



Algoma **Cancer Report** 2015



Algoma
PUBLIC HEALTH
Santé publique Algoma

VISION

Together, we create and sustain healthy communities.

MISSION

Together with our communities, Algoma Public Health is a leader in promoting and protecting health and well-being.

Message from Medical Officer of Health

It has been over ten years since the last report on cancer in the Algoma district was released. I am pleased to present to you, “*Algoma Cancer Report, Release 2015*”.¹

I am happy to report that the incidence rates of some cancers, such as prostate, have decreased. However, the rate for many other cancers remains unacceptably high. The incidence of new cancer cases has also increased, partially due to increased detection.

We can take action, in part by making healthier lifestyle choices as well as through regular participation in cancer screening programs that aim to identify cancers in early and more treatable stages.

Decades of research have shown that cutting tobacco use is the single most effective way to prevent many deadly cancers.² Many people may not realize that combining tobacco with alcohol further increases the risk for some cancers.³ With this in mind, we need to continue to work on reducing the number of people in Algoma who use tobacco products. Further work needs to be done to encourage people to reduce the amount of alcohol that they consume.

Addressing poor nutrition and physical inactivity and understanding the risks of environmental health exposures, such as radon, are other top priorities in the prevention of cancer for our district.

As the lead public health agency in Algoma, our strategic directions reflect our commitment to fight cancer by:

1. Improving Health Equity

Acknowledging that there may be obstacles in attaining optimal health, we will work with key partners to promote access to community services and advocating for “system” supports to reduce health inequities in the prevention of cancer, its early identification and treatment.

2. Collaborating Effectively

Effective collaboration with key partners will allow us to achieve a collective impact in identifying priority activities such as:

- Working with local municipalities to identify and implement policies which support access to safe, nutritious food for Algoma residents to participate in regular physical activity.
- Continue to work with local municipalities to reduce the exposure to tobacco, alcohol, radon and other environmental contaminants.
- Work with community partners to set realistic targets for the reduction of tobacco and alcohol use in Algoma.
- Work with community partners to support the creation and advancement of public awareness tools.

3. Enhancing Employee Engagement

Employees of Algoma Public Health (APH) are engaged in planning, development, and analysis of health data. Program planning is built on identified strengths and needs throughout the communities in Algoma.

4. Being Accountable

APH is accountable for providing information about community health status. The development and sharing of reports such as this cancer report demonstrates the commitment to share information about health indicators and to encourage collaboration in order to influence positive change throughout our communities.

But is this enough? We recognize that there are a number of agencies involved in the prevention, treatment and support services related to cancer. Collaboration with these key partners will allow us to achieve a collective impact that will help to influence a reduction in the incidence and mortality rates of cancer. We cannot do it alone. With this in mind, we issue a call to action to our community partners. Together, we can improve the health of Algoma residents.



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EXECUTIVE SUMMARY

This report reflects the current trends of cancer incidence (newly diagnosed cases) and mortality (deaths attributed to cancer) rates for the time period 2000 to 2009. Throughout the report, Algoma rates were compared to Ontario rates and the 2007 defined Sparsely Populated Urban Rural Mix Public Health Unit Peer Group (excluding Algoma).⁴

Key Findings

1) Newly diagnosed cases of cancer in Algoma.

In Algoma in the 10-year span from 2000 to 2009, there were 7,534 newly diagnosed cases of cancer. This means that on average 753 people per year were diagnosed with cancer.

2) The most common types of cancer.

Prostate, breast, lung and colorectal cancers were the most common types of cancer in Algoma. According to the Canadian Cancer Society (CCS), these four cancers account for over half (52.0%) of all newly diagnosed cancers in Canada.⁵ In Algoma these 4 cancers accounted for 53.9% of all newly diagnosed cases, 53.2% of cases in Ontario and 55.5% of cases in our Peer Group thus mirroring the Canadian picture.

3) Algoma's cancer incidence rate is statistically higher than the Ontario rate.

Algoma's age standardized rate for all cancers, between 2000 and 2009 was 427.6 per 100,000 people compared to Ontario's rate at 410.2 per 100,000 people and our Peer Group at 439.5 per 100,000 people. Algoma's rate was *statistically higher* than the Ontario rate but *not statistically different* from our Peer Group.

4) Algoma's rates were statistically higher for 4 types of cancers.

Lung and Bronchus

The age standardized incidence rate for lung and bronchus cancer in Algoma between 2000 and 2009 was 64.7 new cases per 100,000 people, with the Ontario rate at 52.5 new cases per 100,000 people and our Peer Group at 68.6 new cases per 100,000 people. Algoma's rate was *statistically higher* than the Ontario rate but *not statistically different* than our Peer Group.

Urinary Bladder

The age standardized incidence rate for urinary bladder cancer in Algoma between 2006 and 2009 was 16.7 new cases per 100,000 people, with the Ontario rate at 12.2 new cases per 100,000 people and our Peer Group at 13.0 new cases per 100,000 people. Algoma's rate was *statistically higher* than the Ontario rate but *not statistically different* from our Peer Group.

Kidney and Renal Pelvis

The age standardized incidence rate for kidney and renal pelvis cancer in Algoma between 2000 and 2009 was 12.6 new cases per 100,000 people, with the Ontario rate at 10.4 new cases per 100,000 people and our Peer Group at 12.9 new cases per 100,000 people. Algoma's rate was *statistically higher* than the Ontario rate but *not statistically different* from our Peer Group.

Esophageal

The age standardized incidence rate for esophageal cancer in Algoma between 2000 and 2009 was 6.2 new cases per 100,000 people, with the Ontario rate at 4.1 new cases per 100,000 people and our Peer Group at 4.9 new cases per 100,000 people. Algoma's rate was *statistically higher* than the Ontario rate but *not statistically different* from our Peer Group.

5) Algoma's rates were statistically lower for 2 types of cancers.

Prostate

The age standardized incidence rate for prostate cancer in Algoma between 2000 and 2009 was 118.0 new cases per 100,000 males, with the Ontario rate at 134.4 new cases per 100,000 males and our Peer Group at 134.1 new cases per 100,000 males. Algoma's rate was *statistically lower* than the Ontario rate and our Peer Group.

Liver

The age standardized incidence rate for liver cancer in Algoma between 2000 and 2009 was 2.3 new cases per 100,000 people, with the Ontario rate at 3.7 new cases per 100,000 people and our Peer Group at 2.6 new cases per 100,000 people. Algoma's rate was *statistically lower* than the Ontario rate but *not statistically different* from our Peer Group.

6) Algoma's cancer mortality rate is higher than the Ontario rate.

The age standardized mortality rate for all cancers in Algoma between 2000 and 2009 was 186.3 deaths per 100,000 people, with the Ontario rate at 165.3 deaths per 100,000 people and our Peer Group at 188.6 deaths per 100,000 people. Algoma's rate was *statistically higher* than the Ontario rate but *not statistically different* from our Peer Group.

7) Algoma's lung and bronchus mortality rate is higher than the Ontario rate.

The age standardized mortality rate for lung and bronchus cancer in Algoma between 2000 and 2009 was 52.1 deaths per 100,000 people, with the Ontario rate at 41.4 deaths per 100,000 people and our Peer Group at 54.1 deaths per 100,000 people. Algoma's rate was *statistically higher* than the Ontario rate but *not statistically different* than our Peer Group.

8) Algoma's percentage of current smokers is higher than Ontario.

According to the 2011-2012 cycle of the Canadian Community Health Survey,⁶ in Algoma, the percentage of current smokers, that is, the population age 12 or older who have smoked at least 100 cigarettes in their lifetime and have smoked in the past 30 days, is 23.6% compared to the Ontario percentage of 17.8% and our Peer Group at 24.4%.

9) There are 3 provincially supported cancer screening programs.

Screening identifies pre-cancerous changes or finds cancer in the early stages when it is easier to treat. Breast, cervical and colorectal screening programs are available in Ontario.²¹

A Call to Action

Overall, in Algoma there is a higher incidence rate of cancer than the province. Most notably is the difference between the Algoma and provincial rate for lung and bronchus cancer. Going forward, we can reduce our incidence of cancer through healthy lifestyle choices and understanding exposures that may pose risks.

Community-based partnerships can also improve access to health information and support healthier lifestyles. We recognize that there are a number of agencies involved in the prevention, treatment and support services related to cancer. Collaboration with these key partners will allow us to achieve a collective impact. We cannot do it alone.

With this in mind, we issue a call to action to our community partners to work with us to:

- ❖ Identify and implement policies that support access to safe, nutritious food.
- ❖ Increase opportunities and access for Algoma residents to participate in regular physical activity.
- ❖ Work to reduce the exposure to tobacco, alcohol, radon and other environmental contaminants.
- ❖ Work together to set realistic targets for the reduction of alcohol use in Algoma.
- ❖ Work together to reduce smoking rates by 5% within 5 years.
- ❖ Work together to increase the number of radon test kits sold in the Algoma District by 10% within 5 years.
- ❖ Work together to increase the number of people who report home radon test results to APH by 5% within 5 years.
- ❖ Continue to work together to increase public awareness of the risk factors associated with cancer.
- ❖ Continue to encourage the public to participate in provincially funded cancer screening programs.
- ❖ Continue to monitor and report on cancer trends and associated risk factors.
- ❖ Continue to work to improve equitable access to prevention and treatment services.

This increased alliance will enable us to improve the health of Algoma residents. Together, we can influence a reduction in the incidence and mortality rates of cancer in the Algoma District.

Preventing Cancer

Nearly 50% of all cancers can be prevented through healthy lifestyle choices as well as participating in regular cancer screening and through the implementation of health-promoting policies.⁷ According to the World Health Organization (WHO), at least one-third of all cancer cases are preventable by modifying one's risk factors.⁸

The risks for developing the leading types of cancer can be reduced by making healthy lifestyle choices.² Specifically, lifestyle behaviours, such as not smoking and avoiding exposure to secondhand tobacco smoke will reduce the risk for lung and bronchus cancer.⁹ Eating healthy food and limiting alcohol will help reduce the risk for colorectal cancer.⁹

Early Detection is Important

We urge all Algoma residents to learn more about cancer, learn how to reduce their risk (see Appendix A “What You Can Do to Reduce Your Risk of Cancer”) and to take part in cancer screening programs (see Appendix B for Cancer Screening Guidelines). Regular self-examination is important for early detection for certain types of cancer like breast, skin and testicular cancer. It is important that people know their own bodies through self-examinations so they can recognize a change early and seek medical advice. See Appendix C, “Early Detection is Important” for additional information.

We All Play a Part

Healthy public policies such as smoke-free public places¹⁰ and the Ontario Ministry of Education's School Food and Beverage Policy¹¹ also help individuals to make healthy lifestyle choices which will help reduce the risk of developing cancer. Community-based partnerships can also improve access to health information and support healthier lifestyles.

PUBLIC HEALTH'S ROLE

The Ottawa Charter helps to guide the work of public health around the world.¹² Algoma Public Health uses the five action steps outlined by the Charter to guide our health promotion work:

1. Support Healthy Public Policy

- Continue to work with local municipalities to identify and implement policies which support access to nutritious food and physical activity and mitigate the exposure to tobacco, alcohol, radon and other environmental contaminants.

2. Engage and work with community partners

- There are a number of agencies involved in the prevention, treatment and other cancer related activities. Collaboration with these key partners will allow us to achieve a collective impact that we cannot do alone.
- Work with community partners to set realistic targets for the reduction of tobacco and alcohol use in Algoma.

3. Increase public awareness

- Implement education and awareness strategies on the risk factors associated with cancer and the availability of screening programs.
- Work with community partners to support the creation and advancement of public awareness tools.
- Continue to monitor the trends of cancer in Algoma, as well as associated risk factors and report on them regularly.

4. Create enabling environments

- Through advocacy and partnerships we can strive to improve equitable access to prevention and treatment services as well as enhance opportunities for community residents to make healthier lifestyle choices.

5. Reallocate health services

- Increase health promotion activities with health care providers to help them support patients' awareness of risk factors and the importance of screening.

Algoma Public Health Initiatives that Play a Role in Preventing Cancer

Algoma Public Health is involved in a number of initiatives that can have a positive impact on our risk for developing cancer and other chronic diseases, including:

Food and Nutrition

- Provide educational opportunities, such as presentations and grocery store tours, for the community to enhance food skills.
- Partner with community groups such as the Algoma Food Network to ensure a sustainable, local food system that provides access to affordable, safe and healthy food.
- Advocate and provide support for food and nutrition policies in all places where community members live, learn, work and play. For example, promoting the use of *Nutrition Tools for Schools*© in all elementary schools.
- Work with municipalities, including urban planning, through partnerships like the Healthy Communities Partnership Algoma, to create healthy nutrition environments that make the healthy choice, the easy choice.
- Partner with the Ontario Ministry of Health and Long-term Care, the Ontario Fruit and Vegetable Growers Association and local school boards to provide the Northern Ontario Fruit and Vegetable Program to all elementary schools across Algoma.

Physical Activity

- Work with municipalities, including urban planning, through partnerships like the Healthy Communities Partnership Algoma, to create healthy physical activity environments that make the healthy choice, the easy choice. For example, working to achieve more active transportation infrastructure (walking trails, cycling paths and routes).
- Support the Sault Trail Advisory Committee by conducting an evaluation of the use of the John Rowswell Hub Trail. This evaluation will help to determine the use of the trail. Implications of the results will help support the need for future development and expansion of the Hub Trail.
- Provide programs such as the *10,000 Steps to Healthy Living Program* that promotes walking with the use of pedometers to reach 10,000 steps a day.
- Promote walking groups to specific groups/populations to increase physical activity as well as promote the social aspects of walking.

Tobacco

- Offer services and referrals for individuals wanting to or planning to change their tobacco use and/or to stay smoke-free.
- Provide consultation services to organizations/worksites across Algoma to help them develop strategic plans and policies that support tobacco use prevention, cessation or protection from exposure to second hand smoke. Examples of supports include smoke-free hospital properties, multi-unit dwellings, parks and recreation fields and creating organizational cessation support plans.
- Deliver awareness and education initiatives on existing and emerging tobacco related issues.
- Create partnership networks across our district to address gaps in cessation supports and identify opportunities to ensure everyone has access to services.
- Build tobacco control capacity amongst our community partners through training/workshop opportunities.
- Maintain memberships on regional and provincial tobacco control committees to bring emerging opportunities to our communities.
- Provide education and resources to tobacco retailers instructing them not to sell tobacco products to anyone less than 19 years of age.
- Support our local school boards with the resources they need to teach our youth about staying or becoming smoke-free.

Alcohol

- Work with municipalities to support healthy public policies and create supportive environments related to alcohol (i.e. municipal alcohol policy development and review).
- Work with community partners to implement harm reduction strategies such as preventing alcohol from being served to minors and promotion efforts to encourage youth to delay the age of initial use of alcohol (i.e. PARTY Program and Youth Engagement Theatre).

Early Detection of Cancer

- Inform residents through media, public presentations, and public events of the importance of early detection of cancer through regular participation in cancer screening programs like the Ontario Breast Screening Program, the Ontario Cervical Screening Program, and the *ColonCancerCheck* Program.
- Link people to our local provincially funded screening programs.
- Work with local and regional partners to endorse and implement cancer prevention health promotion activities. Events have included: The Giant Colon display, the *ColonCancerCheck* Photobooth display, and the Pink Tour Bus.

Youth Engagement

- Work with the Algoma Youth Action Alliance (AYAA) committees throughout the district to plan, implement and evaluate health promotion campaigns to influence their peers and key stakeholders around healthy lifestyles. The youth committees focus on tobacco prevention and related risk factors. Some activities include: chew tobacco awareness, smoke-free movies, smoke-free outdoor spaces, and indoor tanning.

Environmental Health

- Enforce the Smoke-Free Ontario Act (SFOA)¹³ and bylaws for preventing the sale of tobacco products to youth under 19 years of age.
- Ensure vendor compliance with the display ban and sale of tobacco products.
- Ensure smoke-free public spaces.
- Enforce the Skin Cancer Prevention Act (Tanning Beds) 2013.¹⁴
- Deliver education and awareness initiatives to the public on environmental risk factors such as radon.
- Enforce provincial acts and regulations on water.
- Collaborate with additional government agencies (e.g. Ministry of Environment and Climate Change) on environmental acts, regulations and bills.

Health Equity and Cancer Prevention

Health inequity is defined as differences in health that individuals or groups experience that are considered unfair and avoidable.¹⁵ Health equity is about levelling the playing field and ensuring that the resources needed to have the best health possible are available to everyone. Social and economic factors such as: education and literacy, employment and working conditions, culture, physical environments, income and social status play a huge role in whether or not someone is healthy.¹⁶ Income in particular has been linked to poorer health outcomes. People living on low incomes have challenges in areas such as food security, affordable housing, accessible transportation and access to certain health services. With this in mind recognize that many of the recommendations that can help reduce the risk of developing cancer may be less attainable.

While the evidence supports behaviours such as healthy eating, physical activity, quitting smoking and monitoring radon as activities to prevent cancer,⁹ some individuals because of their situations will need additional support to follow through on these recommendations.

The role of public health is to promote access to services to reduce inequities; to report on evidence and information that acknowledges the impact of health inequities; develop strategies that can improve these conditions; to advocate for changes in unfair circumstances; and to partner with others to improve the health, economic and social conditions of the citizens of Algoma.¹⁵

INTRODUCTION

The Algoma District is located in Northeastern Ontario and is home to over 116,000 people across 6 regions (Appendix D). Everyone in the Algoma District is affected by cancer. Some are affected directly as a patient or an immediate relative of a cancer patient, while others are indirectly affected through bearing the costs of health care related to cancer diagnosis and treatment. As the population ages, the total number of cancer cases is expected to increase, which will result in an even larger effect.

The cancer rates of a community can be used to assess the health status of that community and help predict the resources that will be needed to manage the current and future cancer cases in that community.¹ We hope that this information will encourage the people of the Algoma district to make more informed lifestyle choices, engage in regular cancer screening and know their own bodies so that they can recognize any changes early and report them to a healthcare provider. This information may also lead community agencies and other interest groups to allocate resources to cancer prevention.

What is cancer?

Cancer is a disease that starts in our cells.¹⁷ Our bodies are made up of millions of cells, grouped together to form tissues and organs.¹⁷ Each cell contains genes which are a set of instructions that tell it to grow, work, reproduce and die.¹⁷ Usually, our cells follow these instructions and we remain healthy.¹⁷ Sometimes the instructions get mixed up, and the cells begin to form lumps or tumours.¹⁷ The tumours can be non-cancerous (benign) or cancerous (malignant) with the potential to spread to nearby tissues, organs or to other parts of the body.¹⁷ According to Cancer Care Ontario (CCO), there are numerous potential reasons why cells that were once healthy undergo changes that trigger them to multiply uncontrollably.¹⁸

Cancer is not a single disease. There are over 200 different types of cancer¹⁸ and each cancer is named after the part of the body where it started to grow.¹⁷ Each type of cancer has its own risk factors that increase the chances of developing that cancer.¹⁷ Each cancer has its own sequence of events that occur in its development.¹⁷ Each also has its own screening and diagnostic methods, treatment options, and prognosis at a given stage of detection.¹⁸

Snapshot of Cancer Rates from 2000 to 2009

This report is intended to provide a snapshot of age standardized cancer rates in the Algoma District and Ontario between 2000 and 2009. This report replaces our earlier *Report on Cancer in the Algoma District, 1984-1998*.¹ Based on how cancer data is reported, when new information comes into the Ontario Cancer Registry or when data quality issues that occurred in previous years are corrected, previous years' data are subject to change in light of this new information. This means data from earlier years may be different now from previous releases.¹⁹ Therefore the rates in this report are not directly comparable to those in the previous report.

Statistical concepts in this report

The majority of the data from this report comes from the Ontario Cancer Registry, Cancer System Quality Index (CSQI), Statistics Canada and the Canadian Community Health Survey (CCHS). Cancer data was retrieved from a program called SEER*Stat that is managed by CCO and contains all newly diagnosed cancer cases excluding non-melanoma skin cancer. Cancer types were classified using the variable “Site recode with Kaposi and Mesothelioma” within the SEER*Stat program. More in depth definitions of each cancer type can be found at http://seer.cancer.gov/siterecode/icdo3_d01272003/.

Cancer data presented in this report comes in two main forms, incidence and mortality rates. Incidence rates pertain to the number of newly diagnosed cancer cases over a specified time period per 100,000 people.²⁰ For this report, the time period is the decade spanning 2000-2009. The mortality rate represents the number of deaths with each cancer type listed as the primary cause of death over a specified time period per 100,000 people.²⁰ Again, for this report the time period is the decade spanning 2000-2009.

In this report, the incidence and mortality rates are age adjusted to a standard population. This adjustment is done to ensure any differences between the Algoma rates and the Ontario rates are not due to one region having a different age structure that is more likely to develop cancer than another. This adjustment therefore removes age as an explanation for any differences in the rates between two regions.

Furthermore, 95% confidence intervals are presented graphically with the two rate types and were used to determine whether or not statistically significant differences exist between regions. 95% confidence intervals create an upper and lower range that accounts for random variability in the rate due to chance.²⁰ Therefore the 95% confidence interval acts as a measure of the precision of an estimate or rate. Generally, the larger the sample is, the more narrow of a range the confidence intervals create.²⁰ When comparing rates between Algoma and Ontario, if the 95% confidence interval around the rate for Algoma does not overlap with the 95% confidence interval for the Ontario rate, the difference is said to be statistically significant, meaning that the difference is not due to random error or chance but some other factor (i.e. greater tobacco exposure). So while sometimes the rates for Algoma and Ontario may appear different, if their confidence intervals overlap, the difference between the two rates is likely due to normal variability in the samples.

