



**Niagara Cancer Statistics, 2000-2007**  
**Excerpt from PHSSC Report: PHD 29-2011**

**CENTRAL SUPPORT, INFORMATION AND SURVEILLANCE DIVISION**  
**NIAGARA REGION PUBLIC HEALTH**

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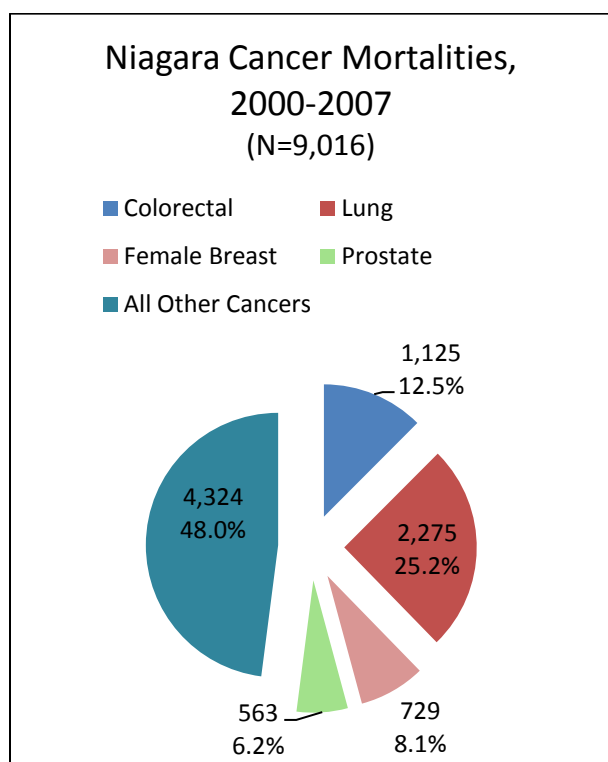
## Niagara Cancer Statistics

### Mortality

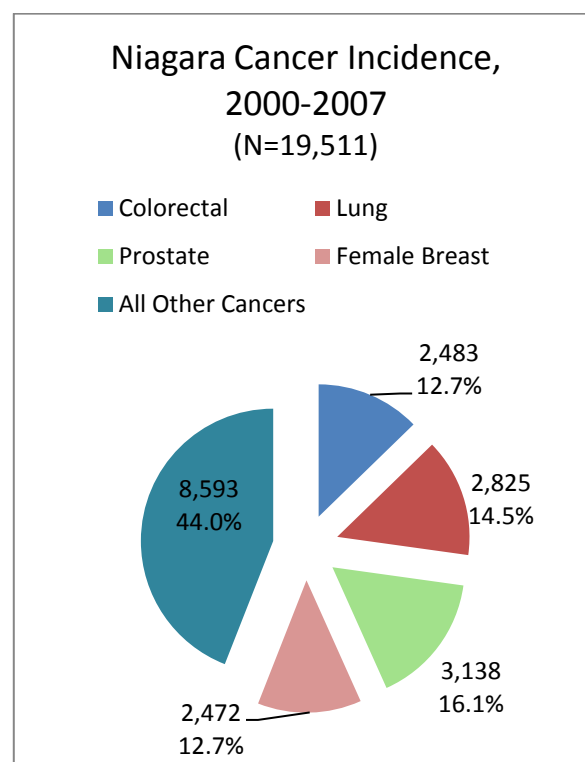
From 2000 to 2007, there were 9,016 cancer-related deaths in the Niagara region. Figure 1 shows the percentage of deaths that were due to specific types of cancer. Over one-quarter (25.2%) of cancer-related deaths were due to lung cancer. Colorectal, female breast, and prostate cancer collectively equate to more than one-quarter of cancer-related deaths. Just under half of all cancer-related deaths were attributable to various other cancers. Among these cancers, the highest numbers of deaths were due to cancers of the digestive system (other than colorectal), cancers of the urinary system, cancers of the female genital system, lymphoma, and leukemia.

