



# Women's Health

Surveillance Report



Health  
Canada

Santé  
Canada

CPHI  SPC  
Canadian Population | Initiative sur la santé de la  
Health Initiative | population canadienne

Part of the Canadian Institute for Health Information  
Partie intégrale de l'Institut canadien d'information sur la santé



# Women's Health

## Surveillance Report

A Multi-dimensional Look  
at the Health of Canadian Women

The views expressed in this report do not necessarily represent the views of the Canadian Population Health Initiative, the Canadian Institute for Health Information or Health Canada.

The report is available as a summary (the present document), presenting the key findings and recommendations of each chapter, and as a full technical document, available in English and French on the CPHI and Health Canada Web sites ([www.cihi.ca](http://www.cihi.ca) and [www.hc-sc.gc.ca](http://www.hc-sc.gc.ca)).

Contents of this publication may be reproduced in whole or in part provided the intended use is for non-commercial purposes and full acknowledgement is given to the Canadian Institute for Health Information.

Canadian Institute for Health Information  
377 Dalhousie Street  
Suite 200  
Ottawa, Ontario, Canada  
K1N 9N8

Telephone: (613) 241-7860  
Fax: (613) 241-8120  
[www.cihi.ca](http://www.cihi.ca)

ISBN 1-55392-251-4

© 2003 Canadian Institute for Health Information

Cette publication est aussi disponible en français sous le titre :  
*Rapport de surveillance de la santé des femmes* ISBN 1-55392-252-2

# TABLE OF CONTENTS

Acknowledgements .....	i
Introduction .....	iii
<b>Determinants of Health</b>	
The Social Context of Women’s Health .....	1
Multiple Roles and Women’s Mental Health in Canada .....	3
Personal Health Practices .....	5
Body Weight and Body Image .....	7
Physical Activity and Obesity .....	9
Gender Differences in Smoking and Self Reported Indicators of Health .....	11
Women and Substance Use Problems .....	13
<b>Health Status of Canadian Women</b>	
Mortality, Life and Health Expectancy of Canadian Women .....	17
Morbidity Experiences and Disability Among Canadian Women .....	19
The Impact of a Reduced Fertility Rate on Women’s Health .....	21
<b>Health-Related Conditions</b>	
Breast Cancer in Canadian Women .....	25
Cancer of the Uterine Cervix .....	27
Other Gynecologic Cancers .....	29
Cardiovascular Disease .....	31
Diabetes in Canadian Women .....	33
Chronic Pain: The Extra Burden on Canadian Women .....	35
The Impact of Arthritis on Canadian Women .....	37
Depression .....	39
Dementia and Alzheimer’s Disease .....	41
Eating Disorders .....	43
Violence Against Canadian Women .....	45
Perimenopausal and Postmenopausal Health .....	47
Sexual Health .....	49
Contraception .....	51
Gender Differences in Bacterial STIs in Canada .....	53
Women and HIV .....	55

**Health Care Utilization**

**Perinatal Care in Canada** ..... 59  
**Factors Associated with Women’s Medication Use** ..... 61

**Conclusions**

**Synthesis: Pulling it all Together** ..... 65  
**Women’s Health Surveillance: Implication for Policy** ..... 73

**Appendices**

**Appendix A** ..... A-1  
**Appendix B** ..... A-1

# ACKNOWLEDGEMENTS

## Editors

The core research team and editors of the Women's Health Surveillance Report included the following Principal and Co-Investigators:

### Principal Investigators

Marie DesMeules  
Donna Stewart

### Co-Investigators

Arminée Kazanjian  
Heather McLean  
Jennifer Payne  
Bilkis Vissandjée

The *Women's Health Surveillance Report: A Multidimensional Look at the Health of Canadian Women* is the result of the efforts of a great many people and organizations, which contributed in a variety of ways. The core research team thanks all of those involved for the generous sharing of their thoughts, ideas and time, and believes that the wide variety of input received has added to the richness of the final product.

## Steering Committee

The Steering Committee helped to create the broad vision of the report and provided general input and feedback throughout the project. The Steering Committee consisted of: Marie Beudet, Sandra Bentley, Marie DesMeules, Arminée Kazanjian, Mireille Kantiebo, Susan Kirkland, Kira Leeb, Heather Maclean, Jennifer Payne, Donna Stewart, Linda Turner, Helen Verhovsek, Bilkis Vissandjée and Cathy Winter.

## Chapter Authors

Chapter authors include: Farah Ahmad, Lori Anderson, Donna Ansara, Chris Archibald, Elizabeth M. Badley, Mike Barrett, Gillian L. Booth, Shirley Bryan, Heather Bryant, Zhenyuan Cao, Nalan Celasun, Beverley Chalmers, Ruhee Chaudhry, Angela Cheung, Robert Cho, Marsha M. Cohen, Renee A. Cormier, Colleen Anne Dell, Marie DesMeules, Eliane Duarte-Franco, Eduardo L. Franco, Rick Fry, Marene Gatali, Keva Glynn, Sherry L. Grace, Lorraine Greaves, Enza Gucciardi, Lisa Hansen, Cynthia Jackevicius, Kammermayer, J., Kantiebo, M. Moira Kapral, Naomi M. Kasman, Catherine Kelly, Susan Kirkland, Joan Lindsay, Heather Maclean, Janice Mann, Douglas Manuel, Mavrak, M., Traci McFarlane, Sharon McMahan, Marta Meana, Ineke Neutel, Marion P. Olmsted, Jennifer Payne, Nancy Poole, Marlene Roache, Gail Robinson, Cathy Sevigny, Ameeta Singh, Donna E. Stewart, Tudiver, S. Linda Turner, Peter Walsh, Vivienne Walters, Shi Wu Wen, Tom Wong.

[Download Full Chapter](#)

## **Reviewers**

The three external reviewers who reviewed the entire document were John Frank, Wanda Jones and Marie Beaudet.

The individuals who reviewed the content of the specific chapters in the report include Suzanne Abraham, Jane Aronson, Christina Bancej, Ken Bassett, Virginia Carver, Margaret de Groh, Steven Edworthy, Lawrence Elliott, Mary Gordon, Olena Hankivsky, Paula Harvey, Hugh Hendrie, James Henry, K. Joseph, Patricia Kaufert, Peter Katzmarzyk, Shiliang Liu, Harriet MacMillan, Loraine Marrett, Randi McCabe, Howard Morrison, Heather Nichol, Ann Pederson, Julie Pentrick, Jerilynn Prior, Robert Spasoff, and Jack Williams.

## **External Consultation Workshop**

Finally, the core research team would like to thank all of the women's health experts who participated in the external consultation in October 2002. In particular, they would like to acknowledge Miriam Stewart and the Canadian Institutes for Health Research - Gender and Health Institute who funded this external consultation, and Nancy Krieger for her invaluable insights and suggestions.



# INTRODUCTION

**Marie DesMeules (Health Canada), Arminée Kazanjian (University of British Columbia), Health McLean (Centre for Research in Women's Health), Jennifer Payne (Health Canada), Donna Stewart (University of Toronto), Bilkis Vissandjée (University of Montreal)**

## **Purpose of the *Women's Health Surveillance Report***

This report on the health of Canadian women is intended to: (i) determine the extent to which currently available data can be used to provide gender-relevant insights into women's health; (ii) provide information to support the development of health policy, public health programs, and interventions aimed at improving the health of Canadian women; and (iii) serve as the basis for further indicator development.

The report provides information and descriptive statistics on determinants of health, health status, and health outcomes for Canadian women. To the extent possible, each chapter presents new, gender-relevant information on a health condition or issue identified as important to women's health during national expert and stakeholder consultations in 1999. Where data or appropriate data are lacking, this is documented. Recommendations for change are made at the end of each chapter, accompanied by a discussion of the gaps in and policy implications of the findings.

## **Background to the *Women's Health Surveillance Report***

The incentive to produce a comprehensive report on the health of women in Canada stems from an advisory process initiated in 1998 by the former Laboratory Centre for Disease Control (LCDC) at Health Canada. At that time, in recognition of the deficiencies in its surveillance\* activities regarding women's health—and particularly vulnerable groups of women—LCDC established an Advisory Committee on Women's Health Surveillance, chaired by the Honourable Monique Bégin. The committee's mandate was to “provide advice on issues, priorities, methodologies and potential partnerships in matters of women's health surveillance.” It met several times and conducted a series of national consultation workshops that involved experts on women's health, community activists, participants from government and non-government organizations, research institutes, and the private sector. The committee's final report, *Women's Health Surveillance: A Plan of Action for Health Canada (1999)*, [1] recommended that LCDC enhance existing surveillance systems, develop new ones, and expand its use of gender-based analysis. The health conditions addressed in the report's recommendations guided the choice of chapter topics in the present document.

A number of jurisdictions have recognized the need for information on gender and health. British Columbia, Ontario, and the Atlantic provinces have produced women's health reports, [2–4] as has the National Women's Law Center in the United States. [5] In the fall of 2000, a Steering Committee was formed to undertake the task of producing a national report for Canada using a multidimensional approach that would integrate information from a variety of disciplines. Such a report would serve to monitor progress in women's health and health care and to provide the necessary knowledge base to establish effective policies in health promotion and disease prevention and control.

\* Defined as the systematic collection over time of health information, its classification, analysis/determinants, and dissemination. The purpose of surveillance is to monitor health trends and issues of importance in populations so that appropriate action can be taken, and to provide a solid basis for effective health policy, program decisions, and targeted interventions.



## Health Determinants

It is generally agreed that differences in health status and health outcomes between individuals—and between men and women—are determined by factors beyond biology. Global forces, including cultural, political, and ecological change, have a powerful effect on health. Against this global backdrop, a complex set of factors—such as socio-cultural and transition experiences, education, income, social status, housing, employment, health services, personal health practices, and the physical environment—comes into play. For example, in developed countries, cultural and economic shifts in attitude toward women’s participation in the labour force and control over reproductive decisions have led many women to delay childbirth.

## Approach of the Report

The *Women’s Health Surveillance Report* adopts the broad definition of women’s health that provided the framework for the discussion on women and health at the Fourth World Conference on Women (the Beijing Conference), held in September 1995:

Women’s health involves women’s emotional, social, cultural, spiritual and physical well-being and is determined by the social, political and economic context of women’s lives as well as by biology. This broad definition recognizes the validity of women’s life experiences and women’s own beliefs and experiences of health. Every woman should be provided with the opportunity to achieve, sustain and maintain health as defined by that woman herself to her full potential. [6]

Further, this report attempts to take a gender-sensitive approach to health information where possible, taking into account the context of individual’s lives (i.e. the social and cultural roles and responsibilities that differentiate women from men and subgroups of women from other subgroups). Its aim in part is to inform future gender-based analyses.

The authors of individual chapters have made use of population data from large Canadian surveys and administrative databases. Data chosen for analysis depended largely on the availability of the databases at the time of chapter development. Although such data sources can provide interesting insights, they also have limitations. For example, while they usually include a breakdown of the data by sex, they often do not provide sufficient measures by which to explore the influence of gender as determined by the context of women’s lives. For example, depression is a major cause of disability worldwide. In Canada, as in other developed countries, the prevalence of depression is the same among boys and girls. After puberty, however, women are about twice as likely as men to experience a depressive episode. [7] Traditional surveillance, such as hospitalization data or physician visits for depression, provides the data on these sex differences. What it does not provide is an analysis of how depression in women varies with income, ethnic background, education, and work experience, or how women’s roles can shape their susceptibility to this condition (e.g. working double-duty shifts at home and in paid work while possibly experiencing harassment or abuse in either setting).

Women’s health issues are different from men’s in a number of ways. Failure to acknowledge these differences has led, in the past, to biases in the health system. Health Canada’s Women’s Health Strategy (1999) has classified these biases as follows: [8]

- Narrowness of focus—concentration on issues concerning women’s reproductive processes (leading in some cases to over-medicalization of normal processes).
- Inappropriate grouping of women with men—the assumption that the course of disease and the consequences of treatment are the same in both sexes (e.g. drug trials and epidemiological studies using only male subjects).
- Exclusion—women’s exclusion from policy-making, research, and medical specialties, and thus from positions of power.

Some biases are now being addressed. Canadian governments have a clear mandate to collect, integrate, analyze, and interpret data about women's health and gender differences in health as a basis for developing policies and interventions to improve health outcomes and reduce health inequalities (see Chapter "Women's Health Surveillance: Implications for Policy").

## **Developing the Women's Health Surveillance Report: the Process**

In July 2000, the Canadian Population Health Initiative (CPHI) launched a Request for Proposals (RFP) to fund research that would generate new knowledge on the determinants of health. The RFP was predicated on five "Strategic Themes and Questions":

1. Why are some communities healthy and others not?
2. To what extent do Canada's major policies and programs improve population health?
3. How do social roles at work, in the family, and in the community affect health status over the life course?
4. What are the population health effects of broad factors in social organization in Canada and other wealthy countries?
5. What is Canada's relation to population health from a global perspective?

Several of the themes encompassed questions intended to address the social determinants of health from a number of perspectives, including gender.

In June 2001, CPHI Council approved funding for the Women's Health Status Report: A Multidimensional Look at the Health of Canadian Women, which addresses the first and third of CPHI's Strategic Themes and Questions. CPHI contributed \$125,000 to this research, and Health Canada provided \$105,000.

A steering committee was formed, which represented a wide mix of partners from across Canada, with representatives from the University of British Columbia, University of Toronto, Université de Montréal, Dalhousie University, Health Canada, Statistics Canada, the F/T/P Working Group on Women's Health Status of Women Forum and the Canadian Institute for Health Information.

In line with the focus and scope of the report, expert authors from a variety of academic institutions and disciplines were selected to research and write the various chapters. They were encouraged to concentrate on aspects of their topic that were interesting from a gender perspective. Chapters were reviewed externally (see Acknowledgements for review details), and the reviewers' comments and suggestions were provided to the authors, who were asked to incorporate them where feasible. Authors were not required to incorporate all of the reviewer's comments, but they were asked to provide a rationale for their decisions.

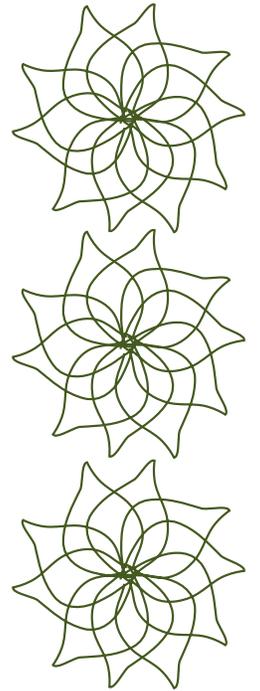
The views expressed in this report do not necessarily represent the views of the Canadian Population Health Initiative, the Canadian Institute for Health Information or Health Canada.

The report is available as a summary (the present document), presenting the key findings and recommendations of each chapter, and as a full technical document, available in English and French on the CPHI and Health Canada Web sites ([www.cihi.ca](http://www.cihi.ca) and [www.hc-sc.gc.ca](http://www.hc-sc.gc.ca)).



## References

1. Advisory Committee on Women's Health Surveillance. *Women's health surveillance: A plan of action for health Canada*. Ottawa: Health Canada, 1999.
2. Women's Health Bureau. *Provincial profile of women's health: a statistical overview of health indicators for women in British Columbia*. Ottawa: Health Canada, 2000.
3. Stewart D.E., Cheung A.M., Ferris L.E., Hyman I., Cohen M.M., and Williams J.I. Ontario Women's Health Status Report. Prepared for the Ontario Women's Health Council by The University Health Network Women's Health Program, The Centre for Research in Women's Health and The Institute for Clinical Evaluative Sciences. February 2002.
4. Colman R. *Women's health in Atlantic Canada: a statistical portrait*. Halifax: Maritime Centre of Excellence for Women's Health. Atlantic Region Fora on Women's Health and Wellbeing, 2000.
5. National Women's Law Centre, FOCUS on Health & Leadership for Women, Center for Clinical Epidemiology and Biostatistics, UoPSoM, the Lewin Group. *Making the grade on women's health: a national and state-by-state report card*. Washington D.C.: National Women's Law Center, 2000.
6. Phillips S. The social context of women's health: goals and objectives for medical education. *Can Med Assoc J* 1995;154(4):507-11.
7. Stewart DE, Rondon M, Damiani G, Honikman J. International psychosocial and systemic issues in women's mental health. *Arch Women's Mental Health* 2001;4:13-7.
8. Health Canada. *Health Canada's women's health strategy*. 1999. Cat: H21-138/1997. URL: <<http://www.hc-sc.gc.ca/pcb/whb>>.



# Determinants of Health





# THE SOCIAL CONTEXT

## Of Women's Health

Vivienne Walters, PhD (University of Wales)

This chapter sets a context for the report by highlighting the importance of gender and the links between gender and health. The ways in which we understand the relationship between gender and health have implications for strategies of change and for policy making; as well, they provide a guide for future research, data collection, and health surveillance by pointing to gaps in existing data.

The chapter begins with a consideration of some key dimensions of gender differences and the inequalities that characterize gender relations. These indicate that while “sex” may be used to denote the biological difference between women and men, it is an imperfect measure of “gender.” Problematically, such a single measure cannot hope to capture the complexity of gender or the ways in which gender relations change over time and give rise to—or exacerbate—health problems.

The discussion of health emphasizes the importance of analyses of the social determinants of health. Social determinants open up the possibility of targeting policies towards the social factors that impair or improve health. In this regard they can guide health surveillance, even though many of the causes of ill health lie outside the health care sector and the sphere of medicine. This discussion leads to a consideration of two broad questions: (i) What do we know about the social determinants of women's and men's health? and (ii) Are there differences in the health problems women and men experience, and if so, how might we explain them?

The literature on the social determinants of health shows the importance of placing a primary emphasis on the social and economic sources of ill health at national, provincial/territorial, and community levels; this focus has the potential to prevent more deaths and chronic illness than any health care interventions. Poverty, social exclusion, unemployment, poor working conditions, and gender inequalities have a profound influence on patterns of health and illness. Health care policy is very important, but it is only one element of the necessary public policy response, and research attentive to the social structuring of women's health can contribute knowledge relevant to this wider array of policy domains.

Studies of gender differences in health suggest the need to develop an understanding of changing gender relationships, women's and men's differences in power and access to resources, and changing expectations of appropriate gender roles and behaviours. Some material markers of change are suggested that might be used in health surveillance, although with a fuller understanding of how gender shapes people's day-to-day lives these measures could be refined and expanded.

In conclusion, the policy implications of this discussion are emphasized and directions for future research are proposed. In tracing the ways in which women's and men's experiences are “written” on their bodies—the way the social is embodied—social and biological sciences must work alongside each other, showing how women's and men's lives help to create or exacerbate health problems. This collaboration would feed back into policies regarding gender and socio-economic inequalities and would also inform other curative or coping responses.

[Download Full Chapter](#)





# MULTIPLE ROLES

## And Women's Mental Health in Canada

Heather Maclean, EdD; Keva Glynn, MHSc; and Donna Ansara, MSc, PhD candidate  
(Centre for Research in Women's Health)

### Health Issue

**This chapter extends previous analyses on the moderating effects of different role combinations on women's mental health and situates this analysis in a social context. The relation between socio-economic factors and women's mental health is assessed with respect to different combinations of women's roles: (i) single mothers, employed and non-employed; (ii) partnered mothers, employed and non-employed; (iii) women without children, partnered and single; and (iv) women without children, employed and non-employed. A new analysis using National Population Health Survey data from 1994–1995 and 1998–1999 examines the association between different role combinations and socio-economic status, and the differences in women's stress, distress, and chronic stress levels according to the various combinations of roles.**

### Key Findings

- Irrespective of women's employment status, single mothers are significantly more likely than partnered mothers to be poor, and to experience financial stress and food insecurity. Further, whether employed or non-employed, they are significantly more likely to report feelings of high personal and chronic stress. Although employment has a significant effect on the stress and distress levels of single mothers, it does not appear to have a significant effect on the distress or chronic stress levels of partnered mothers.
- Single mothers who were not employed were more than twice as likely as all other groups of women to report a high level of distress. In all age groups, single mothers, regardless of employment, were most likely to report feelings of high personal stress and feeling overloaded, compared to partnered mothers.
- Finally, single or partnered women with children had a higher risk of personal stress than those without children. This effect is more pronounced in the comparison of single women with and without children than that of partnered women with and without children.