Lastly, while this report emphasizes comparisons between Algoma and Ontario, the rates for our public health Peer Group are also included. Peer groups involve a cluster of health units that are similar in social and economic factors, and can provide an alternative perspective when making comparisons. Based on the 2007 classification,⁴ the Peer Group that Algoma belongs to involves other sparsely populated urban-rural mix public health units, including: North Bay Parry Sound District Health Unit, Sudbury and District Health Unit, Thunder Bay District Health Unit and Timiskaming Health Unit. Going forward, the majority of graphs and text discussing cancer data will include Algoma, our Peer Group and Ontario. While the Ontario rate is calculated using data from the entire province, including Algoma, all Peer Group rates and statistics do not include data from Algoma.

For further information on the data sources, age standardized rates, confidence intervals and Statistical Significance, refer to Appendix E.

Cancer Screening for Early Detection

Screening for breast, cervical and colorectal cancer saves lives. Screening is done on people who do not have any cancer symptoms (asymptomatic). The purpose of cancer screening is to detect pre-cancerous changes or cancer at an early stage when it is easier to treat.²¹

There are screening programs for early detection of cancer for two of the four leading types of cancer, breast and colorectal. Breast, cervical and colorectal cancer screening programs are available and are operated by CCO.²¹ Refer to Appendix B for Cancer Screening Guidelines.²²

Screening for Breast Cancer

Breast self-awareness and mammograms are important for early detection of breast cancer. Talk to a health care provider about when regular breast cancer screening should begin.

Breast Screening Guidelines

The Ontario Breast Screening Program²¹ recommends:

- Women 50 to 74 years of age should have a mammogram every two years.
- Women between the ages of 30 and 69 and identified by a physician as high risk for breast cancer, should have a mammogram and breast screening Magnetic Resonance Imaging (MRI) every year.

Screening for Cervical Cancer

Human papillomavirus (HPV) is a common virus found in both men and women.²³ It is actually a group of more than 100 types of viruses.²³ Some types of HPV can be passed easily from person to person through sexual contact (vaginal, anal and oral sex or other sexual activity which involves skin to skin contact) with a person who already has the virus.²³ Certain types of sexually transmitted HPV can cause the cells of the cervix to change.²³ These cell changes may lead to cervical cancer if not detected and treated early.²³ For further information, refer to Appendix F: Human Papillomavirus (HPV).

According to the Ontario Cervical Screening Program²¹ participating in regular cervical cancer screening with the Papanicolaou (Pap) test provides a good defense against cervical cancer.

Cervical Screening Guidelines

Cervical cancer screening is recommended every three years²⁴ for all women starting at age 21 who are or ever have been sexually active.

- Sexual activity includes intercourse, as well as digital or oral sexual activity involving the genital area with a partner of either gender.
- Women who are not sexually active by 21 years of age should delay cervical cancer screening until sexually active.

- Regardless of sexual history, there is no evidence to support screening women under 21 years of age.
- Based on the latest clinical evidence, cervical cancer screening every three years is effective.
- Pap tests can stop at age 70 in women who have had three or more normal tests in the prior 10 years.

Screening for Colorectal Cancer

Men and women 50 years of age and older should talk to their health care providers about colorectal cancer screening. As with any cancer, it is important to tell health care providers about any family or personal history of cancer.

Being self-aware is also important when it comes to early detection of cancer. See Appendix G for possible signs and symptoms of colorectal cancer. If you notice any changes, report them to a health care provider right away.

Colorectal Screening Guidelines

Ontario's colorectal cancer screening program, *ColonCancerCheck*²¹ recommends:

- Men and women aged 50 to 74 should complete a fecal occult blood test (FOBT), stool sample every two years.
- Men and women with a parent, sibling, or child diagnosed with colorectal cancer should have a colonoscopy beginning at age 50, or 10 years earlier than the age that their family member was diagnosed, whichever occurs first.

Screening for Prostate Cancer

Although prostate cancer is one of the most common cancers diagnosed in men, there is no provincially approved prostate cancer screening program.²⁵ Scientific evidence is inconclusive on whether or not protein specific antigen (PSA) testing in men without symptoms is an effective method of early detection.²⁶ The test will identify some men who don't have cancer and miss some men who do have cancer.²⁵

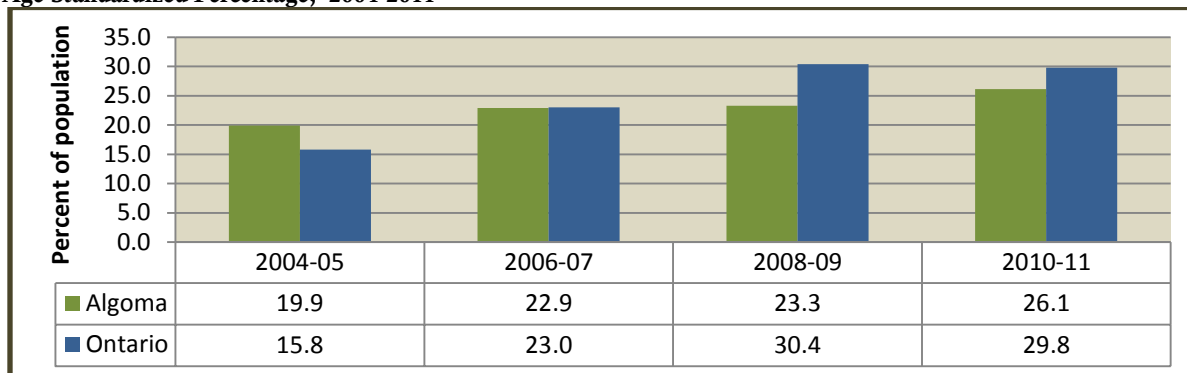
Men 50 years of age and older should discuss screening options for prostate cancer with their health care provider as the risk of developing prostate cancer increases with age. Recognizing symptoms and getting regular checkups are the best ways to detect prostate cancer early.²⁷ Refer to Appendix H for a list of possible signs and symptoms of prostate cancer.²⁸

CANCER SCREENING RATES

Completed FOBT

While there is some variance between the Algoma and Ontario rates for individuals 50-74 years who have completed at least one FOBT within a 2-year interval for the years 2004 to 2011, it was *not statistically significant* (Figure 1).²⁹

Figure 1: Individuals 50-74 Years of Age, Who Completed at Least One Fecal Occult Blood Test, in a 2-Year Period, Age Standardized Percentage, 2004-2011

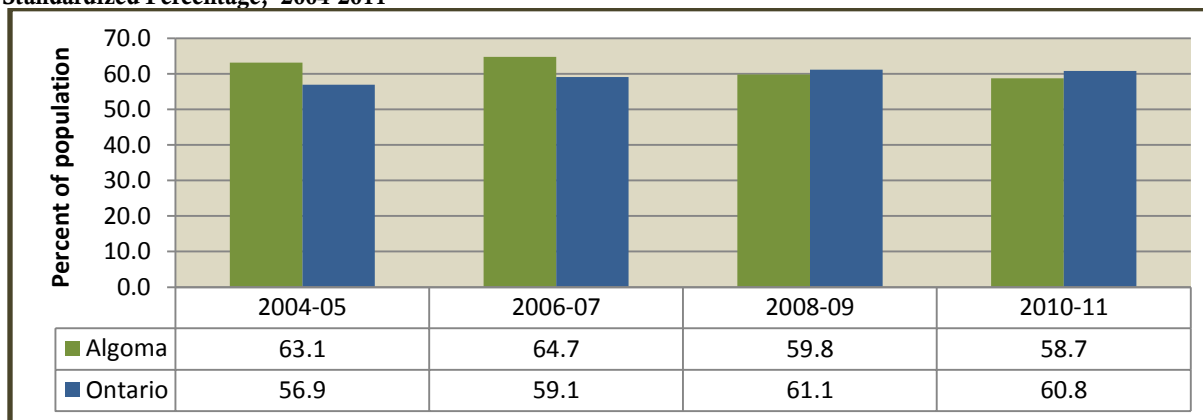


Data Source: Cancer System Quality Index, Cancer Care Ontario, January 2013

Completed Mammogram

While there is some variance between the Algoma and Ontario rates for females 50 to 74 years of age who have completed at least one mammogram within a 2-year interval for the years 2004 to 2011, it was not statistically significant (Figure 2).²⁹

Figure 2: Females, 50-74 Years of Age, Who Completed at Least One Mammogram within a Two-Year Interval, Age Standardized Percentage, 2004-2011

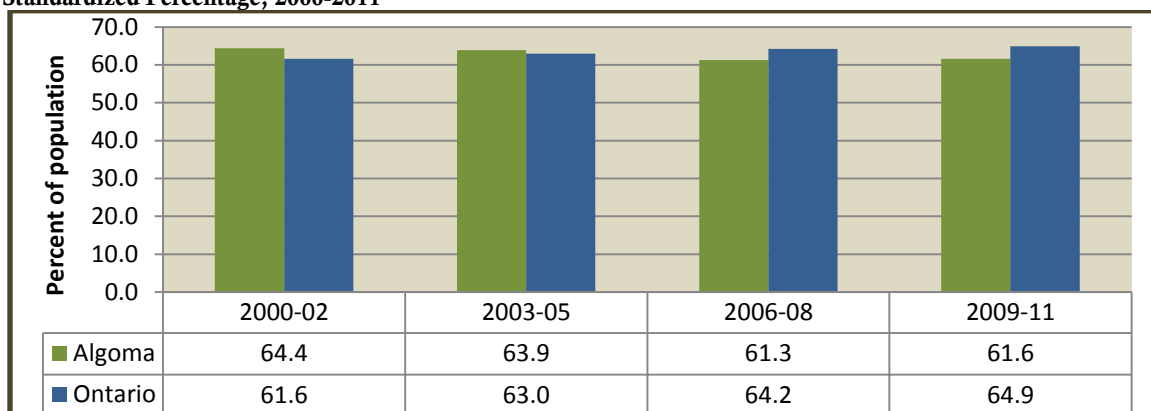


Data Source: Cancer System Quality Index, Cancer Care Ontario, January 2013

Completed Papanicolaou (Pap) Test

While there is some variance between the Algoma and Ontario rates for females, 20 to 69 years who completed at least one Pap test in a 3-year period from 2000 to 2011, it was *not statistically significant* (Figure 3).²⁹

Figure 3: Screen Eligible Females, 20-69 Years of Age, who Completed at Least One Pap Test in a 3-Year Period, Age Standardized Percentage, 2000-2011

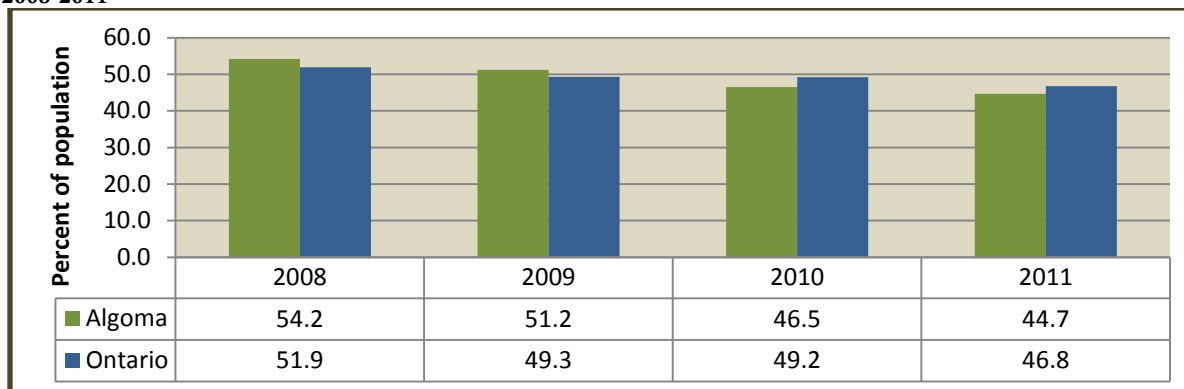


Data Source: Cancer System Quality Index, Cancer Care Ontario, January 2013

Due for Colorectal Screening

While there is some variance between the Algoma and Ontario rates for individuals 50 to 74 years who were due for colorectal screening for the years 2008 to 2011, it was *not statistically significant* (Figure 4).²⁹

Figure 4: Individuals, 50-74 Years of Age, who were due For a Colorectal Screening, Age Standardized Percentage 2008-2011



Data Source: Cancer System Quality Index, Cancer Care Ontario, January 2013

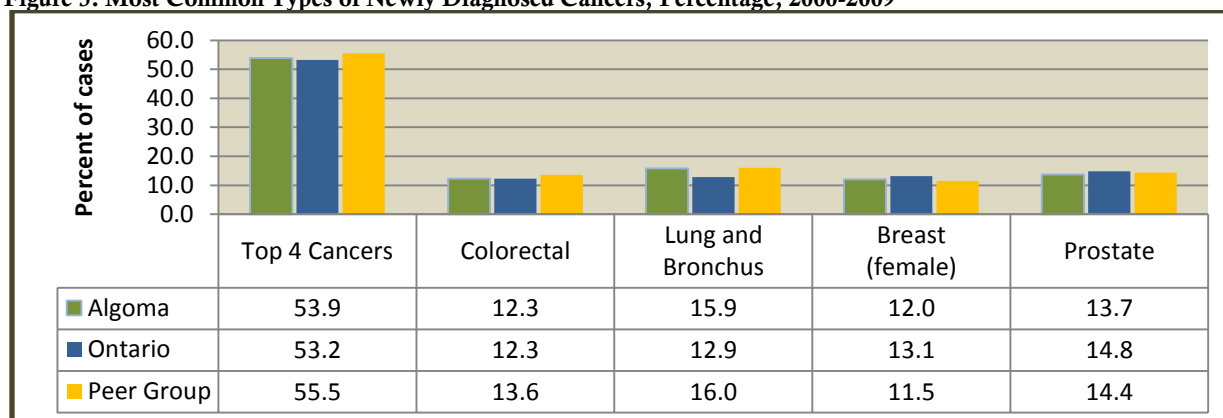
INCIDENCE RATES

Most Common Types of Cancer

In Algoma in the 10-year span between 2000 and 2009, there were 7,534 newly diagnosed cases of cancer in the 15 to 75+ age groups. This means that on average of 753 people per year were diagnosed with cancer. In our Peer Group, during the same 10-year span, 30,024 people were diagnosed with cancer, or on average 3,002 per year. In Ontario, 591,606 people were diagnosed with cancer, an average of 59,160 people per year. During this 10-year timeframe, Algoma's newly diagnosed cancer cases accounted for 1.3% of all new cases in Ontario.³⁰

Prostate, breast, lung and colorectal cancers were the most common types of cancer in Canada excluding non-melanoma skin cancer which is not reported to cancer registries.⁵ According to the Canadian Cancer Society, these four cancers account for over half (52%) of all newly diagnosed cancers in Canada.⁵ In comparison, Algoma, Ontario and our Peer Group mirror the Canadian picture in that the top four cancers also accounted for over half of all newly diagnosed cancers (Figure 5).

Figure 5: Most Common Types of Newly Diagnosed Cancers, Percentage, 2000-2009



Data Source: Cancer Care Ontario – SEER*Stat Release 9 – OCRIS (May 2012)

Prostate cancer in men accounted for 13.7% of all new cancer cases in Algoma, compared to 14.8% of cases in Ontario and 14.4% of cases within our Peer Group. Breast cancer in women accounted for 12.0% of all new cancer cases in Algoma, compared to 13.1% in Ontario and 11.5% in our Peer Group. Colorectal cancer accounted 12.3% of all new cancer cases in Algoma, similar to Ontario at 12.3% and lower than our Peer Group at 13.6%. Lung and bronchus cancer accounted for the greatest proportion of new cancer cases in Algoma at 15.9%, compared to Ontario at 12.9% and our Peer Group at 16% (Figure 5).

Incidence Rates for the Four Most Common Types of Cancer in Algoma

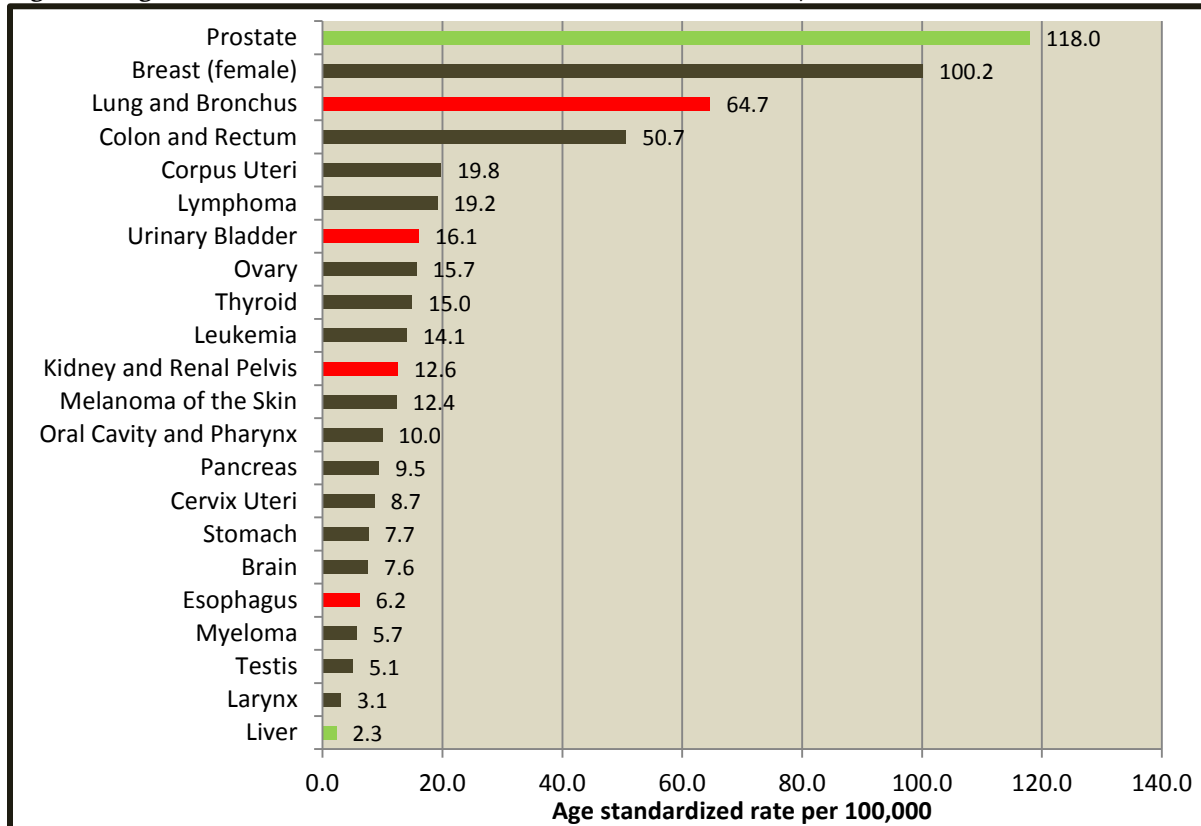
The age standardized rates per 100,000 people, for the years 2000-2009 for the 4 most common types of cancers are provided in Table 1 below:

Table 1: Age Standardized Rates for Most Common Types of Cancer, 2000-2009

Age Standardized Rates for Most Common Types of Cancer, 2000-2009 (Age standardized rate per 100,000)			
Type of Cancer	Algoma	Ontario	Peer Group
Prostate (male)	118.0	134.4	134.1
Algoma is statistically...		lower	lower
Breast (female)	100.2	100.6	96.8
Algoma is statistically...		not different	not different
Lung and Bronchus	64.7	52.5	68.6
Algoma is statistically...		higher	not different
Colorectal	50.7	49.6	58.1
Algoma is statistically...		not different	lower
All Cancers	427.6	410.2	439.5
Algoma is statistically...		higher	not different
Data Source: Cancer Care Ontario – SEER*Stat Release 9 – OCRIS (May 2012)			

In Algoma, the all cancers rate, meaning the rate of all cancers combined, was 427.6 per 100,000 people. The most common cancer in Algoma was prostate cancer, which occurred at a rate of 118.0 new cases per 100,000 males. Second was female breast cancer at 100.2 new cases per 100,000 females, followed by lung and bronchus cancer at 64.7 per 100,000 people and colorectal cancer at 50.7 per 100,000 people (Table 1).

Figure 6: Age standardized Incidence Rates of Selected Cancer Sites, 2000-2009



Data Source: Cancer Care Ontario – SEER*Stat Release 9 – OCRIS (May 2012)

	NOT statistically different from Ontario rate
	Statistically LOWER than Ontario rate
	Statistically HIGHER than Ontario rate

How Algoma Compared to Ontario by Cancer Type

When the Algoma rates for specific cancers were compared to the Ontario rates, Algoma was:

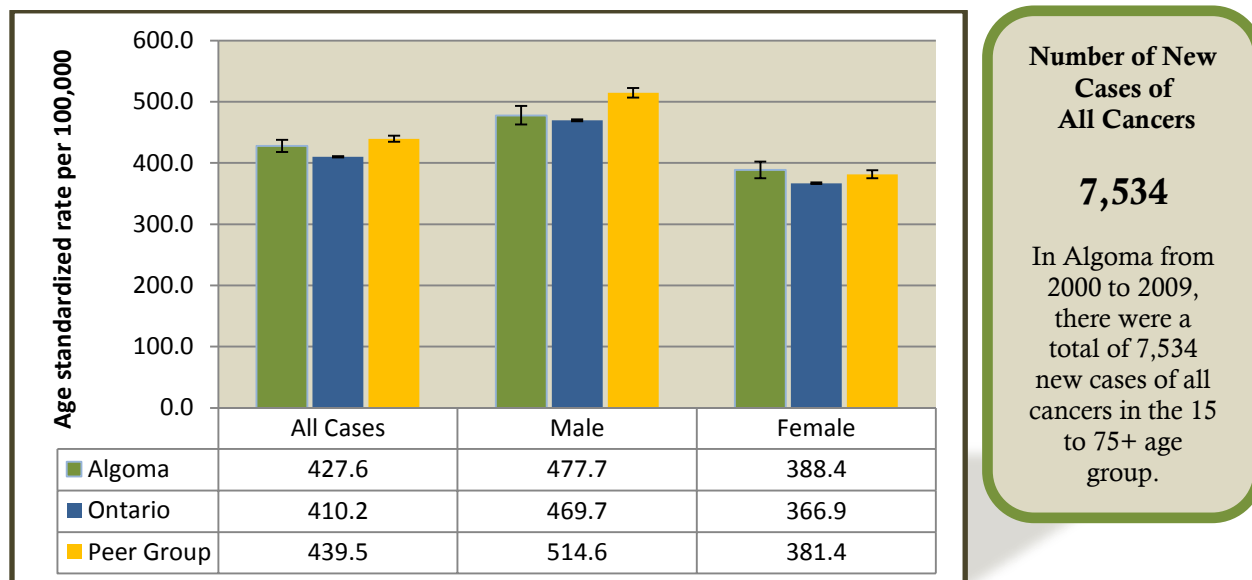
- **Statistically higher** for lung and bronchus, urinary bladder, kidney and renal pelvis and esophageal cancers.
- **Statistically lower** for prostate and liver cancers.
- **Not statistically different** for all other cancers included in this report.

