CANADIAN **PARTNERSHIP** AGAINST **CANCER**

PARTENARIAT CANADIEN CONTRE LE **CANCER**

Cancer System Performance

2018 Report

Contents

REPORT HIGHLIGHTS

Each chapter of this report highlights:

Progress made in improving cancer control in Canada

Variations in cancer control practices between jurisdictions
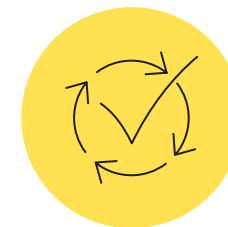
Impact of cancer control improvements on patients with cancer and health care professionals

CANADIAN PARTNERSHIP AGAINST CANCER

Introduction

More than a decade ago, Canada launched the *Canadian Strategy for Cancer Control* (the Strategy)[a] to reduce the number of people diagnosed with and dying from cancer, and to improve the quality of life for those affected by cancer.

Measuring and reporting on standardized, high-quality data of the performance of cancer systems across Canada plays a key role in advancing the Strategy. It allows us to understand gaps and areas where more focused attention is required, and allows us to identify and spread effective practices that can improve cancer care for Canadians.

[a] The 2017-2022 Canadian Strategy for Cancer Control is available at: partnershipagainstcancer.ca/strategy-2018.

This **2018 Cancer System Performance Report** marks a milestone in pan-Canadian performance measurement of its cancer systems.

It represents years of advances in the breadth, depth and quality of data collection by partner organizations across the country, and in how cancer system performance data is presented and linked to calls to action. We are now able to measure and report on more indicators of cancer system performance at a pan-Canadian level; and with each year that this report is released, we have seen increasing participation in data collection from provinces, territories and other partner organizations.

Once a milestone is passed, however, it is time to cover new ground. The Canadian Partnership Against Cancer (the Partnership) is planning important changes in how we deliver information on cancer system performance in the future. After ten years of progress, it is time to renew and evolve the Strategy to address new pressures and new opportunities in cancer control. We will also be taking the opportunity to refresh our core set of system performance indicators so that they align with the renewed Strategy. Through close collaboration with partners, we can help ensure that the best possible data is available for catalyzing improvement and change on crucial issues in cancer control. (More on the Partnership's planned changes to reporting in the *Moving Forward* section at the end of this report).

The *2018 Cancer System Performance Report* highlights progress and gaps across the five themes of the Partnership's strategic plan:

Delivery of **high-quality, effective care** that is evidence-based and improves health outcomes.

Equitable care for all Canadians by minimizing socio-demographic barriers (e.g., income, place of residence, immigrant status) that impact access to effective cancer control services.

Seamless, person-centred care that allows patients and their families to easily understand, access and navigate the cancer system.

A **sustainable system** that meets the needs of the population in a way that optimizes the balance between resource use and excellence in patient outcomes.
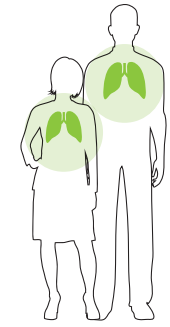
Maximizing data impact by broadening the reach, depth and availability of population and cancer system data, so it can be used to make fast, effective decisions based on evidence.
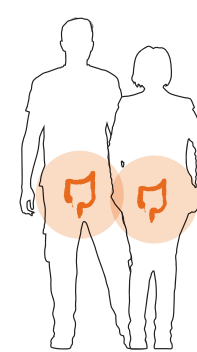
Throughout this report, we use the following colour codes to represent different cancer types:
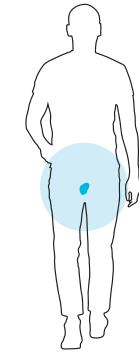

● **Breast Cancer**

● **Lung Cancer**

● **Colorectal Cancer**

● **Prostate Cancer**

● **Cervical Cancer**

A person-centred look at progress
Performance of the cancer system along the patient journey

While the rest of this report is organized by theme—quality, equity, seamless care and sustainability—this section describes what the findings could mean for people affected by cancer, from prevention and screening through diagnosis and treatment to survivorship and end-of-life care.

Prevention is the single most important strategy to reduce the burden of cancer for people today and for future generations. Minimizing risk factors for cancer—in particular, smoking, physical inactivity and excessive drinking—could help us prevent up to one-third of cancer cases.[1] However, it is not an easy task. For example, we have long known 85% of lung cancer cases are attributable to smoking, which is why it has been and remains a key focus of prevention efforts.[2]

Recently, Canada set a goal of reducing smoking rates to 5% of the population by 2035.[3] Although smoking rates have dropped by more than half since the 1970s, nationally the rate is still high at 17.4%. However, rates across the country range from a low of 14.1% to 62.1%, depending on the jurisdiction. Clearly, there is a lot more work to do, but if we succeed in meeting the national smoking target from coast to coast, then by 2035 we could have 31,000 fewer people diagnosed with lung cancer and 20,000 fewer people dying from it.

Canadian jurisdictions also vary in other risk factors, including physical inactivity (from 31.8% to 50.3%, depending on the jurisdiction).
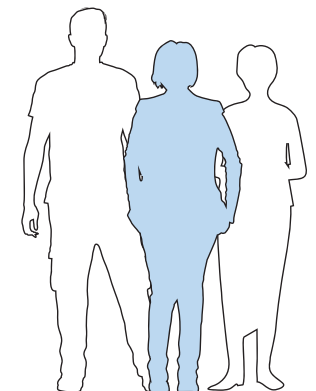
Minimizing risk factors for cancer

Smoking Physical inactivity Excessive drinking

could help us **prevent cancer cases** by up to **one-third**

Excessive drinking is also a problem, ranging from 7.2% to 16.2%, by jurisdiction. These numbers translate to big differences in cancer incidence and a need to expand effective prevention efforts to reach people across Canada.

Despite the success of prevention efforts so far, one in two Canadians will receive a cancer diagnosis in their lifetime.[4] Our goal for those Canadians is to **reduce the percentage who are diagnosed with late-stage cancer, when treatment is not as effective.** The way to do that is to improve early detection and access to population-based screening, which means administering cancer-screening tests to people considered at average risk for cancer (for example, administering screening mammograms every two to three years to average risk women aged 50-69).

Currently, Canada has population-based screening programs for cervical, breast and colorectal cancer.[5] As screening programs mature and participation increases, the proportion of late-stage cancers being diagnosed decrease.[6] Breast cancer screening started more than 20 years ago and has a national self-reported participation rate of 72% of women. Currently, 8.8 times more breast cancer patients are diagnosed at Stage I than at Stage IV. Compare that to population-based colorectal cancer screening, which began after 2007. Only 51% of Canadians in the target age group are screened, and colon cancer is still most commonly diagnosed at Stage III in many reporting jurisdictions, with 1.3 times more patients diagnosed with Stage III than Stage I. We do expect the proportion of late-stage colorectal

Canada has population-based screening programs for:

Cervical cancer   Breast cancer   Colorectal cancer

As **screening programs mature and participation** increases

the proportion of **late-stage cancers** being diagnosed **decreases**.
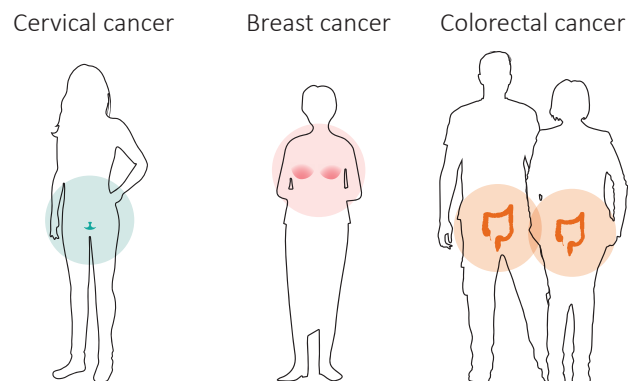
cancers diagnosed will decrease in the future as current programs mature and new programs are implemented in two more jurisdictions. As those changes take hold, we anticipate the impact of colorectal screening will come to resemble that of breast cancer screening and lead to substantial improvement in survival.

Screening is most effective at the population level when it follows evidence-based guidelines. Focusing on target populations as per the guidelines increases the chance of actual cancer being caught and lowers the likelihood of false positives, which can result in unnecessary and potentially harmful follow-up tests and procedures. That is why routine mammography screening of average risk women aged 40–49 is

not recommended: compared to older women, the benefits of screening—reducing illness and death—are lower for that age group, while the risk of a false positive is higher.[7]

It is estimated that **every year in Canada, 450,000 mammograms are performed outside of guidelines** on women aged 40-49. If we could reduce that number by just 15%, 7,500 women could avoid the anxiety and potential harm from additional testing that is brought on by false positives, and about $6.6 million could be redirected to other health care services.

Median wait times between an abnormal fecal test and a follow-up colonoscopy **remain long across the country, from**

45 DAYS TO **81 DAYS**
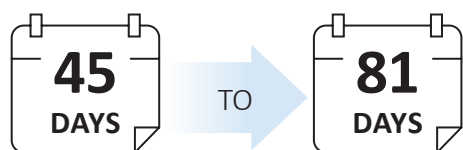
depending on the jurisdiction

After being screened for cancer, a certain number of people are told their test showed an abnormal finding which warrants additional exams. **Waiting to hear back about follow-up tests is one of the highest anxiety periods for patients**, and it is that much worse for those who wait several weeks or months to receive their diagnosis—which too many do.[8] Take colorectal cancer screening as an example. Depending on the jurisdiction, only 28.8% to 76.4% of people have a follow-up colonoscopy within 60 days after an abnormal fecal test, which means there is still a long way to go to reach the target of 90% of people having a follow-up colonoscopy within 60 days. We need to increase our efforts to coordinate cancer screening and diagnosis, so Canadians spend less time living with the uncertainty and anxiety of not knowing whether they have cancer.

As well as a prompt diagnosis, patients need accurate staging of their cancer, as it has

implications for selecting appropriate treatment. Checking for the spread of cancer to the lymph nodes is an important element of staging, and is done by a pathologist, who looks for evidence of cancer in the lymph nodes taken from tissue samples removed by the surgeon. With an insufficient sample, a definitive assessment of the cancer spread may not be possible. Evidence-based guidelines suggest a minimum of 12 nodes need to be examined to ascertain lymph node spread in colon cancer.[9] Canada is doing reasonably well in this regard: eight in 10 patients with colon cancer had 12 or more lymph nodes removed and examined by a pathologist (ranging from 71.4% to 91.0% across the country).

Investing in innovative research, and having patients participate in clinical trials, are essential for developing new treatments for more effective cancer care. However, few Canadians take part in trials, with participation by adults ranging from less than 1% to 5.8% of incident cases, depending on where they live. We need to work harder to expand the number of clinical trials for cancer in Canada and to increase patient awareness and participation in them.

Evidence from clinical trials is also used to develop guidelines for cancer diagnosis and treatment. **In Canada, adherence to evidence-based guidelines is relatively high, but it can be better.** The percentage of patients with Stage II or III rectal cancer, for example, who receive the pre-operative radiation therapy recommended in guidelines remains at 54.8% (ranging from 52.5% to 64.7% by jurisdiction).[10] Data suggest some patients diagnosed with rectal cancer are not referred by their surgeon to an oncologist to be considered for pre-operative radiation.[11] Another example is the percentage of patients with locally advanced lung cancer who receive the post-operative chemotherapy that guidelines call for, has stagnated at 46.4%, and even decreased in patients aged 18-59. However, it should be remembered that while guidelines are important, other factors are considered when clinicians are discussing treatment options with their patients. Patients' preferences, other illnesses and ability to tolerate the treatment regime are all reasons guideline-recommended therapy might not be given.

A high-quality cancer care system is one that is focused on the person, not only on treating the tumour. In addition to their physical symptoms,

After treatment, patients experience diverse physical, emotion and practical challenges such as:
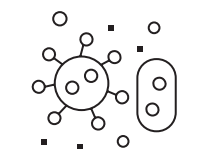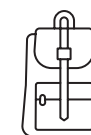
worrying the cancer will return

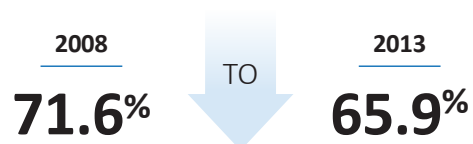problems with sexual intimacy

For younger patients

concerns about fertility

returning to school or work

The percentage of cancer patients dying in hospital decreased from

2008
71.6%

TO

2013
65.9%

Resources and supports for end-of-life care include:

pain control

supportive home care

The cancer care and broader health care systems should ensure resources and supports for end-of-life care are available to cancer patients who choose to be at home.

people with cancer experience emotional and practical concerns before, during and after treatment. Health care professionals can only respond to those needs if they are aware of them and have the resources and support to do so. Tools that encourage patients to describe their quality of life, treatment symptoms and side effects (such as the Edmonton Symptom Assessment System–revised) allow patients to report regularly on the nature and intensity of their symptoms.[12] **Fatigue is the most common symptom of distress reported by patients while receiving cancer treatment (75.6%), followed by anxiety (56.5%).** Health care providers can use this information to recommend resources for alleviating symptoms and to have meaningful and supportive conversations with patients.

After treatment is complete, patients continue to experience physical, emotional and practical challenges such as worrying about whether the cancer will return, problems with sexual intimacy, and for younger patients, concerns about fertility and returning to school or work.[8] Some people feel like they are on their own after

cancer treatment ends, with no clear pathway for support from the general health care system (including community and primary care). **One-third of people report waiting more than a year to get help** for the most difficult physical, emotional or practical concern they face after completing treatment. There is clearly a major need to improve how we care for and support patients in their transition to a new normal after treatment ends.

In cases where cancer is advanced, patients, families and their health care providers need to discuss advanced care options to manage symptoms. This is called palliative care and includes treatment and support that is focused on providing the best possible quality of life in accordance with the preferences and values of patients and their families. **Patients often prefer to spend their last days at home surrounded by their loved ones, not in a hospital.**[13] The percentage of cancer patients dying in hospital decreased from 71.6% in 2008 to 65.9% in 2013. That's moving in the right direction, but to continue this progress, the cancer care and

broader health care systems should ensure resources and supports for end-of-life care, including pain control and supportive home care, are available to cancer patients who choose to be at home.

In summary, **Canada's cancer control system has made substantial progress** in reducing the risk of cancer, and in improving the experience and outcomes of care for those affected by it. However, as outlined in the report, **there is still considerable room for improvement.** We need to expand the availability and use of health system data and keep measuring and monitoring our progress if we are to continue to improve the quality and effectiveness of cancer control in Canada and respond to the challenges that lie ahead.

Burden of Cancer in Canada

Are we moving toward a future where Canadians are less likely to develop cancer and less likely to die from cancer compared with previous years?

The cancer control community in Canada has been and will continue working towards a future where fewer Canadians develop cancer, fewer Canadians die from cancer, and all Canadians affected by cancer live a better quality of life. These ambitious but achievable goals will help guide priorities for the refresh of the Canadian Strategy for Cancer Control.

BACKGROUND

Those delivering cancer control services in Canada have made tremendous strides in reducing the burden of cancer across this country. As this chapter will show, advances in our ability to prevent, detect and treat cancer in recent decades has contributed to improvements in cancer survival, mortality and incidence rates over the past few years. However, there is still work to be done. The Partnership will continue to collaborate with national, provincial and territorial partners to develop and implement innovative strategies to address the gaps highlighted in this report.

CURRENT STATE

More Canadians today are surviving five years following a diagnosis of lung, breast, prostate and colorectal cancer.

Canada's survival rates are among the highest in the world for most cancer types, with rates similar to those of other high performing cancer systems internationally, including the United States, Australia and other Northern European countries.[14] Improvements in cancer survival over time, both in Canada and abroad, can be largely attributed to improvements in early detection strategies, as well as to improvements in efficacy of and timely access to treatment.

Five-year net survival rates for lung, breast, prostate, colon and rectal cancer have all increased among reporting jurisdictions in the last two decades (Figure 1.1).

Canada ranks among the

highest in the world

for cancer **survival rates**

FIGURE 1.1

Five-year survival for lung, breast (female), prostate, colon and rectal cancer, by period of diagnosis — from 1995 to 2014
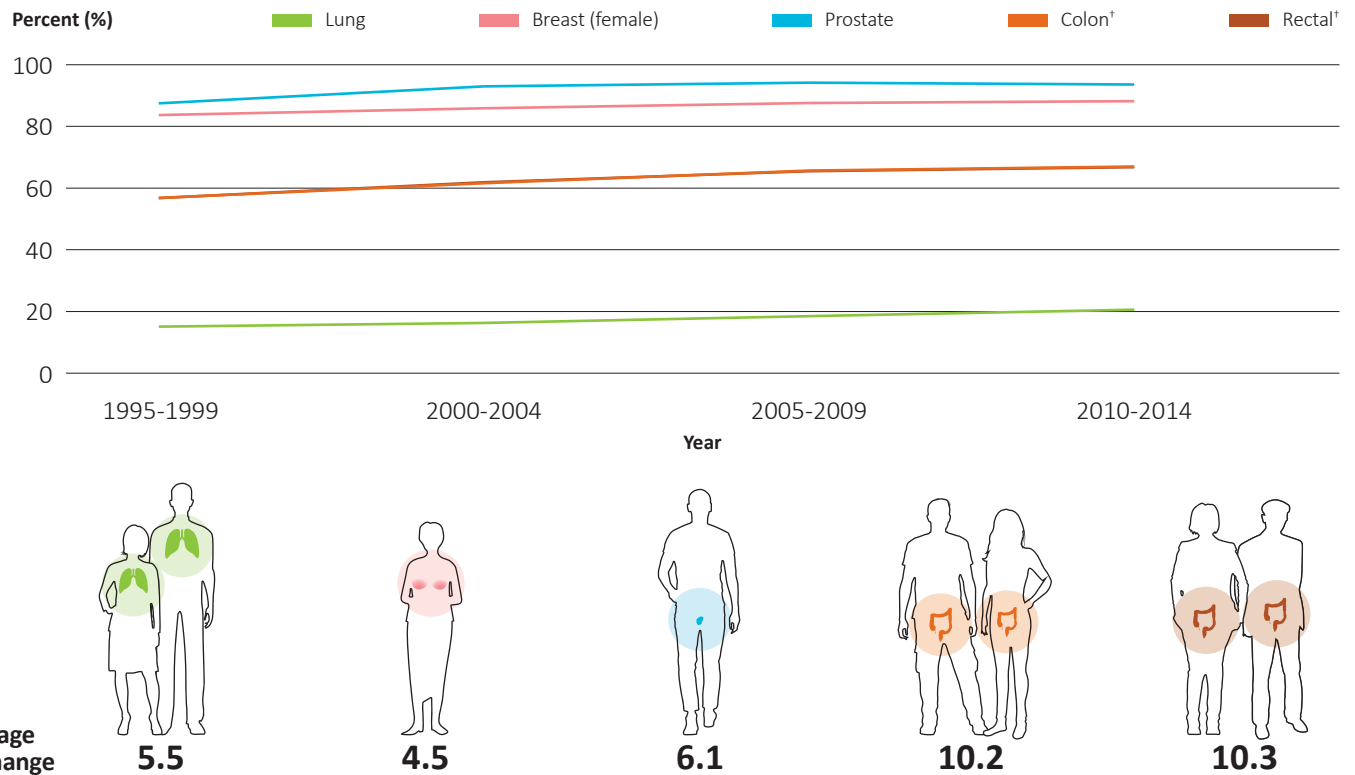
[†] Only 4 trend lines are visible as colon and rectal cancer had very similar trends in survival over time. 1995-1999 survival data includes all jurisdictions with the following exceptions: no data is available from NT or NU for breast cancer; no data is available from any of the territories for prostate and rectal cancer; no data is available from NT or YK for colon cancer. 2000-2014 survival data includes all provinces except for QC. Data sources: CONCORD-2;[15] CONCORD-3;[14] Provincial cancer agencies and programs.

FIGURE 1.2

Mortality rates[†] for breast (female), colorectal, lung and prostate cancer, by sex, Canada — from 1992 to 2014
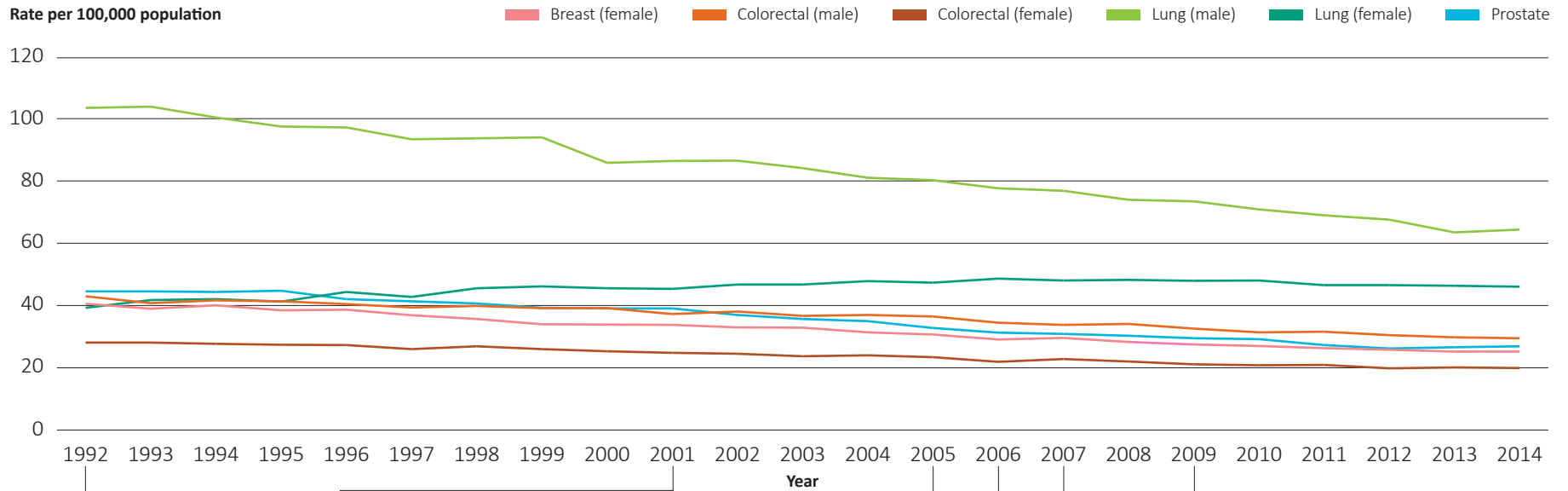
Rate per 100,000 population

Breast (female) ▬ Colorectal (male) ▬ Colorectal (female) ▬ Lung (male) ▬ Lung (female) ▬ Prostate

1992
Launch of the **Canadian Cancer Registry**—allowing for the comparison of cancer incidence and survival data across Canada.

2001
Imatinib approved for use by Health Canada—a cancer drug that dramatically improves treatment results for some cancers.

2005
Trastuzumab approved for use in adjuvant settings by Health Canada—a cancer drug that improves survival outcomes for women with HER2+ breast cancer.

2006
Canadian Strategy for Cancer Control developed—an evidence-based framework to address the growing number of cancer cases and deaths in Canada and the challenges facing cancer care systems.

Canadian Partnership Against Cancer established—enabling oversight and implementation of the Strategy through collaboration with partners in the Canadian cancer control system.

2007
Canada's first **organized colorectal screening programs** begin—intended to reduce the incidence of late stage disease and enable more cancers to be found earlier when treatment is most effective.

2009
The Partnership releases the first **Cancer System Performance Report**—making it possible to compare pan-Canadian indicators of the status of cancer control across the country.

[†] Age-standardized to 2011 Canadian population. Data source: Statistics Canada: Vital Statistics Death Database.

> The rates at which Canadians are dying from prostate, lung (male), breast (female) and colorectal cancer have decreased.

Age-standardized mortality rates are declining for prostate, lung (male), breast (female) and colorectal cancers in Canada (Figure 1.2).

Decreasing cancer mortality rates are likely due to a combination of more effective treatments, increased access to screening for some cancers (for example, breast cancer), early detection efforts, and overall declines in the incidence of some cancers because of successful prevention efforts (for example, anti-smoking measures).

