
MEASURING SUSTAINABLE DEVELOPMENT

THE NOVA SCOTIA GENUINE PROGRESS INDEX

WOMEN'S HEALTH
In
ATLANTIC CANADA

A Statistical Portrait

Prepared by:
Ronald Colman, Ph.D
GPIAtlantic

Halifax, Nova Scotia

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**WOMEN'S HEALTH IN ATLANTIC CANADA:
Abstract**

While not a comprehensive overview of women's health in the region, this report to the Atlantic Region Policy Forum on Women's Health and Well Being illustrates the utility of a health determinants approach, both for improving population health and women's health and for reducing long-term health care costs. The report notes the highly interactive nature of the determinants of health, and points both to data limitations and the need for more research in the area.

The report presents statistical evidence to illustrate the need for strategic investments in several key determinants of health to improve women's health in Atlantic Canada:

- 1) Gender-based analysis reveals different health patterns and outcomes among men and women. Teenage smoking, activity limitations among seniors, and different exercise and physical activity trends among Atlantic men and women are used as examples.
- 2) Increasing stress levels have negatively impacted mental health and psychological well-being among women, which in turn produces adverse physical health outcomes.
- 3) Despite increased educational parity, the persistent gender wage gap and high poverty levels among single mothers and unattached elderly women negatively impact health. Social and income supports for single mothers are seen as a key investment priority.
- 4) Interventions to reduce high smoking and obesity rates in the Atlantic provinces and to increase exercise rates can significantly improve population health and reduce treatment costs.
- 5) High levels of social support and voluntary work are a key buffer against stress and ill-health in the Atlantic provinces. However, the shift from hospital to home care threatens the well-being of informal caregivers, mostly women, and illustrates the need for adequate supports for these caregivers.
- 6) The report concludes by demonstrating that the Atlantic region receives far less than its fair share of health research funds, which must be dramatically increased if Atlantic Canadians are to learn about their particular health issues and determinants, and to target health promotion investments effectively in the region.

WOMEN'S HEALTH IN ATLANTIC CANADA

Purpose and Framework

1. Approach

Policy discussions on health issues currently focus almost entirely on disease treatment. Health is generally thought of as the absence of disease, and "health care" expenditures are devoted almost entirely to the treatment of illness. It has been estimated that health *promotion* and disease *prevention* account for only about 2% of health budgets.

By contrast, this analysis follows the World Health Organization definition of health as:

...a state of complete physical, mental, spiritual and social well-being, and not merely the absence of disease.

That view of health has practical policy implications. Disease treatment is far more costly than investments promoting health and well-being. The serious budgetary crisis in the Canadian health care system is provoking a major shift in focus to the *determinants of health* -- the physical, mental and social factors that cause and predict health outcomes.

Health Canada has identified twelve such "determinants" of health -- including education, income, employment status, gender, personal lifestyle, and social supports. Understanding these determinants not only moves us closer to the broader WHO perspective on health, but enables policy makers to target strategic investments in *population health* that can produce significant savings in later health care costs.

2. Limitations

Although this seems obvious, there are currently serious obstacles to this approach, both from a policy and an information point of view:

- 1) A population health approach requires genuine cooperation among government agencies in order to integrate social, economic and environmental policy with health outcomes. Our current sectoral approach to decision-making, each department with its own budget, hierarchy and mandate, makes it difficult to affect the determinants of health positively.
- 2) The determinants of health are highly interactive. For example, unhealthy lifestyle habits are highly correlated with low income and poor education. This is basically good news, because a strategic investment in one determinant can produce positive outcomes in several others. But our understanding of the causes and nature of these interactions is still very limited by the paucity of research and analysis in this field.
- 3) The Advisory Committee on Population Health has made tremendous progress in advancing the determinants of health approach in its 1999 *Second Report on the Health of Canadians* and the accompanying *Statistical Report* based on the 1994-95 and 1996-97 *National Population Health Surveys*. But those reports frankly acknowledge major

data gaps in areas like mental health, *quality* of health care, environmental health impacts, trends over time, and provincial breakdowns according to health determinants..

For example, there are almost no published population health data giving basic gender breakdowns at the provincial level. For this report, the author accessed electronic Statistics Canada data containing raw figures that were then correlated manually with population statistics in corresponding years to assess incidence rates over time. Far more work is needed to assemble and present population health data in forms that are easily accessible to the public and to provincial policy makers responsible for health policy.

- 4) The Atlantic region currently receives less than one percent of health research funding from the major national research councils, far less than the region's population share merits. Good information on specific Atlantic region health determinants will be difficult to obtain unless research funding to this region is dramatically increased.

Because of these and other limitations, this report does not attempt a *comprehensive* analysis of women's health in the four Atlantic provinces. It focuses instead on selected key issues in women's health to illustrate the utility both of gender-based analyses of health issues and of the population health approach in general. Despite the limitations described, the report also demonstrates that we *already* know enough about what determines health in several key areas to invest strategically in ways that will certainly improve population health and cut long-term health care costs.

3. Why a Gender Perspective?

Instead of blunt across-the-board solutions that often miss the mark, waste money, and even cause harm to particular groups, a gender perspective can allow policy-makers to identify and target health care dollars more effectively and accurately to achieve the best return on investment. The more precisely health dollars are directed to high-risk groups, the greater the long-term cost savings to the health care system.

For example, a gender based analysis reveals that teenage smoking rates have been rising faster among girls than boys. In Nova Scotia, 38% of high school girls smoked in 1998, up dramatically from 26% in 1991. We also know that lung cancer mortality among women today is five times higher than it was in 1970, that women smokers are more than twice as susceptible to lung cancer as male smokers, and that teen smoking predicts adult behaviour. Surveys also tell us that young women have more than twice the stress rates of young men, and that stress relief and weight loss are primary motivations for smoking among teenage girls. Programs, brochures, materials, and counseling that acknowledge these gender-specific motivations and consequences are more likely to be effective than blanket statements about the health effects of smoking.

Similarly, gender-based health analysis reveals that more than twice as many older women suffer activity limitations from arthritis than men, but that older men are far more likely to have heart problems. We also find that exercise rates among Atlantic region men have dropped precipitously since 1985, but increased among Atlantic women. Physical exercise regimens,

physiotherapy programs, and health promotion programs geared to these different gender-based needs and trends will also be far more effective than a "one-size-fits-all" approach.

In these simple examples, it is quite clear that attention to gender-based lifestyle determinants of health can reduce high future health care costs. Federal Health Minister Allan Rock announced last year:

I have undertaken to fully integrate gender-based analysis in all of my Department's program and policy development work.

The Minister also spoke of "the need to enhance the sensitivity of the health system to women's health issues," and "the need for more research, particularly on the links between women's health and their social and economic circumstances." That recognition sets the stage for a fundamental re-orientation of health policy at all levels.

WOMEN'S HEALTH IN ATLANTIC CANADA

Executive Summary: Determinants of Women's Health

The following examples indicate that a health determinants approach can assist policy makers in making significant improvements to population health in general and women's health in particular. Again, it should be emphasized that the sample results that follow are by no means a comprehensive overview, but are intended here for illustrative purposes:

1) Mental Health

In 1985 Atlantic Canadian women registered lower stress levels than men. Women now have much higher stress levels than men; and 20% more Atlantic Canadian women than men register *low* levels of psychological well-being. Women still do nearly twice as much unpaid housework as men, with 38% of employed mothers registering "severe time stress" levels as they juggle their double work burden. Time stress and long work hours are implicated in cardiovascular, gastrointestinal, neuroendocrinal and other disorders.

Among the Atlantic provinces, Newfoundlanders have the highest levels of mental health, and Nova Scotians the lowest. Women have a 14% higher rate of psychiatric hospitalization than men, and a 21% higher rate of general hospital admission for mental disorders, with particularly high separation rates for depression. As psychiatric illness accounts for more hospital days than any other illness, women's mental health and stress is clearly a high policy priority.

2. Education

Educational attainment is positively associated with both health status and healthy lifestyles. Women have made major progress in this area: There are now four times as many women university graduates as there were in 1971, and there are less female than male high school dropouts in Atlantic Canada.

3. Income Distribution and Poverty

Poverty and income inequality are among the most reliable predictors of poor health. Despite relative educational parity, Atlantic Canadian women earn only 81% of the hourly wages of men. Even with identical education, field of study, employment status, work experience, job tenure, age, job duties, industry and occupation, female hourly wages are still 10% lower than equivalent male wages. Full-year full-time working women in the Atlantic provinces earn 71% of male wages, with a quarter of these women earning less than \$15,000 a year (\$8 an hour or less).

Nearly one in five Atlantic Canadian women live in poverty. Single mothers and unattached elderly women have the highest poverty rates, with more than 70% of Nova Scotian single mothers living below Statistics Canada's low-income cut-off. Nearly half the province's poor

children live in single parent families. Low-income earners have poorer physical and mental health and higher rates of hospitalization and health service usage. Just as concerted public policy has dramatically lowered poverty rates among seniors, improving social supports for single mothers is one of the most cost-effective strategic investments governments can make to reduce long-term health care costs.

4. Personal Lifestyle

The Atlantic provinces and Quebec have the highest smoking rates in the country, and Nova Scotia women register the country's highest lung cancer rates. Although public support for smoking restrictions is higher in Atlantic Canada than in the rest of the country, a smaller proportion of this region's population is protected by restrictive by-laws than in the other provinces. Atlantic region exercise rates are below the national average, and Atlantic Canadians have higher rates of obesity and high blood pressure. The four Atlantic provinces register the highest rates of unhealthy body weight in the country. Obesity is linked to diabetes, heart problems, asthma and many other illnesses.

5. Preventive Health Services

A higher percentage of Atlantic region women have been screened for cervical cancer using Pap smears, but they are less likely to have been tested recently than other Canadian women. Newfoundland and Nova Scotia have the country's lowest rates of mammogram screening, with long waits the norm. As the Maritimes have high breast cancer rates, easier access to screening for older women could reduce breast cancer mortality in the region. All four Atlantic provinces have succeeded in dramatically reducing teen pregnancy rates from among the highest to the lowest in the country.

6. Social Supports

Atlantic Canadians have the highest rate of voluntary work in the country, and one of the strongest networks of community and social support, a proven buffer against stress, social problems, and adverse health effects. Nevertheless, the shift from hospital to home care for many disabled, elderly, and chronically sick patients, has placed an increasing burden on family caregivers, particularly women, with negative effects both on earning capacity and time-stress levels.

7. Conclusion

These and other health determinants are highly interactive, with investments in one yielding improvements in several others. While considerably more research is needed to understand the nature of interactions among the determinants of health, the examples above illustrate that well-placed strategic investments at this time can greatly reduce future health care costs. Alleviation of high poverty rates among single mothers stands out as a highly effective intervention that can improve the health status of both women and children, promote healthy lifestyles, and reduce long-term hospitalization and health service utilization costs.

WOMEN'S HEALTH IN ATLANTIC CANADA:

A Statistical Portrait*

This brief statistical overview does not attempt a comprehensive analysis of women's health in the four Atlantic provinces. It focuses on selected key issues in women's health to illustrate the utility of gender-based analyses of health issues and the utility of a population health approach based on the key determinants of health. Not covered in this report, but of singular importance at this time is the relevance of this population health approach to the current restructuring of the health care system, and the shift from hospital to home care.

The World Health Organization has defined health as "*a state of complete physical, mental, spiritual and social well-being, and not merely the absence of disease.*" This overview emphasizes the intimate connection between these four elements of health, and demonstrates how a gender perspective can help take us beyond the narrower "disease treatment" perspective that has long dominated our thinking and created a seemingly intractable crisis in our health care systems. For illustrative purposes only, this report also contains recommendations pointing to the types of practical policy initiatives that can lead us out of crisis and towards a promotion of population health in the fullest sense.

1. Determinants of Women's Health

Health Canada has identified twelve key determinants of health, including gender, education, income, employment status, personal lifestyle and social supports. A growing body of research demonstrates how these determinants function as preventative or risk factors in determining health outcomes. The determinants of health are highly interactive. For example, personal lifestyle choices -- smoking, drinking and exercise -- are strongly correlated with other determinants like education, income, employment status and social supports. From a practical cost-conscious policy perspective, understanding these determinants of health is vitally

* **IMPORTANT NOTE:** Throughout this report, percentage comparisons for men and women in the four Atlantic provinces are based on tabulations and calculations made by the author primarily from Statistics Canada and Health Canada data. Although the statistical sources for these calculations are given in the endnotes, the author takes full responsibility for the actual results, including any errors of calculation. In many cases, the statistical references contain raw figures, and the author has then correlated these with population statistics in the corresponding years to assess incidence trends over time. In other words, the results given are all *based* on the sources in the endnotes, but should not be understood to given in the same form in those references. The author also wishes to thank Lesley Poirier and Dr. Carol Amaratunga of the Maritime Centre of Excellence for Women's Health for their excellent assistance with materials and data sources, for their wise advice and consultation, and for their very helpful feedback in reviewing the first draft of this report. Again, all errors are entirely the responsibility of the author.

important in targeting strategic investments in population health that can provide significant savings in later health care costs.

This seems obvious, and yet, our health care expenditures are almost entirely directed towards disease treatment. It is estimated that only about 2% of health budgets is directed to health promotion and disease prevention. There is a good reason for this anomaly. A genuine population health perspective requires a fully cooperative approach that integrates social, economic and environmental policy with targeted health outcomes. Our sectoral approach to decision-making, each department with its own budget, hierarchy and mandate, makes it very difficult to affect the determinants of health in a positive way. To take just one obvious example: While Health Canada warns of cigarette smoking dangers, Agriculture Canada subsidizes tobacco farmers, and Industry Canada fosters cigarette exports to boost the GDP and improve the balance of payments.

The good news is that it is now more widely acknowledged that health departments have a legitimate mandate beyond their traditional concerns to provide medical treatment for illness and to administer hospitals and Medicare. In many jurisdictions, health departments are becoming the key lead agencies in initiating inter-sectoral cooperation to improve population health. The current health care crisis in Canada, which will be exacerbated by the aging of our population, has underscored the reality that strategic investments in the determinants of health are the most essential long-term step we can take to counter escalating treatment costs.

Federal Health Minister Allan Rock recognized that the success of the new Women's Health Strategy depended on "collaboration with other federal departments, in accordance with the considerable role that social and economic factors play in determining health." In fact, the success of the Women's Health Strategy is even more dependent on inter-departmental collaboration at the provincial level, as that is the real locus of health policy. In this case, therefore, we begin with our conclusion, because it is key to a successful population health strategy that addresses the determinants of health.

We strongly recommend that provincial health departments take a lead role in fostering a collaborative inter-departmental approach to the determinants of health, both provincially and regionally. The MCEWH is willing to assist in this endeavour in every way possible.

This report does not attempt a comprehensive application of Health Canada's twelve determinants to women's health in the four Atlantic provinces, but selects some key issues from seven of these health determinants for illustrative purposes only to demonstrate the utility of the population health approach to women's health issues. The examples selected highlight some major socioeconomic impacts on women's health. The determinants of health noted in this report are:

- a) Gender
- b) Educational attainment;
- c) Income distribution and poverty;

- d) Employment and working conditions;
- e) Personal lifestyle and health practices;
- f) Health services that promote health and prevent disease; and
- g) Social supports.

The discussion that follows also draws attention to the highly interactive nature of these health determinants. It should be noted that the examples chosen here are primarily determined by data availability, and it should not be inferred that determinants not discussed here are less important. One of the most fundamental determinants of health, for example, is the quality of the physical environment, but data on environmental health impacts are not yet systematically assembled either at the provincial or national levels.

2. Why a Gender Perspective?

There are three main arguments for a gender-based analysis of health issues:

- 1) The first reason is *descriptive*: Women have distinct health needs. Thus, federal Health Minister Allan Rock has spoken of "the need to enhance the sensitivity of the health system to women's health issues" and "the need for more research, particularly on the links between women's health and their social and economic circumstances."¹ Similarly, the National Forum on Health recommended that the health system pay more attention to the factors which influence women's health and be more responsive to the distinct needs of women.²
- 2) The second reason is *normative* -- to ensure equal treatment for women, and the elimination of traditional biases that have impeded women's well-being and progress.
- 3) The third reason is *practical* and *policy-oriented*. Whatever else changes in the world of politics, the one constant is the trust borne by governments to administer taxpayer dollars wisely. Instead of blunt across-the-board solutions that often miss their mark, waste money, and even cause harm to particular groups, a gender perspective can, quite simply, allow policy-makers to identify and target health care dollars more effectively and accurately to achieve the best return on investment. The more precisely health dollars are directed to high risk groups, the greater the long-term cost savings to the health care system.

While the first two reasons are now widely accepted, this third reason is frequently overlooked and thus forms the basis of this overview of women's health issues in Atlantic Canada. Indeed, most published Statistics Canada health reports, and population health survey results do not provide provincial breakdowns by gender, which can only be accessed electronically. Three very straight-forward examples will suffice here to illustrate the practicality and policy relevance of a gender-based analysis:

- a) teenage smoking behaviour;
- b) activity limitations among seniors; and
- c) exercise trends.

a) Teenage Smoking

Among *young* people, a gender-based analysis reveals that teenage smoking rates have been rising at a faster rate among girls than among boys. In fact, smoking among 15-19 year-old Canadian men dropped from 40% in 1966 to 27% in 1995, but rose among 15-19 year-old women from 24% in 1966 to 30% today.³

The current rate is higher in the Atlantic provinces: In Nova Scotia, for example, 38% of girls and 34% of boys in grades 7, 9 and 11 smoked in 1998, up dramatically from 26% in 1991. Student smoking rates today are 38% in Newfoundland, 33% in New Brunswick, and 27% in Prince Edward Island.⁴ Across the country the rate of increase is sharper among girls.

On the other hand, young men are far more likely to drink after driving than are young women.⁵ This simple gender distinction in teenage behaviour patterns allows health authorities to write health promotion literature in a language that targets the most affected groups and to aim programs where they will yield the greatest returns.

For example, surveys have found that stress relief and weight loss are primary reasons that teenage girls take up smoking; and that female students suffer from significantly higher stress levels than male students (Chart 1). Programs, brochures, materials and counseling that acknowledge these motivations explicitly are more likely to be effective than blanket statements about the health effects of smoking.

Increases in time stress since 1992 parallel tuition increases and rising student debt levels that may produce greater pressure to work longer hours while at school. Other stressors in the 90's include high youth unemployment rates, and rising job insecurity. These stresses affect both sexes and parallel increases in cigarette smoking during the same period for both boys and girls. But overall, young women still more than twice as likely to be time stressed as young men; and girls under 18 are five times as likely to be squeezed for time.

