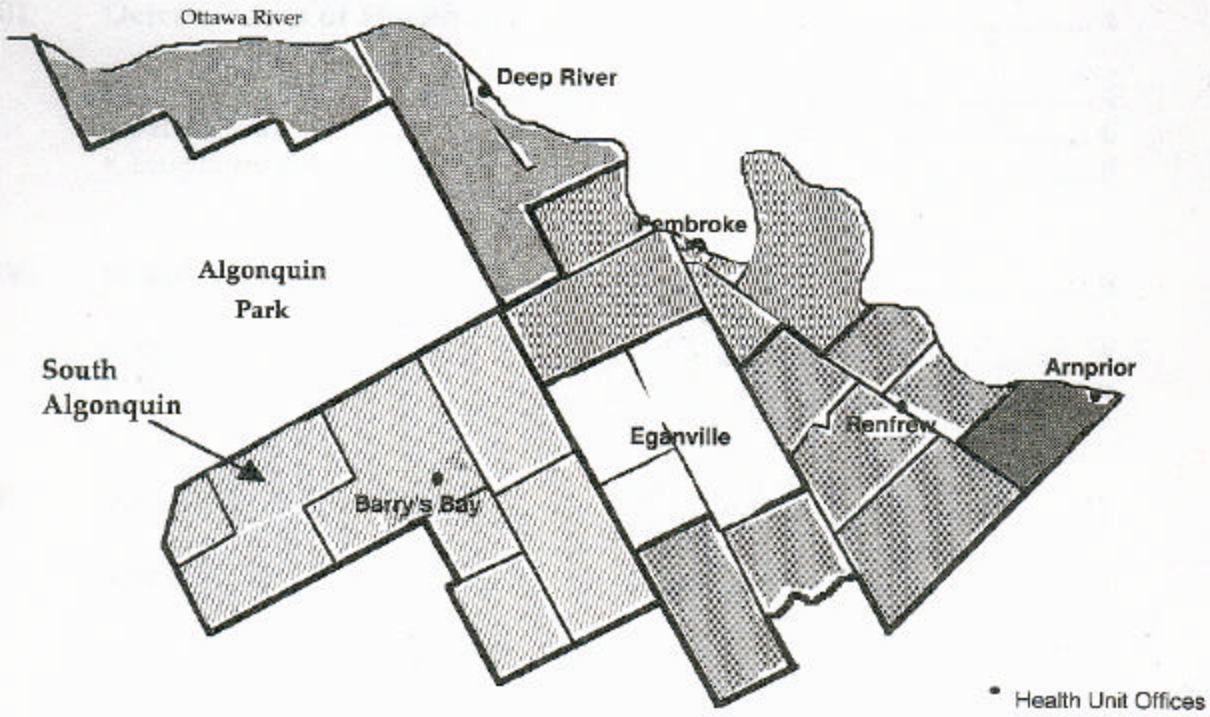
Our Health In Renfrew County And District

Community Health Status Report

Issue #6 - February 1999



Renfrew County and District Health Unit

7 International Drive, Pembroke, Ontario, K8A 6W5 Tel: 613-732-3629

"Promoting Healthy People in a Healthy Environment"

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I. Introduction

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 intended to be 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 (5). 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 residents and our provincial counterparts. 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 begins the process of updating material presented in issues 1 - 5. Questions which will be addressed include "How has the population changed", "Have there been any significant changes in employment and income", "Has overall mortality changed?"

Additional detail on health status and copies of previous reports may be obtained by contacting Dr. M. Corriveau, Medical Officer of Health, 1-800-267-1097, 732-3629, or mcorriveau@rcd-hu.hip.on.ca. Health status information is also available on our website at www.hip.on.ca/renfrew-phu/index.html.