FIGURE 1.3

13

Burden of Cancer in Canada

Incidence rates† for breast (female), colorectal, lung and prostate cancer, by sex, Canada — from 1992 to 2013
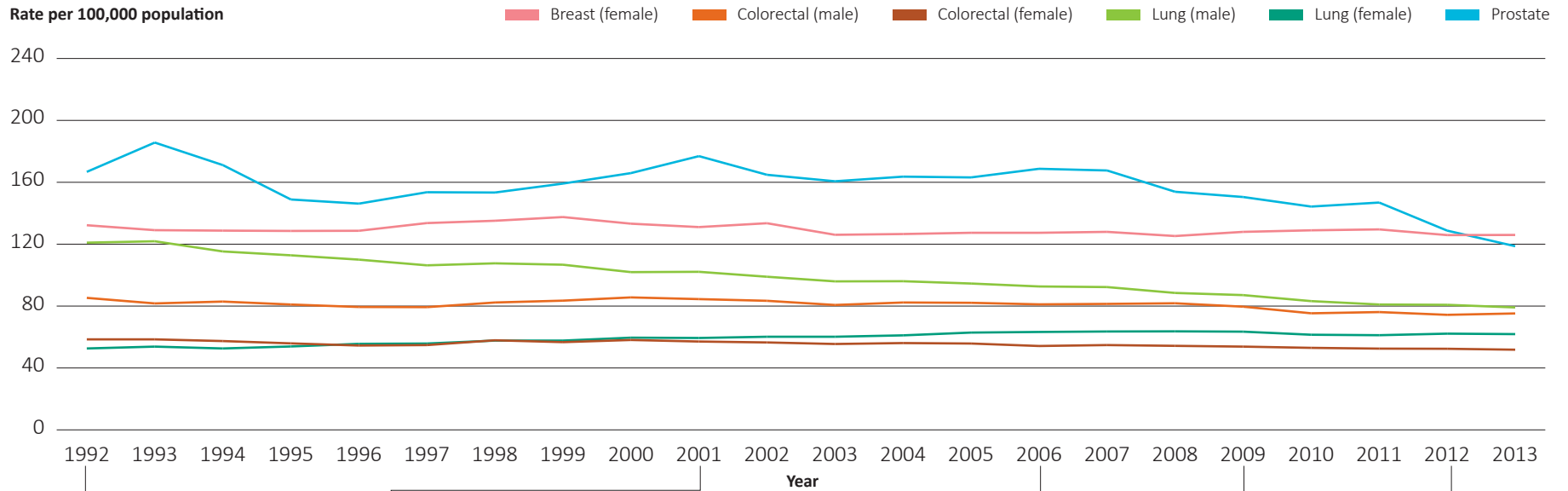
Rate per 100,000 population

Breast (female) — Colorectal (male) — Colorectal (female) — Lung (male) — Lung (female) — Prostate

1992

Launch of the **Canadian Cancer Registry**—allowing for the comparison of cancer incidence and survival data across Canada.

2001

Launch of the **Federal Tobacco Control Strategy**—enhancing tobacco control efforts to reduce incidence of disease and death related to commercial tobacco.

2006

Canadian Strategy for Cancer Control developed—an evidence-based framework to address the growing number of cancer cases and deaths in Canada and the challenges facing cancer care systems.

Canadian Partnership Against Cancer established—enabling oversight and implementation of the Strategy through collaboration with partners in the Canadian cancer control system.

2009

The Partnership releases its first **Cancer System Performance Report**—making it possible to compare pan-Canadian indicators of the status of cancer control across the country.

Coalitions Linking Action and Science for Prevention (CLASP) is launched—bringing together researchers, practice and policy experts in coalitions integrating cancer prevention with strategies to prevent other chronic diseases that share common risk factors.

2012

Federal Tobacco Control Strategy renewed—providing continued support to drive down commercial tobacco use in Canada.

The rates at which Canadians are being diagnosed with prostate, lung (male), breast (female) and colorectal cancer have decreased.

† Age-standardized to 2011 Canadian population. QC: Cancer incidence data are not available for diagnosis years after 2010. The 2010 Quebec incidence and population data have been copied forward to 2011, 2012 and 2013 for the calculation. Data source: Statistics Canada: Canadian Cancer Registry.

Lung cancer is more likely than breast and colorectal cancer to be diagnosed at Stage IV in Canada, however Stage IV incidence rates for lung cancer are improving.

Detecting cancer early, by means such as screening and early detection efforts, can improve the effectiveness of treatment and reduce morbidity and mortality associated with the disease.[16] Most jurisdictions in Canada implemented organized breast cancer screening programs in the 1990's, and most have either implemented, or are planning to implement, organized colorectal screening programs as well.[17, 18] It is expected that the incidence of late-stage colorectal cancer will continue on its slight downward trend as the impact of recently organized screening programs in Canada begins to take effect.[2]

Incidence rates for Stage IV lung cancer have decreased among reporting jurisdictions in recent years,[b] primarily as a result of an overall decline in lung cancer incidence (Figure 1.4). There are currently no organized lung cancer screening programs in Canada, though several provinces are running pilot studies.[19] If successful, these pilot studies could help lead to the implementation of lung cancer screening programs across the country.

[b] All jurisdictions (except for Quebec) are included in this trend and represent 77.1% of the Canadian population.

Detecting cancer early, by means such as screening and early detection efforts, can **improve the effectiveness of treatment and reduce morbidity and mortality** associated with the disease

FIGURE 1.4

Incidence rates[†] for Stage IV lung, breast (female) and colorectal cancer – from 2010 to 2015

Rate per 100,000 population

Legend: Lung — Breast (female) — Colorectal

Year

Change in incidence rate (per 100,000 population)   **-8.6**   **-0.3**   **-2.8**

[†] Age-standardized to 2011 Canadian population. Includes all provinces and territories except QC. Stage IV incidence data may be underestimated in this figure as all jurisdictions have cases where staging information is unknown or unavailable.
Data source: Statistics Canada: Canadian Cancer Registry.

The trends in cancer outcomes presented in this chapter highlight both the successes in cancer control over the past 10 years and the challenges still to be addressed.

The following efforts are needed to further reduce the burden of cancer across Canada:

Continue to promote healthy living and reduce Canadians' exposure to cancer-causing agents.

Ensure that Canadians are receiving high-quality, effective treatment based on widespread adoption of best practices, standards and guidelines across the country.

Ensure that the right people are getting screened at the right frequency, so that those who need treatment are able to receive it early when it is most effective.
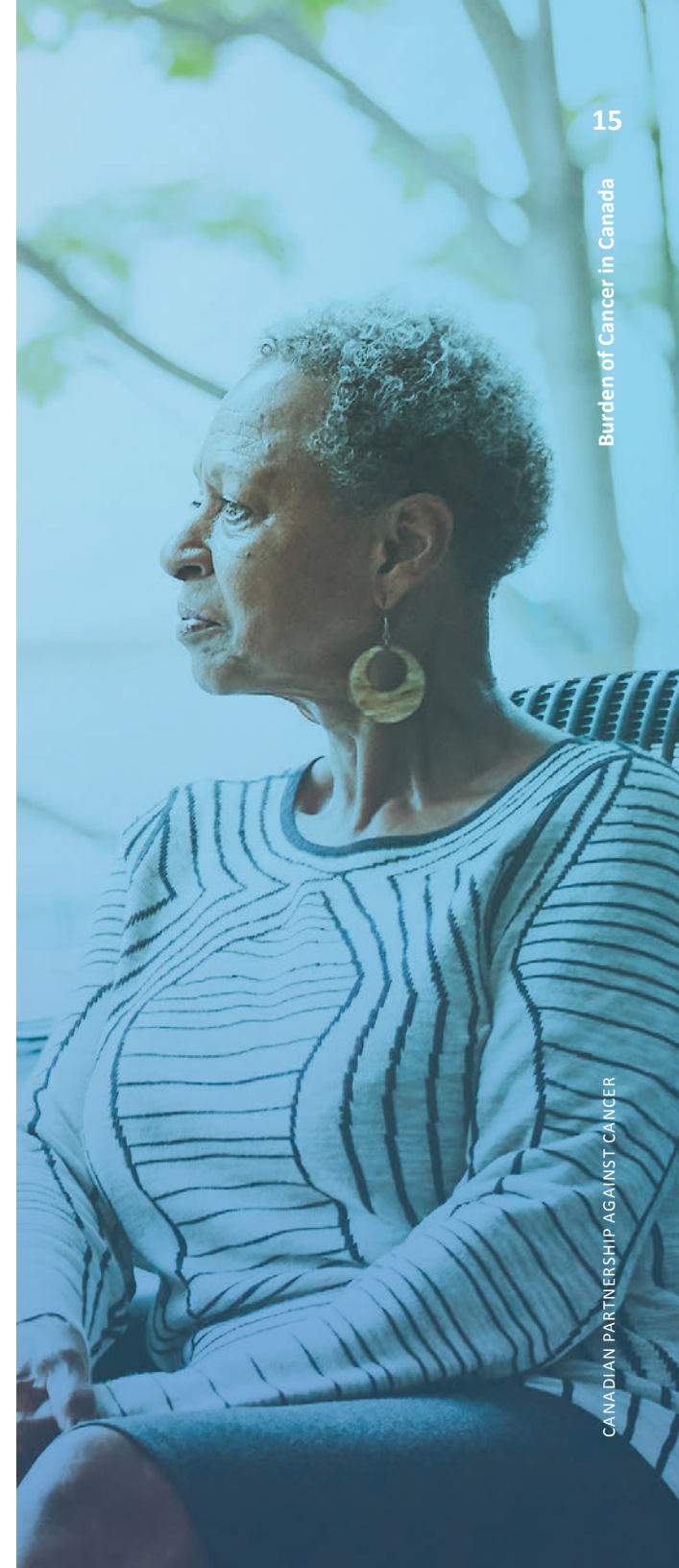
Quality

Are we delivering effective, evidence-based care?

In a high-quality cancer control system, all people have access to services tailored to their individual needs and preferences, which follow best practices based on evidence and balance best outcomes with appropriate use of resources. These elements support individuals in achieving the highest possible level of health and quality of life while striving to reduce the burden of cancer in the future.

A ROADMAP TO QUALITY

Optimal cancer screening participation

within evidence-based guidelines

BETTER UPTAKE OF EVIDENCE-BASED TREATMENTS

Patients who could potentially benefit from available, evidence-based treatments should be referred to the appropriate specialists

90% of colon resections have 12 or more lymph nodes **resected and examined** for accurate cancer staging
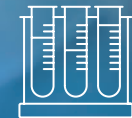
Increased adult clinical trial participation

BACKGROUND

Canadians need high-quality cancer care that is effective, patient-centred, equitable, timely, safe and efficient,[20] from prevention to survivorship and end of life. In this chapter, high quality refers to the *effectiveness* of care — that is, whether we are providing **evidence-based care that improves health outcomes** — during cancer screening and early detection, cancer staging and cancer treatment. We also discuss clinical trials, which can lead to improved diagnosis, treatment and after-care.

CURRENT STATE

High quality population-based screening

High quality population-based screening increases the chance of detecting cancer before it advances to a late stage while minimizing avoidable and potentially harmful testing.

Effective cancer screening systems follow guidelines based on clinical trials that have found the benefits of screening outweigh potential harm.[21] Detecting cancer early means people can receive effective and timely treatment, reducing both illness and death associated with cancer.[22] Most jurisdictions in Canada have organized screening programs for breast, cervical and colorectal cancer.

INDICATORS

In this chapter, we will be exploring the following indicators related to the effectiveness of cancer care:

Programmatic screening
participation rates for breast, cervical and colorectal cancer

Breast cancer screening
abnormal call rates

Removal and examination
of 12 or more lymph nodes in colon resections

Guideline-recommended preoperative radiation therapy
for patients with Stage II or III rectal cancer

Guideline-recommended post-operative chemotherapy
for patients with Stage II or IIIA non-small cell lung cancer

Adult clinical trial
participation rates

- ● Breast Cancer
- ● Lung Cancer
- ● Colorectal Cancer
- ● Multiple Cancers

The benefits of population-based cancer screening can be significant, but there are risks such as false negatives and false positives that can cause cancers to be missed or lead to unnecessary and potentially harmful follow-up testing.

Potential risks can be controlled and minimized if a screening system takes these steps:

1
Use evidence-based guidelines to identify people for whom benefits will outweigh potential harm and offer them regular screening;
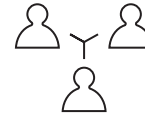
2
Make screening examinations and tests accessible to all eligible people.

3
Follow up on abnormal results promptly to reach a timely diagnosis (cancer or benign) and minimize unnecessary and potentially harmful testing.

4
Collect data systematically to track and assess screening programs' performance and assess whether they deliver high-quality, evidence-based services.[23]

Cancer screening program[†]   **Range of programmatic cancer screening participation rates**

1960	1988	2007	2010-13[‡]	2013-14	2014

First organized **cervical cancer** screening program

in BC

From 62.9% **in SK**   To 73.8% **in BC**

First organized **breast cancer** screening program

in BC

From 31.8% **in NT**   To 62.3% **in QC**

First organized **colorectal cancer** screening program

in MB

From 8.6% **in NL**   To 53.0% **in SK**

† For more information about cancer screening guidelines and evidence-based recommendations, please consult the published guidelines from the Canadian Task Force on Preventive Healthcare. ‡ Cervical cancer screening participation rates are age-standardized to the 2011 Canadian population. NL: In 2013-14, the colorectal cancer screening program was in early stages of implementation. NT: Organized breast cancer screening is only available to 50% of the eligible population. There are no organized screening programs for colorectal or cervical cancers. Data source: Provincial and territorial cancer screening programs.

A spotlight on abnormal mammography findings

Effective screening yields the fewest false positives possible.

In breast cancer screening, a false positive is an abnormal mammogram result that further testing shows is not cancer. The rate of false positives in Canada has increased recently (data not shown). Specifically, the rate of abnormal screens (known as the "abnormal call rate") done on women who have had a previous screening mammogram (i.e. subsequent screens), is going up.

That suggests some women are being referred for potentially avoidable follow-up diagnostic tests, which can be harmful (some follow-up tests, such as breast biopsies, are invasive and carry some risks). As well, women who are recalled for further investigation feel significant stress and anxiety—sometimes even after cancer is ruled out—which may make them less likely to return for screening.[24, 25]

The rate of **abnormal mammography findings** in Canada has **increased**
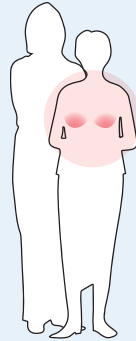
The Partnership, working with experts across the country, is exploring factors related to the increased abnormal call rate, and will support change through quality-improvement initiatives. Our aim is to ensure women who need screening get it, and those who are not at risk are not repeatedly exposed to unnecessary tests.

FIGURE 2.1

Abnormal call rate and invasive cancer detection rate for subsequent screens,[†] women aged 50 to 69 years — from 2003 to 2012 screening years

Abnormal call rate (%) · Invasive cancer detection rate (per 1,000 screens)

Target: <5

Target: >3

Year
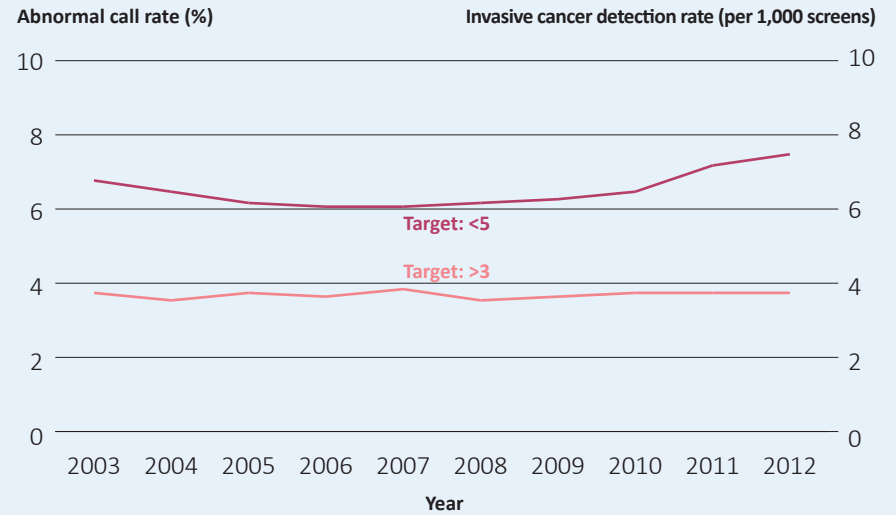
■ Abnormal call rate, subsequent screen   ■ Invasive cancer detection rate, subsequent screen

[†] Subsequent screens includes women who have been screened for breast cancer in the past, and excludes women new to the screening program. AB: Excluded from data prior to 2007 as the Alberta Breast Cancer Screening Program was launched in 2007. QC: Complete diagnostic/cancer information was available to September 30, 2012. Data source: Provincial and territorial breast cancer screening programs.

High-quality cancer treatment starts with correct cancer staging

Most patients with colon cancer have 12 or more lymph nodes examined for cancer staging, which is associated with improved survival.

Staging is an essential part of diagnosing cancer. It provides information on several factors, including whether, and how much, the cancer has spread.

This information helps determine the patient's best treatment options and likely outcome, which can improve survival rates. Patients with colon cancer who have at least 12 lymph nodes removed and then examined by a pathologist are more likely to have had an effective operation and to have their cancer staged accurately.[9]

- Among participating provinces, the percentage of colon cancer patients with 12 or more lymph nodes removed and examined remained high between 2011 (79.4%) and 2014 (80.3%). This means eight out of 10 patients, on average, had at least 12 lymph nodes removed and examined.[c]

- Rates varied moderately among reporting provinces, ranging from 71.4% (Nova Scotia) to 91.0% (Manitoba) in 2014 (Figure 2.2).

[c] Jurisdictions in this trend include AB, SK, MB, NB, NS, PE and NL, which represent 25% of the Canadian population.

8 out of 10

patients with colon cancer, on average, had at least **12 lymph nodes removed and examined**
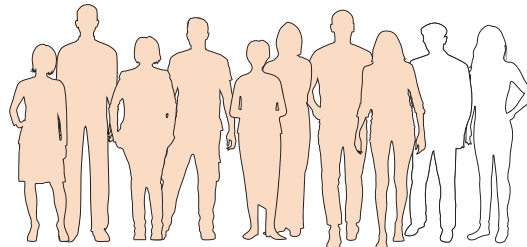
FIGURE 2.2

Percentage of colon resections with 12 or more lymph nodes removed and examined, by province — from 2011 to 2014 diagnosis years

	2011	2012	2013	2014	Percentage point change
BC	71.1%		72.6%	—	—
AB	81.5%			79.0%	-2.5
SK	74.3%			75.2%	+0.9
MB	86.1%			91.0%	+4.9
ON	—	—	73.8%	88.1%	—
QC	—	—	—	—	—
NB	79.3%			84.4%	+5.1
NS	70.3%			71.4%	+1.1
PE	71.6%			73.5%	+1.9
NL	85.7%			89.5%	+3.8
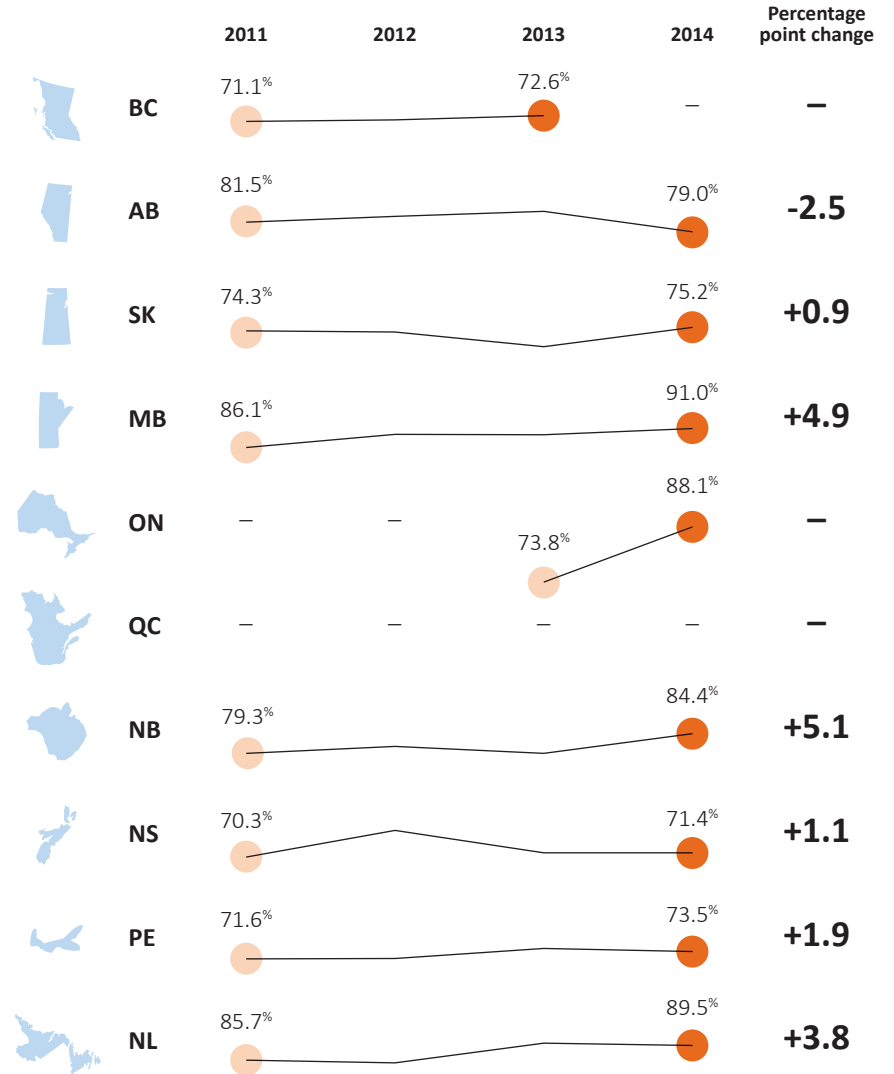
"—" Data not available. Data source: Provincial cancer agencies and programs.

National target

If
90%
of people receiving
a **colon cancer
resection**
have at least 12 lymph
nodes examined

up to
700
more patients
with colon cancer could
**receive the right treatment,
avoiding potential over-
or under-diagnosis**
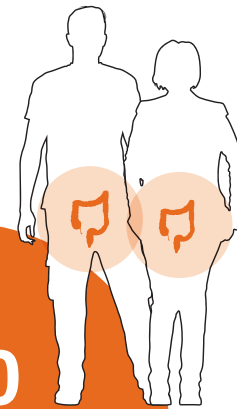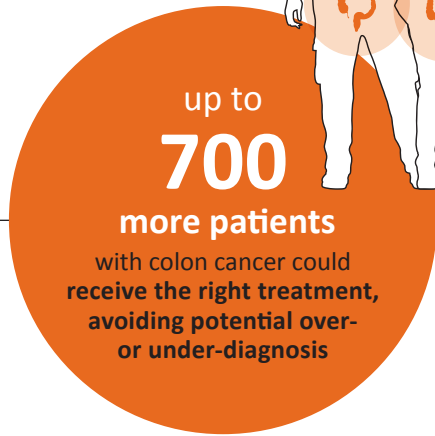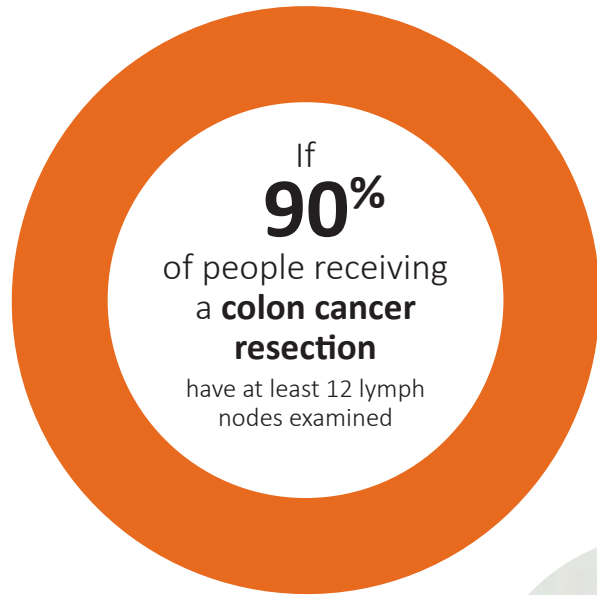
Where should we be?