### Incidence

From 2000 to 2007, there were 19,511 newly diagnosed cases of cancer in the Niagara region. Figure 2 displays the percentage of new cases that were due to specific types of cancer. The cancers with the highest incidence for this time period include: prostate (16.1%), lung (14.5%), colorectal (12.7%), and female breast (12.7%). Just under half (44.0%) of the cancer incidence for this time period was attributable to various other types of cancers. Within these "other cancers", the highest incidence occurred among cancers of the urinary system, cancers of the female genital system, lymphomas, skin cancer (excluding basal cell and squamous cell carcinomas), and leukemia.



**Figure 1.** Cancer mortality in Niagara, 2000-2007<sup>1</sup>



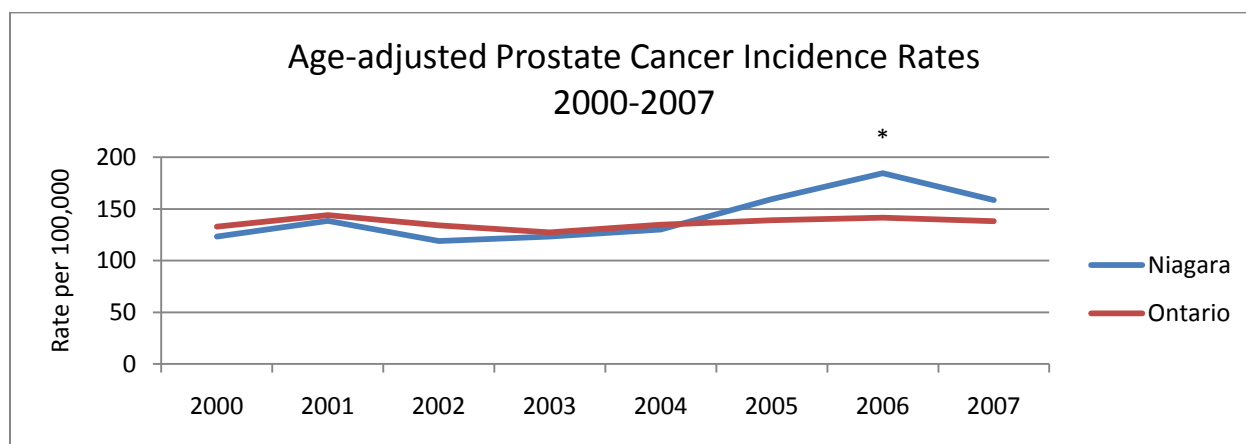
**Figure 2.** Cancer incidence in Niagara, 2000-2007<sup>1</sup>

<sup>1</sup>Source: Cancer Care Ontario-SEER\*Stat Release 7 – OCRIS (February 2009) released March 2009

### Comparison of Niagara to Ontario

In comparing the overall (combined lung, colorectal, breast, and prostate) age-adjusted cancer incidence and mortality rates from 2000 to 2007, there were no significant differences between Niagara and Ontario. Data were also analyzed by cancer type, sex, and age category to determine if the Niagara region differed from Ontario averages.

In 2006, prostate cancer age-adjusted incidence was significantly higher in Niagara than in Ontario as a whole. However, levels in Niagara returned to those comparable to the rest of Ontario in 2007, so this does not appear to be a trend over time (Fig. 3). Reanalysis will occur when further data are available.