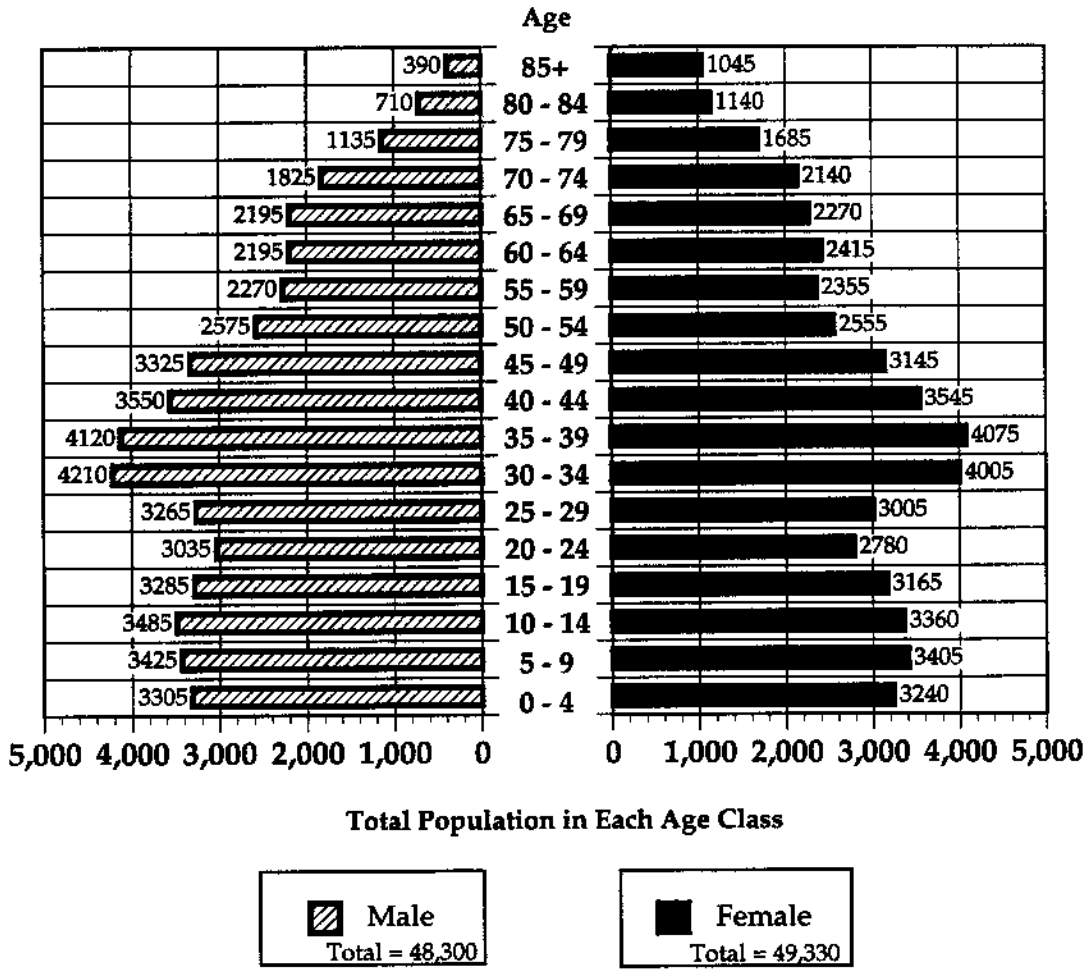
II. Description of the Community

The area served by the Renfrew County and District Health Unit includes the County of Renfrew, the City of Pembroke, the township of South Algonquin in the District of Nipissing, and most of Algonquin Provincial Park. The geographic area of Renfrew County and District is approximately 16,000 square kilometers. Almost half of the population lives in urban areas, as defined by Statistics Canada. The "urban" centres are Arnprior, Chalk River, Cobden, Renfrew, Pembroke, and Petawawa.

Population Age and Sex

The total population of Renfrew County and District according to the 1996 Census is 97,630. Details about how the population is divided by sex and among the various age classes is depicted below in Figure 1. This diagram is referred to as a population pyramid. An interesting characteristic of the population which is clearly apparent in this depiction is the "baby boom bulge" from age 30 - 49.

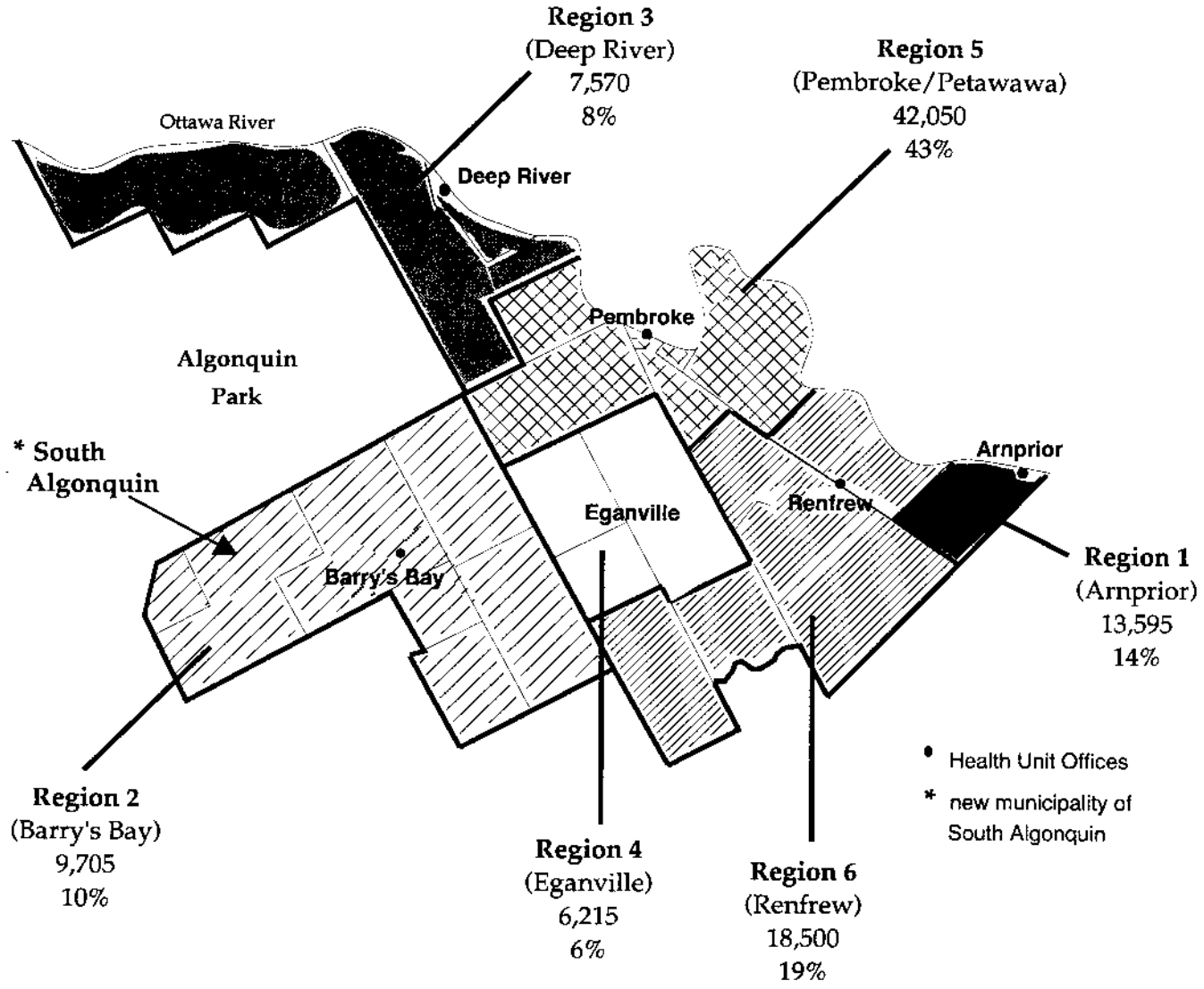
Figure 1 - Population Pyramid for Renfrew County and District (1996)