More research is necessary to understand the links between teenage stress, weight concerns, and high rates of smoking among young women. But the issue is of particular concern in light of rising rates of lung cancer mortality among women (five times the rate of 30 years ago)⁶, and recent findings that women smokers are more than twice as susceptible to lung cancer as men smokers.⁷

As the tobacco industry has long understood, teen smoking predicts adult behaviour. Among 21-39 year-old daily smokers, 86% began smoking as teenagers. Numerous studies have shown that the earlier people start to smoke the more cigarettes they will smoke and the less likely they are to quit. Those who start smoking between 14 and 17 are 2.3 times as likely to smoke more than 20 cigarettes a day as those who start smoking at age 20 or more. Within 10 years, 42% of those who started smoking at age 20 or more had quit, compared to only 22% of those who started between 14 and 17, and just 18% of those who started smoking at 13 or less.⁸

In short, rising rates of teenage smoking, particularly among girls, portends a serious and costly health crisis in the future. Gender-based analysis that addresses causes, conditions and motivations can be an effective and essential tool in this campaign. While this example has focused on smoking among young women, a similar analysis could address young male drinking and driving behaviour.

Chart 1: "Severely Time-Stressed" Youth, 15-24, (%)⁹

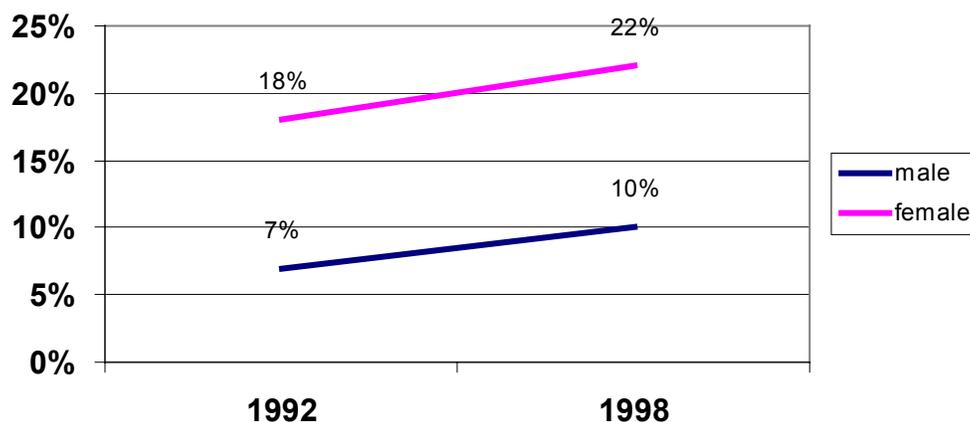
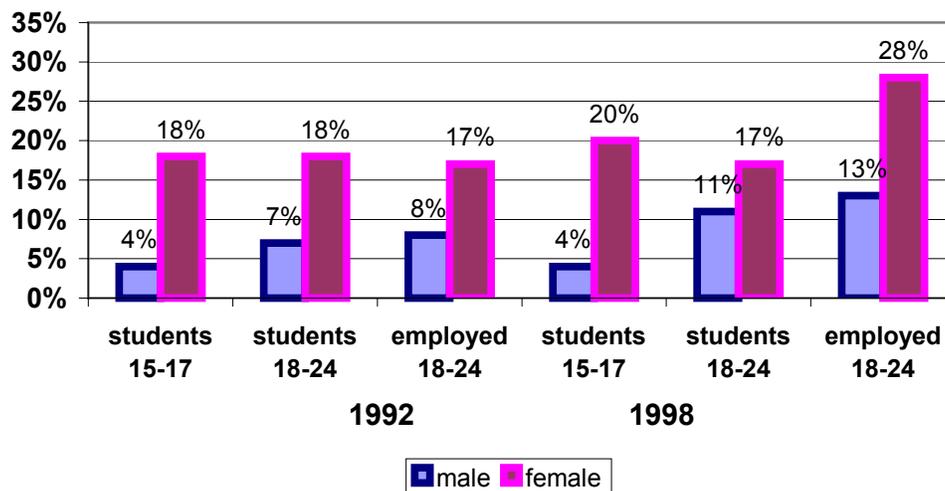


Chart 1(a): Severely Time Stressed Youth, by age and status (%)



b) Activity Limitations among Seniors

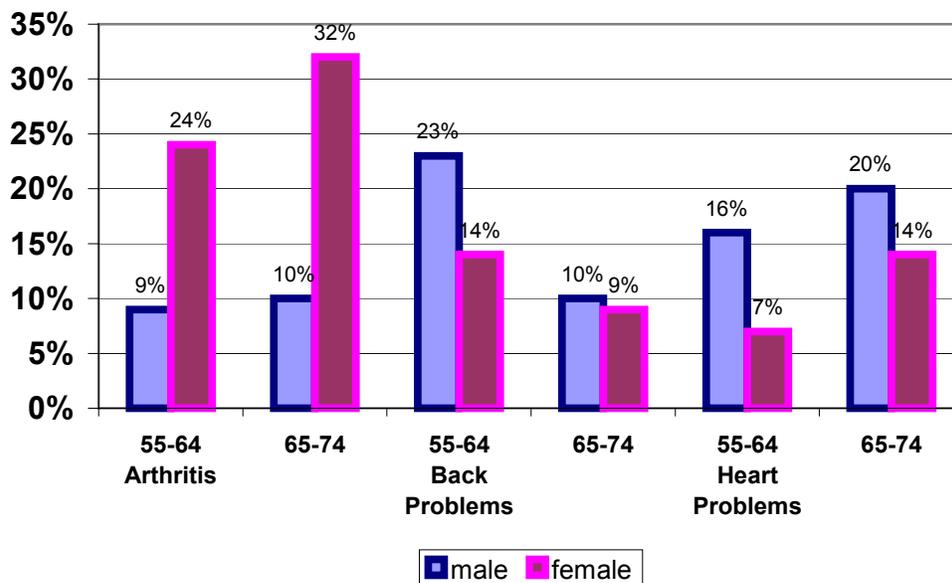
Among *older* Canadians, a gender based analysis is equally useful in formulating strategies for health promotion, disease prevention, health care, and recovery. For example arthritis is the main cause of activity limitation among older women, at three times the rate of older men. By contrast, back problems and heart problems are far more common among older men (Chart 2). Different physical exercise regimens and physiotherapy programs geared to these different needs will be far more effective than a "one-size-fits-all" approach.

c) Exercise Trends in Atlantic Canada

The third example is given here as the kind of unexpected and helpful insight that can arise through gender-based analysis. This report was prepared to provide an overview of *women's* health issues in the Atlantic provinces, but the gender analysis just as frequently suggested useful interventions to improve the health of *men*.

Fifteen years ago Maritimers were more physically active than most Canadians, exercising more frequently in their leisure time. Today all four Atlantic provinces rank significantly *below* the Canadian average (Chart 3). This is a disturbing trend, as physical inactivity has been clearly identified as a primary risk factor in cardiovascular disease.

Chart 2: Primary Cause of Activity Limitation among Older Canadians (%)¹⁰



A recent Statistics Canada analysis controlling for age, education, income, smoking, blood pressure, weight, and other factors, found that sedentary Canadians have *five times* the risk of developing heart disease as those who exercise moderately in their free time. Sedentary Canadians are 60% more likely to suffer from depression than those who are active, and Statistics Canada concluded that "physical activity has protective effects on heart health and mental health that are independent of many other risk factors."¹¹

Current trends not only portend a poorer health prognosis for Atlantic Canadians compared to the national average, but will also increase health care costs in the long run. Cardiovascular disease costs Canadians more than \$20 billion a year in direct and indirect costs, 15% of the total cost of all illnesses, and is the largest cost among all diagnostic categories.¹² Diseases of the circulatory system accounted for more hospital days than any other illness, 6.3 billion days in 1996, and taxpayers paid more than \$5 billion in hospital costs for cardiovascular disease.¹³

But what are Atlantic province health officials to do to counter the disturbing rise of a primary risk factor for heart disease and other illnesses? A gender-based analysis reveals that overall population averages conceal sharply divergent trends among men and women (Chart 3). In fact, women have generally *increased* their rates of leisure time physical

activity quite dramatically since 1985, by 24% in Newfoundland, 15% in Nova Scotia, and 8% in New Brunswick. Overall this is a good prognosis for women's health in this region.

By contrast, while more Canadian men than ever are exercising in other parts of the country, more Atlantic region males are becoming sedentary. In all four Atlantic provinces, there has been a dramatic decline in physical activity by men. In fact, men are entirely responsible for this negative population health trend as a whole. Fully six out of ten Atlantic region men are physically inactive in their free time, with declines in male activity rates of 36% in P.E.I., 18% in New Brunswick, 13% in Nova Scotia, and 4% in Newfoundland. Fifteen years ago, in every Atlantic province, more men than women exercised on a regular basis, by a significant margin. Today, in every province, more women exercise than men.

In the long term, this means that while Atlantic Canadian men had a relatively lower risk of heart disease in 1985 compared to other Canadians, they now have a significantly higher risk, the costs of which will gradually become evident over time. In this case, a gender analysis suggests that health officials target men in promoting sports and exercise programs. In fact, the male and female trends are *so* dramatically different in this case that an overall population analysis without a gender breakdown completely misses the point, and sends misleading signals to policy makers.

It is perhaps appropriate that our presentation begin by identifying a positive trend in women's health and an issue of major concern in men's health. Sadly, gender breakdowns like the following are still not available in the standard published sources, and the percentages in Chart 6 were calculated for this report by correlating electronic data with provincial population figures for the corresponding years.

Conclusion:

The preceding examples are intended for illustrative purposes only, in order to demonstrate the vital practical importance of gender-based analysis in health policy. Above all, it should be clear from these few examples that the utility of a gender-based approach goes far beyond issues traditionally identified as being of concern to women, like reproductive health.

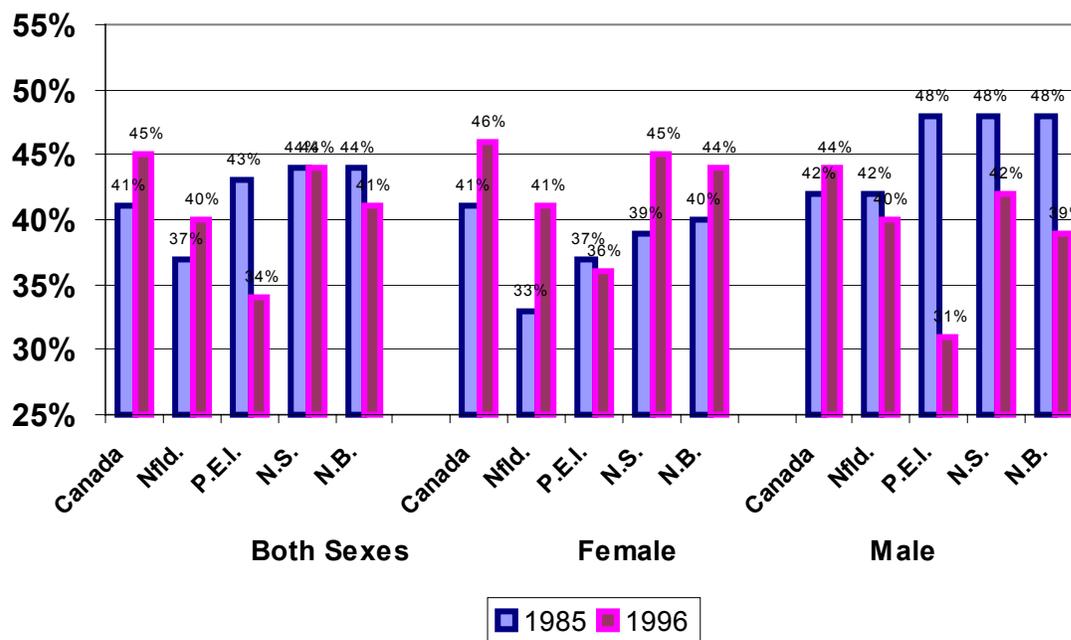
Indeed, it is a core principle of the Women's Health Strategy announced by Minister Allan Rock last year that gender analysis is relevant to every aspect of health policy. In March, 1999, the Minister announced:

I have undertaken to fully integrate gender-based analysis in all of my Department's program and policy development work.¹⁴

It is the strong recommendation of the Maritime Centre of Excellence for Women's Health that the four Atlantic provinces, and their health ministries in particular, take the same step. For our

part, we undertake to do everything we can to assist you in providing information, data, analysis and training to facilitate this transition.

Chart 3: Persons Who Exercise, 1985 - 1996 (%) ¹⁵



3. Mental Health and Psychological Well-being

A gender perspective on health is not intended to focus entirely on *differences* between women and men, as the previous examples may imply. We clearly share a profound common heritage and characteristics as human beings, and a gender perspective can highlight areas where more commonality is needed. Even more, a gender perspective on health can demonstrate that improved health for women benefits the entire population, just as enhanced well-being for men is good for women too. This is particularly apparent in the realm of psychological health.

Studies have demonstrated that the stress of male unemployment produces a health decline among wives and children. Similarly high levels of stress among women affect families and communities. Mental distress is also frequently the precursor of physical illness, and a healthy state of mind is recognized as the most important element in healing and restoring health after illness or injury. There is also strong evidence that mental health is important in coping

successfully with stressors and for maintaining good physical health and healthy life practices.¹⁶

Given the importance of mental well-being and its centrality in the World Health Organization definition of health, it is perhaps surprising how little data is available on the subject, and how hidden the evidence remains compared to measures of physical health. Nevertheless, from the scattered evidence, some interesting trends are discernible.[†]

In 1985, across the country, women registered *lower* levels of stress than men, by more than 10% in the four Atlantic provinces and 6% nation-wide. By 1991, female stress levels in Atlantic Canada had increased markedly and *exceeded* male levels by more than 7%. In Nova Scotia, the jump in female stress levels was particularly dramatic, rising from 12% *below* the male level in 1985 to 29% *above* the male level in 1991, and with nearly a third more Nova Scotia women reporting high stress levels in 1991 than in 1985.¹⁷

By 1994-95, female levels of chronic stress had become *markedly* higher than male levels right across the country, by more than 20%.¹⁸ And in 1998, female levels of time stress in Canada were more than 30% higher than male levels.¹⁹ While these different questionnaires are not strictly comparable, there does seem to be a clear trend of steadily higher stress levels for women. On the three dimensions of mental health in the 1994-95 National Population Health Survey (see footnote, previous page), 20% more Atlantic Canadian women than men registered *low* levels of psychological well-being.²⁰

But these averages conceal significant inter-provincial differences, including among the Atlantic provinces themselves. In all five surveys examined, Newfoundlanders have significantly higher levels of mental health than other Canadians, and consistently report the lowest stress levels and the highest level of psychological well-being in the country.²¹ In 1985, Newfoundland stress levels were 27% below the national average; in 1991 they were 16% less; and in 1994-95 they were 35% less. Newfoundlanders were also 30% more likely than other Canadians to report a high level of psychological well-being.

[†] Population health questionnaires in 1985 and 1991 and 1994-95 tested the degree to which individuals felt their stress levels to be high, moderate or low, using up to 18 different questions. At publication time, the author had not ascertained the degree to which the 1994-95 questions are comparable to those in the earlier two studies, which *are* comparable. For that reason, no general interpretations of trends over time are made here and only *relative* inter-provincial and male/female trends over time are assessed. The 1998 General Social Survey used ten questions to assess "time stress" among Canadians. In addition, the 1994-95 National Population Health Survey for the first time included about 25 questions to assess psychological well-being according to three criteria -- "self-esteem," "mastery" (the extent to which people feel their life circumstances are under their control), and "sense of coherence" (the view that events are comprehensible, challenges are manageable, and life is meaningful.) The scaling system was based on a maximum score of 78 for coherence, 24 for self-esteem, an 28 for mastery. (See Federal, Provincial and Territorial Advisory Committee on Population Health, *Statistical Report on the Health of Canadians, 1999*, September 1999, Health Canada and Statistics Canada, pages 49 and 220-221.)

This high mental health status may explain why, despite higher levels of unemployment and lower income and schooling levels, Newfoundlanders report far less chronic illnesses than other Canadians. They have the lowest rate of new cancer cases, asthma, allergies, and back problems in the country. They also have the lowest rates of suicide and sexually transmitted diseases in Canada, outcomes that are clearly linked to mental health status. They are more likely to report their own health as "excellent" or "very good" than any other Canadians, and they have the highest level of functional health status in the country. Interestingly, despite the province's chronic economic and employment problems, Newfoundlanders even report higher levels of work satisfaction than the national average.²²

Prince Edward Islanders also have a high level of mental health, 23% less than national levels for chronic stress, and 17% higher for psychological well-being.²³ Not surprisingly, Islanders were also the second most likely in the country to rate their own health as excellent or very good, a designation widely accepted as a reliable predictor of health problems and health-care utilization.²⁴

For the other two Maritime provinces, the mental health signals are more mixed. In 1985 and 1991, there was a clear east-west stress gradient in the country with higher levels of stress reported in Ontario and the west, and all four Atlantic provinces ranking well below national levels. But throughout the 1990's both Nova Scotia and New Brunswick gradually moved towards national levels, and now register lower levels of psychological well-being than other Canadians.

In 1985, 14% fewer Nova Scotians reported high stress levels than other Canadians. By 1991, just 4% fewer Nova Scotians were highly stressed; and by 1994-95, *more* Nova Scotians were chronically stressed than other Canadians. In the same year, eighteen percent more Nova Scotians were likely to report low levels of psychological well-being than other Canadians. New Brunswickers have also seen their stress levels rise, and now register similar levels of both chronic stress and psychological well-being to other Canadians.²⁵

The World Health Organization definition of health cited at the beginning of this report ranks mental and spiritual well-being as vital components of human health, and explicitly defines well-being and positive health as more than the absence of disease. The "Newfoundland advantage" in this sphere, once fully recognized and appreciated for its considerable health impact, may provide a model for a realignment of our conventional definitions from a "disease treatment" perspective to a more complete and positive view of health. At the same time the apparent loss of mental health advantage once enjoyed by women in general and by Nova Scotians and New Brunswickers in particular may reawaken an appreciation for non-material quality of life factors that have historically distinguished this region.

