

Appendix D

Methods

Age-specific rates

Age-specific rates are calculated by dividing the number of cases occurring in each of the specified age groups by the corresponding population in the same age group.

Age-standardized rates

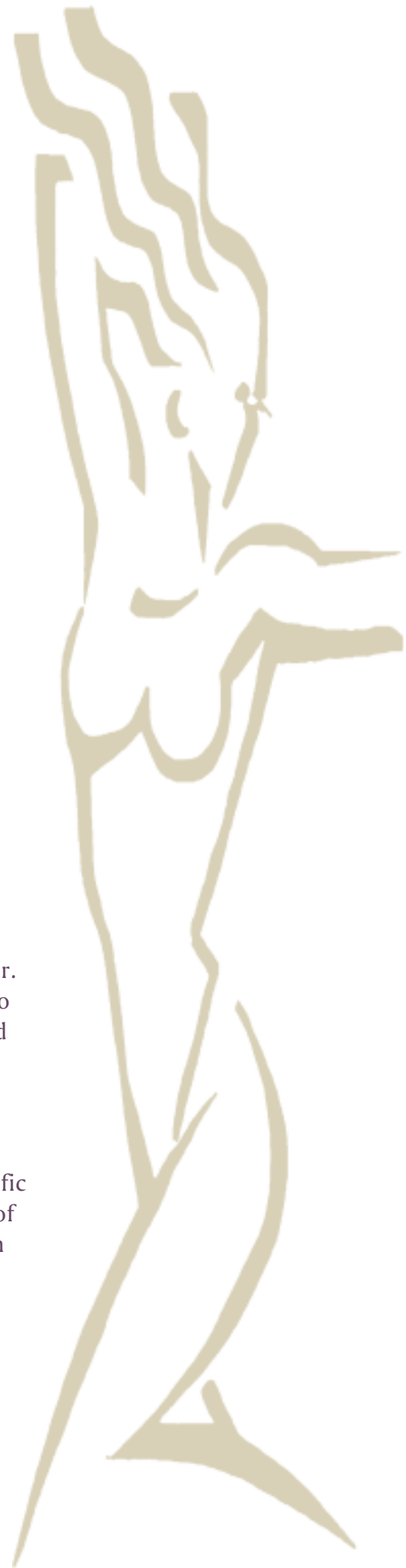
Rates are adjusted for age to facilitate comparisons between populations that have different age structures. This report uses the methods of direct standardization, in which age-specific rates are multiplied by a constant population (Canada, 1991 population). This method was used for both incidence and mortality rates.

Calculation of the expected number of deaths from cervical cancer

Age-specific death rates for cervical cancer in 1950 and 1970 were calculated. This set of age-specific rates was then applied to the corresponding population counts in each age group for each year to obtain the expected number of deaths in each age group in each year. The expected number of deaths in each age group is then summed to derive the expected number of deaths for all ages in a given year had the age-specific death rates in 1950 or 1970 prevailed.

Three-year moving average

The 3-year moving average was calculated by summing the age-specific or age-standardized rates for the 3-year period centred on the year of interest and dividing the total by three. For the first and last years in each series the rates were averaged over 2 years.





Bootstrap variance estimation

In order to account for the stratification and clustering design in the NPHS survey, bootstrap re-sampling methods were used with bootstrap weights to calculate variance and 95% confidence intervals. Bootstrap weights were provided by Statistics Canada.

Hysterectomy

Rates in this report have not been adjusted for hysterectomy status because of lack of reliable data on hysterectomy status by age group and by regions in Canada over the time period used in this report. Further, because an unknown proportion of all hysterectomies do not involve the removal of the cervix, adjustment may lead to an overestimation of rates. One paper that examined the impact of adjusting Pap smear rates among women who had had their uterus removed by hysterectomy reported increased proportions of women with hysterectomies at older ages, as well as regional differences in the hysterectomy rate in 1994. This study was limited as a result of the wide variation due to the small sample⁵⁷. Adjusting the rates has been shown to increase the incidence and mortality rates of cervical cancer as well as participation rates in Pap smear screening, particularly in women aged 45 and older. However, while the overall incidence and mortality rates increase with adjustment, the rate of change and the general trends over time are similar between unadjusted and adjusted data^{57,58}.