The Impact of Diabetes on the Health and Well-being of People in British Columbia

Provincial Health Officer’s Annual Report 2004
Report overview

• Highlights
• What is Diabetes?
• Prevalence, Incidence, Mortality and Cost of Diabetes
• Diabetes Among the First Nations Population
• Prevention of Diabetes
• Management of Diabetes
• Recommendations
Report’s Data and Methodology

National Diabetes Surveillance System
  • A Partnership between federal and provincial governments to improve diabetes data

Administrative databases of Ministry of Health
  • Hospital utilization
  • Medical services utilization
  • Prescribed drug utilization
  • Provincial health insurance coverage information
  • Vital Statistics mortality data
What is Diabetes?

• A chronic condition that results from a deficiency or ineffective use of insulin in the body.

• Types of Diabetes:
  – Type 1
  – Type 2
  – Gestational Diabetes
Diabetes in British Columbia

• In 2003/2004, approximately 220,000 individuals (5.2 per cent of the population) were living with diabetes in British Columbia
Prevalence of Diabetes

Figure 2.1


*Cases for 2003/2004 are adjusted to compensate for incomplete follow-up (12 months) of Medical Services Plan component of the Incident case definition.

Figure 2.2

Age Distribution of Persons With Diabetes, BC, 2003/2004*

*Cases for 2003/2004 are adjusted to compensate for incomplete follow-up (12 months) of Medical Services Plan component of the incident case definition.

Figure 2.4

Age-Standardized Prevalence Rate of Diabetes, by Health Authority, 2003/2004*

*Cases for 2003/2004 are adjusted to compensate for incomplete follow-up (12 months) of Medical Services Plan component of the incident case definition.

Age-Specific Mortality Rates, Ages <10 to 85+ Years,


- Lower Limb Amputation: 17.1
- Chronic Renal Disease: 8.4
- Hypertension: 4.3
- Acute Myocardial Infarction: 3.5
- Ischaemic Heart Disease: 3.4
- Heart Failure: 3.7
- Stroke: 2.8

Figure 2.12a

Cost of Diabetes

Figure 2.17

* Actual costs.

** Cost estimates are derived by attributing all costs (Hospital, Medical Services Plan, Pharmacare) in a given year to two groups — either persons with diabetes or persons without diabetes. Costs are constant 2003/2004 dollars. These estimates exclude both health-related costs for which the responsibility for payment falls on the individual person with diabetes, and other government-funded health care expenses (e.g., costs for long-term care).

*** PharmaCare implemented significant changes to its deductible structure on January 01, 2002 and on May 01, 2003.

Diabetes Among First Nations

Figure 3.4


*Cases for 2003/2004 are adjusted to compensate for incomplete follow-up (12 months) of MSP component of the incident case definition. Trends for all populations are statistically significant (p < 0.001).

Age-Standardized Incidence Rate of Diabetes, Status Indians, by Health Authority, 1998/1999-2002/2003*

*Note: New cases of diabetes arise sporadically and create volatility in the yearly incidence rates for individual age groups. For this reason, a 5-year period is used to smooth out fluctuations that may arise.


- Lower Limb Amputation: 18.5
- Chronic Renal Disease: 4.8
- Hypertension: 4.0
- Acute Myocardial Infarction: 3.1
- Ischaemic Heart Disease: 3.1
- Heart Failure: 3.3
- Stroke: 3.0


Prevention of Diabetes

Figure 4.3: Persons With Diabetes Who Were Overweight or Obese by Age Group, 2003, (BMI 25+)

Note: The sample size for age groups under 30 years of age was based on a small number of people and were therefore excluded.

Source: Canadian Community Health Survey (Stats Canada) File, 2003 (cycle 2.1)
Prevalence of Overweight and Obese Children (ages 5-11) and Youth (ages 12-17)
By Neighbourhood SES Quartiles, NLSCY Cycle 4*

*Percent based on unrounded weighted data, confidence intervals calculated using 1000 bootstrap weights supplied by Statistics Canada to account for the complex sampling design of the NLSCY. NLSCY = National Longitudinal Survey of Children and Youth; SES = socio-economic status.