Even from a purely instrumentalist and cost-conscious perspective, however, policy makers have good reason to pay attention to trends in mental health. Here is a basic fact that is not well known in the public arena. When psychiatric hospitals are included, mental disorders account

for more hospital days in Canada than any other illness -- over 15 million patient days in 1993-94, -- more than the *combined* total for all circulatory and heart diseases, nervous system disorders, cancers, and injuries (the next four most common causes of hospitalization.) Even in normal (non-psychiatric) hospitals, mental disorders account for nearly six million hospital days a year.²⁶

Bucking the national trend toward shorter hospital stays, there has been an upward trend in the average length of hospital stay for treatment of mental disorders, with an overall *increase* in patient days in both acute-care and psychiatric hospitals. While there was a 15% decline in total hospital patient days in the early 1990's, there was a parallel 33% increase in patient days for mental disorders. Affective psychoses, including manic-depressive disorders accounted for 23% of psychiatric separations, more than any other single category. Interestingly, the increase in patient days has occurred despite a decline in the number of discharges. This indicates a clear trend toward longer hospital stays for fewer patients. More serious cases are hospitalized, while less serious ones are being treated in the community.²⁷

As usual, a gender breakdown is useful. Women have a 14% higher rate of psychiatric hospitalization overall than men. Across all ages female rates of separation from psychiatric institutions are markedly higher than male rates for neurotic disorders (ratio of 1.9:1), depressive disorders (1.8:1), affective psychoses (1.7:1) and adjustment reaction (1.4:1), and men have higher rates for alcohol and drug dependence (2.4:1) and schizophrenia (1.4:1). In general hospitals, women have a 21% higher rate of admission for mental disorders than men.²⁸

If the contribution of stress to serious illnesses were included, then it is clear that psychological distress is by far the most expensive component of our health care costs. Yet this is far and away the most neglected element of our health care paradigm with significant data gaps even for the most basic information. For example, despite these dramatic hospitalization figures, most mental health care is actually delivered in the community. But the absence of a national database for community mental health services makes it difficult to examine the efficacy of mental health service delivery and its implications for population health.

In sum, a determined commitment to improve mental well-being is probably the most strategic and cost-effective intervention that health departments can make. This is easier said than done, as the roots of stress and psychological distress run deep, and are affected by subtle trends like the growing materialist and consumerist orientation of western society that neglects non-material quality of life variables. Our obsession with economic growth, for example, frequently overrides concern with mental and spiritual well-being.

Given the seriousness and magnitude of this challenge, the Maritime Centre of Excellence for Women's Health and GPI Atlantic both stand willing to work closely with Atlantic provincial health departments in identifying practical and cost-effective interventions to improve population mental well-being. Given the high rates of female stress, depression, and hospital admissions for mental disorders, this issue is a vital plank of any women's health strategy.

Perhaps Newfoundland can help take the lead in this endeavour by identifying and demonstrating what its people are doing *right!*

4. Educational Attainment and Literacy

Educational attainment is positively associated both with health status and with healthy lifestyles. For example, in the 1996-97 National Population Health Survey, only 19% of respondents with less than high school education rated their health as "excellent," compared with almost 30% of university graduates.²⁹ Self-rated health, in turn, has been shown to be a reliable predictor of health problems, health-care utilization, and longevity.³⁰ From a health determinants perspective, education is clearly a good investment that can reduce long-term health care costs.

Schooling is certainly not synonymous with knowledge and educational attainment, for which there are no accepted indicators or data sets. But years of schooling can at least be used as an indicator of equity between men and women, and as a relative proxy for changes in educational attainment over time within groups, even if schooling is not an absolute indicator of actual knowledge. In this relative sense we have seen remarkable and positive progress among women. There were over four times as many women university graduates over age 25 in 1996 as there were in 1971, compared with twice as many men over 25 with university degrees.

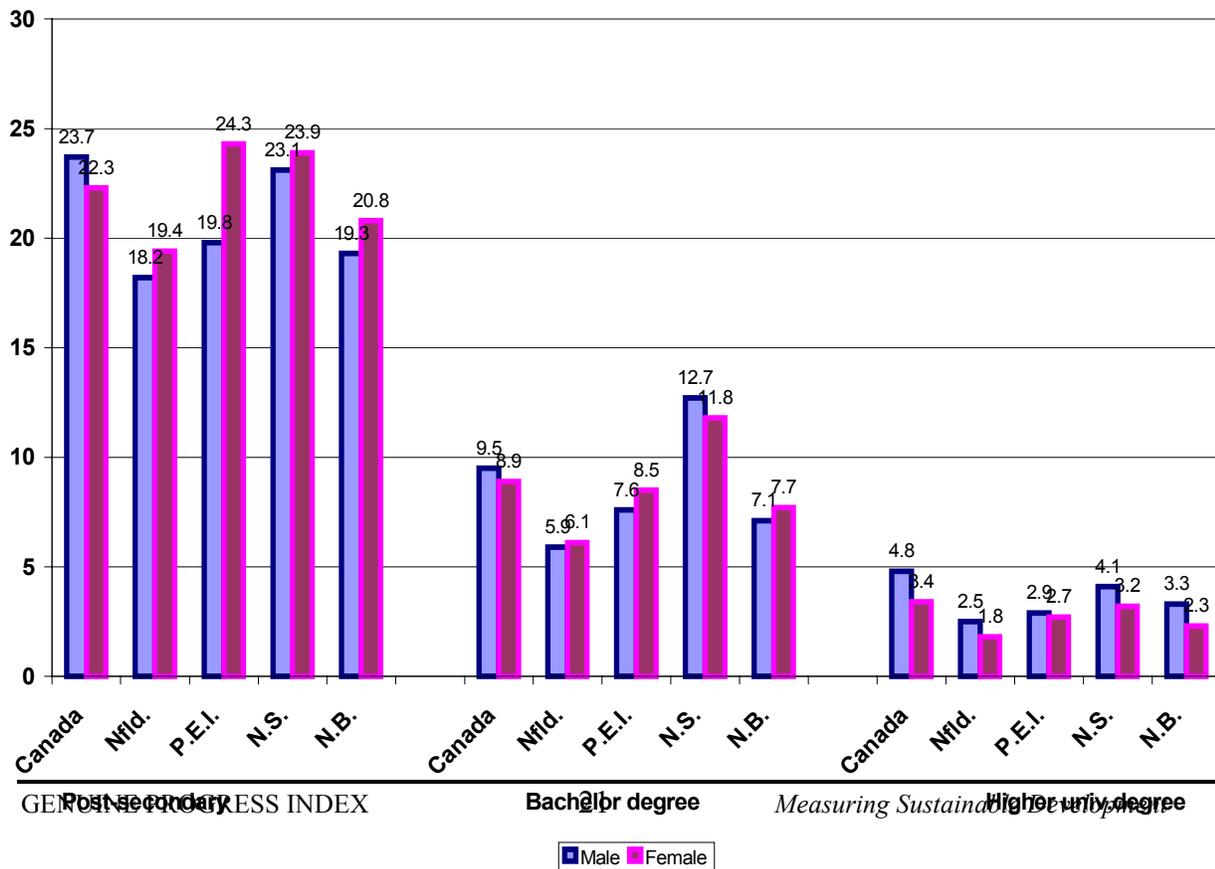
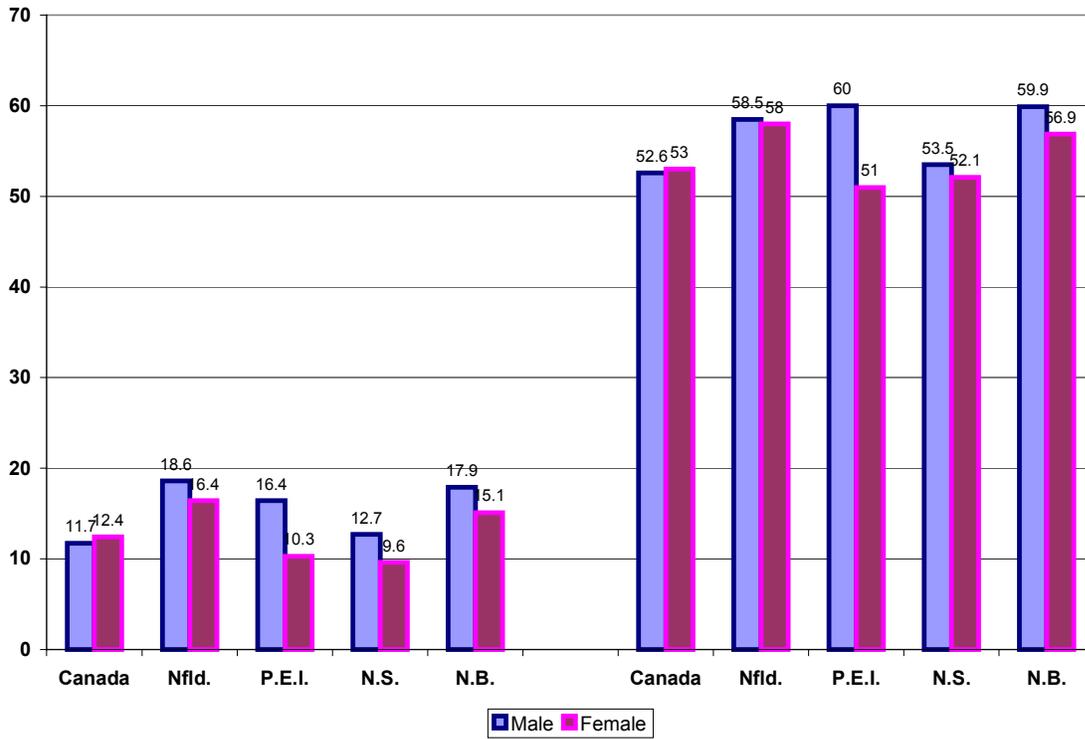
In all four Atlantic provinces, there are now more women with post-secondary education than there are men. Although men still predominate at the masters and doctoral levels, the overall education gap has been narrowing rapidly, and the trend is toward ongoing convergence between men and women. In all four Atlantic provinces, girls are actually more likely to finish high school than boys, and there are now substantially less female drop-outs with less than a grade 9 education than male drop-outs at that level. (Chart 4). Women's scores in prose literacy are also higher than those of males for all age groups.³¹

While a higher proportion of the male population in all four Atlantic provinces has less than a grade 9 education compared to the national average, Nova Scotia has 23% less female drop-outs than the national average, and a 22% higher rate of university graduation among young women.

Chart 4: Schooling, 1996 (%)³²

Less than Grade 9

Elementary and Secondary Only



5. Income Distribution and Poverty

Poverty is recognized as one of the most reliable predictors of poor health, more so than a wide range of medical factors such as high cholesterol and blood pressure levels. No matter which measure of health and cause of death are used, low income Canadians are more likely to have poor health status and to die earlier than other Canadians.³³ Canadians in the lowest income households are four times more likely to report fair or poor health than those in the highest income households, and they are twice as likely to have a long-term activity limitation.³⁴

Canadian studies have reported that low income is nearly as important a determinant of health service use as is illness, and a recent study in Ontario found that hospital admission rates were twice as high among poor people as among the non-poor.³⁵ A detailed Statistics Canada profile of hospital users that controlled for a variety of other factors, found that poverty was an even more reliable predictor of hospital use among women than among men. Men age 15-39 with inadequate income were 46% more likely to be hospitalized than men with adequate income. Poor women were 62% more likely to be hospitalized than non-poor women. For those age 40-64, the percentages increased to 57% and 92% respectively. This study will illustrate the utility of a health determinants approach: As hospitals are the single largest health care expenditure, strategic investments that alleviate poverty are likely to be highly cost effective in the long run.

A growing body of evidence indicates that the *distribution* of income in a given society may actually be a more important determinant of population health than the total amount of income earned by society members.³⁶ Reviewing the evidence, the editor of the British Medical Journal concluded:

*What matters in determining mortality and health in a society is less the overall wealth of the society and more how evenly wealth is distributed. The more equally wealth is distributed, the better the health of that society.*³⁷

A separate literature review by a University of Waterloo professor found convincing "statistical evidence that inequalities in health have grown in parallel with inequalities in income" and concluded that "relative economic disadvantage has negative health implications."³⁸

(i) Hourly Wage Gap

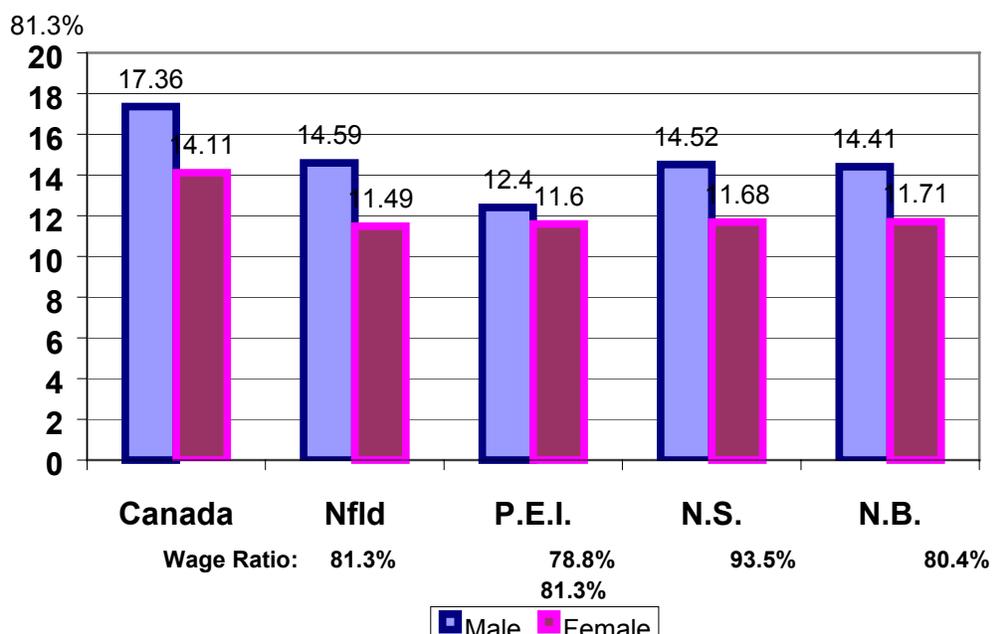
If income inequality impacts health status, then the wage gap between men and women is of concern. The persistence of this substantial gap over time is particularly puzzling in light of the evidence presented in above, indicating near-parity between men and women in educational attainment. While the wage gap gradually narrowed in the 1970's and 1980's, it has stabilized since then and hardly shifted in the last decade.

Full-year full-time working women in the Atlantic provinces earn an average of 72% of the annual income of their male counterparts.³⁹ Among all employees, full and part-time, Atlantic Canadian women earn 63% as much as men.⁴⁰ But, since women average fewer weekly paid

hours than men, the most accurate and conservative equality indicator is hourly wage rates. Despite comparable educational qualifications, women earn just 81% of male wages (Chart 5).⁴¹

In December, 1999, Statistics Canada published its most detailed analysis ever of the male-female wage gap, using the abundant evidence of the Survey of Labour and Income Dynamics to examine 14 different factors that might help explain the persistence of the wage gap over time. After taking into account education, field of study, full-time work experience, job tenure, age of children, part-time status, union membership, firm size, job duties, industry, occupation, and a number of other factors, the study concluded that more than 50% of the wage gap was "unexplained."

Chart 5: Average Hourly Wage Rates, Atlantic Provinces, 1998, (\$)⁴²



In other words, women are earning substantially less than men even when they have identical work experience, education, job tenure and other characteristics, when they perform the same job duties and when they work in the same occupations and industries for the same weekly hours. "This 'unexplained' component," says the study, "is referred to as an estimate of the gender based labour market discrimination."⁴³

It should be noted here that this study includes job duties, occupation and industry in the "explained" portion of the wage gap. Women are less likely than men to be employed in jobs

having supervisory responsibilities (24.8% of women compared to 35.2% of men), and are less likely to be employed in jobs that involve budget and/or staffing decisions (15.7% compared to 21.7%).⁴⁴ In addition, many women are clustered in low-wage industries and occupations, including those, like child care and domestic services, that have shifted from the household economy where they were traditionally regarded as "free."

It could be argued that inequities in job duties and wages paid in industries where women predominate also constitute an element of "gender based labour market discrimination." If these factors are added to the "unexplained" portion of the wage gap, then the remaining ten factors account for only about 30% of the wage gap, and the "discriminatory" portion for 70%.⁴⁵ (Part-time work status, in which women predominate largely because of family responsibilities, is considered here as part of the "explained" or "non-discriminatory" portion of the wage gap.)