90% of patients with colon cancer should have at least 12 lymph nodes removed and examined by a pathologist. This practice increases the chance of detecting any cancer that has spread to the lymph nodes, which has implications for selecting the appropriate treatment.[9, 11]

What does this mean for patients with cancer?

Patients whose cancer has spread to the lymph nodes will often be given chemotherapy to reduce chance of recurrence. A patient's chance of survival may be reduced if cancer has spread to the lymph nodes but is not detected because not enough lymph nodes were examined.[26]

How can we mobilize positive change?

An electronic records system called synoptic pathology reporting has been shown to improve adherence to evidence-based guidelines, including high-quality lymph node dissection and examination.[27] The system uses a standardized electronic report where each type of information has a specific place and format. Clinicians who use it get clear and faster access to their patient's information than from a narrative report. The Partnership has helped introduce synoptic pathology reporting in British Columbia, Manitoba, Ontario, New Brunswick, Prince Edward Island and Nova Scotia through the Electronic Synoptic Pathology Reporting Initiative. That means two-thirds of all pathologists in Canada are now using it.[28] Its full potential will be realized when synoptic pathology reporting is expanded to every province.

Effective treatment decisions are informed by evidence-based guidelines and patient preferences and values.

Just over half of patients with Stage II or III rectal cancer receive recommended preoperative radiation therapy.

Providing radiation therapy (in combination with chemotherapy) before surgery improves local disease control and reduces toxic side effects better than surgery alone or with post-operative radiation.[10] Among participating provinces, only about half of patients with Stage II or III rectal cancer received this guideline-recommended treatment.

- In 2011, 55.8% of patients with Stage II or III rectal cancer received radiation therapy before surgery. In 2014, the rate was essentially unchanged at 54.8%.[d]

- In 2014, preoperative radiation therapy use for patients with Stage II or III rectal cancer ranged from 52.5% (New Brunswick) to 64.7% (Prince Edward Island) (Figure 2.3).

[d] Jurisdictions in this trend include AB, MB, NB, NS, PE and NL, which represent 22% of the Canadian population.

FIGURE 2.3

Percentage of Stage II or III rectal cancer patients who received radiation therapy before surgery, by province — from 2011 to 2014 diagnosis years

	2011	2012	2013	2014	Percentage point change
BC	54.4%		56.0%	–	–
AB	60.9%			53.6%	-7.3
SK	–	–	–	–	–
MB	50.4%			57.3%	+6.9
ON	–	–	–	–	–
QC	–	–	–	–	–
NB	50.8%			52.5%	+1.7
NS	47.4%			56.1%	+8.7
PE	66.7%			64.7%	-2.0
NL	63.8%			52.8%	-11.0
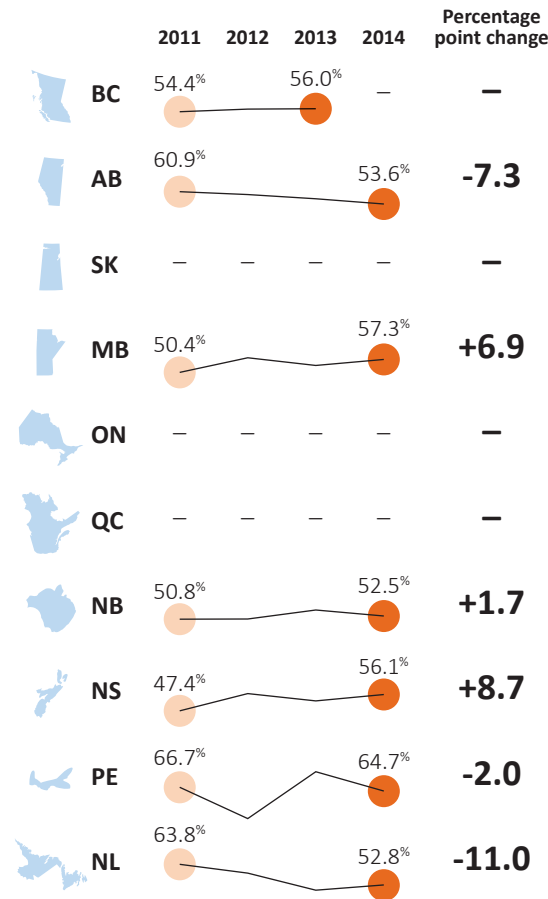
"—" Data not available. Data source: Provincial cancer agencies and programs.

Where should we be?

Patients who could potentially benefit from evidence-based treatments should be referred to the appropriate specialists to discuss fully the risks and benefits of their options for treatment with their health care providers.

What does this mean for people with cancer?

There are many evidence-based cancer treatments, available both before and after surgery, which can ease symptoms, stop tumours from growing, control tumour size before surgery and reduce the chance cancer will recur. People need comprehensive conversations with the right specialists about their treatment options in order to choose a regimen that is aligned with their preferences and values.

How can we mobilize positive change?

Evidence from chart reviews shows that some patients are not consistently referred to specialists to discuss treatment options.[29] Surgeons and specialists should connect with each other before and after surgery to ensure patients get the full range of clinical expertise.

Among reporting provinces, the use of guideline-recommended post-operative chemotherapy for younger patients with locally advanced non-small cell lung cancer has declined since 2011.

Post-operative chemotherapy for patients with locally advanced (Stage II or IIIA) non-small cell lung cancer (NSCLC) improves overall survival for people up to age 80.[30, 31] Clinical guidelines recommend offering it to people under 80, taking into account their other medical conditions, general health, recovery from surgery and preferences.

- This use of recommended post-operative chemotherapy remained stable at 47.1% in 2011 and 46.4% in 2014. However, there was no clear pattern among provinces (Figure 2.4).[e]

- The percentage of patients with locally advanced NSCLC who received chemotherapy after surgery has remained stable for patients aged 60–79 but seems to have declined for patients aged 18–59 (Figure 2.5).
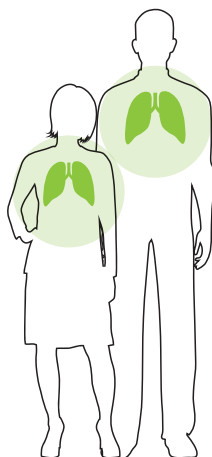
[e] Jurisdictions in this trend include AB, SK, MB, ON, NS, PE and NL, which represent 62% of the Canadian population.

FIGURE 2.4

Percentage of Stage II or IIIA non-small cell lung cancer patients who received chemotherapy following surgical resection, by province — from 2011 to 2014 diagnosis years

Percent (%)   ■ 2011   ■ 2012   ■ 2013   ■ 2014

Province	BC	AB	SK	MB	ON	QC	NB	NS	PE	NL
2011	44.7	47.2	43.3	41.3	50.1			40.0	45.5	0.0
2012	31.6	42.4	45.2	36.8	51.7			37.0		0.0
2013	36.7	42.1	36.4	46.4	50.1			27.7		0.0
2014	—	36.6	41.5	44.7	51.3			39.0		18.9
Percentage point change	—	-10.6	-1.8	+3.4	+1.2	—	—	-1.0	—	+18.9
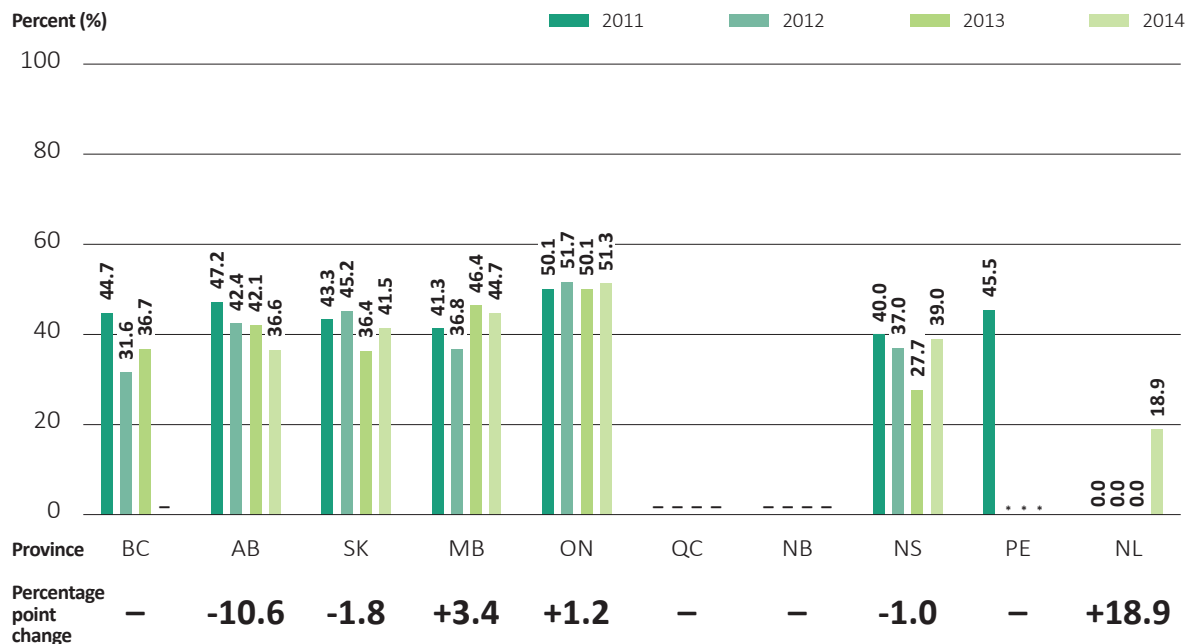
"—" Data not available. * Suppressed owing to small numbers. NL: The percent increase is due to small counts. Data source: Provincial cancer agencies and programs.

FIGURE 2.5

Percentage of patients with Stage II or IIIA non-small cell lung cancer who received chemotherapy following surgical resection, by age group, provinces combined[†] — from 2011 to 2014 diagnosis years

Percent (%)   ■ 2011   ■ 2012   ■ 2013   ■ 2014

Age group	18-59	60-69	70-79	80+
2011	62.6	55.4	38.4	10.3
2012	62.4	57.4	39.8	12.8
2013	57.2	55.7	40.3	13.4
2014	54.0	57.0	40.6	7.6
Percentage point change	-8.6	+1.6	+2.2	-2.7

[†] Includes AB, SK, MB, ON, NS and PE. Data source: Provincial cancer agencies and programs.

Clinical trials are used to develop and test new treatments, which can lead to more effective cancer care

Across Canada, cancer clinical trial participation varies depending on where patients live.

- Participation in clinical trials remained low but stable between 2011 (4.5%) and 2014 (4.7%).[f, g]

- Participation rates varied widely among provinces. In 2015, the proportion of newly diagnosed patients participating in clinical trials ranged from less than 1% (Newfoundland and Labrador, Prince Edward Island) to 5.8% (Alberta and Ontario) (Figure 2.6).

[f] Although this indicator is a ratio, as a proxy for the actual clinical trial participation rate, the results can (for convenience only) be interpreted as percentages (e.g., 0.05 = 5%).

[g] Jurisdictions in this trend include BC, AB, SK, MB, ON, NB, PE and NL, which represent 74.0% of the Canadian population.
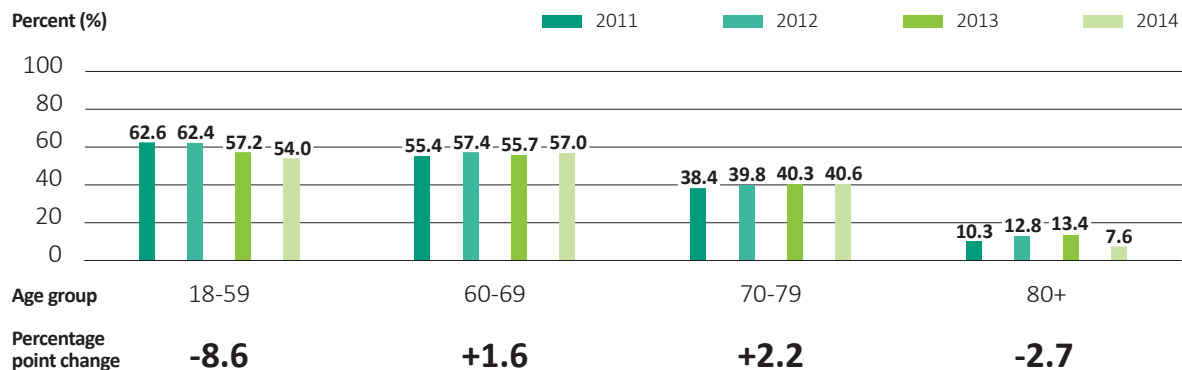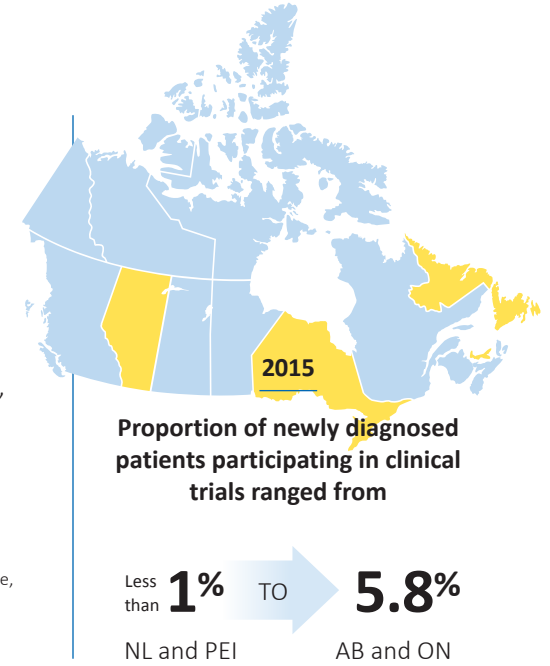
2015

Proportion of newly diagnosed patients participating in clinical trials ranged from

Less than **1%** TO **5.8%**

NL and PEI   AB and ON

FIGURE 2.6

Ratio of adult patients (aged 19+) enrolled in clinical trials to number of incident cases, by province, all cancers — from 2012 to 2015 enrolment years
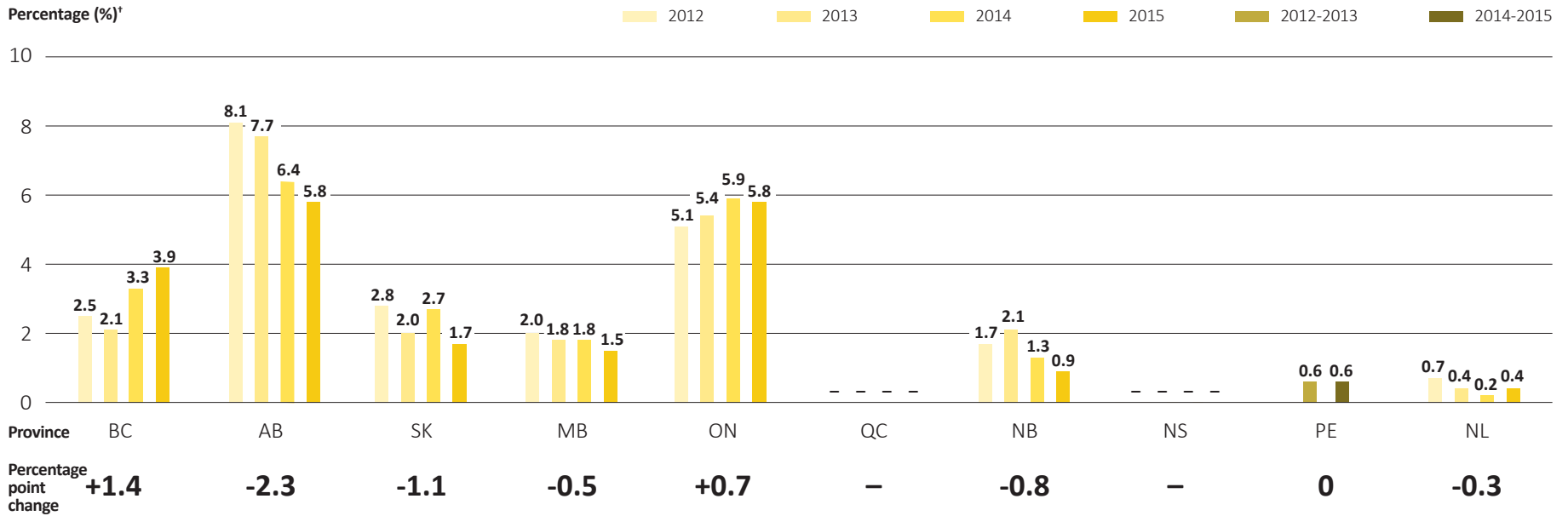
Percentage (%)[†]

Legend: 2012 | 2013 | 2014 | 2015 | 2012-2013 | 2014-2015

Province	BC	AB	SK	MB	ON	QC	NB	NS	PE	NL
Percentage point change	+1.4	-2.3	-1.1	-0.5	+0.7	—	-0.8	—	0	-0.3

Chart values:
- BC: 2.5, 2.1, 3.3, 3.9
- AB: 8.1, 7.7, 6.4, 5.8
- SK: 2.8, 2.0, 2.7, 1.7
- MB: 2.0, 1.8, 1.8, 1.5
- ON: 5.1, 5.4, 5.9, 5.8
- NB: 1.7, 2.1, 1.3, 0.9
- PE: 0.6, 0.6
- NL: 0.7, 0.4, 0.2, 0.4

[†] Although this indicator is a ratio, as a proxy for the actual clinical trial participation rate, the results (for convenience only) are shown as percentages. "—" Data not available. Denominator: Actual incidence cases were used for 2012 to 2014. Projected incidence cases from Canadian Cancer Registry were used for 2015. ON: Data for age 18+. Data sources: Canadian Cancer Society: Canadian Cancer Statistics; Provincial cancer agencies and programs.

Clinical trial participation

If
14%
of new cancer patients in Canada participated in clinical trials (as in the UK, which had the highest trial participation rate)

13,000
additional adults
with cancer would enrol in trials, which could result in more and better treatment options
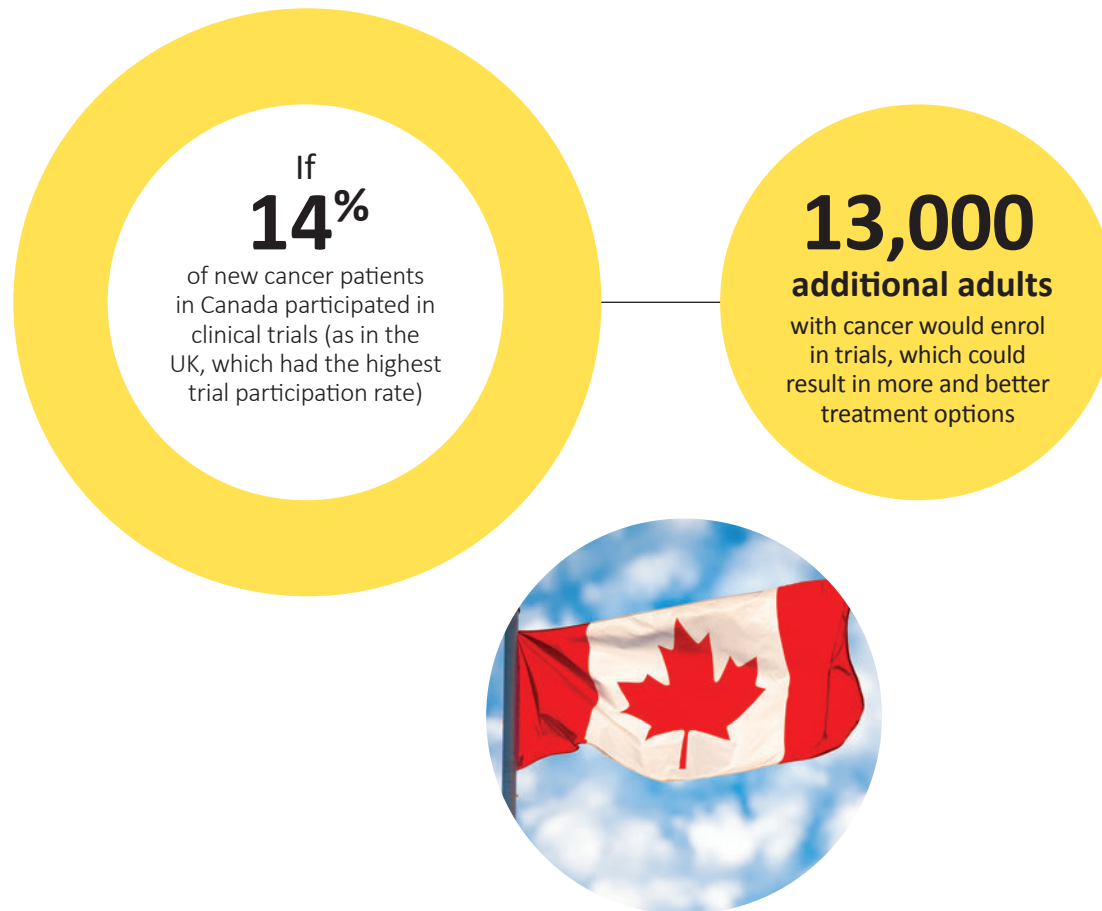
Where should we be?

Patients with cancer across Canada should have the opportunity to participate in clinical trials. To make an informed decision about joining a trial, they need information that helps them understand the implications of their decision.[32]

What does this mean for people with cancer?

Clinical trials evaluate the safety and efficacy of emerging treatments, paving the way for the introduction of new treatments that can improve the health outcomes for future patients. Those who participate in trials may benefit from a breakthrough treatment.[33]

How can we mobilize positive change?

Health system funders and administrators should ensure all cancer centres have the infrastructure to support clinical trials. To help them do that, the Partnership, along with other funders of the Canadian Cancer Clinical Trials Network, plans to evaluate and make recommendations on what support is necessary for effective trials.

Equity

Are we narrowing the gap in cancer outcomes among different groups of Canadians?

An equitable cancer control system minimizes the barriers people face in accessing effective cancer control services because of where they live, income, education, age or gender, their race or ethnicity, gender identity or sexual orientation, or other factors. Minimizing these barriers helps reduce disparities in the health and outcomes of Canadians and fulfill the principles of universality and accessibility of the Canadian health care system.

A ROADMAP TO EQUITY

All communities have effective and culturally appropriate strategies to reduce barriers to living a healthy life, such as:

increasing access to fresh food

encouraging walking and biking

offering effective smoking cessation programs

promoting moderation in alcohol consumption

Increase adoption of evidence-based public policy to create healthier environments where people live, work, learn and play

Canada's universal health care system has a duty to provide equitable access to high-quality, culturally appropriate and person-centred care regardless of a person's social and economic circumstances, and to develop policies to address the social determinants of health.[34] Innovative interventions in policy, system planning and clinical practice have proven effective in closing health gaps for certain at-risk populations; however, these efforts are sporadic, local and uncoordinated. We need a focused pan-Canadian effort to identify and systematically address inequities in—and beyond—the cancer system to ensure everyone has a chance to achieve the best possible outcomes.

Three principles should be considered to ensure equitable planning, delivery and regulation of health systems:[35]
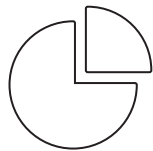
1
Resources should be distributed in proportion to the relative needs of different areas.

2
Different populations should receive services tailored to their health care and cultural needs.

3
Healthy public policy development at national, provincial and local levels should be done through an inclusive, multi-sectoral approach.

Grounding cancer control efforts in these principles is essential for building a long-term strategy to ensure equitable cancer outcomes. In this section, we look at one social determinant of health—place of residence—and the variations in the prevalence of risk factors associated with two types of cancer: lung and colorectal.

