


# Queensland Cancer Quality Index

Indicators of safe, quality cancer care

Cancer care in public and private hospitals

2006-2020

 **cancer alliance**  
queensland

the  
**Partnership**  
between Queensland Health  
and quality partners

**qccat**  
Queensland Cancer  
Clinical Audit Team

**qcr**  
Queensland  
Cancer Registry



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Queensland State Committee of The Royal Australasian College of Surgeons (RACS), formed in 1927, is a non-profit organisation training surgeons and maintaining surgical standards in Australia and New Zealand.



Founded in 1935, The Royal Australian and New Zealand College of Radiologists (RANZCR) is a not-for-profit professional organisation for clinical radiologists and radiation oncologists in Australia.



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# What is the Queensland Cancer Quality Index (The Cancer Index)?

The Cancer Index report has been developed for public and private cancer services. It is an initiative of the Cancer Alliance Queensland which brings together the Cancer Control Safety and Quality Partnership (The Partnership), Queensland Cancer Control Analysis Team (QCCAT) and the Queensland Cancer Register (QCR)(<https://cancerallianceqld.health.qld.gov.au>). The report tracks Queensland's progress towards delivering safe, quality cancer care and will be provided to all relevant public and private hospitals. The Cancer Index highlights areas for improvement and identifies the areas where cancer services are performing well.

The Cancer Index has five dimensions and multiple indicators developed by Cancer Alliance Queensland in partnership with the clinical subcommittees. (Walpole, Theile, Philpot et al. 2019).<sup>18</sup>

Quality Dimension	Description
1   Effective	Achieving the best outcomes for Queenslanders with cancer
2   Efficient	Optimally using resources to achieve desired outcomes
3   Safe	Avoiding and preventing adverse outcomes or injuries caused by healthcare management
4   Accessible	Making health services available in the most suitable setting in a reasonable time
5   Equitable	Providing care and ensuring health status does not vary in quality because of personal characteristics

This version of The Cancer Index has been expanded to include breast, colorectal, CNS and brain, gynaecological, hepatobiliary, lung, prostate, upper GI and urological cancers. The Cancer Index now includes indicators about surgery and radiation therapy, intravenous systemic therapy with other dimensions of care. Additional dimensions and indicators will be added in response to clinician, hospital, HHS, Queensland Health and community feedback.

The Cancer Index reports on available data released for publication annually, however there may have been changes more recently that are not captured by the time periods reported. Regardless, The Cancer Index provides an important tool for monitoring current investments in cancer care and changes in clinical practice. It also enables us to reflect on past improvement programs and identify areas where a renewed effort or new approach may be required.

## Why develop the Cancer Index?

Performance indicators linked to clinical outcomes that align with national benchmarking is a key service action in the Cancer Care State-wide Health Service Strategy, 2014<sup>17</sup>. The Cancer Index has been developed by the Cancer Alliance Queensland, lead clinicians and relevant persons under the auspices of the Queensland Cancer Control Safety and Quality Partnership (The Partnership). The Cancer Alliance Queensland supports a clinician-led, safety and quality program for cancer across Queensland. The Partnership was gazetted as a quality assurance committee under Part 6, Division 1 of the Hospital and Health Boards Act 2011 in 2004. A key role of The Partnership is to provide cancer clinicians, Hospital and Health Services (HHS), public and private hospitals, public and private treatment facilities and Queensland Health with cancer information and tools to deliver the best patient care.

## Where has the data come from?

Since 2004 the Queensland Cancer Control Analysis Team (QCCAT), a sub-committee of the Partnership have compiled and analysed a vast amount of information about cancer incidence, mortality, treatment, and survival. Key to QCCAT's program of work is the ability to match and link population-based cancer information on an individual patient basis. This matched and linked data is housed in the Queensland Oncology Repository (QOR), a resource managed by QCCAT. This centralised repository compiles and collates data from a range of source systems including the Queensland Cancer Register, private and public hospital admissions data, death data, treatment systems, public and private pathology, hospital clinical data systems and QOOL. QOR contains millions records from 1982 onwards. Our matching and linking processes provide matched and linked records of cancer patients from 1982 onwards which provide the data for The Queensland Cancer Quality Index.

For further information on data sources and methods refer to [The Cancer Index Technical Appendix](#).

# How to interpret this report

The Cancer Index should be interpreted in the context of the previous publications by The Partnership. To access previous publication, go to <https://cancerallianceqld.health.qld.gov.au/publications>. These publications provide information on cancer incidence, mortality and survival, surgery, radiation therapy, and intravenous systemic therapy rates and patient flows which is important information for understanding the indicators reported in The Cancer Index.

Many of the indicators have been statistically adjusted for age and sex. This is done to account for any changes in who is being diagnosed with cancer. For example, the introduction or expansion of a screening program may increase the number of cancers being diagnosed in some age groups within the population.

Rather than focus on differences in rates, it would be of more benefit to focus on changes over time and variations in outcomes between different sectors of the population and determine whether these are in line with clinician, patient or community expectations.

Descriptions of all terms and definitions can be found in the glossary section.


## Looking to the future


The Cancer Index provides baseline measurements for the on-going monitoring of the quality of cancer care in Queensland. The Partnership will continue to seek feedback from cancer services, Queensland Health and the community on The Cancer Index. They will lead the development and reporting of quality indicators for other aspects of cancer management and outcomes which will be included in future versions.

# What does the Cancer Index tell us about cancer in Queensland?

The Cancer Index is a first for Queensland. This fifth edition reports on data spanning 15 years of cancer care and highlights where the health system has performed well and where improvements are possible.