(ii) Annual Earnings Gap

The gender wage gap translates into substantially reduced annual incomes and earnings for women. Nearly one-quarter of Atlantic region women who work full-time for the full year earn less than \$15,000 a year, (equivalent to \$8 an hour or less), compared to one in ten men. This means that among full-time full-year workers, more than twice as many women as men are low earners, a ratio that still holds at the \$20,000 level. In fact, more than half of Atlantic region full-time full-year female workers earn less than \$25,000 a year, compared to 28% of full-time male earners (Chart 6).⁴⁶

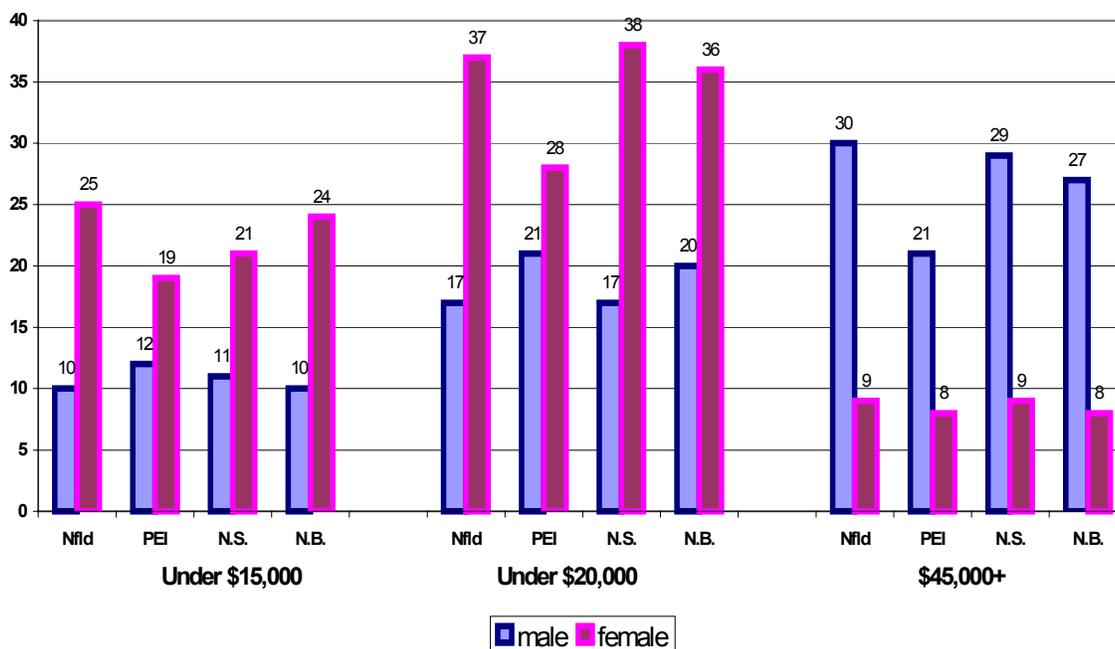
Not surprisingly, full-time working women are severely under-represented among high income earners. Three times as many full-time male employees earn \$45,000 or more as full-time female workers; and the ratio increases to more than five to one at the \$60,000 level. Overall, the average female - male earnings ratio for full-time full-year workers in the Atlantic provinces is 71%, compared to the Canadian average of 72.5%. When average income from all sources (including transfers, interest, dividends, etc.) is taken into account the average male - female income ratio for full-time full-year workers in Atlantic Canada is 72.3% compared to the Canadian average of 73.1%.⁴⁷

One exception should be noted here: Women in Prince Edward Island are more likely to earn a decent wage than women in the other Atlantic provinces. The median wage for full-time working women on the island is more than \$2,000 a year higher than the median for full-time working women in the region as a whole. Interestingly, as we shall below, this helps explain why Prince Edward Island has the lowest rate of child poverty in the country, in marked contrast to the other Atlantic provinces, a factor that will also have long-term health consequences.⁴⁸ The connection also demonstrates that a strategic investment in reducing the male - female wage gap can be a direct investment in children.

To be conservative, the preceding statistics have examined the *hourly* wage gap between men and women, and the annual earnings gap between *full-time full-year* male and

female workers. When *all* earners are considered (including part-timers), we find that more than two-thirds of Atlantic region women earn less than \$20,000 a year, compared to 48% of Atlantic men (and about half of Canadian women). This is because women have a much higher rate of part-time, temporary and on-call work than men, typically at considerably lower wages than full-time workers. Among all earners, only 2% of Atlantic region women \$50,000 or more a year, compared to 12% of Atlantic men (and 7% of Canadian women).⁴⁹

Chart 6: Annual Earnings of Full-Time Full-Year Workers
(% of all full-time full-year workers)



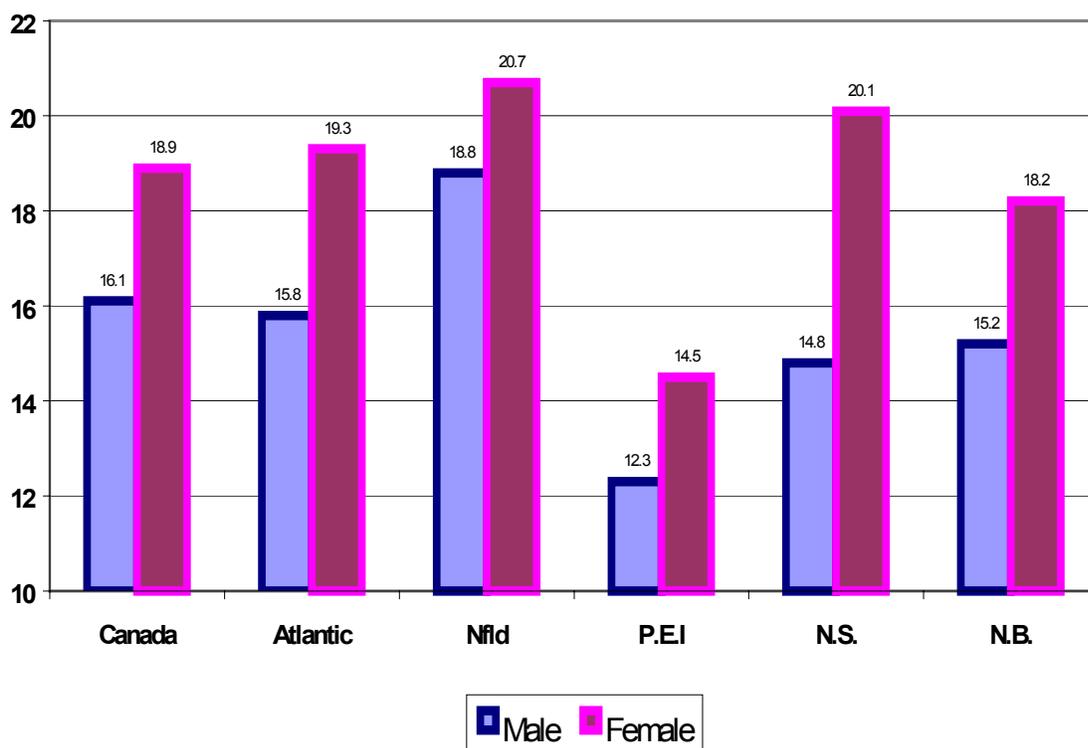
(iii) Low income and poverty rates

Not surprisingly, a higher proportion of Canadian women than men live in poverty. In Atlantic Canada, nearly one in five women live below Statistics Canada's low-income cut-off line. In Nova Scotia the female low-income rate is 36% higher than the male rate, the widest gap in the country. Again, Prince Edward Island is a commendable exception, with the lowest poverty rates in the country for both sexes (Chart 7).⁵⁰

Women are clearly not a homogeneous group; and the averages listed so far conceal significant distinctions. Twice as many elderly Canadian women (one in four) fall below the low-income cut-off line as elderly men; and the low-income rate is particularly high

for unattached elderly women (45%).⁵¹ Low-income rates are even higher for Canadian single mothers (48%), four times the rate for two-parent families. For these single mothers, the average "depth of poverty" (income deficiency between family income and the low-income cut-off) is more than \$10,000 annually.⁵²

Chart 7: Low Income Rates, 1997 (%)



For many single mothers paid work is not a practical or cost-effective option. In order to handle their household responsibilities, single mothers are often only able to take low-paying part-time or temporary work from which the income "might not offset the expenses of working," according to Statistics Canada.⁵³ Those with pre-school-age children, for example, spend 12% of their income on paid child-care, compared to just 4.4% for two-parent families.⁵⁴ Single mothers who do work full-time are the most time-stressed demographic group, putting in an average of 75 hours a week of paid and unpaid work.⁵⁵ They also have only an hour a day to care directly for their children, less than half the time available to their non-working counterparts.⁵⁶ For all these reasons, most single mothers of young children are not employed.

Those who do work for pay -- 31% of Canadian single mothers with children under three, and 47% of single mothers with a child age 3 to 5 -- are likely to experience a different type of

poverty. In a seminal study, Robin Douthitt defined "time poverty" as the time below the minimum necessary for basic household production, including food preparation and cleanup, house care and cleaning, laundry and shopping, and argued for its inclusion in Canadian poverty measures.⁵⁷ Since single parents have only half the time of married couples to meet fixed household time costs, paid work can produce extreme time stress and neglect of basic household functions.

When time and income are both considered, Douthitt finds that poverty rates of working single mothers in Canada are 70% higher than official estimates, and approach the poverty rates of their unemployed counterparts. When sleep deprivation is taken into account, working single mothers experience nearly twice the absolute time poverty rates of their non-employed or married counterparts. From a health determinants perspective, time poverty may be as important for health outcomes as material poverty. Most workplaces have not yet adjusted to the new reality of women's labour force participation, and it is clear that family-friendly work arrangements are a top priority for working single mothers.

High rates of poverty among single mothers translate into high rates of poverty among children. Children of single mothers are 14% of children in Canada, but 42% of children in low-income families. A child who lives with a single mother is nearly four times as likely to be poor as a child living with both parents.⁵⁸ In Nova Scotia, 17% of all families with children are headed by single mothers, and more than 70% of these single mothers live below the low-income cut-off, accounting for fully half the children living in poverty in the province.⁵⁹ If Douthitt's "time poverty" measure is included, the poverty rate for single mothers in the province jumps to more than 80%.

In Canada as a whole, and in the four Atlantic provinces, child poverty rates have increased significantly in the last 10 years, with Newfoundland and Nova Scotia now recording the highest rates in the country (up from #3 and #6 respectively in 1989). Again, Prince Edward Island is a notable exception, registering the lowest rate of child poverty in the country, 34% below Newfoundland and Nova Scotia, and 25% below the national average (Chart 8). Across the country, the younger the child, the greater the likelihood of low-income status. In Nova Scotia, for example, 22.4% of all children under 18 live below the low-income cut-off. For children under 12, the figure is 27%.⁶⁰

A note of caution should be added here. Statistical analyses of poverty among economic families implicitly assume an equal sharing of resources between all household and family members. Household members are assumed to pool their individual resources, which are then redistributed equally based on need. A household is defined as "poor" if its average level of resources falls below a certain standard, and an individual is poor if he or she is a member of a poor household. However, there is a growing body of literature that questions this assumption, arguing that significant inequality exists *within* households, and that women do not receive their "fair share" of household resources.⁶¹ There is not sufficient Canadian evidence to test this

argument here. If it is correct, then conventional estimates of female and child poverty may well be understated.

Chart 8: Poverty Rates of Children under 18 (%) ⁶²

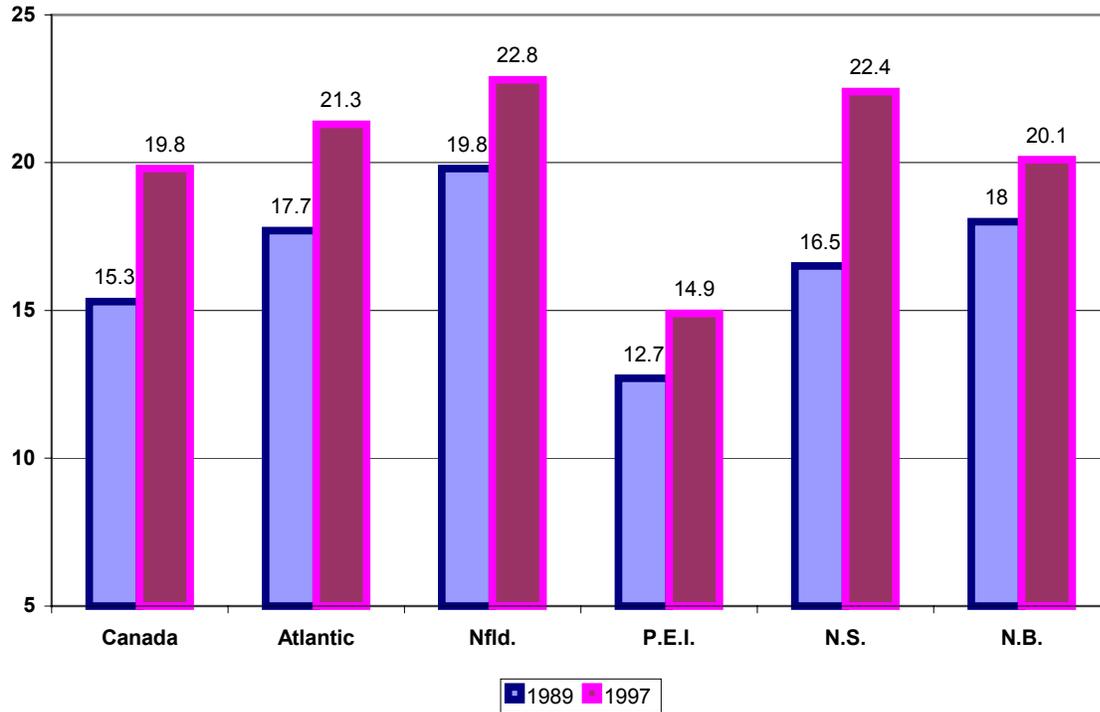
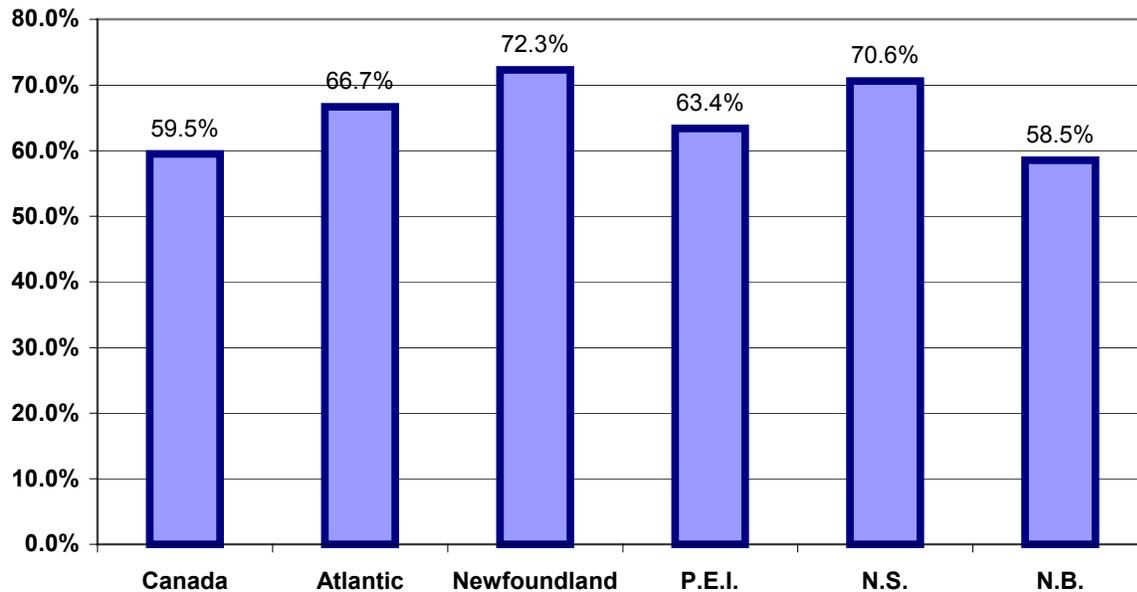


Chart 8 (a) Poverty Rates of Children under 18 in Single Mother Families



(iv) Health Impacts of Low Income

Though Canadian women live longer than men, they have significantly higher rates of chronic illness, disability days, long-term activity limitations, depression, and physician visits; and lower functional health status, all of which translate into higher health care costs.⁶³ In every age group up to age 75, women are more likely than men to have consulted a physician twice or more in the previous year. Overall, women were 33% more likely than men to have seen a physician twice or more; and between ages 18 to 54, women were two to three times as likely to have seen a physician in the previous year.⁶⁴

A Statistics Canada analysis of both the 1994/95 and 1996/97 National Population Health Surveys found that "lone mothers reported consistently worse health status than did mothers in two-parent families," and that longer-term single mothers had particularly bad health. Single mothers scored lower on two scales of "self-perceived health" and "happiness", and substantially higher on a "distress" scale. They had higher rates of chronic illness, disability days and activity restrictions than married mothers, and were three times as likely to consult a health care practitioner for mental and emotional health reasons.⁶⁵

Low-income children are more likely to have low birth weights, poor health, less nutritious foods, higher rates of hyperactivity, delayed vocabulary development and poorer employment prospects.⁶⁶ Although they engage in less organized sports, poor children have higher injury rates, and twice the risk of death due to injury than children who are not poor.⁶⁷ A detailed analysis of both the National Longitudinal Survey on Children and Youth and the National Population Health Survey found that some 31 different indicators all showed that as family income falls, children are more likely to experience problems.⁶⁸

Let us review the evidence in this section as it affects women's health:

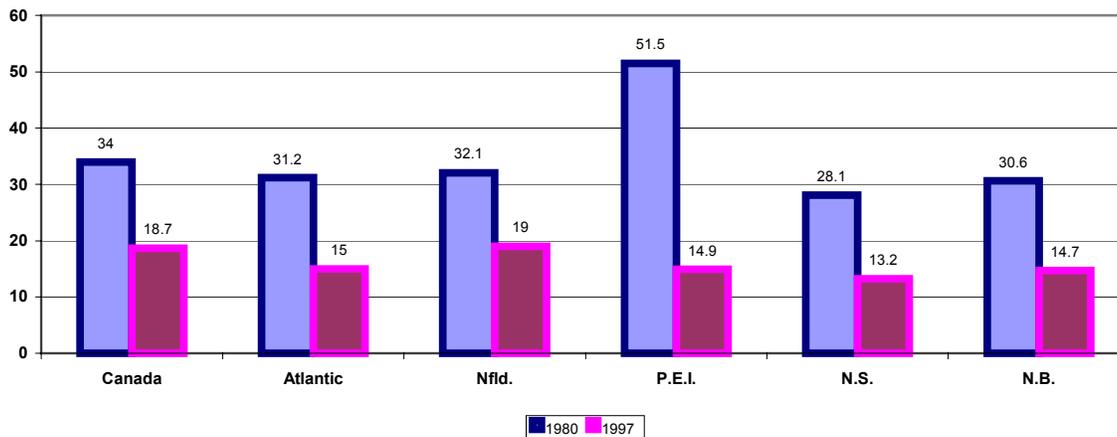
- Poverty and inequality have been identified as reliable predictors of health outcomes.
- Low-income earners have higher rates of hospitalization and health service usage.
- Women earn less and have higher rates of low-income status and physician visits.
- Low-income families pass on poverty and lower functional health to their children.

The conclusion is clear: Since higher rates of health service usage are costly to taxpayers, strategic investments in reducing poverty rates among the most vulnerable groups will yield long-term cost savings to the health care system. As single mothers and elderly women living alone have the highest poverty rates of any demographic group in the region, adequate social supports for these groups are one of the most cost-effective investments governments can make.

It can be done. Concerted public policies and improved income supports have dramatically and continuously lowered poverty rates among Canadian seniors in the last 20 years, with the notable exception of unattached elderly women, as noted. The Atlantic provinces have reduced the poverty rate among seniors by more than half overall, and have proportionately less low

income elderly than the Canadian average, with Nova Scotia recording the lowest rate in the country (Chart 9).⁶⁹ Sadly, that substantial gain has been offset by rising poverty rates among children, and unacceptably high poverty rates for single mothers and elderly women living alone.

