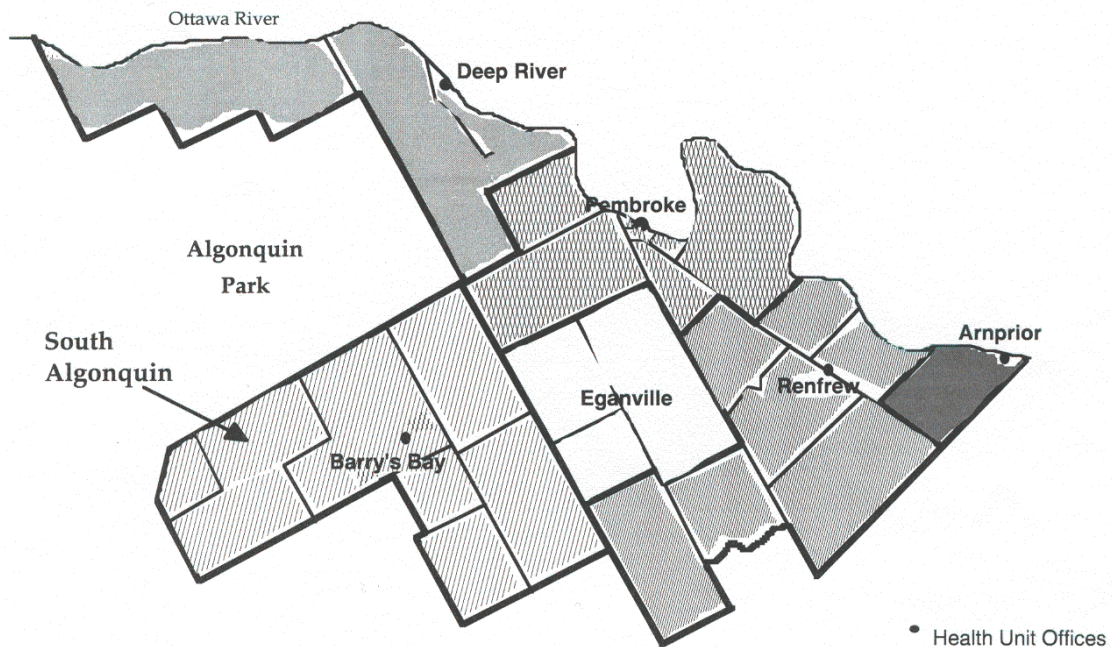


# OUR HEALTH IN RENFREW COUNTY AND DISTRICT

Issue #7 - December 2000



## Renfrew County and District Health Unit

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*"Promoting Healthy People in a Healthy Environment"*

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## **Executive Summary**

The current report is an update of material first published in December 1994 on major causes of death and premature death in Renfrew County and District.

New data are presented for the period 1991-1995 and compared with data for the previous reporting period, 1986-1990. The most recent data available, death rates for the years 1996 and 1997 are included on graphs depicting mortality rate trends.

The major findings are as follows:

### **Major Causes of Death**

- ◆ The average number of deaths per year has increased from 800 to 860, due to a combination of increasing population and population aging.
- ◆ The major causes of death are cardiovascular disease (44%, 380 deaths per year), cancer (27%, 230 deaths per year), respiratory disease (8%, 65 deaths per year), and injuries (6%, 48 deaths per year).
- ◆ The major causes of premature death (potential years of life lost or "PYLL") are cancer, cardiovascular disease and injuries.

### **Cardiovascular Disease**

- ◆ Cardiovascular disease (CVD) death rates declined in Renfrew County between 1986 and 1997 as they did across Ontario and Canada.
- ◆ Renfrew County's age-standardized CVD death rates remain significantly higher than Ontario's as reported previously; rates for all CVD, heart attack and stroke were 19%, 20% and 17% higher respectively for the period 1991-1995.
- ◆ Renfrew County's age-standardized rates of premature death or "PYLL" from CVD also remain significantly higher than Ontario's; rates were 37%, 45% and 39% higher in Renfrew County than Ontario for all CVD, heart attack and stroke between 1991 and 1995.
- ◆ Every year between 1991 and 1995 smoking caused approximately 75 CVD deaths while physical inactivity caused about 30 premature deaths from CVD.

### **Cancer**

- ◆ Cancer is the leading cause of premature death in Renfrew County, accounting for about 29% of PYLL between 1991 and 1995.

- ◆ The most common types of cancer and average number of deaths per year due to each one are as follows: lung, 56; colon, 25; breast, 19; lymphatic system, 17; and prostate, 16.
- ◆ Cancer death rates have been stable or declining for the past decade, with the exception of lung cancer in women, which continues to rise.
- ◆ Renfrew County's age-standardized death rates for cancer do not differ significantly from Ontario's.
- ◆ Rates of premature death (PYLL) from cancer were significantly higher in Renfrew County than Ontario by about 4% overall, down from 9% higher in 1986-1990.
- ◆ Specific types of cancer for which Renfrew County's premature death rates were significantly higher than Ontario's between 1991 and 1995 include colon cancer in women, lung cancer in both sexes, lymphatic cancer in women, leukemia in both sexes, and prostate cancer in men.
- ◆ One-quarter of all PYLL due to cancer in Renfrew County between 1991 and 1995 was due to lung cancer. Of the 56 annual lung cancer deaths during this period, approximately 45 were caused by smoking.

