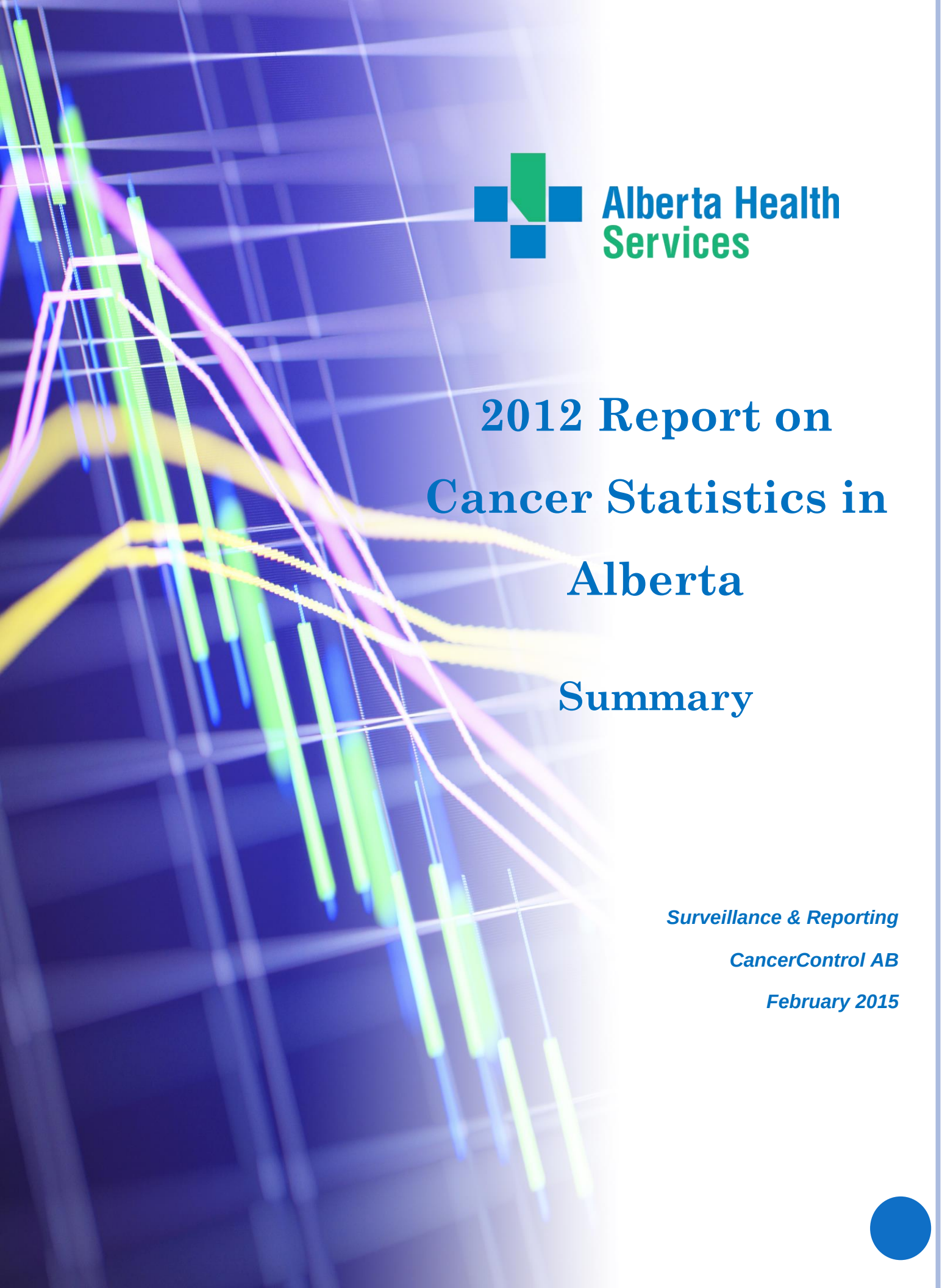

Alberta Health Services

2012 Report on Cancer Statistics in Alberta

Summary

Surveillance & Reporting

CancerControl AB

February 2015

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Purpose of the Report

Surveillance & Reporting, a specialized team within Cancer Measurement Outcomes Research and Evaluation (C-MORE), Alberta Health Services, actively contributes to Changing our Future: Alberta's Cancer Plan to 2030. As well, Surveillance & Reporting keenly contributes to the goal of making Alberta a place where most cancers are prevented, more cancers are cured, and suffering is reduced. This is accomplished in part by conducting cancer ***surveillance*** through the collection, integration, analysis, and dissemination of cancer-related data and information.