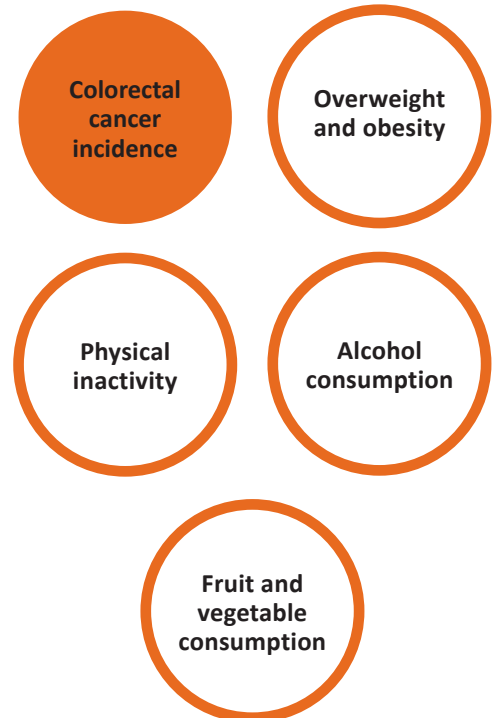In this chapter, we will be exploring the following indicators related to the equity of cancer prevention:

Lung cancer disparities by geography

Lung cancer incidence

Smoking prevalence

Colorectal cancer disparities by geography

Colorectal cancer incidence

Overweight and obesity

Physical inactivity

Alcohol consumption

Fruit and vegetable consumption

● Lung Cancer   ● Colorectal Cancer

Increasing the focus on equity

Differences in the prevalence of risk factors are only one reason for the disparity seen in cancer outcomes across Canada; other factors include access to high-quality and culturally appropriate screening, early detection, treatment and care. The differences among groups in risk, their access and outcomes are influenced by social determinants of health, such as income, education, ethnicity, physical environment, social networks and culture, including Indigenous status. These inequities are often unjust, unfair and avoidable, and represent a significant social and economic cost to all Canadians.

The Partnership—in collaboration with partners across the country—is committed to advancing equity for all Canadians, including improving ways of measuring disparities in cancer control to understand equity issues better, and introducing initiatives to address disparities.
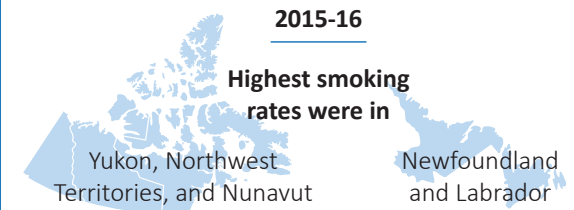
CURRENT STATE

Where people live affects their health behaviour, which can increase their risk of developing cancer.

People living in northern and eastern Canada have the highest rates of lung cancer, which are driven by higher smoking rates.

Smoking is the leading preventable cause of lung cancer, responsible for nearly 85% of all new lung cancer cases in Canada.[37] Socioeconomically disadvantaged people and groups are more likely to smoke and less likely to quit.[38] Across Canada, the variations in lung cancer incidence rates are driven mainly by differences in smoking patterns.[39] While smoking rates in Québec, New Brunswick and Prince Edward Island have substantially decreased over time, they still experience high lung cancer incidence rates compared to other jurisdictions.[40] This is likely because it takes 20-30 years before a decline in smoking prevalence translates to a drop in lung cancer incidence.[38]

Different tobacco taxation practices can affect variations in smoking rates across Canada, but they are also influenced by different socioeconomic and cultural norms across communities.[39] The most effective approaches for reducing lung cancer keep people from starting to smoke with effective tobacco control policy and getting more people to quit through evidence-based cessation programs.[41]

2015-16

Highest smoking rates were in

Yukon, Northwest Territories, and Nunavut

Newfoundland and Labrador

- There is a north-south and east-west gradient in lung cancer incidence and smoking rates across Canada.

- In 2015-16, the highest smoking rates were in the territories (Yukon, the Northwest Territories, and Nunavut) and Newfoundland and Labrador (Figure 3.1).

  – There is a four-fold difference in self-reported daily or occasional smoking rates across Canada, ranging from 14.1% in British Columbia to 62.1% in Nunavut.

- Age-standardized incidence rates of lung cancer range from 54.4 cases per 100,000 people in the Yukon to 160.2 cases per 100,000 people in Nunavut. Although has a low incidence of lung cancer now, Yukon has one of the highest current smoking rates which may translate to an increased burden of lung cancer in the future.

FIGURE 3.1

Geographic variation in smoking prevalence and lung cancer incidence – latest reporting years

Risk categorization based on jurisdictional smoking prevalence[†]

- Lower risk
- Middle risk
- Higher risk

Smoking rates and burden of lung cancer

- X — Lung cancer incidence rate (per 100,000) – 2014[‡]
- Y — Daily or occasional smoking – 2015-16

YT — 54.4 / 24.5%
NT — 86.7 / 34.0%
NU — 160.2 / 62.1%
BC — 60.7 / 14.1%
AB — 67.6 / 18.4%
SK — 67.0 / 19.8%
MB — 73.9 / 18.8%
ON — 61.0 / 16.7%
QC — 86.8 / 18.4%
NL — 79.3 / 21.6%
NB — 86.2 / 18.2%
PE — 90.2 / 15.1%
NS — 86.8 / 19.3%
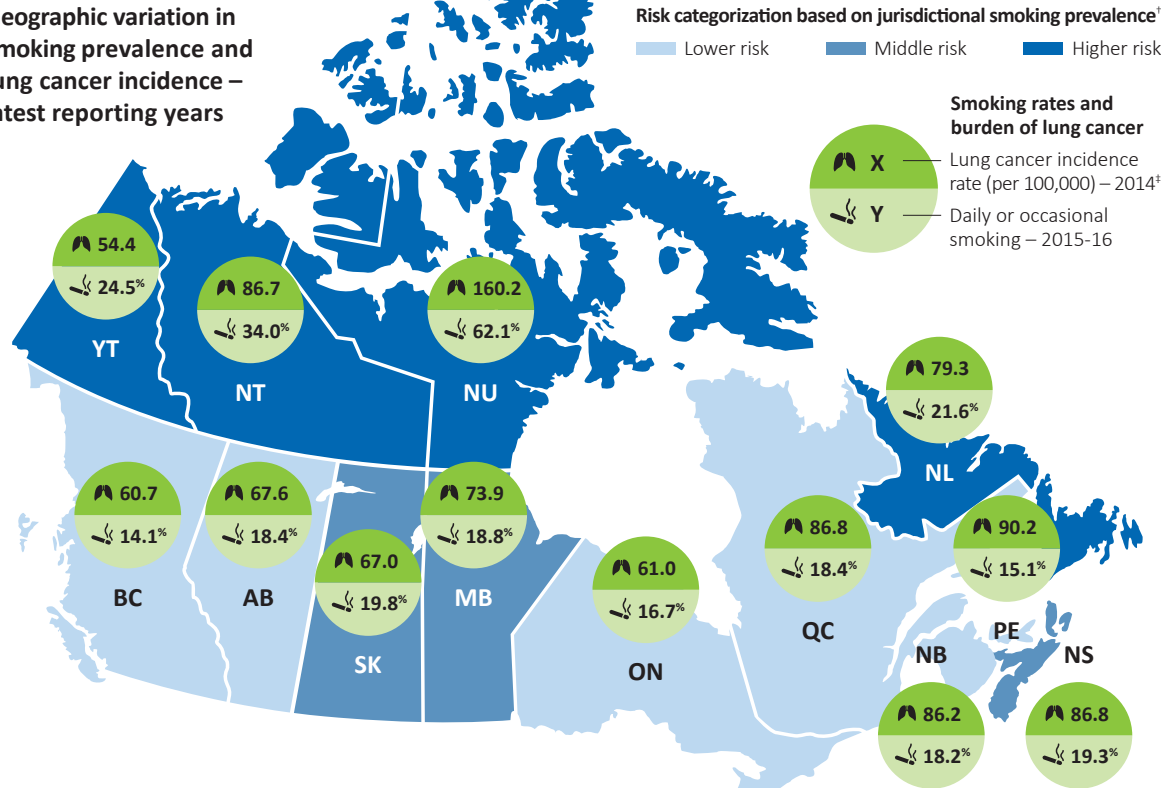
[†]Smoking rates from each province and territory were divided into tertiles to generate groups of lower, middle and higher risk. [‡]For incidence rates for territories, years 2012 to 2014 were combined. QC: cancer incidence data are not available for diagnosis years after 2010. The 2010 Quebec incidence and population data have been copied forward to 2014 for the calculation. Data sources: Statistics Canada: Canadian Cancer Registry, Canadian Community Health Survey.

FUTURE STATE

If Canada achieves a **14.1%** smoking rate[h]

6,900 fewer cases of lung cancer could be diagnosed by 2035
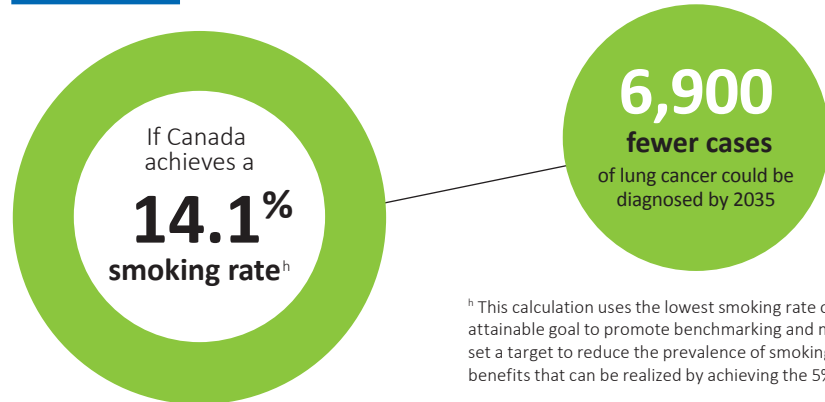
[h] This calculation uses the lowest smoking rate occurring among jurisdictions (14.1% in BC) as an attainable goal to promote benchmarking and mutual learning among jurisdictions. Canada has set a target to reduce the prevalence of smoking among Canadians to 5% by 2035. To see the benefits that can be realized by achieving the 5% smoking target by 2035, please see page 47.
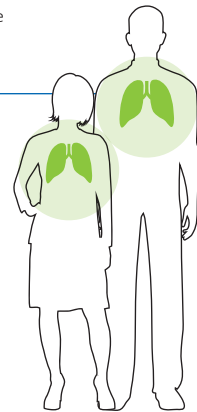
Where should we be?

All Canadians, regardless of where they live, should have the opportunity and support to live healthily in an environment that reduces their risk of developing cancer. Governments can lay the groundwork for reducing inequity by increasing access to fresh food, encouraging walking and biking, minimizing exposure to carcinogens at home and work, and offering education on cancer prevention and culturally competent smoking cessation programs.

What does this mean for people living in Canada?

Where people live, along with their social and economic circumstances, influences their health, behaviour and ability to lead healthier lives.[36] People who live in unhealthy environments, or who face barriers to living healthy lives, can therefore be at an increased risk of developing and dying from preventable cancer.

How can we mobilize positive change?

Provincial and territorial governments should consistently adopt evidence-based public policy to create healthier environments where people live, work, learn and play, so it is easier for people to make healthy choices. The Partnership's policy packs contain evidence all levels of government can use to support implementation of healthy public policies to promote more equitable health for Canadians: https://www.partnershipagainstcancer.ca/tools/prevention-policies-directory/cancer-prevention-policy-packs/

Provinces and territories with the highest rates of new colorectal cancer cases also have the highest rates of obesity, physical inactivity, excessive alcohol consumption and poor diet.

Colorectal cancer risk is influenced substantially by several modifiable risk factors, including poor diet, excess body weight, physical inactivity and high alcohol consumption.[42] The more risk factors an individual has, the greater their chance of developing colorectal cancer.[43] Low socioeconomic status, food insecurity and living in communities with limited opportunities to be active are all associated with an increased risk of developing colorectal cancer.[44]

The colorectal cancer burden can be reduced by adopting public policies that create healthier environments where people live, work, learn and play, and by making healthy choices easier.[45]
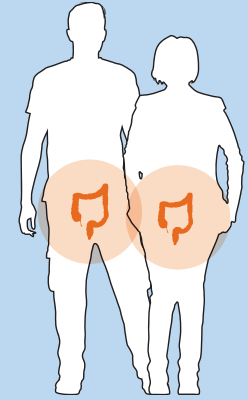
2015-16

Highest prevalence of modifiable risk factors

Northwest Territories

Newfoundland and Labrador

New Brunswick

Nova Scotia

- There is a north-south and east-west gradient in colorectal cancer incidence and related modifiable risk factors across Canada.

- In 2015-16, the highest prevalence of modifiable risk factors for colorectal cancer were in the Northwest Territories, Newfoundland and Labrador, New Brunswick and Nova Scotia (Figure 3.2).
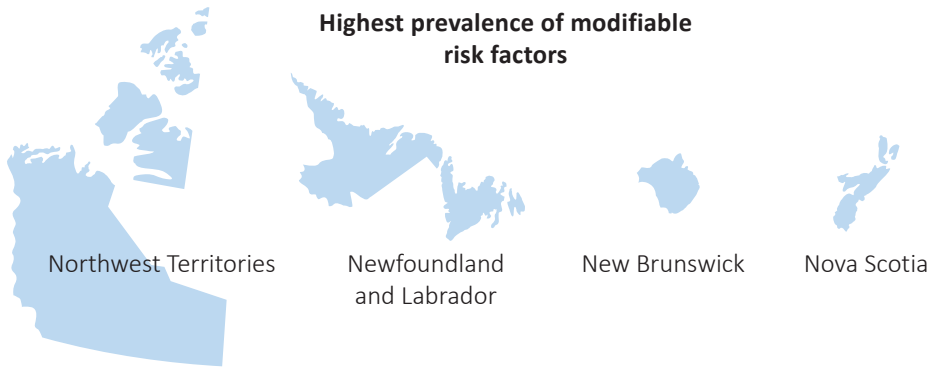
  – The percentage of adults who reported being overweight or obese ranged from 56.8% in British Columbia to 73.1% in New Brunswick.

  – Self-reported physical inactivity varied among jurisdictions, ranging from 31.8% in Yukon to 50.3% in New Brunswick.

  – The percentage of individuals who reported drinking more than recommended by Canada's Low Risk Alcohol Drinking Guidelines for cancer in the last year ranged from 7.2% in New Brunswick to 16.2% in the Northwest Territories.

  – The vast majority of Canadians eat less than the daily recommended amount of fruit and vegetables, which is a good marker for the overall quality of their diet.[46] The percentage of individuals who reported eating fruit and vegetables less than five times per day ranged from 61.4% in Québec to 79.6% in Newfoundland and Labrador.

- Colorectal cancer age-standardized incidence rates varied considerably across the country, ranging from 55.0 cases per 100,000 people in Ontario to 95.4 cases per 100,000 people in the Northwest Territories.

FIGURE 3.2

Geographic variation in modifiable risk factors and colorectal cancer incidence – latest reporting years

Risk categorization based on jurisdictional prevalence of modifiable risk factors[†]

- Lower risk
- Middle risk
- Higher risk
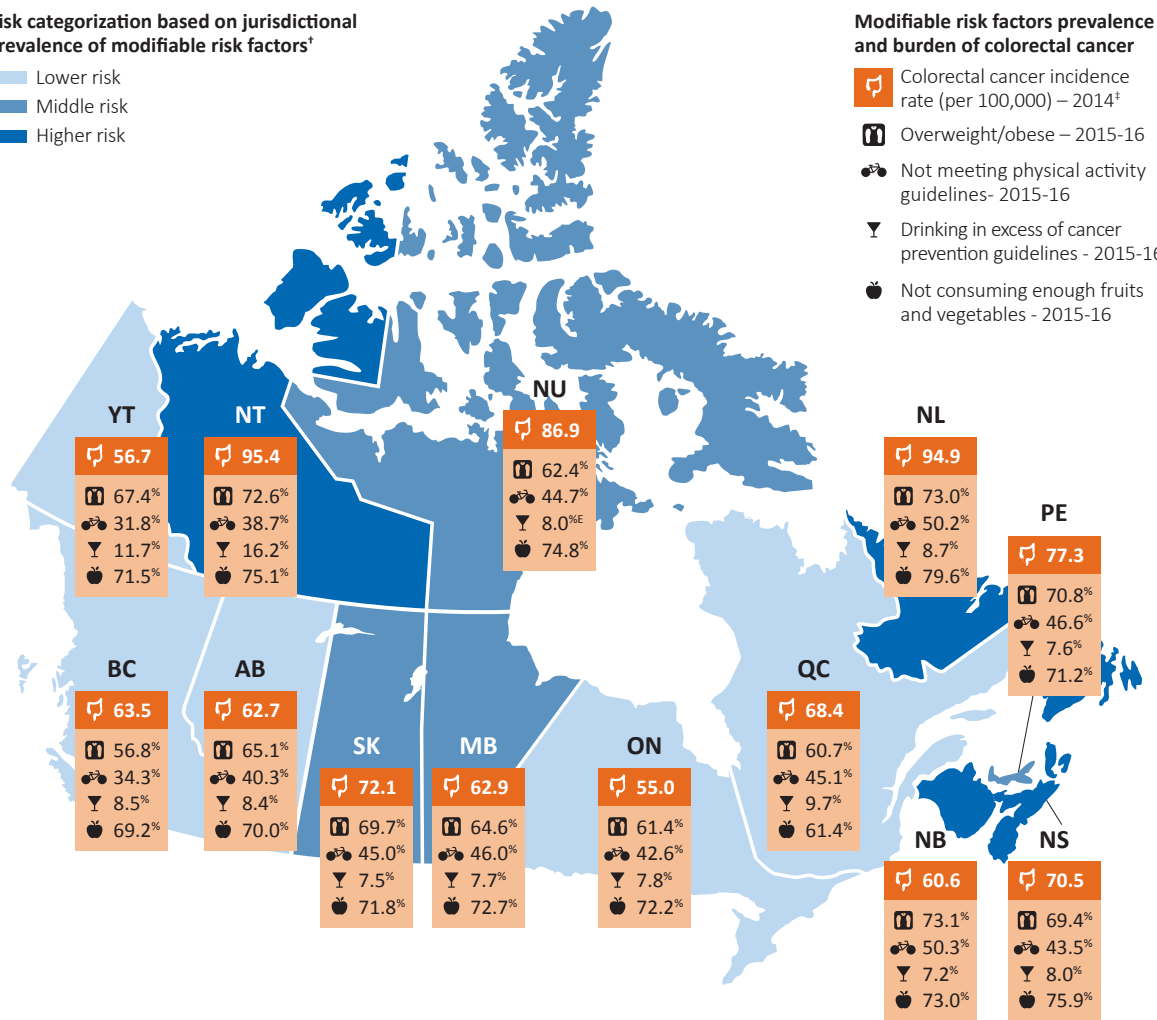
Modifiable risk factors prevalence and burden of colorectal cancer

- Colorectal cancer incidence rate (per 100,000) – 2014[‡]
- Overweight/obese – 2015-16
- Not meeting physical activity guidelines- 2015-16
- Drinking in excess of cancer prevention guidelines - 2015-16
- Not consuming enough fruits and vegetables - 2015-16

YT
- 56.7
- 67.4%
- 31.8%
- 11.7%
- 71.5%

NT
- 95.4
- 72.6%
- 38.7%
- 16.2%
- 75.1%

NU
- 86.9
- 62.4%
- 44.7%[%E]
- 8.0%[%E]
- 74.8%

NL
- 94.9
- 73.0%
- 50.2%
- 8.7%
- 79.6%

PE
- 77.3
- 70.8%
- 46.6%
- 7.6%
- 71.2%

BC
- 63.5
- 56.8%
- 34.3%
- 8.5%
- 69.2%

AB
- 62.7
- 65.1%
- 40.3%
- 8.4%
- 70.0%

SK
- 72.1
- 69.7%
- 45.0%
- 7.5%
- 71.8%

MB
- 62.9
- 64.6%
- 46.0%
- 7.7%
- 72.7%

ON
- 55.0
- 61.4%
- 42.6%
- 7.8%
- 72.2%

QC
- 68.4
- 60.7%
- 45.1%
- 9.7%
- 61.4%

NB
- 60.6
- 73.1%
- 50.3%
- 7.2%
- 73.0%

NS
- 70.5
- 69.4%
- 43.5%
- 8.0%
- 75.9%

[†] Composites were created by summation of jurisdictional cancer risk factors (overweight and obesity, physical inactivity, excessive alcohol consumption and low fruit and vegetables consumption). Derived values were then divided into tertiles to generate groups of lower, middle and higher risk. [‡] For incidence rates for territories, years 2012 to 2014 were combined. [E] Interpret with caution owing to large variability in the estimate. QC: cancer incidence data are not available for diagnosis years after 2010. The 2010 Quebec incidence and population data have been copied forward to 2014 for the calculation. Data sources: Statistics Canada: Canadian Cancer Registry, Canadian Community Health Survey.

FUTURE STATE

If every jurisdiction achieved the lowest risk prevalence rates seen throughout Canada, approximately

1.4 million more Canadians would be at a healthier weight

2.3 million more Canadians would be physically active

450,000 more Canadians would be consuming alcohol at or below cancer guideline levels

2.2 million more Canadians would be eating more fruit and vegetables

This calculation uses the lowest risk factor prevalence rates seen throughout Canada as an attainable goal to promote benchmarking and mutual learning among jurisdictions.

Seamless Care

Do we have an integrated, person-centred cancer care system?

A seamless patient experience is one where health professionals work together to create an integrated, person-centred system. The system allows patients and their families to easily understand, access and navigate the range of services they need to receive the best possible care from the right provider at the right time.

A ROADMAP TO SEAMLESS CARE

90% of women with abnormal mammogram findings receive a diagnosis (cancer or not) **within 5 weeks** (when biopsy is not required) or **within 7 weeks** (when biopsy is required)

90% of people have a follow-up colonoscopy within 60 days when they have an abnormal fecal test

60 DAYS

**More patients spending their last days at home** if they wish to and when is medically appropriate

INCREASED USE OF PATIENT REPORTED OUTCOMES TOOLS across the country to assess patient's symptoms and level of distress

A person-centred cancer care system requires health care providers to work together delivering the care patients need each step of the way. To do that, providers must focus on the needs and preferences of individual patients and their families, and plan and deliver evidence-based care that reflects them.

Four factors are essential for person-centred care and a seamless patient experience:
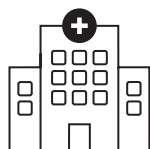
1
System design that supports the smooth movement of patients between appointments, tests and treatments, causes minimal disruption in patients' lives and keeps waits reasonable.

2
Communication between patients and health care providers so providers know each patient's preferences and specific needs, can provide timely information on progress and what to expect, and help them connect with services they need to address their physical, emotional and practical concerns.

3
Communication among health care providers to share information and support multi-disciplinary consultations to ensure the right expertise is in place to provide recommendations for each patient's care.
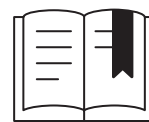
4
Education and training to help health care providers effectively communicate and connect with patients, and also to keep clinicians and health care providers up to date on evidence-based, patient-centred and culturally sensitive approaches to care.

Person-centred care provides a framework for embracing patients and families as full partners in care and is one of the most critical elements in Canada's cancer control strategy.

In this chapter, we will be exploring the following indicators related to seamless care:

System design that supports seamless cancer care
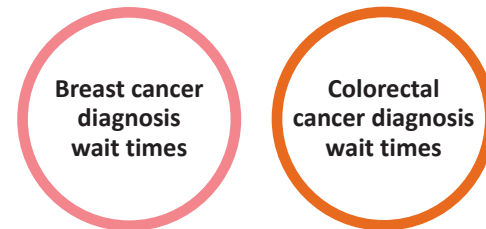
Breast cancer diagnosis wait times

Colorectal cancer diagnosis wait times

Communication between patients and health care providers

Screening for distress

Place of death

● **Breast Cancer**   ● **Colorectal Cancer**

● **Multiple Cancers**

CURRENT STATE

System design that supports seamless cancer care

Wait times are improving but some Canadians still wait months for a diagnosis following an abnormal screen.

Most women with an abnormal mammogram wait five weeks or less to receive a diagnosis when a tissue biopsy is **not required**.

- The percentage of women who received a diagnosis (cancer or not) within five weeks remained fairly stable between 2013 (82.7%) and 2015 (85.8%).[i]

- In 2015, the percentage of women who received a diagnosis within five weeks varied across reporting jurisdictions, from 71.8% in New Brunswick to 95.3% in Alberta. Saskatchewan, Alberta and Ontario met the wait time target of 90% of abnormal screen results not requiring tissue biopsy resolved within five weeks (Figure 4.1).

