



# Cancer in Durham Region

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# Outline

By the end of this presentation, you will learn about:

- Cancer surveillance in Durham Region
- New interactive dashboard – **Durham Region Cancer Data Tracker**
  - Measures of morbidity and mortality
  - Specific indicators
  - Data source caveats
- Prevention
- Resources
- Live demo

# Cancer Surveillance in Durham Region

- Cancer surveillance part of public health program outlined in the Ontario Public Health Standards
- Cancer At A Glance report (examined cancer cases) in Durham Region

**Cancer At A Glance in Durham Region**  
Last Updated: June 2017

**Highlights**

- This report examined cancer incidence in Durham Region over time and as compared to Ontario. Cancer incidence refers to newly diagnosed cases. There were 3,500 cancer cases diagnosed in Durham Region residents in 2012, with 84% of these occurring in people aged 50 or older.
- One in two Ontarians will develop cancer in their lifetime and one in four will die of the disease (1).
- Although we think of cancer as one disease, it is actually many different diseases. Even within a specific type, such as lung cancer or leukemia, there are several different types of diseases. All cancers exhibit uncontrolled growth and spread of abnormal cells. Each type of cancer has different causes, risk factors, preventive factors and characteristics.
- Important risk factors for cancer include tobacco use, alcohol consumption, obesity, overexposure to ultraviolet radiation from the sun, and various occupational exposures. We can prevent some types of cancer by eating a diet rich in vegetables and fruits, breast, cervical and colorectal cancers can reduce both incidence and mortality by detecting pre-cancerous cells and treating the condition before the cells have become cancerous and spread throughout the body.
- The incidence of a disease can change over time because of changes in risk factors or protective factors. Screening or improved diagnostic testing can also increase incidence because more cases are detected and diagnosed.
- The most common cancers in Durham Region males were prostate, lung and colorectal, which make up half of all newly diagnosed cancer cases. The most common cancers in females were breast, lung and colorectal, which make up half of all newly diagnosed cancer cases in Durham Region females. This is similar to Ontario and Canada (1, 3).
- Overall cancer incidence rates were significantly higher in Durham Region than Ontario for males, females and both combined in 2010 to 2012.





# Durham Region Cancer Data Tracker

- Interactive Power BI dashboard
- Examines cancer incidence (new cancers) and mortality in Durham Region
  - Trends from 2010 to 2018
    - By age, sex, and site
  - Compares Durham Region and Ontario (2010-2018)
- Data Source
  - Ontario Cancer Registry (OCR) operated by Cancer Care Ontario
  - SEER\*Stat Package
  - June 2021 release



# Measures of Morbidity and Mortality

- Incidence – new cases of cancer diagnosed each year
- Mortality – deaths attributed to cancer each year
- Standardized Incidence Ratio – ratio of the number of observed to expected cases
- Standardized Mortality Ratio – ratio of the number of observed to expected cancer deaths
- Rates
  - Age-standardized – compare populations with different age compositions
  - Age-specific – compare rates between different age groups
  - Site-specific – compare rates of different types of cancers