The report is designed to provide comprehensive and detailed information regarding cancer in Alberta. It will help support health professionals, researchers and policy makers in the planning, monitoring and evaluation of cancer-related health programs and initiatives. It will also be a useful education tool for the general public and media.

Navigating the Report

This document provides information on cancer statistics in Alberta. Details about individual cancer types are available within separate documents. The words highlighted in ***dark blue*** are terms described in detail in the Glossary within the **Appendix** document.

Data Notes

In this document, the term "cancer" refers to ***invasive cancers*** unless otherwise specified. It is important to note that this document contains both actual and estimated data; distinctions are made where applicable. The numbers published in this report should be considered accurate at the time of publication, as a few cases and deaths may be registered in subsequent years. The data in this report reflect the state of the Alberta Cancer Registry as of July 14, 2014.

Incidence ***rates*** presented in this document exclude basal and squamous skin cancer cases which together are commonly known as non-melanoma skin cancer. Although approximately 30% of the ***malignant*** cancers diagnosed among Albertans each year are basal and squamous skin cancers, these ***tumours*** are generally not life-threatening and are inconsistently reported and coded across registries; therefore basal and squamous skin cancers are rarely included in cancer registry reports.

For detailed descriptions about data sources and how they affect data presented in this report, please see the **Appendix** document.

Cancer in Alberta

- Approximately **1 in 2** Alberta residents will develop cancer in their lifetime and approximately **1 in 4** people born in Alberta will die from cancer. Survival after diagnosis has improved over time resulting in more individuals alive with a prior cancer diagnosis.

- As of December 31, 2012, approximately **131,550** Albertans were alive who had previously been diagnosed with cancer.

- Overall cancer incidence has increased over the last 21 years. In 2012, the most recent year available, there were **16,330** new cancer cases diagnosed in Alberta and **5,817** Albertans died from the disease. The most commonly diagnosed cancers were breast, prostate, lung and colorectal. These four cancers combined accounted for **52%** of new cancer cases and about half of cancer deaths.

- Cancer accounted for **27%** of deaths in the province for all ages in 2012 making cancer the second leading cause of death in Alberta after deaths from circulatory system diseases (**30%**). Among Albertans aged 35-64 years it accounted for **35%** of deaths which is more than circulatory system, respiratory system and digestive system diseases combined.

- Potential years of life lost (PYLL) is the number of years of life lost when a person dies prematurely from any cause, based on their life expectancy. In 2012, cancer was the leading contributor to PYLL, representing about **28**% of the total PYLL. Lung and bronchus, colorectal, breast and pancreatic cancers accounted for the most PYLL.

- Approximately **19,500** cases of cancer are expected to be diagnosed in 2017. This is a **125%** increase in the number of cancer cases between 1992 and 2017. Of this **125%** the majority is estimated to be attributed to an aging population (**61%**) and population growth (**60%**). Cancer is more common later in life so as the average age of the population increases, there will be more cancer cases. There is expected to be a small increase (**3%**) due to an increase in the incidence rate.

Breast Cancer

- Breast cancer is the most commonly diagnosed cancer in females. Approximately **1 in 8** women will develop invasive breast cancer within their lifetime.

- Survival for females diagnosed with breast cancer is generally good and has improved over time. Five-year relative survival for breast cancer was approximately **90%** for those diagnosed between 2010 and 2012. This means that those diagnosed in 2010 to 2012 are about 90% as likely to be alive 5 years after their diagnoses as women of the same age who have not been diagnosed with cancer.