## **Injuries**

- ◆ Injuries are a major cause of premature death in Renfrew County and District, accounting for 21% of all PYLL between 1991 and 1995.
- ◆ The major causes of injury deaths are motor vehicle accidents (16 per year) and suicide (12 per year).
- ◆ Renfrew County's age-standardized injury death rates have declined since the previous reporting period from 57 deaths to 46 deaths per 100,000 population.
- ◆ Renfrew County's age-standardized death rates remained higher than Ontario's for all injuries and motor vehicle accidents.
- ◆ Renfrew County's age-standardized PYLL rates have also declined and remain significantly higher than provincial rates; Renfrew County's premature death rates for all injuries, motor vehicle accidents and suicide were 26%, 66% and 32% higher respectively than Ontario's between 1991 and 1995.

## **Life Expectancy**

- ◆ Life expectancy is approximately six-tenths of a year lower for the population as a whole, and seven-tenths of a year lower for males as a group in Renfrew County than in the province of Ontario. At birth, in 1996, the average resident of Renfrew County and District could expect to live 78.0 years while our provincial counterparts could expect to live 78.6 years.

## Introduction

The Renfrew County and District Health Unit is mandated under the Ontario Health Protection and Promotion Act, to review and report on health status in the community on a regular basis. Information on health status is used to ensure that community health needs are addressed within the community by health promotion and disease prevention programs.

This report is the latest in a series which began in August 1993. Earlier reports in the series presented a demographic profile of the community, information about employment, income, education, social support, health behaviours and a variety of health outcomes including mortality, morbidity, reproductive outcomes, and self-perceived health status. A number of significant differences were noted between Renfrew County and District and Ontario residents. For instance, overall mortality was found to be higher here, in particular premature deaths; income and education levels were found to be lower, and levels of perceived health and social support were higher.

The current report is an update of Issue 3, released in December 1994, which provided an in-depth look at the three major causes of death overall and premature death in Renfrew County and District. Between 1986 and 1991, the period covered in the 1994 report, rates of premature death from cardiovascular disease, cancer and injuries were significantly higher than provincial rates. Whether or not this is still the case is one question addressed by this report. In addition, we will report on trends in mortality from the major causes of death now that data are available that cover a 12-year time span, from 1986 - 1997.

Two major sources of data and statistics were used for this report: the **Health Planning System (HELPS)** of the Ministry of Health and Long Term Care, and the **PYLL and Mortality Rates** program of the Northern Health Information Partnership (NHIP). Information on life expectancy was obtained from Statistics Canada and the Canadian Institute of Health Information. Staff of the Health Information Partnership, Eastern Ontario Region, provided assistance with data retrieval and analysis which we gratefully acknowledge.

In most cases in this report, the data provided refer to Renfrew County and do not include deaths in the Township of South Algonquin. This is because standardized mortality rates for the county are more readily available and up-to-date than rates for the entire health unit area. However, deaths that occurred in the Township of South Algonquin are included in overall totals. Furthermore, health unit death rates and mortality ratios are examined regularly, to ensure that the Renfrew County rates accurately reflect rates for the health unit as a whole.

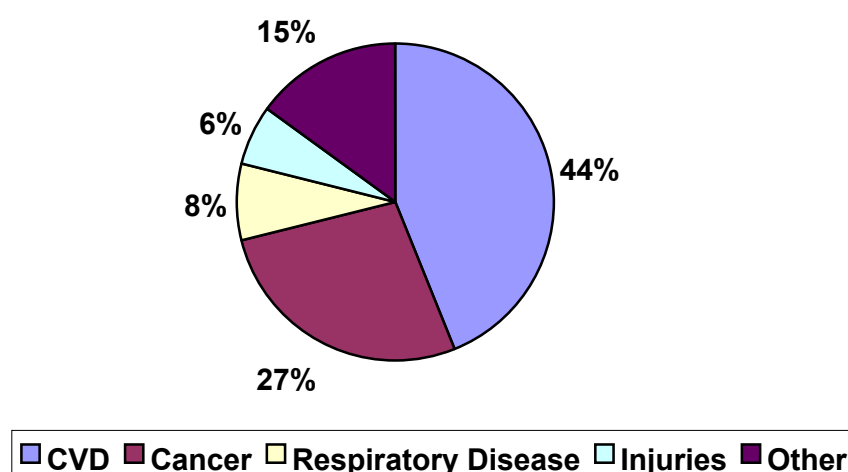
Additional detail on health status and copies of previous reports may be obtained by contacting Lynn Jones, Coordinator of Program Planning and Evaluation, 613-735-8653 Extension 546, [ljones@rcdhu.com](mailto:ljones@rcdhu.com). Community health status information is also available on our website at [www.rcdhu.com](http://www.rcdhu.com).

## Major Causes of Death

Each year in Renfrew County and District between 1991 and 1995, there were, on average, 860 deaths. This was up 7% since our last report on the subject. The increasing number of deaths each year is partly due to the increased population and partly due to the aging of the population (see population pyramid in Our Health in Renfrew County and District, Issue #6 ) (1).