Geographic Distribution of Population

Geographically, the population is spread across the area as illustrated below in Figure 2. In this figure, the area has been divided into six regions. Each region is identified with its population and percentage contribution to the total of Renfrew County and District. For a detailed listing of the municipalities and their populations, see Appendix A.

Figure 2 - Population Distribution by Region of Renfrew County and District (1996)



Population Change

In the 15 years between the 1981 and the 1996 census, there was a 10 percent increase in the population of Renfrew County and District, from 88,870 to 97,635. Region 3 (Deep River) was the only region where the population decreased - it decreased by 9 percent. The greatest changes have taken place in Region 1 (Arnprior), where the population has increased by 27 percent, and Region 4 (Eganville) where there has been an increase of 13 percent. Between 1991 and 1996, the population increased by 4.6%.

III. Determinants of Health

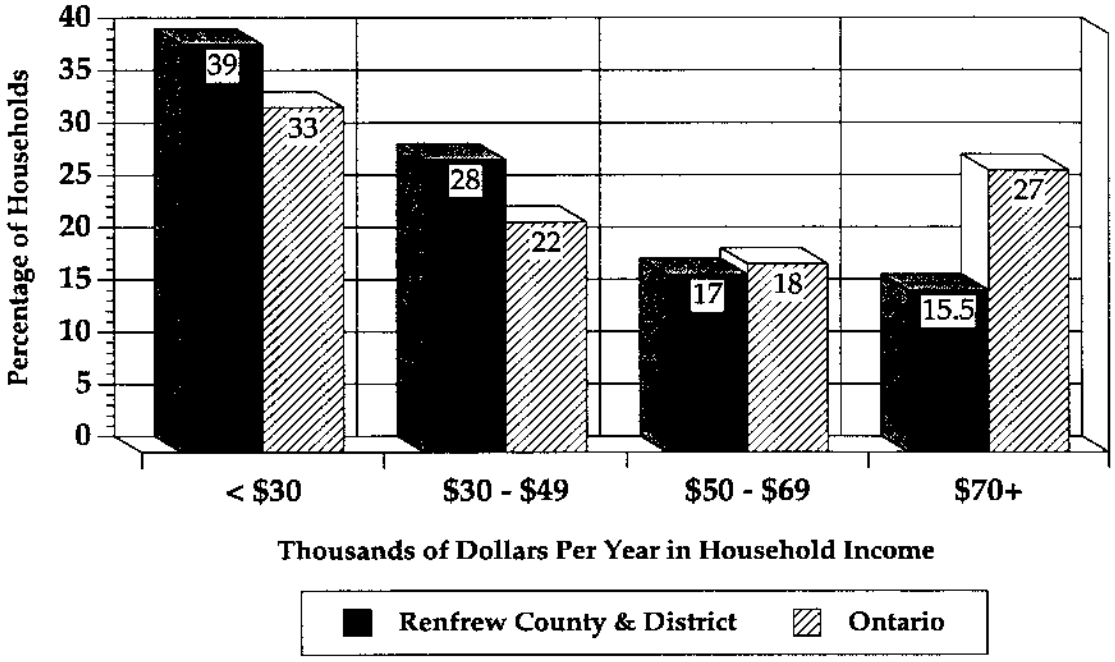
Income

Many studies have shown that income is a powerful determinant of health; the poorer people are, the less healthy they are likely to be. In particular, as income decreases, the probability of dying from preventable diseases, injuries, and suicide increases. Conversely, as income increases, so does life expectancy (1).