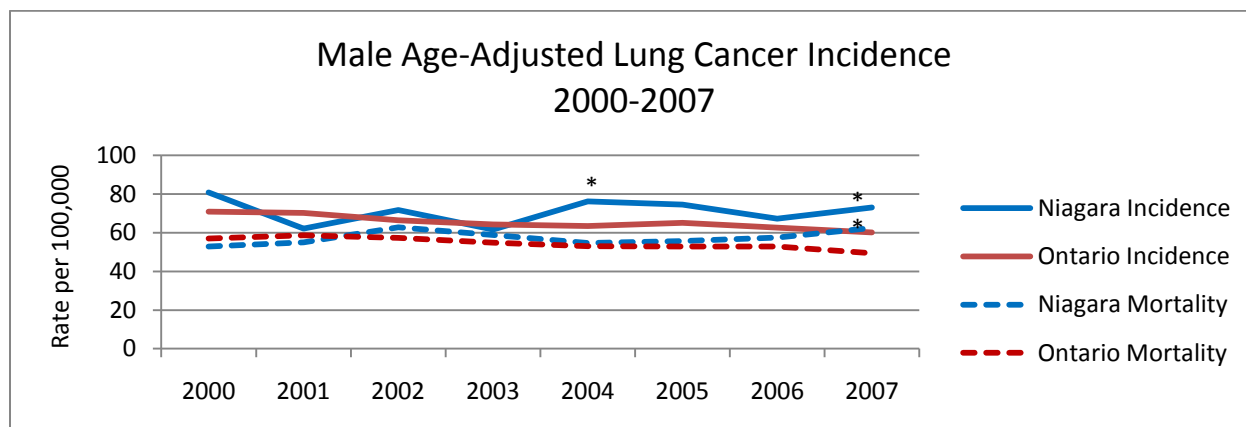


\* Indicates significantly different rate than Ontario

**Figure 3.** Age-adjusted prostate cancer incidence rates for Niagara and Ontario, 2000-2007<sup>1</sup>

Another difference between Niagara and Ontario can be seen when looking at the age-adjusted cancer-specific incidence and mortality rates by sex (Fig. 4). Males in Niagara experienced a statistically significant higher age-adjusted lung cancer incidence than males in Ontario in 2004 and in 2007. In addition, Niagara males also experienced a significantly higher mortality rate than Ontario males in 2007. Although reasons for differences in incidence are not entirely clear, the Niagara region does have a significantly higher smoking rate than the rest of Ontario, and smoking very clearly causes lung cancer. Given that the increase in mortality occurs only in 2007, further data are required before it can be determined if a trend exists.

<sup>1</sup>Source: Cancer Care Ontario-SEER\*Stat Release 7 – OCRIS (February 2009) released March 2009