# Indicators

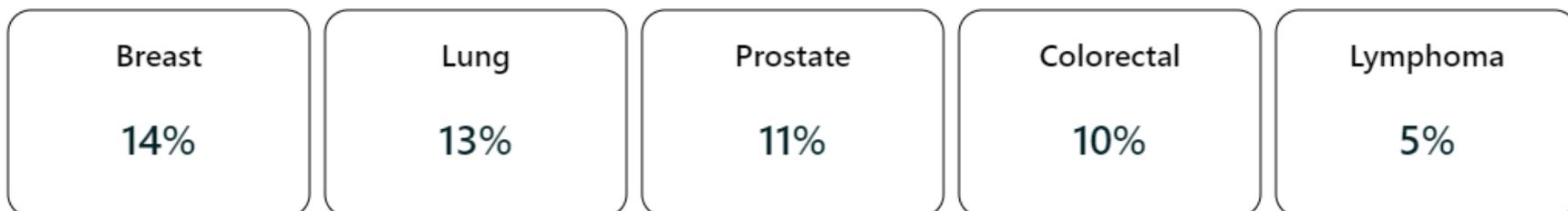
- Overall top five new cancer cases and cancer deaths
- Incidence and Mortality rates
  - All sites
  - By age (0-14 years, 15-29 years, 30-49 years and 50+ years)
  - By cancer site
  - Annual Percent Change in Durham Region from 2010 to 2018
- SIR/SMR – comparison of Durham Region to Ontario by age group and cancer site
- Selected cancer sites: Bladder, Brain (CNS), Breast, Cervical, Colorectal, Esophagus, Hodgkin Lymphoma, Kidney, Leukemia, Liver, Lung, Melanoma, Non-Hodgkin Lymphoma, Oral, Ovary, Pancreas, Prostate, Stomach, Testis, Thyroid, Uterine



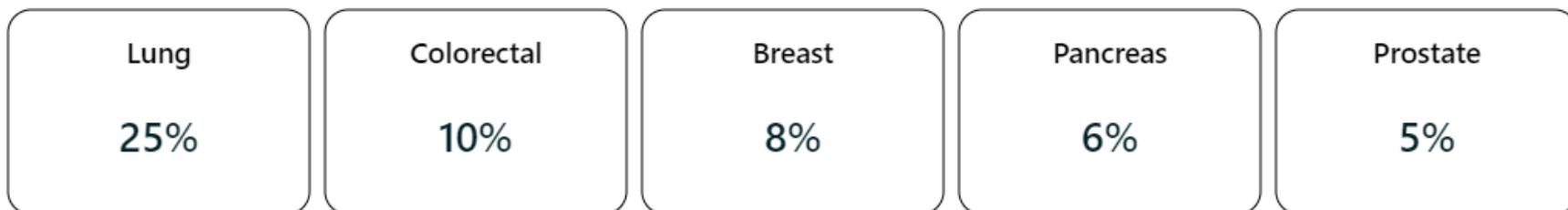
There were 31,763 newly diagnosed cases of cancer and 10,795 cancer deaths among Durham Region residents between 2010 and 2018.