Table 2: How Algoma Compared to Ontario by Cancer Type, 2000-2009

How Algoma Compared to Ontario by Cancer Type, 2000-2009		
Algoma was STATISTICALLY HIGHER than Ontario	Algoma was STATISTICALLY LOWER than Ontario	Algoma was NOT STATISTICALLY DIFFERENT from Ontario
<ul style="list-style-type: none"> ▪ Esophageal ▪ Kidney and Renal Pelvis ▪ Lung and Bronchus ▪ Urinary Bladder 	<ul style="list-style-type: none"> ▪ Liver ▪ Prostate 	<ul style="list-style-type: none"> ▪ Brain ▪ Breast ▪ Cervical ▪ Colorectal ▪ Laryngeal ▪ Leukemia ▪ Lymphoma ▪ Melanoma ▪ Myeloma ▪ Oral and Pharyngeal ▪ Ovarian ▪ Pancreatic ▪ Stomach ▪ Testicular ▪ Thyroid ▪ Uterine
Data Source: Cancer Care Ontario – SEER*Stat Release 9 – OCRIS (May 2012)		

All Cancers

Figure 7: All Cancers, Age Standardized Incidence Rate, 2000-2009



Number of New Cases of All Cancers

7,534

In Algoma from 2000 to 2009, there were a total of 7,534 new cases of all cancers in the 15 to 75+ age group.

Data Source: Cancer Care Ontario – SEER*Stat Release 9 – OCRIS (May 2012)

The age standardized incidence rate for all cancers in the Algoma District between 2000 and 2009 was 427.6 new cases per 100,000 people, with the Ontario rate at 410.2 new cases per 100,000 people and the Peer Group rate at 439.5 new cases per 100,000 people (Figure 7).

- Algoma's incidence rate for all cancers was *statistically higher* than the Ontario rate but *not statistically different* from our Peer Group.

Males All Cancers

The age standardized incidence rate for all cancers for males in Algoma between 2000 and 2009 was 477.7 new cases per 100,000 males, with the Ontario rate at 469.7 new cases per 100,000 males and the Peer Group rate at 514.6 new cases per 100,000 males (Figure 7).

- Algoma's incidence rate for all cancers for males was *not statistically different* from Ontario's rate and *statistically lower* than our Peer Group.

Females All Cancers

The age standardized incidence rate for all cancers for females in Algoma between 2000 and 2009 was 388.4 new cases per 100,000 females, with the Ontario rate at 366.9 new cases per 100,000 females and the Peer Group rate at 381.4 new cases per 100,000 females (Figure 7).

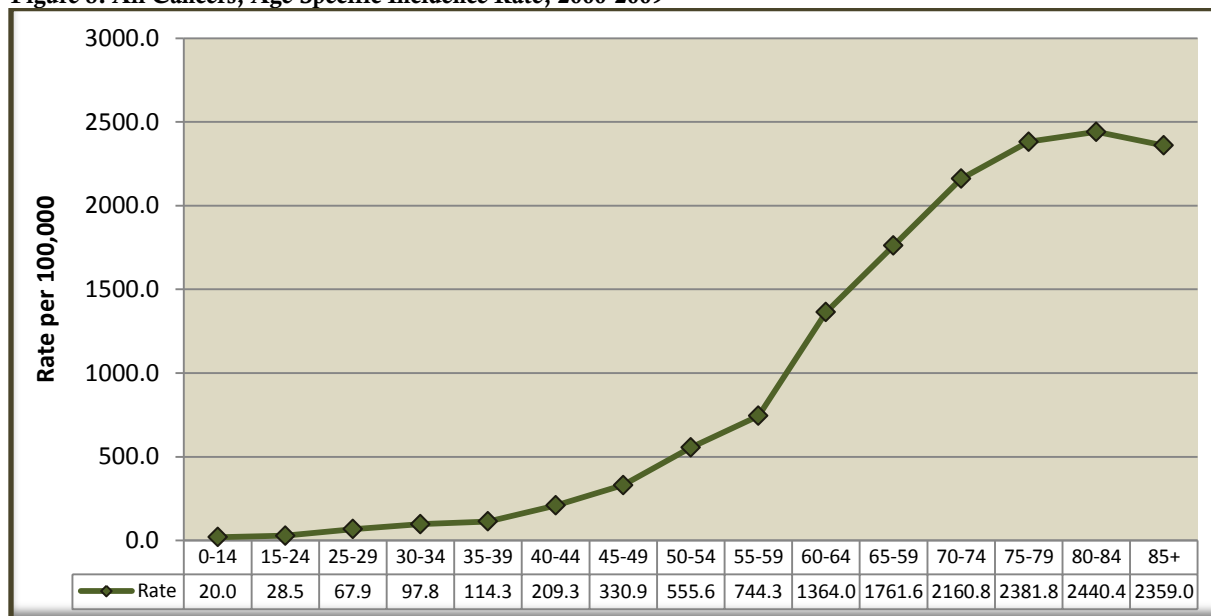
- Algoma's incidence rate for all cancers for females was *statistically higher* than the Ontario rate but *not statistically different* than our Peer Group.

Males vs. Females

The age standardized incidence rate for all cancers for males in Algoma, in Ontario and for the Peer Group was *statistically higher* than the age standardized incidence rate for all cancers for females (Figure 7).

All Cancers by Age Group

Figure 8: All Cancers, Age Specific Incidence Rate, 2000-2009



Data Source: Cancer Care Ontario – SEER*Stat Release 9 – OCRIS (May 2012)

Cancer is a disease that affects people of all ages; however, the risk of cancer increases with age.² Figure 8 illustrates the relationship between age groups and cancer incidence in Algoma.

Table 3: Number of Newly Diagnosed Cases of Cancer in Algoma by Age Group and Gender, 2000-2009

	Male	Male	Female	Female	Total	Total
Age Group	Count	Percentage	Count	Percentage	Count	Percentage
0-14 years	24	0.6%	11	0.3%	35	0.5%
15-44 years	140	3.5%	287	8.1%	427	5.7%
45-54 years	350	8.8%	505	14.3%	855	11.3%
55-64 years	863	21.6%	778	22.0%	1,641	21.8%
65-74 years	1,422	35.6%	963	27.2%	2,385	31.7%
75+ years	1,201	30.0%	990	28.0%	2,191	29.1%
Total	4,000	100.0%	3,534	100.0%	7,534	100.0%

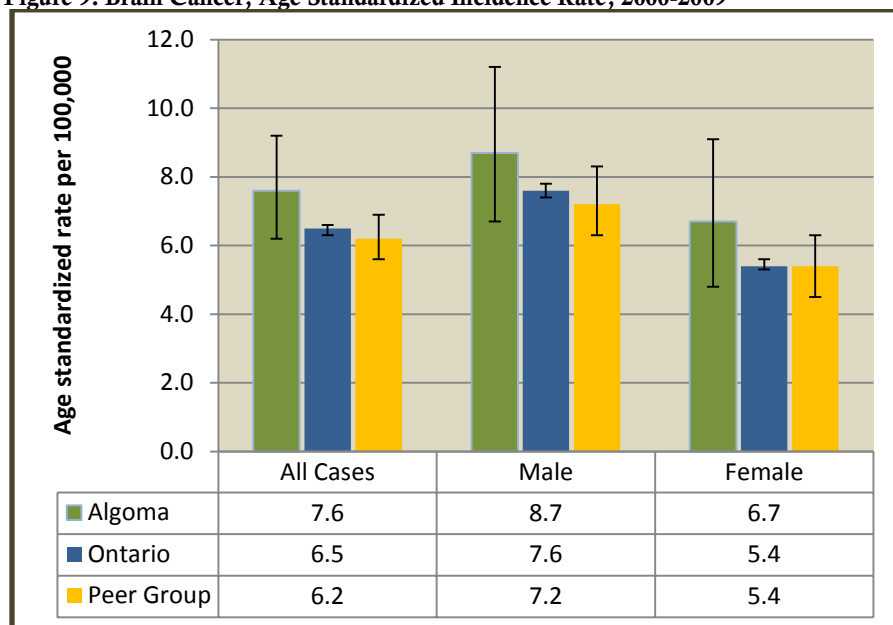
Data Source: Cancer Care Ontario – SEER*Stat Release 9 – OCRIS (May 2012)

Of the 7,534 newly diagnosed cases of cancer during the years 2000 to 2009, 83% (n=6,217) were in individuals 55 years and older (Table 3).

The number of children diagnosed with cancer is a rare event. In Algoma between 2000 and 2009 there were 35 newly diagnosed cases of cancer in children 0 to 14 years of age. This represented 0.5% of all cases during this time period (Table 3).

Brain Cancer

Figure 9: Brain Cancer, Age Standardized Incidence Rate, 2000-2009



Data Source: Cancer Care Ontario – SEER*Stat Release 9 – OCRIS (May 2012)

Number of New Cases of Brain Cancer

117

In Algoma from 2000 to 2009, there were a total of 117 new cases of brain cancer.

The age standardized incidence rate of brain cancer in Algoma between 2000 and 2009 was 7.6 new cases per 100,000 people, with the Ontario rate at 6.5 new cases per 100,000 people and the Peer Group rate at 6.2 new cases per 100,000 people (Figure 9).

- Algoma's incidence rate of brain cancer was *not statistically different* from the Ontario rate or our Peer Group.

Brain Cancer in Males

The age standardized incidence rate of brain cancer for males in Algoma between 2000 and 2009 was 8.7 new cases per 100,000 males, with the Ontario rate at 7.6 new cases per 100,000 males and the Peer Group rate at 7.2 new cases per 100,000 males (Figure 9).

- Algoma's incidence rate of brain cancer for males was *not statistically different* from the Ontario rate or our Peer Group.

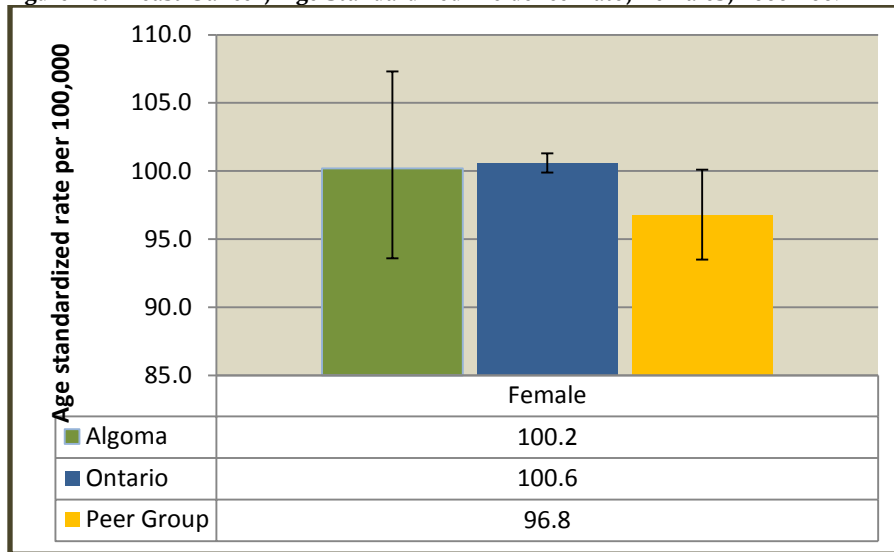
Brain Cancer in Females

The age standardized incidence rate of brain cancer for females in Algoma between 2000 and 2009 was 6.7 new cases per 100,000 females, with the Ontario rate at 5.4 new cases per 100,000 females and the Peer Group rate at 5.4 new cases per 100,000 females (Figure 9).

- Algoma's incidence rate of brain cancer for females was *not statistically different* from the Ontario rate or our Peer Group.

Breast Cancer

Figure 10: Breast Cancer, Age Standardized Incidence Rate, Females, 2000-2009



Data Source: Cancer Care Ontario – SEER*Stat Release 9 – OCRIS (May 2012)

Number of New Cases of Breast Cancer in Females

907

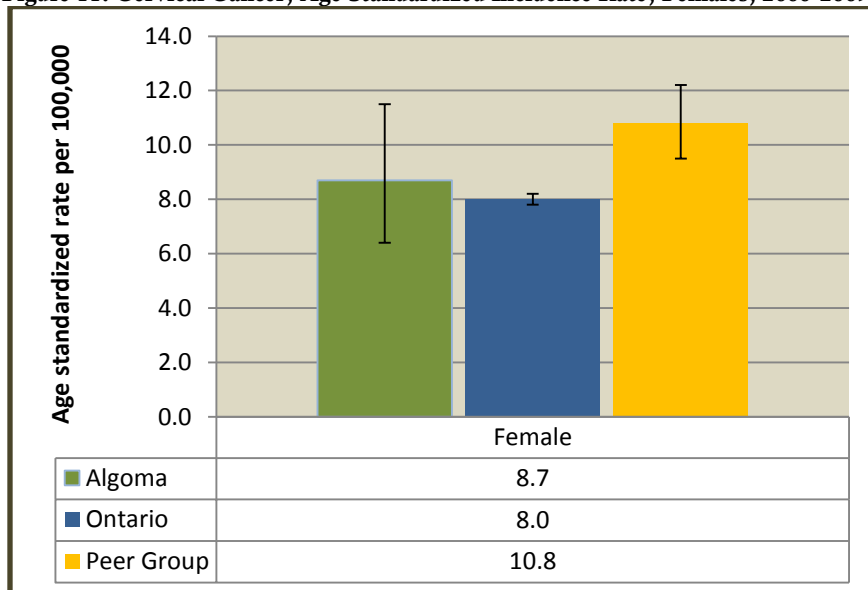
In Algoma from 2000 to 2009, there were a total of 907 new cases of breast cancer in females.

The age standardized incidence rate of breast cancer for females in Algoma between 2000 and 2009 was 100.2 new cases per 100,000 females, with the Ontario rate at 100.6 new cases per 100,000 females and the Peer Group rate at 96.8 new cases per 100,000 females (Figure 10).

- Algoma's incidence rate of breast cancer for females was *not statistically different* from the Ontario rate or our Peer Group rate.

Cervical Cancer (Cervix Uteri)

Figure 11: Cervical Cancer, Age Standardized Incidence Rate, Females, 2000-2009



Data Source: Cancer Care Ontario – SEER*Stat Release 9 – OCRIS (May 2012)

Number of New Cases of Cervical Cancer

56

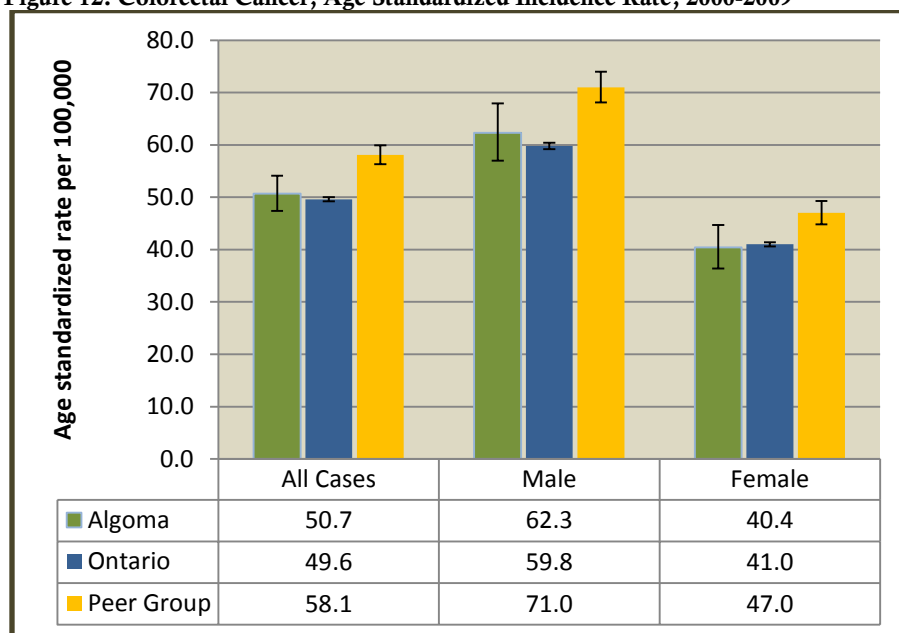
In Algoma from 2000 to 2009, there were a total of 56 new cases of cervical cancer.

The age standardized incidence rate of cervical cancer in Algoma between 2000 and 2009 was 8.7 new cases per 100,000 females, with the Ontario rate at 8.0 new cases per 100,000 females and the Peer Group rate at 10.8 new cases per 100,000 females (Figure 11).

- Algoma's incidence rate of cervical cancer was *not statistically different* from the Ontario rate or our Peer Group.

Colorectal Cancer

Figure 12: Colorectal Cancer, Age Standardized Incidence Rate, 2000-2009



Number of New Cases of Colorectal Cancer

929

In Algoma from 2000 to 2009, there were a total of 929 new cases of colorectal cancer.

Data Source: Cancer Care Ontario – SEER*Stat Release 9 – OCRIS (May 2012)

The age standardized incidence rates of colorectal cancer in Algoma between 2000 and 2009 was 50.7 new cases per 100,000 people, with the Ontario rate at 49.6 new cases per 100,000 people and the Peer Group rate at 58.1 new cases per 100,000 people (Figure 12).

- Algoma's incidence rate of colorectal cancer was *not statistically different* from the Ontario rate but *statistically lower* than our Peer Group.

Colorectal Cancer in Males

The age standardized incidence rate of colorectal cancer for males in Algoma between 2000 and 2009 was 62.3 new cases per 100,000 males, with the Ontario rate at 59.8 new cases per 100,000 males and the Peer Group rate at 71.0 new cases per 100,000 males (Figure 12).

- Algoma's incidence rate of colorectal cancer for males was *not statistically different* from the Ontario rate but *statistically lower* than our Peer Group.

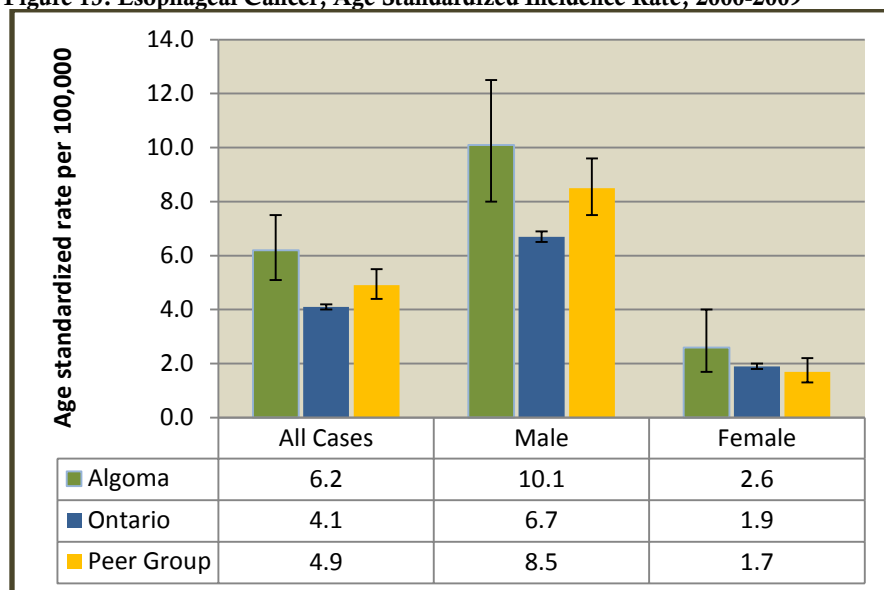
Colorectal Cancer in Females

The age standardized incidence rate of colorectal cancer for females in Algoma between 2000 and 2009 was 40.4 new cases per 100,000 females, with the Ontario rate at 41.0 new cases per 100,000 females and the Peer Group rate at 47.0 new cases per 100,000 females (Figure 12).

- Algoma's incidence rate of colorectal cancer for females was *not statistically different* from the Ontario rate but *statistically lower* than our Peer Group.

Esophageal Cancer

Figure 13: Esophageal Cancer, Age Standardized Incidence Rate, 2000-2009



Data Source: Cancer Care Ontario – SEER*Stat Release 9 – OCRIS (May 2012)

Number of New Cases of Esophageal Cancer

113

In Algoma from 2000 to 2009, there were a total of 113 new cases of esophageal cancer.