Percentage of women who received a diagnosis within five weeks

2013	2015
82.7%	**85.8%**

Wait times from an abnormal mammogram until final diagnosis remain long for women **requiring** tissue biopsy.

- 19% of women require a follow-up tissue biopsy to determine whether they have cancer. The percentage of women receiving a diagnosis (cancer or not) within seven weeks increased from 60.5% in 2013 to 67.1% in 2015.[j]

- In 2015, the percentage of women requiring tissue biopsy who received a diagnosis within seven weeks ranged from 42.1% (Prince Edward Island) to 85.0% (Alberta). None of the participating jurisdictions met the wait time target of 90% of abnormal screen results requiring tissue biopsy resolved within seven weeks (Figure 4.2).
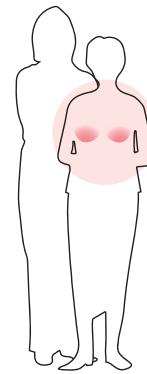
[i,j] Jurisdictions in this trend include all provinces and NT, which represent 99.8% of the Canadian population.

Where should we be?

Patients who go through screening and receive an abnormal result should be able to get prompt follow-up testing to confirm a positive or negative diagnosis in a way that minimizes undue anxiety. The goal is that 90% of individuals with an abnormal screen should receive a diagnosis (cancer or not) within the national targets.

What does this mean for people who live in Canada?

People often experience uncertainty, stress and anxiety as they visit multiple providers and wait for test results to find out if they have cancer. Those who have to wait several weeks or months for a diagnosis worry that the cancer may spread beyond a curable stage in the meantime.[8]

How can we mobilize positive change?

A seamless health care system organizes screening and diagnostic services to ensure reasonable wait times for confirmatory testing and minimal disruption for patients and families. One-stop diagnostic clinics are one way to streamline diagnostic tests and consultations.[47] They have multidisciplinary teams and patient navigators working together to provide timely support and information for individuals going through the process of finding out if they have cancer.

FIGURE 4.1

Median and 90th percentile wait times for resolution of abnormal breast screen without tissue biopsy for women aged 50–69, by jurisdiction — 2015 screening year

Median (weeks)		90th percentile (weeks)
0.9	AB	3.4
1.9	SK	3.9
1.6	ON	4.0
2.1	MB	5.4
3.0	NS	6.4
3.9	PE	6.6
3.7	NB	6.9
4.0	NT	7.0
3.0	BC	8.0
3.3	QC	9.0
3.0	NL	11.0
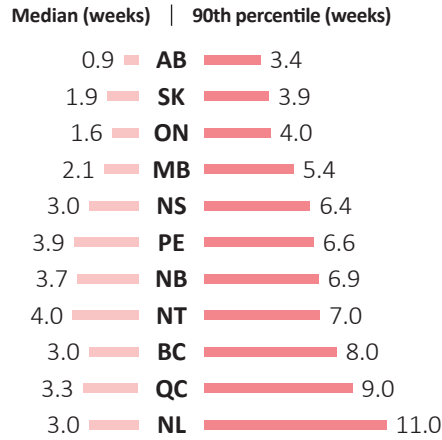
Percentage within wait time target (≤ 5 weeks)

QC 72.3
NS 80.8
NB 71.8
ON 94.7
AB 95.3
BC 80.1
SK 94.9
MB 89.1
NT 72.2
PE 73.4
NL 77.0

80% 60% 40%
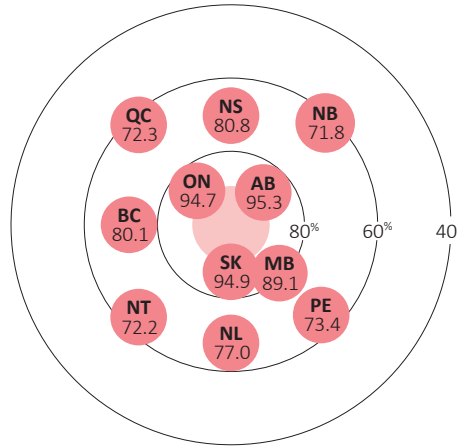
FIGURE 4.2

Median and 90th percentile wait times for resolution of abnormal breast screen with tissue biopsy for women aged 50–69, by jurisdiction — 2015 screening year

Median (weeks)		90th percentile (weeks)
2.9	AB	7.6
7.0	NT	9.0
3.9	ON	9.9
5.1	NS	11.0
6.3	NB	11.0
3.8	SK	11.1
7.6	PE	11.1
5.0	MB	13.9
6.0	BC	14.0
7.9	QC	16.7
7.0	NL	22.0
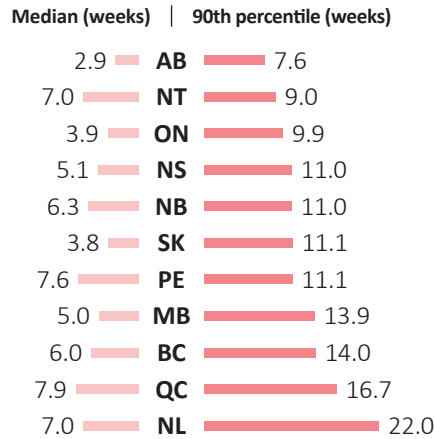
Percentage within wait time target (≤ 7 weeks)

QC 45.5
NS 73.3
NB 61.4
ON 80.1
AB 85.0
BC 62.6
NT 70.6
SK 81.2
MB 69.6
PE 42.1
NL 55.2

80% 60% 40%
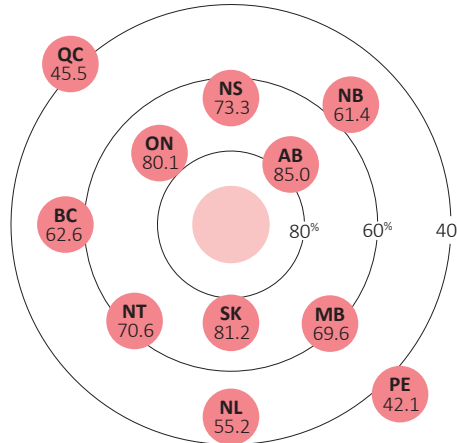
BC: Screens referred by clinical breast exam (CBE) alone cannot be determined and therefore are not excluded from the data. AB: Data sources are Alberta Breast Cancer Screening Database, Alberta Physician Claim data. SK: Tissue biopsy is defined as a list of investigation types. ON: Women with final result of Unknown/Lost to follow-up and those with a diagnostic resolution date greater than 6 months from abnormal screen were excluded from this measure. QC: Screening data in 2015 were for January to September. NT: All Data were 2013-2015 combined from the BSP database.
Data source: Provincial and territorial breast cancer screening programs.

FUTURE STATE

If all provinces could achieve the wait time targets for abnormal breast screen resolution, every year:

6,300
more women
could receive a faster diagnosis when **no tissue biopsy** is required

4,000
more women
could receive a faster diagnosis when a **tissue biopsy** is required

Half of people who have an abnormal fecal test for colorectal cancer wait over two months to receive a definitive diagnosis.

While all provinces have organized colorectal cancer screening programs, several are still in the early stages. In the diagnostic process, individuals with an abnormal fecal test undergo follow-up colonoscopy, after which they receive a definitive diagnosis.

- Among provinces that provided data, 50.8% of people with an abnormal fecal test received a follow-up colonoscopy within 60 days.[k]

- In 2015, the percentage of people with an abnormal fecal test who received a follow-up colonoscopy within 60 days ranged from 28.8%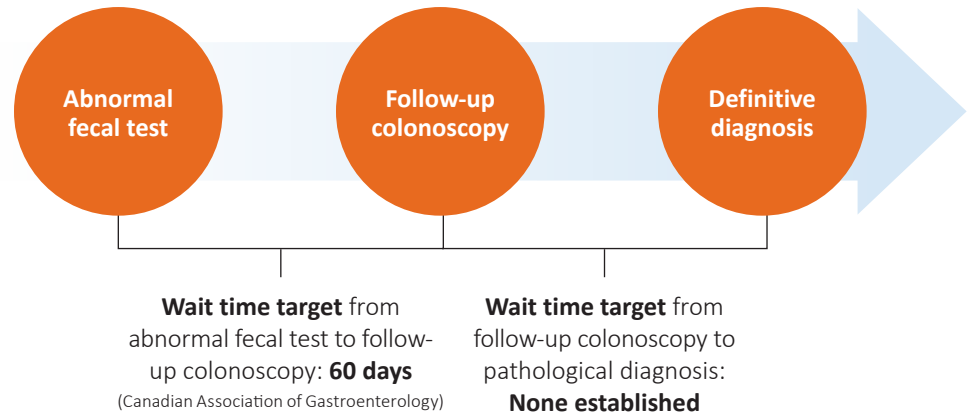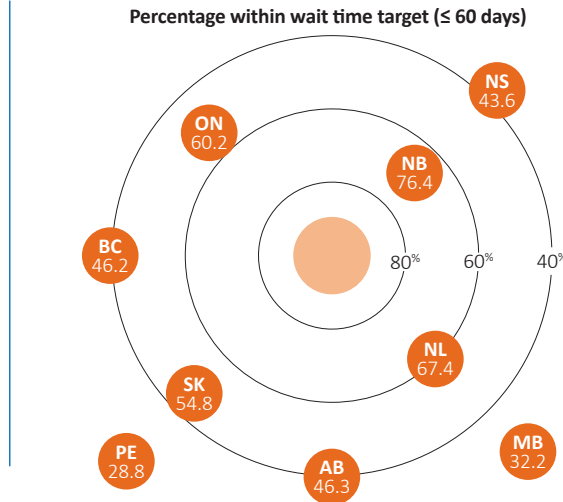 (Prince Edward Island) to 76.4% (New Brunswick). None of the participating provinces met the wait time target of 90% of patients with abnormal fecal test results receiving a colonoscopy within 60 days (Figure 4.3).

Abnormal fecal test → **Follow-up colonoscopy** → **Definitive diagnosis**

Wait time target from abnormal fecal test to follow-up colonoscopy: **60 days**
(Canadian Association of Gastroenterology)

Wait time target from follow-up colonoscopy to pathological diagnosis: **None established**

[k] Jurisdictions in this trend include BC, AB, SK, MB, ON, NL, NB, NS and PE, which represent 77% of the Canadian population.

FIGURE 4.3

Median and 90th percentile wait times from abnormal fecal test result to follow-up colonoscopy, by province — 2015 screening year

Median (days) | 90th percentile (days)

Median (days)	Province	90th percentile (days)
45	NB	81
47	NL	88
51	ON	113
56	SK	117
64	NS	117
73	MB	119
63	AB	129
65	BC	139
81	PE	143
–	QC	–

Percentage within wait time target (≤ 60 days)

80% 60% 40%

- NS 43.6
- ON 60.2
- NB 76.4
- BC 46.2
- NL 67.4
- SK 54.8
- PE 28.8
- AB 46.3
- MB 32.2

"—" Data not available.
AB: High volumes of positive fecal immunochemical tests may influence wait times for follow-up colonoscopy. In select cases, individuals may choose to postpone follow-up colonoscopy. Depending on the jurisdiction, such cases may or may not be included. See Technical Appendix for more details.
Data source: Provincial and territorial colorectal cancer screening programs.

FIGURE 4.4

Median and 90th percentile wait times from follow-up colonoscopy to definitive diagnosis, by province — 2015 screening year

Median (days) | 90th percentile (days)

Median (days)	Province	90th percentile (days)
3	PE	6
4	NB	8
5	BC	9
8	NS	19
12	MB	20
6	NL	21
11	SK	36
–	AB	–
–	ON	–
–	QC	–

"—" Data not available.
In select cases, individuals may choose to postpone follow-up colonoscopy. Depending on jurisdiction, such cases may or may not be included. See Technical Appendix for more details.
Data source: Provincial colorectal cancer screening programs.

Communication of patients' preferences and concerns

Many patients with cancer report symptoms that cause distress during and after treatment.

Nine provinces are using standardized tools to screen for symptoms of distress in cancer centres.

Screening for distress before, during and after active treatment is essential for promptly referring patients to services that can help them manage their physical and emotional symptoms.[12, 49] The Edmonton Symptom Assessment System—revised (ESAS-r) is a validated tool that measures patient-reported symptoms. It asks patients to describe each symptom on a scale of 0 to 10, where 0 indicates no symptoms (that is, no pain, anxiety, fatigue or depression). Symptom distress may be low (scores 1-3), moderate (scores 4-6) or high (scores 7-10).[50] Many cancer centres collect the data, although how often they collect it and the methods they use to do so vary (Figure 4.5).

At least half of patients screened for distress report symptoms which include pain, fatigue, anxiety and depression.

- Between 2016 and 2017, the percentage of patients who reported symptoms of distress ranged from 74.9% (Nova Scotia) to 94.7% (Quebec).

- Fatigue was the most common symptom of distress reported by patients with cancer (75.6%), followed by anxiety (56.5%) (Figure 4.6).

Fatigue

was the **most common symptom of distress** reported by patients with cancer (75.6%) followed by anxiety (56.5%)

Where should we be?

In Canada, all patients with cancer should be able to report their symptoms, such as fatigue or anxiety, using standardized patient-reported outcome tools at provincial cancer centres and hospitals.

What does this mean for people with cancer?

By identifying the intensity of the physical and emotional symptoms that are causing distress, people with cancer can help define the support they need to alleviate symptoms that affect their quality of life.

How can we mobilize positive change?

The Partnership has supported the use of patient-reported outcome tools in most provinces. They give clinicians information they need to deliver person-centred care. All health care providers in Canada should use this information to understand and respond to patients' symptoms and concerns, customize interventions and connect them to services that can help patients and families cope.[48]

FIGURE 4.5

Current state of Patient Reported Outcomes implementation, by province, as of April 2017

X — Number of clinical sites using ESAS-r

Y — Number of clinical sites providing systemic therapy or other services

YT
—

NT
—

NU
—

BC
6
6

AB
17
17

SK
18
18

MB
22
22

ON
70
80

QC
2
92

NL
13
17

PE
2
2

NB
—
—

NS
9
11

PE
• New patient oncology visits
• Intravenous chemotherapy review appointments
• End of treatment for all patients

BC
All new patients referred to BC Cancer have baseline capture of symptoms at the new patient oncology visit.

AB
• New patient oncology visit
• Follow-up visits
• Once per cycle of chemotherapy
• Beginning, middle and end of radiation therapy

SK
• Once for every new patient at new patient consultation
• Once for every patient referred to pain and symptom management clinic
• Once for every radiation therapy patient while on radiation therapy

MB
At every physician visit

ON
All visits

QC
At every physician visit

NL
• New patient oncology visits
• Some follow-up screening at identified points in treatment trajectory

NB
—

NS
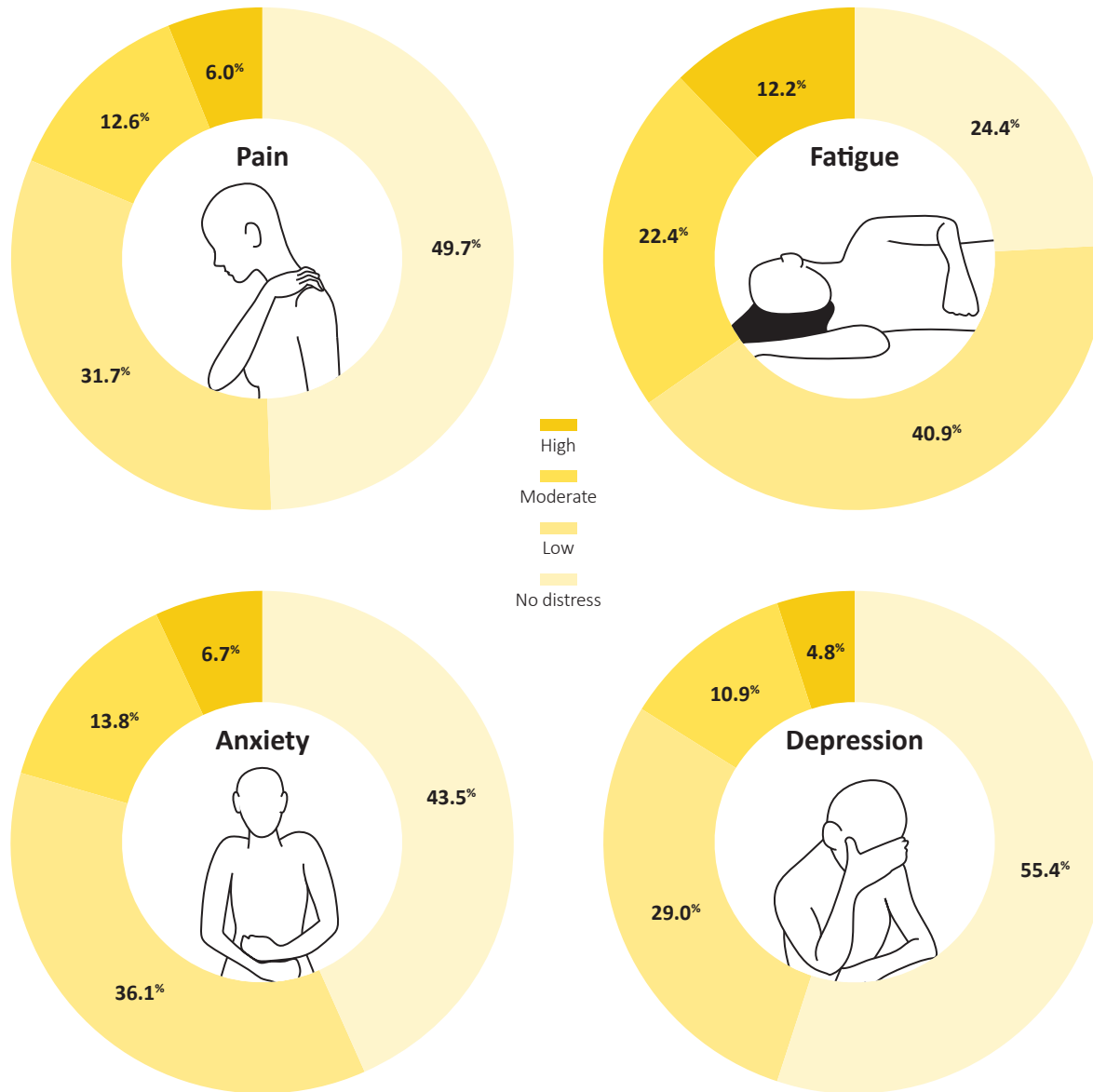• Newly diagnosed patients and at specific transition points in cancer care

"—" Data not available.
ESAS-r= Edmonton Symptom Assessment System - revised.
Data sources: BC Cancer; Patient-Reported Outcomes Initiative Partners.

FIGURE 4.6

Severity of patient distress, by symptom, jurisdictions combined — From October 2016 to March 2017

Pain

6.0%
12.6%
49.7%
31.7%

Fatigue

12.2%
24.4%
22.4%
40.9%

Legend:
- High
- Moderate
- Low
- No distress

Anxiety

6.7%
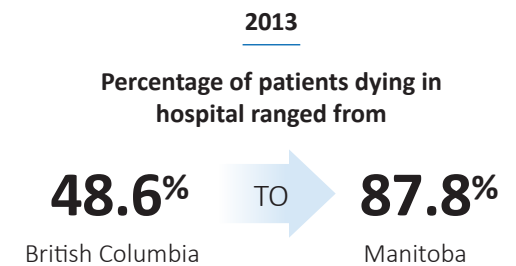13.8%
43.5%
36.1%

Depression

4.8%
10.9%
55.4%
29.0%

The percentage might not sum up to 100% due to rounding. BC, NB and NL were not included.
Data source: Patient-Reported Outcomes Initiative Partners.
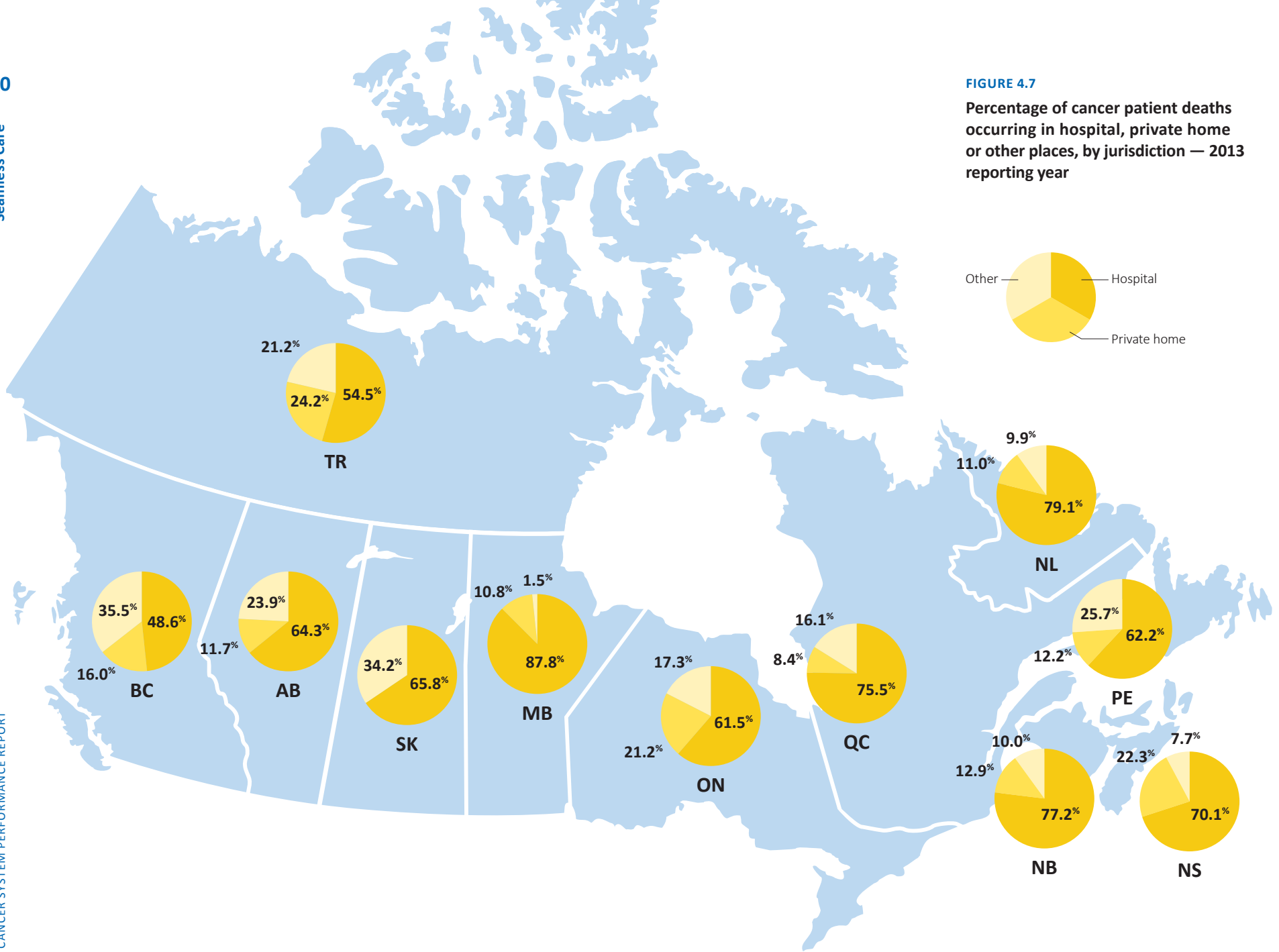
Two-thirds of cancer patients die in hospital, even though many would prefer to die at home.

Surveys consistently indicate patients prefer spending as many of their final days as possible in a comfortable, non-clinical environment surrounded by loved ones—which is often their home. Palliative care at home usually requires additional supports to manage symptoms adequately. However, complications of therapy and other adverse events may require a patient to be admitted to hospital in their final days.