## Top Five Cancers in Durham Region (2010-2018)

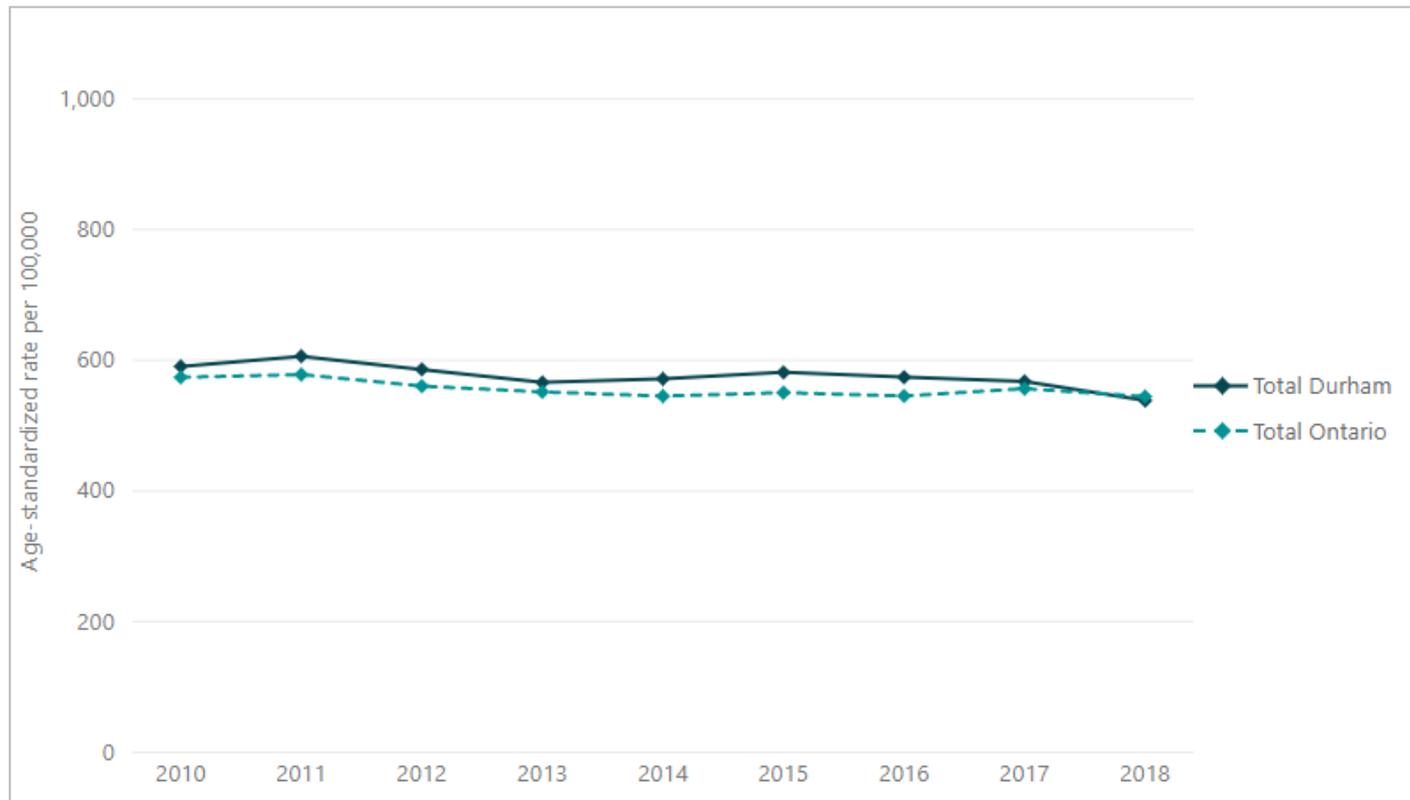
### Five Most Common Cancers



### Five Most Common Cancer Deaths



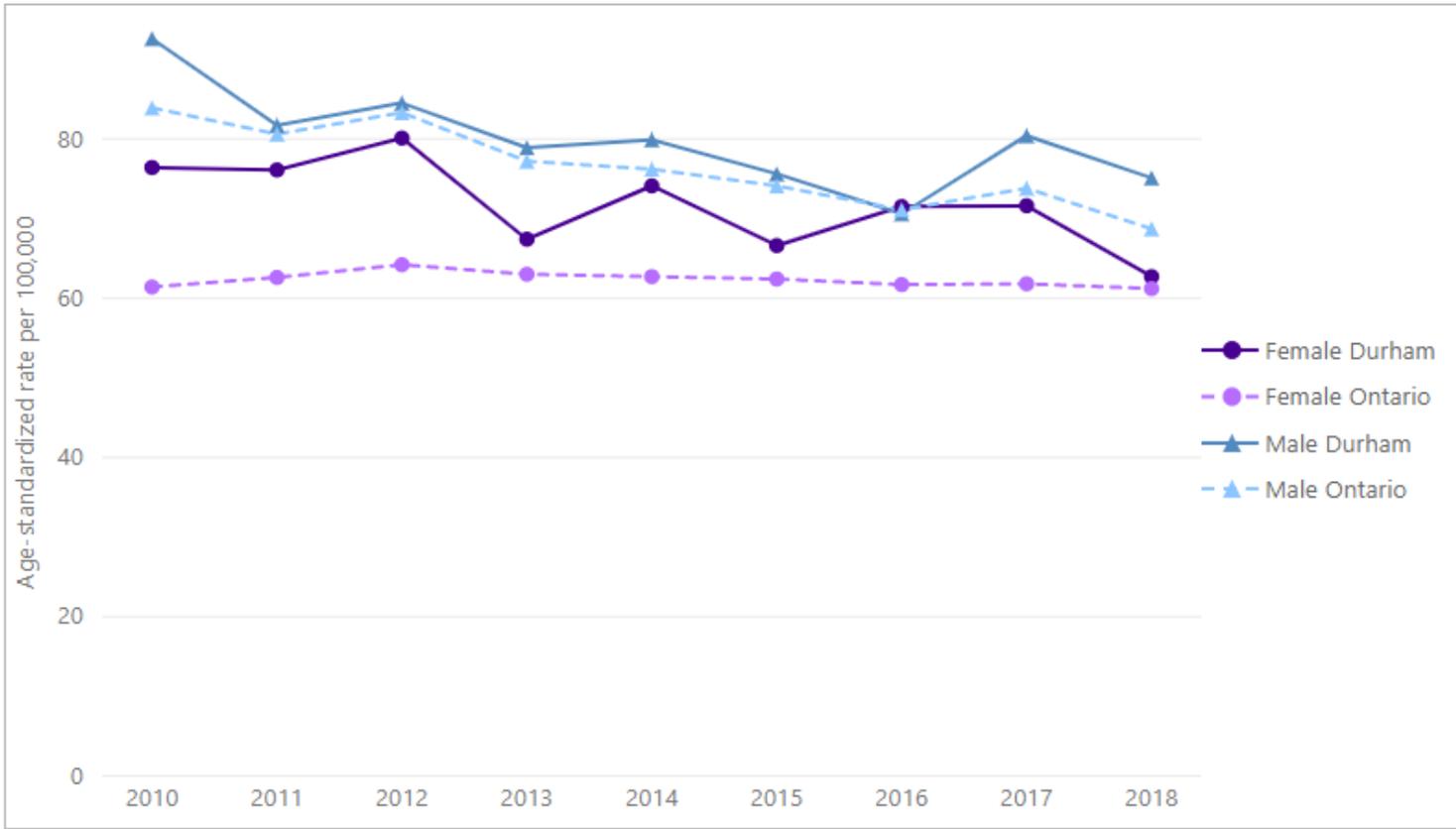
## Cancer Incidence Rates in Durham Region by Year



Sex 

*Click the buttons around the graph to view trends based on sex, age, and type of measure.*