Household incomes in Renfrew County and District are contrasted with those for the province of Ontario in Figure 3. In this graph we can clearly see that a substantially greater proportion of Renfrew County and District households fall into the two lower income brackets than Ontario households (67% vs. 55%) (2). Within specific municipalities in Renfrew County and District, such as the City of Pembroke and the Town of Renfrew, the proportion of households falling into the two lower income brackets rises to 75%.

At the upper end of the income scale, the proportion of Ontario households falling into the highest income bracket is almost double the proportion in Renfrew County and District.

Figure 3- Annual Household Income (Renfrew County and District vs. Ontario) (2)



(Statistics Canada, 1996 Census)

"Incidence of low income" is a calculation regularly made by Statistics Canada. It is intended to capture the portion of the population in difficult financial circumstances due to spending a high proportion of their income on basic necessities. The definition of a low income family changes frequently. The current definition allows for lower incomes in predominantly rural areas such as Renfrew County and District before the low income cutoff points are reached than in urban areas. For more detail about the current definition of low income, see Appendix B.

Presently in Renfrew County and District, the incidence of low income in economic families (two or more household members who are related to each other by blood, marriage, common-law or adoption) is 11.3% as compared with 14.8% for Ontario. However, this is not to say that low income is not a problem here. Even given the low cutoff points, there are a number of areas in the county with relatively high rates of low income; some of these are listed in the table below:

Municipality	Number of Low Income Families	Incidence of Low Income (# of economic families ÷ total economic families x 100)
Barry's Bay	65	20%
Renfrew (Town)	380	17%
Pembroke (City)	715	19%
Eganville	60	16%

(Statistics Canada, 1996 Census)

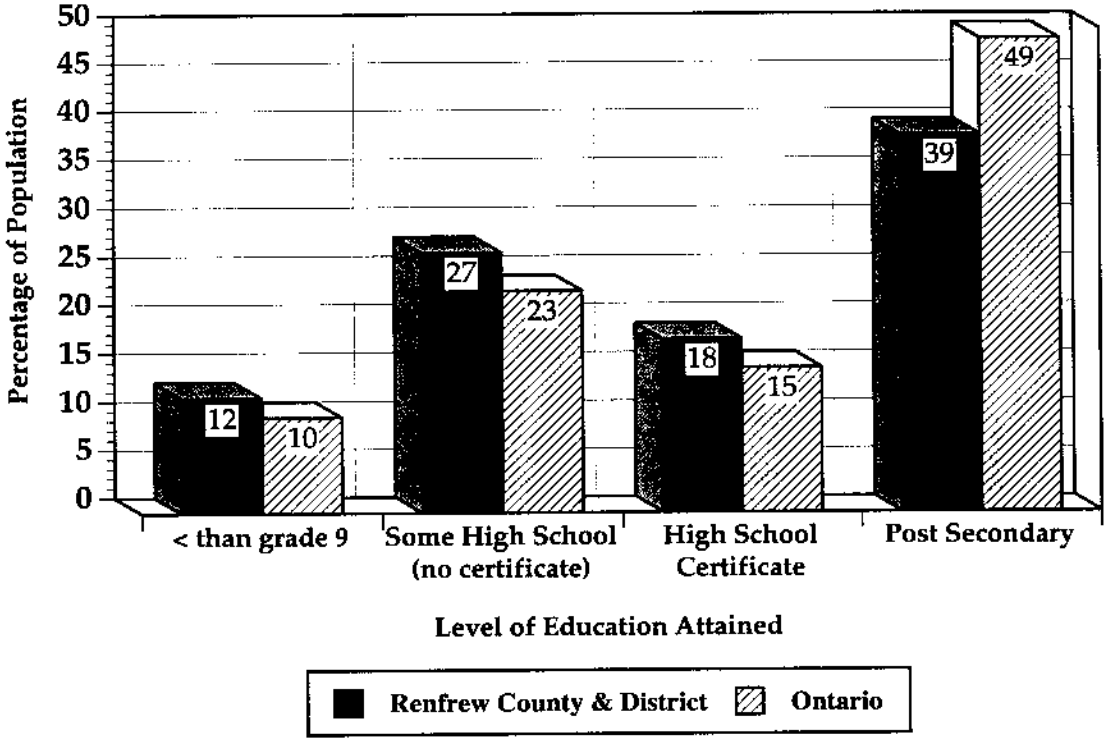
It is important to note that the incidence of low income is higher when all persons living in private households are considered; this would include many single individuals who do not fall into the category of "economic family". In Renfrew County and District, the incidence of low income rises to 13.6 % when these individuals are included. Overall, the number of men, women and children, single or otherwise, in Renfrew County and District affected by low income in 1996 was 12,710.

Education

The number of years of education a person has may influence their health status. It may do so in a number of ways: by increasing job and income security, by equipping people with problem solving skills or by increasing health literacy. In Canada 70% of people with post-secondary education rate their health as good or excellent whereas only 46% of people with less than a secondary education say the same (1).

In Renfrew County and District, fewer people have completed post-secondary education than in Ontario as a whole and more people have less than nine years of education (2). This is depicted graphically in Figure 4. Since the 1991 census, the proportions with the lowest levels of education have decreased slightly for both Renfrew County and District and Ontario.