- Generally, cancers diagnosed in earlier stages (I & II) will receive less invasive treatment and have better survival. More than **80%** of breast cancer cases are diagnosed in stages I and II. Three year relative survival for stage I and II is 100% and 98%, respectively.

- Since breast cancer is the most common cancer in Albertan females and survival is good it is the most prevalent type of cancer in females. As of December 31, 2012, approximately **27,800** Albertan females were alive who had previously been diagnosed with breast cancer.

* Year range represents the period over which the most recent significant trend was observed.

- In 2012, there were **2,333** new cases of breast cancer in Albertan women and **385** deaths due to the disease. Between 1992 and 2012 the age standardized incidence rates for female breast cancer **have remained stable** and the mortality rates have decreased. It is estimated there will be approximately **2,650** cases of breast cancer diagnosed in women in 2017.

- Breast cancer incidence in females remains low until about the age of 25, increasing until it peaks at age 75, after which rates decline. There were no significant geographic variations in female breast cancer incidence and mortality across the five Alberta Health Zones.

- Potential years of life lost (PYLL) is the number of years of life lost when a person dies prematurely from any cause, based on their life expectancy. Breast cancer in females in 2012 had the third highest number of potential years of life lost at **7,876**.

Prostate Cancer

- Prostate cancer is the most commonly diagnosed cancer in males. Approximately **1 in 6** men will develop invasive prostate cancer within their lifetime.

- Survival for prostate cancer is very good. The five-year relative survival for prostate cancer in Alberta is approximately **93%** for those diagnosed between 2010 and 2012 which is a significant improvement over those diagnosed in 1992-1994 (**83%**). This means that those diagnosed in 2010 to 2012 are about 93% as likely to be alive 5 years after their diagnoses as men of the same age who has not been diagnosed with cancer.

- Generally, cancers diagnosed in earlier stages (I & II) have better survival. Almost **80%** of prostate cancer cases were diagnosed in stage I or II from 2010-2012. Three year relative survival is **100%** for males diagnosed in stages I, II or III and **52%** for those diagnosed in stage IV.

- The high survival for prostate cancer and commonality of prostate cancer means that for males this cancer type has the most survivors. As of December 31, 2012, approximately **24,850** Albertans were alive who had previously been diagnosed with prostate cancer.

- In 2012, there were **2,338** new cases of prostate cancer in Alberta and **344** deaths due to the disease. Prostate cancer incidence has remained stable while mortality has consistently decreased between 1992 and 2012. It is estimated there will be approximately **2,500** cases of prostate cancer diagnosed in 2017. The majority of the increase in the number of cases diagnosed since 1992 will be due to aging (**82%**) and population growth (**62%**).

- Prostate cancer incidence rates remain low until age 40, when they begin rising rapidly and peak at approximately age 65 and decrease afterwards. There are no significant differences in the incidence or mortality of Prostate cancer between the five Alberta Health Zones.

- Potential years of life lost (PYLL) is the number of years of life lost when a person dies prematurely from any cause, based on their life expectancy. In 2012, **3,209** potential years of life were lost due to prostate cancer.

* Year range represents the period over which the most recent significant trend was observed.

Lung Cancer

- Approximately **1 in 13** men and **1 in 14** women will develop invasive lung cancer within their lifetime. It accounts for **12%** of all cancers diagnosed and **25%** of all cancer deaths.

- Lung cancer is frequently diagnosed at a late stage when outcomes are poor. Lung cancer has the highest potential years of life lost (PYLL) of all cancer types. PYLL is the number of years of life lost when a person dies prematurely from any cause, based on their life expectancy. In 2012, **21,578** potential years of life were lost due to lung cancer. As of December 31, 2012, approximately **4,450** Albertans were alive who had previously been diagnosed with lung cancer.

- Lung cancer is the third most commonly diagnosed cancer in males with **946** diagnosed in 2012 and the second most commonly diagnosed in females at **992**. Approximately **2,350** cases of lung cancer are expected to be diagnosed in 2017. Incidence and mortality rates for men have decreased between 1992 and 2012. In females lung cancer incidence rates increased between 1992 and 2008 and were stable after 2008. F**emale** lung cancer **mortality rates have increased** over the period 1992 to 2004*. Lung cancer incidence and mortality rates are lower in the Calgary Zone than in the rest of the province.