The results clearly show that the distress, stress, and chronic stress levels of mothers, regardless of employment or marital status, are high, particularly for single, non-employed mothers. The inclusion of life context (chronic stress) in the assessment of personal stress results in higher reports of stress for all four groups. The apparent negative influence of the wider social context on women's mental health speaks to the need for further investigation into the social and environmental conditions influencing women's experiences with multiple roles. In particular, given the disturbing results with respect to the mental health of single, non-employed mothers, further attention needs to be paid to the legislative, social, and environmental factors contributing to their poor state of mental health.



## **Data Gaps and Recommendations**

### **Data Collection**

The authors identified the following data gaps:

- More detailed information needs to be collected on the characteristics of women's work environments and their responsibilities with respect to caregiving.
- Future national surveys should extend questions related to household composition to include intergenerational households, households headed by same-sex couples, and multi-family arrangements.
- More information is needed on the quality of women's domestic roles.
- More disaggregated information on women's ethno-racial background is required.

### **Policy Recommendations**

The authors made the following recommendations:

- Labour force policies and policies that support family life need to be developed. Integral to these policies should be the recognition of women's participation in the labour force and as unpaid caregivers in the home.
- There is a need to expand the childcare and economic subsidies available to lone mothers.
- Employment strategies specific to lone mothers should be developed.
- Educational programs to enhance mental health professionals' understandings of the impact of women's multiple roles on their mental health need to be developed.

**[Download Full Chapter](#)**



# PERSONAL HEALTH PRACTICES

Heather Maclean, EdD; Keva Glynn, MHSc (Centre for Research in Women's Health); Zhenyuan Cao, MSc (Health Canada); and Donna Ansara, MSc (Centre for Research in Women's Health)

## Health Issue

This chapter presents a detailed interpretation of the social context of women's health practices and self-rated health. It begins with a review of the literature, and provides a new analysis of the trends in the relation between socio-demographic factors, health practices, and ratings of self-reported health for women in Canada, based on data from the 2000–2001 Canadian Community Health Survey.

## Key Findings

Compared with women in Ontario, women in western Canada are most likely to engage in multiple health-promoting practices (e.g. being physically active, consulting an alternative health care provider, taking action to improve health, and consuming more than five servings of fruit/vegetables per day). Women in Quebec are least likely to engage in multiple health-promoting practices. In contrast, women from Ontario are more likely than those from all other regions to engage in risky health practices (e.g. being physically inactive; smoking; using pain relievers; binge drinking; and consuming fewer than five servings of fruits/vegetables per day).

Women with high incomes are more likely to engage in health-promoting practices and less likely to engage in risky health practices than those with lower incomes. Further, wealthier women are almost twice as likely as those with lower incomes to report excellent/very good health. Consistent with the literature, highly educated women are more likely than women with less education to engage in health-promoting practices, and are less likely to take part in risky practices. In addition, highly educated women are almost twice as likely as less educated women to report excellent/very good health.

Women aged 20–44 report the poorest health practices, despite findings that they are more likely than older women to report excellent/very good health. Married women are less likely to report multiple risk practices than are single women, but there is no difference in the reporting of multiple health-promoting practices between these two groups of women. Married women are also slightly more likely to report excellent/very good health than their single counterparts. Immigrant Canadian women are less likely to engage in both multiple health-promoting practices and health-risk practices than Canadian-born women. This seemingly contradictory finding is likely due to the types of variables included in the indices of multiple health-promoting and health-risk practices.



## Data Gaps and Recommendations

This study highlights the subgroups of women who demonstrate particularly poor health practices, namely younger women (aged 20–44), women of low income, women with less education, women living in the North and in the Maritimes and, to a lesser extent, single women. It also points to discrepancies between women’s health practices and their self-rated health, particularly among younger women (aged 20–44).

The authors made the following recommendations for future policy and programming consideration:

- More sensitive indicators need to be developed to capture other potential influences on women’s health. Developing indices to measure the effects of broader influences on health, such as women’s political participation, economic autonomy, employment and earnings, and reproductive rights, would provide important information with respect to women’s health.
- Tools and resources must be developed to gather more data on the factors beyond traditional socio-demographics that may affect women’s health practices and perceptions of health. The differences in health practices and self-rated health with respect to geographic location, age, education, and marital status warrant further attention.
- The lack of information on health practices of women in rural areas, and in particular in Nunavut, the Yukon, and the Northwest Territories, must be addressed. Given the results of this study showing the strong association between income, education, and employment on the one hand and poorer health practices and self-rated health for women on the other, there is a pressing need for more data on women living in Canada’s rural areas, and particularly for those living in the North.

[Download Full Chapter](#)



# BODY WEIGHT AND BODY IMAGE

Marion P. Olmsted, PhD and Traci McFarlane, PhD (Toronto General Hospital)

## Health Issue

Body weight is of both physical and psychological importance to Canadian women. It is associated with health status, physical activity, body image, and self-evaluation. Although the problems associated with overweight and obesity are indeed serious, being underweight also carries its own risks. The relationship between body mass index (BMI) and risk of death has been characterized graphically as a U-shaped function for both men and women, with increased risk of death when BMI is less than 23 or greater than 28. Weight prejudice, the dieting industry, and the pressure to have an acceptable body weight intensify body-image concerns for Canadian women and have a significantly negative impact on their self-esteem.

## Key Findings

Analysis of National Population Health Survey (NPHS) data shows that, on average, women have lower BMIs than men, a lower incidence of overweight, and a higher incidence of underweight. However, women are more dissatisfied than men with their bodies, and this dissatisfaction occurs across all weight categories. For instance, women with BMIs between 20 and 22 (below average but “acceptable”) reported their ideal weight to be, on average, 3 kg less than their actual weight, whereas men in the same BMI range believed that their ideal weight was almost 7 kg more than their actual weight.

According to the Physical Activity Index of the NPHS, 59.5% of women are inactive, as compared with 57.6% of men; 17.0% of women and 20.0% of men are classified as active. Women with a BMI of 27 or greater are more likely to be inactive than women with lower BMIs. The data show that women do seem to be aware of the health benefits of exercise, in that they endorsed increased exercise as the top priority for health improvement in all BMI categories. There is a gap, however, between knowledge and practice. When asked about barriers to health improvement, 39.7% of women cited lack of time and 39.2% lack of willpower. Nominating lack of willpower as the main problem is self-blaming and self-defeating, as there is no clear way to change the situation. Being overweight, and having child—and homecare responsibilities have been suggested as barriers to fitness for women.



## **Data Gaps and Recommendations**

The authors identified the following data gaps and made the following recommendations:

- Weight prejudice must be made unacceptable.
- Positive body image should be encouraged and diversity valued, as in the approach taken to promote multiculturalism.
- Body image disparagement, chronic dieting, and exercise to improve appearance need to be acknowledged as vehicles of oppression for women. Policies should encourage all Canadians to take pride in developing a healthy lifestyle with a focus on healthy eating and healthy activity every day.
- Physical activities that mothers can participate in with their families should be encouraged as one method of addressing competing demands and limited time.
- Research should be funded to elucidate the most effective methods of getting women to become and remain physically active without focusing on weight control or appearance.

**[Download Full Chapter](#)**



# PHYSICAL ACTIVITY AND OBESITY

Shirley Bryan, Mkin and Peter Walsh, MSc (Health Canada)

## Health Issue

Overweight and obesity have been recognized as a major public-health concern not only in Canada but also throughout the world. Lack of physical activity, through its impact on energy balance, has been identified as an important modifiable risk factor for obesity. Physical activity and obesity are also important independent risk factors for the development of many chronic diseases that affect women, placing a substantial burden on the health care system. Despite this knowledge, the prevalence of obesity continues to increase among women, and only a small portion of the female population is active enough to achieve health benefits.

The aim of this chapter is to provide an overview of the current state of physical activity and overweight/obesity among Canadian women. The health benefits of regular physical activity are also briefly reviewed. Attention is paid to the individual and systemic factors that determine women's adoption of regular physical activity throughout the lifespan. A summary of the current Canadian recommendations for physical activity and the World Health Organization recommendations for obesity prevention through regular physical activity is also provided. A detailed interpretation of the 2000–2001 Canadian Community Health Survey provides prevalence rates for physical inactivity, overweight, and obesity, with information presented in relation to gender, socio-economic status, educational level, and cultural/racial origin. An analysis of trends is presented where data are available.

## Key Findings

- For all age groups combined, more women (57%) than men (50%) are physically inactive (expending < 1.5 kilocalories per kg per day). This sex disparity is greatest in the youngest and oldest age groups.
- Physical inactivity increases as income adequacy and educational level decrease, and this relation is stronger for women than for men.
- Physical inactivity varies by ethnicity. Among the least active are black women (76%) and South Asian women (73%).
- Between 1985 and 2000–2001, the prevalence of overweight (BMI 25.0–29.9 kg/m<sup>2</sup>) increased from 19% to 26% among women. It also increased among men during this period, but there has been a slight decrease in the prevalence of overweight over the last five years (from 44% in 1994–1995 to 40% in 2000–2001).
- Between 1985 and 2000–2001, the prevalence of obesity (BMI <sup>3</sup> 30 kg/m<sup>2</sup>) steadily increased, from 7% to 14% among women and from 6% to 16% among men.



- The prevalence of obesity among women increases with age, peaking between ages 55 and 59 and then decreasing steadily thereafter. This same pattern is seen in the male population, with the peak occurring in the 50–54 age group.
- The prevalence of obesity among women is highest in the low and lower-middle income groups, but the reverse is seen in the male population.
- The prevalence of obesity is highest among Aboriginal women (28%) and men (22%).

### **Data Gaps and Recommendations**

The authors identified the following data gaps and made the following recommendations:

- There is a gap in the knowledge surrounding the socio-cultural and ecological determinants of physical activity for girls and women of various cultural backgrounds throughout the lifespan.
- Current knowledge on the relation between physical activity, obesity, and chronic disease has been derived from studies performed on predominantly Caucasian males. More research is needed to understand these relations among women and minority populations.
- Data/knowledge surrounding the indirect health care costs associated with physical inactivity and obesity are lacking.
- Multi-sectoral policy interventions (e.g. health, education, urban development, recreation, industry, transportation, etc.) that act to decrease the broad systemic barriers to physical activity and healthy weights among women are required.
- Integrated approaches using behaviour change as a model for lifestyle changes while addressing the issues related to supportive environments for women in various life stages are needed.
- Targeted interventions that aim to decrease the unique barriers of marginalized Canadians (e.g. women, lower-income groups, Aboriginal Canadians, older adults, and other special populations) should be developed.
- The importance of psychological determinants of physical inactivity and overweight/obesity need to be recognized and strategies developed to help women overcome them.

**[Download Full Chapter](#)**



# GENDER DIFFERENCES IN SMOKING

## And Self Reported Indicators of Health

Susan Kirkland, PhD (Dalhousie University); Lorraine Greaves, PhD (British Columbia Centre of Excellence for Women's Health); and Pratima Devichand, MSc (Dalhousie University)

### Health Issue

Smoking among Canadian women is a serious public health issue. Although historically men have smoked more than women, the decline in smoking prevalence among men has been much more pronounced than it has for women over the last few decades: down from 61% to 25% among men from 1965 to 2001, as compared with a reduction from 38% to 21% over this period among women. Dramatic variations in smoking rates and trends are evident for specific sub-populations of women in Canada. Francophone and Aboriginal peoples have the highest rates of smoking in Canada. Smoking rates among teenaged girls have now exceeded smoking rates among boys for the first time. Cancer, heart disease, and cerebrovascular disease are all health risks associated with smoking, and the estimated percentage of deaths from these conditions attributable to smoking is 21%. Other adverse effects include respiratory diseases and reproductive disorders, cervical and breast cancers, and osteoporosis. Health indicators that reflect intermediate health outcomes due to smoking, such as restriction of activities or use of health services, have rarely been emphasized. An analysis of smoking behaviour and its consequences in the context of social, political, and economic factors can illuminate its differential impact on the lives of subgroups of women and men.

### Key Findings

An analysis of data from the 1998–1999 National Population Health Survey showed that 26.4% of Canadian women and 29.2% of Canadian men were classified as being current smokers. In the lowest income groups, 33.7% of women and 44.5% of men were current smokers, whereas in the highest income group, 21.2% and 22.1% of women and men respectively were smokers. Age, marital status, ethnicity, education, and income adequacy independently contributed to an association with current smoking for women and men. Interestingly, household type and functional social support contributed to the association with current smoking for women but not for men. The differences in these factors between women and men may reflect differences in lived experiences and value systems between women and men in terms of social and family roles, work, and caregiving. However, the fact that independent associations between socio-economic factors and smoking were seen for both women and men speaks to their universal impact. Female smokers reported greater restriction of activities, poorer mental health, and more chronic health conditions than men who smoked. When compared to those who had never smoked, independent associations were seen between current smoking and lower self-rated health, poorer mental health, and greater restriction of activities for both women and men.



## **Data Gaps and Recommendations**

The authors identified the following data gaps and made the following recommendations:

- Key issues for Canadian women include an increased prevalence of smoking among young girls and the strong association between smoking and social and economic disadvantage. The high prevalence of adverse intermediate health outcomes noted for female smokers is worthy of further investigation.
- Further work must be conducted on the development of well-constructed socio-demographic and socio-economic health indicators that can be routinely collected and analyzed in population-based surveys. For example, data that adequately capture the complexity of issues that women face in terms of occupation and employment status, such as balancing paid and unpaid work and caregiving roles, are likely to contribute to an understanding of smoking and smoking-associated health outcomes. Of particular importance is the development of programs and policies that do not serve to reinforce existing inequities, but, rather, contribute to their amelioration.

**[Download Full Chapter](#)**



# WOMEN AND SUBSTANCE USE PROBLEMS

**Renee A. Cormier, PhD (British Columbia Centre of Excellence for Women's Health); Colleen Anne Dell, PhD (Canadian Centre of Substance Abuse); and Nancy Poole Dip CS (British Columbia Centre of Excellence for Women's Health)**

## Health Issue

Sex and gender differences exist in the prevalence and physical health impacts of problem substance use among women and men. These differences are also found in the mental health and trauma events related to substance use, barriers to treatment and harm-reduction services, and the impact of substance use on pregnancy and parenting. It remains a challenge for decision-makers both to develop and implement the very broad, collaborative, systemic responses necessary to address problem substance use, and to do so in a manner that links prevention, enforcement, harm reduction, and treatment strategies. In spite of the overall challenges, gender-specific policy and programming can be of tremendous benefit to the health of women and their families. Data from the 2000–2001 Canadian Community Health Survey (CCHS) and Canada's Alcohol and Other Drugs Survey (CAODS, 1994) were used to explore the issue further.

## Key Findings

- Of Canadians (12+ years), more men (80.5%) than woman (73.1%) used alcohol at least once in the previous year.
- Based on CAODS 1994 data, self-reported illicit drug use by females in Canada is low (e.g. cannabis: 5.1%; LSD, speed, or heroin: 0.7%; cocaine: 0.5%).
- While women use alcohol and illicit drugs at lower rates than men, the physical and mental health impacts of women's use are substantial and in some cases greater than those for men.
- In the past decade, increasing attention has been focused on women's substance use during pregnancy and the risk of fetal alcohol spectrum disorder. However, information that might be used to guide prevention initiatives, such as the amount of alcohol that might safely be used in pregnancy and the incidence of fetal alcohol syndrome, related birth defects, and developmental disabilities, are unknown. Fourteen per cent of all women who indicated that they had consumed alcohol in their lifetime also reported that they consumed alcohol during their last pregnancy. Of these, 75.4% drank less than once per month.
- Women are more likely than men to use prescribed psychoactive drugs of all categories (e.g. pain relievers: 24% versus 20%; sleeping pills: 1.7% versus 1.2%; tranquilizers: 1.1% versus 0.8%). Most of these drugs have addictive potential and long-term negative consequences on health.
- Research and data collected from Canadian treatment centres show high rates of victimization among substance-using women, which is linked both to their mental health and substance use.



## Data Gaps and Recommendations

The authors identified the following data gaps and made the following recommendations:

- Data on prevalence, and morbidity and mortality rates relating to women's use of alcohol, other licit drugs, and illicit drugs are inadequate.
- In order to guide prevention initiatives, more information is needed on the amount of alcohol and other drugs used in pregnancy and the incidence of fetal alcohol syndrome and related birth defects and developmental disabilities. There is a need to develop a mechanism for capturing data that evaluate substance-use interventions (including women-specific interventions at various levels of care).
- Knowledge gaps need to be addressed concerning the level, type, and impact of substance use and the adequacy of programs in reaching vulnerable subgroups of women (e.g. Aboriginal women, poor women, homeless women, lesbian women, and women living in rural areas).
- There is a critical need for data on sex and gender differences in the experience of illicit drug use and the potential need for—and impact of—harm reduction-oriented policy and programming.
- Data on the impact of barriers to treatment are needed. Treatment programming that addresses sex and gender differences in the experience of addictions needs to be made more accessible to women in Canada. Programming that is accessible and relevant to women who are mothers is of particular priority.
- Surveillance in the form of a national incidence/prevalence survey should be carried out on a regular basis, and substance-use monitoring systems, such as the Canadian Community Epidemiology Network on Drug Use, should be supported.
- Researchers' access to national systems for collecting and reporting information on hospitalizations is necessary; all aspects of the standardization of data collection on substance use must be addressed, and reporting on hepatitis C in addition to HIV/AIDS should be included.
- Viable and sensitive methods are needed for implementing screening for women's substance use; screening may be conducted by a wide range of professionals who are in a position to refer women for treatment and other resources.
- In order to address the strong interconnections among three serious health problems for women, it is recommended that linkages be enhanced (and in some cases program integration be considered) among mental health treatment, substance misuse treatment, and programming for women who have experienced trauma/relationship violence.

[Download Full Chapter](#)



# Health Status of Canadian Women





# MORTALITY

## Life and Health Expectancy of Canadian Women

Marie DesMeules, MSc (Health Canada); Douglas Manuel (University of Toronto); and Robert Cho (Health Canada)

### Health Issue

Mortality and life expectancy are well established and commonly used indicators of population health, and important patterns by sex and over time have been observed. Canadians' life expectancy at birth, estimated at approximately 76 years for men and 81 years for women, has consistently ranked among the top 10 of all OECD countries for several decades. The overall decrease in mortality over the last century among men and women, and the narrowing difference between them over the last few decades are well known. As well, women have an advantage, though less pronounced, in health-adjusted life expectancy. This indicator of population health has gained recognition in recent years. Although these indicators have been well described in the Canadian population, there is a paucity of information on the factors contributing to this sex gap and how gender-relevant determinants affect the life expectancy of subgroups of Canadian women. This chapter explores such issues, and examines preventable deaths and biologically based sex differences in mortality and life expectancy as well as in health-adjusted life expectancy (using the Canadian Mortality Database (1959–1999), and the Canadian Community Health Survey (2000–2001)).