The leading causes of death in Renfrew County and District are cardiovascular disease (CVD), cancer, injuries and respiratory disease. These four causes combined account for 85% of all deaths here as shown in Figure 1. The provincial situation is similar, although the proportion of total deaths in Ontario due to cardiovascular disease is lower at 39%.

**Figure 1 - Leading causes of death in Renfrew County and District, 1991-1995**

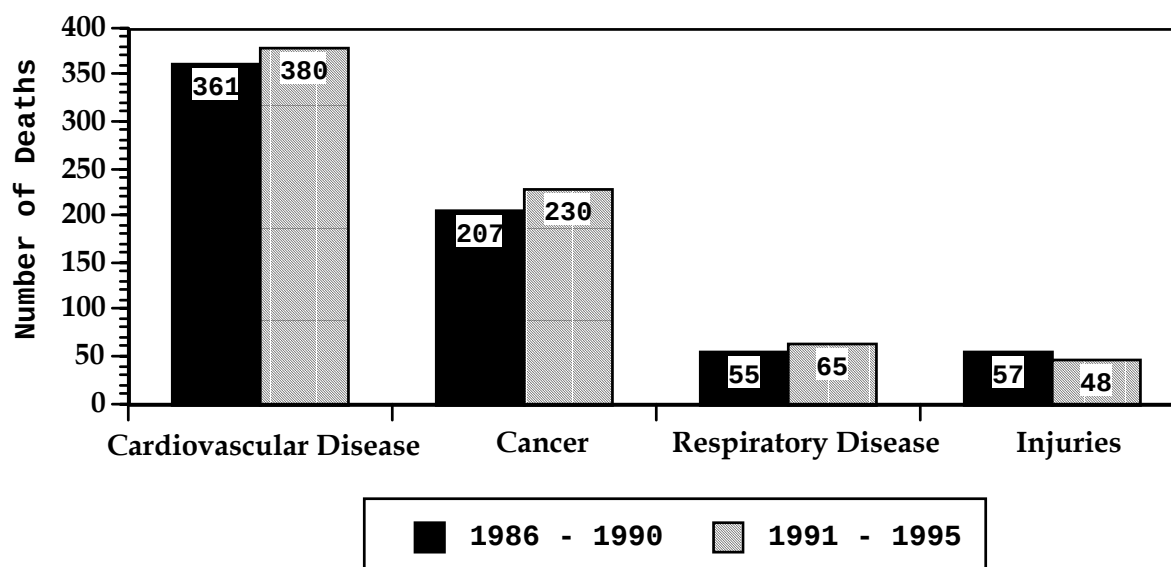


Source: Health Planning System, MOHLTC

The proportion of total deaths due to CVD has dropped slightly both here and in the province since the last reporting period, although the drop was greater in the province. The proportion of total deaths due to injuries has also dropped slightly, while the proportions due to cancer and respiratory disease have slightly increased.

The average number of deaths per year in Renfrew County and District from 1991 - 1995 due to the four leading causes of death is shown below in Figure 2. Note that the total number of deaths from cardiovascular disease, cancer and respiratory disease have increased 5, 11 and 18 percent respectively. This can largely be attributed to the aging of our population. Conversely there has been a 16% decrease in the total number of injury deaths in Renfrew County and District.

**Figure 2 - Average number of deaths per year due to the four leading causes of death in Renfrew County and District, 1986 - 1990 vs. 1991 - 1995**



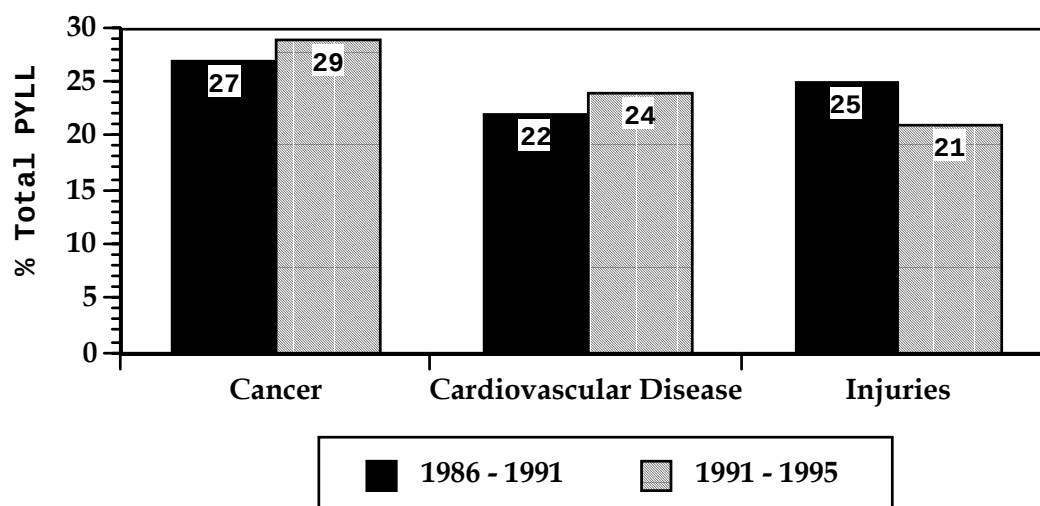
Source: Health Planning System, MOHLTC

### Potential Years of Life Lost

"Potential Years of Life Lost" (PYLL), is an indicator of premature mortality. It is calculated by subtracting the age at death from a "normal" life-span of 75 years for each death that occurs. PYLL for a given disease is the sum total of all potential years of life lost due to that disease. PYLL is usually expressed as a rate per 100,000 population.