Chart 9: Low Income Rates, Elderly, 65 and over, 1980 and 1997 (%)



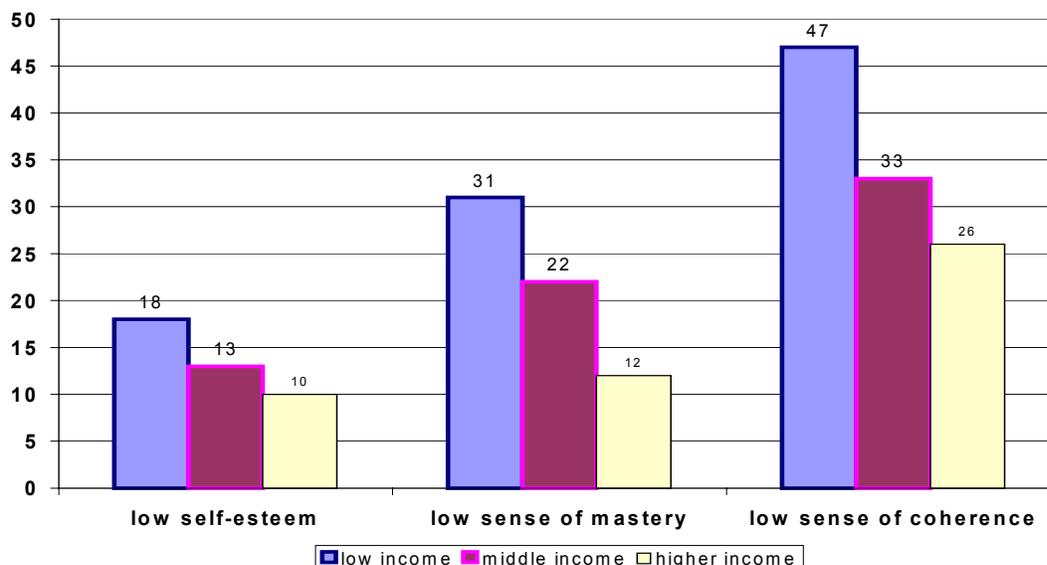
This shift in the distribution of poverty illustrates one of the most interesting aspects of a population health approach based on the determinants of health -- the highly interactive functioning of the various determinants.. The 1994-95 National Population Health Survey found that depression rates are highest and psychological well-being lowest among youth, and that mental well-being increases with age. Remarkably, this is a reversal from the patterns of a generation ago, when seniors were more likely than younger Canadians to be depressed.⁷⁰

Earlier we noted the rising rates of stress and psychological distress among women. It is clear that the steady reduction in poverty rates over two decades among older Canadians is highly correlated with their improved well-being. Conversely that higher rates of child poverty, youth unemployment and job insecurity, student debt, and single mother poverty help explain declines in mental well-being among those groups.

This report emphasizes repeatedly that this understanding is very good news for the practical cost-conscious health official, because a strategic investment in one determinant of health, like the alleviation of poverty among single mothers, will have far-reaching positive effects in many other spheres. In every instance, working with the causes and conditions of health and illness is a far more cost-effective approach to reducing health costs than the medical interventions required to deal with disease after it has occurred, interventions that are generally so symptom-specific that they have few, if any, positive spin-off benefits in other health areas. We have already noted the enormous financial burden of treating mental disorders, and the extraordinarily high number of psychiatric patient days. The close link between mental health

and income level thus provides clear guidance for cost-conscious and responsible policy makers (Chart 10).⁷¹

Chart 10: Psychological Well-being, three measures, by income, 1994-95 (%)



Single mothers represent a comparable population sample to the elderly. If determined public policy can achieve this measure of success in reducing poverty among the elderly, there is no reason why governments cannot act just as decisively to provide the necessary supports to single mothers, their children and to elderly women living alone. The dividends will be substantial in reduced health care, social service and justice costs, improved educational performance, and enhanced workplace productivity and taxation revenues. The Maritime Centre of Excellence for Women's Health is willing to work with the four Atlantic governments to ensure that such investments are wisely targeted to achieve the best outcomes, and so that this region can lead the way in lowering poverty rates among children, single mothers, and elderly women.

6. Work and Employment

The previous sections have already touched on labour market issues that affect women, their health and well-being. We have noted the clustering of women in part-time, temporary, casual, term and on-call jobs with high rates of job insecurity, low wages, and poor benefits. Only 20% of non-permanent jobs carry employer-provided pension plans, compared to 55% of permanent

jobs. Only 19% provide supplementary health benefits compared to 64% of permanent jobs; 16% provide dental care (compared to 60%); 20% provide paid sick leave (compared to 62%); and 20% provide paid vacation leave (compared to 78% of permanent jobs).⁷²

Temporary jobs also provide few, if any, promotion and career advancement opportunities; and contingent workers are, by definition, the first laid off in times of economic downturn or reduced demand. In sum, many of the jobs in which women predominate are characterized by high levels of insecurity.

Among young women, the part-time share of employment increased by 81% from 1980 to 1995 (from 28% to 51%), and is nearly 30% higher than the part-time rate for young men.⁷³ Nearly 70% of Atlantic region part-timers are women, and nearly 40% of these are classified as "involuntary" part-time workers who would prefer full-time work if they could find it. In Newfoundland, 56.5% of women working part-time are "involuntary" part-timers. Two-thirds of all involuntary part-time workers in the Atlantic provinces are women.⁷⁴

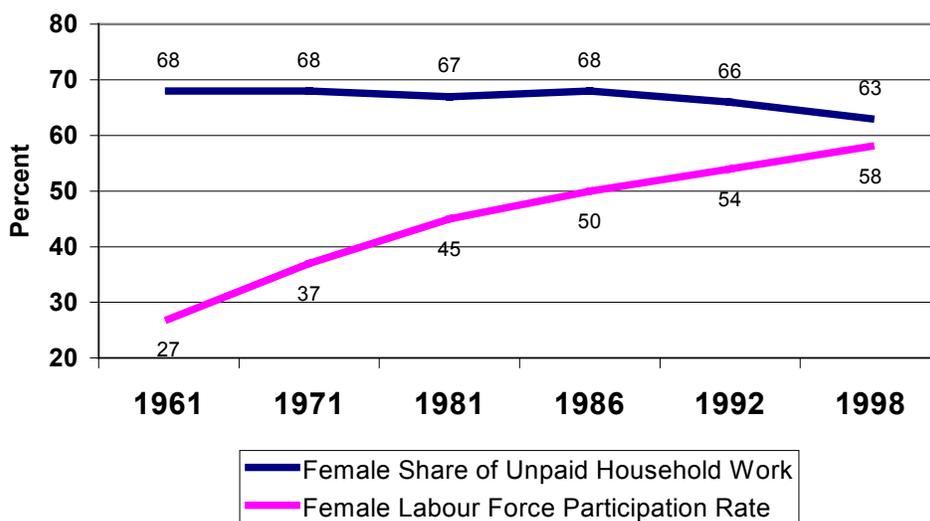
A Statistics Canada study found particularly high levels of work stress, including high rates of job strain and physical and psychological demands and low levels of control, decision-making power, and supervisor support, in the service occupations in which women predominate. Women in these jobs reported higher levels of migraines and psychological distress than workers in other jobs.⁷⁵ In the 1996/97 National Population Health Survey, more women reported high work stress levels than men in every age category. Women aged 20 to 24 were almost three times as likely to report high work stress than the average Canadian worker. Since 1991, the percentage of women reporting they are "very satisfied" with their jobs has dropped from 58% to 49%.⁷⁶

While there are many important labour market issues that affect women's health and well-being, this overview will focus on one critical work issue that is frequently overlooked, that has profound health implications for women, and for which low-cost solutions are readily available. Employment and labour market statistics rarely consider the issue of *balance* between work and household responsibilities. On a daily basis, the "struggle to juggle" these responsibilities dominates the lives of most working women, and is probably the single greatest cause of rising stress levels that may have serious long-term health effects.

Work performed in households is more essential to basic survival and quality of life than much of the work done in offices, factories and stores, and is a fundamental precondition for a healthy market economy. If children are not reared with attention and care, and if household members are not provided with nutritious sustenance, workplace productivity will decline and social costs will rise. Though it is a direct investment in human capital, unpaid household production is invisible in the standard economic accounts, and therefore unvalued.⁷⁷ That unpaid work is still largely performed by women.

Despite a doubling of the female labour force participation rate, women's share of unpaid housework has changed very little in 40 years. In 1961 Atlantic Canadian women were doing 67% of the housework at a time when only one-quarter of them were in the labour force. Today 54% of Atlantic region women work for pay, but they still do 63% of the housework (Chart 11).⁷⁸ In other words, women's share of paid working hours has risen much faster than their share of unpaid hours has dropped, and women have therefore experienced an absolute loss in free time.

Chart 11: Women's Share of Housework and Labour Force Participation Rate
Canada, 1961 - 1998



Despite the vast increase in "labour-saving" household devices, the average unpaid housework burden in Atlantic Canada is still about 24 hours a week, averaged over the entire adult population, unchanged in 40 years, -- about 30 hours a week for women and 18 for men. Parents put in longer housework hours than the general population average. Not-employed mothers put in an average 57.5 hours a week of unpaid household work, unchanged since the beginning of the century, and dual-earner couples with children do the same.⁷⁹

Married mothers working full-time put in an additional 34 hours of unpaid work each week on top of their paid work, for a total paid and unpaid work week of 73.5 hours. They work about 11 hours a day on weekdays, and put in nearly 20 hours more of unpaid work on weekends. Equally time-stressed are full-time single mothers, who put in 75 hours a week of paid and unpaid work. Not surprisingly, 38% of these working mothers registered extreme levels of time stress in Statistics Canada questionnaires, the highest rate of any demographic group, and nearly 50% higher than full-time employed fathers.⁸⁰

While women's labour force participation is clearly a sign of freedom, women's loss of free time is rarely noted. Social structures have not yet adjusted to the doubling of women's labour force participation rates. Workplace structures and time schedules still reflect an outdated reality of one breadwinner and one homemaker; and the gender division of labour within the household has barely changed. Both structures will have to shift substantially if women are to reduce their high levels of time stress. In addition, declining real wages in the last decade have increased the economic pressure for two incomes in households striving to maintain their standard of living.

Among the ten questions in the time stress questionnaire, about half of Canadian women age 25 to 44 answered the following questions affirmatively: "Do you feel that you're constantly under stress trying to accomplish more than you can handle?" "Do you worry that you don't spend enough time with your family or friends?" "Do you feel trapped in a daily routine?" "Do you feel that you just don't have time for fun any more?"⁸¹

Most disturbingly, registered levels of time stress have gone up dramatically in the 1990's for both men and women in every age group. Women still have about 20% higher levels of time stress than men in every age group, but male stress levels are rising at a faster rate. One-third more women age 25 to 44 felt time stressed in 1998 than in 1992, as did 50% more men.⁸²

Remarkably, work hours are growing longer. As families Canadians actually put in longer paid and unpaid work hours today than our great-grandparents did 100 years ago. In 1900, when the average paid work week was 58.5 hours for a single earner breadwinner, full-time female homemakers generally put in a 56-hour week, for a total paid and unpaid household work week of about 125 hours for both partners, assuming minimal housework by the man.⁸³ Today, Statistics Canada's most recent time use survey reveals that full-time working parents are putting in an average 145.5 hour week of paid and unpaid work.⁸⁴

These trends have definite health impacts. Time-stress and long work hours are implicated in cardiovascular and gastrointestinal diseases, in immune system and neuro-endocrinal disorders, and in unhealthy lifestyles that increase the risks for a wide range of illnesses. A recent Statistics Canada study found that women working long hours were 2.2 times more likely to experience major depressive episodes than women working standard hours. Women with high levels of job strain were 1.8 times more likely to experience an unhealthy weight gain compared to women with low job strain; while women who reduced their work hours had only half the odds of a weight gain compared to those who continued to work standard hours.⁸⁵

After controlling for other factors, the study found that men who moved from standard to long hours were more than twice as likely to increase their rate of daily smoking compared to those working standard hours. Women moving to long hours were more than four times as likely to smoke more. Women who moved to longer hours were also twice as likely to increase their rate of alcohol consumption compared to those who worked standard hours. Women who moved to longer hours were also 40% more likely to decrease their level of physical activity. In short, the

study found that longer work hours increased the likelihood of negative health behaviours that carry significant risks for cancer, heart disease, hypertension, diabetes and other serious illnesses.⁸⁶

An increasing number of Canadians cannot get the hours they need to make ends meet and the rate of involuntary part-time work has risen steadily to nearly 40% in Atlantic Canada. At the same time, more Canadians are working longer hours than ever, with the proportions of men and women putting in long hours rising steadily since the early 1980's.⁸⁷ In other words, the standard work week is declining. This polarization of hours itself has health implications, as underemployment and overwork are both stressful. One Japanese study found that the underemployed and the overworked had equally elevated risks of heart attack.⁸⁸ The Japanese word "*karoshi*" actually means "death from overwork."

This discussion does not touch on more subtle and indirect health consequences of overwork. For example, parents are spending less time than ever with their own children.⁸⁹ Long hours can also increase anxiety, strain and irritability, and hasten family breakdown. There is a greater likelihood of sleeplessness, fatigue and poor eating habits.⁹⁰ What the discussion does clearly indicate is that, for women in particular, both paid *and* unpaid work responsibilities must be taken into account in considering employment as a determinant of health.

We noted earlier that there *are* low-cost solutions to the increasingly serious health risk of overwork and rising job stress. Fortunately, there are excellent working models of successful efforts to improve the balance of work and family life. The resulting strengthening of families can independently improve population health, as family is the cornerstone of the social support network that has been recognized as a vital determinant of health in itself.

Efforts to reduce work stress and restore a better work-family balance are an excellent example of the critical need for inter-departmental cooperation to improve population health and effect the actual determinants of health. Some Scandinavian countries now have a special Ministry of Children and Family that fosters such efforts; and family-friendly work arrangements and the reduction of work hours have become more important priorities in collective bargaining in those countries than wages, a movement strongly supported by female unionists. Successes have been achieved without any loss of prosperity or business competitiveness; and morale and health improvements have actually been shown to improve work productivity. The quality of life can dramatically improve: International time use studies have shown that people have 11 hours more free time per week in Denmark than in Canada (Chart 12).⁹¹

The Netherlands, for example, has a 3.2% unemployment rate and the lowest annual work hours of any industrial country. Dutch workers put in an average of 1,370 hours of paid work per year, compared to 1,732 for Canadians, the equivalent of 10 weeks less per year.⁹² That remarkable improvement in the quality of life has been achieved by redistributing work hours to counter the excessive polarization of hours we have witnessed in Canada.

The Netherlands legislated a non-discrimination clause for part-time workers, ensuring them equal hourly pay, pro-rated benefits, and equal opportunity for career advancement, and a bill is now before the Dutch parliament to give workers the right to reduce their work hours, a right already enshrined in most Dutch collective agreements.⁹³ Holland now has the highest rate of part-time work among OECD countries, but part-time work is considered "good work" in that country, and the rate of involuntary part-time work is just 6%, less than one-sixth the rate in Atlantic Canada.

In contrast to North Americans who are working longer hours, the Dutch, Danes, Norwegians, French and other European countries have actively reduced work hours both in order to spread the work more evenly and thus to reduce unemployment and underemployment as well as overwork, and also to improve work-family balance. Since the unemployed have a reduced life expectancy and suffer significantly more health problems than people who have a job, the reduction and redistribution of work hours can have positive health effects in several ways.⁹⁴

Atlantic provincial governments could begin shifting the focus in this direction in a simple cost-free way -- by giving annual honorary awards to businesses that institute family-friendly work arrangements, including flexible work hours, job-sharing arrangements, and the right to reduce working hours without career penalties. Working women in particular, still carrying most unpaid household work responsibilities, would benefit greatly from such initiatives here. GPI Atlantic is willing to work with provincial governments in providing information, contract language and successful case study models of work reduction initiatives in other jurisdictions that have helped reduce work stress and improve work-family balance.

7. Personal Lifestyle

It is already abundantly clear that the twelve determinants of health identified by Health Canada are highly interactive. As noted above, low income and poorly educated people, the unemployed, and those who work excessively long hours are all more likely to have unhealthy lifestyle behaviours that put them at greater risk for a wide range of illnesses. This is actually very good news, because even a modest gain in one health determinant is likely to produce multiple benefits in many others.

These positive spin-offs also make the health determinants approach far more cost-effective in the long run than disease treatment expenditures that target specific symptoms after the fact and do nothing to tackle the causes of ill-health. The latter approach, which currently accounts for 98% of our "health" expenditures, is analogous to putting all justice resources into prisons rather than crime prevention.

Dr. David MacLean, head of the Community Health and Epidemiology Department at Dalhousie Medical School, and principal investigator of Heart Health Nova Scotia has argued that we currently deal with chronic diseases like heart disease, cancer and diabetes

...by relying almost exclusively on clinical care provided by highly trained health

care professionals. We need to balance our health care system with an increased emphasis on health promotion and chronic disease prevention (that)...enable individuals to live healthy, full lives characterized by not smoking, active lifestyles and healthy diets....(P)hysical inactivity, obesity and smoking continue to cost the system both financially and in human terms. In fact studies show that these adverse health risks translate into significantly higher health care charges.

Disease prevention strategies lower health costs because individuals consume fewer health care resources at all ages. This also means that lengthening life expectancy will improve health outcomes and not lead to prolonged periods of disability, as many policy makers feared when these concepts were first introduced.... Striking a healthy balance for our health system means reducing the demand for expensive high-technology health care -- and realistically, this can only be accomplished by reducing the burden of illness from chronic disease.⁹⁵

We have seen that strategies to improve literacy and reduce poverty, inequality and work stress, will positively influence lifestyle behaviours that directly impact health. In this area, there is clearly a vast scope for improvement in the Atlantic provinces. In section one, we noted disturbing trends in levels of physical activity, particularly among men, that have transformed an Atlantic region advantage into a deficit by comparison with the national average. Other lifestyle indicators, like high rates of smoking and obesity, also portend future population health problems and higher health care costs.