### Key Findings

- The main causes of death among women and men are similar and include coronary heart disease, cancer, and chronic lung disease. The distribution by cause of potential years of life lost (PYLL) does, however, differ by sex. In women, a larger number of PYLL are attributable to cancer, whereas in men, a larger number of PYLL are frequently attributable to accidents.
- Age-adjusted mortality rates and life expectancies, calculated by including and excluding causes of death considered avoidable through primary prevention ("external deaths," e.g. smoking-related deaths, injuries, HIV/AIDS) or medical intervention (e.g. asthma, hypertensive disease, etc.), revealed that, overall, external causes of death represented approximately 19% of deaths among women, as compared with 35% among men in 1997–1999. Mortality from causes amenable to medical intervention represented 25% and 23% of all deaths among women and men respectively.
- Smoking-related deaths represent a major contribution to the gap between men's and women's life expectancies. If all Canadians were nonsmokers, the estimated life expectancy at birth would be approximately 83.3 and 79.9 years for women and men respectively. When all external causes were deleted, the sex gap in life expectancy was greatly reduced, at an estimated 84.9 and 82.7 years for women and men, indicating that women do not appear to have a large biological survival advantage but, rather, are at lower risk of preventable deaths.



- Health adjusted life expectancy (HALE) was 70.0 for women and 66.7 years for men. A similar reduction in the difference between men and women was observed when the same external causes were excluded from HALE. Given the higher prevalence of many conditions causing disability in women, such as arthritis, these results highlight the unique health vulnerabilities of women.
- The relative importance of sex-specific causes of death (e.g. prostate and testicular cancer, pregnancy and its complications, breast cancer, etc.) was examined. A larger death burden due to these sex-specific causes was observed among women than men (age-adjusted mortality rates were 40.55 per 100,000 for women and 29.15 per 100,000 per annum for men in 1997–1999).
- Analysis of information on province and rural/urban area of residence showed significantly higher mortality rates among rural women as compared with their urban counterparts (at least a 20% excess among rural women aged 20–64 over the last 10 years). Accidental deaths and chronic diseases contributed significantly to this rural/urban gradient.

## **Data Gaps and Recommendations**

The authors identified the following data gaps and made the following recommendations:

- Information on mortality and life expectancy by variables such as socio-economic status and women's roles is currently limited in Canada. New studies on these variables will be greatly facilitated by national linkages of census and mortality data, and will provide enhanced opportunities for gender analyses in this area.
- Knowledge of unique mortality patterns by subgroups of women will be enhanced by a number of ongoing national initiatives in the area of immigrant and rural health.
- With the changing patterns of avoidable (e.g. smoking-related) deaths, projections of life expectancy and mortality rates would be very useful in planning gender and sex-specific interventions to reduce disparities in the gender gap.
- More comprehensive analysis of the total burden of preventable causes of death (e.g. breast cancer and heart disease, smoking-related deaths) in women and men and subgroups of women would provide insight for developing policies aimed at more vulnerable populations.

**[Download Full Chapter](#)**



# MORBIDITY EXPERIENCES

## And Disability Among Canadian Women

Marie DesMeules, MSc (Health Canada); Linda Turner, PhD (CIHI); and Robert Cho (Health Canada)

### Health Issue

Overall morbidity is commonly defined as “departure from an overall state of health.” Although this concept is relatively narrow in the context of a broad population health assessment framework, it is nevertheless an essential component to consider when describing the health of a population.

Women have a longer life expectancy than men (as described in the chapter on “Mortality and Life Expectancy of Canadian Women”), but they do not appear to have a similar advantage when morbidity is defined in a variety of ways (e.g. hospitalization rates, prevalence of chronic conditions, or disability). Canadian data from health surveys and hospital morbidity databases support these findings. No single explanation fully accounts for these sex discrepancies, which should, rather, be examined in the context of biological/medical, social, economic, and environmental determinants.

The objectives of this chapter are to provide further insight into the overall morbidity experiences of Canadian women. The Canadian Hospital Morbidity Database (2000–2001) and the Canadian Community Health Survey (2000–2001) were used to examine inpatient hospital morbidity, prevalence of chronic conditions, and disability. Men and women, and subgroups of women, are compared and key determinants of morbidity are identified.

### Key Findings

- Although all-cause, age-standardized hospitalization (inpatient) rates have been decreasing in recent years, they have consistently been approximately 20% higher among women than among men. Average length of hospital stay in acute-care facilities was comparable among women and men.
- The most common causes of hospitalization for women are pregnancy and childbirth (more than 50% of all hospitalizations among women aged 20–44), circulatory diseases, and digestive diseases. Women are more frequently hospitalized for cancer, mental disorders, and musculo-skeletal diseases than men, whereas men are hospitalized more for circulatory and respiratory diseases, and injury/poisoning.
- When pregnancy and childbirth were excluded from the all-cause hospitalization rates, women’s hospital morbidity rates are lower than men’s. When only “normal” deliveries (no complications) were excluded, hospital morbidity rates remain higher among women.



- Women had slightly lower rates than men (354 versus 391 per 100,000 respectively) of hospitalization for ambulatory-care sensitive conditions (which include asthma and other conditions for which hospital morbidity can be prevented through proper ambulatory care and adherence to self-care), indicating a possibly higher rate of utilization of ambulatory care services for these conditions among women.
- Reported long-term disability is more frequent among women than men (22.6% versus 19.6% respectively, a female-to-male ratio of approximately 1.15), but was comparable among those in long-term care facilities. Severe disability is more common among women.
- The prevalence of having at least one reported chronic condition is greater among women. Interestingly, this higher prevalence was observed mainly for comorbidity (two or more conditions); the prevalence of only one condition was comparable between women and men.
- Adjusting for age, reported chronic conditions, education, household income, and smoking, multiple logistic regression showed that women have an odds ratio of 1.07 (confidence interval 1.03, 1.12) for disability as compared with men. These factors explain a large portion of the observed sex differences in disability prevalence.
- Women with a disability are less likely than men to be in a partnered relationship, and have lower income and employment rates, and less tangible social support—all representing added vulnerabilities.

## Data Gaps and Recommendations

The authors identified the following data gaps and made the following recommendations:

- The overall lower rate of hospital morbidity among women indicates that their morbidity may be less acute and that they may make greater use of ambulatory care. This type of analysis would be enhanced through further examination of the level of “urgency” of care and the proportion of women’s hospitalizations due to elective procedures. Information such as disease severity at referral would be key in examining gender differences in morbidity. Determinants of the observed higher hospital morbidity in adult women aged 20–44 should be examined more comprehensively.
- As more comprehensive and recent national morbidity databases, such as chronic and long-term care data and trauma registries, are developed, capacity for sex and gender comparisons in morbidity will be enhanced.
- The impact of disability on Canadian women’s health is substantial. More comprehensive studies of the gender-relevant social and economic characteristics of women with disabilities are needed to develop enhanced interventions in this area, and will be facilitated by the recent Participation and Activity Limitation Survey (2001). The role of modifiable factors (e.g. access to timely and appropriate care, socio-economic factors) and non-modifiable factors (e.g. biological, disease severity) in women’s versus men’s risk of disability needs further study.
- Currently available measures of disability (e.g. the Health Utility Index) are based mainly on physical and sensory functioning (e.g. walking, hearing) and may have limitations for use in gender-sensitive analyses. Other factors that may contribute significantly to disability among women (e.g. depression, severe fatigue, or chronic stress) should be further explored.

[Download Full Chapter](#)



# THE IMPACT OF A REDUCED FERTILITY RATE

## On Women's Health

Jennifer Payne, MSc (Health Canada)

### Health Issue

Over the last four decades, total fertility rates (TFRs, or number of children each woman bears on average) have decreased worldwide and particularly in developed countries such as Canada. The Canadian fertility rate has decreased by more than 60%, from 3.90 per woman in 1960 to 1.49 in 2000, below the replacement level of 2.1 children per woman. This reduction has clearly contributed to some of the obvious improvements in women's maternal and reproductive health in this period, such as the significant decreases in the rates of maternal mortality and other pregnancy complications. However, not many data are available about the impact on women's health of reduced fertility rates, delayed fertility, and more births to unmarried women. This chapter presents information on fertility trends in Canada and worldwide. Data available from the General Social Survey Cycle 10—The Family (1995) were used to examine (i) the relation between family size and specific determinants of health, (ii) the distribution of family and work attitudes by age and education, and (iii) the relation between attitude and intention to have one or more children in the future. Sex-specific logistic regression was used to look at the multivariate relations in (i) and (iii).

### Key Findings

- While TFR has decreased over the last 40 years, the rate varies considerably by geographic location and socio-demographic subgroup. Some of this variation is explained by differences in population distribution.
- The associations between family size and selected determinants of health (marital status, education, employment, home ownership, and self-perceived health) are different for women and men. Both women and men who have children are more likely to be in a long-term (marriage or common law) relationship than those who do not. A woman with one child is almost four times more likely to be "coupled" than a woman with no children. Women with two children, are as likely to be in a couple as women with only one child. On the other hand, a man with one or more children is more than five times more likely to be married than his childless counterpart, regardless of family size.
- Women with two or more children were significantly more likely than those without children to have an educational level of less than high school. This association was similar, but less strong, among men.
- Having children was significantly associated with unemployment among women, and the strength of this association increased with family size. Among men, unemployment was significantly associated only with having a large family (five or more children).
- Home ownership was directly associated with having children (all family sizes) among men, but associated only with having two children among women.



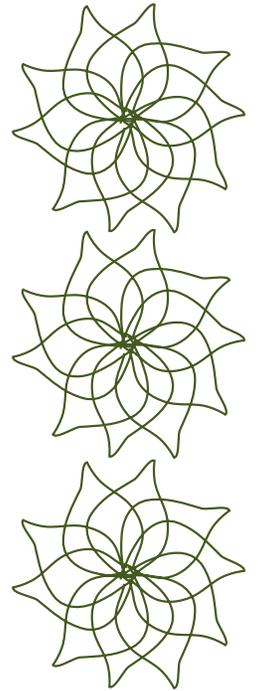
- There was neither a strong nor a consistent relation between number of children and perceived health in either women or men.
- Attitudes about selected family and work-related issues were similar among men and women, but varied by age group and educational level. Among women, intention to have one or more children in the future was associated with age, educational level, employment, the belief that having a child is important to happiness, and the belief that what a woman really wants is a home and children; among men it was associated with age, having more than high school education, not being employed full time, the belief that having a child is important to happiness, and the belief that what a woman really wants is a home and children.

## **Data Gaps and Recommendations**

The author identified the following data gaps and made the following recommendations:

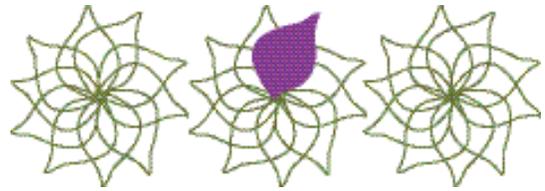
- There is a paucity of data on the impact of reduced fertility rates on women's health in general and on how women's roles (parent, caregiver, adult caregiver, worker, etc.) relate to their decision to have or not have children.
- While it would be useful to examine longer-term health outcomes by parity and age of first birth, as well as socio-economic and role-related variables, these data are not available.
- It is recommended that more detailed data be collected about individual roles (such as the quality of marital relationships and employment conditions etc.) to facilitate gender research.
- Longitudinal linkage between survey data and morbidity outcome data would help to facilitate a better understanding of parity and related health outcomes.
- Given the differing profiles of women with children and men with children, further research is needed to determine the health policies that can best support women with children, particularly those most vulnerable.

**[Download Full Chapter](#)**



# Health-Related Conditions





# BREAST CANCER

## In Canadian Women

Heather Bryant, MD, PhD, FRCPC (University of Calgary)

### Health Issue

Although lung cancer is the leading cause of death for Canadian women, breast cancer is the most common invasive cancer among Canadian women. About 5,400 women are expected to die from the disease in 2003. Between 1973 and 1998, the age-standardized incidence rate of breast cancer increased by 25%, with most of the increase occurring at the beginning of that period. In 1998, women's lifetime risk of breast cancer was about one in nine. The reason for the increased rates is not understood, although they may be linked with reproductive patterns. The introduction of screening mammography in the late 1980s and early 1990s probably led to better cancer detection and thus may have contributed to the greater incidence. However, incidence rates have tended to level off since 1993, during a time when more screening programs were becoming established.

### Key Findings

Risk factors for breast cancer include:

- higher age;
- country of birth in North America or northern Europe;
- hormonal factors, including early menarche, late menopause, and late age at first full-term pregnancy;
- familial risk: women without a history of breast cancer in a first-degree relative have a 7.8% probability of developing cancer by age 80, whereas those with this history have a 13.3% risk. For those with a history of breast cancer in two first-degree relatives, the risk is 21.1%;
- BRCA-1 and BRCA-2 gene mutations: about 35% of women with a BRCA-1 gene defect and 50% of those with a BRCA-2 defect would be expected to develop breast cancer by age 70;
- diet and obesity: postmenopausal obesity increases risk to some degree, and alcohol has been suggested as a risk factor (30% increased risk among drinkers in cohort studies); and
- radiation: exposure to high levels of ionizing radiation is a somewhat rare risk factor.



Interventions include:

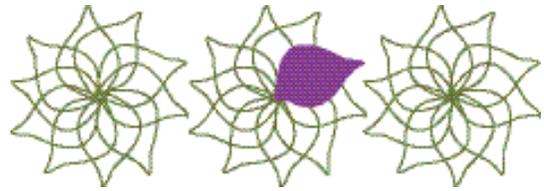
- genetic counseling/testing: women who have strong family histories of breast cancer (i.e., more than one first degree relative affected) may benefit from genetic counseling and potentially from familial genetic testing;
- selective estrogen receptor modifiers (SERMs): tamoxifen has been shown to reduce breast cancer rates among women with strong risk factors, but increases the risk of endometrial cancer and thrombosis; trials of an alternative SERM, raloxifene, are underway and appear to be promising;
- mastectomy: prophylactic mastectomy reduces breast cancer risk by about 90%, but individual women need to balance this potential benefit against the personal impact of this surgery; and
- screening: overall, the evidence points to benefit from routine mammography for women aged 50 and over.

## **Data Gaps and Recommendations**

The authors identified the following data gaps and made the following recommendations:

- Guidelines are unclear in several areas, particularly in screening. There is a need to develop ways to involve women fully in informed decision making, and to address several policy issues to prevent disparities in access to high-quality services;
- clarifying patenting issues associated with genetic tests (and thus their availability);
- ensuring that screening is carried out in high-quality, coordinated programs;
- establishing the key components of organized screening programs; and
- when clinical guidelines are available, conduct health services research or ongoing monitoring (by provincial/territorial cancer agencies) to assess compliance with the guidelines and to ensure equity of access within provinces/territories.

**[Download Full Chapter](#)**



# CANCER OF THE UTERINE CERVIX

Eliane Duarte-Franco, MD, MPH and Eduardo L. Franco, MPH, DrPH (McGill University)

## Health Issue

Cervical cancer is one of the most common malignant diseases of women: it is diagnosed in almost half a million women every year, and half as many die from it annually. Although Canada has been one of the pioneer countries in reducing the incidence of cervical cancer through the adoption of Pap smear screening, the disease remains an important problem for the Canadian health care delivery system, both because of the numbers of invasive cancer cases that escape surveillance and the high costs of maintaining the quality and coverage of screening programs. Cervical cancer is a particularly important problem for immigrant groups and for Aboriginal women. Cervical cancer consists of two general histological varieties: squamous cell carcinomas and adeno-carcinomas. Although prevalence of the former has decreased in response to screening, the proportion of the latter among all cervical cancers has increased, because Pap cytology is generally ineffective to detect these adenocarcinomas and their precursor lesions.

## Key Findings

In Canada, it is estimated that there were 1,450 new cases of and 420 deaths from cervical cancer in 2002. Cervical cancer incidence and mortality have declined during the last 50 years as a result of the increased availability of Pap smear screening programs worldwide and, likely, the decline in fertility rates during the last half-century in several countries. Canada was one of the first countries to adopt organized screening for cervical cancer, but most provinces have yet to follow national guidelines calling for the implementation of program-based cytology screening. In most provinces, early detection still depends on opportunistic screening that relies on cytology tests done at the discretion of family physicians.

A woman with a diagnosis of cervical cancer is, on average, at least two decades younger than a woman with other female genital cancers. An average 26 years of life are lost per female patient dying of cervical cancer. It is estimated that each year in Canada, cervical cancer causes an estimated 11,000 person-years of life lost.

Unlike most other cancers, cervical cancer has a central causal factor: human papilloma virus (HPV) infection, which may in fact be a necessary cause of this disease and of its precursor lesions. Other risk factors are specific sexual behaviours, smoking, parity, oral contraceptive use, diet, and HIV infection. Primary prevention can be achieved through health education (sexual behaviour modification) and vaccination to prevent HPV infection. Two main types of HPV vaccines are currently being developed: (i) prophylactic vaccines to prevent HPV infection, and (ii) therapeutic vaccines to induce regression of precancerous lesions or remission of advanced cervical cancer. Such vaccines are under evaluation in different populations. The initial results appear to be very promising, but wide-scale use as a preventive strategy is still more than a decade away.

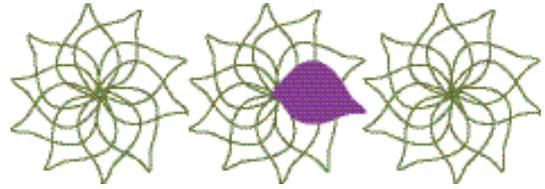


## Data Gaps and Recommendations

The authors identified the following data gaps and made the following recommendations:

- Most progressive cases of cervical cancer occur because of a false-negative Pap test result, because a woman did not receive a Pap test at all, or was not tested often enough. Well-developed recommendations and guidelines exist as part of a succession of national consensus reports concerning the implementation and maintenance of cytology-based screening programs. However, most Canadian women do not yet have access to organized, centralized cervical cancer screening.
- Despite the availability of some excellent Canadian surveys of Pap test utilization among women who developed the invasive form of the disease, we still lack critical information concerning the appropriate management of precursor lesions from audit studies. Various automated systems, aimed at improving the performance of the cytology test, are currently being tested. Large-scale prospective studies are still needed to evaluate these systems.
- Several studies have assessed the relative utility of HPV testing in addition to or compared with the Pap test as a cervical cancer-screening tool. These have been cross-sectional or short-term follow-up investigations, and no randomized controlled trials have yet been published. Testing for HPV seems to be a promising screening approach, but definitive evidence of efficacy is still needed from long-term follow-up studies with invasive cancer as an outcome and from randomized, controlled trials.
- One other screening application for HPV testing is in the secondary triage of equivocal Pap smears. Results from large-scale studies have indicated that HPV testing has greater sensitivity than a repeat Pap test for detecting hidden precursor lesions or cancer among women referred because of an equivocal Pap smear; such testing also reduces costs in terms of colposcopy referrals. However, taking into account the totality of the evidence, we still lack Canadian data to justify augmenting or modifying current screening programs.

[Download Full Chapter](#)



# OTHER GYNECOLOGIC CANCERS

Eliane Duarte-Franco MD, MPH and Eduardo L. Franco, MPH, DrPH (McGill University)

## Health Issue

In 2000, there were more than 4.7 million cases of cancer in women worldwide. Gynecologic tumours, which include cancers of the endometrium, ovaries, vulva, vagina, placenta, and adnexa, encompassed 8% of all female primary tumours worldwide and 45% of all genital cancers (cervical cancer is treated in a separate chapter). In Canada, these diseases account for 11% of all malignant neoplasms (except non-melanoma skin cancers) in women and 81% of all genital cancers. Although the incidence and mortality from vulvar and vaginal cancers are very low, endometrium and ovarian cancer are important public health problems.

## Key Findings

Endometrial cancer accounts for 43% of all female genital cancers in Canada. Because diagnosis is typically made at early stages, the prognosis is usually good for most patients with endometrial cancer. Over the past 30 years, however, there has been no appreciable improvement in survival among women with advanced disease.

In Canada, the incidence and mortality rates of ovarian cancer have varied little over the past 15 years. Ovarian cancer is similar to endometrial cancer in its incidence, age distribution, and geographic differences. Unlike the latter, however, the survival of women with ovarian cancer is poor: more than 70% of cases are diagnosed at late stages and fewer than 40% of women with ovarian cancer survive five years or more. Up to 10% of ovarian cancers are linked to familial aggregation.