<p>1   Effective </p>	<p>Cancer survival compares favourably with the rest of Australia.</p> <p>Most patients receive treatment for their cancer.</p>
<p>2   Efficient </p>	<p>For most cancers there is little difference in the length of hospital stay between public and private patients receiving cancer surgery.</p> <p>Across several cancers the median length of hospital stay has been reducing over time.</p>
<p>3   Safe </p>	<p>For the majority of cancers, surgical mortality rates in Queensland are lower than or comparable to national or international published data.</p>
<p>4   Accessible </p>	<p>Public patients waited longer for their first cancer treatment than private patients.</p> <p>Across most cancers, the proportion of rural, remote and regional patients receiving treatment within 30 days of diagnosis was significantly lower compared to metropolitan patients.</p>
<p>5   Equitable </p>	<p>Age is not a barrier to receiving first cancer treatment within 30 days.</p> <p>There is little difference in rates of receiving treatment within 30 days of diagnosis between First Nations patients treated in any hospital and non First Nations patients treated in a public hospital.</p> <p>There is a wide gap in waiting for treatment between patients of socioeconomic disadvantage compared to other groups.</p>

 Excellent

 Very good

 Good

 Fair

 Poor



# 1 | Effective

Achieving the best outcomes for Queenslanders with cancer.



# 1.1 | Survival

## What percentage of people with cancer are living 5 years after diagnosis?<sup>§</sup>

<b>Relative Survival</b> (% of people who would have survived if cancer was the only cause of death)		Queensland			Australia <sup>19</sup>
Cancer group	Cancer	2006-2010 5 Year Survival	2011-2015 5 Year Survival	2016-2020 5 Year Survival	2014-2018 5 Year Survival
Breast	Breast	90%	91%	93%	92%
Colorectal	Colorectal	68%	71%	71%	71%
	Colon	68%	71%	71%	71%
	Rectal	69%	72%	73%	71%
CNS and brain	Brain	23%	22%	26%	23%
Gynaecological	Cervical	75%	74%	77%	74%
	Ovarian	48%	49%	49%	48%
	Uterine	85%	84%	84%	83%
	Vulva	74%	75%	73%	74%
Head and neck	Head and neck	70%	72%	72%	72%
	Hypopharynx	31%	40%	39%	39%
	Larynx	65%	67%	66%	65%
	Major Salivary Glands	79%	83%	87%	78%
	Nasal Cavity and Paranasal Sinuses	67%	62%	59%	70%
	Nasopharynx	65%	63%	65%	67%
	Oral Cavity	68%	63%	68%	**
	Oropharynx	61%	70%	73%	72%
	Other Pharynx	36%	50%	55%	**
Hepatobiliary	Biliary tract*	5%	2%	2%	**
	Liver	18%	19%	24%	22%
	Pancreatic	7%	10%	13%	12%
Lung	Lung	14%	18%	26%	22%
	Non-small cell lung	14%	18%	29%	**
Prostate	Prostate	93%	94%	95%	96%
Upper GI	Gastric	37%	41%	46%	37%
	Oesophagus	19%	27%	29%	23%
Urological	Bladder	54%	54%	58%	56%
	Testicular	98%	98%	97%	97%

Relative survival was calculated using the Ederer II method, and the period approach was used. Relative survival was calculated for all persons aged 0-89 at diagnosis.

\* Biliary tract (not incl Bile Ducts and Vater C240-C241).

\*\* National comparative data not available.

§ Head and neck (not incl External lip C000-C002).

## 1.2 | Queenslanders receiving Multidisciplinary Team review

Multidisciplinary care and formal Multidisciplinary team review (MDT) are considered best practice in the treatment planning and care for patients with cancer<sup>16</sup>.

### How many Queenslanders with cancer receive multidisciplinary team (MDT) review during their cancer management?

MDT Review (Number of patients who had MDT documented)		Queensland		
Cancer group	Cancer	2006-2010 MDT number (rate)	2011-2015 MDT number (rate)	2016-2020 MDT number (rate)
Breast	Breast	1,991 (15%)	6,153 (39%)	7,799 (43%)
Colorectal	Colon	830 (9%)	2,926 (29%)	3,852 (35%)
	Rectal	517 (12%)	1,841 (39%)	2,085 (43%)
CNS and brain	Brain	209 (14%)	728 (47%)	964 (54%)
Gynaecological	Cervical	34 (4%)	228 (24%)	143 (13%)
	Ovarian	39 (3%)	241 (18%)	132 (10%)
	Uterine	75 (4%)	429 (18%)	191 (7%)
	Vulva	21 (8%)	87 (25%)	37 (9%)
Head and neck	Head and neck	959 (31%)	2,910 (81%)	3,921 (91%)
	Hypopharynx	73 (41%)	178 (80%)	203 (92%)
	Larynx	172 (29%)	441 (76%)	541 (90%)
	Major salivary glands	55 (24%)	171 (72%)	235 (86%)
	Nasal cavity and paranasal sinuses	43 (35%)	123 (81%)	186 (92%)
	Nasopharynx	23 (26%)	80 (81%)	112 (90%)
	Oral cavity	308 (32%)	788 (81%)	1,091 (88%)
	Oropharynx	261 (33%)	1,085 (85%)	1,522 (94%)
	Other pharynx	24 (25%)	44 (76%)	31 (82%)
	Hepatobiliary	Liver	76 (7%)	392 (26%)
Pancreatic, biliary tract & duodenal		165 (7%)	631 (21%)	1,247 (32%)
Lung	Non-small cell lung	3,649 (45%)	4,929 (55%)	6,623 (62%)
Prostate	Prostate	524 (3%)	1,314 (6%)	2,622 (12%)
Upper GI	Oesophagogastric	434 (14%)	1,469 (42%)	1,946 (49%)
	Bladder	63 (3%)	264 (11%)	530 (20%)
Urological	Bladder	63 (3%)	264 (11%)	530 (20%)
	Testicular	43 (6%)	132 (17%)	329 (36%)