- Age-specific incidence rates for lung cancer in both sexes increase rapidly after the age of 45. After the age of 65, rates for females are lower than for males, and decline after age 75, while male rates decline after 80.

- Generally, cancers diagnosed in earlier stages (I & II) have better survival. Unfortunately, less than **23%** of lung cancer cases are diagnosed in stages I & II. For patients diagnosed in stage I survival is **64%** in males and **77%** in females and decreases to **5%** for males and females diagnosed in stage IV.

- The five-year relative survival for lung cancer in Alberta is approximately **17%** for those diagnosed between 2010 and 2012, an improvement over those diagnosed in 1992-1994 (**12%).** This means that those diagnosed in 2010 to 2012 are about **17%** as likely to be alive 5 years after their diagnoses as someone who has not been diagnosed with cancer.

Colorectal Cancer

- Colorectal cancer is the second most commonly diagnosed cancer in males and the third in females accounting for **1,911** new cases diagnosed in 2012 and **683** deaths in 2012. Approximately **1 in 13** men and **1 in 16** women will develop invasive colorectal cancer within their lifetime. As of December 31, 2012, approximately **14,300** Albertans were alive who had previously been diagnosed with colorectal cancer.

- Over the last 21 years, between 1992 and 2012, both **male and female** colorectal cancer **incidence rates have remained stable** whilst **mortality rates have decreased**. Colorectal cancer incidence and mortality remains consistent across all five Alberta Health Zones. Colorectal cancer rates are low until about age 40, at which point rates begin to increase, with rates for males rising more quickly than for females.

- Approximately **2,500** cases of colorectal cancer are expected to be diagnosed in 2017. Most of the increase in colorectal cancer incidence since 1992 is estimated to be attributable to an aging population (**73%**) and population growth (**60%**).

* Year range represents the period over which the most recent significant trend was observed.

- Potential years of life lost (PYLL) is the number of years of life lost when a person dies prematurely from any cause, based on their life expectancy. In 2012, **10,065** potential years of life were lost due to colorectal cancer.

- Generally, cancers diagnosed in earlier stages (I & II) will receive less invasive treatment and have better survival. **47%** of colorectal cancer cases were diagnosed in stages I & II from 2010-2012. Survival for patients diagnosed in Stage I and II was above 90% for patients diagnosed in 2009-2012 and decreased to 19% for those diagnosed in stage IV.

- The five-year relative survival ratio for colorectal cancer in Alberta is approximately **64%** for those diagnosed between 2010 and 2012, an improvement compared to those diagnosed in 1992-1994 (**55%**). This means that those diagnosed in 2010 to 2012 are about 64% as likely to be alive 5 years after their diagnoses as someone who has not been diagnosed with cancer.

Bladder

- Bladder cancer (including both invasive and in situ) is more commonly diagnosed in males than females. **1 in 23** men and **1 in 81** women will be diagnosed with bladder cancer* within their lifetime. In 2012, there were **738** new cases of bladder cancer in Alberta accounting for **5%** of the cancers diagnosed in Alberta. There were **170** deaths accounting for **3%** of the cancer deaths in Alberta.

- The five-year relative survival ratio for bladder cancer in Alberta is approximately **77%** for those diagnosed between 2010 and 2012. This means that those diagnosed in 2010 to 2012 are about 77% as likely to be alive 5 years after their diagnoses as someone of the same age who has not been diagnosed with cancer. As of December 31, 2012, approximately **6,700** Albertans were alive who had previously been diagnosed with bladder cancer.

- Between 1992 and 2012[†], **both male and female** bladder cancer **incidence and mortality rates have remained stable**. Age-specific rates remain stable until about age 40, at which point rates begin to increase, with rates for males rising more quickly than for females. Looking into the future it is estimated that approximately **910** cases of bladder cancer are expected to be diagnosed in 2017.