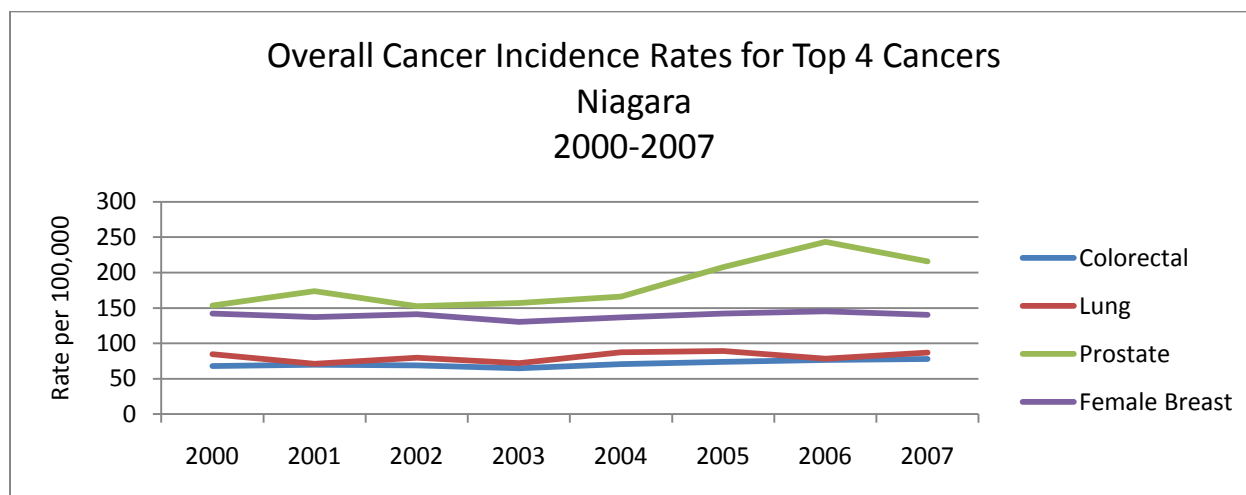


\* Indicates significantly different rate than Ontario

**Figure 4.** Age-adjusted lung cancer incidence and mortality for males in Niagara and Ontario, 2000-2007<sup>1</sup>

### Cancer-specific Incidence and Mortality Rates in the Niagara region, 2000-2007

Figures 1 and 2 display the cancer-specific incidence rates (new cancers) and the cancer-specific mortality (death) rates from 2000 to 2007 for the top 4 cancers in the Niagara region. Colorectal cancer, lung cancer and female breast cancer incidence rates remained relatively stable over this time period. Colorectal cancer showed a slight increase in incidence, although this was not statistically significant and could be due to chance and normal variations in rates. Prostate cancer incidence did increase during this time period, with a spike from 2004 to 2006. This may be due to increased screening with prostate-specific antigen (PSA) testing during that time period. However, since this increase is only seen for two years, it is difficult to determine if this is a pattern that will continue. Further analysis will be performed once data for the years following 2007 are available. The mortality rates for colorectal cancer, female breast cancer and prostate cancer have also remained relatively stable during the same time period. The mortality rate for lung cancer does appear to be increasing, but this increase is not statistically significant. Further data are required to determine if a trend exists.



**Figure 5.** Cancer-specific incidence rates in Niagara, 2000-2007<sup>1</sup>

<sup>1</sup>Source: Cancer Care Ontario-SEER\*Stat Release 7 – OCRIS (February 2009) released March 2009

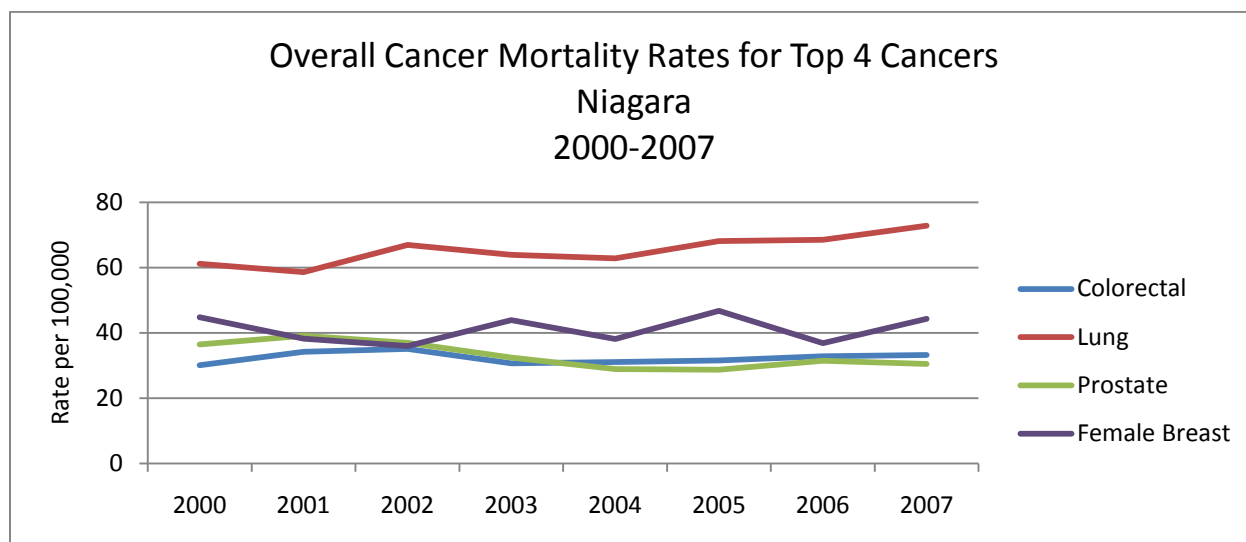


Figure 6. Cancer-specific mortality rates in Niagara, 2000-2007<sup>1</sup>

## Colorectal Cancer

Colorectal cancer starts in the colon or rectum. The cells lining the walls of the colon or rectum can divide rapidly and form non-cancerous growths called polyps. Colorectal cancer almost always develops from one of these polyps, and this can provide an opportunity to catch cancers earlier. Modifiable risk factors for colorectal cancer include an unhealthy diet, low levels of physical activity, obesity, smoking, and heavy alcohol use. Screening for colorectal cancer can occur using a fecal occult blood test (FOBT), sigmoidoscopy, or colonoscopy. The Colon Cancer Check program in Ontario provides FOBT screening to all Ontarians at average risk for colorectal cancer who are 50 years of age and older. Under the OPHS, NRPH promotes FOBT screening for colorectal cancer. Figure 7 shows that FOBT screening rates are increasing in Niagara's Local Health Integration Network (LHIN).