(i) Smoking

Smoking is acknowledged as the most important preventable cause of death and illness in industrialized countries. Lung cancer is the most predictable outcome of smoking, although it also causes other cancers (oral, larynx, etc.), and is a significant risk factor for coronary heart disease and hospitalization. Smoking is estimated to cost the country \$10 billion annually in direct and indirect costs.⁹⁶ In Canada, smoking is estimated to be responsible for 45,000 deaths a year -- at least one-quarter of all deaths for adults between the ages of 35 and 84. The principal causes of death for smokers are cancer (41%) and heart disease (19%).⁹⁷

With the exception of Quebec, the four Atlantic provinces have the highest smoking rates in the country, at 31% of the population 12 years and older.⁹⁸ Again, a gender breakdown is revealing. Prince Edward Island's high smoking rate is almost entirely due to its men who smoke at twice the rate of the Island's women. In fact, P.E.I. women have the lowest smoking rate in the country, a fact that may well be related to having the smallest gender wage gap and the lowest rates of low-income incidence and child poverty in the country. By contrast, P.E.I. men have the highest smoking rate in the country, a fact that portends poorly for long-term male health, especially when considered in conjunction with the dramatic decline in male exercise and physical activity rates on the Island noted earlier.⁹⁹

Nova Scotia and Quebec have the country's highest smoking rates for women, 20% above the national average. As women smokers are twice as susceptible to lung cancer as male smokers, and since Nova Scotia already has the highest rate of lung cancer for women in the country, a well-targeted educational campaign aimed at reducing female smoking rates in the province would be extremely timely.¹⁰⁰ Lung cancer incidence and death rates among women are now almost five times as high as rates in 1970.¹⁰¹ It was already noted section 1 of this report that smoking among teenage girls in Nova Scotia has shot up dramatically from 26% in 1991 to 38% today.¹⁰²

Nova Scotia's continuing high smoking rates are a concern for both sexes, as the province has the highest overall cancer death rates for both men and women in the country. The overall cancer death rate for Nova Scotia men is 21% above the national average and lung cancer mortality among Nova Scotia men is 31.4% higher than the Canadian average. The cancer death rate for Nova Scotia women is 13% above the national average. Nova Scotia and New Brunswick have the highest overall cancer incidence rates in the country for men; and Nova Scotia and Prince Edward Island have the highest rates for women (Chart 12).¹⁰³

Chart 12: Cancer Incidence and Deaths, 1999
(Age-standardized rate per 100,000 population)

Chart 12 (a): All Cancers

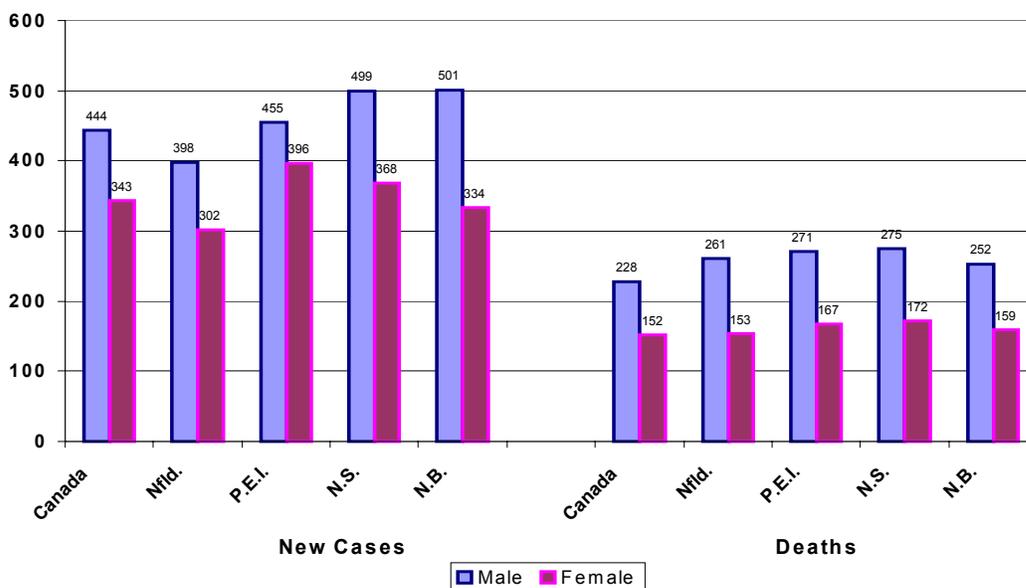
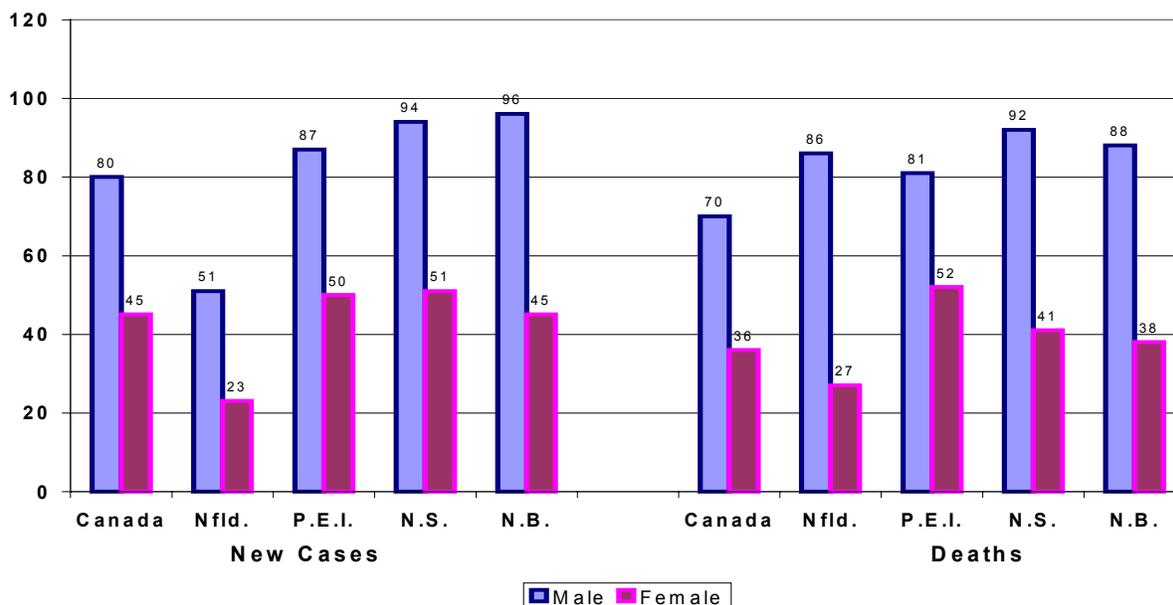


Chart 12 (b): Lung Cancer



The health risks of smoking are measured not only by smoking incidence, but also by cigarette consumption and by nicotine dependence. Newfoundland smokers have the lowest cigarette consumption in the country, but that low average is due to the fact that women smokers in that province are generally light smokers, with nearly half smoking between one and 10 cigarettes per day. Newfoundland men smoke much more heavily, with one in eight consuming 26 or more cigarettes per day. Maritimers on the whole, both men and women, smoke more heavily than other Canadians.¹⁰⁴

There are additional health concerns for women smokers. More than one-third of Canadian women under 40 who smoke daily smoked during their last pregnancy despite the considerable health risks to new-born babies. Though fewer P.E.I. women smoke than the Canadian average, those that do smoke have higher rates of cigarette consumption. Island women who smoked during their most recent pregnancy reported consuming an average of 15 cigarettes daily during that time.¹⁰⁵

Nova Scotian smokers have the highest rate of nicotine dependence in the country, with 28% of daily smokers having their first cigarette *within five minutes* of waking in the morning. Nearly 70% of New Brunswick daily smokers reach for their first cigarette within half an hour of waking. With such high rates of nicotine addiction, it is not surprising that a smaller proportion of Atlantic Canadian smokers has considered quitting than the Canadian average.¹⁰⁶

The health risks of smoking are not confined to smokers. Environmental tobacco smoke ("second-hand smoke" or ETS) is also hazardous. Young children are particularly susceptible to

the effects of ETS, with increased risks of developing asthma, respiratory illness, reduced lung development, middle ear infection and a variety of other conditions, as well as increased risks of later smoking and nicotine dependence.¹⁰⁷

Studies have found that the two most effective means of discouraging cigarette smoking are tobacco taxes and bylaws against smoking in public.¹⁰⁸ Especially among young people, smoking has been shown to be extremely price-sensitive, and it is no coincidence that teen smoking in the Atlantic provinces rose dramatically at the same time that lower tobacco taxes reduced cigarette prices. Raising cigarette prices is the simplest and most effective means to reduce smoking.

A Health Canada study found that Atlantic Canadians are far less likely to be protected by bylaws restricting public smoking than other Canadians. The 1995 study found that eighty-one percent of the Ontario population is protected by such bylaws, compared to just 3% in Newfoundland, 13% in P.E.I., 27% in Nova Scotia, and 30% in New Brunswick -- the lowest rates in the country.¹⁰⁹ This is ironic, because the 1996-97 National Population Health Survey found that Atlantic Canadians are the *most* strongly in favour of smoke-free environments and are *more* aware than other Canadians about the damaging health effects of second-hand smoke.¹¹⁰ In other words, public support for smoke-free environments appears to be greater in the Atlantic provinces than in the rest of the country, and Atlantic Canadians seem to be far readier for more public smoking restrictions than governments are to impose them. Given the costs of smoking to the health care system, the time for decisive action seems ripe.

(ii) Obesity and High Blood Pressure

Overweight and obesity are linked to a wide range of health problems, especially cardiovascular disease, diabetes, and some forms of cancer. A Statistics Canada analysis found that obese Canadians (with a body weight in excess of 30 BMI, calculated by dividing weight by height) were four times as likely to have diabetes, 3.3 times as likely to have high blood pressure, 2.6 times as likely to report urinary incontinence, 56% more likely to have heart disease, and 50% *less* likely to rate their health positively than Canadians with an acceptable weight. Overweight Canadians (BMI between 25 and 30) also had a significantly higher risk of asthma, arthritis, back problems, high blood pressure, stroke, diabetes, thyroid problems, activity limitations, and repetitive strain injuries.¹¹¹

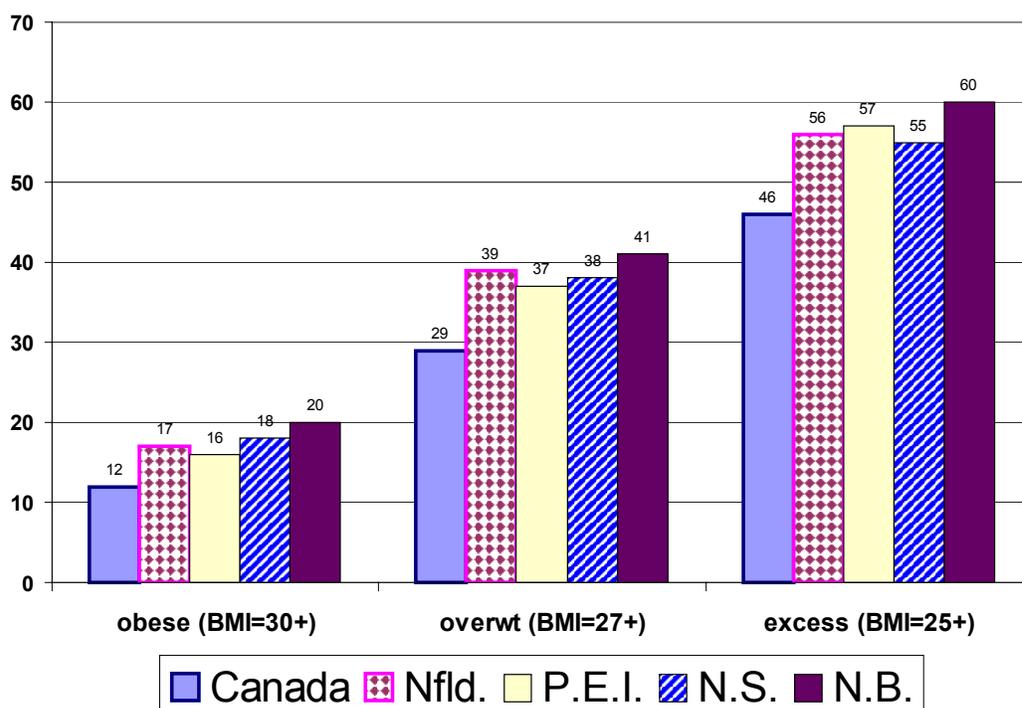
It is not surprising that obesity is costly to the health care system. The cost of obesity related to type II diabetes and hypertension alone has been estimated at \$1.089 billion in Canada.¹¹² In the United States, with the highest rate of obesity among OECD countries (23% -- twice the Canadian rate), the diet and weight loss industries are estimated to add \$32 billion annually to the U.S. GDP, and obesity-related illnesses are estimated to add \$50 billion more. Excess weight kills an estimated 280,000 Americans each year.¹¹³

Physical inactivity is clearly related to overweight and obesity rates, with a 44% higher rate of obesity among sedentary Canadians.¹¹⁴ Poor diet and nutrition are also contributing causes. The American Academy of Pediatrics recently reported that "increased television use is documented to be a significant factor leading to obesity,"¹¹⁵ and may help explain why 25% of U.S. children today are overweight or obese. Another study found that children lost weight if they simply watched less television.¹¹⁶

Gender differences are significant: Men are nearly 20% more likely to be obese than women, and are 50% more likely to be overweight to the level of probable health risk (BMI = 27+). But there has been a steady increase in the prevalence of overweight among both men and women since 1985, and the rate of increase is now greater among girls than among boys.¹¹⁷

The issue has particular significance for Atlantic Canada, which has the highest rates of overweight and obesity in the country. New Brunswick, Newfoundland, Nova Scotia and Prince Edward Island registered the highest rates of unhealthy body weight (BMI = 27+) in the country, with the New Brunswick rate 45% above the national average. Fully 20% of New Brunswickers are obese (BMI = 30+), 67% higher than the Canadian rate (12%). Nova Scotia has the second highest rate of obesity in the country -- 18% (Chart 13).¹¹⁸ Studies have found that under-reporting produces an average underestimate of about 10% in BMI scores, so the percentages given here are conservative.

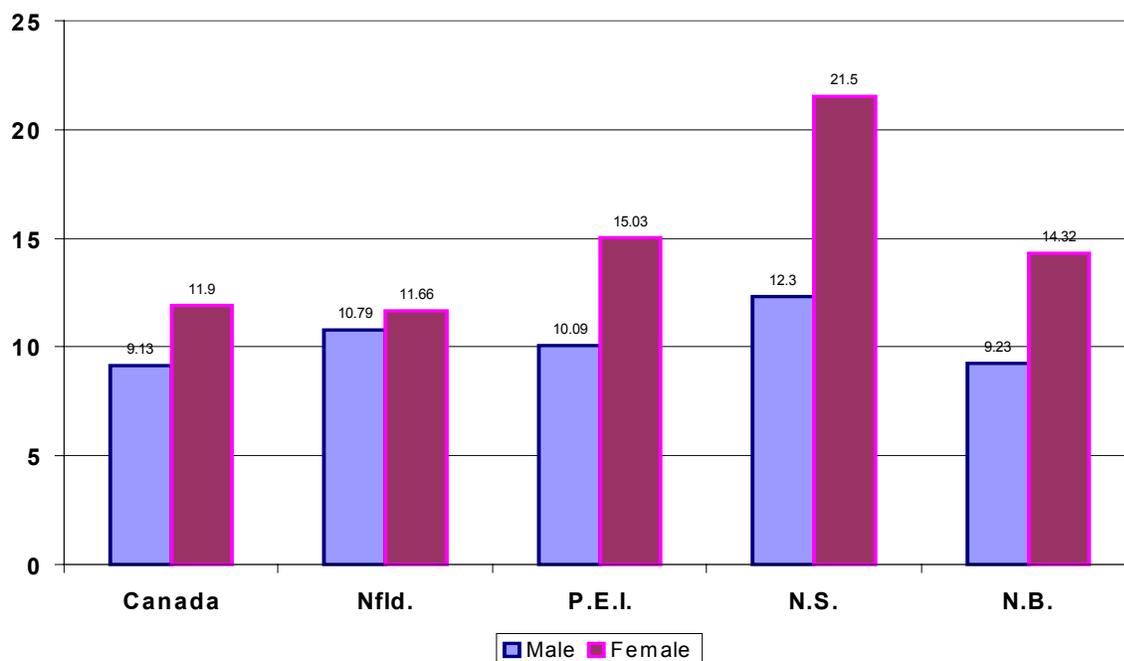
Chart 13: Overweight and Obesity, age 20-64 (%)



We have noted that overweight individuals have significantly higher odds of reporting high blood pressure, which operates as an independent risk factor for cardiovascular disease. All four Atlantic provinces register higher than average rates of high blood pressure, and Nova Scotian men and women consistently record the highest rates in the country. Seventeen percent of Nova Scotians have high blood pressure, a rate 62% higher than the Canadian average. In previous surveys, too, Nova Scotians have recorded 32%, 40% and 50% higher rates of high blood pressure than the Canadian average.¹¹⁹

Again, a gender analysis is revealing. A particularly high percentage of Nova Scotia women record high blood pressure (more than one in five), 80% above the national average, and 43% above the next highest province (Prince Edward Island). Again this high rate has been consistent over time. In previous surveys, in 1985, 1991, and 1994-95, the rate of high blood pressure for Nova Scotian women was 46%, 50% and 55% above the national average. While rates of high blood pressure have declined across the country, they remain stubbornly high among Nova Scotian women (Chart 14).¹²⁰

Chart 14: Population with High Blood Pressure, 1996-97 (%)



Personal lifestyle behaviours, which are themselves related to income, education, employment status and other health determinants, have direct health outcomes. The Heart and Stroke Foundation reports that provincial prevalence rates of smoking, high blood pressure, physical inactivity, and obesity tend to run parallel to the rates for cardiovascular disease.¹²¹ We have

seen that the Atlantic provinces rank high on all four risk factors, and, indeed, Newfoundland and Prince Edward Island record the highest mortality rates in the country due to cardiovascular disease.¹²²

This report has not considered diet, another major lifestyle determinant of heart disease, on which there is a dearth of good provincial data. As Newfoundland has by far the highest incidence and death rate from stomach cancer in the country, twice the national average, and since stomach cancer is linked closely with diet, an effective health promotion strategy in that province will clearly focus on this risk factor.¹²³

Deaths from cardiovascular disease have been declining in Canada since 1970, both among men and women, although more slowly among women, largely due to growing awareness of risk factors and changes in lifestyle, including declines in smoking and consumption of fatty foods. Cardiovascular disease, however, is still the major cause of death in Canada. While more men than women die of ischemic heart disease (22% versus 19%), more women die of stroke (9% versus 6%).¹²⁴

Rising stress rates, a significant risk factor, may portend a higher future incidence of cardiovascular disease, especially since it is linked to other risk factors like poor diet, physical inactivity and increased smoking. If the considerable gains of the last three decades are to be protected -- Canada currently has one of the lowest rates of cardiovascular mortality among all developed countries¹²⁵ -- then attention must be paid now, particularly in the Atlantic provinces, to some of the troubling recent lifestyle trends discussed here.