Cancers of the vulva and of the vagina are very rare. Women with vaginal cancer are less likely to survive than women with vulvar cancer. Both these cancers share many risk factors with cervical cancer, and the recent developments in the study of human papilloma virus (HPV) infection should be applicable to these diseases as well. Of particular interest will be the advent of vaccines for the primary prevention of HPV infection.



## Data Gaps and Recommendations

The authors identified the following data gaps and made the following recommendations:

- Modifiable risk factors, such as exposure to unopposed estrogens, obesity, and diet, play an important role in increasing the risk of endometrial cancer. Therefore, public and professional education to prevent this disease should be encouraged and improved. With regard to risk factors, there is good evidence for a protective role for oral contraceptives, and practitioners should take this into consideration when judging the risks of familial ovarian cancer.
- Although several screening methods have been studied, including several tumour markers, none has been found to be particularly useful in reducing the incidence of advanced disease or mortality from ovarian cancer. Thus, further research is needed to develop diagnostic methods capable of diagnosing disease at an early stage. At present, the best available means to diagnose gynecologic malignancies is during the detailed clinical examination provided as part of routine health care, provided that the physician considers the totality of information on potential and proven risk factors, such as age, reproductive health, sexual practices, smoking, and the familial clustering of some of these cancers.
- Modifiable reproductive-related factors, such as oral contraceptive use and tubal ligation, can be responsible for significant protection against ovarian cancer; informing the medical community as well as women at large of these options is thus important.
- Because cigarette smoking increases the risk of first and second vulvar and vaginal cancers, women who smoke should be advised to quit.

[Download Full Chapter](#)



# CARDIOVASCULAR DISEASE

Sherry L. Grace, PhD (University Health Network); Rick Fry, MSc (Health Canada); Angela Cheung, MD, PhD; and Donna E. Stewart, MD, FRCPC (University Health Network)

## Health Issue

Cardiovascular disease (CVD) is the leading cause of death in Canadian women and men. In general, women present with a wider range of symptoms, are more likely to delay seeking medical care, and are less likely to be investigated and treated for CVD with evidence-based medications, angioplasty, or coronary artery bypass graft than men. Sex differences have also been observed in CVD risk factors, including cigarette smoking, depression, low income, elevated serum lipid levels, hypertension, obesity, and lack of physical activity. Vulnerable subpopulations include Aboriginal women, South Asian women, and women with diabetes mellitus. Data sources for the findings presented here include the 2000–2001 Canadian Community Health Survey (CCHS), the 1998–1999 National Population Health Survey, the Canadian Heart Health Survey, and Canadian Institute for Health Information databases.

## Key Findings

- In 1998, there were 78,964 deaths attributable to CVD in Canada, with generally equivalent numbers in men (39,767) and women (39,197). Acute myocardial infarction, which increases significantly after menopause and continues to increase with advanced age, was the leading cause of death among women.
- Cardiovascular disease accounted for 21% of all hospital admissions for Canadian women over age 50 in 1999, and the rates were higher among older women. Admissions to hospital for ischemic heart disease were more frequent for men than women, but the mean length of hospital stay for women surpassed that of men.
- Mean blood pressure increases with age in both women and men. After age 65, however, high blood pressure is more common among Canadian women than men. More than one-third of postmenopausal Canadian women have hypertension.
- Diabetes increases the mortality and morbidity associated with CVD in women more than it does in men, and eliminates the advantage for women in all atherosclerotic disease outcomes except stroke.
- Depression also contributes to the incidence and recovery from CVD, particularly for women, who experience twice the rate of depression as men.



- Data from the CCHS concerning risk factors and vulnerable subgroups were used to predict self-reported heart disease in women and men. For both sexes, increasing age, lower household income, former daily smoking, and BMI greater than 27 all show a positive risk for heart disease; being physically active and having a higher educational level are protective. Although being married appears to be protective for females, it is neither protective nor a risk for males.
- North American data generally show significant gender differences in referral and participation in secondary prevention programs such as cardiac rehabilitation (CR). In general, 20% fewer women than men are enrolled in CR.

## Data Gaps and Recommendations

The authors identified the following data gaps and made the following recommendations:

### Surveillance of the diagnosis and detection of CVD

- Recent data are lacking on physical measures (i.e. of hypertension, lipid profiles), for which self-report is notoriously poor. We need recent data on people undergoing treatment for hypertension, hyperlipidemia, and depression, and the effectiveness of these treatments.
- We are unable to capture the number of women or men undergoing stress tests, angiography, echocardiography, or Holter monitoring.
- Surveillance data regarding health services evaluation are lacking.

### Policy recommendations

- Cardiovascular disease needs to be recognized as an important women's health issue, given the Canadian mortality projections, increasing smoking rates among women, the aging population, and rampant inequities in health care access and provision.
- Health professionals should be trained to screen and address CVD risk factors among women, including hypertension, elevated lipid levels, smoking, physical inactivity, depression, diabetes mellitus, and low socio-economic status.
- Efforts to encourage healthy eating habits and physical activity through a multiplicity of approaches should be pursued.
- We need to continue developing and evaluating educational resources for women across the lifespan regarding their risk for CVD and symptom presentation.
- Attention must be paid to barriers to physical activity among women of diverse ethnocultural backgrounds and social classes.

[Download Full Chapter](#)



# DIABETES

## In Canadian Women

Catherine Kelly, MSc, MD, FRCPC and Gillian L. Booth, MD, MSc, FRCPC  
(University of Toronto)

### Health Issue

Diabetes mellitus (DM) is a chronic health condition that affects approximately 4.8% of Canadian adults 20 years of age and older. The prevalence increases dramatically with age; approximately 12% of Canadians aged 60–74 years are affected, according to the National Diabetes Surveillance System (NDSS) (1998–1999). As many as one-third of cases may remain undiagnosed. The number of people with DM is projected to increase substantially over the next 20 years, largely as a result of increases in rates of obesity and inactivity, as well as the aging of the population. This chapter reviews data from the NDSS, the 2000–2001 Canadian Community Health Survey, Ontario Diabetes Database (1998–1999), and the Ontario Health Survey II to investigate DM and the factors associated with it.

### Key Findings

Determining the true prevalence rates of DM remains a difficult task. Administrative databases provide important information, but people who do not seek medical attention or whose condition is undiagnosed will not be captured in these statistics. Self-reporting on population surveys is also known to underestimate actual rates of disease. Diabetes mellitus in Canada appears to be more common among men than women in almost every age group. The sole exception to this is women aged 20–34 years who have higher rates of the disease. These are reproductive years when women have more physician visits and are more likely to be diagnosed if they have diabetes.

Among Aboriginal Canadians, DM is much more prevalent among women, who represent two-thirds of affected individuals. Diabetes mellitus is also more prevalent in other ethnic groups, including South or West Asians, African Canadians, and Hispanic populations. Obesity and inactivity are well-described risk factors. Although the prevalence of obesity is higher among Canadian men than women (35% versus 27%), the risk of DM associated with excess weight is relatively greater among women. Socio-economic status appears to be inversely related to the prevalence of DM. Women aged 20–65 with household income under \$20,000 are twice as likely to have DM as those with higher income levels. Income-related disparities in DM prevalence are greater among women. Polycystic ovarian syndrome, an endocrine disorder that affects 5–7% of women of reproductive age, is associated with a doubled risk of DM. The prevalence of depression among women with DM is twice that of women without DM and is associated with poor metabolic control and the use of more health care resources.



## Data Gaps and Recommendations

The authors identified the following data gaps and made the following recommendations:

- There is inadequate information about DM as it relates to ethnic/racial groups other than Aboriginal Canadians and Canadians of European ancestry, and about the chronic complications of DM by gender and in women of these other ethnic groups.
- The reasons for the greater income-related disparities in DM prevalence among women remain unclear. Qualitative and quantitative research on lower-income women who have DM is needed to evaluate ethnic/racial differences, social supports, marital status, housing information, family structure, number of dependent children, employment status, lifestyle and activity profiles, dietary habits, health beliefs, and depression. Obtaining more detailed information about these women might help to elucidate factors that could be modifiable and thus potentially improve health outcomes. Depression is almost twice as prevalent among women with DM than it is among women who do not suffer from the disease, and influences a woman's ability to achieve good metabolic control. Research to determine whether more aggressive treatment of depression and/or mood disorders improves DM metabolic control could have a significant impact on health outcomes.
- Rising obesity rates in Canadian children of all ethnic groups is sounding an alarm for an impending rise in type 2 DM among children. Policies to promote healthy lifestyles among Canadians of all ages are urgently required.
- From pre-school throughout high school, school systems across the country need to examine the amount of time devoted to physical education and health promotion. Many high schools have eliminated or limited compulsory physical education classes (or an alternative activity), resulting in less active lifestyles for students. Government and public pressure to encourage schools and fast food outlets to serve healthier foods in smaller portions should be encouraged.
- Lifestyle promotion programs for adults, particularly in the workplace, should be studied. Canadians are working longer hours than they did 15 years ago, making it difficult to find adequate time outside of normal work hours for sports or other activities.
- There is a need to address the disparities in access to supplies (e.g. medications, blood glucose testing supplies) and services by low income people with DM across the country.
- Aboriginal women are at particular risk of developing obesity and type 2 DM. Culturally sensitive community programs need to be planned, implemented, and evaluated in this population.
- Women who have gestational diabetes are known to be at significant risk of developing type 2 DM in the future. It seems prudent to target these young women for diabetes prevention programs in their communities and monitor the outcomes of such programs. Large prospective trials have demonstrated that lifestyle interventions are extremely effective in preventing the progression to DM among high risk populations.
- Canadian health professionals need further training in the use of effective counselling skills that will assist people with DM to make and maintain some difficult behavioural changes.

[Download Full Chapter](#)



# CHRONIC PAIN

## The Extra Burden on Canadian Women

**Marta Meana PhD (University of Nevada), Robert Cho, Marie DesMeules MSc (Health Canada)**

### Health Issue

**Chronic pain affects individuals of all ages and ethnic backgrounds as well as both sexes. It is a major public health problem, associated with deficits in quality of life, difficulties in psychological adjustment, depression, disability and reduced income potential. The economic cost of chronic pain to society is huge in terms of health care utilization, absenteeism from work, disability, high levels of medication dependence, and the failure of multiple and often expensive medical procedures. Epidemiologic, clinical and experimental studies have all consistently found that the burden of pain is greater for women than for men.**

### Key Findings

- According to the self-report data of the Canadian Community Health Survey (2000), 16% of the population aged 12 years and older suffered from chronic pain (14% males versus 18% females).
- The prevalence of chronic pain increased with age in both sexes.
- Pain intensity was similar for males and females.
- There was an association between chronic pain and income: its prevalence was lower among those in higher income categories.
- When age, income and education were controlled for, women were not at greater risk of chronic pain than men.
- The prevalence of depression was twice as high among people reporting chronic pain as among those who did not, and among the former it was twice as high among individuals aged < 65 than those > 65.
- The majority of those who suffered chronic pain were limited in at least a few activities directly because of the pain; the proportion was higher among females (77.7% versus 70.7%).
- Among people aged = 65, the proportion of south Asians who reported chronic pain was higher than for any other ethnic group; for those aged < 65, Aboriginal Canadians had the highest proportion of chronic pain.



## Data Gaps and Recommendations

The authors identified the following data gaps and made the following recommendations:

- There is a lack of detailed information on the types of chronic pain that women experience, for instance chronic pelvic pain and other pain associated with reproductive function.
- Data from sources other than self-report surveys are needed, such as provincial databases of billing claims or Pharmacare data. These would provide a clearer picture of health care utilization and patterns of analgesic medication use.
- There has been little investigation into the effect of chronic pain on domestic responsibilities and parenting, areas that tend to be ignored in assessments of the impact of health conditions in women.
- Surveillance and early identification of pain disorders is crucial to reducing their impact, since early treatment is likely to result in better outcomes.
- Assessment of pain should be incorporated into the first medical consultation with either primary care providers or obstetricians/gynecologists and repeated periodically.
- Patient education and self-management approaches must be part of the strategy to combat chronic pain and its effects on health care services, particularly given the large expected increase in the number of individuals over the age of 65 in the next 30 years.

**[Download Full Chapter](#)**



# THE IMPACT OF ARTHRITIS

## On Canadian Women

Naomi M. Kasman, MSc (University Health Network), and Elizabeth M. Badley, PhD (University of Toronto)

### Health Issue

Arthritis is currently one of the most prevalent chronic conditions in Canada. It is a leading cause of long-term disability, pain, and increased health care utilization. It is also a far more prevalent condition among women than men. This chapter of the *Women's Health Surveillance Report* presents information on the status and impact of arthritis on women in Canada. The impact of arthritis was measured in terms of self-rated health, pain, long-term disability, dependence, and health service utilization. To set the data on arthritis in Canadian women in a broader population health context, we also present data for men with arthritis, women with chronic conditions other than arthritis, and women with no chronic conditions. The information presented in this report has been obtained primarily from analysis of the 1998–1999 National Population Health Survey (NPHS) and the Canadian Joint Replacement Registry.

### Key Findings

In Canada, the overall prevalence in 1998–1999 of self-reported arthritis or rheumatism among women was 20.0%. This prevalence rate increased with age to a maximum of 55.6% among women over age 75. In Canada, women with arthritis are older, have lower incomes, fewer years of education, and are more likely to be out of the labour force despite being aged 16–64. In terms of health impacts, women with arthritis are far more likely than women with other chronic conditions to experience long-term disability, report worse health, experience more pain, and be dependent upon others for assistance. Women with arthritis also consult with general practitioners, specialists and physiotherapists more frequently than any of the comparison groups.

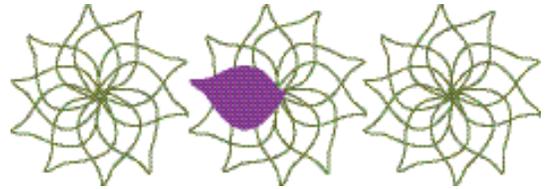


## **Data Gaps and Recommendations**

The authors identified the following data gaps and made the following recommendations:

- In Canada, a number of gaps exist in the arthritis and gender data currently available.
- The lack of detailed data on the use of health care services by women with arthritis. Our only sources of comprehensive population-based data are national and provincial health surveys, which rely on self-reported information.
- The lack of systematic data available on the prescribing of medications, access to services such as assistive devices or exercise programs, or the use of community support, self-management strategies or rehabilitation services.
- The burden of arthritis both on women and on society is expected to increase as the population ages. Hence, a comprehensive health strategy to reduce the impact of arthritis is required to ensure that health and support services are available in a timely manner, and provided in such a way as to meet the needs of Canadian women.

**[Download Full Chapter](#)**



# DEPRESSION

**Donna E. Stewart, MD, FRCPC (University of Toronto); Enza Gucciardi, MHSc; and Sherry L. Grace, PhD (University Health Network)**

## Health Issue

**Depression is a disorder the symptoms of which cause clinically significant distress or impairment in physical, social, occupational, and other key areas of functioning. Women are approximately twice as likely as men to experience depression. The average major depressive episode persists approximately nine months in the absence of treatment, and about 50% of individuals who have one episode will experience a recurrence. Psychosocial factors likely mediate the risks for depression incurred by biological influences. The effects of stress, violence, poverty, inequality, and low self-esteem likely increase women's vulnerability to depression.**

## Key Findings

Data from the National Population Health Survey (NPHS) show that depression is common in Canadian women, with a self-reported incidence of 5.7% per year compared with 2.9% in men in 1999. Geographically, the highest rates of depression among women are found in Nova Scotia and New Brunswick, while women in PEI have the highest rates of hospitalization for depression. The highest rates of depression are seen among women of reproductive age. Predictive factors for depression include previous depression (OR = 2.97), feelings of being out of control or overwhelmed (OR = 1.80), chronic health problems (OR = 1.77), traumatic events in childhood or young adulthood (OR = 1.69), lack of emotional support (OR = 1.47), and low sense of mastery (OR = 1.32). Women who are lone parents are more likely (15%) to experience depression than women generally (7%). Greater severity of chronic pain increases the prevalence of depression among women more than men. Being overweight (i.e. body mass index 25–27) and daily smoking are also associated with depression in Canadian women. Although depression is treatable, in 1998–1999, 67.6% of depressed Canadian women were not taking antidepressant medication. Only 43% of those reporting a major depressive episode had consulted a health professional about the problem. People with lower education, inadequate income, and fewer contacts with a health professional are less likely to receive treatment for their depression.



## **Data Gaps and Recommendations**

The authors identified the following data gaps and made the following recommendations:

- Commission research to gain a better understanding of the factors that increase or decrease vulnerability and resilience to depression and begin to conduct surveillance on these factors.
- As 8% of 12-to-13-year-old girls report contemplating suicide in the previous year (NPHS), collect and analyze data to gain an understanding of the contributing factors to this situation and how to improve self-esteem in early adolescent girls.
- Collect and analyze national data on the prevalence of clinical depression and anxiety.
- Collect and analyze data on current treatments for depression and their efficacy in depressed women at different life stages to determine what treatments and services are optimal.
- Conduct further research to better understand interprovincial variations in depression rates and hospitalization rates for women to develop the best possible practices for prevention and treatment strategies.
- Collect data on the impact of depression on work and family life and the costs to individuals, families, and society.
- Collect and analyze data on depression at 6 and 12 months after childbirth to determine depression's prevalence and the factors that increase or decrease vulnerability to it.

**[Download Full Chapter](#)**



# DEMENTIA

## And Alzheimer's Disease

Joan Lindsay, PhD (Health Canada), with Lori Anderson, BA

### Health Issue

**Dementia, including Alzheimer's disease (AD) (the most common type of dementia) is a problem that increases with age after age 65. With the aging of the baby boom generation, the number of people with dementia will likely increase significantly over the next three decades. While prevalence and incidence rates do not differ markedly between women and men, women live longer on average, so the number of women with dementia is greater than that of men. In addition, women are more frequently caregivers for people with dementia. Thus, dementia is an important health problem for women.**

### Key Findings

Findings are based on data from the Canadian Study of Health and Aging (CSHA), a large, national study that provides a great deal of detailed data on dementia in Canada. The prevalence of dementia increases markedly with age for both sexes, approximately doubling every five years from ages 65 to 84, with a lower rate of increase at older ages. Rates of AD are higher among women, whereas rates of vascular dementia are higher among men. The prospective analysis of risk factors for AD show that the risk of AD increases with increasing age, lower education, and apolipoprotein Eε4. Regular physical activity is clearly protective in women, whereas this association is less clear for men. Use of non-steroidal anti-inflammatory drugs, wine consumption, coffee consumption, and past exposure to vaccines are associated with decreased risk of AD. While estrogen replacement therapy has been seen to be protective in some studies, several studies fail to support this association, including the CSHA.

The CSHA data demonstrated women's strong caregiving role. Seventy-five per cent of all caregivers for people with dementia living in the community are women, as are 71% of caregivers for those with dementia in institutions. Daughters represented 45% of the informal caregivers of institutionalized dementia patients.



## **Data Gaps and Recommendations**

The authors identified the following data gaps and made the following recommendations:

- Further study is needed to confirm some of the protective factors against dementia (coffee drinking, vaccinations) before policy recommendations can be made.
- The protective effect of regular physical activity for AD provides an additional reason for the promotion of regular physical activity at all ages.
- While the CSHA covers the years 1991 to 2001, ongoing surveillance of the incidence and prevalence of dementia is needed to monitor the impact of treatments as well as the aging of the population. Such surveillance is not feasible using the usual sources of data (hospitalizations, mortality, physicians' visits) since only a fairly small fraction of dementia cases would have dementia as a diagnosis.