Figure 2.18

Lifestyle Modification starting in 2006/2007

Projected Prevalence No Reduction Incidence
Projected Prevalence Based On 25% Incidence Reduction By Lifestyle Modification Program
Projected Prevalence Based On 50% Incidence Reduction By Lifestyle Modification Program

Year
03/04* 04/05 05/06 06/07 07/08 08/09 09/10 10/11 11/12 12/13 13/14 14/15 15/16

*Actual prevalence.
Projected Health Services Costs To The B.C. Ministry of Health for People With Diabetes, With Implementation of Lifestyle Modification Program, B.C. 2002/03 to 2015/16

Projected Cost No Reduction Incidence
Projected Cost Based On 25% Incidence Reduction By Lifestyle Modification Program
Projected Cost Based On 50% Incidence Reduction By Lifestyle Modification Program

Lifestyle Modification starting in 2006/07

Year


Projected Cost ($)

Source: Population Health Surveillance & Epidemiology, Ministry of Health Services, 2005.

For the purpose of this analysis, the resulting estimates were modelled from a widely reported study involving a nutritional and physical activity intervention for non-diabetics at risk of developing diabetes (Diabetes Prevention Program Research Group, 2002). It must be acknowledged that the results of a specific clinical trial are not necessarily attainable at the population level, but can assist in the development of goals for a population prevention strategy.
Management of Diabetes

Recommended Services for Persons with Diabetes

- A1C Test – four tests per year
- Microalbumin Test – one test per year
- Lipid (Cholesterol) Test – one test every 1-3 years
- Eye exams – one exam every 1-2 years
- Blood pressure – regular checks and needs to be at 130/80 for all diabetic patients

(From: Ministry of Health, Medical Services Plan, Clinical practice guidelines and protocols in British Columbia, 2005)
Proportion of people with diabetes receiving recommended services, BC, 1999/2000 to 2002/2003

- A1C Test: 2 or more per year
  - 1999/2000: 31%
  - 2000/2001: 33%
  - 2001/2002: 35%
  - 2002/2003: 39%
  - 2003/2004: 41%
  - Recommended Frequency: 4 per year

- Microalbumin Test: 1 per year
  - 1999/2000: 22%
  - 2000/2001: 25%
  - 2001/2002: 28%
  - 2002/2003: 34%
  - 2003/2004: 41%
  - Recommended Frequency: 1 per year

- Lipid Test: 1 every 3 years
  - 1999/2000: 61%
  - 2000/2001: 65%
  - 2001/2002: 70%
  - 2002/2003: 78%
  - 2003/2004: 80%
  - Recommended Frequency: 1 every 1-3 years

- Eye Exams: 1 per year
  - 1999/2000: 47%
  - 2000/2001: 47%
  - 2001/2002: 47%
  - 2002/2003: 43%
  - 2003/2004: 44%
  - Recommended Frequency: 1 every 1-2 years
Recommendations

Prevention of Diabetes

• Importance of Data and Research
• School Health
• Food Security
• Public Education & Community Interventions
Recommendations

Prevention of Diabetes (continued)

• Monitoring & Regulations of marketing Approaches of the Food Industry
• Urban Design and Transportation
• Prevention of Diabetes in the First Nations Populations
• Commitment to Actions and Goals
Recommendations

Management of Diabetes

• Reliable and Efficient Primary Health Care
• Reliable and Efficient Patient Registry and Recall System
• Provision of Recommended Services
• Education and Diabetes Self-management Program
What can individuals do?

- Reduce overweight and obesity
- Increase physical activity
- Eat a healthy and balanced diet
- Learn about diabetes and screening
What can communities do?

• Promote physical activity, healthy eating and healthy weights
• Provide affordable recreational facilities and access to clean and safe parks, walking paths and bike lanes
• Develop programs such as community kitchens and gardens and encourage provision of better selections of healthy food
What can physicians and healthcare professionals do?

- Identify people at risk of developing diabetes.
- Prevent or delay further complications.
- Recommended services should be provided to all diabetes patients.
- Educate their patients to prevent and reduce risk of diabetes.
- Encouraged a coordinated approach with other health care professionals, diabetes patients and their families.
What can governments do?

• Redesign primary care
• Effective system of monitoring diabetes
• Provide more diabetes education program
• Review option of extending PharmaCare coverage for glucose-monitoring devices and other equipments
• Monitor marketing approaches of the food industry
• Ensure social assistance and low-income supports are tied to the cost of a healthy food basket
What can governments do?

• More resources should be provided for population-based programs such as ActNow BC to ensure that they are effective and sustained enough to make a difference

• More funding for research in diabetes-related fields