74% (8-10yrs)</td>
<td>23.6%</td>
</tr>
<tr>
<td>DMFT</td>
<td>2.5 (8-10yrs)</td>
<td>0.5</td>
</tr>
<tr>
<td>dmft / DMFT</td>
<td>6.0</td>
<td>2.5</td>
</tr>
<tr>
<td><strong>Adolescents (12-19)</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Prevalence</td>
<td>96.6%</td>
<td>58.8%</td>
</tr>
<tr>
<td>DMFT</td>
<td>9.2</td>
<td>2.5</td>
</tr>
<tr>
<td><strong>Adults</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Edentulism</td>
<td>23.6%</td>
<td>6.4%</td>
</tr>
<tr>
<td>Coronal Caries</td>
<td>96.1%</td>
<td>95.9%</td>
</tr>
<tr>
<td>DMFT</td>
<td>17.5</td>
<td>10.7</td>
</tr>
<tr>
<td>Root Caries</td>
<td>__</td>
<td>20.3%</td>
</tr>
</tbody>
</table>
## International Comparisons - Caries

<table>
<thead>
<tr>
<th></th>
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<td></td>
</tr>
<tr>
<td>DMFT</td>
<td>2.49</td>
<td>2.55</td>
<td></td>
</tr>
<tr>
<td><strong>Adults (Coronal)</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Prevalence</td>
<td>95.9%</td>
<td>90.1%</td>
<td>91.6%</td>
</tr>
<tr>
<td>DMFT</td>
<td>10.67</td>
<td>12.8</td>
<td>10.33</td>
</tr>
<tr>
<td></td>
<td>(0.58 untreated)</td>
<td></td>
<td>(0.76 untreated)</td>
</tr>
</tbody>
</table>
International Comparisons – Periodontics (Adults)

Solid Color = % of Prevalence > 4mm LOA
Vertical lines = % of Prevalence > 5mm LOA

<table>
<thead>
<tr>
<th>Country</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Canada</td>
<td>21.1</td>
</tr>
<tr>
<td>Australia</td>
<td>42.5</td>
</tr>
<tr>
<td>United States</td>
<td>28.5</td>
</tr>
</tbody>
</table>
International Comparisons – Edentulism

- Canada (2010) Age 20-79: 6.4%
- Canada (2010) Age 60-79: 21.7%
- Australia (2004-2006) Age 15-75: 6.4%
- United States (2007) Age 20-64: 3.8%
- United States (2007) Age 65-74: 23.8%
Other CHMS Results

- **Aerobic Fitness**
  - Fitness levels are higher in Canadian males than in females across all age groups.
  - Both males and females show similar age-related declines.
  - Comparing Canadians over the last 25 years, muscular strength and flexibility have decreased.

- **Body Composition**
  - 45% of Canadian women (18-79) and 31% of men had a normal weight for their height.
  - 74% of Canadian children have a BMI that is neither overweight nor obese.
  - Comparing Canadians over the last 25 years, BMI, waist circumference and skin fold measurements have increased.

- **Musculoskeletal fitness**
  - Males are stronger than females on average for all ages.
  - Females tend to be more flexible and retain their flexibility much later in life.

http://www.statcan.gc.ca/bsolc/olc-cel/olc-cel?catno=82-003-X201000111064&lang=eng
Other CHMS Results

- **Vitamin D Status**
  - 90% of Canadians had vitamin D levels adequate for bone health. Women were more likely than men to have adequate concentrations.
  - 33% of Canadians are above recommended range.
  - 4% of the population have levels indicating vitamin D deficiency, i.e., 1.1M Canadians are deficient (rickets in children, osteoporosis in adults).
  - Deficiency $\rightarrow$ below 27.5 nanomoles per litres (nmol/L)
  - Desirable $\rightarrow$ above 75 nmol/L
  - April to October $\rightarrow$ 38.6% above 75 nmol/L
  - November to March $\rightarrow$ 30.3% above 75 nmol/L
  - Levels tied to season, racial background (non-white), milk intake.
  - 33% good; 66% should take supplements.

http://www.statcan.gc.ca/pub/82-003-x/2010001/article/11131-eng.htm
Conclusions

Generally, Canadians oral health status is good;

3 out of 4 Canadians attend annually for dental care;

2 out of 3 Canadians have no dental needs;

1 out of 3 Canadians has a need and 1 out of 6 say they cannot address this need because of financial reasons;

Of those with need, 50% has a restorative need, 25% has a surgical need and the remaining 25% has needs in prosthodontics, periodontics, urgent conditions and orthodontics respectively;

Canada compares well to other similar Organisation for Economic Co-operation and Development (OECD) countries in terms of caries and periodontal diseases.