- Potential years of life lost (PYLL) is the number of years of life lost when a person dies prematurely from any cause, based on their life expectancy. In 2012, **2,088** potential years of life were lost due to bladder cancer.

Non-Hodgkin Lymphoma

- The chance of being diagnosed with non-Hodgkin lymphoma in a lifetime is approximately **1 in 39** men and **1 in 46** women. As of December 31, 2012, approximately **5,700** Albertans were alive who had previously been diagnosed with non-Hodgkin lymphoma.

- In 2012, there were **700** new cases of non-Hodgkin lymphoma in Alberta and **213** deaths due to the disease. Over the past 30 years, between 1992 and 2012, the incidence rates have been increasing and mortality rates have been decreasing. Incidence of non-Hodgkin Lymphoma increases rapidly after age 30. Incidence is higher in males than in females. In the future it is estimated that approximately **900** cases of non-Hodgkin lymphoma are expected to be diagnosed in 2017.

* Year range represents the period over which the most recent significant trend was observed.

- Survival for non-Hodgkin Lymphoma is generally good and has improved consistently. The five-year relative survival ratio for non-Hodgkin lymphoma in Alberta was **53%** for those diagnosed 1992-1994 and was **73%** for those diagnosed between 2010 and 2012. This means that those diagnosed in 2010 to 2012 are about **73%** as likely to be alive 5 years after their diagnoses as someone of the same age who has not been diagnosed with cancer.

- Potential years of life lost (PYLL) is the number of years of life lost when a person dies prematurely from any cause, based on their life expectancy. In 2012, **3,101** potential years of life were lost due to non-Hodgkin lymphoma.

Melanoma of the Skin

- The chance of being diagnosed with melanoma of the skin in a lifetime is approximately **1 in 55** men and **1 in 69** women. As of December 31, 2012, approximately **7,800** Albertans were alive who had previously been diagnosed with melanoma of the skin.

- In 2012, there were **599** new cases of melanoma of the skin in Alberta and **72** deaths due to the disease. The trends in incidence rates are different between males and females. From 1992 to 2012*, **male** melanoma **incidence rates increased** while **female** melanoma **incidence rates remained stable**. Mortality rates for both **males and females remained stable during this period**. Both male and female rates of melanoma increase after about age 35 with higher rates in males after age 40.
- In the future it is estimated that approximately **700** cases of melanoma of the skin will be diagnosed in 2017.

- The relative survival ratio for individuals diagnosed with melanoma of the skin is extremely high. The five-year relative survival ratio for melanoma of the skin in Alberta is approximately **91%** for those diagnosed between 2010 and 2012. This means that those diagnosed in 2010 to 2012 are about 91% as likely to be alive 5 years after their diagnoses as someone of the same age who has not been diagnosed with cancer.

- Potential years of life lost (PYLL) is the number of years of life lost when a person dies prematurely from any cause, based on their life expectancy. In 2012, **1,462** potential years of life were lost due to melanoma of the skin.

Leukemia

- The chance of being diagnosed with leukemia in a lifetime is approximately **1 in 42** men and **1 in 65** women. As of December 31, 2012, approximately **4,750** Albertans were alive who had previously been diagnosed with leukemia.

- In 2012, there were **557** new cases of leukemia in Alberta and **214** deaths due to the disease. From 1992 to 2012*, **incidence rates for leukemia have increased** while **mortality rates have decreased.** Incidence rates of leukemia are somewhat elevated in those under the age of 15 but remain low for both sexes until the age of 40. Incidence rates in males are higher than in females from age 45 onward. Approximately **730** cases of leukemia are expected to be diagnosed in 2017.

* Year range represents the period over which the most recent significant trend was observed.

- The five-year relative survival ratio for leukemia in Alberta has increased from **53%** for those diagnosed in 1992 to 1994 to **71%** for those diagnosed between 2010 and 2012. This means that those diagnosed in 2010 to 2012 are about 71% as likely to be alive 5 years after their diagnoses as someone of the same age who has not been diagnosed with cancer.

