Overview of 2018 special report on cancer incidence by stage

The 2018 Canadian Cancer Statistics publication includes a special report on cancer incidence by stage at diagnosis. It also includes an overview of cancer in Canada (using estimates from Canadian Cancer Statistics 2017) and a guide to finding other cancer statistics through Statistics Canada’s online database, CANSIM. Access the full publication at cancer.ca/statistics.

What is cancer stage and why is it important?

Cancer stage is a way to classify a cancer based on how much disease is in the body and the spread of the disease at the time of diagnosis. Generally, the higher the stage, the poorer the prognosis and the lower the survival rate. Stage definitions differ somewhat between cancers but in general are defined as follows:

Stage 1
- Tumour is small and has not grown outside the organ it started in

Stage 2
- Tumour is larger than stage 1 but has not spread to nearby tissues

Stage 3
- Tumour is large and has spread to nearby tissues and lymph nodes

Stage 4
- Tumour has spread through the blood or lymphatic system to a distant site in the body

Cancer stage provides valuable information for people with cancer, healthcare providers, researchers and decision-makers. For example, healthcare providers use this information to make a prognosis, plan treatment and predict how well treatment will work. This information also helps people with cancer understand their diagnosis and treatment options and anticipate how their disease will progress. Healthcare decision-makers use population-level information on cancer stage for a variety of reasons, including to explain trends in cancer over time and across geography, plan and evaluate cancer control efforts and allocate resources.

Information on cancer stage has not previously been included in the Canadian Cancer Statistics publication because nationwide data have only recently become available. This special report represents the most up-to-date and comprehensive source of statistics on cancer incidence by stage in Canada.

What statistics are found in this report?

Data on cancer stage at diagnosis (2011 to 2015) were obtained from the Canadian Cancer Registry. The chart below shows the regions the stage data were available for, by cancer type:

<table>
<thead>
<tr>
<th>Cancer</th>
<th>BC</th>
<th>AB</th>
<th>SK</th>
<th>MB</th>
<th>ON</th>
<th>QC</th>
<th>NB</th>
<th>NS</th>
<th>PE</th>
<th>NL</th>
<th>Territories*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lung, colorectal, breast, prostate</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>–</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Cervix</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>–</td>
<td>–</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Other cancers†</td>
<td>–</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>✓</td>
<td>✓</td>
<td>–</td>
</tr>
</tbody>
</table>

* Data are pooled for Yukon, Northwest Territories and Nunavut
† These are the other 15 stageable cancers typically included in the Canadian Cancer Statistics publication: bladder, esophagus, Hodgkin lymphoma, kidney and renal pelvis, larynx, liver, melanoma, non-Hodgkin lymphoma, oral, ovarian, pancreatic, stomach, testis, thyroid, uterine
This report provides estimates of stage at diagnosis by sex, age and region (where applicable) for lung, colorectal, female breast, prostate and cervical cancers. It also includes information about 15 other stageable cancers. Three types of statistics are included: the number of cancers by stage, the percent distribution of cancer by stage and age-standardized incidence rates by stage.

**What are some key findings?**

The stage distribution varied a great deal, depending on the type of cancer:

- In general, cancers that form deep in the body (e.g., pancreatic, stomach, lung) were more likely to be found at a late stage, whereas cancers that form in tissues or organs that are more visible, show symptoms quickly or are detectable through screening (e.g., skin, thyroid, testicular, breast, cervical) were more likely to be found at an early stage.
- 50% of lung cancers were diagnosed at stage 4. This is reflected in its overall low survival rate (17%).
- Despite the availability of organized screening programs in most provinces and territories in Canada, about half (49%) of colorectal cancers were diagnosed at a late stage (stage 3 or 4).
- Conversely, more than 80% of female breast cancers and almost three-quarters of prostate cancers were diagnosed at an early stage (stage 1 or 2).
- In addition, more than 70% of cervical cancers diagnosed in females aged 18 to 39 years were diagnosed at stage 1, likely reflecting early detection through cervical cancer screening programs.

Every year in Canada (excluding Quebec), an average of about 6,800 lung and bronchus, 2,500 colorectal, 800 female breast and 1,200 prostate cancers were stage 4 at diagnosis.

For the four most commonly diagnosed cancers, the percentage of “stage unknown” cases was generally much higher in older age groups than younger age groups. This may be because older people were less likely to undergo a full diagnostic workup for their cancer.

The percent distribution of cancer stage at diagnosis varied across the country much more for some cancers (e.g., thyroid, prostate, ovarian) than for others (e.g., pancreatic, uterine). This variation is, at least in part, because of differences in early detection practices.

**Where do we go from here?**

This report provides an early look at cancer incidence by stage at diagnosis in Canada. The results can be used in many ways, including by healthcare planners to allocate resources, researchers to identify priorities and healthcare providers to understand and communicate about the burden of cancer. As additional years of stage data accumulate and are reported to the Canadian Cancer Registry, the data can contribute to monitoring and evaluating cancer control in even more meaningful ways.

**Important note:** Because the Canadian Cancer Statistics publication was evaluated in 2018, updates were not made to the statistics reported in the 2017 edition, meaning projections for 2018 incidence and mortality are not available.

The results of the evaluation will be applied to the 2019 edition onward. Planning for the Canadian Cancer Statistics 2019 is underway. It will include updated statistics on cancer incidence and mortality (including projected estimates to 2019) as well as updated estimates of cancer survival.