Rates have been adjusted for age and sex. MDT rates includes facilities that use QOOL, or Townsville ROIS, or lung cancer conference at PA Hospital. QOOL supports cancer multidisciplinary teams by assisting with meeting preparation, communication, and documentation of essential clinical information such as diagnosis, cancer stage and recommended treatment plans. QOOL provides continuity of care and state-wide multidisciplinary team linkage and provides access to clinical outcomes and system performance data for quality improvement. The web based system provides a central view of patient data for multiple users, accessible at multiple locations.

# 1.3 | Queenslanders receiving cancer surgery

## How many Queenslanders with cancer receive surgery?

Surgery number (Number of cancer patients receiving surgery)			Queensland		
Cancer group	Cancer	Surgery type	2006-2010 Surgery number (rate)	2011-2015 Surgery number (rate)	2016-2020 Surgery number (rate)
Breast	Breast	Breast cancer surgery	12,186 (91%)	14,412 (91%)	16,146 (90%)
Colorectal	Colon	Major resection	7,557 (80%)	7,864 (78%)	8,198 (76%)
	Rectal	Major resection	3,141 (71%)	3,188 (67%)	2,856 (59%)
CNS and brain	Brain	Major resection	1,214 (83%)	1,300 (83%)	1,487 (83%)
Gynaecological	Cervical	Major resection	290 (36%)	337 (35%)	408 (37%)
	Ovarian	Major resection	741 (65%)	920 (68%)	879 (64%)
	Uterine	Major resection	1,786 (92%)	2,123 (90%)	2,323 (85%)
	Vulva	Major resection	197 (78%)	258 (74%)	278 (70%)
Head and neck	Head and neck	Major resection	1,788 (58%)	1,964 (55%)	2,253 (52%)
	Hypopharynx	Major resection	83 (46%)	98 (44%)	76 (35%)
	Larynx	Major resection	345 (58%)	335 (58%)	317 (52%)
	Major salivary glands	Major resection	195 (86%)	214 (90%)	239 (87%)
	Nasal cavity and paranasal sinuses	Major resection	81 (66%)	98 (65%)	134 (66%)
	Nasopharynx	Major resection	6 (6%)	13 (13%)	7 (6%)
	Oral cavity	Major resection	727 (76%)	769 (79%)	1,003 (81%)
	Oropharynx	Major resection	323 (39%)	415 (32%)	467 (30%)
	Other pharynx	Major resection	28 (28%)	22 (37%)	10 (28%)
Hepatobiliary	Liver	Major resection	214 (19%)	255 (17%)	395 (18%)
	Pancreatic, biliary tract & duodenal	Pancreaticoduodenectomy	252 (10%)	319 (11%)	358 (9%)
Lung	Non-small cell lung	Major resection	1,411 (18%)	1,774 (20%)	2,357 (22%)
Prostate	Prostate	Prostatectomy	6,747 (34%)	9,067 (44%)	10,221 (47%)
Upper GI	Oesophagogastric	Major resection	968 (32%)	996 (29%)	1,051 (26%)
Urological	Bladder	Cystectomy	446 (20%)	510 (21%)	563 (21%)
	Testicular	Orchidectomy	666 (95%)	747 (95%)	895 (97%)

Rates have been adjusted for age and sex.

## 1.4 | Queenslanders receiving radiation therapy

### How many Queenslanders with cancer receive radiation therapy?

Radiation therapy (Number of cancer patients receiving radiation therapy)		Queensland		
Cancer group	Cancer	2006-2010 Radiation therapy number (rate)	2011-2015 Radiation therapy number (rate)	2016-2020 Radiation therapy number (rate)
Breast	Breast	8,785 (66%)	10,655 (67%)	12,386 (69%)
Colorectal	Colon	1,120 (12%)	1,089 (11%)	902 (8%)
	Rectal	1,850 (42%)	2,102 (44%)	1,931 (40%)
CNS and brain	Brain	904 (61%)	1,018 (65%)	1,182 (66%)
Gynaecological	Cervical	427 (51%)	488 (51%)	535 (49%)
	Ovarian	137 (12%)	148 (11%)	122 (9%)
	Uterine	545 (28%)	727 (31%)	818 (30%)
	Vulva	93 (37%)	135 (39%)	160 (40%)
Head and neck	Head and neck	2,137 (69%)	2,458 (68%)	3,094 (72%)
	Hypopharynx	151 (83%)	166 (74%)	172 (78%)
	Larynx	430 (72%)	407 (70%)	474 (79%)
	Major salivary glands	151 (67%)	153 (64%)	168 (61%)
	Nasal cavity and paranasal sinuses	86 (69%)	102 (67%)	150 (74%)
	Nasopharynx	68 (76%)	80 (81%)	110 (90%)
	Oral cavity	512 (53%)	472 (49%)	589 (48%)
	Oropharynx	667 (83%)	1,041 (82%)	1,401 (87%)
	Other pharynx	72 (73%)	37 (62%)	30 (84%)
	Hepatobiliary	Liver	101 (9%)	201 (13%)
Pancreatic, biliary tract & duodenal		222 (9%)	344 (11%)	536 (14%)
Lung	Non-small cell lung	3,933 (49%)	4,706 (52%)	5,837 (54%)
Prostate	Prostate	8,198 (44%)	8,001 (40%)	8,256 (36%)
Upper GI	Oesophagogastric	1,041 (34%)	1,276 (36%)	1,574 (40%)
Urological	Bladder	751 (34%)	761 (31%)	848 (31%)
	Testicular	86 (13%)	33 (4%)	18 (2%)

Rates have been adjusted for age and sex.