As illustrated in Figure 3 on the next page, the three leading causes of premature death in Renfrew County and District from 1991 - 1995 were cancer, heart disease and injuries. The proportion of PYLL caused by cancer increased slightly since our last report, as did the proportion caused by heart disease, whereas the proportion caused by injuries dropped from 25% to 21%. In fact, injuries moved from being the second to the third leading cause of premature death, changing places with CVD.

**Figure 3 - Proportion of total PYLL caused by cancer, cardiovascular disease and injuries, Renfrew County and District, 1986-1990 vs. 1991-1995**

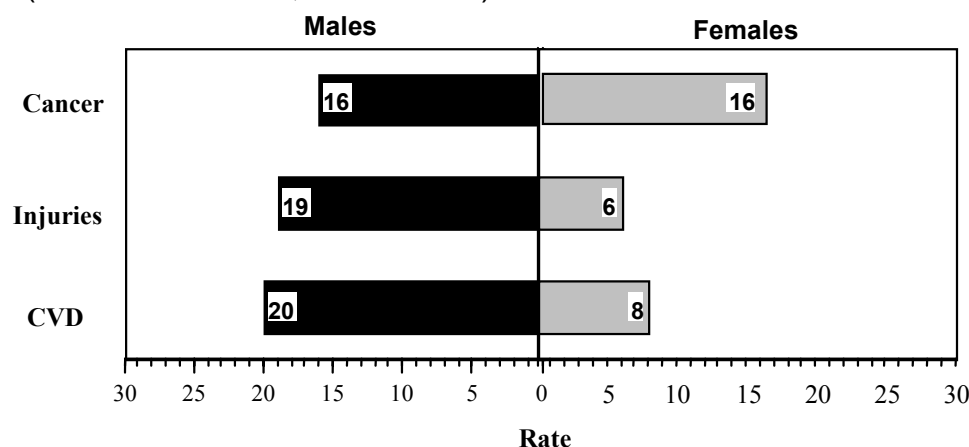


Source: Health Planning System, MOHLTC

In Ontario as a whole, for the period 1991 - 1995, the proportion of PYLL caused by cancer was similar to that of Renfrew County and District (29.3%); however the proportions caused by CVD and injuries were considerably lower at 18.8% and 18.3% respectively.

Causes of premature death affect males and females differently. Figure 4 below highlights differences between males and females in Renfrew County and District for leading causes of premature death. Note that the PYLL rate for CVD in males is about two and a half times the rate for females, and the PYLL rate for injuries in males is more than three times the rate in females.

**Figure 4 - Age-standardized PYLL rates (per 1000 persons of each sex) for leading causes of premature death in Renfrew County and District (males vs. females, 1991 - 1995)**



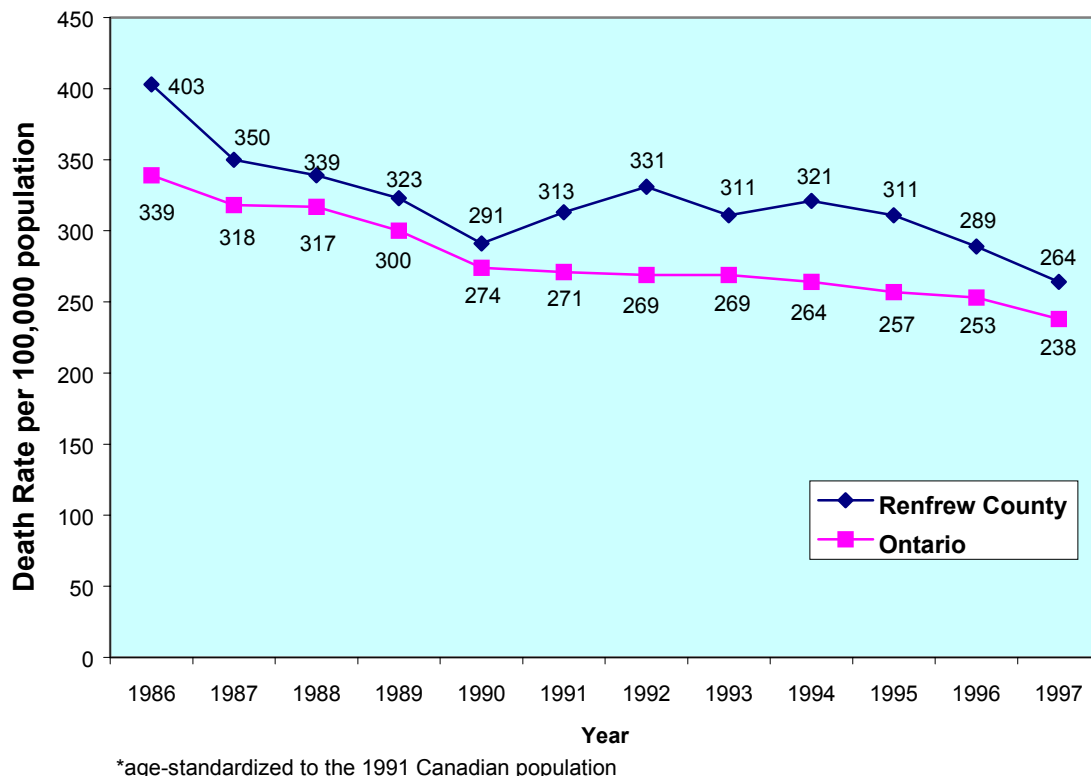
Source: Northern Health Information Partnership, PYLL and Mortality Rates Program, 2000