8. Preventive Health Services

We have focused deliberately on some of the "big issues" that have the broadest impact on population health, -- education, income, poverty, employment, healthy lifestyles, and gender itself -- and looked at some of their impacts on women's health. We have also omitted discussion of some of the most important determinants of health, like the impact of the physical environment. But there are also some basic practical health measures that can prevent diseases of particular concern to women.

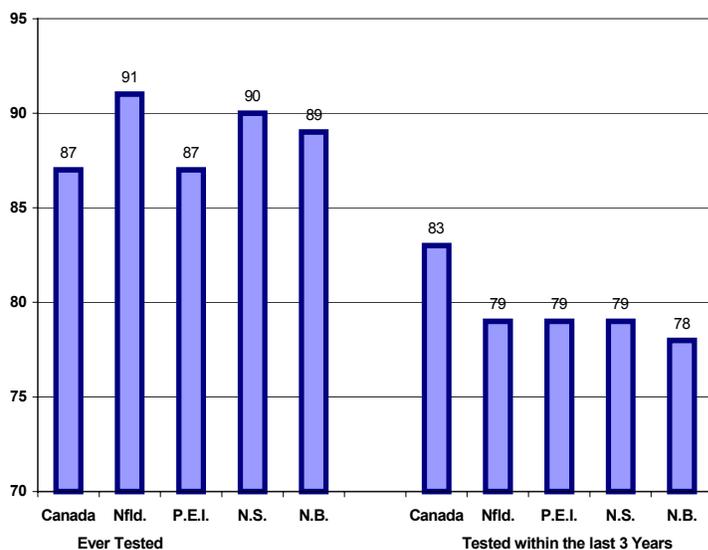
As noted earlier, only a tiny proportion of health care expenditures are devoted to health promotion and disease prevention. But of those that are, the availability of pap smear tests, mammograms, and teenage sex education are of particular concern to women. All can prevent adverse health outcomes. In all three cases, there has been major improvement in the last 20 years, and in all three cases there are significant variations among the four Atlantic provinces.

(i) Pap Smear Tests

Cervical cytology screening with a Pap smear reduces the incidence of and mortality from cervical cancer. As a result of the widespread adoption of this simple screening procedure, cervical cancer incidence and mortality rates have fallen dramatically across the country. Between 1969 and 1998, the age-standardized incidence rate fell from 21.8 to 8.3 cases per 100,000, and the mortality rate from 7.4 to 2.2 deaths per 100,000.¹²⁶

Most cases of invasive cervical cancer today occur in women not previously screened *or* not screened recently. Interestingly, a higher percentage of women in the Atlantic provinces have been tested than the Canadian average; but women in this region are also the least likely to have been tested recently, with New Brunswick women the least likely in the country to have been tested in the last three years. As Pap smears are recommended every three years for women aged 18 and over, the Atlantic region results suggest that educational information focus on the importance of the time element (Chart 14).¹²⁷

Chart 14: Pap Smear Testing, Women, 18+, 1996-97



(ii) Mammogram Screening

Canadian women have a one in nine lifetime risk of breast cancer, the most common cancer to afflict women, one in 25 Canadian women will die from it, and the incidence of breast cancer has been rising steadily. Because of the relatively young age at which women die from breast cancer, it results in 98,000 potential years of life lost each year. The three Maritime provinces currently have among the highest rates of breast cancer incidence in the country.¹²⁸

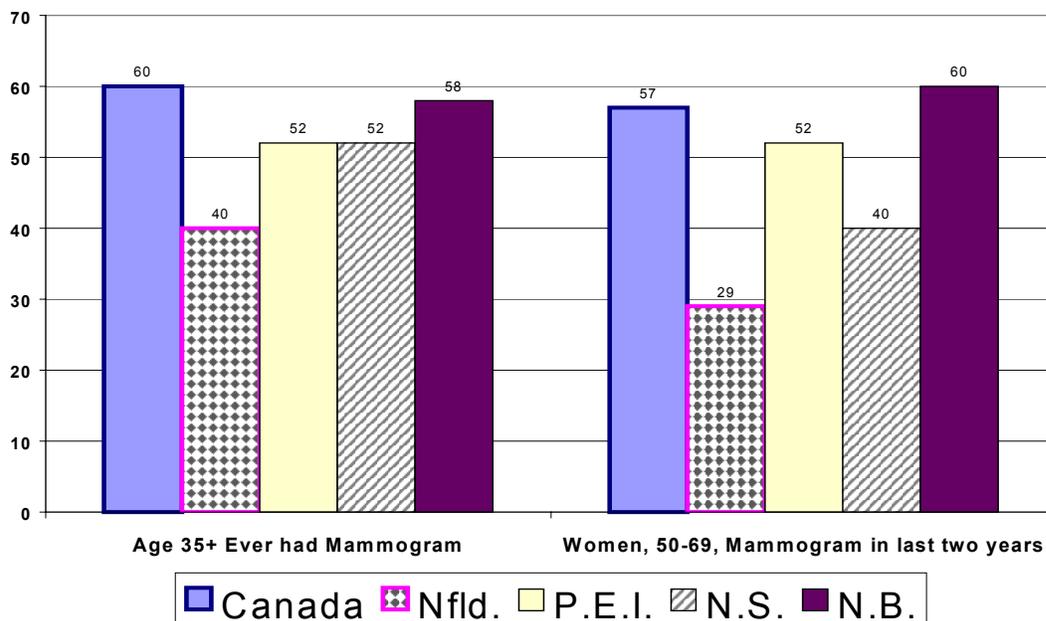
The good news is that early detection of breast cancer through mammograms has been shown to reduce mortality in women age 50-69, and the breast cancer mortality rate is now at its lowest since 1950.¹²⁹ The Advisory Committee on Population Health reports that:

*The dramatic increase in mammography use is a positive example of how public education combined with efficient screening practices can make a dramatic difference in the use of proven preventive measures.*¹³⁰

In 1990 just 47% of Canadian women 50 and over had ever had a mammogram. By 1996-97, the figure was 75%. Currently, mammography screening is recommended every two years for women aged 50-69, and the likelihood that a woman has had a mammogram increases with age, peaking at age 50-59.¹³¹

For women 35 and older, the Atlantic region still registers the lowest mammogram screening rate in the country. When regular screening for the 50-69 age group is considered separately, then the Atlantic provinces vary widely, with New Brunswick and Prince Edward Island registering higher screening rates, and Newfoundland and Nova Scotia registering the country's lowest screening rates on both measures(Chart 15). A recent report found the average waiting time for mammograms in the Halifax area is seven months.¹³² In other parts of Nova Scotia, even longer waiting times have been reported.

**Chart 15: Women, 35+, who have ever had a Mammogram;
Women, 50-69, Mammogram in last two years (%)**



A 1999 study for the Maritime Centre of Excellence for Women's Health study found that the Well Women's Clinics in Prince Edward Island are able to combine mammogram and Pap smear testing successfully with health education, including instruction in breast examinations.¹³³ Among the Atlantic provinces, in fact, women in P.E.I. have the highest rate

of breast examinations by health professionals, with Newfoundland, New Brunswick and Nova Scotia registering the lowest rates in the country. This successful P.E.I. model indicates a potential strategic investment for the other Atlantic provinces that can save expensive hospital costs, reduce mammogram waiting times, and increase screening rates in an atmosphere conducive to health promotion and public health education.

Mammogram screening and Pap test rates across the country are highly correlated with income. A clear policy priority is to provide greater access to health care services for marginalized, minority and low-income women.

(iii) Teenage Pregnancy

Pregnancy before age 20 entails a number of medical risks both for children and mothers. Teenage mothers have a greater risk of having a pre-term or low birth-weight baby or a baby with congenital abnormalities, and they themselves are less likely to complete their education and are more likely to live in poverty. In addition to unplanned pregnancies, unsafe sex can lead to serious sexually transmitted diseases, infertility and HIV infection.¹³⁴

The National Population Health Survey found that 51% of sexually active 15-19 year-old women had sex without a condom in the past year, and the four-province Atlantic student drug survey found that 50% of sexually active high school students had unplanned intercourse at least once under the influence of alcohol or drugs. As well, a study in Amherst, Nova Scotia, for the Maritime Centre of Excellence for Women's Health (MCEWH) found serious inadequacies in the sexual education offered to high school students by the province's health and education services.¹³⁵

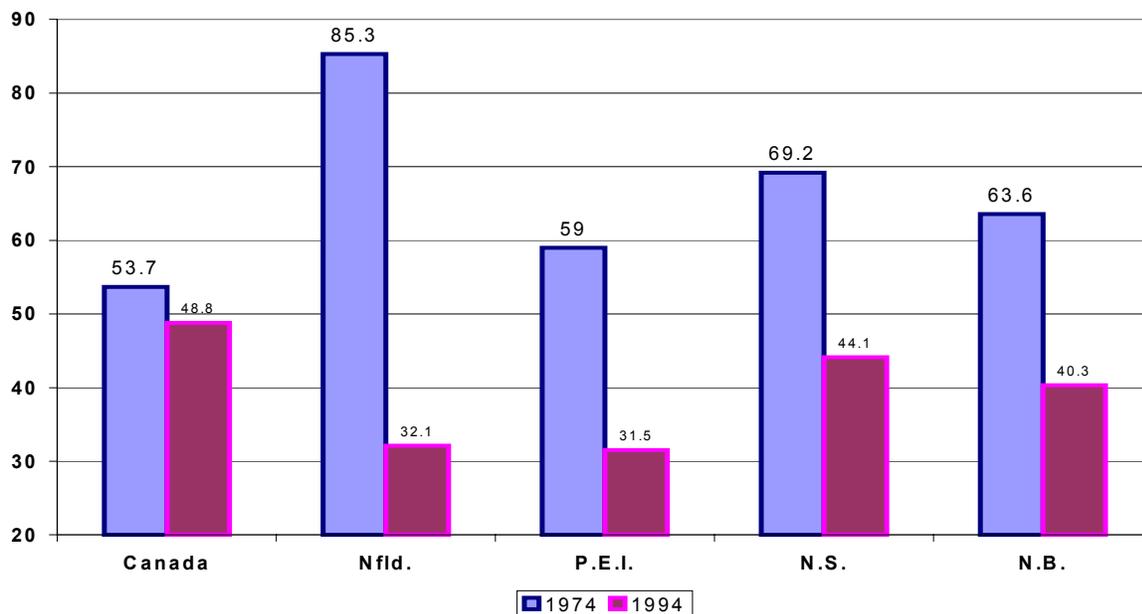
Despite these major concerns, the rate of teenage pregnancies has fallen sharply in the four Atlantic provinces since 1974. In the 1970s all four provinces recorded teen pregnancy rates well above the national average. By 1994, the Atlantic region had the lowest rates in the country, with a particularly dramatic 62% decline in Newfoundland from the highest to the lowest rates (along with P.E.I.) in Canada (Chart 16).¹³⁶

An explicit goal in Nova Scotia's "Government by Design" is to lower the teen pregnancy rate from 44 per 1,000 to 36 per 1,000 by 2005, though the MCEWH study warns that this will not occur without a major improvement in current sexual health services.¹³⁷ Nova Scotia currently has the highest teen pregnancy rate in the Atlantic region. The MCEWH and its researchers stand ready to work with Nova Scotia and the other Atlantic governments to identify the most cost-effective health service interventions to reduce the rate of unwanted teenage pregnancies.

As with all the issues identified in this report, prevention, education, and health promotion are far less expensive strategies than the significant social costs that are paid at a later stage. One Statistics Canada study noted that the Netherlands has one of the lowest teenage pregnancy and

abortion rates in the world. The Dutch teen pregnancy rate is less than one-quarter of the Canadian rate. And while teenage abortions in this country have increased by 60% in the last 20 years, the Dutch abortion rate is less than one-eighth the Canadian rate. Based on the Dutch experience, the study concluded that teenage pregnancies have been reduced through effective sex education, open discussion of human sexuality in the media, easier access to contraceptives, education programs, and active participation of parents and teenagers in such programs.¹³⁸

Chart 16: Teenage Pregnancy Rate, per 1,000 women, 15-19, 1974 and 1994



9. Social Supports

Families and friends provide needed emotional support in times of stress, and help provide the basic prerequisites of health such as food, housing and clothing. The caring and respect that occur in social networks, as well as the resulting sense of well-being, seem to act as a buffer against social problems. Indeed, some experts in the field believe that the health effect of social relationships may be as important as established risk factors such as smoking and high blood pressure.¹³⁹

We have already noted that, despite their material deficiencies in relation to the rest of Canada, Newfoundlanders experience remarkably high levels of mental health, which in turn has a range of positive physical health benefits. The strength of family, social and community supports is also a profound Atlantic region asset that undoubtedly buffers adverse health impacts. These strengths are not measured in our standard economic indicators, and are thus always in danger of being neglected and overlooked in the relentless quest for economic growth

and material wealth. But there is no doubt that it will serve the region and the health of its population well to nurture, maintain and strengthen the network of community supports that contributes so much to the quality of life in Atlantic Canada. MCEWH researchers were impressed, for example, to note the centrality of "community" in the P.E.I. Throne Speech last year.

(i) Family and Shared Households

Space does not permit here a full discussion of the range of social supports that are vital to good health. But clearly family and household members can not only provide vital requisites of good health but also be a central pillar of support in times of illness. Divorce rates are one indicator of family instability and breakdown. Newfoundland has the highest marriage rate and the lowest divorce rate in the country, with Prince Edward Island and New Brunswick also registering divorce rates well below the national average.¹⁴⁰ A double caveat must be added here: In some cases family is not a safe place. Family violence can have a devastating effect on the health and well-being of women and children in both the short and long term, and divorce can be a healthy alternative to spousal abuse.¹⁴¹ There are also alternative shared household models that provide strong social support, aside from the traditional family.

The National Population Health Survey tested social support levels by questions like whether respondents had someone to confide in, count on in a crisis, count on for advice, and make them feel loved and cared for. Among household types, single parents had the lowest levels of social support. Newfoundland, Prince Edward Island and New Brunswick all have a smaller proportion of single-parent families than the national average, and thus fewer individuals in this low-support group; while Nova Scotia has more.¹⁴²

One of the most significant changes in family function today is the result both of an aging population and of the de-institutionalization of the health care system. The sick, elderly and disabled are depending more than ever on informal family caregivers, mostly women. Because of the vital importance of this issue to women's health, the MCEWH has commissioned two separate studies of family care-giving, and is willing to work with all Atlantic governments to ensure that this massive social change can save governments money, enhance healing and social support for those in need, and strengthen families.¹⁴³

Early research on this emerging trend indicates that informal caregivers are becoming increasingly time stressed, suffer significant job disruptions to care for family members in need, often face difficult financial circumstances, and require better access to information in order to provide care effectively. Most disturbingly, a significant proportion of caregivers are themselves suffering adverse health consequences as a direct result of the increased burden of care-giving. One analyst warned that "women's 'double day' of paid work and unpaid domestic labour" has led to an emerging "crisis of care-giving, a direct result of the 'time crunch' that now characterizes the female life course."¹⁴⁴

The tremendous growth in informal family care-giving holds great promise for all. But if it is not accompanied by some transfer of resources, support, information, respite, and assistance, the potential benefits may turn into liabilities, and the caregivers themselves may not only be unable to provide the needed care to their husbands and parents but be in need of it themselves.¹⁴⁵

(ii) Social Health

The Advisory Committee on Population Health points out that

The importance of social support also extends to the broader community. Civic vitality refers to the strength of social networks within a community, region, province or country. It is reflected in the institutions, organizations and informal giving practices that people create to share resources and build attachments with others.

Evidence is strong that these networks are still more vibrant in Atlantic Canada than in other parts of the country, and we shall look briefly at one such body of evidence in the next section. In fact, the social inclusion project of the Maritime Centre of Excellence for Women's Health has specifically identified support groups in the four Atlantic provinces that are playing a major role in strengthening these community networks and promoting women's health.¹⁴⁶

However, the evidence is equally strong that these support networks cannot be taken for granted and may well be in decline. One indicator is the "Index of Social Health" recently developed by Human Resources Development Canada in conjunction with Statistics Canada. The fifteen components of the index include trends in rates of poverty, child abuse, infant mortality, teen suicides, drug abuse, high school dropouts, crime, alcohol-related fatalities, access to affordable housing, and other factors.

HRDC found that all provinces have experienced a decline in their social health indicators since the early 1980's, with Newfoundland and New Brunswick registering modest declines (5% and 8%), and Prince Edward Island and Nova Scotia much steeper declines (15% and 21%). In fact, the Nova Scotia drop is the 2nd steepest in the country.¹⁴⁷ In a separate study, GPI Atlantic found that the Nova Scotia crime rate today is 98% of the national average, up sharply from two-thirds the Canadian rate 25 years ago.¹⁴⁸ While the province still has a significantly lower rate of serious crimes, the social health indicators bear watching, especially as these worrying trends can remain invisible in the standard measures of progress based on economic growth statistics.

(iii) Volunteers

As noted earlier, the World Health Organization defines health as "***a state of complete physical, mental, spiritual and social well-being.***" That is a positive, powerful, and uplifted goal, and it will not serve our collective purpose and intention to give in to despair or negativity about the difficulties and challenges we face in reforming our health care system. For that reason, we end this overview on a strongly positive note by referring to one of the great strengths of this

Atlantic region -- our simple caring for each other, that may be our most powerful asset in fostering genuine population health.