## 1.5 | Queenslanders receiving intravenous systemic therapy

### How many Queenslanders with cancer receive intravenous systemic therapy (IVST)?

Systemic therapy (Number of cancer patients receiving systemic therapy)		Queensland		
Cancer group	Cancer	2006-2010 Systemic therapy number (rate)	2011-2015 Systemic therapy number (rate)	2016-2020 Systemic therapy number (rate)
Breast	Breast	6,523 (48%)	8,012 (51%)	8,423 (48%)
Colorectal	Colon	3,095 (33%)	3,435 (34%)	3,400 (31%)
	Rectal	2,070 (47%)	2,286 (48%)	2,017 (41%)
CNS and brain	Brain	324 (22%)	361 (23%)	426 (24%)
Gynaecological	Cervical	321 (39%)	439 (46%)	507 (46%)
	Ovarian	780 (69%)	976 (72%)	951 (68%)
	Uterine	511 (26%)	675 (29%)	669 (25%)
	Vulva	38 (15%)	85 (24%)	80 (21%)
Head and neck	Head and neck	1,182 (38%)	1,681 (47%)	1,988 (47%)
	Hypopharynx	83 (45%)	121 (54%)	126 (58%)
	Larynx	169 (28%)	183 (31%)	187 (32%)
	Major salivary glands	35 (15%)	33 (14%)	37 (14%)
	Nasal cavity and paranasal sinuses	34 (27%)	51 (34%)	73 (36%)
	Nasopharynx	66 (72%)	79 (79%)	93 (78%)
	Oral cavity	254 (26%)	216 (22%)	301 (25%)
	Oropharynx	499 (61%)	966 (75%)	1,153 (72%)
	Other pharynx	42 (42%)	32 (51%)	18 (56%)
	Hepatobiliary	Liver	319 (29%)	512 (34%)
	Pancreatic, biliary tract & duodenal	1,020 (42%)	1,354 (45%)	1,838 (48%)
Lung	Non-small cell lung	3,094 (38%)	3,903 (43%)	5,074 (48%)
Prostate	Prostate	3,534 (19%)	3,113 (15%)	3,022 (13%)
Upper GI	Oesophagogastric	1,213 (40%)	1,514 (43%)	1,855 (47%)
Urological	Bladder	861 (39%)	1,109 (45%)	1,396 (52%)
	Testicular	401 (57%)	480 (61%)	485 (52%)

Rates have been adjusted for age and sex.

# 2 | Efficient

Optimally using resources to achieve desired outcomes.







# 3 | Safe

Avoiding and preventing adverse outcomes or injuries caused by healthcare management.



## 3.1 | In-Hospital mortality

### What percentage of patients die in hospital after cancer surgery?

In-Hospital mortality (% patients who die in hospital following cancer surgery)			Queensland		
Cancer group	Cancer	Surgery type	2006-2010 In-Hospital mortality rate	2011-2015 In-Hospital mortality rate	2016-2020 In-Hospital mortality rate
Breast	Breast	Breast cancer surgery	<1%	0%	0%
Colorectal	Colon	Major resection	3%	1.7%	1.4%
	Rectal	Major resection	2%	1%	0.9%
CNS and brain	Brain	Major resection	2.7%	1.5%	0.8%
Gynaecological	Cervical	Major resection	0%	0%	0%
	Ovarian	Major resection	0.4%	0%	0.3%
	Uterine	Major resection	0.1%	0.2%	0.2%
	Vulva	Major resection	0.7%	0%	0%
Head and neck	Head and neck	Major resection	0.3%	0.3%	0.3%
	Hypopharynx	Major resection	2.5%	1%	1.3%
	Larynx	Major resection	0.3%	0%	0.7%
	Major salivary glands	Major resection	0%	0%	0%
	Nasal cavity and paranasal sinuses	Major resection	0%	0%	0%
	Nasopharynx	Major resection	0%	0%	0%
	Oral cavity	Major resection	0.3%	0.5%	0.4%
	Oropharynx	Major resection	0.3%	0%	0%
Hepatobiliary	Liver	Major resection	4.8%	2.3%	0.2%
	Pancreatic, biliary tract & duodenal	Pancreaticoduodenectomy	1.3%	3.4%	1%
Lung	Non-small cell lung	Major resection	1.4%	0.6%	0.2%
Prostate	Prostate	Prostatectomy	0.1%	0.1%	<1%
Upper GI	Gastric	Gastrectomy	2.6%	2.2%	1.3%
	Oesophagus	Oesophagectomy	0.4%	1.3%	1.1%
Urological	Bladder	Cystectomy	1.2%	0.6%	0.5%
	Testicular	Orchidectomy	0.3%	0%	0%

Rates have been adjusted for age and sex. Crude rates have been used for cancers with less than 20 cases.

Cancers with less than 20 cases should be interpreted with caution due to the poor reliability of rate calculations based on small numbers. (Refer to Table 1.3 for number of surgery cases).