## Cardiovascular Disease

Cardiovascular disease (CVD) refers to diseases of the circulatory system including heart disease and stroke. CVD remains the leading cause of death in Renfrew County and District, causing 380 deaths each year, (200 males, 180 females) between 1991 and 1995. Of these 380 deaths, about 215 (57%) were due to ischemic heart disease (including 105 heart attack deaths), and 75 (20%) were caused by stroke. CVD accounted for 44% of all deaths in Renfrew County and District and 39% of all deaths in Ontario during this 5-year reporting period.

In Renfrew County and District between 1986 and 1997, death rates for CVD declined, as they did across Ontario and Canada. The decline in rates for CVD in Renfrew County and Ontario is shown below in Figure 5.

**Figure 5: CVD death rates (age-standardized\*): Renfrew County and Ontario 1986-1997**



Source: Northern Health Information Partnership, PYLL and Mortality Rates Program, 2000

Although CVD rates are declining here, Renfrew County's age-standardized CVD death rates were significantly higher than Ontario's for the period 1991-1995 as well as the previous reporting period, 1986-1990. This is shown below in Table 1. Note that Renfrew County's death rates for all CVD, heart attack and stroke (both sexes) were 19%, 20% and 17% higher respectively than Ontario's (as indicated by the two numbers after the decimal point in the shaded column) for the period 1991-1995.

**Table 1: Standardized mortality ratios (SMR)\*\* for all CVD, heart attack and stroke, Renfrew County 1986 - 1995**

| Cause of Death      | 1986 - 1990 |       |         | 1991 - 1995 |       |         |
|---------------------|-------------|-------|---------|-------------|-------|---------|
|                     | SMR         |       |         | SMR         |       |         |
|                     | Both sexes  | males | females | Both sexes  | males | females |
| <b>All CVD</b>      | 1.10*       | 1.13* | 1.05    | 1.19*       | 1.24* | 1.12*   |
| <b>Heart Attack</b> | 1.13*       | 1.13* | 1.12    | 1.20*       | 1.24* | 1.13    |
| <b>Stroke</b>       | 1.26*       | 1.46* | 1.14    | 1.17*       | 1.16  | 1.19*   |

\* significant at the 95% level

\*\* for a definition of "Standardized Mortality Ratio" see the appendix on page16

Source: Northern Health Information Partnership, PYLL and Mortality Rates Program, 2000

The difference between Renfrew County and the province with respect to CVD is even more pronounced when we look at premature death from CVD as indicated by potential years of life lost. As shown below in Table 2, Renfrew County's age-standardized PYLL rates for all CVD, heart attack and stroke were 37%, 45% and 39% higher than Ontario's for the period 1991-1995 (see shaded column).

**Table 2: Standardized PYLL ratios (SPYLLR)\*\* for CVD, heart attack and stroke, Renfrew County 1986 - 1997**

| Cause of Death      | 1986 - 1990<br>SPYLLR |       |         | 1991 - 1995<br>SPYLLR |       |         |
|---------------------|-----------------------|-------|---------|-----------------------|-------|---------|
|                     | Both sexes            | males | females | Both sexes            | males | females |
| <b>All CVD</b>      | 1.19*                 | 1.17* | 1.23*   | 1.37*                 | 1.38* | 1.34*   |
| <b>Heart Attack</b> | 1.29*                 | 1.20* | 1.63*   | 1.45*                 | 1.48* | 1.33*   |
| <b>Stroke</b>       | 1.07                  | 1.26* | .89     | 1.39*                 | 1.91* | 1.10    |

\* significant at the 95% level

\*\* for a definition of "standardized PYLL ratio" see appendix page 16



From 1991- 1995, there were on average 133 premature deaths due to CVD each year in Renfrew County and District.

Known modifiable risk factors for CVD include smoking, physical inactivity and obesity. Every year in Renfrew County and District, between 1991 and 1995, smoking caused at least 75 CVD deaths (2). During the same period, physical inactivity caused about 30 premature deaths from CVD each year (3).

Renfrew County and District's significantly higher rates of premature death from CVD can be partly explained by marginally higher smoking rates, younger ages of smoking initiation, higher rates of obesity, higher fat consumption, and socioeconomic factors such as lower average levels of education and income. These factors have been discussed in previous reports.