**[Download Full Chapter](#)**



# EATING DISORDERS

**E. Gucciardi, MHSc; N. Celasun, MPH, PhD; F. Ahmad, MBBS, MPH (University Health Network); D.E. Stewart, MD, FRCPC (University of Toronto)**

## Health Issue

Eating disorders and disturbances are characterized by an abnormal perception of one's body image—weight, or shape, or both. This perception is expressed as an obsessive preoccupation with food and weight that may lead to health-risk behaviours. Clinical eating disorders include anorexia nervosa, bulimia nervosa, and eating disorders not otherwise specified. Personal, behavioural and socio-environmental factors, such as negative body image, low self-esteem, fear of becoming fat, chronic dieting, and social pressures to be thin, are identified risk factors.

## Key Findings

Eating disorders, preoccupation with weight and body image, and self-concept disturbances are more prevalent among women than men. Data from the 1996–1997 National Population Health Survey (NPHS) suggest that more women than men wish to weigh much less than their actual weight. Although eating disorders are observed across all age groups, the desire for an “ideal,” thin body during a vulnerable stage of physical and emotional maturation places adolescent women at highest risk. Young girls and women face pressure to conform to idealized images of thin women in the media and popular culture, regardless of their natural body shape. Alarmingly, eating disorders and eating disturbances are increasingly identified among prepubescent youth.

In 1995, 95% of reported hospitalized cases of anorexia and more than 90% of hospitalized cases of bulimia in Ontario were women. Between 1994 and 1999, in-patient crude hospital separation rates in Canada for any diagnosis of anorexia, bulimia, and other unspecified eating disorders increased somewhat (by 4.7%), from 10.2 to 10.7 per 100,000 women. Although the rates among men were notably lower, they also increased slightly (by 4.8%) during the same period, from 0.6 to 0.7 per 100,000 men. These slight increases may be due to better awareness and detection of eating disorders and improved specialized inpatient treatment programs. Across Canada, age-standardized hospital separation rates for eating disorders were highest among women in British Columbia (15.9 per 100,000) and New Brunswick (15.1 per 100,000) and lowest in Saskatchewan (8.6) and Alberta (8.6 per 100,000).

Furthermore, in 2000, the prevalence of depression among women who were hospitalized with a diagnosis of anorexia (11.54%) or bulimia (15.36%) was more than twice the rate of depression in the general population of women (5.7%), according to the 1998–1999 NPHS. The highest prevalence of depression was found in women 25–39 years of age for both anorexia and bulimia.



## Data Gaps and Recommendations

The authors identified the following data gaps and made the following recommendations:

- Hospitalization data captures only the severe cases of eating disorders. Therefore, individuals with eating disorders who visit clinics or family physicians, or use hospital outpatient services—or no services at all—are not included in this database. Across Canada, there is currently no systematic process for collecting prevalence data on eating disorders outside of hospitals.
- There were several limitations in the collection of data, including lack of longitudinal data, appropriate comparison groups, large samples, and ethnic group analysis. Most studies were based on clinical samples, making it difficult to generalize findings to the general population. Furthermore, many of these studies were cross-sectional and limited in their ability to make causal links.
- Data should be collected on eating disorders in Canadian women, including the prevalence and risk factors in subgroups such as disabled, immigrant, and visible minority women.
- Cross-cultural and longitudinal evaluations of attitudes and behaviours towards disordered eating should be conducted in large community samples to monitor trends, examine protective and non-protective factors, and assist in the development and planning of preventive and treatment programs.

[Download Full Chapter](#)



# VIOLENCE AGAINST CANADIAN WOMEN

Marsha M. Cohen, MD and Heather Maclean, EdD (Centre for Research in Women's Health)

## Health Issue

Exposure to violence as children or as adults places a woman at higher risk of poor health outcomes, both physical and psychological. Abused women use more health care services and have poorer social functioning than women who have not been abused. Knowledge of the prevalence of violence against women, and of which women are at risk, should assist in the planning of services for abuse prevention and treatment of the health consequences of abuse. Data from the 1999 General Social Survey on Victimization are presented to explore aspects of violence further.

## Key Findings

- Overall, the highest rates of any partner violence were in Alberta (25.5%) and British Columbia (23%). The lowest rates were in Ontario (18.8%). Women aged 15–24 had the highest rates in all regions of Canada, compared with older women. Aboriginal women in Manitoba/Saskatchewan and Alberta had higher rates of violence (57.2% and 56.6% respectively) than non-Aboriginal women (20.6%).
- Overall, lower rates of partner-related violence were reported among women not born in Canada (18.4%) than among Canadian-born women (21.7%). Visible minority women reported lower rates of lifetime sexual assault (5.7%) than non-visible minority women (12.3%). Perceptions of violence may vary by ethnicity.
- Rates of any partner-related violence among women who had activity limitations were 35.6% in British Columbia as compared with 20.6% for those without activity limitations. The rate of lifetime sexual assault on women with activity limitations was 25.2% in British Columbia as compared with 14.5% for those with no limitations. Women with a spouse and children under age 25 were less likely than lone mothers to experience partner-related violence (16.5% versus 68.3% experienced violence respectively).



## **Data Gaps and Recommendations**

The authors identified the following data gaps and made the following recommendations:

- More information is required concerning the prevalence of violence among Aboriginal women, immigrant and refugee women, women with disabilities, lesbian women, and pregnant women. It is also necessary to be able to correlate information on violence against women with health status data.
- National population-based surveys need to include items about both violence and health. Future surveys should have better questions to determine the health consequences of violence and related resource utilization.
- Further research is needed to identify the health care system's role in prevention, management, and rehabilitation as they relate to violence against women. Future programs and policies must be based on valid, reliable, and comprehensive empirical data.
- Coordination across the country in terms of violence studies and violence programs is needed. Dissemination of successful programs (based on evidence) to other jurisdictions would help reduce duplicate efforts and allow resources to be used directly for program implementation and research.
- More research is required on whether identifying violence and treatment would result in lower health care utilization and improved health outcomes.
- Much more needs to be known about the health effects of violence, its costs to the health care system, and the role of the health care system in reducing violence against women.

**[Download Full Chapter](#)**



# PERIMENOPAUSAL AND POSTMENOPAUSAL HEALTH

Angela M. Cheung, MD, PhD, FRCPC; Ruhee Chaudhry, MSc; Moira Kapral, MD, MSc, FRCPC; Cynthia Jackevicius, Dpharm (University Health Network); and Gail Robinson, MD, FRCPC (University of Toronto)

## Health Issue

The perimenopausal phase of a woman's life can span several years. The changes that occur during this period of transition will affect women to varying degrees. For some women, symptoms can be severe and disruptive, and for others the transition is welcomed. Clinical and epidemiologic data on women in perimenopause are limited and come primarily from Caucasian populations. Somewhat greater attention has been given to postmenopausal women's health, and these data are often extrapolated to women in perimenopause. The average age of natural menopause in Western societies is estimated to be 51 years, so that women in Canada can expect to live, on average, a third of their lives in postmenopausal years. During these years women are at increased risk of chronic diseases such as osteoporosis and cardiovascular disease.

Morbidity data from the Canadian Institute for Health Information (CIHI), Statistics Canada's Canadian Mortality Database, and the FASTRAK II database (of acute cardiac hospital admissions across Canada) were analyzed to explore these conditions further.

## Key Findings

- Clinical and epidemiologic data on women in perimenopause are limited. There are no adequate Canadian data on symptom severity and prevalence among perimenopausal and postmenopausal women. Existing data on age at menopause and experience of the menopausal transition come primarily from Caucasian populations.
- Perimenopausal and postmenopausal women differ hormonally and experientially. Therapies tested on one population should not necessarily be extrapolated to the other.
- Psychiatric disorders are not significantly increased among menopausal women, although there may be some increase in psychiatric symptoms in perimenopause.
- Scientific evidence is lacking to support or refute claims that commonly used botanical products can offer therapeutic relief of menopausal symptoms. There are inadequate data on the efficacy, side effects, and pharmacokinetics of these products. However, recent studies have demonstrated their estrogenic activity, suggesting a potential for their use and a viable mechanism of action.
- Consistent with previous studies, recent data from the Women's Health Initiative suggest that combination hormone therapy increases the risk of stroke, coronary artery disease, and breast cancer. The study did demonstrate a decrease in risk of colon cancer and hip fracture. Hormone therapy is no longer recommended for the prevention of chronic diseases for asymptomatic women.



- Stroke is an important issue for perimenopausal and postmenopausal women. Sex differences may exist in the secondary prevention of stroke. Women may be less likely than men to receive antiplatelet agents and carotid endarterectomy for secondary stroke prevention, although further research is needed on whether this is due to sex alone or to age or other clinical factors.
- Osteoporosis affects an estimated one in six women and one in sixteen men over the age of 50. Women are greater risk of osteoporosis and osteoporotic fractures than men. However, women have lower in-hospital mortality rates than men following hip fracture.

### **Data Gaps and Recommendations**

The authors identified the following data gaps and made the following recommendations:

- Conduct clinical and epidemiologic research aimed at better understanding the menopausal transition and defining its clinical phases. In order to collect data on perimenopausal women, we must be able to identify them. Age is often used as a surrogate for menopausal status, making it difficult to differentiate conditions that may be due to biological changes from those that may be attributed to other factors.
- Investigate alternative combinations and doses of hormone therapy, in light of known risks and benefits, with respect to treatment of menopausal symptoms and long-term outcomes.
- Investigate non-pharmacological alternatives (risks and benefits) for the treatment of menopausal symptoms, particularly those already in common use.
- Educate health care practitioners and women on the risks and effective treatment related to cardiovascular disease so that they may present for treatment more quickly and receive the most effective therapies.
- Investigate the use of ovarian hormones to augment the effect of antidepressants in menopausal women.

**[Download Full Chapter](#)**



# SEXUAL HEALTH

**Lisa Hansen, MSc, MHSc; Janice Mann, MD; Mike Barrett, PhD; Sharon McMahon, MA; and Tom Wong, MD, MPH, FRCPC (Health Canada)**

## Health Issue

Health Canada's 1999, *Report from Consultations on a Framework for Sexual and Reproductive Health*, has asserted as a guiding principle that all individuals are sexual beings throughout their lives. This is the broad approach we have taken in considering issues related to the sexual health of Canadian women. In both biological and behavioural aspects, Canadian women experience important variations in their sexual health throughout the life cycle, from before puberty to after menopause. We pay particular attention to the often overlooked formative and mature stages of women's sexual lives, including the development of healthy sexuality before puberty and the maintenance of healthy sexuality after the reproductive years. We have analyzed cross-sectional data from the "Sexual Behaviour" module of the 2000–2001 Canadian Community Health Survey (CCHS), and have reviewed the literature and other available indicators of the sexual health of Canadian women.

## Key Findings

- Contemporary Canadian adolescents are becoming sexually active at younger ages than in previous generations.
- The "gender gap" between young males and females in age at first intercourse has virtually disappeared. Among those 15–24 years old, the mean age at first intercourse was 16.7 years for males and 16.8 for females.
- Canadian-born females and males are significantly younger at first intercourse than respondents who were not born in Canada.
- In focused research, female and male adolescents demonstrate a poor knowledge of sexual and reproductive health. Despite a reasonable awareness of HIV/AIDS, few adolescents recognize the behaviours and infections that pose the greatest threats to their sexual health. In this aspect, Canadian youth are similar to their international peers.
- Among all CCHS respondents who had one or more sexual relationships lasting less than 12 months in the previous year, only about half report that they "always" used a condom.
- Among older adults, the medical model of sexuality often fails to recognize that normal aging does not necessarily compromise sexual expression. Canadians in mid-life and beyond are sexually active, and find emotional and physical satisfaction in their sexual relationships. Healthy sexuality is an essential aspect of quality of life for older adults.



## Data Gaps and Recommendations

The authors identified the following data gaps and made the following recommendations:

- At the national level, we rely on periodic population health surveys for a limited set of sexual health measures. Both surveys and targeted research need to employ a broader understanding of “sexuality,” to encompass psychological as well as behavioural and biological measures. Ongoing indicators are needed to measure important changes in the sexual health of Canadians throughout the life cycle as well as better measures of the upstream determinants of sexual health.
- Although unintended pregnancies, contraceptive use, and sexually transmitted infections among adolescents have been extensively researched, sexual behaviour and knowledge have not been given the same degree of attention. There is reluctance to direct questions about sexual issues to younger Canadians, even though increased knowledge of sexual health topics is associated with delayed onset of sexual intercourse.
- Among adults, resources directed at sexual health are needed to address psychological aspects of aging and sexuality, rather than focusing on physiologic sexual dysfunction.
- Age and gender-appropriate sexual health care, education, and knowledge is not only important for women of reproductive age, but for all Canadians at all stages of life.

[Download Full Chapter](#)



# CONTRACEPTION

Sharon McMahon, MA; Lisa Hansen, MSc, MHSc; Janice Mann, MD; Cathy Sevigny, RN; Tom Wong, MD, MPH, FRCPC; and Marlene Roache, MA (Health Canada)

## Health Issue

Contraception choices affect the long-term sexual health and fertility of women and men. Women's ability to control their fertility has enhanced their ability to control their lives, and with this power has come a higher responsibility for contraception in relationships. The context in which men and women make decisions related to contraception changed with the advent of oral contraception (OC) some 40 years ago and, more recently, with the increased risk of HIV and other sexually transmitted infections (STIs). Choice of contraceptive method was previously based on the considered efficacy of the method, ease of use, cost, and availability. Through the 1990s, prevention of STIs has become as important—if not more important—for many men and women as prevention of pregnancy. Data from the 1998 Canadian Contraception Study and the 2000–2001 Canadian Community Health Survey are used in this chapter to examine recent trends in contraceptive use among Canadian women and their familiarity with various methods, including emergency contraception. Also considered are factors that influence contraception choice across the life stages and women's and men's different perceptions of contraception.

## Key Findings

- Oral contraception is the dominant method of contraception for women in Canada: more than 43% of sexually active women use it.
- Women today seem to be better informed than they were in the past about how to protect themselves against HIV/STI.
- Canadian women have a high awareness of the condom, which offers an effective method of birth control and currently provides the most capable barrier method for protection against HIV/STI.
- Seventy-five percent of Canadian women have not heard of the female condom. Of those who had, only 3% had a favourable opinion of it.
- Contraception use in sexually active, younger women in the 15–17 age group is quite high (80% report using contraception the first time they had intercourse). However, consistency of use is a problem: only 60% of unmarried teens report always using contraception over the previous six months.
- Adolescents' dual use of condoms and OC is low. Canadian and U.S. studies show that, among youth, condom use drops as use of OC increases, especially in sexual activity with a main partner.
- Adolescent girls who are sexually active report high awareness of emergency contraception but low awareness of the time limits within which it is effective.



- Women aged 35–44 report a higher level of familiarity with sterilization than do younger women, and indicate lower familiarity with reversible methods of sterilization than in the past. There has been a notable shift in sterilization practices, with a move away from tubal ligation and an increase in vasectomy. Twenty-three percent of married women aged 35 to 44 report using sterilization as their method of contraception, 10% of themselves and 14% of their partners.

## Data Gaps and Recommendations

The authors identified the following data gaps and made the following recommendations:

- In spite of two excellent sources, the Canadian Contraception Studies and the Canadian Fertility Studies, national data to guide policy and program development are limited. Data are needed on men and contraception use, and on factors that affect accessibility, adherence and negotiation of choice.
- Increased efforts on sexual health promotion and education in Canadian women are required.
- Younger women and men, as well as physicians, health care providers, and educators, need heightened awareness about the importance of dual protection.
- Adherence to the contraceptive method chosen should be promoted.
- Women need increased awareness of emergency contraception methods.
- Conduct research and trials associated with new, reversible contraceptive methods for men and the development of safe and effective microbicides.

[Download Full Chapter](#)



# GENDER DIFFERENCES IN BACTERIAL STIs IN CANADA

Tom Wong MD, MPH, FRCPC (Health Canada); Ameeta Singh, BMBS (Alberta Health and Wellness); Janice Mann, MD; Lisa Hansen, MSc, MHSc; and Sharon McMahon, MA (Health Canada)

## Health Issue

The incidence of bacterial sexually transmitted infections (STIs) is rising in Canada, and has serious health and economic consequences. In 1990, the estimated direct and indirect costs of chlamydia in Canadian females were as high as \$115 million (CAD); for males the cost was up to \$8 million. In the same year, the cost burden of gonorrhoea was up to \$63 million for females and \$12 million for males. If these easily curable illnesses were properly prevented and treated, the cost savings would be enormous.

Sexually transmitted infections pose a greater risk to women than men in a number of ways, including women's increased susceptibility to infection and the severity of the sequelae associated with infection. A further difference between men and women lies in the difficulties involved in screening and diagnosis. This chapter analyzes these differences using national STI surveillance trend data from 1991 to 2000.

## Key Findings

Reported incidence rates of chlamydia, gonorrhoea, and infectious syphilis declined until 1997, when this downward trend for all three STIs began to reverse. While incidence of STIs has increased for both men and women, men are experiencing a greater percentage increase: between 1991 and 2000 chlamydia increased 53% among men and 27% among women; gonorrhoea increased 43% among men and 32% among women; and syphilis increased 62% among men and 22% among women. The reported rate of chlamydia is much higher among women than men, whereas the reverse is true for gonorrhoea and infectious syphilis.

The power differential between men and women and higher potential for women to suffer from domestic violence create barriers to women protecting themselves against STIs. Increases in high-risk sexual behaviour among men who have sex with men began to be observed after the introduction of potent antiretroviral HIV suppressive therapy in 1996, but behavioural changes in women await further research.



## **Data Gaps and Recommendations**

The authors identified the following data gaps and made the following recommendations:

- We need to improve the surveillance system for STIs in Canada. For example:
  - The reported rate may underestimate the true incidence if a lack of symptoms causes people not to present themselves for diagnosis—we need to estimate the size of the “hidden epidemic.”
  - We need to evaluate and monitor gender-specific behavioural changes in this “HIV antiretroviral therapy era.”
  - Geographic and ethnic disparities, gaps, and needs must be addressed.
- We need to develop safer, acceptable, and female-controlled methods of STI prevention, such as topical microbicides, that do not increase the risk of HIV transmission.
- More research is needed about gender-specific strategies that promote safer sexual practices and behaviour change (e.g. the use of the Internet for STI/HIV “cyberprevention”).
- Urine screening for chlamydia should be more widely available.
- We need to increase screening opportunities by taking advantage of women’s greater tendency to present for health examinations (e.g. Pap tests).
- We need to improve screening of high-risk men in order to prevent re-infections in their partners.

**[Download Full Chapter](#)**



# WOMEN AND HIV

Marene Gatali, MHSC, BAsC and Chris Archibald, MDCM, MHSc, FRCPC (Health Canada)

## Health Issue

The epidemic of human immunodeficiency virus (HIV) and acquired immunodeficiency syndrome (AIDS) in developed countries has changed over time. The earlier epidemic affected primarily men who have sex with men, while the current epidemic increasingly affects other groups, such as injecting drug users and heterosexuals. As a result, the number and percentage of women living with HIV and AIDS is increasing, as is the potential for transmission of HIV from mothers to their infants.

HIV manifests itself differently among women and men, especially with regard to early symptoms and later opportunistic infections. The presence of recurrent and persistent gynecological infections may be the first clinical manifestation of HIV in an infected woman and can occur early in the course of infection.

The two main ways that adult women acquire HIV are through injecting-drug use and heterosexual contact with an HIV-infected partner or a partner who is at risk of HIV infection. Heterosexual contact is now the main risk factor for HIV among women in Canada and worldwide. Women who work as commercial sex workers, those who inject drugs, and partners of injecting drug users are at increased risk of acquiring HIV.