The age standardized incidence rate of esophageal cancer in Algoma between 2000 and 2009 was 6.2 new cases per 100,000 people, with the Ontario rate at 4.1 new cases per 100,000 people and the Peer Group rate at 4.9 new cases per 100,000 people (Figure 13).

- Algoma's incidence rate of esophageal cancer was *statistically higher* than the Ontario rate but *not statistically different* than our Peer Group.

Esophageal Cancer in Males

The age standardized incidence rate of esophageal cancer for males in Algoma between 2000 and 2009 was 10.1 new cases per 100,000 males, with the Ontario rate at 6.7 new cases per 100,000 males and the Peer Group rate at 8.5 new cases per 100,000 males (Figure 13).

- Algoma's incidence rate of esophageal cancer for males was *statistically higher* than the Ontario rate but *not statistically higher* than our Peer Group.

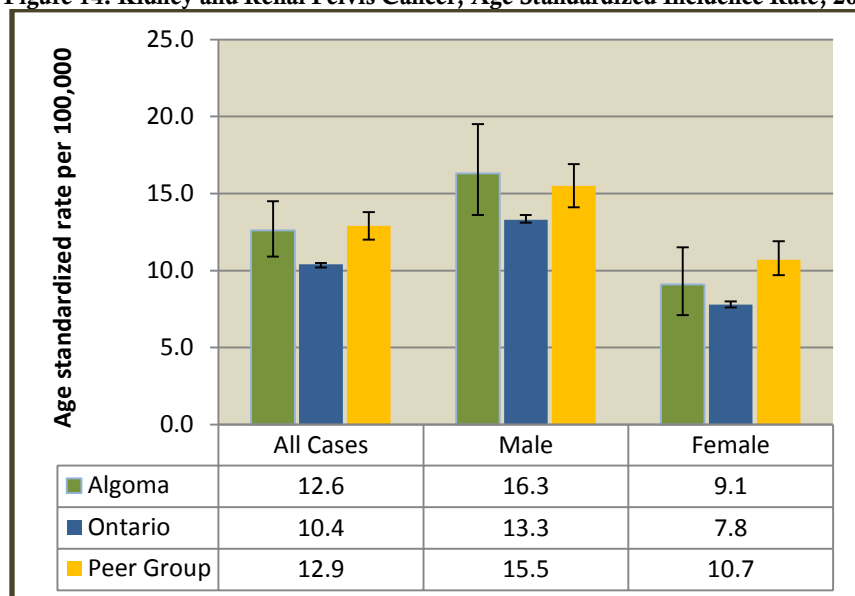
Esophageal Cancer in Females

The age standardized incidence rate of esophageal cancer for females in Algoma between 2000 and 2009 was 2.6 new cases per 100,000 females, with the Ontario rate at 1.9 new cases per 100,000 females and the Peer Group rate at 1.7 new cases per 100,000 females (Figure 13).

- Algoma's incidence rate of esophageal cancer for females was *not statistically different* from the Ontario rate or our Peer Group.

Kidney and Renal Pelvis Cancer

Figure 14: Kidney and Renal Pelvis Cancer, Age Standardized Incidence Rate, 2000-2009



Number of New Cases of Kidney and Renal Pelvis Cancer

213

In Algoma from 2000 to 2009, there were a total of 213 new cases of kidney and renal pelvis cancer.

Data Source: Cancer Care Ontario – SEER*Stat Release 9 – OCRIS (May 2012)

The age standardized incidence rate of kidney and renal pelvis cancer in Algoma between 2000 and 2009 was 12.6 new cases per 100,000 people, with the Ontario rate at 10.4 new cases per 100,000 people and the Peer Group rate at 12.9 new cases per 100,000 people (Figure 14).

- Algoma's incidence rate of kidney and renal pelvis cancer was *statistically higher* than the Ontario rate but *not statistically different* from our Peer Group.

Kidney and Renal Pelvis Cancer in Males

The age standardized incidence rate of kidney and renal pelvis cancer for males in Algoma between 2000 and 2009 was 16.3 new cases per 100,000 males, with the Ontario rate at 13.3 new cases per 100,000 males and the Peer Group rate at 15.5 new cases per 100,000 males (Figure 14).

- Algoma's incidence rate of kidney and renal pelvis cancer for males was *not statistically different* from the Ontario rate or our Peer Group.

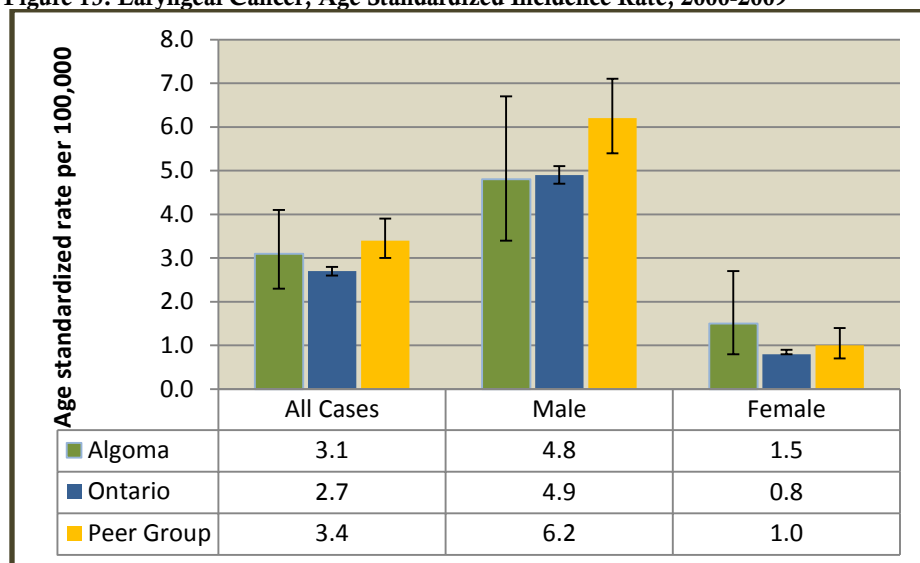
Kidney and Renal Pelvis Cancer in Females

The age standardized incidence rate of kidney and renal pelvis cancer for females in Algoma between 2000 and 2009 was 9.1 new cases per 100,000 females, with the Ontario rate at 7.8 new cases per 100,000 females and the Peer Group rate at 10.7 new cases per 100,000 females (Figure 14).

- Algoma's incidence rate of kidney and renal pelvis cancer for females was *not statistically different* from the Ontario rate or our Peer Group.

Laryngeal Cancer

Figure 15: Laryngeal Cancer, Age Standardized Incidence Rate, 2000-2009



Data Source: Cancer Care Ontario – SEER*Stat Release 9 – OCRIS (May 2012)

Number of New Cases of Laryngeal Cancer

55

In Algoma from 2000 to 2009, there were a total of 55 new cases of laryngeal cancer.

The age standardized incidence rate of laryngeal cancer in Algoma between 2000 and 2009 was 3.1 new cases per 100,000 people, with the Ontario rate at 2.7 new cases per 100,000 people and the Peer Group rate at 3.4 new cases per 100,000 people (Figure 15).

- Algoma's incidence rate of laryngeal cancer was *not statistically different* from the Ontario rate or our Peer Group.

Laryngeal Cancer in Males

The age standardized incidence rate of laryngeal cancer for males in Algoma between 2000 and 2009 was 4.8 new cases per 100,000 males, with the Ontario rate at 4.9 new cases per 100,000 males and the Peer Group rate at 6.2 new cases per 100,000 males (Figure 15).

- Algoma's incidence rate of laryngeal cancer for males was *not statistically different* from the Ontario rate or our Peer Group.

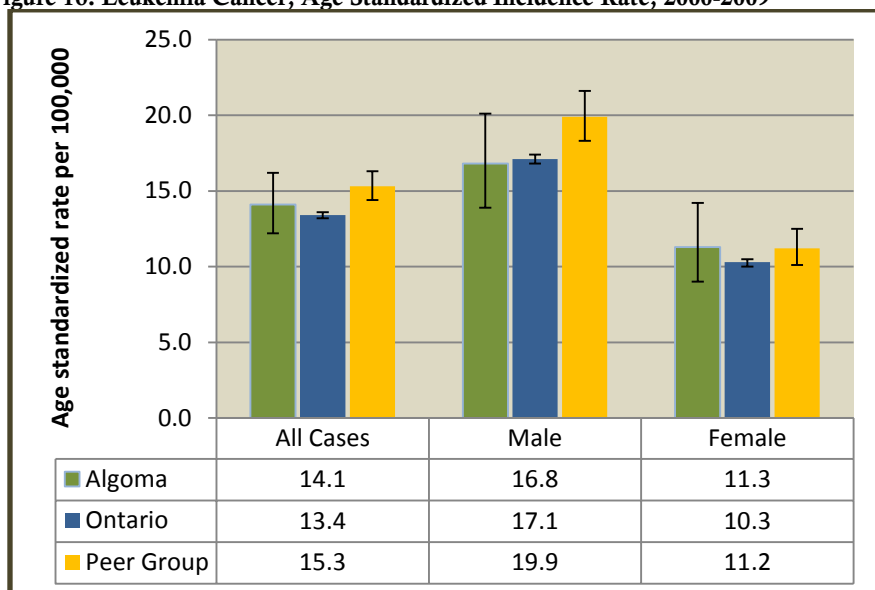
Laryngeal Cancer in Females

The age standardized incidence rate of laryngeal cancer for females in Algoma between 2000 and 2009 was 1.5 new cases per 100,000 females, with the Ontario rate at 0.8 new cases per 100,000 females and the Peer Group rate at 1.0 new case per 100,000 females (Figure 15).

- Algoma's incidence rate of laryngeal cancer for females was *not statistically different* from the Ontario rate or our Peer Group.

Leukemia

Figure 16: Leukemia Cancer, Age Standardized Incidence Rate, 2000-2009



Number of New Cases of Leukemia

227

In Algoma from 2000 to 2009, there were a total of 227 new cases of leukemia.

Data Source Cancer Care Ontario – SEER*Stat Release 9 – OCRIS (May 2012)

The age standardized incidence rate of leukemia in Algoma between 2000 and 2009 was 14.1 new cases per 100,000 people, with the Ontario rate at 13.4 new cases per 100,000 people and the Peer Group rate at 15.3 new cases per 100,000 people (Figure 16).

- Algoma's incidence rate of leukemia was *not statistically different* from the Ontario rate or our Peer Group.

Leukemia in Males

The age standardized incidence rate of leukemia for males in Algoma between 2000 and 2009 was 16.8 new cases per 100,000 males, with the Ontario rate at 17.1 new cases per 100,000 males and the Peer Group rate at 19.9 new cases per 100,000 males (Figure 16).

- Algoma's incidence rate of leukemia for males was *not statistically different* from the Ontario rate or our Peer Group.

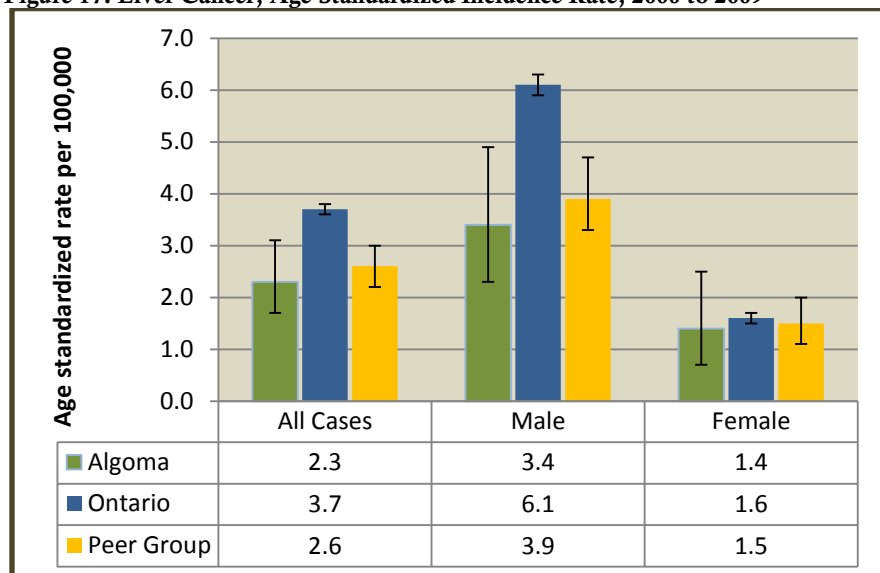
Leukemia in Females

The age standardized incidence rate of leukemia for females in Algoma between 2000 and 2009 was 11.3 new cases per 100,000 females, with the Ontario rate at 10.3 new cases per 100,000 females and the Peer Group rate at 11.2 new cases per 100,000 females (Figure 16).

- Algoma's incidence rate of leukemia for females was *not statistically different* from the Ontario rate or our Peer Group.

Liver Cancer

Figure 17: Liver Cancer, Age Standardized Incidence Rate, 2000 to 2009



Data Source: Cancer Care Ontario – SEER*Stat Release 9 – OCRIS (May 2012)

Number of New Cases of Liver Cancer

43

In Algoma from 2000 to 2009, there were a total of 43 new cases of liver cancer.

The age standardized incidence rate of liver cancer in Algoma between 2000 and 2009 was 2.3 new cases per 100,000 people, with the Ontario rate at 3.7 new cases per 100,000 people and the Peer Group rate at 2.6 new cases per 100,000 people (Figure 17).

- Algoma's incidence rate of liver cancer was *statistically lower* than the Ontario rate but *not statistically different* from our Peer Group.

Liver Cancer in Males

The age standardized incidence rate of liver cancer for males in Algoma between 2000 and 2009 was 3.4 new cases per 100,000 males, with the Ontario rate at 6.1 new cases per 100,000 males the Peer Group rate at 3.9 new cases per 100,000 males (Figure 17).

- Algoma's incidence rate of liver cancer for males was *statistically lower* than the Ontario rate but *not statistically different* from our Peer Group.

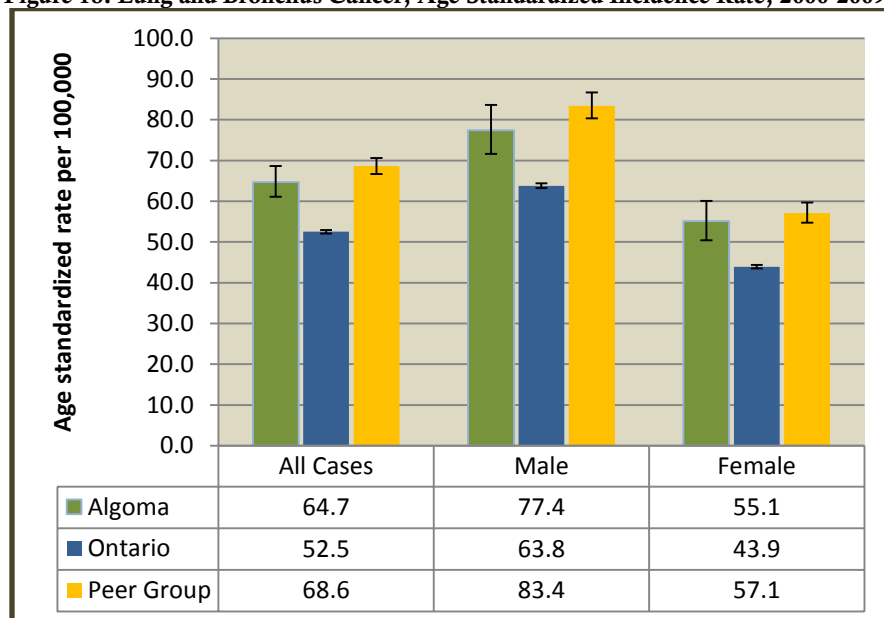
Liver Cancer in Females

The age standardized incidence rate of liver cancer for females in Algoma between 2000 and 2009 was 1.4 new cases per 100,000 females, with the Ontario rate at 1.6 new cases per 100,000 females and the Peer Group rate at 1.5 new cases per 100,000 females (Figure 17).

- Algoma's incidence rate of liver cancer for females was *not statistically different* from the Ontario rate or our Peer Group.

Lung and Bronchus Cancer

Figure 18: Lung and Bronchus Cancer, Age Standardized Incidence Rate, 2000-2009



Number of New Cases of Lung and Bronchus Cancer

1,196

In Algoma from 2000 to 2009, there were a total of 1,196 new cases of lung and bronchus cancer.

Data Source: Cancer Care Ontario – SEER*Stat Release 9 – OCRIS (May 2012)

The age standardized incidence rate of lung and bronchus cancer in Algoma between 2000 and 2009 was 64.7 new cases per 100,000 people, with the Ontario rate at 52.5 new cases per 100,000 people and the Peer Group rate at 68.6 new cases per 100,000 people (Figure 18).

- Algoma’s incidence rate of lung and bronchus cancer was *statistically higher* than the Ontario rate, which is consistent with the finding in our last report entitled *Report on Cancer in the Algoma District (1984-1998)*¹, but *not statistically different* from our Peer Group .

Lung and Bronchus Cancer in Males

The age standardized incidence rate of lung and bronchus cancer for males in Algoma between 2000 and 2009 was 77.4 new cases per 100,000 males, with the Ontario rate at 63.8 new cases per 100,000 males and the Peer Group rate at 83.4 new cases per 100,000 males (Figure 18).

- Algoma’s incidence rate of lung and bronchus cancer for males was *statistically higher* than the Ontario rate but *not statistically different* from our Peer Group.

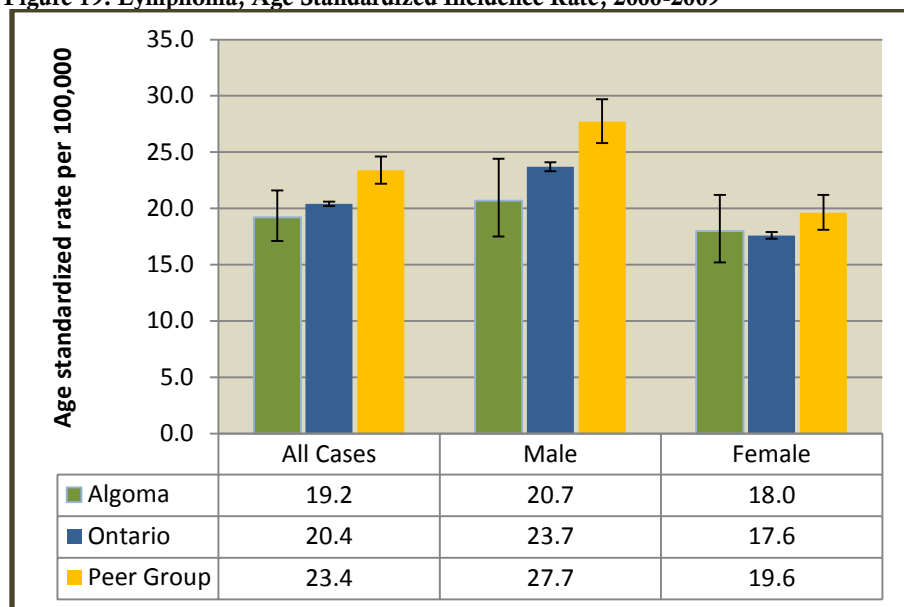
Lung and Bronchus Cancer in Females

The age standardized incidence rate of lung and bronchus cancer for females in Algoma between 2000 and 2009 was 55.1 new cases per 100,000 females, with the Ontario rate at 43.9 new cases per 100,000 females and the Peer Group rate at 57.1 new cases per 100,000 females (Figure 18).

- Algoma’s incidence rate of lung and bronchus cancer for females was *statistically higher* than the Ontario rate but *not statistically different* from our Peer Group.

Lymphoma

Figure 19: Lymphoma, Age Standardized Incidence Rate, 2000-2009



Number of New Cases of Lymphoma

322

In Algoma from 2000 to 2009, there were a total of 322 new cases of lymphoma.

Data Source: Cancer Care Ontario – SEER*Stat Release 9 – OCRIS (May 2012)

The age standardized incidence rate of lymphoma in Algoma between 2000 and 2009 was 19.2 new cases per 100,000 people, with the Ontario rate at 20.4 new cases per 100,000 people and the Peer Group rate at 23.4 new cases per 100,000 people (Figure 19).

- Algoma's incidence rate of lymphoma was *not statistically different* from the Ontario rate but *statistically lower* than our Peer Group.

Lymphoma in Males

The age standardized incidence rate of lymphoma for males in Algoma between 2000 and 2009 was 20.7 new cases per 100,000 males, with the Ontario rate at 23.7 new cases per 100,000 males and the Peer Group rate at 27.7 new cases per 100,000 males (Figure 19).

- Algoma's incidence rate of lymphoma for males was *not statistically different* from the Ontario rate but *statistically lower* than our Peer Group.

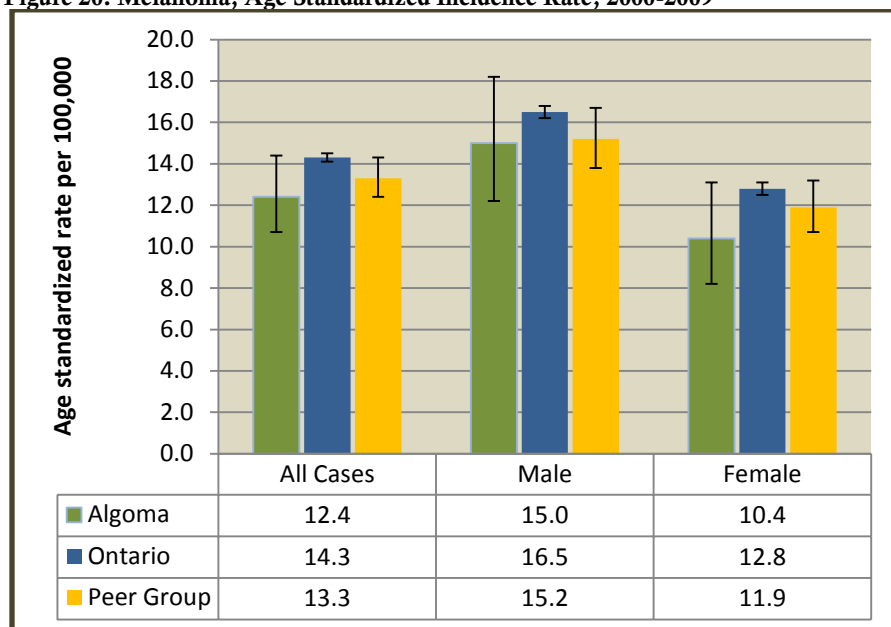
Lymphoma in Females

The age standardized incidence rate of lymphoma for females in Algoma between 2000 and 2009 was 18.0 new cases per 100,000 females, with the Ontario rate at 17.6 new cases per 100,000 females and the Peer Group rate at 19.6 new cases per 100,000 females (Figure 19).