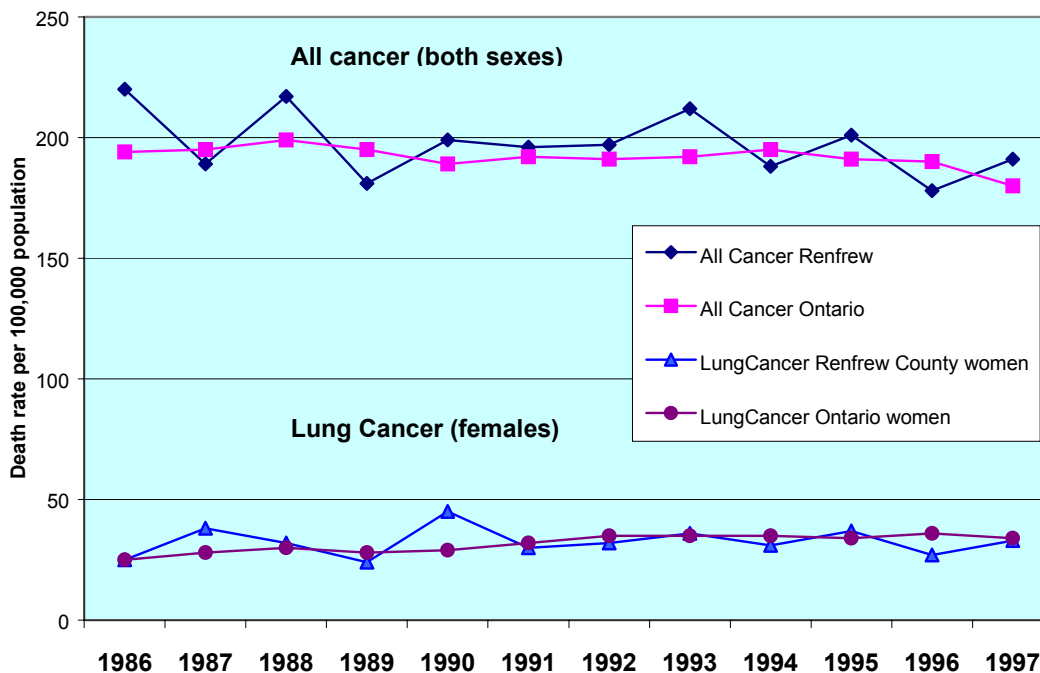
## Cancer

Cancer represents a group of diseases characterized by uncontrolled growth of abnormal cells in various body sites. Modifiable risk factors for cancer include: tobacco use, high fat diets, physical inactivity and exposure to cancer-causing agents.

Cancer is the leading cause of premature death in Renfrew County and District accounting for 29% of potential years of life lost (PYLL) between 1991 and 1995. The average number of cancer deaths each year in Renfrew County and District in the same period was 230. The most common types of cancer and the average number of deaths per year due to each one are as follows: lung, 56; colon, 25; breast, 19; lymphatic system, 17; and prostate, 16.

Cancer death rates have been stable or declining in Canada for the past decade with a few exceptions, most notably lung cancer in women, which continues to rise. In Renfrew County and Ontario, these Canadian trends hold as shown below in Figure 6. Renfrew County's age-standardized death rates for all cancer declined between 1986 and 1997, and were not significantly different from Ontario's. Renfrew County's lung cancer death rates for women rose slightly over the same period and did not differ significantly from Ontario's.

**Figure 6: Cancer death rates (age-standardized\*) Renfrew County and Ontario, 1986 - 1997**



\*standardized to the 1991 Canadian population

Source: Northern Health Information Partnership, PYLL and Mortality Rates Program, 2000

Rates of premature death from cancer are significantly higher in Renfrew County than in Ontario as a whole. As shown below in Table 3, Renfrew County's PYLL rate for all cancer was 4% higher than Ontario's for the 5-year period 1991-1995 (as indicated by the two numbers after the decimal point in the first shaded box). During the previous 5-year reporting period the PYLL rate for all cancer was 9% higher than Ontario's.

Renfrew County's PYLL rates for colon cancer in women, lung cancer in both sexes, lymphatic cancer in women, leukemia in both sexes and prostate cancer in men were also significantly higher than Ontario's between 1991 and 1995 as shown in Table 3. Note that Renfrew County's lung cancer death rates for females and males were 9% and 12% higher than Ontario's between 1991 and 1995 (see second shaded box) and that lung cancer accounted for one-quarter of all PYLL due to cancer during this period. 1986 - 1990 rates are also provided in this table for comparison purposes.