## 3.2 | 30 day mortality

### What percentage of patients die within 30 days of their cancer surgery?

30 day mortality (% patients who die ≤ 30 days following cancer surgery)			Queensland			Other sources
Cancer group	Cancer	Surgery type	2006-2010 30 day mortality rate	2011-2015 30 day mortality rate	2016-2020 30 day mortality rate	30 day mortality rate
Breast	Breast	Breast cancer surgery	0.1%	<1%	<1%	0.2% <sup>1</sup>
Colorectal	Colon	Major resection	3.3%	2.2%	1.9%	3.4% <sup>2</sup>
	Rectal	Major resection	2.1%	1.2%	1%	3.3% <sup>2</sup>
CNS and brain	Brain	Major resection	6.9%	5.3%	3.8%	3.0% <sup>3</sup>
Gynaecological	Cervical	Major resection	0%	0%	0%	N/A
	Ovarian	Major resection	0.4%	0.3%	0.4%	2.0% <sup>4</sup>
	Uterine	Major resection	0.3%	0.2%	0.3%	0.5% <sup>5</sup>
	Vulva	Major resection	0.6%	0.4%	0%	N/A
Head and neck	Head and neck	Major resection	0.6%	0.7%	0.7%	0.8% <sup>6</sup>
	Hypopharynx	Major resection	1.2%	2.2%	1.2%	N/A
	Larynx	Major resection	0.6%	0.3%	1.5%	2.8% <sup>7</sup>
	Major salivary glands	Major resection	0%	0.5%	0%	N/A
	Nasal cavity and paranasal sinuses	Major resection	1.2%	1%	0%	N/A
	Nasopharynx	Major resection	0%	0%	31.6% <sup>€</sup>	N/A
	Oral cavity	Major resection	0.4%	0.8%	0.7%	1.0% <sup>8</sup>
	Oropharynx	Major resection	1%	0.3%	0.4%	0.7% <sup>9</sup>
Hepatobiliary	Liver	Major resection	4.2%	2.4%	0.7%	1.8% <sup>10</sup>
	Pancreatic, biliary tract & duodenal	Pancreaticoduodenectomy	1.4%	2.8%	1.3%	2.0% <sup>11</sup>
Lung	Non-small cell lung	Major resection	1.4%	0.7%	0.3%	3.0% <sup>12</sup>
Prostate	Prostate	Prostatectomy	0.1%	0.1%	<1%	0.2% <sup>13</sup>
Upper GI	Gastric	Gastrectomy	2.4%	2.8%	1%	4.0% <sup>14</sup>
	Oesophagus	Oesophagectomy	0%	0.9%	1.4%	4.0% <sup>14</sup>
Urological	Bladder	Cystectomy	2%	0.4%	0.8%	2.0% <sup>15</sup>
	Testicular	Orchidectomy	0.3%	0.1%	0%	N/A

Rates have been adjusted for age and sex. Crude rates have been used for cancers with less than 20 cases.

~ Other sources include published data see reference list for further information.

N/A No appropriate references identified.

€ Cancers with less than 20 cases should be interpreted with caution due to the poor reliability of rate calculations based on small numbers. (Refer to Table 1.3 for number of surgery cases).

## 3.3 | 90 day mortality

### What percentage of patients die within 90 days of their cancer surgery?

90 day mortality (% patients who die ≤ 90 days following cancer surgery)			Queensland		
Cancer group	Cancer	Surgery type	2006-2010 90 day mortality rate	2011-2015 90 day mortality rate	2016-2020 90 day mortality rate
Breast	Breast	Breast cancer surgery	0.2%	0.2%	0.2%
Colorectal	Colon	Major resection	5.9%	4%	3.3%
	Rectal	Major resection	3.8%	2.6%	2.2%
CNS and brain	Brain	Major resection	23.3%	19.8%	13.7%
Gynaecological	Cervical	Major resection	0%	0.4%	0%
	Ovarian	Major resection	1.5%	1.2%	1.1%
	Uterine	Major resection	1.2%	0.7%	0.7%
	Vulva	Major resection	1.6%	1.6%	0.3%
Head and neck	Head and neck	Major resection	1.7%	1.4%	1.6%
	Hypopharynx	Major resection	3.6%	4.1%	2.6%
	Larynx	Major resection	2%	1.2%	3.4%
	Major salivary glands	Major resection	1.1%	0.8%	0.4%
	Nasal cavity and paranasal sinuses	Major resection	3.5%	1.9%	0%
	Nasopharynx	Major resection	0%	0%	31.6% <sup>€</sup>
	Oral cavity	Major resection	1.2%	1.7%	1.3%
	Oropharynx	Major resection	2.4%	0.5%	1.5%
Hepatobiliary	Liver	Major resection	6.8%	4%	1.2%
	Pancreatic, biliary tract & duodenal	Pancreaticoduodenectomy	3.2%	4.6%	2.1%
Lung	Non-small cell lung	Major resection	2.9%	2.1%	0.8%
Prostate	Prostate	Prostatectomy	0.3%	0.1%	0.1%
Upper GI	Gastric	Gastrectomy	4%	4.1%	2.6%
	Oesophagus	Oesophagectomy	1.3%	2.5%	2.6%
Urological	Bladder	Cystectomy	5.7%	1.4%	2.5%
	Testicular	Orchidectomy	0.7%	0.1%	0.1%

Rates have been adjusted for age and sex. Crude rates have been used for cancers with less than 20 cases.

<sup>€</sup> Cancers with less than 20 cases should be interpreted with caution due to the poor reliability of rate calculations based on small numbers. (Refer to Table 1.3 for number of surgery cases).