- Algoma's incidence rate of lymphoma for females was *not statistically different* from the Ontario rate or our Peer Group.

Melanoma

Figure 20: Melanoma, Age Standardized Incidence Rate, 2000-2009



Data Source: Cancer Care Ontario – SEER*Stat Release 9 – OCRIS (May 2012)

Number of New Cases of Melanoma

200

In Algoma from 2000 to 2009, there were a total of 200 new cases of melanoma.

The age standardized incidence rate of melanoma in Algoma between 2000 and 2009 was 12.4 new cases per 100,000 people, with the Ontario rate at 14.3 new cases per 100,000 people and the Peer Group rate at 13.3 new cases per 100,000 people (Figure 20).

- Algoma's incidence rate of melanoma was *not statistically different* from the Ontario rate or our Peer Group.

Melanoma in Males

The age standardized incidence rate of melanoma for males in Algoma between 2000 and 2009 was 15.0 new cases per 100,000 males, with the Ontario rate at 16.5 new cases per 100,000 males and the Peer Group rate at 15.2 new cases per 100,000 males (Figure 20).

- Algoma's incidence rate of melanoma for males was *not statistically different* from the Ontario rate or our Peer Group.

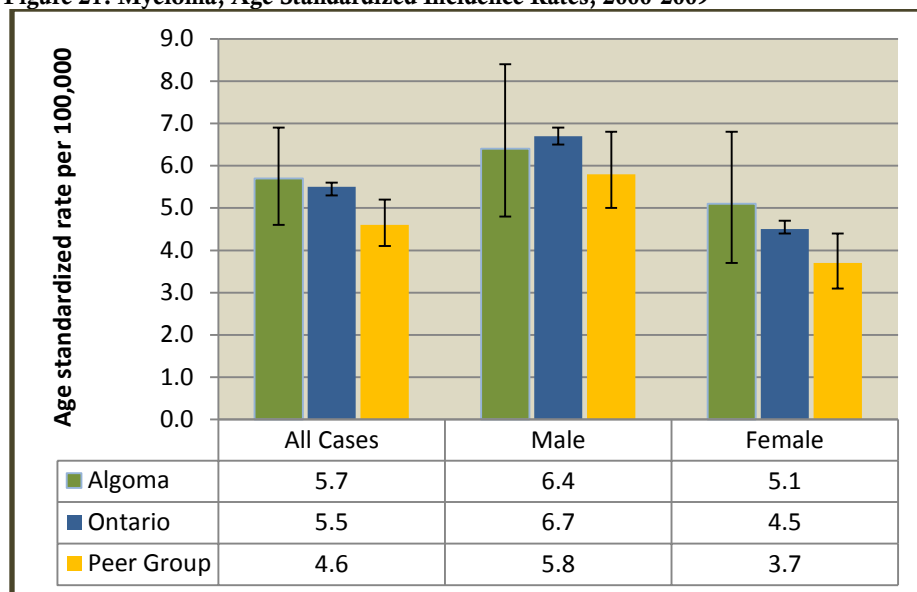
Melanoma in Females

The age standardized incidence rate of melanoma cancer for females in Algoma between 2000 and 2009 was 10.4 new cases per 100,000 females, with the Ontario rate at 12.8 new cases per 100,000 females and the Peer Group rate at 11.9 new cases per 100,000 females (Figure 20).

- Algoma's incidence rate of melanoma for females was *not statistically different* from the Ontario rate or our Peer Group.

Myeloma

Figure 21: Myeloma, Age Standardized Incidence Rates, 2000-2009



Data Source: Cancer Care Ontario – SEER*Stat Release 9 – OCRIS (May 2012)

Number of New Cases of Myeloma

105

In Algoma from 2000 to 2009, there were a total of 105 new cases of myeloma.

The age standardized incidence rate of myeloma in Algoma between 2000 and 2009 was 5.7 new cases per 100,000 people, with the Ontario rate at 5.5 new cases per 100,000 people and the Peer Group rate at 4.6 new cases per 100,000 people (Figure 21).

- Algoma's incidence rate of myeloma was *not statistically different* from the Ontario rate or our Peer Group.

Myeloma in Males

The age standardized incidence rate of myeloma for males in Algoma between 2000 and 2009 was 6.4 new cases per 100,000 males, with the Ontario rate at 6.7 new cases per 100,000 males and the Peer Group rate at 5.8 new cases per 100,000 males (Figure 21).

- Algoma's incidence rate of myeloma for males was *not statistically different* from the Ontario rate or our Peer Group.

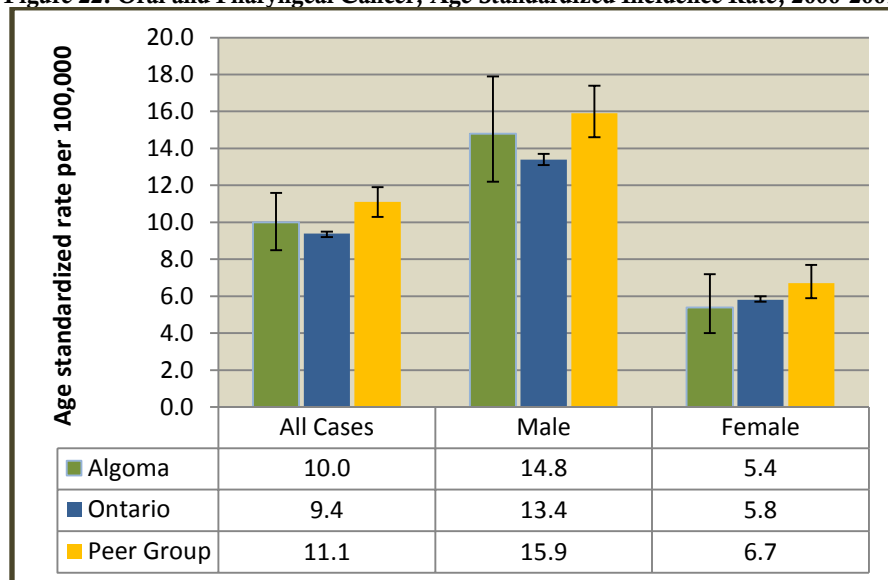
Myeloma in Females

The age standardized incidence rate of myeloma for females in Algoma between 2000 and 2009 was 5.1 new cases per 100,000 females, with the Ontario rate at 4.5 new cases per 100,000 females and the Peer Group rate at 3.7 new cases per 100,000 females (Figure 21).

- Algoma's incidence rate of myeloma for females was *not statistically different* from the Ontario rate or our Peer group.

Oral and Pharyngeal Cancer

Figure 22: Oral and Pharyngeal Cancer, Age Standardized Incidence Rate, 2000-2009



Data Source: Cancer Care Ontario – SEER*Stat Release 9 – OCRIS (May 2012)

Number of New Cases of Oral and Pharyngeal Cancer

175

In Algoma from 2000 to 2009, there were a total of 175 new cases of oral and pharyngeal cancer.

The age standardized incidence rate of oral and pharyngeal cancer in Algoma between 2000 and 2009 was 10.0 new cases per 100,000 people, with the Ontario rate at 9.4 new cases per 100,000 people and the Peer Group rate at 11.1 new cases per 100,000 people (Figure 22).

- Algoma's incidence rate of oral and pharyngeal cancer was *not statistically different* from the Ontario rate or our Peer Group.

Oral and Pharyngeal Cancer in Males

The age standardized incidence rate of oral and pharyngeal cancer for males in Algoma between 2000 and 2009 was 14.8 new cases per 100,000 males, with the Ontario rate at 13.4 new cases per 100,000 males and the Peer Group rate at 15.9 new cases per 100,000 males (Figure 22).

- Algoma's incidence rate of oral and pharyngeal cancer for males was *not statistically different* from the Ontario rate or our Peer Group.

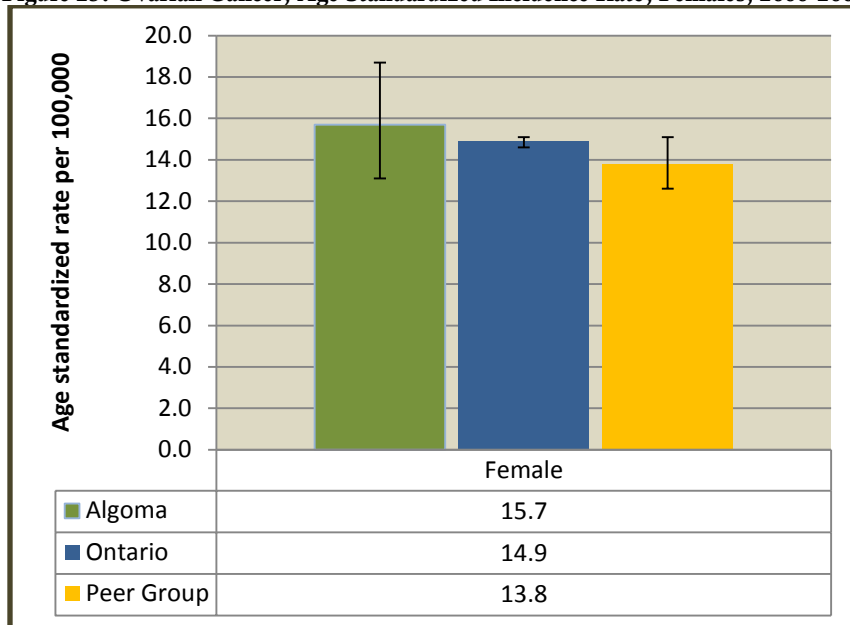
Oral and Pharyngeal Cancer in Females

The age standardized incidence rate of oral and pharyngeal cancer for females in Algoma between 2000 and 2009 was 5.4 new cases per 100,000 females, with the Ontario rate at 5.8 new cases per 100,000 females and the Peer Group rate at 6.7 new cases per 100,000 females (Figure 22).

- Algoma's incidence rate of oral and pharyngeal cancer for females was *not statistically different* from the Ontario rate or our Peer Group.

Ovarian Cancer

Figure 23: Ovarian Cancer, Age Standardized Incidence Rate, Females, 2000-2009



Data Source: Cancer Care Ontario – SEER*Stat Release 9 – OCRIS (May 2012)

Number of New Cases of Ovarian Cancer

142

In Algoma from 2000 to 2009, there were a total of 142 new cases of ovarian cancer.

The age standardized incidence rate of ovarian cancer in Algoma between 2000 and 2009 was 15.7 new cases per 100,000 females, with the Ontario rate at 14.9 new cases per 100,000 females and the Peer Group rate at 13.8 new cases per 100,000 females (Figure 23).

- Algoma's incidence rate of ovarian cancer was *not statistically different* from the Ontario rate or our Peer Group.

Pancreatic Cancer

Figure 24: Pancreatic Cancer, Age Standardized Incidence Rate, 2000-2009



Number of New Cases of Pancreatic Cancer

174

In Algoma from 2000 to 2009, there were a total of 174 new cases of pancreatic cancer.

Data Source: Cancer Care Ontario – SEER*Stat Release 9 – OCRIS (May 2012)

The age standardized incidence rate of pancreatic cancer in Algoma between 2000 and 2009 was 9.5 new cases per 100,000 people, with the Ontario rate at 8.8 new cases per 100,000 people the Peer Group rate at 9.8 new cases per 100,000 people (Figure 24).

- Algoma's incidence rate of pancreatic cancer was *not statistically different* from the Ontario rate or our Peer Group.

Pancreatic Cancer in Males

The age standardized incidence rate of pancreatic cancer for males in Algoma between 2000 and 2009 was 10.3 new cases per 100,000 males, with the Ontario rate at 9.7 new cases per 100,000 males and the Peer Group rate at 11.3 new cases per 100,000 males (Figure 24).

- Algoma's incidence rate of pancreatic cancer rate for males was *not statistically different* from the Ontario rate or our Peer Group.

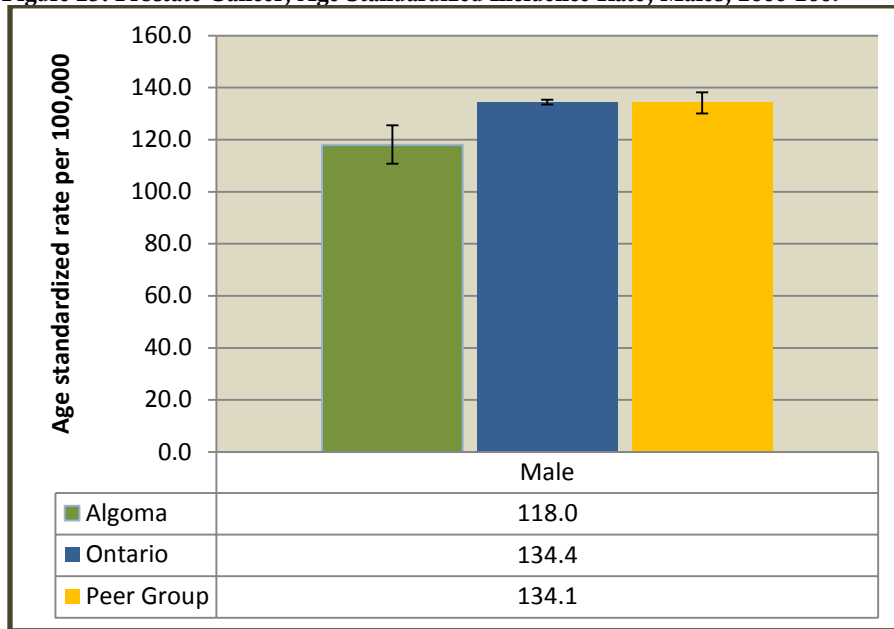
Pancreatic Cancer in Females

The age standardized incidence rate of pancreatic cancer for females in Algoma between 2000 and 2009 was 8.5 new cases per 100,000 females, with the Ontario rate at 7.9 new cases per 100,000 females and the Peer Group rate at 8.2 new cases per 100,000 females (Figure 24).

- Algoma's incidence rate of pancreatic cancer rate for females was *not statistically different* from the Ontario rate or our Peer Group.

Prostate Cancer

Figure 25: Prostate Cancer, Age Standardized Incidence Rate, Males, 2000-2009



Data Source: Cancer Care Ontario – SEER*Stat Release 9 – OCRIS (May 2012)

Number of New
Cases of
Prostate Cancer

1,031

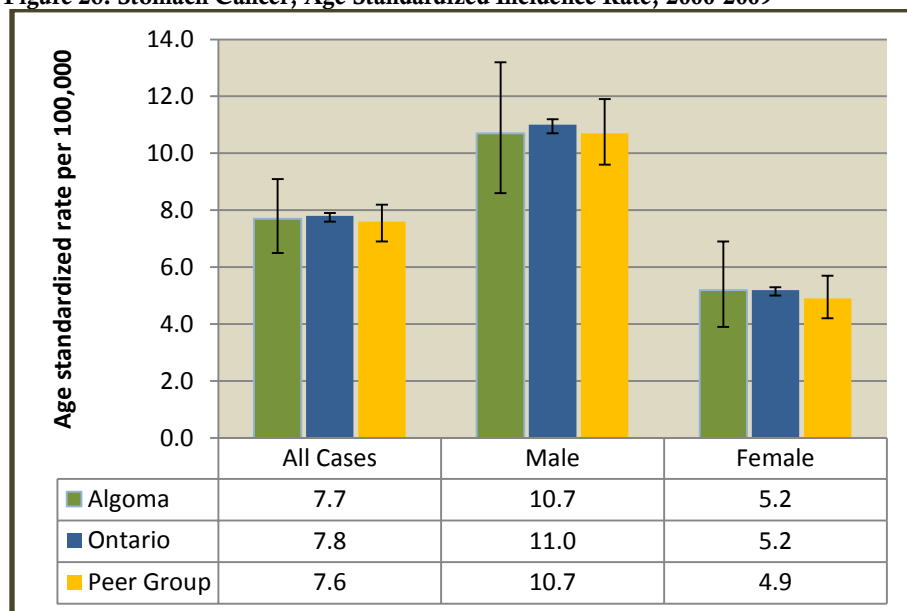
In Algoma from 2000 to 2009, there were a total of 1,031 new cases of prostate cancer.

The age standardized incidence rate of prostate cancer in Algoma between 2000 and 2009 was 118.0 new cases per 100,000 males, with the Ontario rate at 134.4 new cases per 100,000 males and the Peer Group rate at 134.1 new cases per 100,000 males (Figure 25).

- Algoma's incidence rate of prostate cancer was *statistically lower* than the Ontario rate and our Peer Group.

Stomach Cancer

Figure 26: Stomach Cancer, Age Standardized Incidence Rate, 2000-2009



Data Source: Cancer Care Ontario – SEER*Stat Release 9 – OCRIS (May 2012)

Number of New
Cases of
Stomach Cancer

144

In Algoma from
2000 to 2009, there
were a total of 144
new cases of
stomach cancer.

The age standardized incidence rate of stomach cancer in Algoma between 2000 and 2009 was 7.7 new cases per 100,000 people, with the Ontario rate at 7.8 new cases per 100,000 people and the Peer Group rate at 7.6 new cases per 100,000 people (Figure 26).

- Algoma's incidence rate of stomach cancer was *not statistically different* from the Ontario rate or our Peer Group.

Stomach Cancer in Males

The age standardized incidence rate of stomach cancer for males in Algoma between 2000 and 2009 was 10.7 new cases per 100,000 males, with the Ontario rate at 11.0 new cases per 100,000 males and the Peer Group rate at 10.7 new cases per 100,000 males (Figure 26).

- Algoma's incidence rate of stomach cancer for males was *not statistically different* from the Ontario rate or our Peer Group.

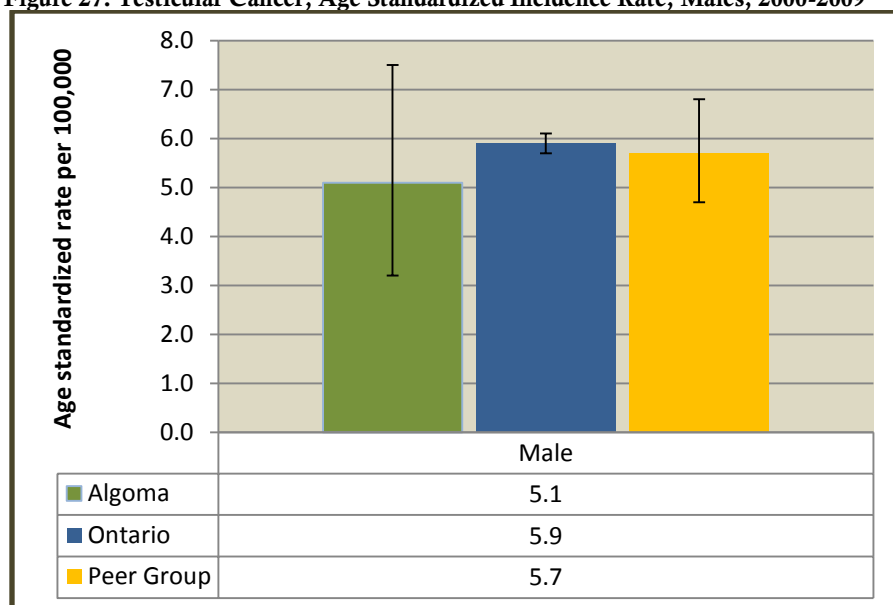
Stomach Cancer in Females

The age standardized incidence rate of stomach cancer for females in Algoma between 2000 and 2009 was 5.2 new cases per 100,000 females, with the Ontario rate at 5.2 new cases per 100,000 females and the Peer Group rate at 4.9 new cases per 100,000 females (Figure 26).

- Algoma's incidence rate of stomach cancer for females was *not statistically different* from the Ontario rate or our Peer Group.

Testicular Cancer

Figure 27: Testicular Cancer, Age Standardized Incidence Rate, Males, 2000-2009



Data Source: Cancer Care Ontario – SEER*Stat Release 9 – OCRIS (May 2012)

Number of New
Cases of
Testicular Cancer

27

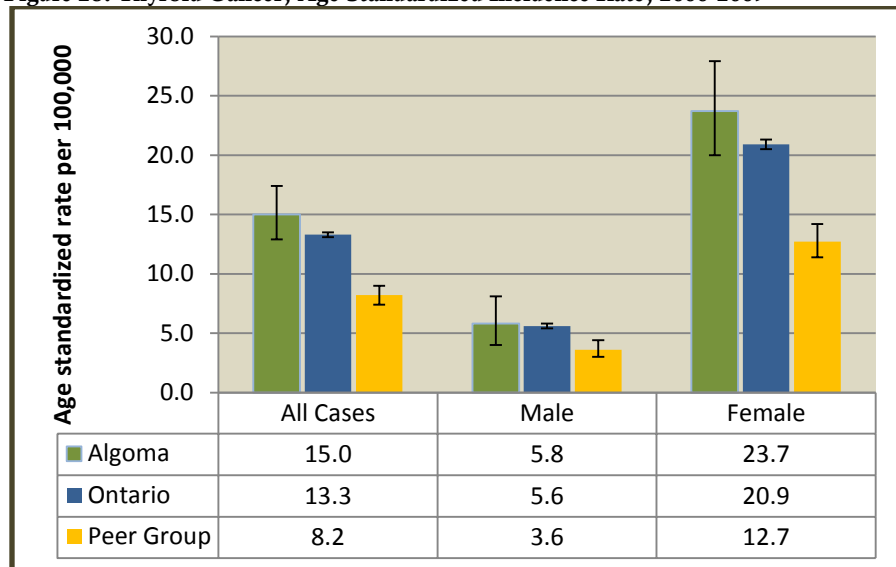
In Algoma from 2000 to 2009, there were a total of 27 new cases of testicular cancer.