## Cancer Incidence Rates in Durham Region for Selected Cancers by Year



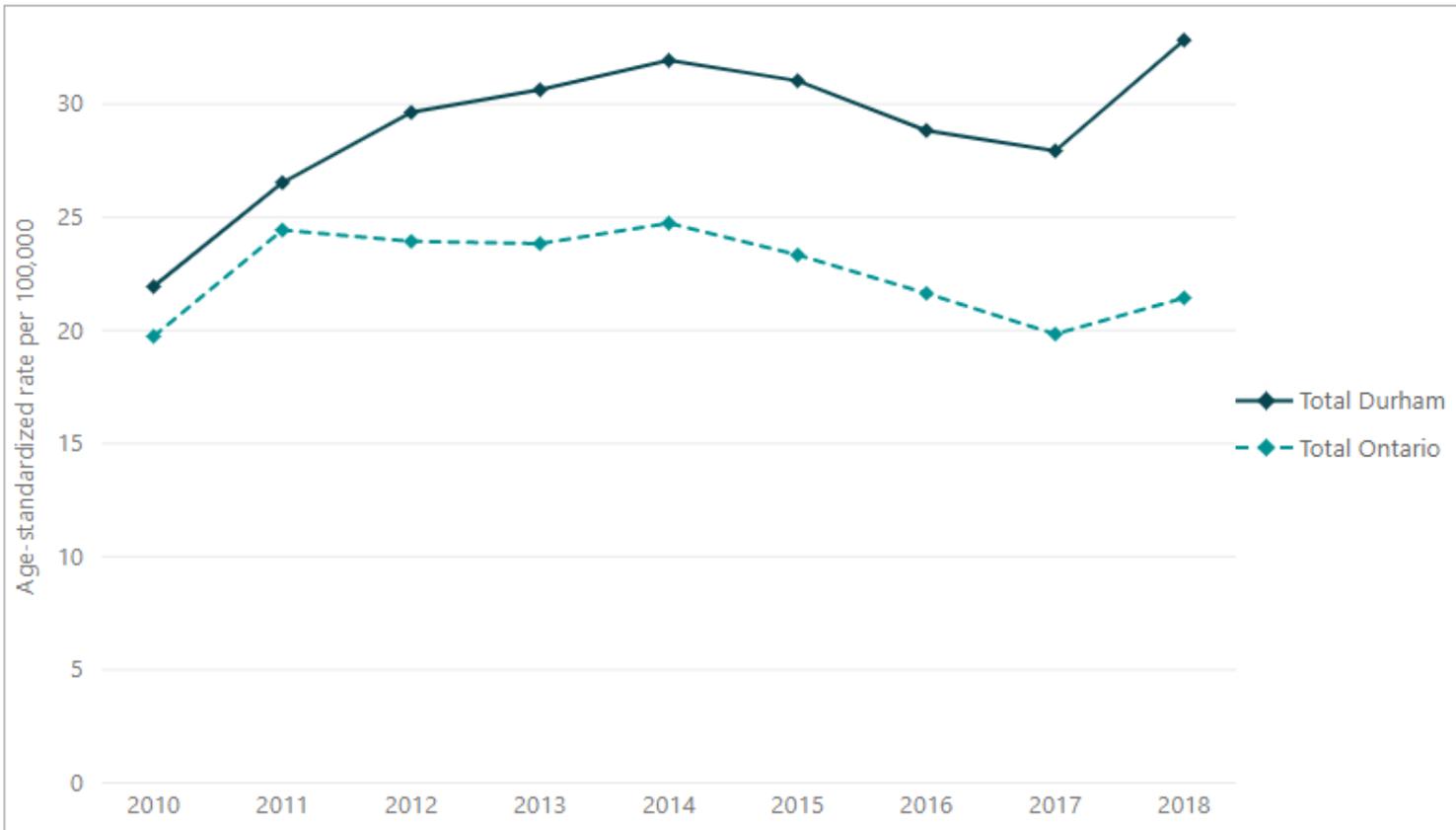
Sex

- Female
- Male
- Total

Site

- Bladder
- Brain, CNS
- Breast
- Cervical
- Colorectal
- Esophagus
- Hodgkin Lymphoma
- Kidney
- Leukemia
- Liver
- Lung
- Melanoma
- Non-Hodgkin Lympho...
- Oral
- Ovary