## 3.4 | 1 year surgical survival

### What percentage of patients are alive one year after cancer surgery?

1 year surgical survival (% patients still alive 1 year after cancer surgery)			Queensland		
Cancer group	Cancer	Surgery type	2006-2010 1 yr survival rate	2011-2015 1 yr survival rate	2016-2020 1 yr survival rate
Breast	Breast	Breast cancer surgery	99%	99%	99%
Colorectal	Colon	Major resection	86%	89%	91%
	Rectal	Major resection	89%	93%	95%
CNS and brain	Brain	Major resection	30%	43%	57%
Gynaecological	Cervical	Major resection	99%	97%	99%
	Ovarian	Major resection	91%	93%	94%
	Uterine	Major resection	96%	96%	96%
	Vulva	Major resection	90%	91%	94%
Head and neck	Head and neck	Major resection	90%	92%	93%
	Hypopharynx	Major resection	79%	76%	79%
	Larynx	Major resection	88%	93%	91%
	Major salivary glands	Major resection	96%	97%	96%
	Nasal cavity and paranasal sinuses	Major resection	84%	86%	93%
	Nasopharynx	Major resection	100%	100%	68%
	Oral cavity	Major resection	91%	91%	92%
	Oropharynx	Major resection	91%	95%	96%
Hepatobiliary	Liver	Major resection	82%	87%	91%
	Pancreatic, biliary tract & duodenal	Pancreaticoduodenectomy	77%	77%	84%
Lung	Non-small cell lung	Major resection	88%	91%	95%
Prostate	Prostate	Prostatectomy	99%	99%	100%
Upper GI	Gastric	Gastrectomy	80%	83%	89%
	Oesophagus	Oesophagectomy	87%	83%	84%
Urological	Bladder	Cystectomy	79%	85%	83%
	Testicular	Orchidectomy	99%	99%	99%

Rates have been adjusted for age and sex. Crude rates have been used for cancers with less than 20 cases.

Cancers with less than 20 cases should be interpreted with caution due to the poor reliability of rate calculations based on small numbers. (Refer to Table 1.3 for number of surgery cases).

## 3.5 | 2 year surgical survival

### What percentage of patients are alive two years after cancer surgery?

2 year surgical survival (% patients still alive 2 years after cancer surgery)			Queensland		
Cancer group	Cancer	Surgery type	2006-2010 2 yr survival rate	2011-2015 2 yr survival rate	2016-2020 2 yr survival rate
Breast	Breast	Breast cancer surgery	96%	97%	97%
Colorectal	Colon	Major resection	78%	81%	85%
	Rectal	Major resection	81%	87%	89%
CNS and brain	Brain	Major resection	25%	28%	34%
Gynaecological	Cervical	Major resection	95%	95%	99%
	Ovarian	Major resection	82%	84%	85%
	Uterine	Major resection	91%	92%	92%
	Vulva	Major resection	85%	83%	89%
Head and neck	Head and neck	Major resection	81%	84%	86%
	Hypopharynx	Major resection	61%	62%	63%
	Larynx	Major resection	78%	83%	80%
	Major salivary glands	Major resection	91%	91%	93%
	Nasal cavity and paranasal sinuses	Major resection	73%	78%	87%
	Nasopharynx	Major resection	100%	85%	74%
	Oral cavity	Major resection	82%	83%	86%
	Oropharynx	Major resection	85%	90%	92%
Hepatobiliary	Liver	Major resection	70%	75%	84%
	Pancreatic, biliary tract & duodenal	Pancreaticoduodenectomy	51%	60%	61%
Lung	Non-small cell lung	Major resection	76%	82%	90%
Prostate	Prostate	Prostatectomy	99%	99%	99%
Upper GI	Gastric	Gastrectomy	67%	71%	79%
	Oesophagus	Oesophagectomy	69%	71%	72%
Urological	Bladder	Cystectomy	66%	75%	75%
	Testicular	Orchidectomy	98%	98%	99%

Rates have been adjusted for age and sex. Crude rates have been used for cancers with less than 20 cases.

Cancers with less than 20 cases should be interpreted with caution due to the poor reliability of rate calculations based on small numbers. (Refer to Table 1.3 for number of surgery cases).

# 4 | Accessible

Making health services available in the most suitable setting in a reasonable time.



## 4.1 | Timeliness

### What percentage of public compared to private patients received their first cancer treatment<sup>+</sup> within 30 days of diagnosis?