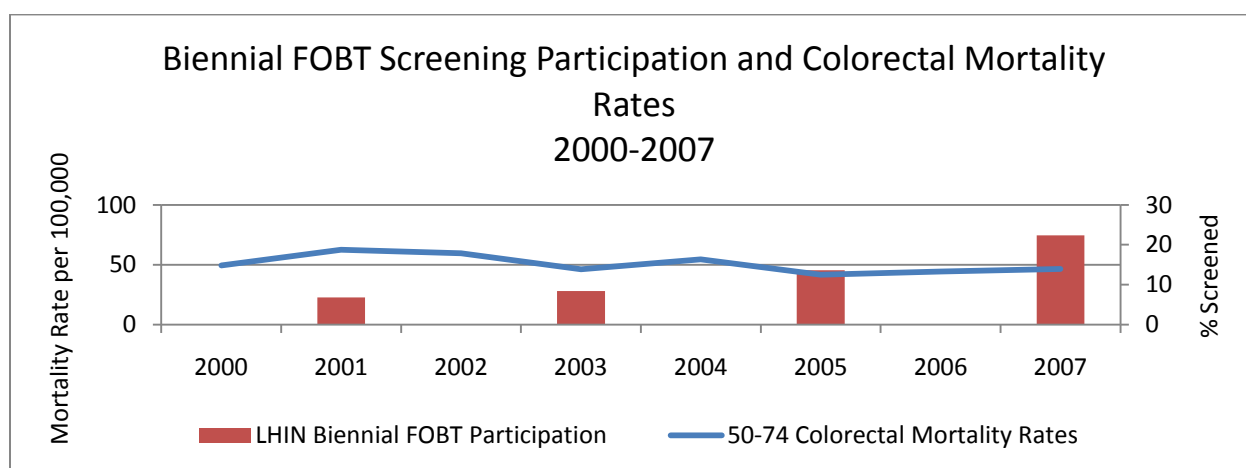


Figure 7. FOBT Screening and colorectal cancer mortality among those 50-74 years old in Niagara, 2000-2007<sup>1</sup>

<sup>1</sup>Source: Cancer Care Ontario-SEER\*Stat Release 7 – OCRIS (February 2009) released March 2009

## Lung Cancer

Lung cancer is the leading cause of cancer-related mortality in Niagara and it is the second-leading cause of cancer incidence in the Niagara region (Fig. 1, 2), which is in keeping with the rest of Canada. The major cause of lung cancer is tobacco smoke, but other modifiable risk factors for lung cancer include radon, asbestos, radiation, arsenic, and air pollution. There is no generally accepted screening test for lung cancer.

The incidence of lung cancer increases with age (i.e., older people develop lung cancer more often than younger people). Currently, men have a higher death rate than women due to lung cancer. However, this is expected to change in the future as the increase in women smokers began later than men. The Niagara region is likely to see an increase in lung cancer incidence and mortality in women with a decline approximately 20 years later (Canadian Cancer Statistics, 2011).

## Prostate Cancer

Prostate cancer is a male cancer that affects the prostate gland in the male reproductive system. Modifiable risk factors for prostate cancer include an unhealthy diet, obesity, lack of physical activity, and smoking. The PSA test and digital rectal examination may be used to screen for prostate cancer in appropriate men. Prostate cancer has the highest incidence and fourth highest mortality of cancers in the Niagara region, which is similar to the rest of Ontario. Prostate cancer is associated with age and is rare in men under 50 years. The incidence peaks around 65-79 years of age, but death rates are highest in the 80 and over age group. Overall, mortality is decreasing likely due to a combination of screening and improved treatment.