Figure 4 - Highest Level of Education Attained (Renfrew County and District Residents vs. Ontario Residents) (2)



(Statistics Canada, 1996 Census)

Employment

Employment status affects health in a number of ways. Physical hazards, stress levels, job security and job satisfaction all vary with different types of work. Unemployment is stressful, reduces income, and may result in loss of self-esteem, distress, anxiety and health problems. For these reasons it is important to consider employment in our community as an important factor influencing the overall picture of health here.

In 1996, there were 4,585 unemployed men and women in Renfrew County and District (2). The number of people affected was greater of course, taking into consideration other members of the household. The unemployment rate in Renfrew County for 1996 was 9.7%, up from 8.4% in 1991 and slightly higher than the provincial rate of 9.1%.

It is important to note that the unemployment rate is considerably higher in some parts of our community such as Pembroke (City) and Stafford Township (14%) and the Region 2 of the health unit served by the Barry's Bay office (18%).

Female participation in the work force remains lower in Renfrew County and District than female participation in Ontario as a whole (55% vs. 60%).

In contrast to the slight increase in overall unemployment since the 1991 census, is the sizable increase in youth (ages 15 - 24) unemployment. Between 1991 and 1996 youth unemployment in Renfrew County and District increased 5% (from 12.3% to 17.2%). A similar increase occurred in the province of Ontario as a whole.

Type of employment affects health in a number of ways. Rates of premature death, disease and injury are higher in some occupations than others. For example, agricultural work continues to be one of the most hazardous occupations as evidenced by high death and permanent disability rates. Workers in lumber and wood products manufacturing are injured more often than producers of other goods. Employees who spend their work day at computer terminals may experience significant levels of stress.

In a previous report, it was noted that a slightly greater portion of the work force in Renfrew County and District was employed in government service and primary industries than in the province as a whole. This difference still holds according to the 1996 census although there have been significant job losses in both of these sectors provincially and locally. For instance, 20 jobs were lost in agriculture in Renfrew County and District in this five year period and 845 jobs were lost in the government service sector. These losses were partly offset by an increase of 350 jobs in the manufacturing sector.

IV. Health Outcomes

The term "health outcomes" refers to indicators that are used to measure the health status of a community. Information on births and infant deaths, collectively referred to as "reproductive outcomes" is one type of health income indicator. Mortality rates, also known as death rates is another.

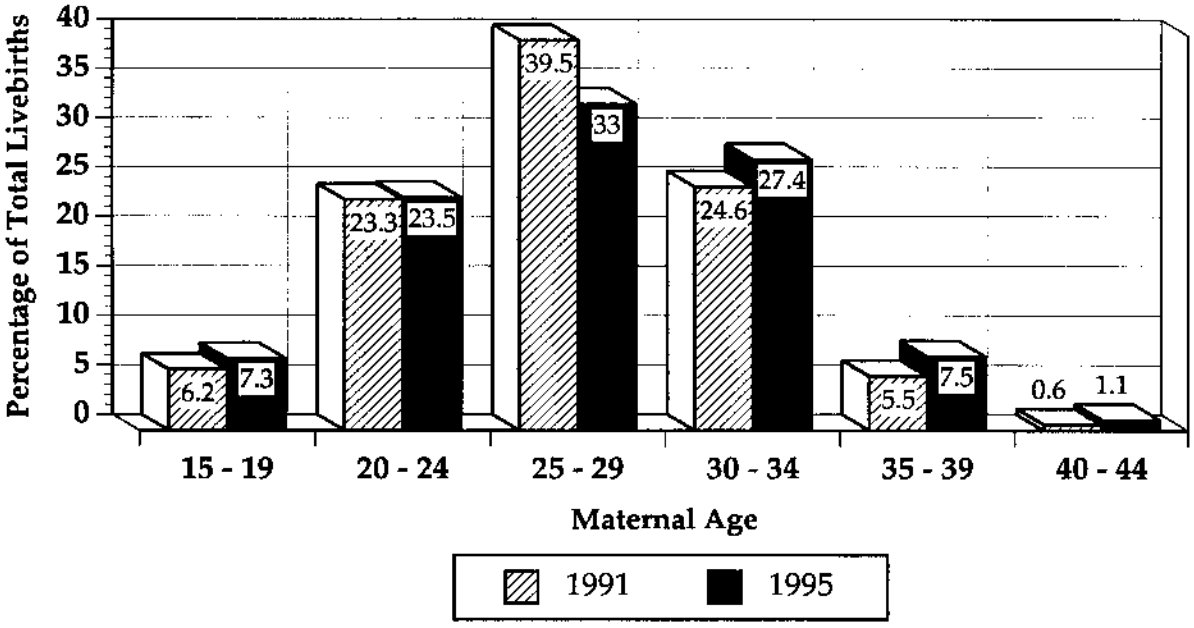
We have previously reported on both reproductive outcomes and mortality rates. This section will serve to update previously reported findings.