## Key Findings

The number of women in Canada living with HIV, including those with AIDS, has increased over time. Recent estimates indicate that by the end of 1999, an estimated 6,800 women were living with HIV, an increase of 48.0% from the 1996 estimate of 4,600. On an annual basis, women account for a growing proportion of positive HIV-test reports with known age and sex among adults in Canada. This proportion increased from 10.7% in the period 1985–1995 to 25% in 2001, due to both an increase in the number of positive HIV tests for women as well as a decreased number for men. A second, related finding is the rising proportion of females aged 15–29 among both positive HIV test reports and reported AIDS diagnoses in Canada. Third, HIV appears to be a particular problem for certain subgroups of women: women in prison, Aboriginal women, and black women. Finally, in Canada, the increasing proportion of HIV-positive test reports among women is attributed to heterosexual exposure (64% in 2001). Injection drug use, however, continues to be an important risk (32% in 2001).

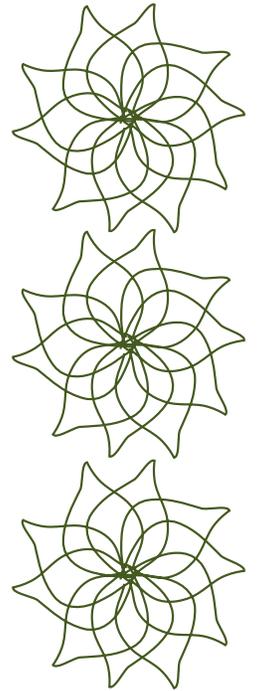


## Data Gaps and Recommendations

The authors identified the following data gaps and made the following recommendations:

- Better and more research is needed to address information gaps about risk behaviours, testing patterns, and HIV incidence and prevalence among women, especially in particular subgroups of women such as women in prison, young women, Aboriginal women, and women from endemic countries.
- Future research should include examination of the influence of the broader contextual factors on women's lives and on their risk of HIV infection. This data will help individuals to receive appropriate counselling and treatment, and help public health officials to better interpret surveillance data.
- Human immunodeficiency virus in women encompasses many facets of their lives and behaviours. The authors note that reducing the toll of the HIV epidemic among women will require efforts on several fronts:
  - Programs and prevention messages need to be tailored to specific social, cultural, and economic contexts in which women may be more vulnerable to HIV infection than men.
  - Prevention efforts must be gender—and age-specific and should target not only individual behaviours but also the social and cultural context in which these behaviours occur (e.g. increasing individual motivation to use condoms and reducing contextual barriers to their use).
  - Specific interventions are needed to address the intersection of injecting drug use and HIV transmission, including both women who inject and those who do not but whose sexual partners do.
  - Increased emphasis on appropriate HIV prevention, counselling, and testing, as well as treatment services for young women, is required.

[Download Full Chapter](#)



# Health Care Utilization





# PERINATAL CARE

## In Canada

**Beverley Chalmers, DSc (Med) (University of Toronto), PhD; and  
Shi Wu Wen, MB, PhD (Health Canada)**

### Health Issue

Canada's standard of perinatal care ranks among the highest in the world, but there is still room for improvement, both in terms of regional differences in care across the country and global comparisons of approaches to care in Canada and elsewhere. This chapter makes use of data obtained through the Canadian Perinatal Surveillance System (CPSS) to examine morbidity and mortality among mothers and infants as well as the implications for perinatal care for the increasing proportion of older women giving birth, and the use of infertility treatments.

### Key Findings

Maternal mortality rates in Canada dropped to 4.4 per 100,000 live births in 1993–1997 and are among the lowest in the world. The most common causes of death during pregnancy are hypertensive disorders, pulmonary embolism, hemorrhage, and ectopic pregnancy. Life-threatening conditions during pregnancy include amniotic fluid embolism, obstetric pulmonary embolism, eclampsia, septic shock, anesthesia complications, cerebrovascular disorders, and hemorrhage. National data on amniotic embolism indicate that this is a rare event (5.6 per 100,000 deliveries) but carries a high case-fatality rate (approximately 80%). Rates of maternal readmission after Caesarean birth have increased from 3.2 per 100 Caesarean sections in 1990 to 3.9 in 1997, compared with a stable rate of 2.5 per 100 for readmission after normal vaginal delivery. This may signal a potential future concern as rates of Caesarean section are increasing (from 15.3 per 100 hospital deliveries in 1994 to 19.1 in 1997). Rates of maternal readmission after Caesarean birth are being exacerbated as postpartum stays in hospital become shorter.

The live birth rate among teenaged mothers aged 10–14 and 15–19 has declined, from 0.29 per 1,000 in 1981 to 0.22 in 1997, and from 25.8 per 1,000 in 1981 to 19.9 in 1997 respectively. The total induced abortion rate in 1997 was 16.8 per 1,000 women, an increase from 14.6 in 1990. These figures are likely to be significantly underreported, however, and should be interpreted with caution. The past two decades have also seen a steady increase in the proportion of births to older women, who are more at risk of the complications of pregnancy and of preterm birth (among women over age 34, 8.8 preterm births per 1,000 total births in 2000, the highest rate of all age groups).



Although the infant mortality rate in Canada is among the lowest in the world (5.3 to 8.8 per 1,000 live births between 1990 and 2000) there are unacceptable disparities between subpopulations. Low-income groups show a risk of infant deaths 1.6 times higher than that of high income groups. In Aboriginal populations, rates of stillbirth and perinatal mortality are double (among registered Indians) and 2.5 times (among Inuit groups) the Canadian average. Rates of preterm birth increased in Canada between 1981 and 2000 (6.4 to 7.5 per 100 deliveries), possibly because of increases in multiple births and obstetric interventions.

The increasing rate of multiple births, partially related to increasing use of infertility treatments, has accelerated recently and is of concern. Multiple births carry a higher risk of complications and are associated with an increased risk of preterm birth: in 2000, 51.5% of twin pregnancies and 97.7% of triplet or higher pregnancies resulted in preterm births. The costs to the health care system in terms of neonatal intensive care, prolonged hospital stay, and medication use are likely to be high.

## Data Gaps and Recommendations

The authors identified the following data gaps and made the following recommendations:

- Data contributing to CPSS surveillance needs to be collected in a more timely and uniform manner across provinces and territories. Furthermore, events occurring outside of hospitals are not necessarily captured.
- Economic indicators should be part of CPSS surveillance of perinatal health, so that unnecessary or excessive use of certain (possibly costly) practices can be assessed.
- The CPSS should provide an evaluation of how well Canada fares in relation to international standards of perinatal care.

[Download Full Chapter](#)



# FACTORS ASSOCIATED WITH WOMEN'S MEDICATION USE

Jennifer Payne, MSc; Robert Cho; Marie Desmeules, MSc (Health Canada); and Ineke Neutel, PhD (SCO Health Services Inc.) The authors thank Rose Odili, B Pharm, for her assistance in separating medications into Rx and OTC categories.

## Health Issue

Research in Canada and internationally has consistently shown that while women generally live longer than men, they report more illness and use of health care services (including medication) than men throughout their adult lives. In the literature, the reasons for women's elevated medication use are not clear. This chapter uses data from the National Population Health Survey (NPHS 1994–1995, 1996–1997, and 1998–1999) to investigate the associations between prescription (Rx) and over-the-counter (OTC) medication use and selected social and demographic variables in males and females. Multivariate analysis (logistic regression) was used to determine the association between using prescription medications (i.e. having taken one of a selection of prescription medications in the preceding two days) and social-role status (being a parent, partner, or worker), taking into account potential confounding variables such as age, education, income, chronic diseases, physician visits, and pain experience.

## Key Findings

While a larger proportion (about 50%) of women than men 20+ years used medication throughout the period 1994–1995 to 1998–1999, the proportion of people using medication did not increase for the period. The use of OTC and Rx medication increased by number of physician visits for women and men. The female-to-male ratio for Rx medication use, however, decreased with increasing number of physician visits. For OTC medications, the relationship was less consistent.

The patterns of medication use differed for women and men depending on their level of education (higher education includes those with more than high-school education or a college or university degree; lower education includes those with high-school education or less). In all education groups, medication use increased with age, chronic disease, and number of physician visits, and decreased with the perception of good to excellent health. The relationship with other factors, however, was variable. For women, the social roles of being married or previously married, being employed, or being a parent did not increase their likelihood of medication use. In fact, medication use was lower among more highly educated women who were parents and among previously married women with lower educational level than in the comparison groups. Reported income adequacy is not associated with the chances of medication use (Rx and OTC) among highly educated women, whereas for women with low levels of education, medication use increases as income adequacy decreases. Additionally, having drug insurance seems to significantly reduce the chances of reported medication use in both men and women with a high educational level.

A comparison with factors associated with men's medication use is available in the full chapter.

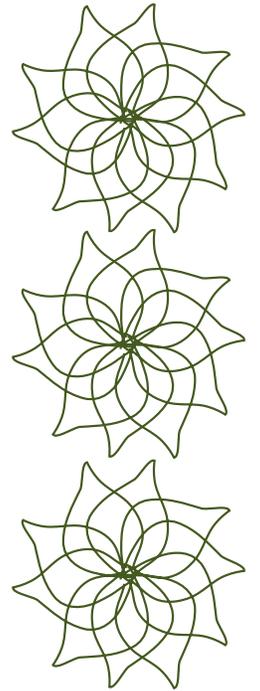


## **Data Gaps and Recommendations**

The authors identified the following data gaps and made the following recommendations:

- More complete data are needed about social roles, particularly their quality, to better understand the relation between roles and medication use. While there is information on marital status, no data are available about women's perceived quality of their relationships, relationship duration, or about same-sex relationships. A similar gap exists with regard to contextual information about parenting: although the question in the survey asked for "number of children less than 6 living in the household," the amount of time spent on childcare or on household activities was not given. Having a better understanding of the context surrounding women's social roles would facilitate interpretation of the results.
- Data that would allow an assessment of the appropriateness of OTC and Rx drug use or the reasons for such use were not available and need to be collected.
- More research is needed to better understand the distribution and determinants of specific medication use.

**[Download Full Chapter](#)**



# Conclusions





# SYNTHESIS

## Pulling it all Together

**Marie DesMeules (Health Canada), Arminée Kazanjian (University of British Columbia), Health McLean (Centre for Research in Women's Health), Jennifer Payne (Health Canada), Donna Stewart (University of Toronto), Bilkis Vissandjée (University of Montreal)**

### What the Women's Health Surveillance Report Achieves

This gender-focused *Women's Health Surveillance Report* is the initial step in developing an effective, sustainable women's health surveillance system in Canada. This report identifies key data gaps in existing national surveys, gaps that must be addressed in order to have an effective women's health surveillance system. It uses data from a variety of national administrative and survey databases to explore sex and gender differences in important areas of women's health. While these data have often been considered "sterile" (they were collected for other purposes and generally lack much of the context needed for gender analysis), the report's authors have used them to provide some insights into disparities in the distribution of determinants of health, health behaviours, health outcomes, and health care utilization for Canadian women, and to identify vulnerable subgroups of women.

This report provides a baseline for monitoring health outcomes, health-related behaviours, and other social and economic issues that affect women's lives. Its focus is a range of health issues that emerged from national consultations with women's health experts.

Many women's health experts, with a variety of perspectives, came together to create the *Women's Health Surveillance Report*. Expert teams drafted chapters and consulted regularly with the Steering Committee. A broader, external "expert" consultation took place in October 2002. This collaboration will continue through the report's dissemination and evaluation stages, as relevant stakeholders work together to build a comprehensive and effective women's health surveillance system in Canada.

### Some Key Messages: A Crosscutting Perspective

Rather than adopting a crosscutting perspective, the *Women's Health Surveillance Report* presents information on a series of health issues. Below are some key messages from the report with respect to quality of life, the health of Canadian women across the life cycle, and the health of more vulnerable women.



## Quality of Life (QoL)

The health-related quality of life indicators used in this report include self-perceived health, self-reported chronic conditions, and health-adjusted life expectancy (HALE). This report supports the well-known associations between income, education, age, and self-rated health. As income and education levels increase, women are more likely to rate their health as very good or excellent. Having a partner also seems to be related to a positive perception of health. On the other hand, older women (65+ years), women not born in Canada, and those who engage in multiple risk behaviours are less likely to report very good or excellent health.

Across all age groups, women are more likely than men to report chronic conditions, comorbidity, and severe and moderate disability. Income, education, smoking status, and age are only slightly associated with the prevalence of reported disability. Disabled women, however, are more likely to be single with dependent children, have lower incomes, be unemployed, and have less tangible social support and fewer positive social interactions their male counterparts. Similarly, disabled women over age 45 were less likely to be married than their male counterparts.

Women have lower incomes and less formal education than men, and twice the prevalence of depression. All these conditions are strongly associated with reports of chronic pain. Further, women and men with less social support report pain more frequently.

The chapter on the mortality and life expectancy of Canadian women indicates that women have a longer Health Adjusted Life Expectancy (HALE) than men (70.0 years versus 66.7 years). When preventable deaths (e.g. those caused by smoking) are excluded from the analysis, however, this disparity diminishes. If smoking-related deaths and disability continue to increase among women and decrease among men, this sex gap could narrow further.

## Life Cycle

### Young women

Young women are a subgroup most vulnerable to health risks. Research shows that smoking rates for young women now exceed those of young men—and continue to rise. Young women are some of the largest consumers and abusers of alcohol, with reports of heavy alcohol use among women aged 20–24. Further, adolescent women (15–19 years) are at highest risk of becoming anorexic and/or bulimic, and are more likely to report experiencing violence than women 45+ years. Rates of non-severe violence and emotional abuse are highest in the youngest cohort of women.

Because their cervical cells are still developing and their cervical mucus is more easily penetrated by bacterial organisms that cause disease, adolescent women are at an increased biological risk of contracting chlamydia and gonorrhea. In 2000, the reported incidence of chlamydia and gonorrhea was highest among women aged 15–19 years as compared with older cohorts of women. Further, the greatest increases in positive HIV/AIDS tests among women are found in the youngest age group (15–29 years). Of those women who tested positive for HIV in 2001, almost half were between the ages of 15 and 29 years. The proportion of positive HIV tests attributed to women aged 15–29 has increased steadily, from 14.6% in 1985–1995 to 44.5% in 2001.

Finally, the data suggest that the mental health of young women is a concern. The incidence of depression is higher among young women (18–24 years) than older women, and suicide rates increase over the teen years.

### Women in midlife

Compared to their younger counterparts, women in midlife (40+ years) begin to be at elevated risk for breast cancer and other gynaecological cancers, such as invasive endometrial cancer and ovarian cancer. Women aged 50 and older face a higher risk of developing cardiovascular disease, the result of both hormonal changes related to menopause and poor health behaviours. Two significant lifestyle changes for women in midlife include decreased physical activity and a greater likelihood of being overweight.

Women in their 40s often begin to experience changes in sexual self-image, sometimes accompanied by diminished sexual desire and decreased sexual responsiveness. These changes are thought to be primarily a result of decreased testosterone levels, although changing social roles for women in midlife may also be a factor.

In general, women aged 45 years and older are less likely to experience depression than their younger counterparts.

### Older women

As this report shows, as women age, they are at increased risk for breast cancer, cardiovascular disease, gynaecological cancers, osteoporosis, and arthritis. Further, older women are less likely than their younger counterparts to practise positive health behaviours, such as exercising and following a healthy diet. Therefore, it is perhaps not surprising that women aged 65+ years have the highest rates of health care utilization. Notably, age was shown to be a better correlate of primary health care utilization than either sex or geographic location. As age increases, so does the proportion of the population using medication, and the number of medications consumed.

Compared to the amount of data on elderly women's physical health and functioning, little data exists to support an analysis of the non-medical determinants of health, such as social support. This is a substantial data gap, given that elderly women constitute one of the poorest and most vulnerable segments of Canadian society.

Overall, the likelihood of experiencing depression tends to decrease with age. Although psychiatric symptoms, including minor depression and anxiety, increase in the years immediately preceding menopause, these symptoms have been shown to diminish substantially in the postmenopausal years.



## Vulnerable Populations

### Aboriginal Women

Aboriginal women face multiple health burdens, including poor health status, poverty, violence, and substance abuse. There is some agreement that, in Canada, Aboriginal people's health profile resembles that of people in a developing country. Despite this agreement, Aboriginal health—and particularly Aboriginal women's health—remains poorly understood.

The life expectancy of First Nations women is 5 years below the national average for Canadian women. Belonging to an Aboriginal community is also associated with an increased risk of reporting poor/fair health status. The health practices of First Nations women differ substantially from those of the general female population in Canada. For example, Aboriginal women's smoking rates are double the national average, while alcohol dependence is twice as common among Aboriginal women as it among their non-Aboriginal counterparts. Further, Aboriginal women who are dependent upon alcohol are more likely to experience depression. On the positive side, Aboriginal women are more likely than non-Aboriginal women to be physically active.

Aboriginal women appear to be at greater risk than the general female population for chronic diseases, such as cardiovascular disease, diabetes, arthritis, rheumatism, and cervical cancer. Further, they have higher death rates than the general population from ischemic heart disease and stroke. Despite a trend towards an increase in breast cancer among Inuit women (1969–1973 and 1984–1988), it appears that breast cancer rates are lower among Inuit women than the rest of the female Canadian population.

Approximately half of all HIV-positive tests reported among Aboriginal people are from women, compared to 16% for women in the non-Aboriginal population. Further research is required to determine the factors associated with this trend.

Rates of all types of violence, including sexual assault, are much higher among Aboriginal women than non-Aboriginal women. Aboriginal women also have a disproportionate suicide rate: Status Indian teenaged women, for example, are 7.5 times more likely than other Canadian teenagers to commit suicide, and Status Indian women aged 20–29 have a suicide rate 3.6 times that of other Canadian women of similar age. Unfortunately, no national data are available on the prevalence of depression among Aboriginal women both on and off reserve.

### Lone Parents

Single mothers are significantly more likely than partnered mothers to be poor and to experience financial stress and food insecurity. These factors may contribute to lone mothers' significantly higher rates of distress (e.g. depressive symptoms), personal stress (e.g. feeling overloaded), and chronic stress. Also of concern is the finding that lone mothers living with young children experience greater rates of severe and non-severe violence and emotional abuse.

### Incarcerated Women

Women in prison have a higher risk of exposure to HIV/AIDS than non-incarcerated women because of injection drug use, needle sharing, and risky sexual behaviour. Other health issues affecting incarcerated women not discussed in this report (e.g. exposure to antibiotic-resistant tuberculosis, hepatitis C, and sexually transmitted infections) require future research.

### Rural Versus Urban Women

This report's findings about the health of rural versus urban women are mixed. On one hand, rural women have significantly higher mortality rates than urban women. For example, mortality rates among rural teenaged girls (15–19 years) are 2.5 times those of their urban counterparts. There are also substantial geographic differences in mortality: for instance, women living in the Northwest Territories have a 60% higher all-cause mortality rate than women living in British Columbia, and a 30% higher mortality rate than that of women in Newfoundland.

On the other hand, urban women report a higher risk of experiencing physical violence and are more likely than women in rural areas to report being sexually assaulted.

### **Ethnic Diversity and Migration**

There is a dearth of ethnic-specific national data disaggregated by sex and gender. When ethnicity is available as a variable, it is often presented as broad categories that tend to create homogeneity among diverse sub-groups. The analysis in this report is based on a limited sample of women and men reporting that they were born elsewhere, but currently live in Canada, and or self-identifying with a specific ethnic group. Our analysis suggests that women who are recent immigrants report better health and are less likely to engage in most health risk behaviours, such as smoking and regular drinking than Canadian born women. As length of residence increases in Canada, women were significantly more likely to report poor health than Canadian-born women. Reported morbidity was also higher for women and men, who had spent more time in Canada which is similar to the findings of other studies.

## **What Else is Needed for a Sustainable Women's Health Surveillance System?**

### **Other Reports on Women's Health**

The United States and several Canadian provinces have prepared women's health reports that provide assessments of women's health status and information that can be used by health decision-makers in developing women's health policy and programs. [1–4] This *Women's Health Surveillance Report* is unique in that it: (i) uses a Canadian national perspective, and (ii) endeavours to clarify the utility of national secondary data (administrative and survey) in providing gender-relevant information for women's health policy and program decision-making. This important baseline information is necessary for developing a women's health surveillance system.