**Table 3: Potential years of life lost due to cancer, Renfrew County vs. Ontario, 1986-1995**

| Type of Cancer                    | 1986 - 1990 |        | 1991 - 1995 |        |
|-----------------------------------|-------------|--------|-------------|--------|
|                                   | PYLL Total  | SPYLLR | PYLL Total  | SPYLLR |
| <b>All Cancer</b>                 | 8689        | 1.09*  | 8331        | 1.04*  |
| <b>Colon Cancer (females)</b>     | 297         | 1.26*  | 356         | 1.45*  |
| <b>Lung Cancer (females)</b>      | 875         | 1.37*  | 785         | 1.09*  |
| <b>Lung Cancer (males)</b>        | 1643        | 1.22*  | 1384        | 1.12*  |
| <b>Lymphatic Cancer (females)</b> | 325         | 1.24*  | 325         | 1.43*  |
| <b>Leukemia (females)</b>         | 198         | 2.39*  | 132         | 1.79*  |
| <b>Leukemia (males)</b>           | 259         | 1.81*  | 200         | 1.69*  |
| <b>Prostate cancer (males)</b>    | 173         | 1.02   | 228         | 1.33*  |

\* significant at the 95% level

Source: Northern Health Information Partnership, PYLL and Mortality Rates Program, 2000

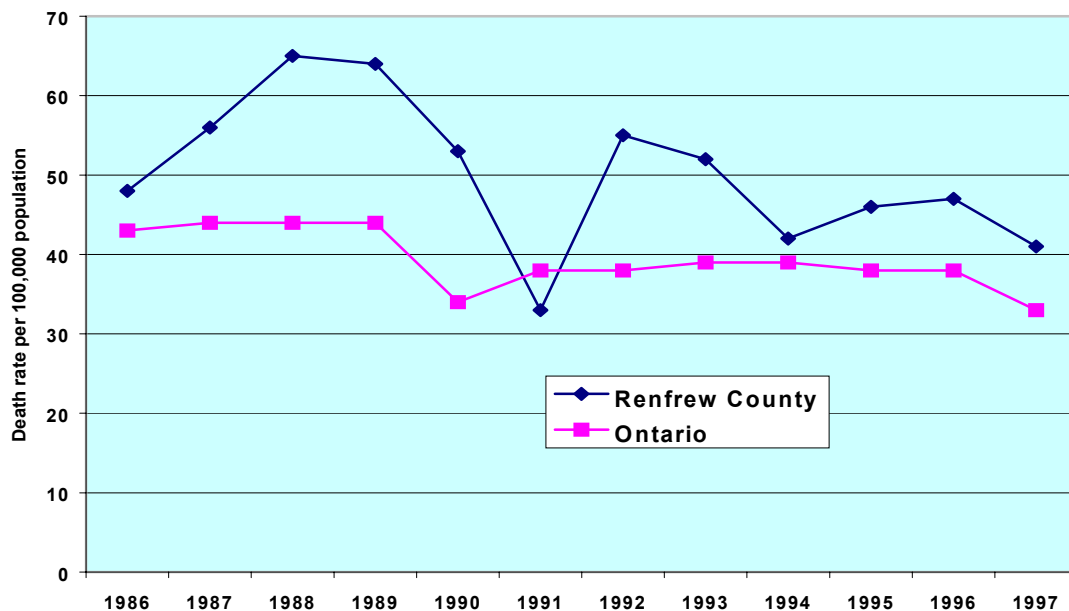
The biggest single modifiable risk factor for cancer is smoking. Of the 56 yearly lung cancer deaths which occurred between 1991 and 1995, approximately 45 were caused by smoking (2).

## Injuries

Injuries are a major cause of premature death in Renfrew County and District. From 1991- 1995, injuries accounted for 21% of potential years of life lost (PYLL). There were approximately 40 injury deaths each year during this period, down from 50 per year from 1986 - 1990. The major cause of injury deaths is motor vehicle accidents (MVA's), (16 per year) and suicides (12 per year).

Renfrew County and District's age-standardized injury death rates have decreased since the previous reporting period as shown below in Figure 7.

**Figure 7: Injury death rates (age-standardized\*), Renfrew County vs. Ontario, 1986-1997**



\*standardized to the 1991 Canadian population

Source: Northern Health Information Partnership, PYLL and Mortality Rates Program, 2000

Renfrew County's age-standardized death rates are significantly higher than Ontario's for all injuries and motor vehicle accidents as shown on the next page in Table 4. This table also shows the decline in age-standardized death rates between the two reporting periods (see the two shaded columns).

**Table 4: Injury death rates, Renfrew County vs. Ontario 1986 - 1997.**

| Cause of Death                 | 1986 - 1990 |       |         | 1991 - 1995 |       |         |
|--------------------------------|-------------|-------|---------|-------------|-------|---------|
|                                | # deaths    | SMR   | SRATE** | # deaths    | SMR   | SRATE** |
| <b>All injuries</b>            | 277         | 1.37* | 57      | 235         | 1.17* | 46      |
| <b>Motor vehicle accidents</b> | 96          | 1.93* | 20      | 79          | 1.86* | 16      |
| <b>Suicide</b>                 | 70          | 1.48* | 15      | 59          | 1.26  | 12      |

\*\*age-standardized death rate (to the 1991 Canadian population) per 100,000 population per year

\* significant at the 95% level

Source: Northern Health Information Partnership, PYLL and Mortality Rates Program, 2000

Renfrew County's age-standardized PYLL rates for injuries have also been declining, but remain significantly higher than provincial rates, as shown below in Table 5. In the SPYLLR figures in this table, the two numbers after the decimal point indicate the percentage difference between Renfrew County's rates and Ontario rates, after adjusting for age structure of the population. Between 1991 and 1995, Renfrew County's premature death rates for all injuries, motor vehicle accidents and suicide, were 26, 66 and 32 per cent higher respectively, than Ontario's (see the shaded column).