The age standardized incidence rate of testicular cancer in Algoma between 2000 and 2009 was 5.1 new cases per 100,000 males, with the Ontario rate at 5.9 new cases per 100,000 males and the Peer Group rate at 5.7 new cases per 100,000 males (Figure 27).

- Algoma's incidence rate of testicular cancer was *not statistically different* from the Ontario rate or our Peer Group.

Thyroid Cancer

Figure 28: Thyroid Cancer, Age Standardized Incidence Rate, 2000-2009



Data Source: Cancer Care Ontario – SEER*Stat Release 9 – OCRIS (May 2012)

Number of New Cases of Thyroid Cancer

214

In Algoma from 2000 to 2009, there were a total of 214 new cases of thyroid cancer.

The age standardized incidence rate of thyroid cancer in Algoma between 2000 and 2009 was 15.0 new cases per 100,000 people, with the Ontario rate at 13.3 new cases per 100,000 people and the Peer Group rate at 8.2 new cases per 100,000 people (Figure 28).

- Algoma's incidence rate of thyroid cancer was *not statistically different* from the Ontario rate but *statistically higher* than our Peer Group.

Thyroid Cancer in Males

The age standardized incidence rate of thyroid cancer for males in Algoma between 2000 and 2009 was 5.8 new cases per 100,000 males, with the Ontario rate at 5.6 new cases per 100,000 males and the Peer Group rate at 3.6 new cases per 100,000 males (Figure 28).

- Algoma's incidence rate of thyroid cancer rate for males was *not statistically different* from the Ontario rate or our Peer Group.

Thyroid Cancer in Females

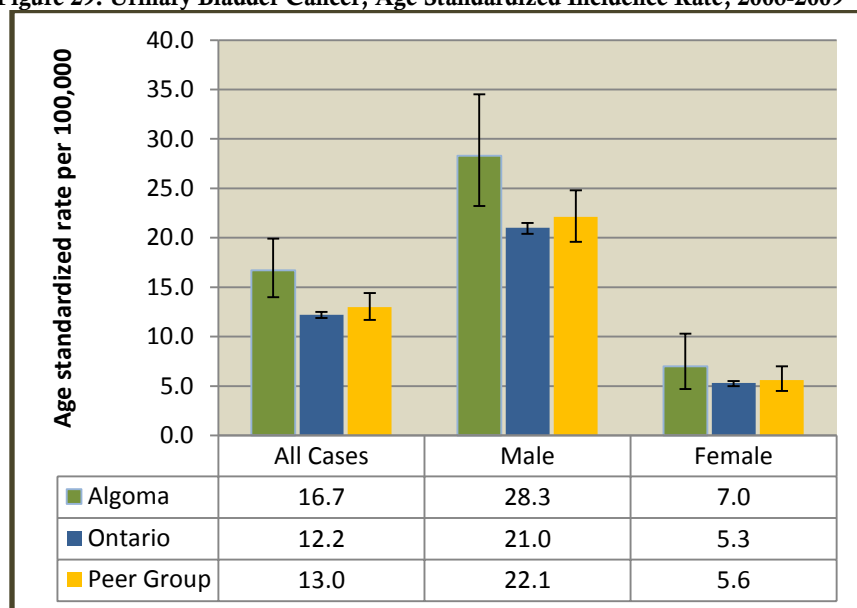
The age standardized incidence rate of thyroid cancer for females in Algoma between 2000 and 2009 was 23.7 new cases per 100,000 females, with the Ontario rate at 20.9 new cases per 100,000 females and the Peer Group rate at 12.7 new cases per 100,000 females (Figure 28).

Algoma's incidence rate of thyroid cancer for females was *not statistically different* from the Ontario rate but *statistically higher* than our Peer Group.

Urinary Bladder Cancer

Due to data quality concerns, urinary bladder cancer incidence is only reported for the years 2006-2009, instead of the 2000-2009 time frame used for the rest of the cancer sites.

Figure 29: Urinary Bladder Cancer, Age Standardized Incidence Rate, 2006-2009



Data Source: Cancer Care Ontario – SEER*Stat Release 9 – OCRIS (May 2012)

Number of New Cases of Urinary Bladder Cancer

305

In Algoma from 2006 to 2009, there were a total of 305 new cases of urinary bladder cancer.

The age standardized incidence rate of urinary bladder cancer in Algoma between 2006 and 2009 was 16.7 new cases per 100,000 people, with the Ontario rate at 12.2 new cases per 100,000 people and the Peer Group rate at 13.0 new cases per 100,000 (Figure 29).

- Algoma's incidence rate of urinary bladder cancer was *statistically higher* than the Ontario rate but *not statistically different* from our Peer Group.

Urinary Bladder Cancer in Males

The age standardized incidence rate of urinary bladder cancer for males in Algoma between 2006 and 2009 was 28.3 new cases per 100,000 males, with the Ontario rate at 21.0 new cases per 100,000 males and the Peer Group rate at 22.1 new cases per 100,000 (Figure 29).

- Algoma's incidence rate of urinary bladder cancer for males was *statistically higher* than the Ontario rate but *not statistically different* from our Peer Group.

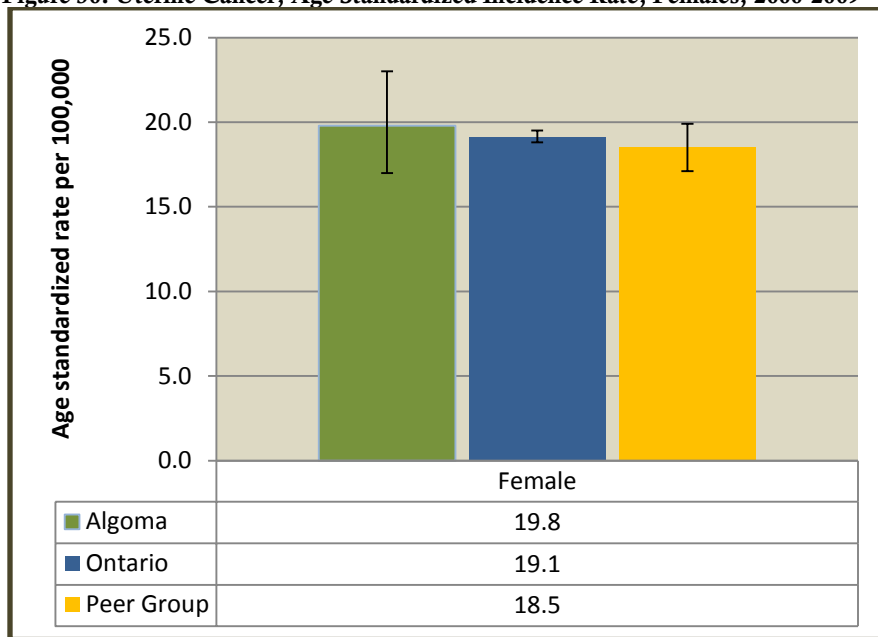
Urinary Bladder Cancer in Females

The age standardized incidence rate of urinary bladder cancer for females in Algoma between 2006 and 2009 was 7.0 new cases per 100,000 females, with the Ontario rate at 5.3 new cases per 100,000 females and the Peer Group rate at 5.6 new cases per 100,000 (Figure 29).

- Algoma's incidence rate of urinary bladder cancer for females was *not statistically different* from the Ontario rate or our Peer Group.

Uterine Cancer (Corpus Uteri)

Figure 30: Uterine Cancer, Age Standardized Incidence Rate, Females, 2000-2009



Data Source: Cancer Care Ontario – SEER*Stat Release 9 – OCRIS (May 2012)

Number of New Cases of Uterine Cancer

185

In Algoma from 2000 to 2009, there were a total of 185 new cases of uterine cancer.

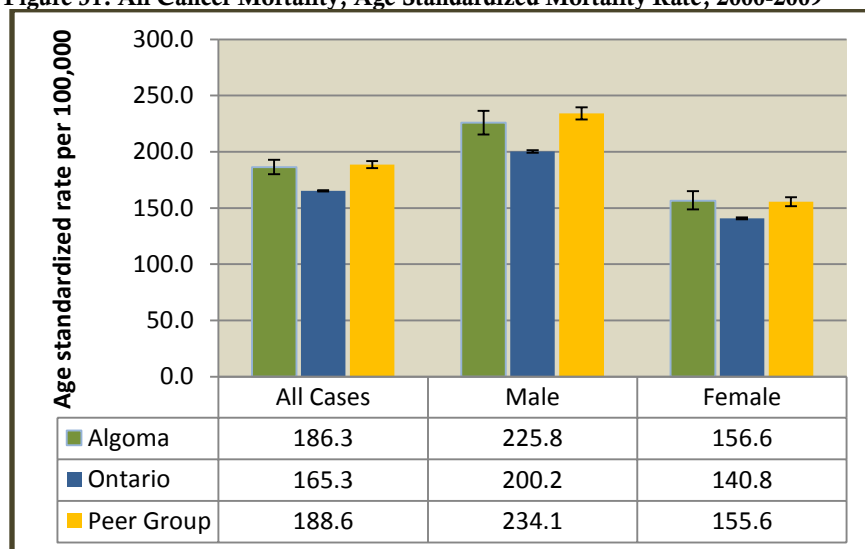
The age standardized incidence rate of uterine cancer in Algoma between 2000 and 2009 was 19.8 new cases per 100,000 females, with the Ontario rate at 19.1 new cases per 100,000 females and the Peer Group rate at 18.5 new cases per 100,000 females (Figure 30).

- Algoma's incidence rate of uterine cancer was *not statistically different* from the Ontario rate or our Peer Group.

MORTALITY RATES

All Cancers Mortality Rate

Figure 31: All Cancer Mortality, Age Standardized Mortality Rate, 2000-2009



Data Source: Cancer Care Ontario – SEER*Stat Release 9 – OCRIS (May 2012)

Number of All Cancer Deaths

3,453

In Algoma from 2000 to 2009, there were a total of 3,453 deaths as a result of all cancers combined. 1,881 were males and 1,572 were females.

The age standardized cancer mortality rate for all cancers in Algoma between 2000 and 2009 was 186.3 deaths per 100,000 people, with the Ontario rate at 165.3 deaths per 100,000 people and the Peer Group rate at 188.6 deaths per 100,000 people (Figure 31).

- Algoma's cancer mortality rate for all cancers for both sexes was *statistically higher* than the Ontario rate but *not statistically different* from our Peer Group.

Male Cancer Mortality Rate

The age standardized cancer mortality rate for all cancers for males in Algoma between 2000 and 2009 was 225.8 deaths per 100,000 males, with the Ontario rate at 200.2 deaths per 100,000 males and the Peer Group rate at 234.1 deaths per 100,000 males (Figure 31).

- Algoma's cancer mortality rate for all cancers for males was *statistically higher* than the Ontario rate but *not statistically different* from our Peer Group.

Female Cancer Mortality Rate

The age standardized cancer mortality rate for all cancers for females in Algoma between 2000 and 2009 was 156.6 deaths per 100,000 females, with the Ontario rate at 140.8 deaths per 100,000 females and the Peer Group rate at 155.6 deaths per 100,000 females (Figure 31).

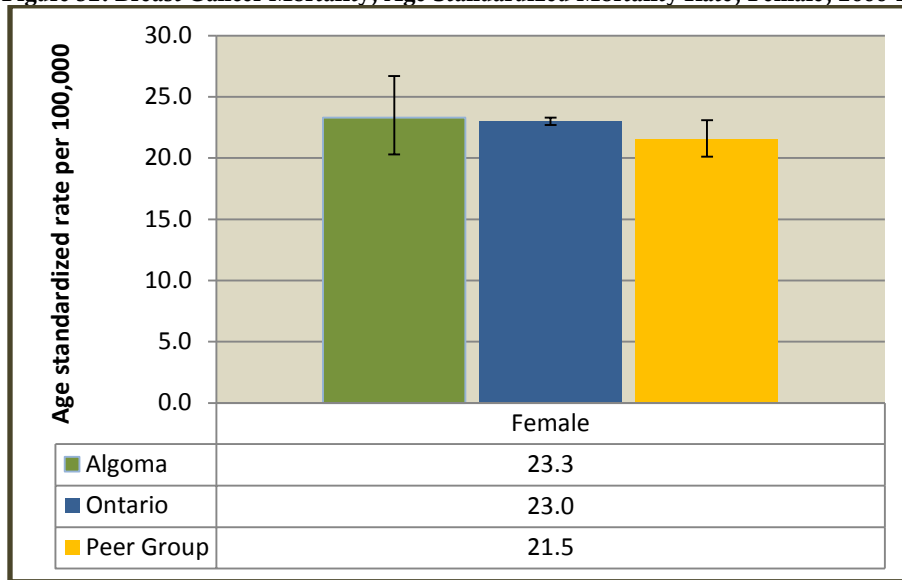
- Algoma's cancer mortality rate for all cancers for females was *statistically higher* than the Ontario rate but *not statistically different* from our Peer Group.

Male vs. Female Cancer Mortality Rate

- The age standardized cancer mortality rates for males for Algoma, for Ontario and our Peer Group were *statistically higher* than the age standardized cancer mortality rates for females for Algoma, for Ontario and our Peer Group (Figure 31).

Breast Cancer Mortality Rate

Figure 32: Breast Cancer Mortality, Age Standardized Mortality Rate, Female, 2000-2009



Data Source: Cancer Care Ontario – SEER*Stat Release 9 – OCRIS (May 2012)

Number of Breast Cancer Deaths

231

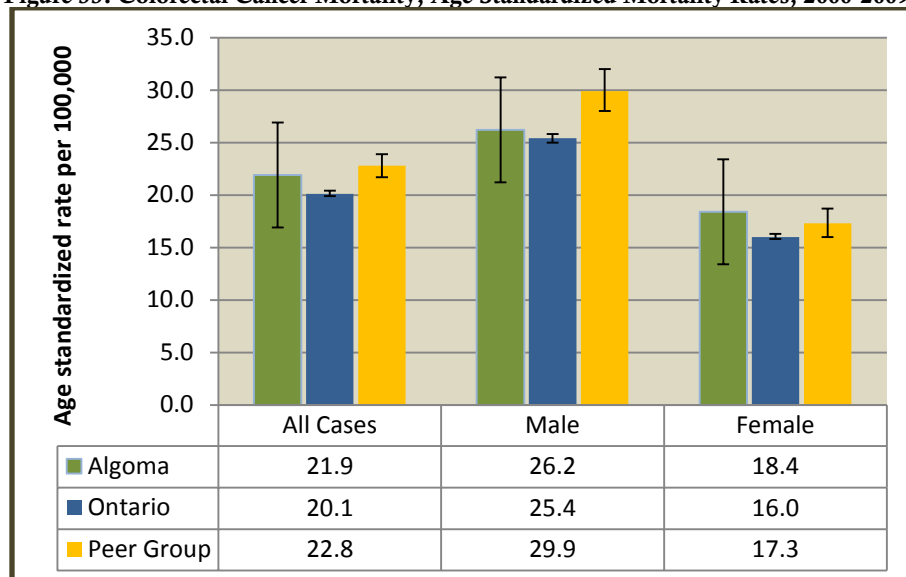
In Algoma from 2000 to 2009, there were a total of 231 female deaths as a result of breast cancer.

The age standardized cancer mortality rate for breast cancer for females in Algoma between 2000 and 2009 was 23.3 deaths per 100,000 females, with the Ontario rate at 23.0 deaths per 100,000 females and the Peer Group rate at 21.5 deaths per 100,000 females (Figure 32).

- Algoma's cancer mortality rate for breast cancer for females was *not statistically different* from the Ontario rate or our Peer Group.

Colorectal Cancer Mortality Rate

Figure 33: Colorectal Cancer Mortality, Age Standardized Mortality Rates, 2000-2009



Data Source: Cancer Care Ontario – SEER*Stat Release 9 – OCRIS (May 2012)

Number of Colorectal Cancer Deaths

413

In Algoma from 2000 to 2009, there were a total of 413 deaths as a result of colorectal cancer.

The age standardized cancer mortality rate for colorectal cancer for both sexes in Algoma between 2000 and 2009 was 21.9 deaths per 100,000 people, with the Ontario rate at 20.1 deaths per 100,000 people and the Peer Group rate at 22.8 deaths per 100,000 people (Figure 33).

- Algoma's cancer mortality rate for colorectal cancer for both sexes was *not statistically different* from the Ontario rate or our Peer Group.

Male Colorectal Cancer Mortality Rate

The age standardized mortality rate for colorectal cancer for males in Algoma between 2000 and 2009 was 26.2 deaths per 100,000 males, with the Ontario rate at 25.4 deaths per 100,000 males and the Peer Group rate at 29.9 deaths per 100,000 males (Figure 33).

- Algoma's cancer mortality rate for colorectal cancer for males was *not statistically different* from the Ontario rate or our Peer Group.

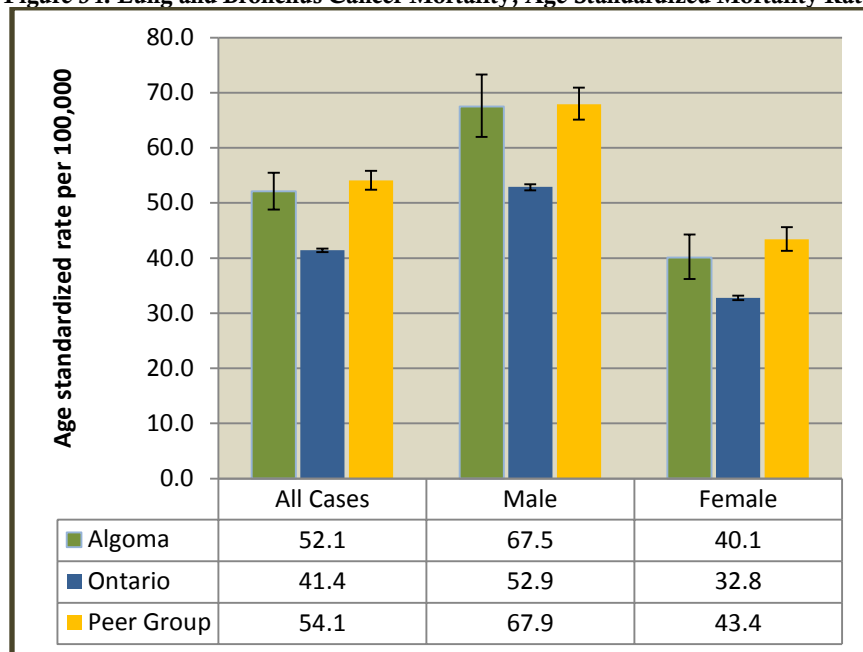
Female Colorectal Cancer Mortality Rate

The age standardized cancer mortality rate for colorectal cancer for females in Algoma between 2000 and 2009 was 18.4 deaths per 100,000 females, with the Ontario rate at 16.0 deaths per 100,000 females and the Peer Group rate at 17.3 deaths per 100,000 females (Figure 33).

- Algoma's cancer mortality rate for colorectal cancer for females was *not statistically different* from the Ontario rate or our Peer Group.

Lung and Bronchus Cancer Mortality Rate

Figure 34: Lung and Bronchus Cancer Mortality, Age Standardized Mortality Rate, 2000-2009



Data Source: Cancer Care Ontario – SEER*Stat Release 9 – OCRIS (May 2012)

Number of Lung and Bronchus Cancer Deaths

973

In Algoma from 2000 to 2009, there were a total of 973 deaths as a result of lung and bronchus cancer.

The age standardized cancer mortality rate for lung and bronchus cancer for both sexes in Algoma between 2000 and 2009 was 52.1 deaths per 100,000 people, with the Ontario rate at 41.4 deaths per 100,000 people and the Peer Group rate at 54.1 deaths per 100,000 people (Figure 34).

- Algoma's cancer mortality rate for lung and bronchus cancer for both sexes was *statistically higher* than the Ontario rate but *not statistically different* from our Peer Group.

Male Lung and Bronchus Cancer Mortality Rate

The age standardized cancer mortality rate for lung and bronchus cancer for males in Algoma between 2000 and 2009 was 67.5 deaths per 100,000 males, with the Ontario rate at 52.9 deaths per 100,000 males and the Peer Group rate at 67.9 deaths per 100,000 males (Figure 34).

- Algoma's cancer mortality rate for lung and bronchus cancer for males was *statistically higher* than the Ontario rate but *not statistically different* from our Peer Group.