Time to first cancer treatment		Queensland									
(% patients whose time from diagnosis to first cancer treatment is ≤30 days)		2006-2010			2011-2015			2016-2020			P-value
Cancer group	Cancer	Time to first cancer treatment			Time to first cancer treatment			Time to first cancer treatment			
		All	Public	Private	All	Public	Private	All	Public	Private	
Breast	Breast	71%	52%	86%	64%	43%	79%	56%	32%	78%	***
Colorectal	Colon	74%	68%	81%	70%	61%	80%	68%	58%	81%	***
	Rectal	57%	42%	70%	51%	35%	68%	48%	34%	62%	***
CNS and brain	Brain	79%	74%	87%	79%	76%	83%	83%	83%	84%	
Gynaecological	Cervical	38%	30%	54%	29%	21%	47%	27%	19%	47%	***
	Ovarian	83%	75%	91%	86%	80%	92%	81%	74%	89%	***
	Uterine	61%	34%	86%	57%	29%	84%	49%	23%	79%	***
	Vulva	41%	26%	61%	38%	20%	65%	31%	17%	52%	***
Head and neck	Head and neck	48%	36%	75%	44%	34%	67%	45%	37%	66%	***
	Hypopharynx	39%	33%	76%	42%	37%	65%	40%	39%	51%	
	Larynx	57%	42%	89%	53%	42%	73%	57%	50%	72%	***
	Major salivary glands	68%	56%	82%	64%	52%	76%	57%	46%	71%	***
	Nasal cavity and paranasal sinuses	58%	41%	81%	64%	53%	85%	59%	54%	67%	
	Nasopharynx	35%	28%	72%	44%	45%	42%	39%	34%	68%	**
	Oral cavity	45%	36%	62%	43%	35%	59%	42%	36%	57%	***
	Oropharynx	41%	29%	77%	36%	25%	67%	40%	29%	72%	***
	Other pharynx	27%	17%	76%	27%	18%	54%	47%	41%	55%	
Hepatobiliary	Liver	55%	51%	62%	45%	37%	65%	42%	36%	61%	***
	Pancreatic, biliary tract & duodenal	61%	46%	74%	60%	45%	73%	59%	47%	73%	***
Lung	Non-small cell lung	51%	41%	67%	46%	36%	61%	46%	37%	61%	***
Prostate	Prostate	6%	7%	5%	8%	7%	8%	10%	10%	10%	
Upper GI	Oesophagogastric	48%	35%	64%	44%	33%	59%	43%	32%	57%	***
Urological	Bladder	41%	36%	46%	38%	34%	42%	41%	41%	42%	
	Testicular	97%	98%	97%	97%	97%	98%	98%	97%	99%	**

Rates have been adjusted for age and sex.

\*\*P-value <0.05 & \*\*\*P-value < 0.001 indicate significant difference in rates for 2016-2020 between patients treated in public and private facilities.

\* Treatment includes IV systemic therapy, radiation therapy, and/or surgery. Oral systemic therapy is not included in analysis.



## 4.2 | Remoteness

### What percentage of patients living outside a major city received cancer treatment\*?

Rural and remote first cancer treatment (% of patients receiving first cancer treatment)		Queensland									P- value <sub>trend</sub>
Cancer group	Cancer	2006-2010			2011-2015			2016-2020			
		Rural & Remote	Regional	Metro-politan	Rural & Remote	Regional	Metro-politan	Rural & Remote	Regional	Metro-politan	
Breast	Breast	94%	95%	95%	93%	96%	95%	94%	96%	95%	
Colorectal	Colon	92%	95%	95%	92%	94%	94%	93%	93%	92%	
	Rectal	97%	96%	97%	96%	96%	95%	92%	95%	93%	
CNS and brain	Brain	87%	87%	86%	87%	88%	87%	83%	85%	87%	**
Gynaecological	Cervical	92%	89%	94%	92%	95%	94%	95%	95%	95%	
	Ovarian	76%	80%	84%	83%	80%	86%	80%	79%	83%	
	Uterine	94%	95%	96%	91%	94%	93%	92%	90%	91%	
	Vulva	88%	89%	90%	81%	98%	91%	87%	87%	85%	
Head and neck	Head and neck	86%	88%	91%	89%	90%	92%	90%	93%	93%	**
	Hypopharynx	93%	85%	87%	81%	85%	87%	86%	86%	82%	
	Larynx	82%	92%	93%	91%	92%	92%	90%	97%	94%	
	Major salivary glands	99%	96%	94%	97%	95%	94%	92%	91%	98%	**
	Nasal cavity and paranasal sinuses	94%	86%	90%	84%	84%	93%	84%	92%	90%	
	Nasopharynx	80%	69%	92%	77%	94%	95%	85%	77%	98%	
	Oral cavity	84%	87%	90%	90%	87%	90%	92%	94%	90%	
	Oropharynx	88%	88%	93%	89%	91%	94%	90%	94%	95%	**
Hepatobiliary	Other pharynx	67%	82%	76%	84%	76%	76%	100%	96%	89%	
	Liver	24%	41%	47%	45%	46%	49%	47%	49%	59%	
	Pancreatic, biliary tract & duodenal	42%	48%	51%	49%	54%	54%	49%	55%	57%	**
Lung	Non-small cell lung	60%	67%	70%	65%	71%	75%	74%	78%	82%	
Prostate	Prostate	71%	73%	73%	72%	76%	77%	76%	78%	78%	
Upper GI	Oesophagogastric	62%	67%	68%	65%	66%	68%	70%	66%	67%	
Urological	Bladder	89%	89%	91%	90%	90%	90%	91%	93%	91%	
	Testicular	96%	99%	98%	100%	98%	98%	97%	100%	99%	

Rates have been adjusted for age and sex.

\*\*P-value<sub>trend</sub> < 0.05 & \*\*\*P-value<sub>trend</sub> < 0.001 indicate significant difference in rates for 2016-2020 across remoteness of residence. (Refer to Glossary for further information on P-value<sub>trend</sub>).

\* Treatment includes IV systemic therapy, radiation therapy, and/or surgery. Oral systemic therapy is not included in analysis.