- Although most patients with cancer die in hospital, the percentage decreased from 71.6% in 2008 to 65.9% in 2013. This means that slightly more patients are dying outside hospital settings, including hospices, residential care, and at home.[i]

- In 2013, the percentage of patients dying in hospital ranged from 48.6% (British Columbia) to 87.8% (Manitoba). Of note, many of the in-hospital deaths recorded in Manitoba and Newfoundland and Labrador occur in palliative care units or hospital-based hospices (Figure 4.7).

2013

Percentage of patients dying in hospital ranged from

48.6% TO **87.8%**

British Columbia   Manitoba

i This trend includes all provinces and territories.

FIGURE 4.7

Percentage of cancer patient deaths occurring in hospital, private home or other places, by jurisdiction — 2013 reporting year

Other —○— Hospital

—○— Private home

TR
21.2% · 24.2% · 54.5%

NL
9.9% · 11.0% · 79.1%

BC
35.5% · 48.6% · 16.0%

AB
23.9% · 64.3% · 11.7%

SK
34.2% · 65.8%

MB
10.8% · 1.5% · 87.8%

ON
17.3% · 21.2% · 61.5%

QC
16.1% · 8.4% · 75.5%

PE
25.7% · 12.2% · 62.2%

NB
10.0% · 12.9% · 77.2%

NS
7.7% · 22.3% · 70.1%

The percentage might not sum up to 100% due to rounding. SK: Owing to small numbers, deaths in private homes were combined with Other. TR: Territories combined. Provinces and territories vary in how location of death is categorized and the classification of different settings. In MB, for example, many deaths are categorized as in-hospital occur in palliative care units or hospital-based hospices. Data source: Statistics Canada: Vital Statistics Death Database.

If all of Canada **reduced** the proportion of patients **dying in hospital to**

48.6%

(as in BC, which had the lowest proportion of in-hospital deaths)[m]

13,000
fewer cancer patients
would die in hospital
each year

Where should we be?

The health care system should, where it is medically appropriate, provide the resources necessary for patients to spend their final days at home if they choose to.

What does this mean for patients with cancer?

Surveys show people prefer spending as many of their final days as possible in a comfortable and familiar environment, often their home.[51] When patients and families make advance care plans with their clinical team, they should be able to make an informed decision about where they want to spend their final days and be reassured they will have access to the services they need to die comfortably where they prefer, when medically appropriate.

How can we mobilize positive change?

Clinicians should be open during advance care planning with their patients and discuss goals for care as early in their illness as possible. This will help align what patients want with the care they receive during their cancer experience, including end-of-life. Funders and health system planners should ensure resources and supports needed for end-of-life care, including pain control and supportive home care, are available to cancer patients who choose to die at home.[52]

[m] The above calculation uses the lowest proportion of cancer deaths occurring in hospital in Canada as an attainable goal to promote benchmarking and mutual learning among jurisdictions.

Measurement of cancer system performance in Quebec

The Quebec Ministry of Health & Social Services (ministère de la Santé et des Services sociaux) made the development and reporting of cancer system performance indicators a key strategic focus for current and future work. This is part of an ongoing effort to build a culture of continuous quality improvement within the Quebec Cancer Network. The Ministry's recent report, *Bulletin national de performance en cancérologie*, is the first of its kind in Quebec and focuses on cancer system performance indicators measured between 2014 and 2017.[53] The Ministry is continuing its efforts to enhance current indicators and add more indicators in future bulletins as its performance measurement work continues to evolve.

Time to diagnosis and treatment in Quebec:
A focused look at 3 indicators of seamless care

Quebec has seen a slight improvement in the percentage of breast ultrasound centres meeting wait time targets.

Women who receive an abnormal screening mammogram result are often referred for a breast ultrasound exam for further investigation. Waiting for follow-up testing after receiving an abnormal mammogram screening result can be a difficult and stressful time for women and their families. **Quebec's Minister of Health has set a maximum wait time target of three weeks or less** from the time a call is made for a breast ultrasound appointment to the actual appointment date.
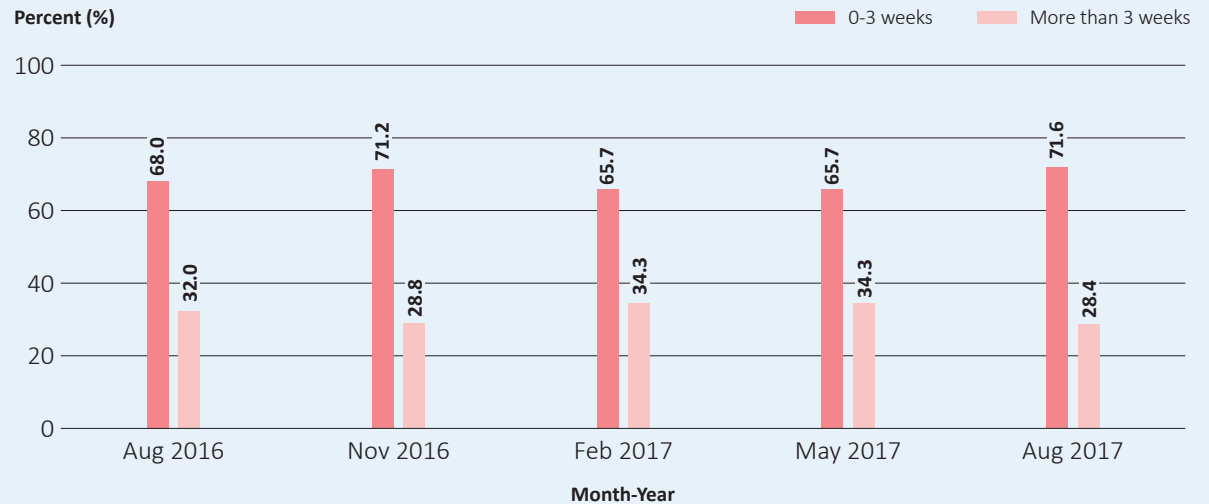
Percentage of breast ultrasound screening centres meeting Quebec's wait time targets increased from (Figure 4.8):

Aug 2016
68.0%

Aug 2017
71.6%

FIGURE 4.8

Wait times for follow-up breast ultrasound screening appointments, Quebec — from August 2016 to August 2017

Percent (%)

Legend: 0–3 weeks | More than 3 weeks

Month-Year	0–3 weeks	More than 3 weeks
Aug 2016	68.0	32.0
Nov 2016	71.2	28.8
Feb 2017	65.7	34.3
May 2017	65.7	34.3
Aug 2017	71.6	28.4

Data source: Gouvernement du Québec: Bulletin national de performance en cancerologie.[53]

Most breast and colorectal cancer surgeries are performed within target wait times, however wait times for lung and prostate surgery are longer.

It is important for surgery to be provided in a timely manner to prevent the growth and spread of cancers in the body and reduce the often anxiety-ridden time patients spend waiting for surgery. **Quebec's Minister of Health has set targets whereby 90% of cancer surgeries must occur within 28 days or less** after the date on which the patient is deemed medically ready to receive the surgery, **and 100% must occur within 56 days or less.**

- In 2017, 63.1% of all cancer surgeries in Quebec were performed within 28 days while 89.7% were performed within 56 days (Figure 4.9).

- Breast and colorectal cancers were closest to meeting wait time targets with 95.9% and 95.4% of surgeries, respectively, occurring within 56 days (Figure 4.9).

In 2016-2017

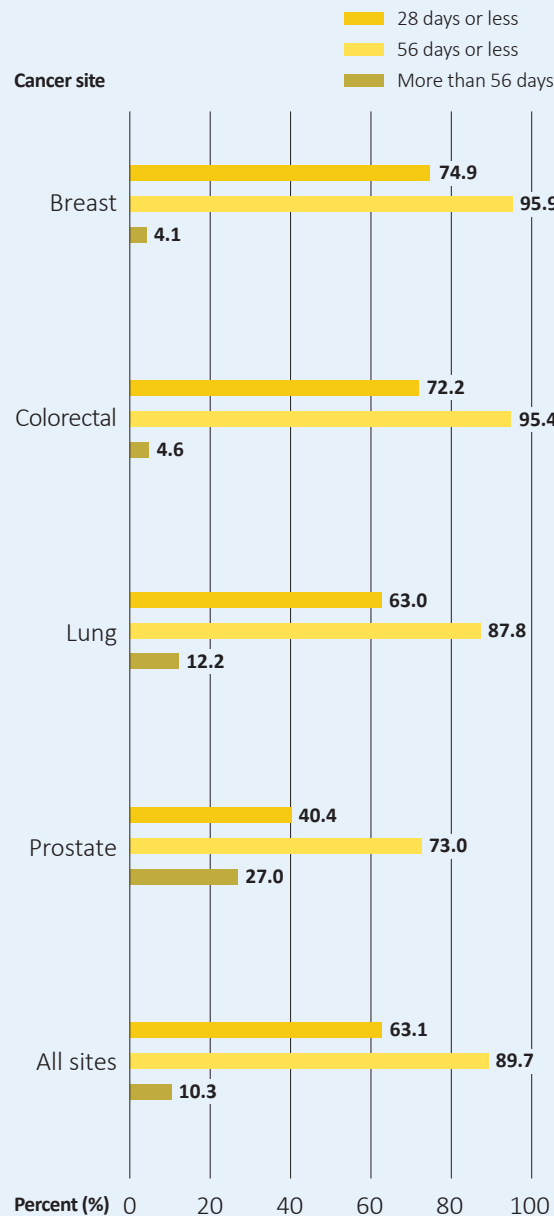**63.1%**
of cancer surgeries were performed within

28 DAYS

89.7%
were performed within

56 DAYS

FIGURE 4.9

Wait times for cancer surgery for the four most common cancer sites, Quebec – 2016-2017

Legend:
- 28 days or less
- 56 days or less
- More than 56 days

Cancer site

Cancer site	28 days or less	56 days or less	More than 56 days
Breast	74.9	95.9	4.1
Colorectal	72.2	95.4	4.6
Lung	63.0	87.8	12.2
Prostate	40.4	73.0	27.0
All sites	63.1	89.7	10.3

Percent (%) 0 20 40 60 80 100

Data source: Gouvernement du Québec: Bulletin national de performance en cancerologie.[53]

Just under half of participating laboratories in Quebec are meeting target turnaround times for pathology reports.

Timely completion of pathological testing and reporting of tissue sample results have important implications on the timeliness of cancer treatment. As part of Quebec's OPTILAB project aimed at improving the efficiency of diagnostic services within the province, **Quebec's Minister of Health has set targets whereby 80% of cancer pathology reports must be turned around within 12 working days** following receipt of a surgical specimen. In April 2016, (the last reporting period), 20 of the 46 participating laboratories met this target.[53]

Sustainability

Are we providing cancer control services in a way that balances resource use and patient benefits?

A sustainable health care system meets the health care needs of the population—from disease prevention to end-of-life care—in a way that optimizes the balance between resource use and excellence in patient outcomes. Carefully managing resources and taking a balanced approach to new investments (including considering the relative value of alternatives) will help ensure future generations of Canadians are able to benefit from our universal health care system.

A ROADMAP TO SUSTAINABILITY

REDUCE COMMERCIAL TOBACCO USE **5%** to 5% by 2035 across the country

Achieve **90%** human papillomavirus (HPV) vaccination uptake among eligible populations

Reduce mammogram screening outside of age group guidelines for Canadians at average risk

Increase the proportion of **mastectomies that can be safely performed as day surgery**

Reduce ICU admissions near the end-of-life

BACKGROUND

The average annual number of new cancer cases in Canada is expected to increase by 40% over the next 15 years, which is likely to put considerable strain on Canada's health care resources.[2] This increase is being primarily driven by the growing size of the older adult population in Canada. By 2032, Canadians 65 years of age or older are expected to make up close to a quarter of the population.[4] These trends make it particularly important to continue working toward optimizing the balance between resource use and good patient outcomes.
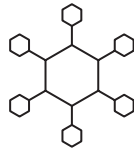
The number of new cancer cases in Canada is expected to increase by 40% over the next 15 years.

Five key elements can support and contribute to sustainable health care in Canada:[54]
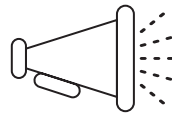
1 Effective health promotion and disease prevention strategies and policies.
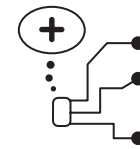
2 Effective health system structures, processes and approaches that optimize the use of resources.

3 Funding models that promote desired behaviour among those who plan and deliver health care services.

4 Use of innovative technology to make health service delivery more efficient and effective.
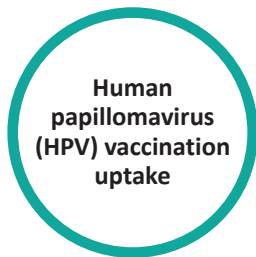
5 Following best practices in human resource management.

INDICATORS

In this chapter, we will be exploring the following indicators related to the sustainability of cancer care:

Prevention

Smoking prevalence

Human papillomavirus (HPV) vaccination uptake

Value and non value-based care

Screening mammograms for women outside the target age range

Breast cancer mastectomies performed as day surgery

Intensive care use in the last two weeks of life
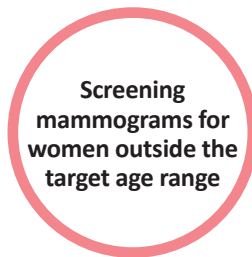
- Breast Cancer
- Lung Cancer
- Cervical Cancer
- Multiple Cancers

CURRENT STATE

Prevention

Commercial tobacco use has declined in Canada in recent years, however prevalence still varies widely across jurisdictions.

Tobacco use is the most preventable cause of disease and premature death in Canada. The federal government has set a target of reducing smoking among Canadians to 5% of the population by 2035.[3] Smoking is responsible for up to 30% of all cancer-related deaths and up to 85% of new lung cancer cases.[1,2]

- In Canada, daily and occasional smoking has declined from 26.0% in 2001 to 17.4% in 2015/16 (Figure 5.1).[n]

- Smoking prevalence varies considerably across the country, ranging from 14.1% in British Columbia to 62.1% in Nunavut in 2015/16 (Figure 5.2). Prevalence of smoking is highest among those living in Canada's three territories.

[n] All jurisdictions are included in this trend.

FIGURE 5.1

Percentage of Canadians who reported smoking daily or occasionally, Canada — 2001 to 2016 reporting years
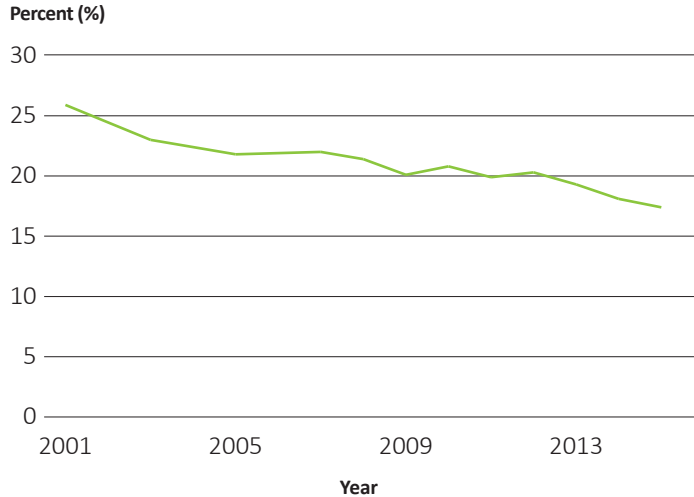
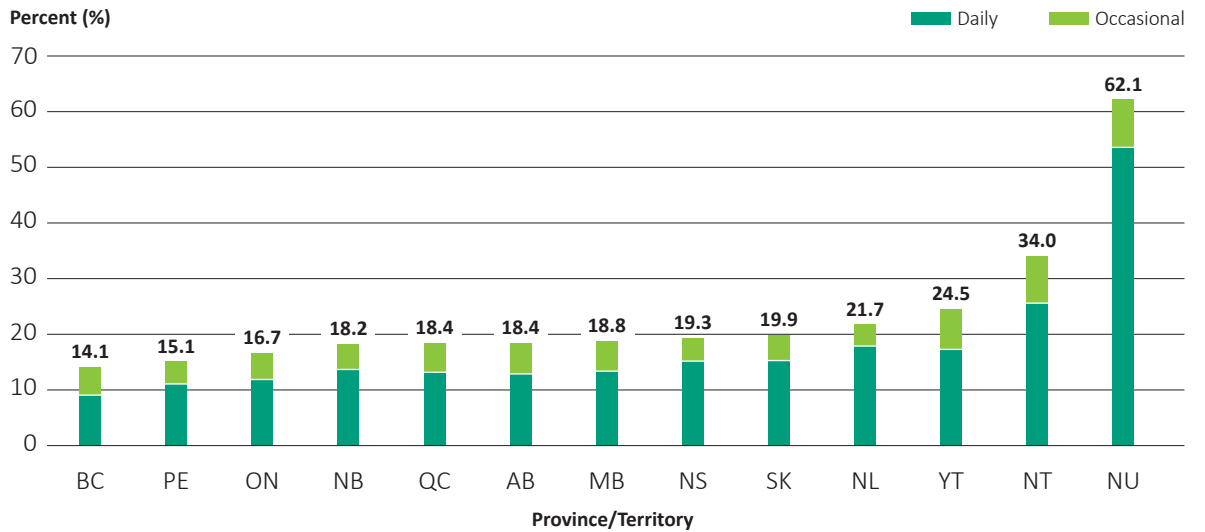Data source: Statistics Canada: Canadian Community Health Survey.

Smoking is responsible for

up to **85%** of **new lung cancer cases**

up to **30%** of all **cancer-related deaths**
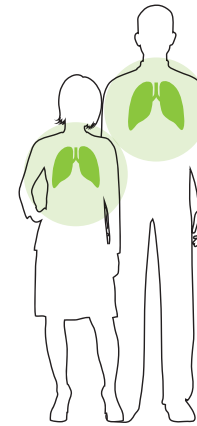
FIGURE 5.2

**Percentage of Canadians who reported smoking daily or occasionally, by jurisdiction — 2015-16 reporting years**

Data source: Statistics Canada: Canadian Community Health Survey.

Then between 2017 and 2035

If Canada achieves a

5%

smoking rate gradually by 2035

31,000
fewer people
may be diagnosed with lung cancer

20,000
fewer people
may die from lung cancer

457,000
quality-adjusted life years
could be gained

$680
million in lung cancer treatment
costs could be redirected to other health care services

These benefits do not take into account other smoking-related illnesses and deaths that could be avoided if Canada achieves a 5% smoking prevalence rate by 2035.
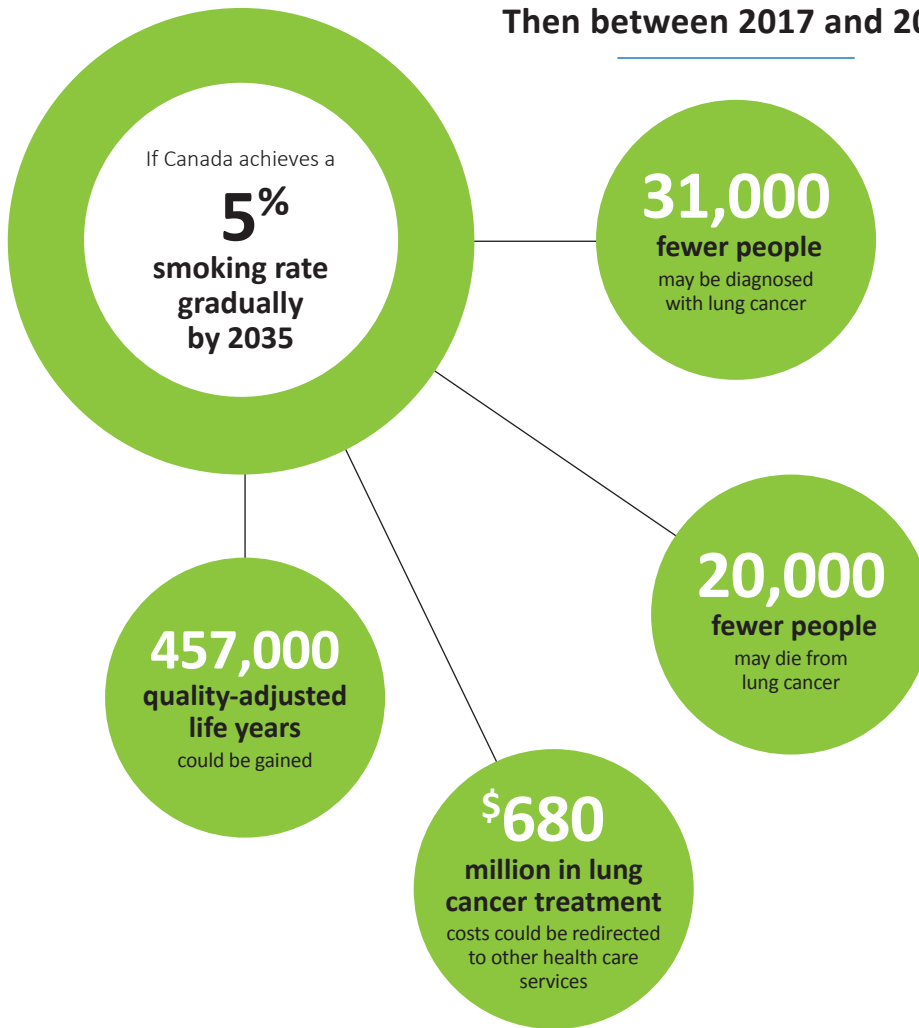
Where should we be?

To meet Health Canada's smoking prevalence target of 5% by 2035, a full range of proven policies and other mechanisms to reduce smoking need to be pursued.

What does this mean for people who live in Canada?

Smoking causes up to 85% of new lung cancer cases and increases an individual's risk of developing a number of other cancers, including mouth and throat, bladder, cervix, colorectal and several others.[1,2] Evidence has shown that cancer mortality can be significantly reduced by getting individuals to quit smoking.[2] Continuing to smoke after a diagnosis of cancer can negatively impact the effectiveness of treatment, and increase the chances of a cancer recurring.[55-60]

How can we mobilize positive change?

Governments should continue investing in prevention and cessation programs and policies to reduce commercial tobacco use. Cancer care professionals should ask all patients about smoking and support patients in quitting by discussing the risks of smoking during and after cancer treatment, and referring patients to existing cessation services. The Partnership has compiled several smoking cessation resources for cancer agencies and governments: http://www.cancerview.ca/preventionandscreening/tobacco/.

Human papillomavirus vaccination rates vary widely by province and territory.

High-risk human papillomavirus (HPV) types 16 and 18 are responsible for approximately 70% of all cervical cancer cases that occur, and for other cancers including an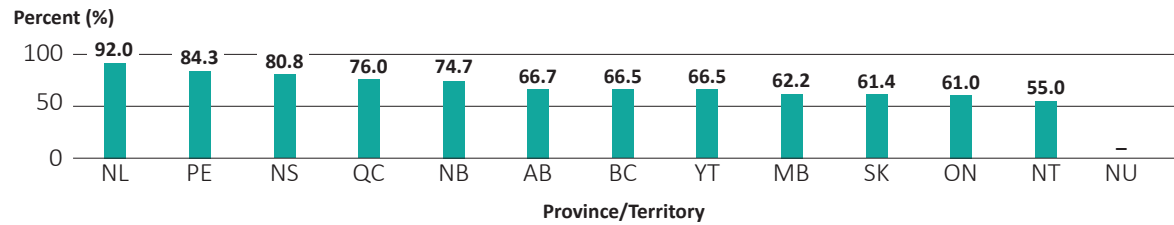al, penile, oral cavity and oropharyngeal.[61-63] The Public Health Agency of Canada recommends vaccinating both boys and girls between the ages of 9 and 26 (see the Canadian Immunization Guide for more detail).[64] Continued efforts to increase HPV vaccination coverage for both males and females will play a critical role in reducing the future burden of cervical and other cancers.