## Female Breast Cancer

Breast cancer is primarily a disease of women. Modifiable risk factors for breast cancer include physical inactivity, obesity, and increased alcohol consumption. Screening for breast cancer is through a mammogram (breast x-ray). A mammogram tries to detect early cancer which can be treated. NRPH promotes Ontario's organized screening program called the Ontario Breast Cancer Screening Program (OBSP). As seen in Figures 1 and 2, breast cancer has the fourth highest incidence of all cancers in Niagara Region and the third highest mortality. This is comparable with Canadian rates. Breast cancer incidence increases with age and is more likely to be due to genetic or inherited factors in women under 40 years. Incidence and mortality are highest in women 65 years and older. Figure 8 shows that the incidence of breast cancer in women 80 years and older appears to be increasing. This may be due to increased screening for breast cancer through the OBSP, which has increased in Niagara since 2000 (Fig. 9). Generally, incidence follows a similar pattern as that of screening which is evident in Figure 9. In addition, mortality rates among women over the age of 80 have also decreased during the same time period (Fig. 10), which may suggest that more breast cancers are being detected at an earlier stage, thereby increasing survival rates. Improvements in breast cancer treatment also likely contribute to the decreasing mortality rates.

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<sup>1</sup>Source: Cancer Care Ontario-SEER\*Stat Release 7 – OCRIS (February 2009) released March 2009

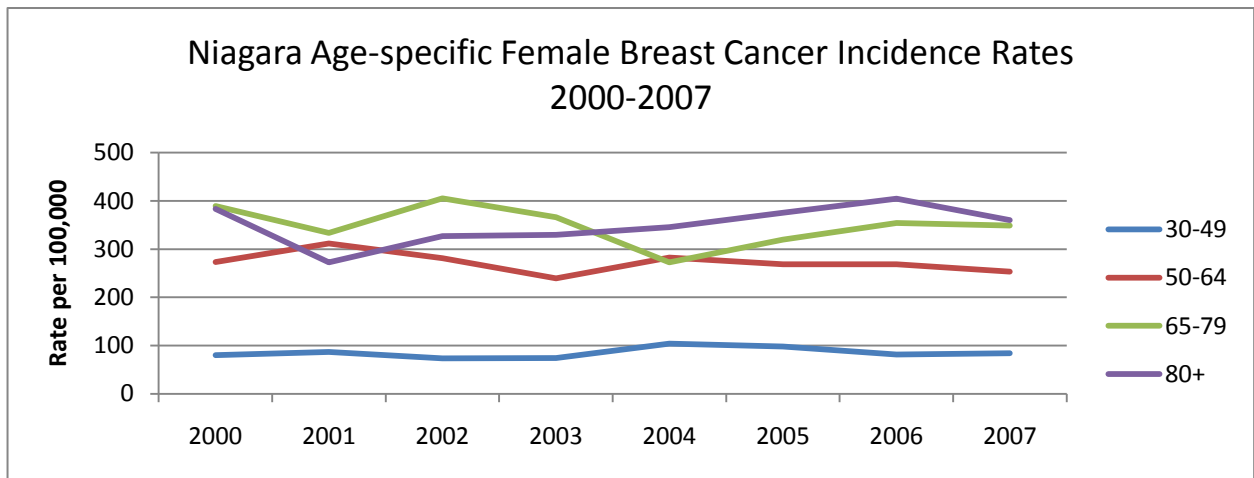


Figure 8. Age-specific female breast cancer incidence in Niagara, 2000-2007<sup>1</sup>