## Cancer Incidence Rates in Durham Region for Selected Cancers by Year



Sex

Female

Male

Total

Site

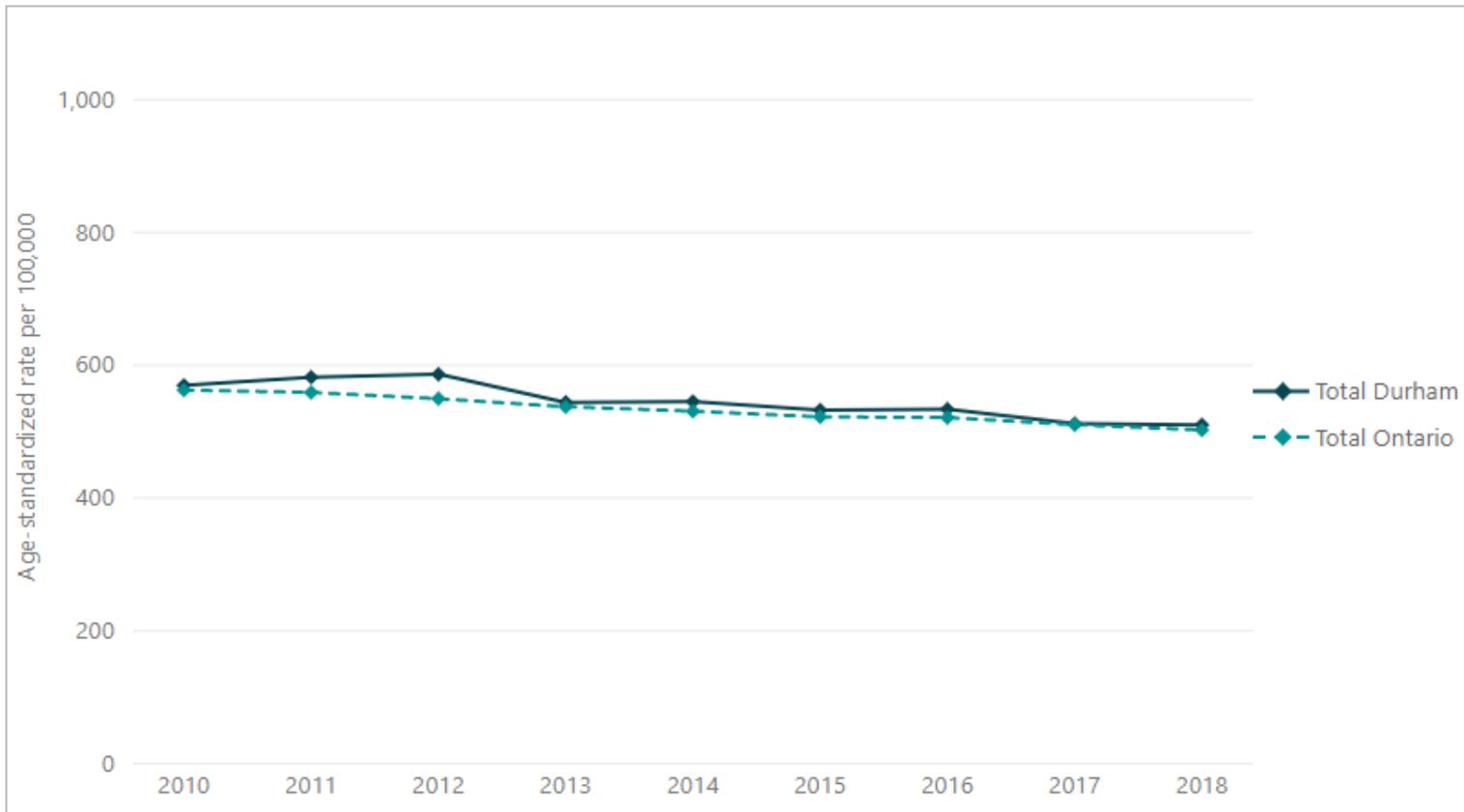
- Hodgkin Lymphoma
- Kidney
- Leukemia
- Liver
- Lung
- Melanoma
- Non-Hodgkin Lympho...
- Oral
- Ovary
- Pancreas
- Prostate
- Stomach
- Testis
- Thyroid
- Uterine

## Changes Over Time in Cancer Incidence Rates for Selected Cancers

The table below shows age-adjusted rates per 100,000 population for Durham Region for 2010 and 2018. The annual percent change (APC) is the rate of change of incidence rates (age-adjusted to the 2011 Canadian population) over time. Statistical significance, in this instance, means the APC is significantly different from 0 (p-value<0.05).