Reproductive Outcomes

The most recent year for which reproductive outcome information is available is 1995. In 1995, there were 1,208 livebirths in Renfrew County and District. Of these livebirths, 604 were male and 604 were female (3).

When we first reported on reproductive outcomes for 1991, women in Renfrew County and District tended to have their babies at younger ages than their provincial counterparts. Since then, the distribution of livebirths by age of mother has been shifting towards the provincial pattern. As shown below in Figure 5, in 1995, a greater proportion of babies was born to mothers aged 30 - 44 and a smaller proportion to women aged 25 - 29. The exception to this shift was an increase in the proportion of births to teenagers in Renfrew County and District, from 6.2 to 7.3% of livebirths.

Figure 5 - Distribution of Livebirths by Age of Mother (Renfrew County and District, 1991 vs. 1995)



Between 1991 and 1995 the percentage of infants born to single women in Renfrew County and District increased from 15.7 to 21%.

Premature infants, (those born under 36 weeks gestation) were less common in Renfrew County and District than in Ontario at our last reporting. This continued to be true in 1995 as the percentage of premature infants in Renfrew County and District declined from 5.6 to 2.6%.

The percentage of low birth weight babies (infants weighing less than 2500 g or 5.5 lbs at birth) declined from 5.6 to 5.0%, consistent with a provincial trend.

The rate of low birth weight among single live births (excluding twins and other multiple births) is now considered to be a more accurate indicator of socioeconomic conditions in the community than the overall rate of low birth weight. In 1995, the rate of low birth weight among single live births was 4.6 in Renfrew County and District. The corresponding rate for Ontario was not available.

In 1995, for every 100 live births in Renfrew County and District, there were 9.6 therapeutic abortions. This rate is down from 10.8 in 1991 and the rate here remains significantly lower than the provincial rate which was 31.5 in 1995.

Mortality

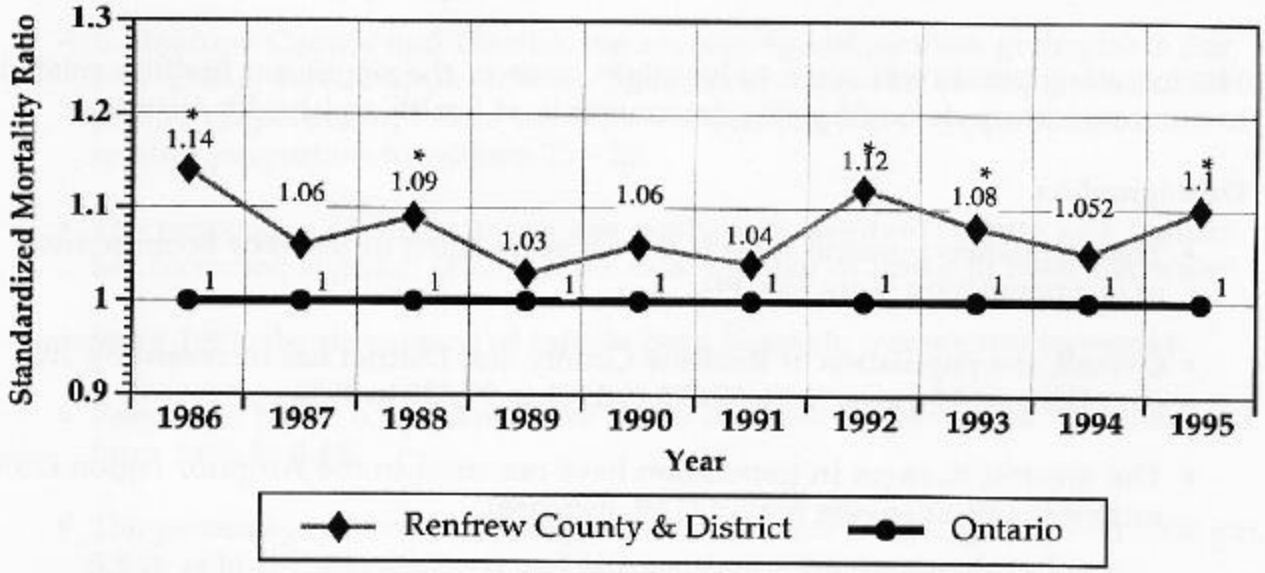
Two commonly used indicators of mortality are number of deaths from all causes and potential years of life lost before age 75. These may be converted into standardized mortality ratios (SMR's) (see Appendix B). SMR's provide information as to how the population of interest differs from the reference population (Ontario) in its experience of mortality after differences due to age structure of the population have been eliminated.

An earlier report in this series (5, Issue #2) highlighted the fact that death rates in Renfrew County and District were consistently higher than provincial rates during most of the six-year period from 1986 to 1991. In Figures 6 and 7, the standardized mortality ratios for all causes of death and potential years of life lost are presented again for 1986 to 1991; ratios for four additional years (1992 - 1995) have been added. Mortality for all causes of death remains higher in Renfrew County and District and significantly so for three of the four years from 1992 - 1995 (4).

Potential years of life lost also continued to be significantly higher in Renfrew County and District that in Ontario for three of the four years from 1992 -1995 (4).