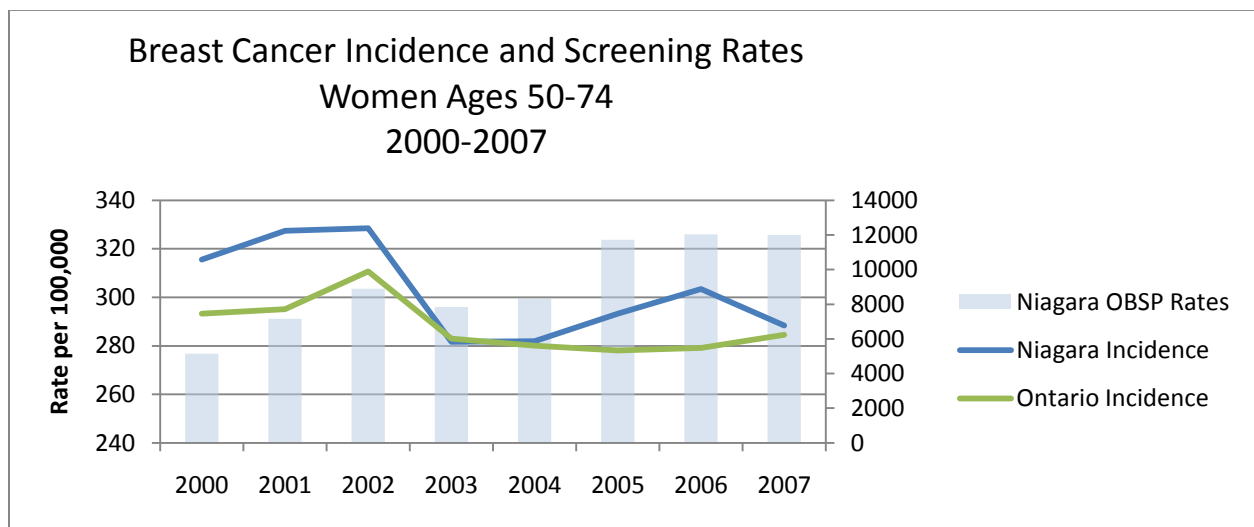


Figure 9. Breast cancer incidence and breast cancer screening rates among those 50-74 years old, 2000-2007<sup>1</sup>

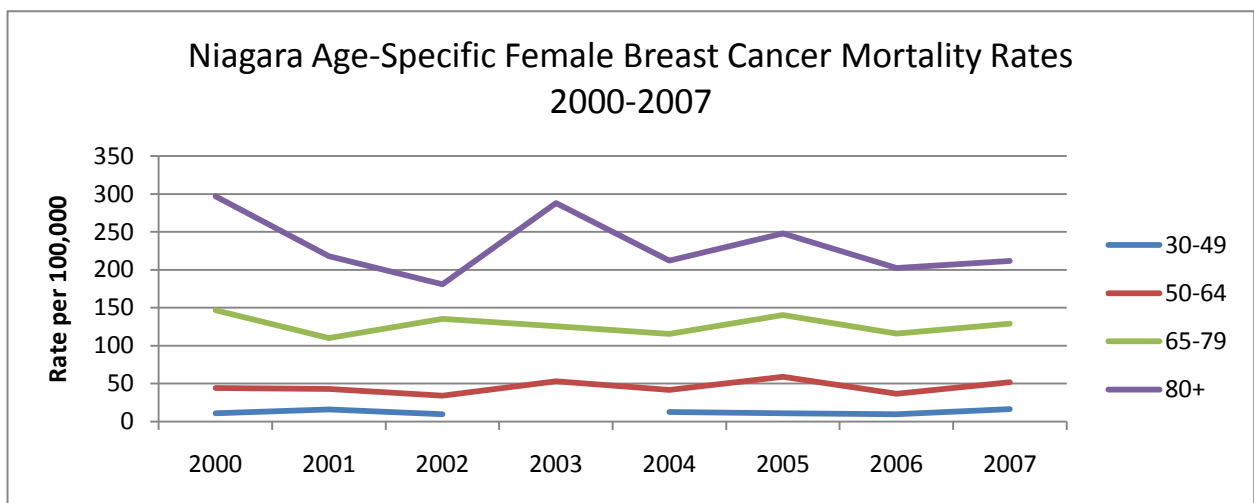


Figure 10. Age-specific female breast cancer mortality in Niagara, 2000-2007<sup>1</sup>

<sup>1</sup>Source: Cancer Care Ontario-SEER\*Stat Release 7 – OCRIS (February 2009) released March 2009

## Summary

The Niagara region is a safe place to live, work, grow, and play. Trends for new cancer cases and deaths in the Niagara region are similar to those in Ontario and the rest of Canada. Over 50% of cancers can be prevented through the adoption of healthy lifestyles. NRPH will continue to promote quitting smoking, increasing physical activity, eating a healthy diet, consuming alcohol in moderation, and having cancer screening performed when appropriate. Further reports will follow as new data becomes available.

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<sup>1</sup>Source: Cancer Care Ontario-SEER\*Stat Release 7 – OCRIS (February 2009) released March 2009