*Making the Grade on Women's Health: A National and State-by-State Report Card*, prepared by the National Women's Law Center in the United States, [1] reviewed 32 measures of women's health status and 32 measures of women's health policy. While some of the health issues dealt in the U.S. report with were the same as those in the *Women's Health Surveillance Report*, the U.S. report focused mainly on inequities in access to health care, which is less applicable to the Canadian situation.

Within Canada, different provinces and regions—including Atlantic Canada (1999; updated in 2003), British Columbia (2000), and Ontario (2002)—have reported on women's health. [2–4] Like the *Women's Health Surveillance Report*, these publications provide a gender-relevant perspective on women's health. This approach recognizes that health and its determinants are not distributed equally between men and women or, for that matter, among women themselves, and aims to identify particularly vulnerable groups. While they take different approaches, there are similarities in these reports with respect to issues dealt with and the results obtained.

The Atlantic report showed, through illustrative examples, the utility of a “determinants of health” approach to assessing women's health status in the region. [2] It addressed issues including socio-economic determinants of health, lifestyle and preventive factors, and disease. The report noted the highly interactive nature of the determinants of health and identified some significant data gaps and limitations. The British Columbia report used the six provincial health goals and their corresponding objectives and indicators as a framework for the report. [3] Like the Atlantic report, it was intended to demonstrate an alternative approach to women's reporting. The Ontario report provided a comprehensive description of the current state of women's health in the province. It looked at health and the determinants of health, and was organized around five themes: demographics, morbidity indicators, reproductive health, health behaviours, and subpopulations. [4]

These reports, and the research teams that worked on them, provide opportunities for further insight into and collaboration towards strengthening women's health surveillance in Canada.



## Beyond this Report

During the consultation process and subsequent development of the *Women's Health Surveillance Report*, several stakeholders and women's health experts suggested more or different women's health issues that could/should have been included. Not all these topics are discussed here, for a variety of reasons. For example, there are data available on respiratory diseases among women, which should be addressed in future reports. In some cases, such as abortion and hysterectomies, insufficient data are available for a comprehensive analysis. Also there are other important issues such as anxiety in women and pelvic pain for which there are no appropriate data. There is clearly a need to continue the process of consensus building, and further the development and validation of women's health indicators. The agreement on a framework and a core set of gender-sensitive women's health indicators will be an important step towards establishing a comprehensive and valid scope for future reports.

Such a framework and indicators would facilitate appropriate and useful data collection. While it has been possible to provide some sex-and gender-relevant data analysis for all issues covered in this report, almost all chapter authors have commented on the limitations of the secondary data available for constructing the most appropriate gender variables. The authors of several chapters expressed the need for more suitable data for gender-sensitive analysis, particularly:

- More contextual data pertaining to women's circumstances, such as women's roles (e.g. employee, wife, mother, caregiver) and women's use of health care resources. Qualitative and quantitative research should complement each other and help to determine the most useful contextual variables.
- Longitudinal data that would allow a better understanding of the links between health behaviours and health outcomes.
- Representative samples in health surveillance systems to reflect the diversity of the Canadian population with respect to ethnic background and length of residence in Canada, especially to assess the needs of recent immigrants.
- Longitudinal data that would provide information of the influence of changing socio-economic environments, of transition experiences and their interaction with gender roles, ethnicity, migration experiences and health.
- More contextual Aboriginal data.

Consideration was given to standardizing the broad social concepts (e.g. age, education, employment, housing, ethnicity, immigrant groups, etc.) used to examine gender in this report. Given the diversity of the issues addressed, however, it seemed inappropriate to categorize these variables arbitrarily. It was decided, instead, to use the results of the report as a basis for recommending the most appropriate categories for gender-based analysis. Accordingly, a "concept dictionary" could be developed, providing proposed categorizations for their use in future gender-relevant analyses.

The analyses, and this report, have focused primarily on the individual. The importance of more "upstream" political, social, cultural, and economic determinants of health, however, must be acknowledged. As well, indicators that measure, monitor, and report on these determinants—and on risk factors, exposures, interventions, and health outcomes—must be built in to any sustainable women's health surveillance system.

Although a systematic life-course approach was not taken, authors of various chapters have chosen to focus on women in specific age groups. A systematic investigation of women's health risks across the different stages of life (early life, childhood, adolescence, and early, middle, and late adult life), however, can provide insights into the biological, psychosocial, and social factors interact to influence women's health. Our understanding of women's health would benefit from increased knowledge in this area, and more emphasis should be placed on health across life stages in future reports.

A sustainable women's health surveillance policy development cycle, as envisioned by the Advisory Committee on Women's Health Surveillance, [5] requires interdisciplinary input (from researchers, health practitioners, data collectors, analysts and interpreters, policy and program developers, and communicators) at all stages. Input from policy and other decision-makers can help guide data collection and analysis. Similarly, an understanding of the needs of policy and communications teams could help focus both data analysis and the reporting of results. As well, trends and important health patterns identified by surveillance experts can help inform and focus policy and program decision-making. The more inclusive the surveillance system, and the more multifaceted the perspectives and approaches to it, the more likely it is to be sustainable and relevant to policy.

## Next Steps

The core research team identified the following next steps in the process of developing a sustainable, national women's health surveillance system in Canada:

- Evaluating this report to determine the extent to which it is a practical and useful tool for women's health policy and program development.
- Compiling the longer-term recommendations from stakeholders and experts into a format that can inform future women's health reports. Here, it would be useful to include a systematic assessment of the recommendations' possible effectiveness.
- Further work with diverse partners to develop and validate a gender-sensitive framework for and indicators of women's health that can be used in the preparation of future reports. These tools would facilitate the standardization of data and the comparison of data between the groups that use them. Further, they would assist in setting priorities.
- Continued engagement of women's health experts and other stakeholders in the process of refining a gender-sensitive model of surveillance that can form the evidence base for women's health policy and programming.

The *Women's Health Surveillance Report* aims to provide a useful tool for examining women's health, a tool that can help policymakers set specific health goals for Canadian women, improve Canadian women's health, and inform the development of Canada's national health goals.



## References

1. National Women's Law Centre; FOCUS on Health & Leadership for Women, Center for Clinical Epidemiology and Biostatistics, University of Pennsylvania School of Medicine; the Lewin Group. *Making the grade on women's health: a national and state-by-state report card*. Washington DC: National Women's Law Center, 2000.
2. Colman R. *Women's health in Atlantic Canada: a statistical portrait*. Halifax: Maritime Centre of Excellence for Women's Health. Atlantic Region Fora on Women's Health and Wellbeing, 2000.
3. Women's Health Bureau. *Provincial profile of women's health: a statistical overview of health indicators for women in British Columbia*. Ottawa: Health Canada, 2000.
4. Stewart DE, Cheung AM, Ferris LE, Hyman I, Cohen MM, Williams JI. *Ontario women's health status report*. Prepared for the Ontario Women's Health Council by the University Health Network Women's Health Program, the Centre for Research in Women's Health, and the Institute for Clinical Evaluative Sciences. 2002.
5. Advisory Committee on Women's Health Surveillance. *Women's health surveillance: a plan of action for Health Canada*. Ottawa: Health Canada, 1999.



# WOMEN'S HEALTH SURVEILLANCE

## Implications for Policy

**Sari Tudiver, PhD; Mireille Kantiebo, MSc, PhD (cand); Jean Kammermayer, BScN, MPA; and Monica Mavrak, BSocSci (Women's Health Bureau, Health Policy and Communications Branch, Health Canada)**

### Acknowledgements:

Special thanks to Janet Currie, Focus Consultants, Victoria, B.C., who assisted with background research for this chapter, and to Winnipeg consultant Lissa Donner, and Madeline Boscoe, Executive Director, Canadian Women's Health Network, for many helpful comments at earlier stages of this project. Thanks as well to our colleagues in Health Canada who provided suggestions and information.

### Introduction

The previous chapters in this Report provide valuable data and insights about women's health in Canada but also point to significant gaps in information gathering about women's health and about gender differences in health. These gaps are evident in health surveillance activities and in areas of biomedical and social research. As well, the gender implications of social and economic policies are rarely considered in a systematic and consistent way. This long-standing situation is the result of assumptions and values underlying theoretical and practical approaches to data collection, research, analysis and policy development, which have tended to reinforce the centrality of women's reproductive and caregiving roles and ignore or underplay women's experiences in other sectors of social life. [1–4]

Identifying and redressing the sex/gender gaps in health surveillance would contribute to a more robust and accurate system of health surveillance in Canada and, in turn, provide a stronger evidence base for the development and implementation of effective social policies to improve population health outcomes and reduce health inequalities. More effective policies could lead to the identification of new areas and methods for improved surveillance. This could be achieved, in part, by systematically incorporating gender-based analysis into surveillance practices, particularly by focusing on the context and diversity of people's lives; developing and applying gender-sensitive health indicators; and using innovative theoretical concepts and analytic tools to map the pathways and interrelations between population health determinants and health outcomes. This chapter underlines the need for a policy framework for women's health surveillance in Canada and points to some of the elements that such a framework might include.



## Surveillance and the Policy Cycle

Surveillance data contribute to policy development in a number of ways. Surveillance is used to identify sentinel events, such as outbreaks of diseases, that may require immediate policy decisions concerning public health. Surveillance systems track the incidence of particular diseases, such as diabetes, breast cancer and sexually transmitted infections, over time, as well as rates and patterns of health behaviours, such as smoking, to which policies and programs are directed. Data may show particular subgroups at increased or decreased risk of these and other health conditions—important information for health promotion programs, research and clinical treatment. [1, 5] Societal trends identified through surveillance—for example, the rising age of women at first birth [6]—can be further analyzed to identify correlates such as level of education, income and employment; increased use of technologies for assisted human reproduction; attitudes towards child-rearing; and the possible causes of the trend. Such analysis is essential to the development of healthy public policy. [7]

The various stages through which a policy must pass to be approved and implemented are often referred to as the “policy cycle,” or policy process. [8, 9] These stages commonly involve identifying the issue; gathering available research and other forms of evidence; conducting risk assessments; consulting with stakeholders; developing and refining policy options; making decisions at the appropriate levels of government; implementing policy; and assessing its impacts over time. [10] Ideally, high-quality evidence and analysis are accessible to those involved at all stages of the policy cycle. Health surveillance data are especially relevant to the detailed and systematic delineation and analysis of an issue, including risk assessment. Gaps in surveillance data may identify the need for additional research before or during the development of policy options. When urgent policy decisions must be taken, the phases of the policy cycle may be carried out simultaneously, in a rapidly changing environment.

Surveillance is also pertinent to the implementation and assessment of policies. Through the use of appropriate health indicators (see “Developing Women’s Health Indicators” below), surveillance can be part of a monitoring system to track the effectiveness of specific interventions, such as health education or screening programs, and of broad policies, such as health system restructuring, in improving population health outcomes and reducing health inequalities.

A number of factors limit the usefulness of current surveillance data to the policy process. Many of these have been identified in previous chapters. To summarize, there has been no comprehensive monitoring and reporting on women’s health. Where data are gathered, they reveal methodological constraints: the National Population Health Survey (NPHS) and other surveys rely on memory through self-reporting (see chapter entitled “Body Weight and Body Image”); there are data inconsistencies between survey years; and cross-sectional surveys do not provide causal explanations. The methods used may lead to under-reporting, making the data less robust for understanding the situations of particular subgroups. This is the case in surveys on violence that do not include people without telephones, those who are homeless or in institutions, or those in the Yukon, Northwest Territories and Nunavut, many of whom are at high risk of maltreatment (see chapter entitled “Violence against Canadian Women”). Detailed health surveillance information pertaining to Aboriginal and other ethno-cultural communities, people with disabilities, and residents of rural and remote areas is also sparse, limiting an understanding of sex and gender differences in these populations (see the chapter entitled “The Mortality, Health and Life Expectancy of Canadian Women”). There is a lack of infrastructure for standardized reporting on many public health issues and a need for cultural and social sensitivity when such data are gathered. There is also a lack of co-operation on the standardization of surveillance among jurisdictions (see chapter entitled “Gender Differences in Bacterial STIs in Canada”). Some of these problems are the result of limited resources. [11]

## Broadening the Scope of Surveillance and Analysis

The design of surveillance systems can be limited when existing policies assume a focus that is too narrow, such that important aspects or consequences of policy interventions are missed. To be relevant to policy, surveillance must be designed to capture a range of data about the context of health behaviours and the interplay between the social and biological determinants of health, including sex and gender differences. Gender-based analysis offers a systematic, analytic tool that can be used to examine diversity within and between populations and subgroups (according to age, socio-economic status, sexual orientation, race, ethnicity, education, abilities, location, etc.) and across the life cycle. [12, 13] Sex and gender are more than independent variables, since exploring these differences often challenges the assumptions underlying analytic frameworks, including interpretation of behaviours, and points to the need for different levels and types of data collection, analysis and intervention. [14]

Health system reform provides an example of how the framework used for data gathering must be able to explore complex causal pathways and anticipate possible future effects of policies. For example, data on shortened hospital stays have been used to track cost savings and patient health outcomes. However, the impact of early discharges on unpaid family caregivers, the majority of whom are women, has not traditionally received attention as a significant issue for surveillance and policy. [15, 16] There is growing evidence that caregiving increases the risks of morbidity and mortality [17, 18]; this is of particular relevance to mid-life and older women, who may have chronic conditions such as arthritis or diabetes. Research into the economic, social, physical and mental health effects of added caregiving could provide a basis for the development of health indicators with which to measure the impacts of health system changes on the health and well-being of caregivers, both women and men.

## Developing Women's Health Indicators

Health surveillance systems report on health indicators, defined as statistics or parameters that provide, over time, information on trends and changes in the condition and status of health. [19] Health indicators are important tools that help describe and measure the determinants of health, including health services, as well as health status and health outcomes. They are useful for formulating policies, programs and legislation, and are used to monitor and report on progress towards health goals and objectives. Indicators can inform health impact assessments, and social and financial costing. Indicators also permit comparisons between jurisdictions against established standards.

Traditional health indicators, based exclusively on sex-disaggregated data, do not adequately reflect the interrelations between biological processes, social roles, socio-economic context, the health care system and health outcomes. Various types of statistical analysis, such as multivariate analysis, incorporate some considerations of social roles and other aspects of gender, but the challenge is to develop indicators that reflect the complex interconnections among health determinants and health outcomes, including key differences in health and well-being between women and men, boys and girls. [20–22]



For instance, the chapter in this Report on “Multiple Roles and Women’s Mental Health in Canada” demonstrates how single employed and unemployed mothers have high rates of personal and chronic stress. This suggests a need to determine how cumulative stress levels contribute to chronic diseases or other health conditions for women and men. To track sex and gender differences in the occurrence of chronic diseases or other health problems, indicators should capture the interaction between biological, socio-economic and behavioural factors, cumulative exposures to different types of stress (e.g. in workplaces, in families), and patterns of health problems, such as heart disease, among women and men. Further, research showing an association between infant and childhood risk factors and adult chronic conditions, including heart disease, points to the need for indicators to reflect the multiplicity of interactions across the lifespan. [23, 24] Emerging theories in social epidemiology offer important constructs to explore the “cumulative interplay between exposure, susceptibility and resistance.” [25] Such theories are based, in part, on increased understanding of the interrelations between the psychological and the somatic, especially the impacts that stressors, such as discrimination and early deprivation, have on human health.

If social policies are to *promote* health as well as *prevent* disease, indicators must be designed to identify a broad range of human behaviours and the conditions and context that shape behaviours. Researchers within Aboriginal communities suggest that, in addition to focusing on patterns of disease and consequences of victimization, indicators for Aboriginal health should be constructed to capture health-seeking behaviours that reflect positive coping strategies and the resilience of individuals and communities. [26–28] Similar perspectives have been articulated by researchers from immigrant and refugee communities and disability rights organizations, among others. [29–31] Earlier in this Report, Wong et al. demonstrate that standard indicators on the sexual health of Canadian adolescents are constructed to identify diseases (e.g. sexually transmitted infections) and negative outcomes (e.g. unplanned pregnancies), with little attention to indicators of behaviours and healthy sexuality. As they note, indicators need to represent “a broad-based behavioural, biological and cognitive approach to adolescent sexual health” (see chapter on “Sexual Health”).

There are limits to structured surveillance tools, including well-defined indicators. Surveys and indicators must be augmented and informed by qualitative research to reveal the context behind the limited answers available through traditional indicators. Other sources must be critically mined for evidence on sex, gender and diversity to answer policy-relevant questions: “Why did this trend or pattern occur?” “What are the short—and long-term implications for the health of women and men and for particular subgroups?” “What specific policies and interventions are likely to be most effective in achieving improved health outcomes and reducing health inequalities?” A gender lens can be applied to historical reviews of trends and policies, other theoretical and analytic work, biomedical and social research, policy research and evaluation, risk assessments, environmental scans and health technology assessments to achieve a more comprehensive understanding of an issue and to further refine indicators for women’s health surveillance.

## Developing Gender-Sensitive Policies

Earlier chapters offer a number of recommendations for further areas of surveillance, research and analysis on women's health. They also identify the need for specific social policies and programs to be undertaken by appropriate levels of government, health professions and other non-governmental organizations to improve health outcomes and reduce health inequalities. Some issues, such as sexual and reproductive health, smoking, cardiovascular disease and family violence, have a range of surveillance data, research and policy associated with them that could form the basis for comprehensive, gender-sensitive social policy initiatives. Two of these issues, sexual and reproductive health, and smoking, will be discussed here to briefly illustrate how such policies might emerge.

### Sexual and Reproductive Health

A broad social policy initiative is needed to address the sexual and reproductive health of females and males across the life cycle. Issues include the prevalence of sexually transmitted infections (chlamydia, human papillomavirus and HIV) among young and older women; social and economic factors that limit women's capacity to negotiate safer sex; and lack of information about, or access to, birth control. [32] Canadian males share concerns about STIs and sexual dysfunction. Male-related causes of infertility have also received attention, because of increasing evidence of possible links between decreased male fertility and exposure to pesticides or other toxicants. However, the application of technologies for assisted human reproduction tends to focus on women.

As the relevant chapters in this Report show, there exist sex-disaggregated surveillance data and other sources of evidence pertinent to sexual and reproductive health in Canada, but there are gaps in the integration of data across jurisdictions. There is also considerable biomedical and social marketing research on contraceptive methods and on the promotion of healthy sexuality and sex education, much of which focuses on male and female adolescents and young adults, with less emphasis on other age groups.

Framework documents developed through consultations with federal and provincial/territorial governments and the Canadian public clarify values and articulate ethical guidelines and approaches to these sometimes controversial issues. [33] As well, Canada is signatory to a number of international agreements that include commitments to improve maternal health, promote sexual and reproductive health and rights, ensure the availability of universal access to reproductive health services, and promote gender equality and women's empowerment. [34–36]

Ideally, the development of an integrated, gender-sensitive policy initiative for sexual and reproductive health would be part of a broad, inter-sectoral framework based on evidence that demonstrates the benefits for sexual and reproductive health outcomes of economic security, good nutrition, family life education, quality reproductive health services and empowerment. The framework would recognize that women and men of differing ages, socio-economic status, geographic locations, ethno-cultural backgrounds, abilities, and sexual orientations have different concerns and needs, and differ in access to resources, including health services. An integrated policy would be based on the effectiveness of strategies for improving sexual and reproductive health. Policies and programs could support access to effective birth control methods by both partners and programs that encourage self-esteem and skills to negotiate safer sex practices and respond effectively to situations of maltreatment/violence and power differentials.