A good indicator of caring and generosity is the strength of a society's voluntary sector, in which people "give of themselves to contribute to the common weal," and thus create a strong "civil society," where citizens express their deepest aspirations to help others. A Statistics Canada national survey of volunteers found that, given a list of 15 possible reasons to volunteer, the vast majority of volunteers said their motive was simply "to help others." That civil society, in which individuals freely choose their own interests and associations is, in turn, a critical indicator of healthy participatory democracy. Weak civil societies are subject to more social unrest, alienation, higher crime rates, drug abuse and other dysfunctional activities.¹⁴⁹

Many volunteers work specifically in health, care-giving and social services, volunteering in hospitals, palliative care and hospice units, nursing homes and mental health associations. Others volunteer with first aid groups, the Heart Foundation, the Cancer Society, the Lung Association, the Multiple Sclerosis Society, the Diabetes Association, the VON and many other groups. Volunteers assist the elderly and disabled, staff help lines, and work in food banks, soup kitchens, sheltered workshops, and homes and shelters for abused women and children. Others contribute to population health by voluntarily coaching neighbourhood sports teams, working for groups like the Children's Aid Society, Big Brothers and Sisters, and Easter Seals, counseling victims, helping out in schools, literacy programs and youth groups, protecting the environment, organizing church camps, fighting fires, helping in search and rescue operations, and promoting occupational health and work safety.¹⁵⁰

Yet, despite its enormous contribution to population health, the work of volunteers is invisible in our standard measures of progress based on economic growth statistics, because money is not exchanged. If the voluntary sector were to decline in strength, there is no doubt that our standard of living, quality of life, and population health would decline markedly. Aside from the direct value of the work performed, the voluntary sector also strengthens communities and creates that wider network of social support identified by experts as a vital buffer against the stressors responsible for ill-health and disease.

The value of caring and giving is sometimes measured by rates of charitable contributions, and we know that Atlantic Canadians have higher rates of giving despite their comparative lower incomes, with Newfoundlanders registering the highest per capita donations in the country. But the value of voluntary work[‡] exceeds the value of charitable giving by a factor of 20 to 1. If voluntary services were replaced for pay, they would contribute \$1.9 billion a year of services

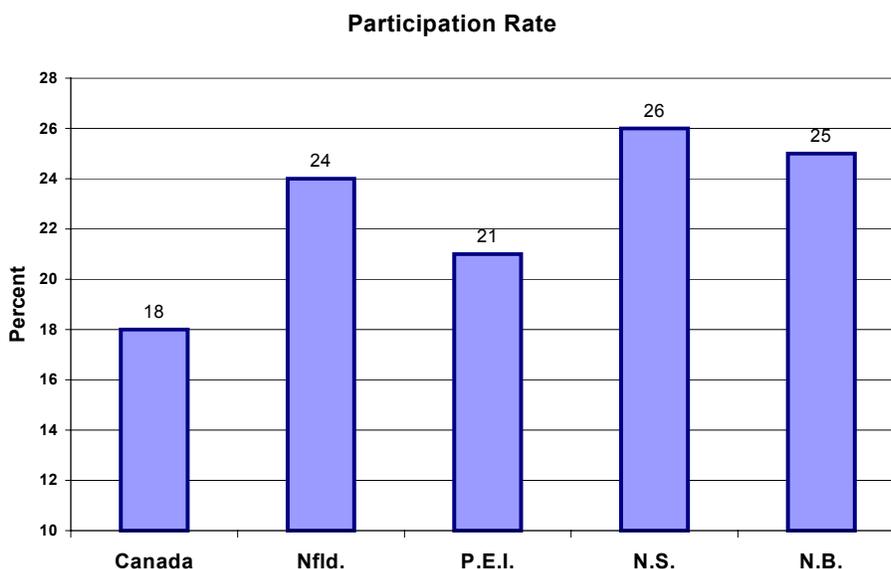
[‡] NOTE: In all the tabulations that follow, voluntary work is taken to include both "formal" and "informal" voluntary work. The former includes services offered through statutory non-profit organizations; the latter refers to help and care given directly by citizens to those outside their own households but not through any organization. It might include shopping for a disabled neighbour, shoveling an elderly person's driveway, or visiting and helping the sick and infirm. Time use studies reveal that more than two-thirds of voluntary work is "informal," with the remaining one-third offered through formal organizations. The results here should therefore not be confused with other estimates based only on formal voluntary work.

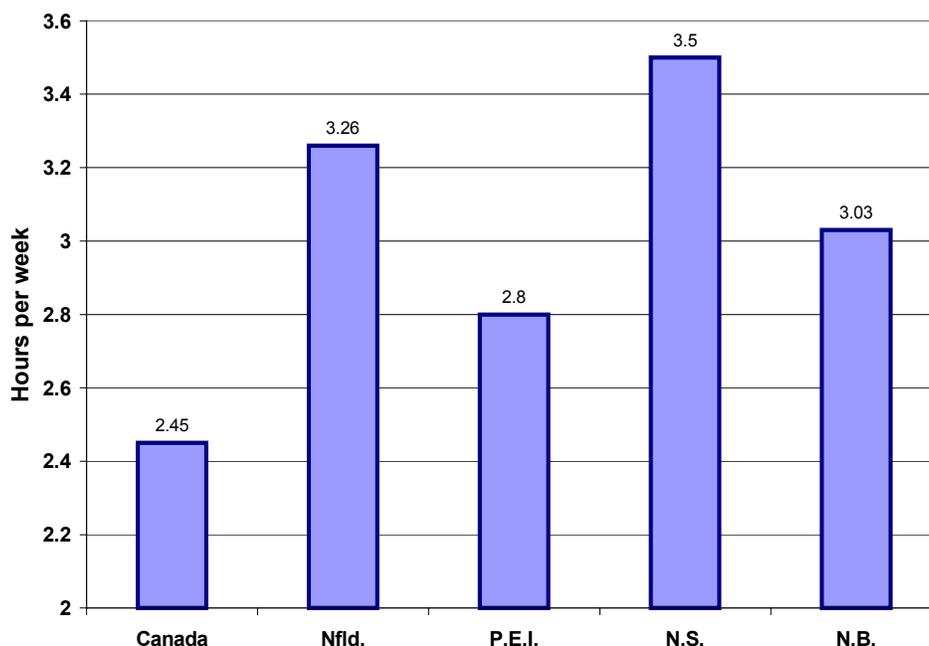
to the Nova Scotia economy, \$1.2 billion to New Brunswick, \$1 billion to Newfoundland, and \$230 million to Prince Edward Island. When volunteers' out-of-pocket expenses are added, the voluntary sector contributes services equivalent to nearly 10% of the total value of the Gross Domestic Product in Atlantic Canada, more than any other industry.¹⁵¹

Atlantic Canadians have by far the highest rates of volunteering in the country, with residents of all four provinces contributing far more voluntary hours per capita than other Canadians, with Nova Scotians registering the highest rates in the country, exceeding the national average by 43%. Nova Scotia is followed closely by Newfoundland, New Brunswick and Prince Edward Island.

Nova Scotians give 138 million hours of voluntary service time a year, equal to three and a half hours each week for every person 15 years and older. This is more than a hour a week longer per person than the Canadian average, and is the equivalent of more than 80,000 jobs in the province. Newfoundlanders give more than 75 million hours a year, New Brunswickers nearly 100 million hours, and Prince Edward Islanders 16 million hours a year of voluntary service time (Chart 17).

Chart 17 (a): Volunteer Participation Rate, population 15+, 1998 (%)
Chart 17 (b): Weekly Hours per capita, population 15+, 1998





In the chart above, it should be noted that people who volunteer actually give far more hours per week on average, as the per capita hours are averaged over the entire adult population, including non-volunteers.

The enormous contribution that Atlantic Canadians are making to population health through their generosity and care cannot be taken for granted, as it sometimes is in the relentless pursuit of economic growth and material well-being. There are troubling signs that an increasing time crunch and rising stress levels are eroding a powerful Atlantic advantage. Funding cuts and inadequate resources are also putting increasing strains on volunteer and non-profit social and community service groups.

Results from the 1997 National Survey on Giving, Volunteering and Participating reveal that, on an hourly per capita basis, formal volunteering through non-profit organizations has declined by 4.7% across the country since 1987, and by 6.4% in Newfoundland, 2% in Prince Edward Island, 7.2% in Nova Scotia, and 3.9% in New Brunswick.¹⁵² This decline in formal voluntary work appears to be accompanied by a substantial increase in informal voluntary work, mainly by women, as a result of changes in the health care system, and reductions in hospital services and government social service expenditures, necessitating an increase in informal care-giving. Non-profit organizations report increasing difficulties in recruiting volunteers for leadership positions that demand substantial time commitments, and in meeting increased demands with fewer staff and financial resources. Volunteer burnout is widely reported.¹⁵³

The troubling trend appears to be related to labour market developments. Restructuring and downsizing of firms and government agencies has led to longer hours and higher rates of

unpaid overtime for highly skilled and educated staff retained and required to maintain and exceed previous production levels with fewer staff. The highly educated, who are putting in longer paid work hours, also have a far higher rate of volunteering than groups with less education, leading to a serious time squeeze on the voluntary sector.¹⁵⁴ In addition, married women, whose severe time stress juggling job and family responsibilities was noted earlier, also have the highest rate of volunteer participation of any household type.¹⁵⁵ As well, declining real wages in the 1990s has led many families to work longer hours to make ends meet.

With increasing work and family responsibilities, voluntary work is in danger of getting squeezed out, with serious potential implications for population health. Women, as noted earlier, have far higher rates of time stress than men, but stress levels have been rising dramatically through the 1990s for both sexes. The preoccupation with economic statistics and paid work trends has left the threats to the voluntary sector invisible and unnoticed in the policy arena.

Provincial government action to recognize, support and strengthen the voluntary sector in the Atlantic region can be a vital strategic investment to protect a powerful asset that distinguishes this region and makes a critical contribution to the health of its people. The boundless reserve of generosity and care that characterizes the region and contributes to its special quality of life is one of the most significant and positive determinants of health for Atlantic Canadians. Even more broadly, it signifies the real *capacity* that exists in this region to make genuine progress in all the determinants of health described in this overview, and to improve the health both of Atlantic Canadian women and of the population as a whole.

EPILOGUE: Improving Population Health through Sharing Resources Fairly

It is clear from this overview that:

- 1) a population health approach can provide policy makers with the information needed to make wise strategic investments in the determinants of health that can improve well-being and save money in future disease treatment costs;
- 2) the determinants of health are highly interactive, with wise investments in one determinant producing significant improvements in several others, and resulting in positive physical, mental and social health outcomes;
- 3) particular socio-economic determinants of women's health, like the high poverty rates of single mothers and rising time-stress levels, stand out as clear targets for such investments that can significantly improve the health of women;
- 4) health benefits are not equitably distributed, either geographically or among different population groups. A population health approach can successfully identify "at-risk" groups where investments can bring the greatest return in health benefits and savings in future hospitalization and health service costs;

- 5) that there is an urgent need for more research into the determinants of health, with particular emphasis on their interaction, and on current data gaps, such as environmental impacts on health, mental health, quality of care, informal home care-giving, and provincial gender breakdowns.

It is axiomatic today that knowledge and good information are the essential prerequisites to effective policy. It is not unreasonable to argue that good policy-relevant research holds the key to the potential benefits of a population health approach described above. Just as a population health approach provides information on inequities in the distribution of health benefits, this overview would be remiss if it did not point to inequities in the distribution of health research resources.

Just as women have particular health needs, this region has its particular health issues that require vital research. For example, what accounts for Nova Scotia's high cancer rates, or declining rates of physical activity rates among Atlantic region men, or Newfoundland's high mental health status, or Prince Edward Island's low child poverty rates? These and many other issues raised in this overview require investigation if we are to improve the health of Atlantic Canadians and save money in future health care costs.

It is, therefore, particularly disturbing that the Atlantic region receives far from its "fair share" of health research funds. In the last six years the four Atlantic provinces together have received an average of 2.9% of the \$250 million spent annually by the Medical Research Council of Canada, or about two-thirds less than what would be due based on our population share. Of the \$90 million in research funds awarded annually through the Social Sciences and Humanities Research Council of Canada, the Atlantic provinces receive only about 4%, or half what would be due based on population share. To make improvements in population health in this region, it is essential that we *learn about ourselves*. It is not unreasonable to draw a parallel between some of the poorer health outcomes in this region and the inadequacy of knowledge and research into their causes.

Clearly the inequities in health research funding are part of a growing inequity in provincial-federal fiscal relations. After major cuts in federal health care funding, the Atlantic provinces have cut staff and are struggling to maintain essential services while Ottawa reaps huge surpluses and is actually expanding the size of its health bureaucracy. It is clear from this overview that a narrow medical disease treatment perspective on health is inadequate both to improve population health and to save money. The portrait has therefore looked more broadly into several social and economic determinants of health. This epilogue would be remiss if it did not add a political dimension to the mix. A fundamental questioning of inequities in provincial-federal fiscal relations, including both health care and health research funding, can be regarded as an equally essential determinant of Atlantic region health.

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¹³ Canadian Institute for Health Information, *Hospital Morbidity Database, 1995-96*, cited in ACPH, *Toward a Healthy Future*, exhibit 6.4, page 142 on hospital days; and *The Changing Face of Heart Disease*, Table 2-2, page 62, adjusted to 1996 dollars, on hospital costs for cardiovascular disease.

¹⁴ Health Canada, *Women's Health Strategy*, March, 1999, page 1 (see endnote 1).

- ¹⁵ Statistics Canada, *CANSIM database* Matrix #M1011, Tables H501100 - H501212; available at <http://cansima.statcan.ca/cgi-win/CNSMCGI.EXE> Percentages calculated by the author using population figures for 1985 and 1996 from Statistics Canada, *CANSIM Database*, Matrices #M6367 - M6371 inclusive, and selected Tables from C892268 to C893542. In this, as in all provincial tables, caution must be exercised in interpreting trends for Prince Edward Island, as sample sizes are frequently small and produce a larger margin of error than for the other provinces.
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- ²² These outcomes are taken from the various statistical tables in ACPH, *Statistical Report*, including pages 219, 225, 231, 270, 287, 315, and elsewhere. "Functional health status" is based on the Comprehensive Health Status Measurement System which combines two components: a) a description of eight functional health attributes -- vision, hearing, speech, mobility, dexterity, cognition, emotion, and pain/discomfort; and b) a McMaster University survey asking individuals to rank various health conditions in order of the severity of their effects on health. These two components are combined to produce an overall score for each respondent (*ibid.*, page 230).
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- ²⁶ Statistics Canada, *Mental Health Statistics, 1993-94*, catalogue no. 83-245-XPB, 1996; Canadian Institute for Health Information, *Hospital Morbidity Database, 1994-95, and 1995-96*; ACPH, *Toward a Healthy Future*, pages 142-143; ACPH, *Statistical Report*, pages 296-301.
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- ⁹⁵ David MacLean, M.D., "Striking Balance Between Care, Costs," *The Chronicle-Herald*, January 20, 2000, page C2
- ⁹⁶ E. Single, L. Robson, X.Xie, et. al., *The Costs of Substance Abuse in Canada*, Canadian Centre on Substance Abuse, 1995, cited in ACPH, *Statistical Report*, page 164.
- ⁹⁷ ACPH, *Toward a Healthy Future*, page 25; ACPH, *Statistical Report*, page 308

⁹⁸ ACPH, *Statistical Report*, page 167. Statistics Canada's *Health Statistics, 1999* CD-ROM, and the Statistics Canada *CANSIM* database, Matrix M1004, give figures which yield somewhat different smoking rates than the ACPH *Statistical Report*. According to the ACPH *Statistical Report*, for example, New Brunswick's smoking rate is the same as the national average, 28%. According to the *Health Statistics* CD-ROM and *CANSIM* database, the New Brunswick rate is almost identical to that of Newfoundland and P.E.I., and ranks #4 in the country. In the latter database, Nova Scotia ranks #2 after Quebec; whereas in the ACPH it ranks #3, after Quebec and Prince Edward Island. As well, the smoking rates in the *CANSIM* and *Health Statistics* databases are altogether between three and six percentage points lower than the ACPH estimates. (Smoking rates based on the Statistics Canada sources are calculated by the author.) Because of these uncertainties, unresolved at publication time, charts have not been included in this report.

⁹⁹ Statistics Canada, *Health Statistics 1999*, CD-ROM, and *CANSIM* database, Matrix M1004, tabulations by the author using Statistics Canada population statistics (*CANSIM* database, matrices M 6367-6378) to estimate the population 12 years and over by gender.

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¹⁰¹ National Cancer Institute of Canada, *Canadian Cancer Statistics 1999*, page 24

¹⁰² Province of Nova Scotia, *Nova Scotia Student Drug Use, 1998, Highlights Report*, Halifax, Nova Scotia, Department of Health, Drug Dependency, Dalhousie University, 1998.

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¹⁰⁴ Statistics Canada, *Health Statistics, 1999*, CD-ROM.

¹⁰⁵ ACPH, *Statistical Report*, pages 164-167

¹⁰⁶ ACPH, *Statistical Report*, pages 168-170.

¹⁰⁷ ACPH, *Statistical Report*, page 65.

¹⁰⁸ T. Stephens, L. Pederson, J. Koval, et. al., "The Relationship of Cigarette Prices and No-Smoking By-Laws to the Prevalence of Smoking in Canada," *American Journal of Public Health*, 1997, 87, pages 1519-1521, cited in ACPH, *Statistical Report*, page 63.

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¹¹⁴ Gilmore, op. cit., page 35.

¹¹⁵ "Media Education," *Pediatrics*, Vol. 104, No. 2, August 1999, pages 341-343, available at www.aap.org/policy/RE9911.html.

¹¹⁶ Thomas N. Robinson, "Reducing Children's Television Viewing to Prevent Obesity; A Randomized Controlled Trial," *Journal of the American Medical Association*, Vol. 282, No. 6, October 27, 1999, pages 1561-1567.

¹¹⁷ ACPH, *Statistical Report*, pages 264 and 267; Gilmore, op. cit., page 33.

¹¹⁸ Idem.

¹¹⁹ Statistics Canada, *Health Statistics, 1999*, CD-ROM, Table 0060121.IVT

¹²⁰ Idem.

¹²¹ Heart and Stroke Foundation of Canada, *Heart Disease and Stroke in Canada*, Ottawa, 1997; ACPH, *Toward a Healthy Future*, page 21.

¹²² ACPH, *Statistical Report*, page 291.

¹²³ National Cancer Institute of Canada, *Canadian Cancer Statistics, 1999*, Toronto, 1999, Tables 4 and 6, pages 20 and 22.

- ¹²⁴ ACPH, *Toward a Healthy Future*, page 21.
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- ¹²⁶ Judy Lee, Greg Parsons, Jane Gentleman, "Falling Short of Pap Test Guidelines," Statistics Canada, *Health Reports*, pages 9-19, esp. page 11, ACPH, *Toward a Healthy Future*, Pages 146-147, ACPH, *Statistical Report*, page 79.
- ¹²⁷ ACPH, *Statistical Report*, page 81
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