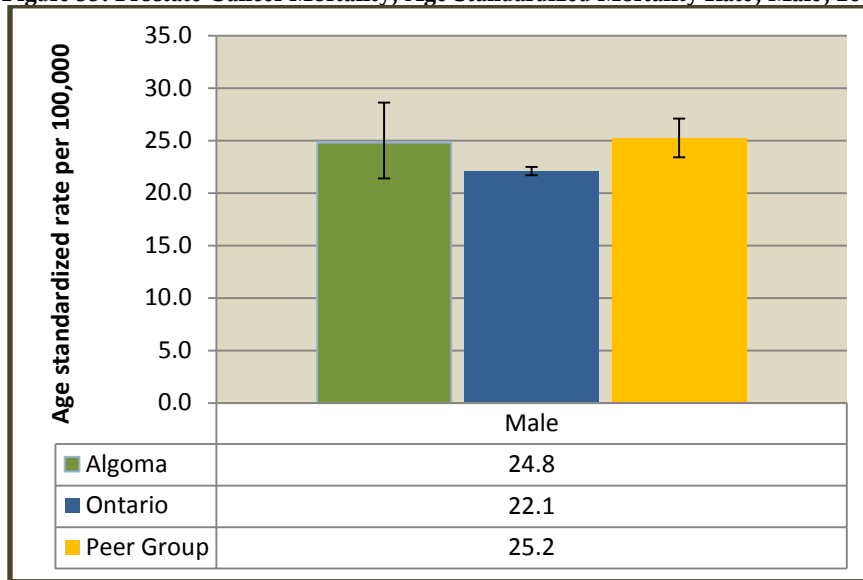
Female Lung and Bronchus Cancer Mortality Rate

The age standardized mortality rate for lung and bronchus cancer for females in Algoma between 2000 and 2009 was 40.1 deaths per 100,000 females, with the Ontario rate at 32.8 deaths per 100,000 females and the Peer Group rate at 43.4 deaths per 100,000 females (Figure 34).

- Algoma's cancer mortality rate for lung and bronchus cancer for females was *statistically higher* than the Ontario rate but *not statistically different* from our Peer Group.

Prostate Cancer Mortality Rate

Figure 35: Prostate Cancer Mortality, Age Standardized Mortality Rate, Male, 2000-2009



Number of Prostate Cancer Deaths

198

In Algoma from 2000 to 2009, there were a total of 198 deaths as a result of prostate cancer.

Data Source: Cancer Care Ontario – SEER*Stat Release 9 – OCRIS (May 2012)

The age standardized cancer mortality rate for prostate cancer for males in Algoma between 2000 and 2009 was 24.8 deaths per 100,000 males, with the Ontario rate at 22.1 deaths per 100,000 males and the Peer Group rate at 25.2 deaths per 100,000 males (Figure 35).

- Algoma's cancer mortality rate for prostate cancer was *not statistically different* from the Ontario rate or our Peer Group.

PUTTING IT ALL TOGETHER

Causes of Cancer

What causes cancer is very complex. According to the CCS, pinpointing the cause of cancer is difficult partially because cancer has a very long latency period – the time between exposure to a potential cancer-causing agent and the time the cancer develops and is detected.³¹ Latency times for cancer are often years.³¹ Consequently, it may be difficult to work backwards in time to assess potential exposures once someone has developed cancer.

Most cancer-causing agents don't cause cancer with a single exposure. Generally, an individual must be exposed to a cancer-causing agent for many years before cancer develops.³¹ This may help explain why the risk of developing cancer increases with age with 70% of all new cancer cases and 62% of cancer deaths occurring in individuals 50–79 years of age.²

Not all individuals develop cancer after exposure to a potential cancer causing agent.³¹ Cancer is triggered by accumulated changes (injuries that cause mutations) in the genetic makeup of an individual's cells. Individuals vary in their ability to fight off these changes and their effects.³¹ Changes may result in over division of the cells and/or the inability of old mature cells to die resulting in the overgrowth of cells and subsequent clumping together of those cells into masses (tumors).³¹

Risk Factors for Developing Cancer

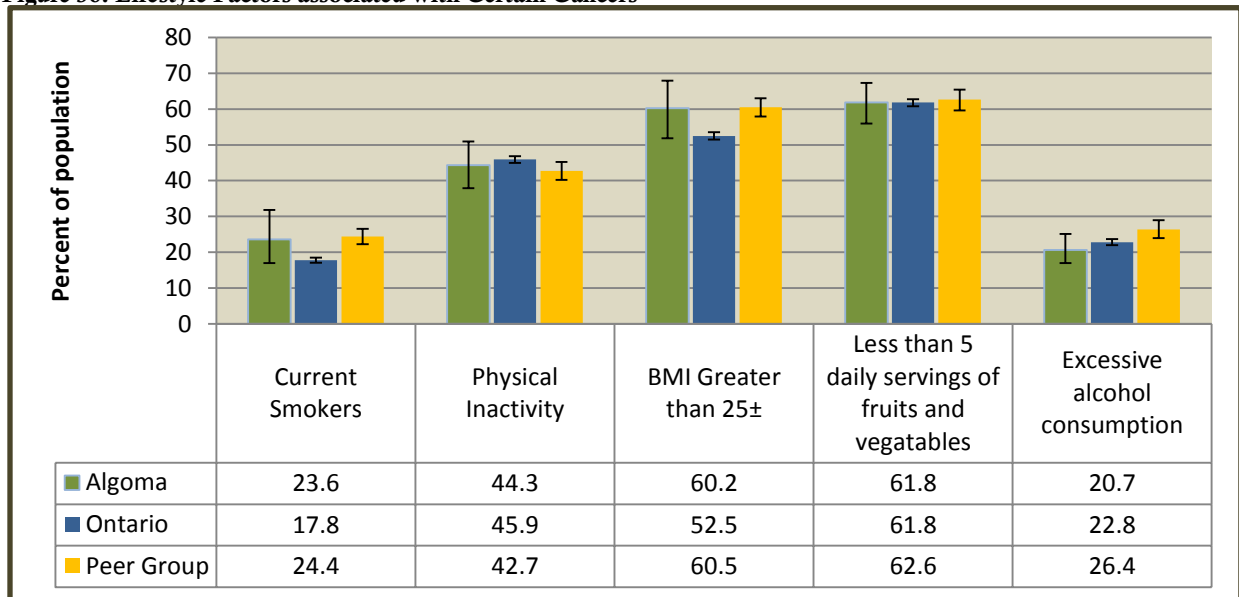
There are several risk factors that may result in the development of cancer, many of which are lifestyle choices such as tobacco and alcohol use, poor diet, lack of physical activity and obesity.^{9, 32} CCO cites smoking, obesity and physical inactivity as the most well-established cancer risks³². Further outlined in an article published in the Lancet journal³³ is the relationship between these 5 lifestyle factors and the development of several cancers (Table 4).

Table 4: Lifestyle Factors Associated with a Reduction in the Likelihood of Certain Cancers.

Reduction in Cancer type	Avoid smoking	Being physically active	Maintaining a healthy weight	High fruit and vegetable consumption	Limiting alcohol
Oral and Pharyngeal	x				x
Esophageal	x			x	x
Stomach	x			x	
Colorectal		x	x	x	
Liver	x				x
Pancreatic	x				
Lung and Bronchus	x			x	
Breast		x	x		x
Cervix	x				
Uterine			x		
Bladder	x				
Leukemia	x				

Compared to Ontario and our Peer Group, Algoma’s current status as it relates to these lifestyle factors, can be found in Figure 36 below.

Figure 36: Lifestyle Factors associated with Certain Cancers



±Only includes those who are 18+ years of age compared to those who are 12+ years of age in the other categories

It is worth keeping in mind that that these numbers are based on self-reported data from the 2011-2012 cycle of the Canadian Community Health Survey (CCHS).⁶ Self-reported numbers are sometimes subject to misrepresentation of socially undesirable traits;^{34, 35} as such these numbers are likely underestimates of the true picture of lifestyle risk factors in Algoma.

Tobacco

Smoking is the single most significant risk factor for lung and bronchus cancer causing 85% of lung cancer cases in Canada.³⁶ Non-smokers can also develop lung and bronchus cancer if they have long-term exposure to second-hand smoke (through tobacco use by others).³⁶

The lung and bronchus cancer rate for the Algoma District was just over 20% greater than the Ontario rate. The larger percentage of smokers in Algoma, as stated in this report, should not be a shock to anyone, as Algoma has had a greater percentage of smokers than Ontario for many years.³⁷

The best health advice for smokers is to quit smoking and never stop trying to quit. Nonsmokers are encouraged to remain smoke-free so if you don’t smoke, don’t start. No amount of exposure to tobacco products or environmental tobacco smoke is safe.³⁶

Algoma Public Health staff offer brief contact interventions (BCI) for all clients in order to identify interest and intent now or in the future to reduce or quit tobacco use. BCI provides staff the opportunity to refer clients to supports based on their readiness to change their tobacco behavior. In conjunction with providing BCI to all clients Public Health staff offer and can make a direct fax referral at the client’s request to the Smoker’s Helpline operated by the CCS.

APH also provides Tobacco Cessation Clinic services to those who are ready to make an attempt to quit smoking or need help to stay smoke-free. Our clinics provide intensive one-on-one tobacco

cessation counselling by staff that have specialized training in tobacco cessation. The counsellors help clients to take an in depth look at their smoking history, patterns and triggers, and develop a quit plan. Self-help resources, quit smoking strategies, and education on smoking cessation medication options is also provided. Intensive one-on-one cessation counselling support is an option for clients that are currently being visited in their homes by APH staff. For more information, contact any of our Public Health office locations across Algoma.

Alcohol

According to CCO, alcohol consumed in any amount increases the risk of developing cancer.^{38, 39} Even small amounts of alcohol have been linked to the development of various chronic health problems.⁴² Alcohol is listed as a cause of breast cancer and colorectal cancer,⁹ one of the three leading causes of cancer death in Ontario.^{38, 39} There is also a link between alcohol consumption and esophageal cancer, one of the four types of cancer in which Algoma is higher than Ontario and our comparison Peer Group.³⁸ With these facts in mind, we encourage the residents of Ontario to follow the Low Risk Drinking Guidelines in relation to the amount of alcohol that they consume.⁴⁰ See Appendix A for a summary of the guidelines.

Environmental Factors

While the biomedical community has strong evidence for some risk factors, they remain uncertain about many others as evidence is currently not available or is inconclusive regarding exposure levels to various chemicals or combination of chemicals and their association with cancer risk.⁴¹ Cause and effect is very difficult to establish with cancer, especially in regards to environmental factors, due to long periods between exposure and cancer onset, interactions between many other risk factors and the difficulty with measuring past levels of environmental exposures.

Air, soil, water and food are all potential sources of introducing chemicals and potential carcinogens into our bodies.^{9,41} One such chemical is polycyclic aromatic hydrocarbons (PAHs).^{9,41} PAHs describe substances that belong to a class of over 100 compounds that share similar chemical and physical properties.^{9,41} They are found naturally in the environment but can also be man-made.⁴⁵ According to the U.S. Environmental Protection Agency (2008), PAHs are used in medicines, to make dyes, pesticides and plastics, and to conduct research.⁴⁵ People are exposed to PAHs in the environment, in the home and workplace.^{32,41} The most common sources include cigarette and tobacco smoke, wood burning, vehicle emissions, inhaling air from industrial emissions and eating charred grilled or barbequed foods cooked at high temperatures.^{43,44}

Air quality and soil contamination from local industry and the relationship to increased cancer rates in the Algoma district, specifically Sault Ste. Marie has been questioned in the past. To respond to these concerns, APH requested that Public Health Ontario (PHO) conduct a scientific study. Benzo-a-pyrene is one of many compounds that are classified as PAHs and was used to represent all PAHs for the soil study conducted in the Bayview Area of Sault Ste. Marie.⁴⁴

PHO reviewed the air quality data for the years 2011 – 2013 and soil data for the years 1998 – 2013 for Sault Ste. Marie and provided the following conclusions:⁴⁴

- Community exposures to Polycyclic Aromatic Hydrocarbons (PAHs) in surface soil and outdoor air in the Bayview neighbourhood of Sault Ste. Marie are not likely to result in adverse health effects, even following lifetime exposure to PAH in local surface soil and outdoor air.

- People are exposed to PAHs through food (such as meats or other foods cooked at high temperatures including grilling or charring) and inhaling air impacted by industrial emissions, tobacco smoke and vehicle smoke. Soil is not considered a significant exposure medium.
- The median concentration of PAHs in ambient air reported for the Bayview neighbourhood falls within the range of ambient concentrations associated with road transportation and PAH wood heating.

APH recommends the following ways to help reduce exposure to environmental sources of PAHs:⁴³

- Wash hands to prevent ingesting chemicals and other contaminants:
 - Before eating or preparing food.
 - After gardening or playing outside.
 - When you come home or inside.
- Wash all fruits and vegetables from the garden, store or market to remove pesticides, chemicals or germs that may be on them.
- Peel root vegetables such as carrots, potatoes and parsnips.
- Avoid charring or burning of food.
- Leave your shoes/boots at the door so you do not bring in extra dirt or dust from outside.
- Use a wet mop or cloth to dust and clean items in the home or workplace. Use a vacuum that has a HEPA filter.
- Avoid tobacco smoke.
- Test homes and buildings for radon gas.
- Minimize exposure to burning wood. Use a high efficiency air tight wood stove if you heat with wood as they release less PAHs. Investigate the possibility of alternative heat sources.
- Reduce outdoor activities on days when the air quality health index is high. Follow the Air Quality Health Index at http://weather.gc.ca/airquality/pages/onaq-014_e.html.

Radon Gas

Exposure to radon gas is the leading cause of lung cancer in non-smokers.⁴⁶ The risk for developing lung cancer increases further for individuals who smoke and are exposed to radon gas.^{46, 47}

Radon gas is a colourless, odourless, radioactive gas that is found naturally in the soil and environment all over Canada.^{46, 47} It is produced when uranium found in soil, rock or water decays.⁴⁶ It can get into any type of building through cracks in foundation walls and floors, or gaps around pipes and cables and accumulates in the lowest level of the building or home.

The only way to know if radon is in a building or home is to test for it.^{46, 47} Long term test kits and short term test kits are available at local hardware stores. There are also professional companies that have staff certified by the Canadian National Radon Proficiency Program (C-NRPP) in Ontario that can use specialized equipment to measure radon levels in buildings and homes. Testing should be conducted in the winter months when the flow of air is at its lowest.^{46, 47}

If levels are found above 200 bq/m³ then you may be at risk. A recent publication (Peterson et al. 2013) estimates that 13.6% of lung cancer deaths in Ontario in 2007 were attributable to current radon exposure regardless of smoking status⁴⁸. In the Algoma region, it is estimated that 14.7% of lung cancer deaths in 2007 were attributable to current radon exposure.⁴⁹ Of the lung cancer deaths attributable to radon in Algoma, approximately 24% could be prevented if all homes were remediated to comply with the 200 bq/ m³ suggested limit, while 37% of lung cancer deaths could be prevented if all homes were remediated to 100 bq/m³.⁴⁹

Things to do if radon is found in buildings or homes:

- Spend less time in the basement.
- Seal up any cracks in walls and foundation.
- Seal gaps around pipes in the basement.
- Increase air flow and ventilation in the basement by opening windows and installing approved fans.
- Contact a local contractor to install one of the many radon reduction systems available on the market.
- Test again after corrective action has taken place.
- Test again next winter and compare results.

Drinking Water

Water treatment byproduct is another environmental factor that can be associated with increased cancer risk.⁵⁰ In order to reduce the risk of viral, bacterial and parasitic diseases associated with drinking unclean water, public drinking water has been disinfected since the early 1970s.⁴¹ Chlorine is the most widely used disinfectant.⁴¹ When the chlorine reacts with naturally occurring organic compounds (such as plant material) in the water, chlorination disinfection by-products are produced, with the most common one being Trihalomethanes (THMs).⁵⁰ There are provincial standards specifying maximum levels of long term (lifetime) exposure to THMs.⁵¹ These levels are continuously being monitored by the water treatment plant. When the level of THM exceeds the provincial standards, a Drinking Water Advisory is issued to the public.

Other Causes

The role of genetics, inflammation, and exposure to viruses/bacteria and other infections in the development of cancer will not be covered in the scope of this report. For further information, please refer to CCO or CCS websites.

It is inevitable that we will be exposed to potential cancer causing agents as we live our lives but we have choices that can have a positive and dramatic impact on our cancer risk. By making healthier lifestyle choices, we can strengthen our bodies and our immune system. Refer to Appendix A, for some healthier lifestyle choices that you can do TODAY.

Summary of Key Findings

1) Newly diagnosed cases of cancer in Algoma.

In Algoma in the 10-year span from 2000 to 2009, there were 7,534 newly diagnosed cases of cancer. This means that on average 753 people per year were diagnosed with cancer.

2) The most common types of cancer.

Prostate, breast, lung and colorectal cancers were the most common types of cancer in Algoma. According to the CCS, these four cancers account for over half (52.0%) of all newly diagnosed cancers in Canada⁵. In Algoma these 4 cancers accounted for 53.9% of all newly diagnosed cases, 53.2% of cases in Ontario and 55.5% of cases in our Peer Group thus mirroring the Canadian picture.

3) Algoma's cancer incidence rate is statistically higher than the Ontario rate.

Algoma's age standardized rate for all cancers, between 2000 and 2009 was 427.6 per 100,000 people compared to Ontario's rate at 410.2 per 100,000 people and our Peer Group at 439.5 per 100,000 people. Algoma's rate was *statistically higher* than the Ontario rate but *not statistically different* from our Peer Group.

4) Algoma's rates were statistically higher for 4 types of cancers.

Lung and Bronchus

The age standardized incidence rate for lung and bronchus cancer in Algoma between 2000 and 2009 was 64.7 new cases per 100,000 people, with the Ontario rate at 52.5 new cases per 100,000 people and our Peer Group at 68.6 new cases per 100,000 people. Algoma's rate was *statistically higher* than the Ontario rate but *not statistically different* from our Peer Group.

Urinary Bladder

The age standardized incidence rate for urinary bladder cancer in Algoma between 2006 and 2009 was 16.7 new cases per 100,000 people, with the Ontario rate at 12.2 new cases per 100,000 people and our Peer Group at 13.0 new cases per 100,000 people. Algoma's rate was *statistically higher* than the Ontario rate but *not statistically different* from our Peer Group.

Kidney and Renal Pelvis

The age standardized incidence rate for kidney and renal pelvis cancer in Algoma between 2000 and 2009 was 12.6 new cases per 100,000 people, with the Ontario rate at 10.4 new cases per 100,000 people and our Peer Group at 12.9 new cases per 100,000 people. Algoma's rate was *statistically higher* than the Ontario rate but *not statistically different* from our Peer Group.

Esophageal

The age standardized incidence rate for esophageal cancer in Algoma between 2000 and 2009 was 6.2 new cases per 100,000 people, with the Ontario rate at 4.1 new cases per 100,000 people and our Peer Group at 4.9 new cases per 100,000 people. Algoma's rate was *statistically higher* than the Ontario rate but *not statistically different* from our Peer Group.

5) Algoma's rates were statistically lower for 2 types of cancers.

Prostate

The age standardized incidence rate for prostate cancer in Algoma between 2000 and 2009 was 118.0 new cases per 100,000 males, with the Ontario rate at 134.4 new cases per 100,000 males and our Peer Group at 134.1 new cases per 100,000 males. Algoma's rate was *statistically lower* than the Ontario rate and our Peer Group.

Liver

The age standardized incidence rate for liver cancer in Algoma between 2000 and 2009 was 2.3 new cases per 100,000 people, with the Ontario rate at 3.7 new cases per 100,000 people and our Peer Group at 2.6 new cases per 100,000 people. Algoma's rate was *statistically lower* than the Ontario rate but *not statistically different* from our Peer Group.

6) Algoma's cancer mortality rate is higher than the Ontario rate.

The age standardized mortality rate for all cancers in Algoma between 2000 and 2009 was 186.3 deaths per 100,000 people, with the Ontario rate at 165.3 deaths per 100,000 people and our Peer Group at 188.6 deaths per 100,000 people. Algoma's rate was *statistically higher* than the Ontario rate but *not statistically different* from our Peer Group.

7) Algoma's lung and bronchus mortality rate is higher than the Ontario rate.

The age standardized mortality rate for lung and bronchus cancer in Algoma between 2000 and 2009 was 52.1 deaths per 100,000 people, with the Ontario rate at 41.4 deaths per 100,000 people and our Peer Group at 54.1 deaths per 100,000 people. Algoma's rate was *statistically higher* than the Ontario rate but *not statistically different* from our Peer Group.

8) Algoma's percentage of current smokers is higher than Ontario.

According to the 2011-2012 cycle of the Canadian Community Health Survey,⁶ in Algoma, the percentage of current smokers, that is, the population age 12 or older who have smoked 100 cigarettes in their lifetime and have smoked in the past 30 days, is 23.6% compared to the Ontario percentage of 17.8% and our Peer Group at 24.4%.

9) There are 3 provincially supported cancer screening programs.

Screening identifies pre-cancerous changes or finds cancer in the early stages when it is easier to treat. Breast, cervical and colorectal screening programs are available in Ontario.²¹

CONCLUSIONS

Overall, in Algoma there is a higher incidence rate of cancer than the province. Most notably is the difference between the Algoma and provincial rate for lung and bronchus cancer. Going forward, we can reduce our incidence of cancer through healthy lifestyle choices and understanding exposures that may pose risks.

We urge all Algoma residents to learn more about cancer, learn how to reduce their risk, take part in cancer screening programs and know their own bodies through self-examinations so they can recognize a change early and seek medical advice.

A Call to Action

Community-based partnerships can also improve access to health information and support healthier lifestyles. We recognize that there are a number of agencies involved in the prevention, treatment and support services related to cancer. Collaboration with these key partners will allow us to achieve a collective impact. We cannot do it alone.