**Table 5: Injury PYLL rates, Renfrew County vs. Ontario 1986 - 1995**

| Cause of Death                 | 1986 - 1990 |        |       |        | 1991 - 1995 |        |       |        |
|--------------------------------|-------------|--------|-------|--------|-------------|--------|-------|--------|
|                                | Total PYLL  | SPYLLR |       |        | Total PYLL  | SPYLLR |       |        |
|                                |             | Total  | Male  | Female |             | Total  | Male  | Female |
| <b>All injuries</b>            | 8151        | 1.57*  | 1.92* | 1.55*  | 6021        | 1.26*  | 1.32* | 1.12*  |
| <b>Motor vehicle accidents</b> | 3513        | 1.92*  | 1.98* | 1.87*  | 2376        | 1.66*  | 1.68* | 1.65*  |
| <b>Suicide</b>                 | 2259        | 1.55*  | 1.52* | 1.49*  | 1878        | 1.32*  | 1.43* | 1.15*  |

\* significant at the 95% level

Source: Northern Health Information Partnership, PYLL and Mortality Rates Program, 2000

The decline in age-standardized injury death rates is a welcome development. It may be partially due to increased awareness of the hazards of drinking and driving, and stricter enforcement of impaired driving laws.

## Life Expectancy

In December 1994, when the material in this report was first reported, we posed the question whether life expectancy might be significantly lower for residents of Renfrew County and District than for residents of Ontario.

Recent data published by Statistics Canada and the Canadian Institute for Health Information (4) indicate that life expectancy is lower in Renfrew County and District than in Ontario for the population as a whole and for males as a group, but not for females. The differences in life expectancy are shown below in Table 6. "Life expectancy" is defined as the number of years a person would be expected to live from the day he or she was born (for life expectancy at birth) or at ages 65 to 69 (for life expectancy at ages 65 to 69), based on mortality statistics at the time.

**Table 6: Life expectancy at birth and at age 65-69, by sex, Ontario and Renfrew County and District, 1996.**

| Life Expectancy<br>at Birth    | Total |           | Male  |           | Female |           |
|--------------------------------|-------|-----------|-------|-----------|--------|-----------|
|                                | Years | 95% CI*   | Years | 95% CI    | Years  | 95% CI    |
| Ontario                        | 78.6  | 78.6-78.7 | 75.8  | 75.8-6.0  | 81.3   | 81.2-81.3 |
| Renfrew County and<br>District | 78.0  | 77.5-78.5 | 75.1  | 74.4-75.7 | 81.0   | 80.3-81.6 |

| Life Expectancy<br>at Age 65- 69 | Total |           | Male  |           | Female |           |
|----------------------------------|-------|-----------|-------|-----------|--------|-----------|
|                                  | Years | 95% CI    | Years | 95% CI    | Years  | 95% CI    |
| Ontario                          | 18.1  | 18.1-18.2 | 16.1  | 16.1-16.2 | 19.8   | 19.8-19.9 |
| Renfrew County<br>and District   | 17.6  | 17.3-18.0 | 15.4  | 15.0-15.9 | 19.7   | 19.2-20.1 |

\*confidence interval

Source: Statistics Canada and the Canadian Institute of Health Information, 2000

The largest difference in life expectancy shown in the table above is for males in Renfrew County as compared with Ontario males. As shown in the shaded boxes, life expectancy for Renfrew County and District males at birth and at age 65-69 is seven-tenths of a year less than for Ontario males in the same age groups.

## Appendix

### Standardized Mortality Ratio

A standardized mortality ratio (SMR) is a statistic resulting from a comparison between a population of interest (eg. Renfrew County residents) and a larger standard or reference population (eg. Ontario residents) with respect to their experience of different indices of mortality. As part of the process of calculating these ratios, compensation is made for differences in age structure between the population of interest and the standard population. The result is a statistic which tells you how much more or less mortality there is in the population of interest than you would expect if it had the same age-specific death rates as the standard population.

If the SMR is greater than 1, it means that more deaths are observed in the smaller population than expected. For example, an SMR of 1.35 indicates that there were 35% more deaths than expected in the population of interest. An SMR of less than 1 implies that the death rate is lower for the population of interest than the standard population.

### Standardized PYLL Ratio

The definition of Standardized Mortality Ratio above, applies to Standardized PYLL Ratio, with the only difference being that PYLL rates are compared as opposed to death mortality rates.

## References

(1) Renfrew County and District Health Unit. *Community Health Status Report*, Issue #6: February 1999.

(2) Schabas, Richard. *Tobacco and Your Health: Report of the Chief Medical Officer of Health*, 1991, Ontario Ministry of Health.

(3) Montano, Lilly. *Ischemic heart disease mortality attributable to physical inactivity in Ontario*. PHERO, 5: Number 6, 1994.

(4) Statistics Canada and the Canadian Center for Health Information. *Health Indicators*. (82-221-XIE), [www.statcan.ca:80/english/freepub/82-221-XIE/free.htm](http://www.statcan.ca:80/english/freepub/82-221-XIE/free.htm), December 2000.