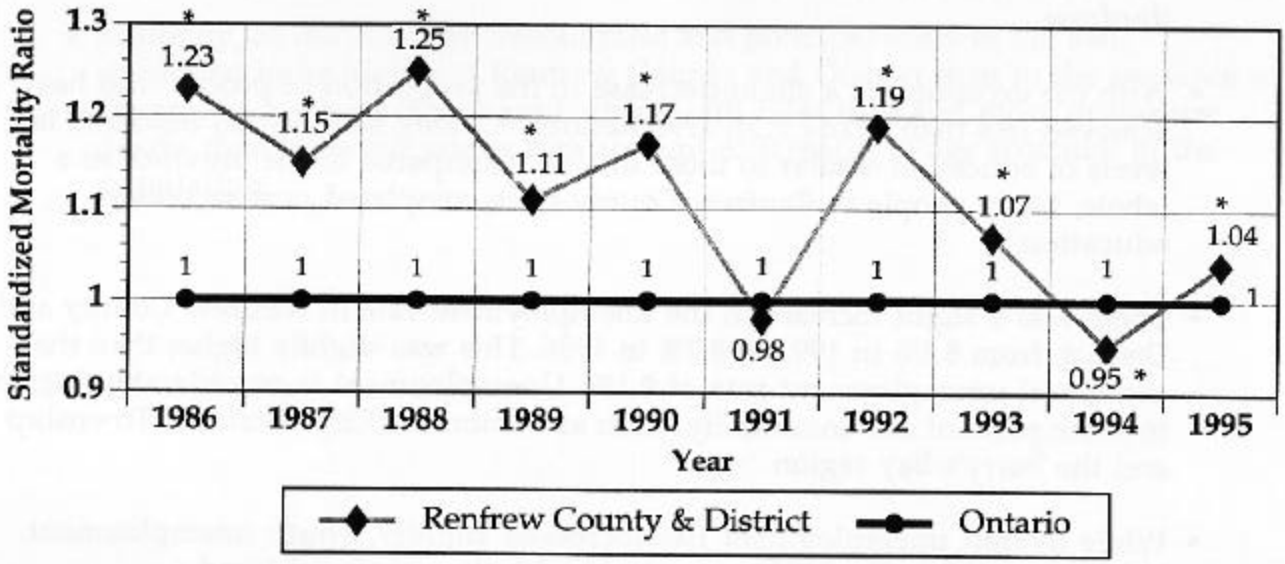
We may conclude that overall death rates in Renfrew County and District, and rates of premature death (years of life lost before age 75) continue to be considerably higher in Renfrew County and District than in Ontario.

Figure 6 - Mortality (All Causes): Ontario vs. Renfrew County and District



* significant at the 95% level

Figure 7 - Mortality (Potential Years of Life Lost): Ontario vs. Renfrew County and District



* significant at the 95% level

Note for Figures 6 & 7: Data for 1986 - 1991 from the Ontario Ministry of Health; Data for 1992 - 1995 were obtained by the Health Information Partnership, Eastern Ontario Region, from the Provincial Health Planning Database of the Ontario Ministry of Health.

V. Summary

The following points will serve to highlight some of the significant findings related to our community demographics, determinants of health and health outcomes:

Demographics

- The population pyramid reflects the expected aging of the baby boom portion of our population (ages 30 - 49).

- Overall, the population of Renfrew County and District has increased by 10% over the past 15 years, from 88,870 in 1981 to 97,635 in 1996.

- The greatest changes in population have occurred in the Arnprior region (20% increase) and Eganville region (13% increase).

Determinants of Health

- Renfrew County and District households continue to have lower annual incomes than Ontario households.

- There are areas within the county where the proportion of families classified as low income approaches 20%; these include Barry's Bay, Pembroke and Renfrew.

- With the exception of a slight decrease in the proportion of people who have achieved less than Grade 9, in 1996 Renfrew County and District residents had levels of education similar to those in 1991. Compared to the province as a whole, fewer people in Renfrew County have completed post-secondary education.

- There was a slight increase in the unemployment rate in Renfrew County and District, from 8.4% in 1991 to 9.7% in 1996. This was slightly higher than the provincial unemployment rate of 9.1%. Unemployment is considerably higher in some parts of our community, such as Pembroke (City), Stafford Township and the Barry's Bay region.

- While overall unemployment has increased slightly, youth unemployment has increased 5% since 1991, consistent with the provincial trend.

- Female participation in the workplace is lower than female participation in Ontario as a whole. (55% vs. 60%)

- There have been significant job losses in the government service sector and primary industries (e.g. agriculture), which have been partly offset by an increase of jobs in the manufacturing sector.

Health Outcomes

- In Renfrew County and District, the average age of mothers giving birth has been rising, similar to the Ontario pattern. As compared to 1991 data, in 1995 a greater proportion of babies were born to mothers 30 - 44 years of age, and a smaller proportion to women 25 - 29.

- The proportion of births to teenage mothers in Renfrew County and District has increased slightly, although the total number of births to teens decreased.

- Since 1991, the percentage of infants born to single women has increased.

- Premature births (i.e. infants born under 36 weeks of gestation) have declined from 5.6% to 2.6%.