Site	2018 Durham Rate	2018 Count	2010 Durham Rate	Annual Percent Change	Trend P-value	Statistical Significance
Breast	76.4	531	79.0	0.05	0.95	Not Significant
Lung	67.8	471	82.4	-1.99	0.01	Significant decrease
Prostate	56.4	401	74.8	-3.24	0.03	Significant decrease
Colorectal	48.8	335	62.7	-2.15	0.03	Significant decrease
Thyroid	32.8	222	21.9	2.59	0.08	Not Significant
Melanoma	25.2	174	23.3	0.57	0.70	Not Significant
Non-Hodgkin Lymphoma	24.0	164	26.4	-2.38	0.10	Not Significant
Uterine	22.1	153	16.0	1.87	0.41	Not Significant
Bladder	22.0	151	33.8	-3.16	0.04	Significant decrease
Kidney	17.4	121	15.0	0.01	1.00	Not Significant
Leukemia	16.6	115	20.6	-1.74	0.24	Not Significant
Oral	12.7	88	11.2	2.01	0.37	Not Significant
Pancreas	11.9	83	10.2	1.36	0.41	Not Significant
Stomach	9.4	65	11.2	-1.65	0.21	Not Significant
Ovary	8.8	60	10.1	-2.66	0.04	Significant decrease
Brain, CNS	7.3	50	7.8	-2.42	0.16	Not Significant
Liver	5.9	41	4.8	4.15	0.11	Not Significant
Esophagus	4.7	33	6.1	-2.31	0.46	Not Significant
Testis	4.6	30	2.7	5.14	0.13	Not Significant
Cervical	4.5	31	6.8	-2.79	0.43	Not Significant

## Cancer Mortality Rates in Durham Region by Year



Sex

Female

Male

Total

Age group

00-14 years

15-29 years

30-49 years

50+ years

*Click the buttons around the graph to view trends based on sex, age, and type of measure.*