- Potential years of life lost (PYLL) is the number of years of life lost when a person dies prematurely from any cause, based on their life expectancy. In 2012, **3,096** potential years of life were lost due to leukemia.

Uterine Cancer

- Uterine cancer accounts for **7%** of all cancers diagnosed in women. Approximately **1 in 33** women will be diagnosed with uterine cancer within their lifetime. As of December 31, 2012, approximately **6,350** Albertan women were alive with a prior diagnosis of uterine cancer.

- In 2012, there were **529** new cases of uterine cancer in Alberta and **87** deaths due to the disease. Over the last 30 years, from 1992 to 2012*, uterine cancer **incidence rates have increased** while mortality rates have remained stable. Uterine cancer incidence begins rising at age 30, peaking at age 65, and then declining in older ages. In 2017 it is estimated that approximately **600** cases of uterine cancer are expected to be diagnosed.

- Survival for uterine cancer has been stable over the last 20 years. The five-year relative survival ratio for uterine cancer in Alberta is approximately **83%** for those diagnosed between 2010 and 2012. This means that those diagnosed in 2010 to 2012 are about 83% as likely to be alive 5 years after their diagnoses as women of the same age who have not been diagnosed with cancer.

- Potential years of life lost (PYLL) is the number of years of life lost when a person dies prematurely from any cause, based on their life expectancy. In 2012, **1,641** potential years of life were lost due to uterine cancer.

Kidney Cancer

- Kidney cancer accounts for **3%** of all cancers diagnosed and **3%** of all cancer deaths. Approximately **1 in 55** men and **1 in 85** women will be diagnosed with invasive kidney cancer within their lifetime. As of December 31, 2012, approximately **4,350** Albertans were alive who had previously been diagnosed with kidney cancer.

- In 2012, there were **483** new cases of kidney cancer in Alberta and **162** deaths due to the disease. Over the past 21 years, from 1992 to 2012*, **incidence rates** for kidney cancer have remained stable while kidney cancer **mortality rates have decreased.** Incidence of kidney cancer increases gradually in both males and females after age 30. Incidence rates are higher in males than in females after age 30. Approximately **640** cases of kidney cancer are expected to be diagnosed in 2017.

- The five-year relative survival ratio for kidney cancer in Alberta increased from **58%** for those diagnosed in 1992 to 1994 to **68%** for those diagnosed between 2010 and 2012. This means that those diagnosed in 2010 to 2012 are about 68% as likely to be alive 5 years after their diagnoses as someone of the same age who has not been diagnosed with cancer.

* Year range represents the period over which the most recent significant trend was observed.

- Potential years of life lost (PYLL) is the number of years of life lost when a person dies prematurely from any cause, based on their life expectancy. In 2012, **2,581** potential years of life were lost due to kidney cancer.

Childhood Cancer

- Cancer in children (ages 0 to 14) is rare accounting for <1% of all cancers diagnosed. In 2012, **113** children aged 0 to 14 years old were diagnosed with cancer in Alberta. As of December 31, 2012, approximately **710** children (aged 0 to 14 years) were alive who had previously been diagnosed with cancer in Alberta and about **2,600** Albertans aged 0 to 99 were survivors of childhood cancer.

- The most common cancer types diagnosed between 2008 and 2012 were **leukemias** (27%) followed by **central nervous system tumors** (23%), **lymphomas** (10%), **neuroblastomas** (7%), and **soft tissue tumours** (6%). Since 1992, childhood cancer **incidence rates have increased** and **mortality rates have been stable.**

- Survival for childhood cancers is good. Five-year observed survival for all childhood cancers in Alberta is **82%**. In 2012, there were only **10** children aged 0 to 14 years old who died from childhood cancer in Alberta. Over the five year period between 2008 and 2012, the most common cancer causes of death in children were **central nervous system tumors** (45%) followed by **leukemias** (22%), and **neuroblastomas** (7%).

* Year range represents the period over which the most recent significant trend was observed.

Further Information

Further information is available on a separate document, the **Appendix**:

Appendix 1: Glossary of Terms
Appendix 2: Cancer Definitions
Appendix 3: Data Notes

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