- The percentage of low birth weight babies (infants weighing less than 2500 gm, 5.5 lb at birth) also declined and is consistent with the provincial trend. Prematurity, smoking, low pre-pregnant weight, poor nutrition, lack of prenatal care and very young (< 19 yrs.) or older (> 35 yrs.) maternal age are all known risk factors for low birth weight.

- The rate of therapeutic abortions declined from 10.8 per 100 live births in 1991 to 9.6 and remains lower than the provincial rate.

- Mortality, as indicated by overall rates and potential years of life lost, continued to be higher in Renfrew County and District than in the province of Ontario as a whole. There are higher death rates here and more premature deaths than expected taking into account differences in age structure of the population.

Appendix A

Regions Within Renfrew County and District and Their Populations

Region 1 - Arnprior	Arnprior, T	(7,115)	
	Braeside, VL	(715)	
	McNab, TP	(5,765)	TOTAL: 13,59
Region 2 - Barry's Bay	Barry's Bay, VL	(1,085)	
	Brudenell and Lyndoch, TP	(790)	
	Hagarty & Richards, TP	(1,680)	
	Killaloe Station, VL	(670)	
	Radcliffe, TP	(1,115)	
	Raglan, TP	(820)	
	Sherwood, Jones & Burns, TP	(2,140)	
	South Algonquin, TP	(1,405)	TOTAL: 9,705
Region 3 - Deep River	Chalk River, VL	(975)	
	Deep River, VL	(4,490)	
	Head, Clara & Maria, TP	(295)	
	Rolph, Buchanan, Wylie & McKay, TP	(1,810)	TOTAL: 7,570
Region 4 - Eganville	Eganville, VL	(1,315)	
	Grattan, TP	(1,325)	
	North Algona, TP	(665)	
	Sebastopol, TP	(590)	
	South Algona, TP	(385)	
	Wilberforce, TP	(1,935)	TOTAL: 6,215
Region 5 - Pembroke	Alice & Fraser, TP	(4,125)	
	Beachburg, VL	(900)	
	Pembroke, C	(14,175)	
	Pembroke, TP	(2,020)	
	Petawawa, TP	(8,760)	
	Petawawa, VL	(6,540)	
	Stafford, TP	(2,840)	
	Westmeath, TP	(2,690)	TOTAL: 42,05
Region 6 - Renfrew	Admaston, TP	(1,650)	
	Bagot & Blythfield, TP	(1,370)	
	Bromley, TP	(1,190)	
	Brougham, TP	(265)	
	Cobden, VL	(1,020)	
	Griffith & Matawatchan, TP	(400)	
	Horton, TP	(2,515)	
	Renfrew, T	(8,125)	
	Ross, TP	(1,965)	TOTAL: 18,50

Legend: C - City VL - Village
T - Town TP - Township

Source: 1996 Canada Census

Appendix B

Definitions Used in this Report:

"Low Income"

The latest low income cut-offs used by Statistics Canada in their calculations of the incidence of low income are as follows:

Low Income Cut-offs for Economic Families and Unattached Individuals, 1995 (6)

	Size of area of residence				
Family size	500,000 or more	100,000 to 499,999	30,000 to 99,999	Small urban regions	Rural (farm and non-farm)
1	$16,874	$14,473	$14,372	$13,373	$11,661
2	$21,092	$18,091	$17,965	$16,716	$14,576
3	$26,232	$22,500	$22,343	$20,790	$18,129
4	$31,753	$27,235	$27,046	$25,167	$21,944
5	$35,494	$30,445	$30,233	$28,132	$24,530
6	$39,236	$33,654	$33,420	$31,096	$27,116
7+	$42,978	$36,864	$36,607	$34,061	$29,702

"Standardized Mortality Ratio"(SMR)

A standardized mortality ratio is a comparison between a population of interest (eg. Renfrew County and District 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 structure as the standard population.

The formula for the SMR is as follows: $\text{SMR} = \frac{\text{total observed deaths in a population}}{\text{total expected deaths in that population}}$

If the ratio is greater than 1, it means that more deaths are observed in the smaller population than would be expected based on rates in the larger (standard) population. If the ratio is less than 1, fewer deaths are observed than expected. The ratio may also be expressed as a percentage; for example, an SMR of 1.35 would indicate that there were 35% more deaths than expected in the population of interest.

References

(1) Premier's Council on Health, Well-Being and Social Justice. Nurturing Health. Toronto: Queen's Printer for Ontario, 1993.

(2) Statistics Canada. Profile of census divisions and subdivisions. (electronic data product) Ottawa, Statistics Canada, 1997. 1996 Census of Canada.

(3) Ontario Ministry of Health, Public Health Branch. Health Planning System. HELPS Release 97.2.

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(5) Renfrew County and District Health Unit. Community Health Status Report. Issues #1, August 1993; Issue #2, June 1994; Issue #3, December 1994; Issue #4, July 1995, and Issue #5, July 1996.

(6) Statistics Canada. 1996 Censes Dictionary. Ottawa: Industry Canada, 1997. 1996 Census of Canada. Catalogue number 92-351-XPE.