All Ages

Age Specific

# Distribution of Cancer Deaths in Durham Region for Selected Cancers

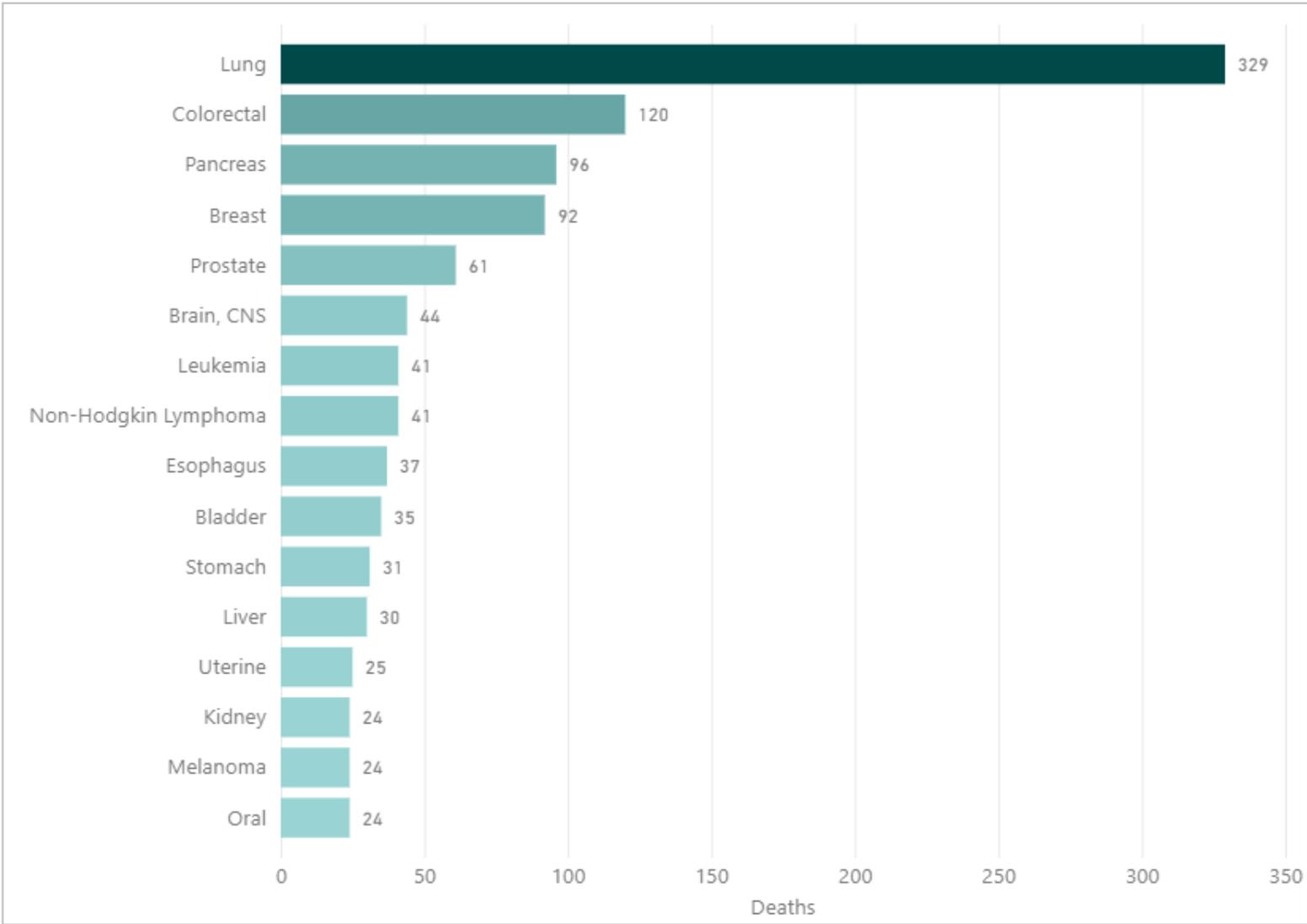
Year of death

- 2010
- 2011
- 2012
- 2013
- 2014
- 2015
- 2016
- 2017
- 2018

Sex

- Female
- Male
- Total

Click the buttons above to view top cancers based on sex and year of diagnosis.



## Standardized Incidence Ratios (SIRs) by Age, 2010-2018 Combined

	Rate Ratio	Lower Confidence Interval	Upper Confidence Interval	P-Value	Count	Compared to Ontario
<b>Durham Region</b>						
00-14 years	0.97	0.83	1.13	0.75	181	Similar
15-29 years	1.17	1.07	1.27	0.00	597	Higher than Ontario
30-49 years	1.05	1.01	1.08	0.01	3,781	Higher than Ontario
50+ years	1.03	1.02	1.04	0.00	27,204	Higher than Ontario

Sex 

Female

Male

Total

Click the buttons above to view SIRs by sex.

## Standardized Mortality Ratios (SMRs) by Age, 2010-2018 Combined

	Rate Ratio	Lower Confidence Interval	Upper Confidence Interval	P-Value	Count	Compared to Ontario
<b>Durham Region</b>						
00-14 years	1.42	0.98	2.00	0.07	35	Similar
15-29 years	1.12	0.83	1.48	0.47	52	Similar
30-49 years	0.99	0.90	1.08	0.81	513	Similar
50+ years	1.03	1.01	1.05	0.01	10,195	Higher than Ontario

Sex 

Female

Male

Total

Click the buttons above to view SMRs by sex.



# Caveats

- Non-melanoma cancers not included in OCR
- Timeliness of data
- Suppression rules
- Selected cancers
- Limited information on external factors
  - Incidence rates – changes in risk and protective factors, screening and diagnostic testing improvements
  - Mortality rates – changes in treatment options and availability, changes in classification or post-mortem examinations



# We can prevent some types of cancer by:

- Eating a diet rich in vegetables and fruits
- Being physically active
- Not smoking
- Reducing alcohol consumption
- Maintaining a healthy weight
- Vaccinating against infections such as human papillomavirus (HPV) and hepatitis B
- Reducing exposure to carcinogens in the workplace
- Screening for breast, cervical and colorectal cancers
- Practicing sun safety and avoiding excessive sun exposure



# Resources

- Public Health Ontario – [Snapshots](#)
  - Interactive map based dashboard for all PHUs
- Cancer Care Ontario – [Ontario Cancer Profiles](#)
  - Provides cancer incidence, mortality, risk factor and screening information by LHIN



# Durham Region Cancer Data Tracker



# Questions?