HPV vaccination rates varied considerably across the country, from 55.0% in the Northwest Territories to 92.0% in Newfoundland and Labrador (Figure 5.3).
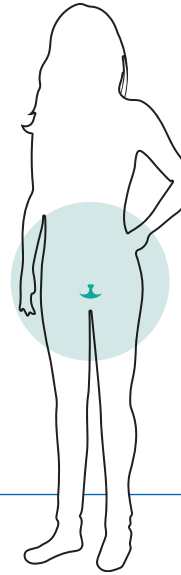
FIGURE 5.3

Percentage of girls who received a full course[†] of human papillomavirus (HPV) vaccination from school-based HPV immunization programs, by jurisdiction — most recent reported year[‡]

Percent (%)

	NL	PE	NS	QC	NB	AB	BC	YT	MB	SK	ON	NT	NU
	92.0	84.3	80.8	76.0	74.7	66.7	66.5	66.5	62.2	61.4	61.0	55.0	—

Province/Territory

[†] As of the 2015/16 school year, the full course of vaccination for school-based HPV vaccination programs is three doses in AB, SK, NT and NU, and two doses in all other provinces and territories. [‡] 2015/16: MB, ON, NS, PE, NL, NT; 2016: SK; 2016/17: BC, AB, QC, NB, YT. "—" Data not available. Data source: Provincial and territorial immunization programs.

FUTURE STATE

If we increased HPV vaccine uptake from **67%[†]** to **90%** then over the lifetime of an eligible cohort,[‡] we would expect to see a:

23% reduction in cervical cancer cases

21% reduction in cervical cancer-related deaths in this group of women

[†] 67% is the current national, weighted-average for HPV vaccine uptake across Canada. [‡] A modeled cohort of eligible women, which includes all 5 to 10 year old girls in 2015 and follows them throughout their lifetime.

Where should we be?

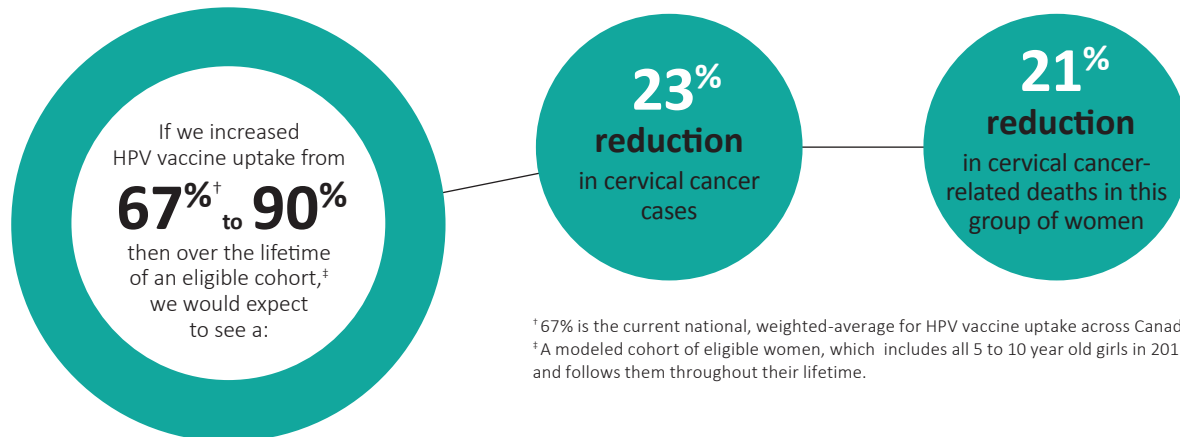All boys and girls in the target age groups should be receiving the recommended regimen of HPV vaccination.

What does this mean for people who live in Canada?

The HPV vaccine provides protection against high-risk strains of the virus, which are responsible for over 70% of cervical cancer cases, 92% of anal cancers, 63% of penile cancer and 89% of oral cavity and oropharyngeal cancer. [61-63]

How can we mobilize positive change?

There are two developments in Canada related to school-based HPV immunization programs—vaccinating males and moving to a two-dose vaccination schedule.[65] These changes could help further reduce infections caused by HPV and the subsequent risk of cervical, oropharyngeal, penile and anal cancer.

Value-based care

The proportion of screening mammograms being performed on women outside the target age range of 50–74 varies widely by jurisdiction.
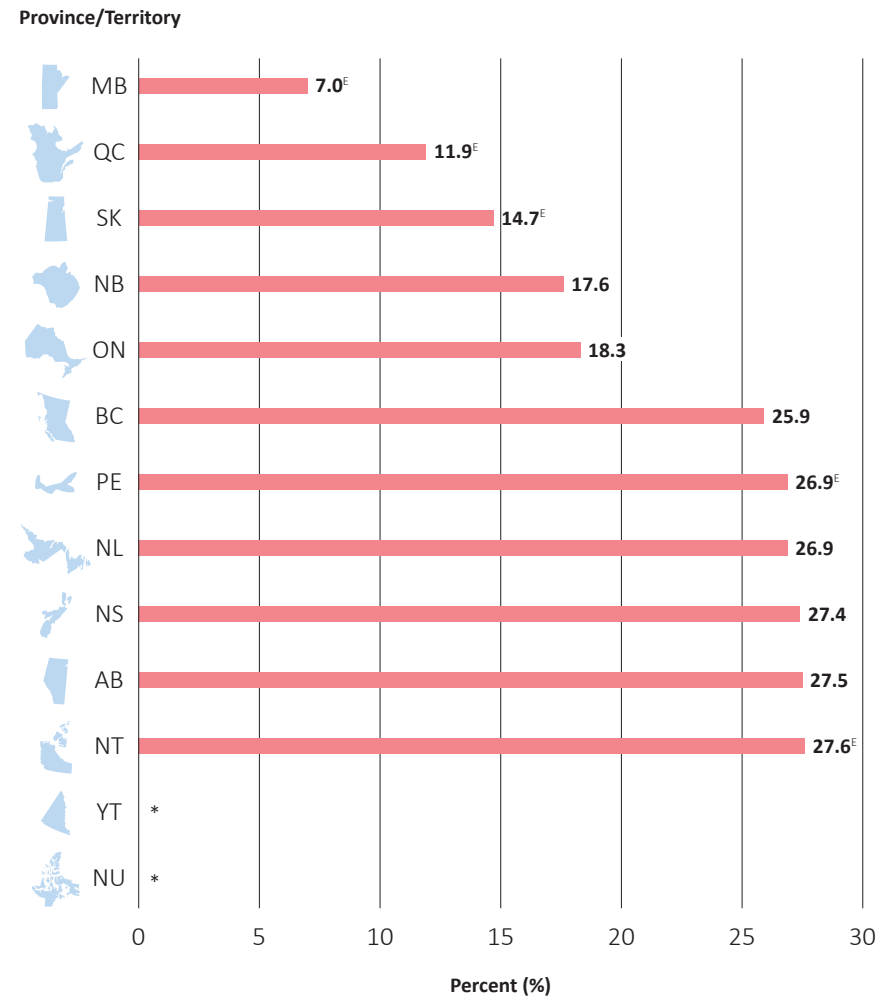
Choosing Wisely Canada and the Canadian Task Force for Preventive Health Care recommend against routinely screening average risk women aged 40–49 with mammography.[66,67] Screening mammograms for women in their 40s may be appropriate in some cases (such as for women at high risk of developing breast cancer), but the benefits of screening—reducing illness and death—are lower for that age group than for older women, and the risk of false positives is higher.[66, 68]

- From 2008 to 2012, between 7.0% (Manitoba) and 27.6% (Northwest Territories) of screening mammograms performed were done on women between the ages of 40–49 (Figure 5.4).

- The distribution of self-reported screening mammograms performed on women outside of the target age range of 50-74 has declined from 36.4% in 2008 to 26.3% in 2014 (for all reporting jurisdictions combined) (Figure 5.5).°

° Jurisdictions in this trend include NS, NB, AB, NT, which represent 17% of the Canadian population.
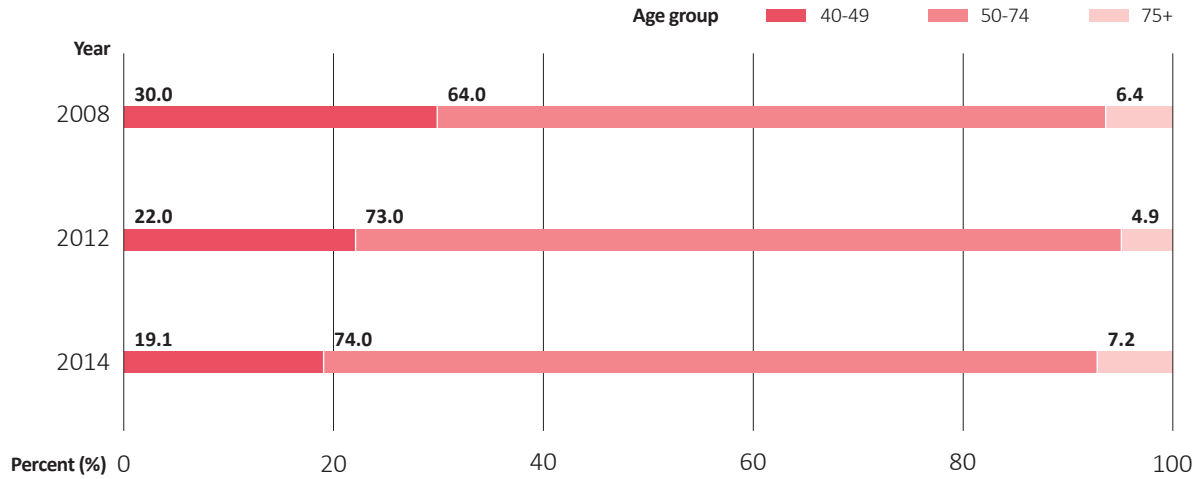
FIGURE 5.4

Screening outside of guidelines: percentage of all screening mammograms[†] in the past year reported by women aged 40–49, by jurisdiction[‡] — 2008–12 reporting years combined

Province/Territory

Jurisdiction	Percent (%)
MB	7.0[E]
QC	11.9[E]
SK	14.7[E]
NB	17.6
ON	18.3
BC	25.9
PE	26.9[E]
NL	26.9
NS	27.4
AB	27.5
NT	27.6[E]
YT	*
NU	*

Percent (%)

[†] A woman is deemed to have had a screening mammogram if her reason for undergoing a mammogram was one of the following: family history of breast cancer, regular check-up/routine screening, age or current use of hormone replacement therapy. [‡] All jurisdictions provided data in 2008 and 2012. Mammography module was optional from 2009 to 2011; the following jurisdictions provided data in 2009: AB, NB, NS, NL and NT; 2010: AB, NB, NS, NL and NT; 2011: AB, ON, NL and NU. [E] Interpret with caution owing to large variability in estimates. * Suppressed owing to small numbers. Data source: Statistics Canada: Canadian Community Health Survey.

FIGURE 5.5

Proportion of self-reported screening mammograms[†] performed on women within and outside of the target age group in the past year, jurisdictions combined[‡] — 2008, 2012 and 2014 reporting years

Age group █ 40-49 █ 50-74 █ 75+

Year	40-49	50-74	75+
2008	30.0	64.0	6.4
2012	22.0	73.0	4.9
2014	19.1	74.0	7.2

Percent (%) 0 — 20 — 40 — 60 — 80 — 100

[†] A woman is deemed to have had a screening mammogram if her reason for undergoing a mammogram was one of the following: family history of breast cancer, regular check-up/routine screening, age or current use of hormone replacement therapy. [‡] Includes NS, NB, AB and NT. The percentage might not sum up to 100% due to rounding. Data source: Statistics Canada: Canadian Community Health Survey.

FUTURE STATE

The findings suggest that screening performed on women aged 40–49 accounts for more than 450,000 mammograms annually, out of a total of 2.6 million mammograms conducted each year (based on 2012 data for all jurisdictions).

If the number of screening mammograms performed on women aged 40–49 could be reduced by 15% per year (67,000 fewer mammograms):

7,500 women
could avoid the anxiety and additional testing brought on by false positive results, and

$6.6 million
could be redirected to other health care services.

Where should we be?

Women should be given the right information to make informed decisions about the risks and benefits of screening outside of recommended guidelines. Jurisdictions should implement polices to concentrate population screening activity (for average risk women) in the 50 to 74 year age group, and at the recommended frequency.

What does this mean for people who live in Canada?

Though screening outside of recommended target groups may be appropriate in some cases, findings suggest that some women are getting mammograms they do not need. These women may be unnecessarily exposed to the anxiety and stress caused by false positive tests, and possibly harmed by follow-up testing.[66]

How can we mobilize positive change?

Clinicians should have open conversations with their patients regarding the risks and benefits of screening mammography outside of guidelines so women can make informed decisions about whether screening is right for them.[69] Choosing Wisely Canada recommendations for screening mammography can provide a starting point for clinicians to initiate these discussions with their patients.

The proportion of mastectomies performed as day surgery has increased substantially but still varies widely across jurisdictions.

Mastectomy is one of the standard treatments for women with early-stage breast cancer and can usually be safely performed as day surgery with the proper supports.[70, 71] Studies show women who have day-surgery mastectomies likely have better physical and psychological recovery afterward and better satisfaction with their care.[72-75] Shifting mastectomy from in-patient to day surgery would reduce health system costs and free up in-patient hospital beds for other users.

- The percentage of mastectomies performed as day surgery has increased from 20.6% in 2008 to 34.0% in 2015 for all reporting provinces (Figure 5.6).[p]

- Rates varied considerably across the country, ranging from 1.7% in Saskatchewan to 65.5% in New Brunswick (Figure 5.7).

Rates varied considerably by province, ranging from:

1.7%   TO   **65.5%**
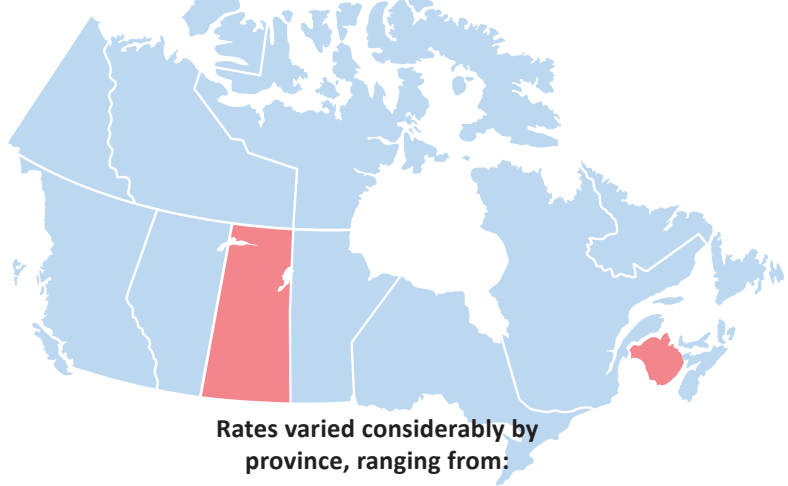
SK   NB

FIGURE 5.6

Percentage of breast cancer mastectomies done as day surgery, provinces combined[†] — 2008/09-2015/16 fiscal years

[†] Includes BC, AB, MB, ON, NB, NS and NL. Data sources: Alberta Health and Wellness: Alberta Ambulatory Care Reporting System; Canadian Institute for Health Information: Hospital Morbidity Database, National Ambulatory Care Reporting System.

2008/09	2009/10	2010/11	2011/12	2012/13	2013/14	2014/15	2015/16
20.6%	21.7%	21.7%	24.2%	27.1%	30.9%	31.6%	34.0%

FIGURE 5.7

Percentage of mastectomies done as day surgery, by jurisdiction — 2014/15–2015/16 fiscal years combined

[*] Suppressed owing to small numbers. "—" Data not available. SK, Territories: includes data for 2014. TR: territories combined. Data sources: Alberta Health and Wellness: Alberta Ambulatory Care Reporting System; Canadian Institute for Health Information: Hospital Morbidity Database, National Ambulatory Care Reporting System.
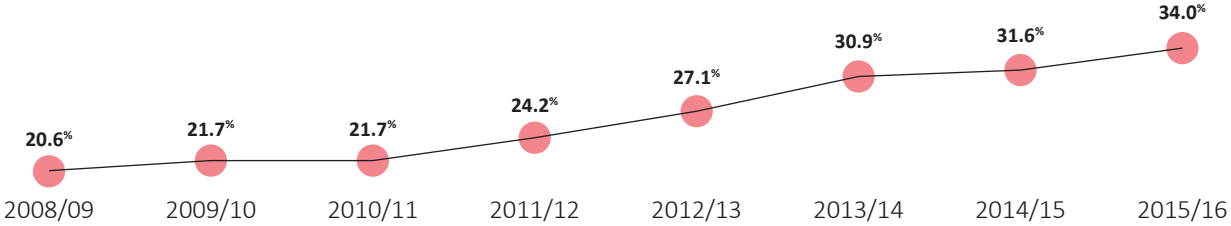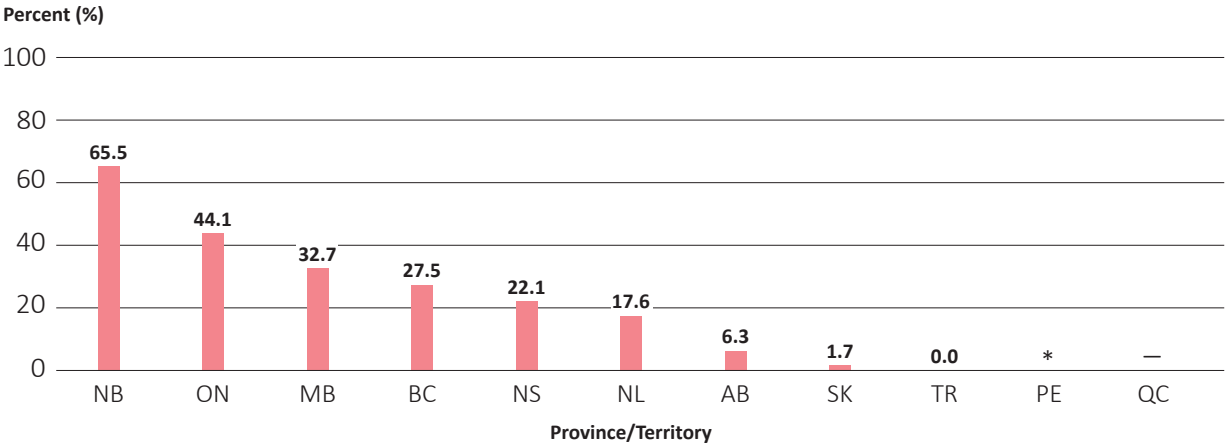
[p] Jurisdictions in this trend include BC, AB, MB, ON, NB, NS, NL, which represent 73% of the Canadian population.

Percent (%)

Province/Territory	Percent (%)
NB	65.5
ON	44.1
MB	32.7
BC	27.5
NS	22.1
NL	17.6
AB	6.3
SK	1.7
TR	0.0
PE	*
QC	—

Province/Territory

Where should we be?

Regardless of where they live, women with breast cancer should be able to have a mastectomy performed as day surgery, so they can recover at home and avoid an overnight stay in hospital.

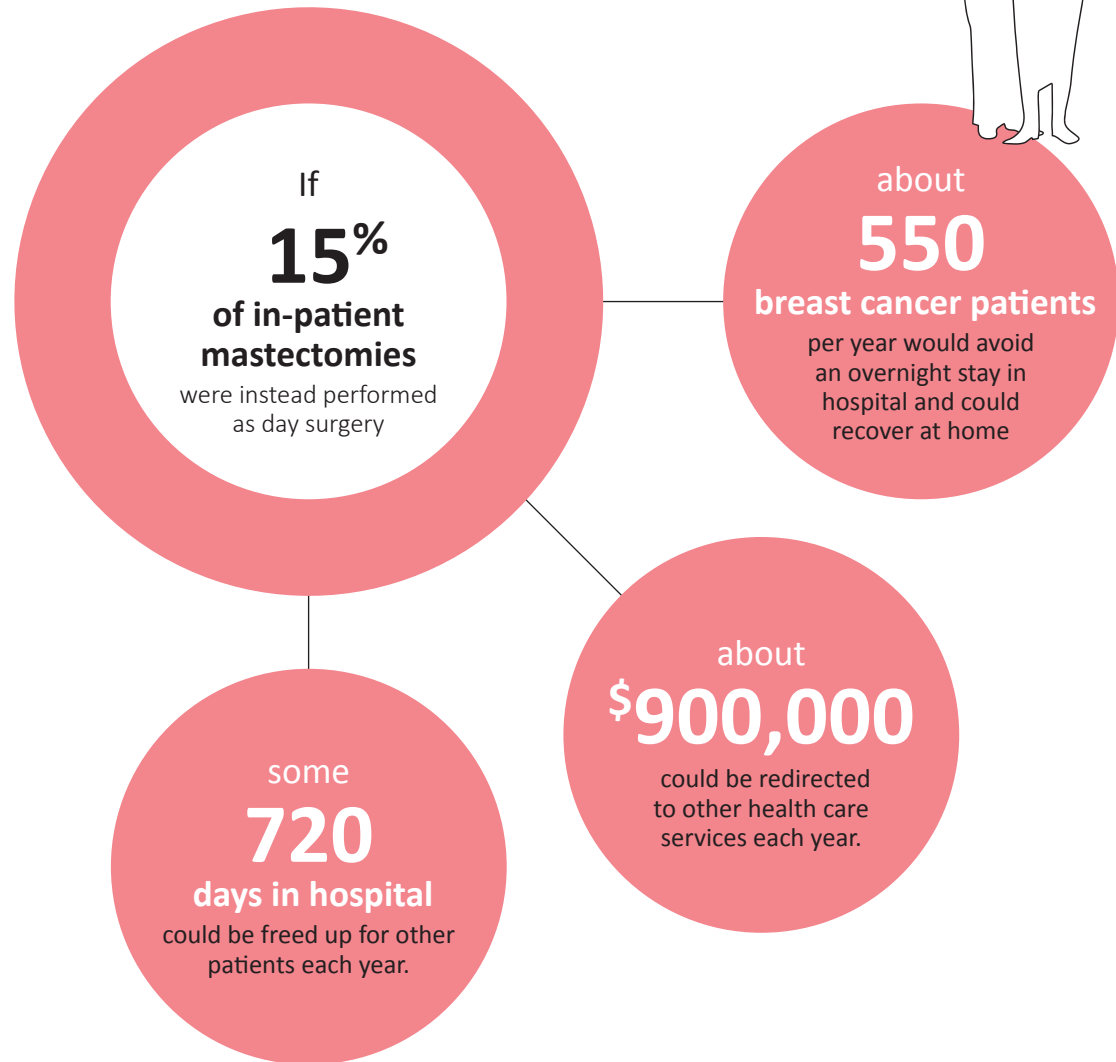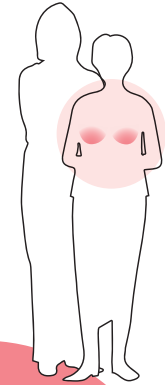## What does this mean for patients with cancer?

Patients who have mastectomies as day surgery are more likely to have better psychological outcomes after surgery and are more satisfied with their care. [72-75]

How can we mobilize positive change?

Health system administrators need to ensure that the appropriate out-patient, community and home care resources are in place to provide post-surgical recovery support for those who have a mastectomy done as day surgery.

FUTURE STATE

Over 10,000 mastectomies were performed in 2014/15 and 2015/16 combined; 68% were done as in-patient procedures, which represents approximately 7,300 surgeries.

If
15%
of in-patient mastectomies
were instead performed as day surgery

about
550
breast cancer patients
per year would avoid an overnight stay in hospital and could recover at home

some
720
days in hospital
could be freed up for other patients each year.

about
$900,000
could be redirected to other health care services each year.

The proportion of cancer patients that were admitted to an intensive care unit in the last 14 days of life has changed little over the years.

People dying of cancer deserve care that helps alleviate their physical symptoms, addresses their emotional and psychosocial needs, and provides a setting that is supportive, comfortable and minimally disruptive. While some cancer patients require the life-sustaining therapy offered in an intensive care unit (ICU), it is not the ideal setting for quality end-of-life care, which should include palliative care and symptom control.[76]

- The use of ICUs in the last 14 days of life changed little from 2011 to 2015 in Canada (Figure 5.8).[q]

- The percentage of cancer patients admitted to an ICU in the last 14 days of life ranged from 6.4% in Nova Scotia to 17.9% in all the territories combined (Figure 5.9).