With this in mind, we issue a call to action to our community partners to work with us to:

- ❖ Identify and implement policies that support access to safe, nutritious food.
- ❖ Increase opportunities and access for Algoma residents to participate in regular physical activity.
- ❖ Work to reduce the exposure to tobacco, alcohol, radon and other environmental contaminants.
- ❖ Work together to set realistic targets for the reduction of alcohol use in Algoma.
- ❖ Work together to reduce smoking rates by 5% within 5 years.
- ❖ Work together to increase the number of radon test kits sold in the Algoma District by 10% within 5 years.
- ❖ Work together to increase the number of people who report home radon test results to APH by 5% within 5 years.
- ❖ Continue to work together to increase public awareness of the risk factors associated with cancer.
- ❖ Continue to encourage the public to participate in provincially funded cancer screening programs.
- ❖ Continue to monitor and report on cancer trends and associated risk factors.
- ❖ Continue to work to improve equitable access to prevention and treatment services.

This increased alliance will enable us to improve the health of Algoma residents. Together, we can influence a reduction in the incidence and mortality rates of cancer in the Algoma district.

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APPENDIX

Appendix A: What You Can Do to Reduce Your Risk of Cancer

Living a smoke-free lifestyle, eating a healthy diet and maintaining a healthy weight can have a positive and dramatic impact on cancer risk. Together with regular cancer screening, taking these steps can help reduce your risk of developing cancer:

- Be a non-smoker and avoid second-hand smoke. If you use tobacco products, quit.
- Reduce long-term health risks by following the Low Risk Drinking Guidelines. Women should drink no more than 10 drinks per week, with no more than two drinks per day on most days.⁴² Men should no more than 15 drinks per week, with no more than three drinks per day on most days.⁴²
- Eat a variety of healthy foods such as fruits and vegetables, and foods high in fibre like whole grains and legumes. Reduce the amount of food that contains fat, added sugar and sodium. Reduce the intake of red meat and processed meat such as lunch meat or deli meat. Refer to Canada Food Guide for additional information on choosing food.⁶³
- Breastfeed your baby because it provides women with a hormonal protective factor as estrogen levels may remain lower while a woman is breast-feeding.⁶⁴
- Stay active and maintain a healthy weight. Refer to Canadian Physical Activity Guidelines⁶⁵ found in Appendix I.
- Practice safer sex. CCS states that reducing the risk of infection remains the best way to help prevent some infection-related cancers.⁵³ For example, using condoms may help prevent Hepatitis B and Human Papillomavirus infections which cause liver and cervical cancer respectively.⁵⁵ The best preventative measures to help reduce the risk of acquiring a sexually transmitted infection include abstinence, delaying the onset of sexual activity, limiting the number of sexual partners and using latex condoms every time for oral, vaginal and anal intercourse. Next to abstinence, the safest practice is mutual monogamy.⁵⁶
- Protect yourself from the sun and exposure to artificial tanning equipment.
- Examine your body regularly for changes in breasts (women)⁵⁹ and testicles (men)^{60,61} and look for changes in moles and skin.⁶² Contact your health care provider if you have concerns. See appendix C: Early Detection is Important, for further information.
- Participate in regular cancer screening. Ask your health care provider about age-appropriate cancer screening.²²
- Talk to your health care provider about immunization. Get vaccinated. Refer to Public Health Agency of Canada for immunization schedules.⁵⁸
- Test buildings and homes for radon gas.

(Source: Adapted from Cancer prevention: 7 tips to reduce your risk, Mayo Clinic, December 12, 2012)

Appendix B: Cancer Screening Guidelines²²

Cancer Care Ontario Guidelines for Breast, Cervical and Colorectal Cancer Screening

Screen for Life

Cancer screening sees what you can't

✓ Breast ✓ Cervical ✓ Colorectal

Ontario Breast Screening Program (OBSP)		
	Average Risk	High Risk
Screening Recommendation	Mammogram every 2 years for most women	Mammogram and screening breast MRI every year
Screening Population	Women 50 to 74 years of age	Women 30 to 69 years of age identified as high risk (see eligibility for criteria)
Outside the Screening Population	<ul style="list-style-type: none"> Screening starts at age 50 Women over age 74 can be screened within the OBSP, however they are encouraged to make a personal decision about breast screening in consultation with their health care provider 	<ul style="list-style-type: none"> Screening starts at age 30 Women 70 to 74 years of age identified as high risk should be screened with mammography only Women over age 74 can be screened within the OBSP, however they are encouraged to make a personal decision about breast screening in consultation with their health care provider
Eligibility	<ul style="list-style-type: none"> No acute breast symptoms No personal history of breast cancer No current breast implants No screening mammogram within the last 11 months 	<ul style="list-style-type: none"> No acute breast symptoms Meet one of the following risk criteria: <ul style="list-style-type: none"> ✓ Are known to be carriers of a deleterious gene mutation ✓ Are the first degree relative of a mutation carrier and have declined genetic testing ✓ Have a family history that indicates a lifetime risk of breast cancer that is $\geq 25\%$ confirmed through genetic assessment ✓ Have received radiation therapy to the chest before age 30 and at least 8 years previously

Ontario Cervical Screening Program (OCSP)	
Screening Recommendation	Cervical cytology (Pap test) every 3 years
Screening Population	<ul style="list-style-type: none"> Initiation: women 21 years of age who are or have ever been sexually active Cessation: women 70 years of age if ≥ 3 negative/normal cytology tests in the previous 10 years

For information on follow-up and special circumstances see *Ontario Cervical Screening Cytology Guidelines Summary* available at www.cancercare.on.ca/pcresources.

ColonCancerCheck (CCC)		
	Average Risk	High Risk
Screening Recommendation	Fecal occult blood test (FOBT) every 2 years	Colonoscopy
Screening Population	Women and men 50 to 74 years of age	<ul style="list-style-type: none"> Defined as a family history of colorectal cancer in ≥ 1 first-degree relatives (parent, sibling or child) Begin at 50 years of age, or 10 years earlier than the age the relative was diagnosed, whichever occurs first

An abnormal FOBT should be followed up with colonoscopy.

For additional resources visit: www.cancercare.on.ca/pcresources

Questions? Contact us at: screenforlife@cancercare.on.ca | 1.866.662.9233



Appendix C: Early Detection is Important

Regular self-examination is important for early detection for certain types of cancer, like breast, testicular and skin cancer.

Breast Health

No matter what age, women should know what is normal for them and tell a health care provider if they notice any changes.⁵⁹

Breast Health Guidelines from Cancer Care Ontario⁵⁹ encourage women to:

- Know how their breasts normally look and feel.
- Know what breast changes to look for, such as:
 - A lump or dimpling.
 - Changes in the nipple or fluid leaking from the nipple.
 - Skin changes or redness that does not go away.
 - Any other changes in the breasts.

Most changes are not cancerous but should be checked right away.

Testicular Health

The Canadian Cancer Society recommends that men should check their testicles for any changes such as lumps or swelling.⁶⁰ The best time to check is after a shower or bath when the muscles in the scrotum are relaxed.⁶¹ This will make it easier to notice if there are any lumps, growths, tenderness or other changes.

See a health care provider if you notice any of the following:⁶¹

- A lump on the testicle.
- A painful testicle.
- A feeling of heaviness or dragging in the lower abdomen or scrotum.
- A dull ache in the lower abdomen and groin.

Skin Cancer

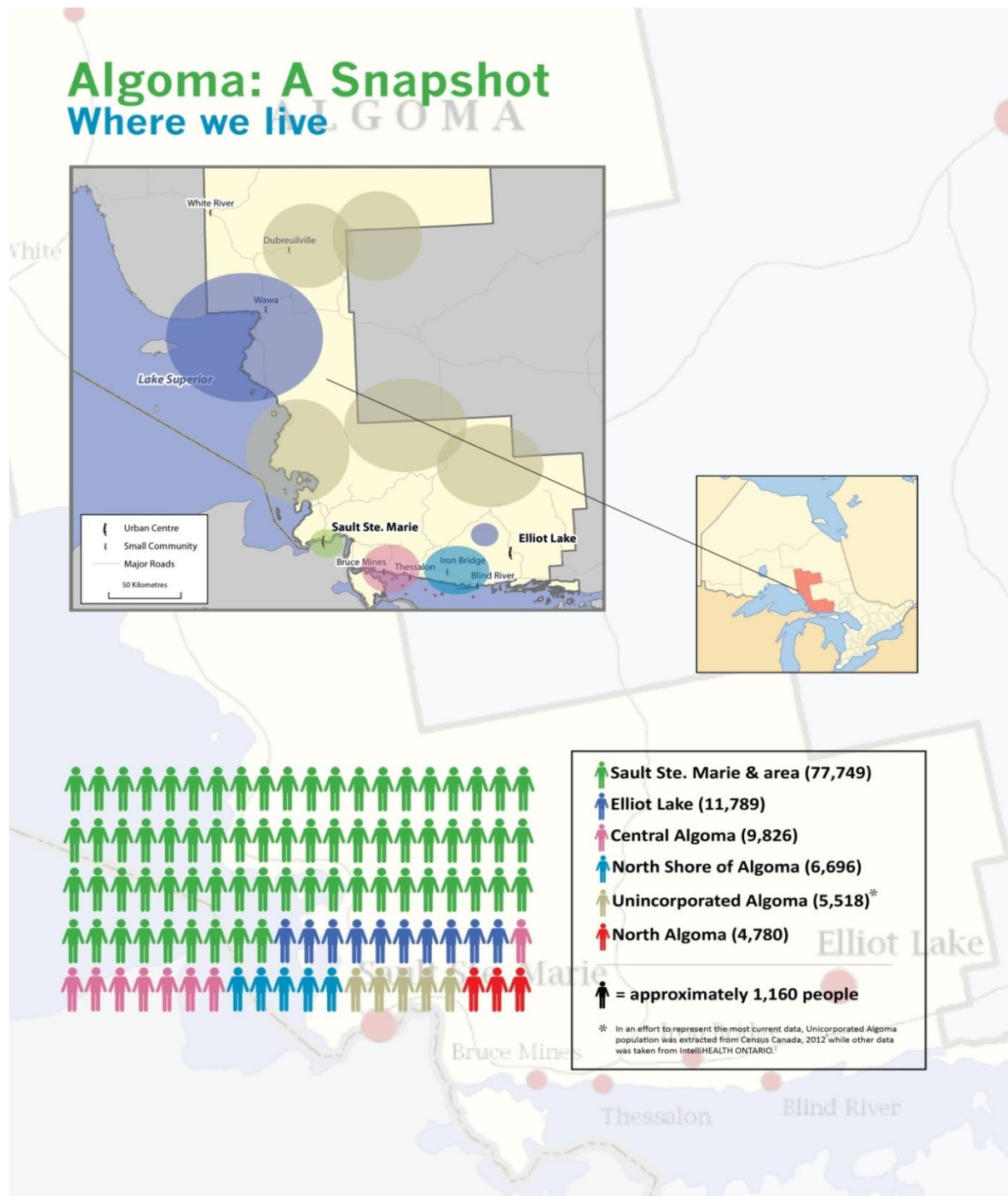
According to the Canadian Cancer Society, knowing the signs of skin cancer is very important.⁶² Most skin cancers can be cured if found early.⁶² Check skin regularly and have someone else check places that are difficult for you to see such as your back, ears, and the back of your legs and neck.⁶² If changes are noticed, see a health care provider right away.

Look for:

- Any change in a birthmark.
- A mole that changes shape, colour, size or changes to the surface of the mole.
- Any new growth on the skin.
- Any sore that does not heal.
- An area of skin that bleeds, oozes, swells, itches or is red and bumpy.

Source: Canadian Cancer Society, 2014

Appendix D: Algoma District Profile



Source: Algoma Public Health 2014. Partnering for Better Health 2013, Annual Report. To read the full report visit:

<http://www.algomapublichealth.com/UserFiles/file/Media/Annual%20Report/2942.pdf>

Appendix E: Hepatitis B and Human Papillomavirus

Vaccination and Cancer

Hepatitis B

Hepatitis B is a liver disease caused by the hepatitis B virus (HBV).²⁴ HBV is spread through contact with infected blood and body fluids including semen and vaginal fluid.²⁴ Symptoms can take two to six months to appear and only about 50 percent of people develop symptoms.²⁴ Individuals may not know they have the virus until damage has already been done to their liver.²⁴ During this time, the virus can also be spread to others.²⁴ Potential complications from chronic HBV infection include cirrhosis of the liver, liver failure, liver cancer and premature death.²⁴

HBV can be prevented by a vaccine.²⁴ People who have not been vaccinated may be at risk of getting infected.²⁴ Talk to a health care provider about being vaccinated. Further information on HBV can be obtained from the Public Health Agency of Canada website.

Human Papillomavirus (HPV)

There are over 100 types of HPV that can infect many parts of the body.²³ The different types can affect your body in different ways.²³ You can have more than one type at a time.²³ Some types of HPV are sexually transmitted and can cause warts or cancer of the cervix, penis or anus.²³

You can get HPV if you have oral, vaginal or anal sex with a person who already has the virus.²³ You can also get HPV from other sexual activity with skin to skin contact.²³ Your partner may not have visible warts (bumps that look like cauliflower) but can still spread the virus.²³ Some warts are very hard to see. A doctor or nurse can do an exam to find them.

The various types of HPV are often classified into low and high risk.²³ The “low-risk” types are rarely associated with cancer.²³ The “high-risk” types are more likely to lead to the development of cancer.²⁵

HPV infection can be prevented by a vaccine. If you are a male between 9-26 years of age, or a female up to 45 years of age you can protect yourself against some types of HPV with the Gardasil vaccine. It is given by a needle in three separate doses. Girls in Grade 8 or of Grade 8 age are offered publicly funded Gardasil in school clinics.²⁵

APH offers Gardasil at their immunization clinics, by appointment only. To make an appointment, call 705 541 7085 or 1 866 402 1193.

The HPV vaccine does not protect against all types of HPV²³. Even if you are vaccinated it is still possible that you will become infected with other types of HPV. It is still very important for you to continue to have regular PAP tests and use condoms for vaginal, anal and oral sex.²³

Appendix F: Symptoms of Colorectal Cancer

Often there are no symptoms in the early stages but symptoms appear as the disease progresses.

- A recent change in bowel habits:
 - Prolonged diarrhea or constipation
 - Stools that are narrower than normal
- Blood (bright or dark red) in the stool
- Unexplained or sudden weight loss
- Fatigue (feeling tired)
- Anemia (low iron)
- Loss of appetite
- Nausea or vomiting
- Abdominal pain or discomfort
- Frequent indigestion or heartburn
- Frequent gas pains or cramps
- A feeling that the bowel does not completely empty

These symptoms MAY indicate colorectal cancer or they may be the sign of something else so check with your health care provider before you panic and assume that you have cancer.

(Source: Algoma Public Health Website 2014)

Appendix G: Symptoms of Prostate Cancer²⁸

Possible signs and symptoms of prostate cancer can include:

- Changes in bladder habits.
- Need to urinate often (frequency), especially at night.
- Intense need to urinate (urgency).
- Difficulty in starting or stopping the urine flow.
- Inability to urinate.
- Weak or decreased urine stream.
- Interrupted urine stream.
- A sense of incompletely emptying the bladder.
- Burning or pain during urination.
- Blood in the urine or semen.
- Painful ejaculation.

Canadian Physical Activity Guidelines

FOR CHILDREN - 5 – 11 YEARS

Guidelines



For health benefits, children aged 5-11 years should accumulate at least 60 minutes of moderate- to vigorous-intensity physical activity daily. This should include:



Vigorous-intensity activities at least 3 days per week.



Activities that strengthen muscle and bone at least 3 days per week.



More daily physical activity provides greater health benefits.

Let's Talk Intensity!

Moderate-intensity physical activities will cause children to sweat a little and to breathe harder. Activities like:

- Bike riding
- Playground activities

Vigorous-intensity physical activities will cause children to sweat and be 'out of breath'. Activities like:

- Running
- Swimming

Being active for at least 60 minutes daily can help children:

- Improve their health
- Do better in school
- Improve their fitness
- Grow stronger
- Have fun playing with friends
- Feel happier
- Maintain a healthy body weight
- Improve their self-confidence
- Learn new skills

Parents and caregivers can help to plan their child's daily activity. Kids can:

- Play tag – or freeze-tag!
- Go to the playground after school.
- Walk, bike, rollerblade or skateboard to school.
- Play an active game at recess.
- Go sledding in the park on the weekend.
- Go "puddle hopping" on a rainy day.

60 minutes a day. You can help your child get there!



Canadian Physical Activity Guidelines

FOR YOUTH - 12 – 17 YEARS

Guidelines



For health benefits, youth aged 12-17 years should accumulate at least 60 minutes of moderate- to vigorous-intensity physical activity daily. This should include:



Vigorous-intensity activities at least 3 days per week.



Activities that strengthen muscle and bone at least 3 days per week.



More daily physical activity provides greater health benefits.

Let's Talk Intensity!

Moderate-intensity physical activities will cause teens to sweat a little and to breathe harder. Activities like:

- Skating
- Bike riding

Vigorous-intensity physical activities will cause teens to sweat and be 'out of breath'. Activities like:

- Running
- Rollerblading

Being active for at least 60 minutes daily can help teens:

- Improve their health
- Do better in school
- Improve their fitness
- Grow stronger
- Have fun playing with friends
- Feel happier
- Maintain a healthy body weight
- Improve their self-confidence
- Learn new skills

Parents and caregivers can help to plan their teen's daily activity. Teens can:

- Walk, bike, rollerblade or skateboard to school.
- Go to a gym on the weekend.
- Do a fitness class after school.
- Get the neighbours together for a game of pick-up basketball, or hockey after dinner.
- Play a sport such as basketball, hockey, soccer, martial arts, swimming, tennis, golf, skiing, snowboarding...

Now is the time. 60 minutes a day can make a difference.



Canadian Physical Activity Guidelines

FOR ADULTS - 18 – 64 YEARS

Guidelines



To achieve health benefits, adults aged 18-64 years should accumulate at least 150 minutes of moderate- to vigorous-intensity aerobic physical activity per week, in bouts of 10 minutes or more.



It is also beneficial to add muscle and bone strengthening activities using major muscle groups, at least 2 days per week.



More physical activity provides greater health benefits.

Let's Talk Intensity!

Moderate-intensity physical activities will cause adults to sweat a little and to breathe harder. Activities like:

- Brisk walking
- Bike riding

Vigorous-intensity physical activities will cause adults to sweat and be 'out of breath'. Activities like:

- Jogging
- Cross-country skiing

Being active for at least 150 minutes per week can help reduce the risk of:

- Premature death
- Heart disease
- Stroke
- High blood pressure
- Certain types of cancer
- Type 2 diabetes
- Osteoporosis
- Overweight and obesity

And can lead to improved:

- Fitness
- Strength
- Mental health (morale and self-esteem)

Pick a time. Pick a place. Make a plan and move more!

- Join a weekday community running or walking group.
- Go for a brisk walk around the block after dinner.
- Take a dance class after work.
- Bike or walk to work every day.
- Rake the lawn, and then offer to do the same for a neighbour.
- Train for and participate in a run or walk for charity!
- Take up a favourite sport again or try a new sport.
- Be active with the family on the weekend!

*Now is the time. Walk, run,
or wheel, and embrace life.*



Canadian Physical Activity Guidelines

FOR OLDER ADULTS - 65 YEARS & OLDER

Guidelines



To achieve health benefits, and improve functional abilities, adults aged 65 years and older should accumulate at least 150 minutes of moderate- to vigorous-intensity aerobic physical activity per week, in bouts of 10 minutes or more.



It is also beneficial to add muscle and bone strengthening activities using major muscle groups, at least 2 days per week.



Those with poor mobility should perform physical activities to enhance balance and prevent falls.



More physical activity provides greater health benefits.

Let's Talk Intensity!

Moderate-intensity physical activities will cause older adults to sweat a little and to breathe harder. Activities like:

- Brisk walking
- Bicycling

Vigorous-intensity physical activities will cause older adults to sweat and be 'out of breath'. Activities like:

- Cross-country skiing
- Swimming

Being active for at least 150 minutes per week can help reduce the risk of:

- Chronic disease (such as high blood pressure and heart disease) and,
- Premature death

And also help to:

- Maintain functional independence
- Maintain mobility
- Improve fitness
- Improve or maintain body weight
- Maintain bone health and,
- Maintain mental health and feel better

Pick a time. Pick a place. Make a plan and move more!

- Join a community urban poling or mall walking group.
- Go for a brisk walk around the block after lunch.
- Take a dance class in the afternoon.
- Train for and participate in a run or walk for charity!
- Take up a favourite sport again.
- Be active with the family! Plan to have "active reunions".
- Go for a nature hike on the weekend.
- Take the dog for a walk after dinner.

**Now is the time. Walk, run,
or wheel, and embrace life.**



Appendix I: Sun Safety Guidelines for All Outdoor Activities

- Drink water all day.
- Wear a hat with a 3-4" brim or a back flap. Wear a hat as much as possible.
- Cover and protect your skin with clothes. Lycra/polyester is better than cotton.
- Use a sunscreen with a Sun Protection Factor (SPF) of 30 or more in ALL kinds of weather year round. Ask your pharmacist for help when choosing a sunscreen.
- People with fair hair or fair skin or who burn easily should use a higher SPF.
- Apply sunscreen 20 minutes before going out in the sun. Reapply throughout the day, especially if perspiring, after swimming or getting wet.
- Sunblock such as Zinc Oxide blocks the sun's rays. Apply sunblock to nose and ears.
- Protect lips using a lip balm with a SPF of 30 or more.
- Use sunglasses that state they protect against UVA and UVB rays.
- Find some shade, especially during the hours of 10 a.m. to 4 p.m. Use an umbrella for shade.
- Be aware of surroundings. Water, sand and snow reflect the sun's rays by 15-20%
- Regular use of sunscreen in the first 18 years of life could reduce skin cancer by 78%
- Keep babies out of direct sun.

(Source: Elgin-St. Thomas Health Unit/Algoma Public Health)