Policies and programs could address the needs of diverse groups, including vulnerable populations of women and men, at particular stages in the life cycle. For example, gay and lesbian youth are at increased risk of mental health problems and would benefit from peer support or other programs. People with disabilities have identified the need for education and other programs related to sexual and reproductive health and choices. Involving those most directly affected in the various stages of the policy cycle, including the design of policy and programs, is associated with more successful outcomes.

Implementing a comprehensive policy on sexual and reproductive health requires alignment of relevant policies and programs already in place; development and application of health indicators that include positive aspects of sexuality for males and females from infancy to the older years; enhanced integration of surveillance systems that gather relevant data from different levels of government; identification of gaps and coordination of needed research, including policy research; and assessment of services, programs and policies. Databases of best practices and evaluations of interventions in Canada and internationally would be a highly useful resource for citizens, professionals, front-line workers and policy makers in the development of effective policy and in finding the right mix of interventions. [7]

### **Smoking**

Smoking is a modifiable risk factor for many diseases and for premature mortality. As the chapter in this volume entitled “Gender Differences in Smoking and Self-Reported Indicators of Health” indicates, considerable evidence documents the numerous and serious health effects of smoking on both females and males, including increased risk of lung cancer and cardiovascular disease. Some effects of smoking are unique to women’s physiology and life cycle. For example, women smokers have higher rates of cervical cancer and more menstrual problems, and they tend to experience menopause up to two years earlier than non-smokers. Smoking during pregnancy is associated with lower infant birth weights and other complications.

Existing surveys such as the Canadian Tobacco Use Monitoring Survey (CTUMS) and the NPHS show variations in rates and trends in smoking between males and females and among specific subpopulations of women in Canada. In general, smoking rates in all age groups have been decreasing since 1985. [37–40] However, smoking is an issue of particular concern for young females. It has been observed that girls begin smoking at earlier ages than boys, following the pattern of their earlier maturation. As well, the various surveys of smoking behaviour show that a greater percentage of girls aged 15 to 17 consistently report being current smokers than their male counterparts (although by age 18 to 19, teenaged boys generally either catch up to or surpass them). Early smoking carries particular health risks for females. [41] There are long-term implications for population health and for costs to the health care system if teens who currently smoke continue to do so into adulthood.

Smoking is an indicator of social and health inequality, and reveals a clear socio-economic gradient. Smoking is more prevalent among women in low-income households, women who have low-status jobs, are single parents or divorced, and those with low levels of education (see “Gender Differences in Smoking and Self-Reported Indicators of Health”). Women tend to smoke for somewhat different reasons than men: as a coping strategy for feelings of stress and lack of control over their lives, as part of a daily routine to take a break from caregiving and other work, as time to share intimacies with partners or friends, or to “distance and defuse relationships” and control negative emotions. Images of smoking as “cool” and a way to ward off weight gain have influenced many female teens and young girls who smoke. [42] Many older women face barriers to quitting, including fear of weight gain, lack of confidence, and lack of support to overcome this addiction.

The Federal Tobacco Control Strategy (FTCS) combines a variety of approaches to achieve measurable goals in reducing the prevalence of smoking in Canada, including a mass media campaign; protection, prevention, cessation and harm reduction initiatives; and taxation on tobacco. [43] Reviews of best practices pertaining to smoking cessation strategies for youth, pre—and post-natal mothers, and other target groups are being compiled and disseminated. On-line self-help programs and other resources are available.

The application of gender-based analysis to smoking issues and an understanding of the social and economic determinants of smoking provide the basis for a more gender-sensitive tobacco reduction policy in Canada. This approach has been articulated in *Filtered Policy: Women and Tobacco in Canada* (2000), which suggests the use of broad policy measures related to determinants of health, including income adequacy, child care and other areas of women's work, to reduce tobacco use among women and to avoid increasing social inequalities. [44] Policy initiatives pertaining to women and tobacco were also reinforced with the adoption of the Framework Convention for Tobacco at the World Health Assembly in May 2003, which called for measures to address gender-specific risks when developing tobacco control strategies. [45]

A serious addiction, smoking can be influenced by a combination of gender-sensitive social and economic policies and by targeted programs that address the diversity of individual and group barriers to reducing or quitting smoking. Surveillance and various forms of research, including policy research, are integral to the development of tobacco control policies and programs and to monitoring their effectiveness in improving health outcomes for men and women, girls and boys.



## From Surveillance to Policy Action—and Back

This Report proposes a significant paradigm shift in the gathering of health surveillance data in order to yield a more profound and accurate understanding of the determinants of women's health and health behaviours. Such a shift is part of an interactive process in which surveillance informs the stages of policy development, implementation and evaluation, and the various stages of the policy cycle generate new questions and approaches to surveillance. The *Federal Plan for Gender Equality*, [46] Health Canada's *Gender-Based Analysis Policy* [12] and Health Canada's *Women's Health Strategy* [13] provide the mandate and policy guidelines for the consistent application of gender-based analysis to all relevant programs, policies, legislation, research and surveillance activities. Some further strategies for sustaining a dynamic process follow.

### Collaboration

Surveillance systems are costly and involve a variety of stakeholders within and across jurisdictions. As a result, competing priorities may pose obstacles to the gathering of new data. Improved collaboration across federal departments and among jurisdictions and sectors is crucial to ensuring that stakeholders understand the rationale for proposed changes and the value added to the work of others who will use the proposed data and analyses. Interdisciplinary work is challenging, in part because each expert comes with particular assumptions and a discourse that may be unfamiliar to others. Paradigms may be difficult to explain, but the collaboration of demographers, statisticians, social epidemiologists, policy analysts, qualitative researchers and gender experts on common projects can lead to creative synergy and innovative design of surveillance systems.

### Use of Evidence and Theory

There is a need for coherent theoretical frameworks that help to explain the dynamic interrelationships among the social and biological determinants of health, including processes of human resilience and vulnerabilities, causal pathways and cumulative effects of circumstances and risks over the life cycle. Further, there must be the analytic capacity and the commitment to use and refine the knowledge gained. Despite the need for sound evidence in the policy process and in clinical practice, research shows that the best available evidence is not always disseminated, considered or applied. [47]

For example, it is widely known that to achieve improved health outcomes and reduce health inequalities, governments must focus macro-level social and economic policies on poverty reduction, improved living and working conditions, and safer physical environments; strengthen communities and social networks ("social capital"); improve health system responses; and influence modifiable risk factors while remaining sensitive to the particular circumstances of people's lives, including differences in location. Yet, *individual* health behaviours and a concern with genetic determinants are often emphasized in research, health policies and therapies, and less consideration is given to social, economic and environmental determinants of health. [48]

## Policy Evaluations

To achieve effective social policies and to plan for the future, evaluation data on the impacts of current or past social policy initiatives are sorely needed. However, few countries engage in systematic health and social policy assessments. For example, the 1998 Acheson Report in the United Kingdom identified the increasing gap in inequalities in health, as did the Black Report of 1980, but did not assess the effects that social and economic policies implemented in the 1980s and 1990s may have had. [49]

The Netherlands provides a unique model, having undertaken systematic research over the past decade to map the nature and determinants of socio-economic inequalities in health and then to launch a program of intervention studies to compare health outcomes or process measures in experimental and control groups. A strategy was developed for reducing socio-economic inequalities in health, with specific recommendations and quantitative policy targets. [50]

This model has the potential to be adapted to policy research in other countries, including Canada. It would be enhanced by the application of gender-based analysis through all stages of the policy cycle.

## Public Involvement

A robust process, in which surveillance informs the policy process and policy guides surveillance, must incorporate authentic mechanisms for public involvement. Women's groups and organizations in Canada have a long and vibrant history of advocacy and engagement with federal, provincial and territorial governments in efforts to improve women's health. [51–53] Women of diverse ethno-cultural backgrounds, geographic locations and sexual orientations, and with different skills, education, abilities and disabilities have identified issues of concern, such as violence and poverty, and advocated to have these issues placed on the social policy agenda.

Some women's health groups have called attention to emerging international issues, such as the rapid development of reproductive and genetic technologies. [54] Women and Health Protection, a network of health providers, consumers and researchers, is engaged in research and informal surveillance on the impact of drugs and devices on women's health and provides input to government on policies pertinent to health protection. [55] Others have identified gaps in health planning, encouraged the integration of gender-based analysis into government processes and called attention to the need for further development of indicators to evaluate progress towards gender equality. [56] The National Coordinating Group on Health Care Reform and Women monitors the impact on women of Canadian health care system reforms, with a particular focus on home care. [57]

Such groups provide diverse perspectives, often "from the margins"; bring synergy and balance to discussions and debate; challenge assumptions and concepts; and suggest options to government for surveillance, research and policy. A wide range of women's voices can be heard through consultations, panels, advisory committees and working groups. Such input is vital to a transparent process of policy development. Successful implementation of effective health surveillance and social policies depends on a broad base of public dialogue and support.



## Conclusions

Surveillance data are subject to many limitations, including a lack of infrastructure for standardized reporting. There are also conceptual limitations to surveillance, particularly when data may be disaggregated by sex but provide no further evidence about gender differences.

Creative social policies can guide surveillance beyond these conceptual limits. To be relevant to policy development, an understanding of health determinants should be integrated into the framework of surveillance systems, to capture the diverse contexts of people's lives across the life cycle. Surveillance systems should also be designed to anticipate future trends and health information needs; for example, by monitoring the short—and long-term physical and mental health impacts of genetic testing and reproductive technologies, and the ways in which these may differ for women and men, boys and girls.

Surveillance systems can also be designed to monitor crosscutting issues relevant to many aspects of population health. Thus, surveillance data are crucial in occupational health because working conditions contribute to, or are a major cause of, chronic and other diseases and injuries experienced by women and men. Workplace conditions and exposures play a role in pulmonary conditions, cardiovascular disease, reproductive health, mental health issues and musculoskeletal illnesses, among others. Without detailed, gender-sensitive data on the conditions and structure of work over time and on the health of workers, these relations cannot be documented or addressed through workplace and other social policies. [2, 58, 59] Similarly, surveillance data on family violence contribute to a better understanding of a wide range of health issues from addictions to injuries to various somatic complaints (see the chapter on “Violence against Canadian Women”).

Health surveillance systems should be able to alert governments and the public to social policy and program failures and contribute to analysis of the lessons learned. Carefully designed surveillance can be a “sentinel system” for the mix of innovative initiatives and policies that will improve population health outcomes, reduce economic and social inequalities, and enhance the quality of life for the most vulnerable in Canadian society.

## References

1. Health Canada. *Women's health surveillance: a plan of action for Health Canada*. Ottawa: Minister of Public Works and Government Services Canada, 1999.
2. Messing K. *One-eyed science: occupational health and women workers*. Philadelphia: Temple University Press, 1998.
3. Eichler M. *Non-sexist research methods: a practical guide*. Boston: Allen & Unwin, 1987.
4. Grant KR. *Why women's health? Issues and challenges for women's health research in Canada in the 21st century*. A Position Paper. Prepared for the Women's Health Bureau, Health Canada, 2002.
5. Stratton E, Gosselin P. Surveillance: What is it? *Health Policy Research Bulletin* 2002;4:35–40.
6. Lochhead C. The trend toward delayed first childbirth: health and social implications. *Isuma* 2000;1(2):41–4.
7. Colvin P. Creating the right mix. *Health Policy Research Bulletin* 2002;1(3):24–5.
8. Milne G. *Making policy: a guide to the federal government's policy process*. Ottawa: Glen Milne, 2001.
9. Pal LA. *Beyond policy analysis-public issue management in turbulent times*. Toronto: ITP Nelson Canada, 1997.
10. Health Canada. *Health Canada decision-making framework for identifying, assessing and managing health risks*. Ottawa: Minister of Public Works and Government Services Canada, 2000.
11. Office of the Auditor General of Canada. *National health surveillance: 2002 report of the Auditor General of Canada*. 2002 Status Report, chapter 2. Ottawa: Health Canada, 2002.
12. Health Canada. *Health Canada's gender-based analysis policy*. Ottawa: Minister of Public Works and Government Services Canada, 2000.
13. Health Canada. *Women's Health Strategy*. Ottawa, 1999.
14. Tudiver S. Gender matters: evaluating the effectiveness of health promotion. *Health Policy Research Bulletin* 2002;11(3):22–3.
15. Armstrong P, Amaratunga C, Bernier J, Grant K, Pederson A, Willson, K. *Exposing privatization: women and health care reform in Canada*. Aurora ON: Garamond Press, 2002.
16. National Coordinating Group on Health Care Reform and Women. *Reading Romanow: the implications of the final report of the Commission on the Future of Health Care in Canada for women*. National Coordinating Group on Health Care Reform and Women, 2003.
17. Lee S, Colditz GA, Berkman LF, Kawachi I. Caregiving and risk of coronary heart disease in U.S. women. *Am J Prev Med* 24(2):113–9.
18. Kiecolt-Glaser JK, Preacher KJ, MacCallum RC, Atkinson C, Malarkey WB, Glaser R. *Chronic stress and age-related increases in the proinflammatory cytokine IL-6*. URL: <[www.pnas.org/cgi/doi/10.1073/pnas.1531903100](http://www.pnas.org/cgi/doi/10.1073/pnas.1531903100)>.
19. Health Canada. *Perinatal health indicators for Canada: a resource manual*. Ottawa: Minister of Public Works and Government Services Canada, 2000.
20. Abdool SN, Vissandjée B, Desmeules M, Payne J, Centre d'excellence pour la santé des femmes—Consortium Université de Montréal and Centre for Chronic Disease Prevention and Control, Population and Public Health Branch, Health Canada. *Towards gender-sensitive health indicators*. *Centres of Excellence for Women's Health Research Bulletin* 2003;2(3):6–8.
21. Kantiebo M. *Shaping a vision for women's health indicators*. Unpublished document. Ottawa: Women's Health Bureau, Health Canada, 2003.
22. Maiese D. Healthy people 2010-leading health indicators for women. *Women's Health Issues* 2002;12(4):155–64.
23. Osmani S, Sen A. The hidden penalties of gender inequality: fetal origins of ill health. *Economics and Human Biology* 2003;1(1):105–21.



24. Harrell JS, Frauman AC. Cardiovascular health promotion in children: program and policy implications. *Public Health Nursing* 1994;11(4):236–41.
25. Krieger N. Theories for social epidemiology in the 21st century: an ecosocial perspective. *Int J Epidemiol* 2001;30: 668–77.
26. Stout MD, Kipling GD, Stout R. *Aboriginal women's Health Research Synthesis Project, final report*. Ottawa: Health Canada, 2001.
27. Elias B, Leader A, O'Neil J, Sanderson D. *Living in balance: gender, structural inequalities, and health promoting behaviours in Manitoba First Nations communities*. Winnipeg: Prairie Centre of Excellence for Women's Health, 2000.
28. Anderson K, Lawrence B (eds). *Strong women stories: native vision and community survival*. Toronto: Sumach Press, 2003.
29. Bowen S. *Health and resilience: Salvadoran refugee women in Manitoba*. Prairie Centre of Excellence for Women's Health, 1999.
30. Immigrant, Refugee and Visible Minority Women of Saskatchewan Inc. *Post traumatic stress: the lived experiences of immigrant, refugee and visible minority women of Saskatchewan*. Prairie Centre of Excellence for Women's Health, 2002.
31. Masuda S. *Women with disabilities: We know what we need to be healthy*. Vancouver: British Columbia Centre of Excellence for Women's Health, 1999.
32. Health Canada. *Canadian sexually transmitted diseases surveillance report*. URL: <<http://www.hc-sc.gc.ca/pphb-dgspsp/publicat/ccdr-rmtc/00vol26/26s6/index.html>>.
33. Health Canada. *Report from consultations on a framework for sexual and reproductive health*. Ottawa: Minister of Public Works and Government Services Canada, 1999.
34. International Conference of Population and Development (ICPD). URL: <[http://www.unfpa.org/icpd/icpd\\_poa.htm](http://www.unfpa.org/icpd/icpd_poa.htm)>.
35. Millenium Development Goals. URL: <<http://www.developmentgoals.org/index.html>>.
36. Convention on the Elimination of All Forms of Discrimination against Women (CEDAW). URL: <[http://www.canadianheritage.gc.ca/progs/pdp-hrp/docs/cedaw/cn\\_e.cfm](http://www.canadianheritage.gc.ca/progs/pdp-hrp/docs/cedaw/cn_e.cfm)>.
37. Statistics Canada. *General Social Surveys, 1985–1991*.
38. Health Canada. *National Population Health Survey, 1994–1995; 1996–1997; 1998–1999*.
39. Health Canada. *Survey on Smoking in Canada, 1994*.
40. Health Canada. *Canadian Tobacco Use Monitoring Survey. 1999, 2000, 2001, 2002 (first half)*.
41. Band PR. Carcinogenic and endocrine disrupting effects of cigarette smoke and risk of breast cancer. *Lancet* 2002;360:1044–9.
42. Greaves L. *Smoke screen: women's smoking and social control*. Halifax: Fernwood, 1996.
43. Health Canada. *The Federal Tobacco Control Strategy*. URL: <<http://www.hc-sc.gc.ca/hecs-sesc/tobacco/legislation/rip/06.html>>.
44. Greaves L, Barr VJ. *Filtered policy: women and tobacco in Canada*. Vancouver: British Columbia Centre of Excellence for Women's Health, 2000.
45. Framework Convention for Tobacco, World Health Assembly, May 2003. URL: <[http://www.who\\_int/gb/fctc/PDF/inb6/einb65.pdf](http://www.who_int/gb/fctc/PDF/inb6/einb65.pdf)>.
46. Status of Women Canada. *The federal plan for gender equality*. Ottawa: Status of Women Canada, 1995.
47. Dobbins M, Ciliska D, Cockerill R, Barnsley J, DiCenso A. A framework for the dissemination and utilization of research for health-care policy and practice. *Online Journal of Knowledge Synthesis for Nursing* 2002;9(7).
48. Raphael D. Addressing the social determinants of health in Canada: bridging the gap between research findings and public policy. *Policy Options* 2003;24(3):35–40.

49. Black D, Morris JN, Smith C, Townsend P. Better benefits for health: plan to implement the central recommendation of the Acheson report. *BMJ* 1999;318:724–7.
50. Mackenbach JP, Stronks K. A strategy for tackling health inequalities in the Netherlands. *BMJ* 2002;325:1029–32.
51. Ford AR. *Working together for women's health: a framework for the development of policies and programs*. Prepared by the Federal/Provincial/Territorial Working Group on Women's Health. 1990.
52. Canadian Advisory Council on the Status of Women. *What women prescribe: report and recommendations from the National Symposium "Women in Partnership: Working Towards Inclusive, Gender-Sensitive Health Policies."* CACSW, 1995.
53. Winnipeg Consultation Organizing Committee. *The strength of links: building the Canadian Women's Health Network*. Winnipeg, 1994.
54. Working Group on Women, Health and the New Genetics. *The gender of genetic futures: the Canadian biotechnology strategy, women and health*. Toronto: York University, 2000.
55. Women and Health Protection Group. URL: <<http://www.whp-apsf.ca/en/index.html>>.
56. Horne T, Donner L, Thurston WE. *Invisible women: gender and health planning in Manitoba and Saskatchewan and models for progress*. Winnipeg: Prairie Women's Health Centre of Excellence, 1999.
57. National Coordinating Group on Health Care Reform. URL: <<http://www.cewh-cesf.ca/healthreform/index.html>>.
58. Messing K. *Integrating gender in ergonomic analysis*. Brussels: Trades Union Technical Bureau, European Economic Community, 1999.
59. Messing K. Ergonomic studies provide information about occupational exposure differences between women and men. *J Am Med Wom Assoc* 55(2):72–5.





# Appendices





# APPENDICES

## Appendix A

Appendix A provides an overview of National Population Health Survey (NPHS) and Canadian Community Health Survey (CCHS).

[Download Appendix A](#)

## Appendix B

Appendix B provides some initial recommendations by the core research team for potential women's health and disease surveillance Indicators, including possible indicators for assessing women's health.

[Download Appendix B](#)