[q] All jurisdictions (except Quebec) are included in this trend and represent 77.1% of the Canadian population.
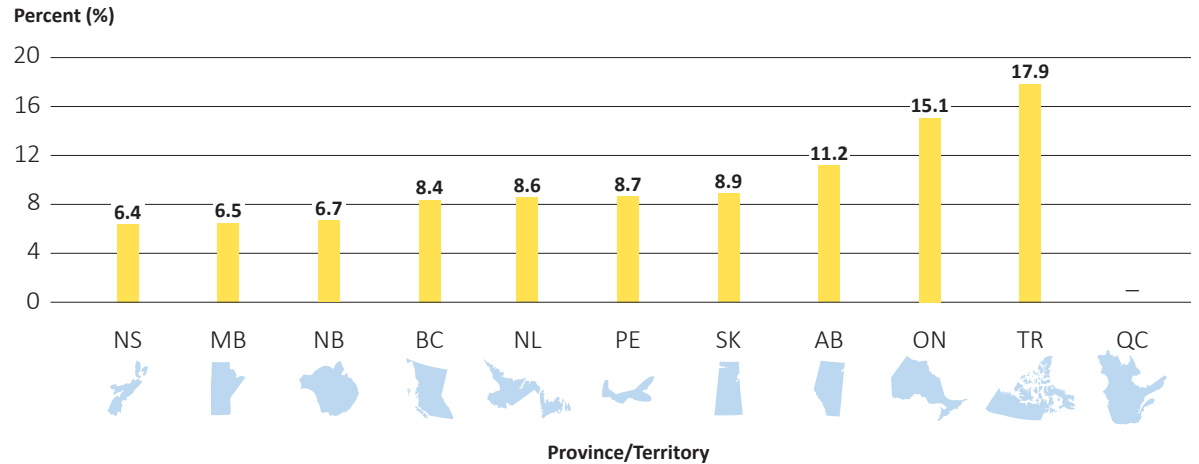
FIGURE 5.8

Percentage of cancer patients that died in an acute care hospital and were admitted to an intensive care unit in the last 14 days of life, Canada — 2011/12 to 2015/16 fiscal years

| 10.5% | 11.4% | 11.7% | 11.2% | 11.9% |
| 2011/12 | 2012/13 | 2013/14 | 2014/15 | 2015/16 |
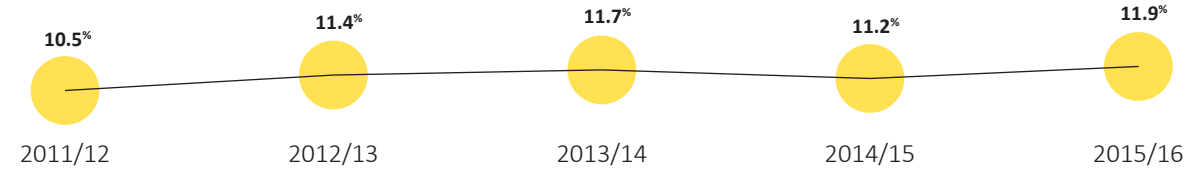
Includes all provinces and territories except QC. Includes only facilities that reported intensive care unit data.
Data source: Canadian Institute for Health Information: Discharge Abstract Database.

FIGURE 5.9

Percentage of cancer patients that died in an acute care hospital and were admitted to intensive care units in the last 14 days of life, by jurisdiction — 2014/15 and 2015/16 fiscal years combined

Percent (%)

NS	MB	NB	BC	NL	PE	SK	AB	ON	TR	QC
6.4	6.5	6.7	8.4	8.6	8.7	8.9	11.2	15.1	17.9	—

Province/Territory

"—" Data not available. TR: territories combined. Includes only facilities that reported intensive care unit data.
Data based on patient's place of residence. Data source: Canadian Institute for Health Information: Discharge Abstract Database.

Where should we be?

Only patients requiring life-sustaining care should be in an ICU; in most other cases, patients near the end of life should receive supportive care in an appropriate palliative care setting that offers comprehensive symptom management and support for patients and their families.

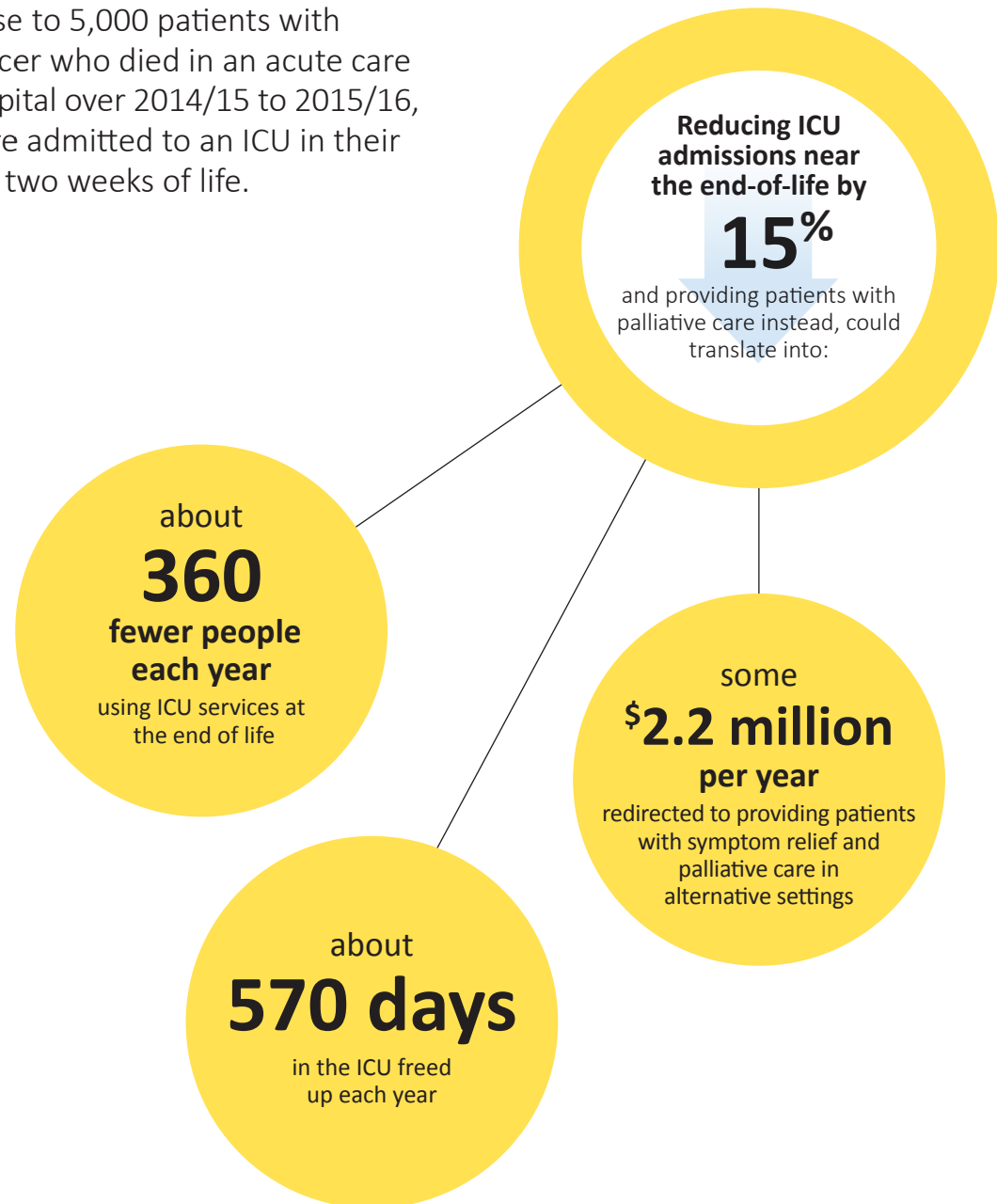## What does this mean for patients with cancer?

Many ICU visits at the end of life provide limited or no health benefits for patients and in some cases can even be harmful.[77] Patients who receive palliative care and advanced care planning are less likely to be admitted to the ICU, which is associated with a more positive experience for patients near the end of life.[78-80]

How can we mobilize positive change?

Provincial and territorial governments should ensure that adequate community-based, multidisciplinary palliative care services are available at home, in hospices and in long-term care facilities. The Partnership and the Canadian Foundation for Healthcare Improvement (CFHI) are collaborating on an initiative to support provincial health authorities and organizations to train paramedics in providing palliative and end-of-life care to people in their homes. This initiative will allow more Canadians to receive this type of care at home and potentially avoid more trips to the hospital.

FUTURE STATE

Close to 5,000 patients with cancer who died in an acute care hospital over 2014/15 to 2015/16, were admitted to an ICU in their last two weeks of life.

Reducing ICU admissions near the end-of-life by

15%

and providing patients with palliative care instead, could translate into:

about
360
fewer people
each year
using ICU services at the end of life

some
$2.2 million
per year
redirected to providing patients with symptom relief and palliative care in alternative settings

about
570 days
in the ICU freed up each year

Maximizing Data Impact

Major progress has been made in enhancing and expanding the use of cancer system data. High quality data—from all jurisdictions—is vital for tracking our progress on improving care and meeting future goals for the health of Canadians. However, there are still areas where we need to broaden the scope and improve the availability of population health and cancer system data. Some of the challenges around data are:

- data being held in separate and unlinked datasets
- lack of comparable data between jurisdictions
- missing or incomplete information on key aspects of cancer care

- little to no information on underserved populations including the experiences of Indigenous people
- limited access to key datasets for monitoring and quality improvement

The Partnership is committed to collaborating with partners across the country as part of the pan-Canadian Maximizing Data Impact Strategy. This would complement the upcoming refreshed Canadian Strategy for Cancer Control and provide the measurement and evaluation platform for its goals and priorities.

Linkage of the Canadian Cancer Registry

The Social Data Linkage Environment (SDLE) is a highly secure environment at Statistics Canada that promotes the innovative use of administrative and survey databases through record-level linkage. The Partnership collaborated with Statistics Canada to link the Canadian Cancer Registry with key datasets containing socioeconomic and sociodemographic information, which will allow researchers to investigate the relationship between social determinants of health, cancer outcomes and treatment patterns.

The System Performance Initiative will use the linked datasets from the SDLE to explore the extent to which income, education, immigrant status and ethnicity can affect disparities in cancer diagnosis, treatment patterns and outcomes in Canada in coming knowledge products.

CANADIAN PARTNERSHIP AGAINST CANCER

The Maximizing Data Impact Strategy's calls to action:

1

Increasing data completeness and comparability

- **Data custodians** and **standard setters** need to implement processes to ensure comparability of and consistency in health system data.
- **Health system administrators** should ensure data collected is complete and represents all jurisdictions, is consistent with standards, and where relevant, is submitted to national datasets to enable comparisons across jurisdictions.

2

Adding new data elements to existing datasets and collecting new data

Health system administrators should expand the scope of data collected in or linked to registries to include:

- Information on all key cancer interventions including radiation and chemotherapy.
- Information on under-measured domains of cancer control, including community and primary care, patient reported experiences and outcomes, and survivorship.

3

Linking to non-cancer datasets

Provincial cancer agencies, provincial and territorial governments and **national health data custodians** should work to link the cancer registries to other datasets that help us better understand cancer populations and their needs —particularly key sociodemographic data—to leverage the full potential of data available.

4

Increasing Indigenous peoples data

Provincial and territorial governments and **national health data partners** should follow First Nations Ownership, Control, Access and Possession principles and Inuit and Métis research and data collection guidelines when considering Indigenous data collection. Appropriate engagement with First Nations, Inuit and Métis communities, which aligns with the Truth and Reconciliation Commission's Calls to Action, is required to co-develop culturally safe approaches for identifying Indigenous peoples in health data systems, to better understand and improve the cancer experience and outcomes of Indigenous peoples.

5

Reducing barriers and increasing accessibility

- **Data custodians** should implement changes to data access protocols that lead to a better balance between privacy considerations and the need to open up access to data so qualified individuals and organizations with legitimate questions can use it.
- **Stewards of Canadian health data** should facilitate the development and promotion of front-end tools and processes that make it easier to analyze and interpret data.

In time, these changes will have the following impact:

Researchers, policy makers, practitioners and other health system decision-makers will have access to comprehensive, valid and reliable data on all important aspects of cancer control essential for practice, policy and planning. This will help to promote and reinforce a culture of measurement, routine use of data in decision-making and continuous performance improvement.

Moving Forward

The system performance indicators in this report help describe the *quality, equity, person-centredness* and *sustainability* of cancer control systems in Canada.

By examining where progress has been made, how practices vary across jurisdictions and where we can improve cancer control systems, we are better able to decide where to focus measurement in the future and to find new opportunities for sharing promising practices.

Continuous quality improvement in the cancer control system requires high-quality data. With the renewal of the *Canadian Strategy for Cancer Control* underway, this is an ideal time to revisit what performance data we collect and how we use it. Data is essential for decision making, aligning what we measure with jurisdictional priorities and for developing the information we need to create positive change across the cancer system. The Partnership is undertaking several activities, in collaboration with organizations across the country, to ensure high-quality, comprehensive cancer data is available. These activities include:

- Refreshing system performance measurement and reporting by reviewing and identifying which topics and indicators we should report, as well as new data sources, strategies for collecting data, and opportunities to enhance reporting. Our goal is to support quality improvement with more and better data.

- Working with provincial, territorial and national partners to expand cancer system performance data through improved access to key administrative and social data sets. At the same time, we will enhance or develop tools and strategies to share data and best practices. For example, the Partnership is collaborating with Statistics Canada to expand the measurement of access to cancer control services, survival and death by various socio-demographic criteria though Statistics Canada's new social data linkage environment, which will enable analysis of disparities in cancer control using data at the individual level, which has never before been possible.

- Evaluating recent system performance work to determine if the Partnership's approach to presenting and visualizing system performance data is meeting the needs of our audiences, with the goal of increasing the reach and use of performance data to improve the system.

Canada has established itself as a world leader in measuring the performance of its cancer system to identify gaps in quality and drive improvement. Continuous evolution of system performance reporting, the breadth and depth of data collected and analyzed, and more effective ways to present and communicate results will ensure that jurisdictions across the country have the evidence they need to accomplish the goals of the *Canadian Strategy for Cancer Control:* fewer Canadians develop cancer, fewer die from cancer, and those affected by cancer have a better quality of life.

Summary of Indicator Results

● Top Third (highest performance) ● Middle Third ● Bottom Third (lowest performance)

Indicator	BC	AB	SK	MB	ON	QC	NB	NS	PE	NL	YT	NT	NU	TR†	Pg #	Data source
Burden of Cancer in Canada																
Stage IV prostate cancer incidence rate (per 100,000 men) – 2015 diagnosis year¥	19.1	21.2	28.3	25.6	17.5	–	16.0	18.7	14.0	14.3	–	–	–	–	–	PCA
Stage IV breast cancer incidence rate (per 100,000 women) – 2015 diagnosis year¥	7.5	9.6	13.7	9.9	8.4	–	8.0	11.4	11.5	12.6	–	–	–	–	14	PCA
Stage IV lung cancer incidence rate (per 100,000) – 2015 diagnosis year¥	38.0	39.7	45.0	41.2	32.8	–	40.0	49.2	43.3	42.8	–	–	–	–	14	PCA
Stage IV colorectal cancer incidence rate (per 100,000) – 2015 diagnosis year¥	12.8	14.4	20.0	16.2	11.5	–	16.0	20.2	12.1	20.8	–	–	–	–	14	PCA
Quality																
Participation rate in breast cancer screening programs (%) – 2014 screening year¶	54.4	58.0	43.3	54.1	49.1	62.3	60.1	55.2	59.7	36.6	–	31.8			18	BCSP
Participation rate in colorectal cancer screening programs in a 30-month period (%) – 2013-14 screening years combined¶, ᴨ	–	41.8	53.0	16.9	–	–	–	25.8	20.4	8.6	–	25.0	–		18	CRCSP
Women aged 21-69 reporting at least one Pap test in 42-month period (%) – 2010-13 screening years‡, §, ¶	73.8	67.7	62.9	70.8	64.9	–	64.5	67.2	67.4	71.3	–	67.2			18	CCSP
Removal and examination of 12 or more lymph nodes in colon resections (%) – 2014 diagnosis year	–	79.0	75.2	91.0	88.1	–	84.4	71.4	73.5	89.5	–	–			20	PCA
Preoperative radiation therapy for Stage II or III rectal cancer (%) – 2014 diagnosis year	–	53.6	–	57.3	–	–	52.5	56.1	64.7	52.8	–	–			22	PCA
Post-operative chemotherapy for Stage II or IIIA non-small cell lung cancer (%) – 2014 diagnosis year	–	36.6	41.5	44.7	51.3	–	–	39.0	*	18.9	–	–	–	–	23	PCA
Adult clinical trial participation (ratio) – 2015 enrolment year	0.039	0.058	0.017	0.015	0.058	–	0.009	–	0.006	0.004	–	–	–	–	24	CCS, PCA
Equity																
Lung cancer incidence rate (per 100,000) – 2014 diagnosis year£	60.7	67.6	67.0	73.9	61.0	86.8	86.2	86.8	90.2	79.3	54.4	86.7	160.2	–	29	CCR
Smoking prevalence, overall (%) – 2015-16 reporting years combined	14.1	18.4	19.8	18.8	16.7	18.4	18.2	19.3	15.1	21.6	24.5	34.0	62.1		29	CCHS
Colorectal cancer incidence rate (per 100,000) – 2014 diagnosis year£	63.5	62.7	72.1	62.9	55.0	68.4	60.6	70.5	77.3	94.9	56.7	95.4	86.9	–	31	CCR
Adults classified as overweight or obese (%) – 2015-16 reporting years combined	56.8	65.1	69.7	64.6	61.4	60.7	73.1	69.4	70.8	73.0	67.4	72.6	62.4		31	CCHS
Adults who are not meeting Canadian physical activity guidelines (%) – 2015-16 reporting years combined	34.3	40.3	45.0	46.0	42.6	45.1	50.3	43.5	46.6	50.2	31.8	38.7	44.7	–	31	CCHS
People not consuming enough fruits and vegetables (%) – 2015-16 reporting years combined	69.2	70.0	71.8	72.7	72.2	61.4	73.0	75.9	71.2	79.6	71.5	75.1	74.8	–	31	CCHS
Adults who are drinking excess of Canada's low-risk alcohol guideline (%) – 2015-16 reporting years combined	8.5	8.4	7.5	7.7	7.8	9.7	7.2	8.0	7.6	8.7	11.7	16.2	8.0	–	31	CCHS

"—" Data not available. * Suppressed owing to small numbers † Territories combined. ¥ Stage IV incidence data may be underestimated as all jurisdictions have cases where staging information is unknown or unavailable. ¶ NT: Organized breast cancer screening is only available to 50% of the eligible population. There are no organized screening programs for colorectal or cervical cancers in NT. ᴨ In 2013-14, the colorectal cancer screening program was in early stages of implementation in NL. ‡ NB and ON include data from January 2011 to June 2014, while other provinces include data from January 2010 to June 2013. § Participation rate in cervical screening program from ON, MB and BC were hysterectomy-corrected, rates from other provinces were non-hysterectomy-corrected. £ For QC: Cancer incidence data are not available for diagnosis years after 2010. The 2010 Quebec incidence and population data have been copied forward to 2011, 2012 and 2013 for the calculation.

Data sources:
BCSP: Provincial and territorial breast cancer screening programs
CCHS: Statistics Canada, Canadian Community Health Survey
CCR: Statistics Canada, Canadian Cancer Registry
CCS: Canadian Cancer Society, Canadian Cancer Statistics

CCSP: Provincial and territorial cervical cancer screening programs
CIHI: Canadian Institute for Health Information
CRCSP: Provincial and territorial colorectal cancer screening programs and registries

Immunization programs: Provincial and territorial immunization programs
PCA: Provincial cancer agencies and programs
VSD: Statistics Canada, Vital Statistics Death Database

● Top Third (highest performance)   ● Middle Third   ● Bottom Third (lowest performance)

Indicator	BC	AB	SK	MB	ON	QC	NB	NS	PE	NL	YT	NT	NU	TR†	Pg #	Data source
Seamlessness																
Breast cancer diagnosis within 5 weeks (no biopsy, %) – 2015 screening year	80.1	95.3	94.9	89.1	94.7	72.3	71.8	80.8	73.4	77.0	—	72.2	—	—	35	BCSP
Breast cancer diagnosis wait time (no biopsy), 90th percentile (weeks) – 2015 screening year	8.0	3.4	3.9	5.4	4.0	9.0	6.9	6.4	6.6	11.0	—	7.0	—	—	35	BCSP
Breast cancer diagnosis within 7 weeks (biopsy, %) – 2015 screening year	62.6	85.0	81.2	69.6	80.1	45.5	61.4	73.3	42.1	55.2	—	70.6	—	—	35	BCSP
Breast cancer diagnosis wait time (biopsy), 90th percentile (weeks) – 2015 screening year	14.0	7.6	11.1	13.9	9.9	16.7	11.0	11.0	11.1	22.0	—	9.0	—	—	35	BCSP
Colorectal cancer patients with an abnormal fecal test who received a follow-up colonoscopy within 60 days (%) – 2015 screening year	46.2	46.3	54.8	32.2	60.2	—	76.4	43.6	28.8	67.4	—	—	—	—	36	CRCSP
Colorectal cancer diagnosis wait time from abnormal fecal test result to follow-up colonoscopy, 90th percentile (days) – 2015 screening year	139	129	117	119	113	—	81	117	143	88	—	—	—	—	36	CRCSP
Colorectal cancer diagnosis wait time from follow-up colonoscopy to definitive diagnosis, 90th percentile (days) – 2015 screening year	9	—	36	20	—	—	8	19	6	21	—	—	—	—	36	CRCSP
Place of death within hospital (%) – 2013 reporting year	48.6	64.3	65.8	87.8	61.5	75.5	77.2	70.1	62.2	79.1	—	—	—	54.5	40	VSD
Sustainability																
Smoking prevalence, daily (%) – 2015-16 reporting years combined	9.1	12.9	15.3	13.4	11.9	13.2	13.7	15.2	11.1	17.9	17.3	25.6	53.6	—	46	CCHS
Smoking prevalence, occasionally (%) – 2015-16 reporting years combined	5.0	5.5	4.6	5.4	4.8	5.2	4.5	4.1	4.0	3.8	7.2	8.4	8.5	—	46	CCHS
Human papillomavirus vaccination uptake, full course (%) – 2015/16 or 2016/17 school year	66.5	66.7	61.4	62.2	61.0	76.0	74.7	80.8	84.3	92.0	66.5	55.0	—	—	48	Immunization programs
Breast cancer screening mammograms performed on average-risk women aged 40-49 (%) – 2008-12 reporting years combined	25.9	27.5	14.7	7.0	18.3	11.9	17.6	27.4	26.9	26.9	*	27.6	*	—	49	CCHS
Breast cancer mastectomies as day surgery (%) – 2014/15-2015/16 fiscal years combined	27.5	6.3	1.7	32.7	44.1	—	65.5	22.1	*	17.6	—	—	—	0.0	51	CIHI
Admission to intensive care unit in the last 2 weeks of life (%) – 2014/15-2015/16 fiscal years combined	8.4	11.2	8.9	6.5	15.1	—	6.7	6.4	8.7	8.6	—	—	—	17.9	53	CIHI
Other																
Use of breast conserving surgery over mastectomy for breast cancer resections (%) – 2014/15-2015/16 fiscal years combined	57.3	54.0	47.4	66.7	67.0	—	57.9	60.9	66.7	34.0	—	—	—	47.3	—	CIHI

"—" Data not available. * Suppressed owing to small numbers † Territories combined. ‡ Stage IV incidence data may be underestimated as all jurisdictions have cases where staging information is unknown or unavailable. ¶ NT: Organized breast cancer screening is only available to 50% of the eligible population. There are no organized screening programs for colorectal or cervical cancers in NT. ⁑ In 2013-14, the colorectal cancer screening program was in early stages of implementation in NL. ‡ NB and ON include data from January 2011 to June 2014, while other provinces include data from January 2010 to June 2013. § Participation rate in cervical screening program from ON, MB and BC were hysterectomy-corrected, rates from other provinces were non-hysterectomy-corrected. £ For QC: Cancer incidence data are not available for diagnosis years after 2010. The 2010 Quebec incidence and population data have been copied forward to 2011, 2012 and 2013 for the calculation.

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