## 4.3 | Time to first treatment ≤ 30 days

**What percentage of patients living outside a major city received their first cancer treatment\* within 30 days of diagnosis?**

Rural and remote first cancer treatment											
(% patients whose time from diagnosis to first cancer treatment is ≤30 days)											
Queensland											
Cancer group	Cancer	2006-2010			2011-2015			2016-2020			P-value <sub>trend</sub>
		Time to first cancer treatment Rural & Remote	Regional	Metro-politan	Time to first cancer treatment Rural & Remote	Regional	Metro-politan	Time to first cancer treatment Rural & Remote	Regional	Metro-politan	
Breast	Breast	67%	68%	73%	54%	58%	67%	45%	53%	59%	***
Colorectal	Colon	75%	74%	75%	65%	68%	72%	61%	65%	70%	***
	Rectal	55%	54%	58%	44%	48%	54%	39%	45%	51%	***
CNS and brain	Brain	83%	84%	76%	75%	81%	78%	82%	83%	84%	
Gynaecological	Cervical	36%	33%	39%	32%	29%	28%	27%	26%	27%	
	Ovarian	82%	83%	84%	81%	84%	88%	75%	78%	82%	**
	Uterine	53%	58%	63%	47%	58%	59%	42%	47%	51%	**
	Vulva	37%	43%	41%	33%	38%	40%	31%	26%	33%	
Head and neck	Head and neck	41%	45%	50%	37%	43%	47%	36%	39%	50%	***
	Hypopharynx	28%	40%	42%	39%	44%	43%	30%	37%	46%	
	Larynx	54%	58%	58%	38%	55%	57%	47%	52%	63%	**
	Major salivary glands	68%	57%	73%	68%	65%	63%	51%	56%	59%	
	Nasal cavity and paranasal sinuses	78%	61%	54%	59%	65%	64%	46%	51%	67%	**
	Nasopharynx	18%	61%	37%	55%	59%	39%	45%	39%	37%	
	Oral cavity	38%	41%	48%	33%	34%	49%	30%	35%	49%	***
	Oropharynx	35%	33%	45%	31%	32%	39%	31%	32%	45%	***
Hepatobiliary	Liver	52%	52%	57%	38%	45%	46%	36%	44%	43%	
	Pancreatic, biliary tract & duodenal	57%	60%	62%	57%	56%	62%	54%	54%	61%	**
Lung	Non-small cell lung	56%	50%	50%	49%	45%	45%	44%	42%	48%	***
Prostate	Prostate	8%	5%	6%	8%	6%	8%	10%	9%	10%	
Upper GI	Oesophagogastric	45%	46%	50%	39%	41%	46%	32%	32%	48%	***
Urological	Bladder	41%	40%	41%	32%	42%	38%	38%	41%	42%	
	Testicular	94%	96%	98%	96%	99%	97%	99%	95%	99%	

Rates have been adjusted for age and sex.

\*\*P-value<sub>trend</sub> < 0.05 & \*\*\*P-value<sub>trend</sub> < 0.001 indicate significant difference in rates for 2016-2020 across remoteness of residence. (Refer to Glossary for further information on P-value<sub>trend</sub>).

\* Treatment includes IV systemic therapy, radiation therapy, and/or surgery. Oral systemic therapy is not included in analysis.

# 5 | Equitable

Providing care and ensuring health status does not vary in quality because of personal characteristics (age, First Nations peoples or socio-economic status).



## 5.1 | Over 75 years

### 5.1.1 | What percentage of patients aged $\geq 75$ received their first cancer treatment<sup>+</sup> within 30 days of diagnosis?

<b>Time to first cancer treatment</b> (% patients whose time from diagnosis to first cancer treatment is $\leq 30$ days)		Queensland						
Cancer group	Cancer	2006-2010		2011-2015		2016-2020		P-value
		Time to first cancer treatment Age < 75	Time to first cancer treatment Age $\geq 75$	Time to first cancer treatment Age < 75	Time to first cancer treatment Age $\geq 75$	Time to first cancer treatment Age < 75	Time to first cancer treatment Age $\geq 75$	
Breast	Breast	72%	70%	64%	60%	56%	57%	
Colorectal	Colon	73%	79%	68%	74%	66%	71%	***
	Rectal	55%	63%	49%	58%	45%	55%	***
CNS and brain	Brain	77%	91%	77%	92%	82%	93%	***
Gynaecological	Cervical	37%	52%	29%	27%	27%	21%	
	Ovarian	84%	79%	87%	81%	82%	76%	**
	Uterine	61%	59%	57%	56%	50%	46%	
	Vulva	32%	61%	35%	45%	32%	28%	
Head and neck	Head and neck	47%	52%	44%	48%	45%	45%	
	Hypopharynx	38%	41%	43%	41%	41%	35%	
	Larynx	54%	68%	51%	60%	57%	56%	
	Major salivary glands	71%	58%	67%	54%	61%	42%	**
	Nasal cavity and paranasal sinuses	56%	66%	63%	64%	59%	58%	
	Nasopharynx	37%	0%	44%	56%	37%	52%	
	Oral cavity	45%	45%	43%	44%	43%	40%	
	Oropharynx	41%	39%	36%	32%	40%	38%	
Hepatobiliary	Liver	53%	63%	44%	52%	43%	40%	
	Pancreatic, biliary tract & duodenal	61%	61%	60%	60%	60%	56%	
Lung	Non-small cell lung	52%	47%	47%	42%	47%	44%	**
Prostate	Prostate	5%	8%	7%	10%	10%	12%	**
Upper GI	Oesophagogastric	48%	50%	44%	45%	43%	42%	
Urological	Bladder	38%	44%	34%	42%	38%	45%	**
	Testicular	97%	100%	97%	100%	98%	100%	

\*\*P-value < 0.05 & \*\*\*P-value < 0.001 indicate significant difference in rates for 2016-2020 between age < 75 and  $\geq 75$ .

<sup>+</sup> Treatment includes IV systemic therapy, radiation therapy, and/or surgery. Oral systemic therapy is not included in analysis.

## 5.2 | First Nations peoples

### 5.2.1 | What percentage of First Nations peoples received their first cancer treatment\* within 30 days of diagnosis?

Time to first cancer treatment											
<i>(% patients whose time from diagnosis to first cancer treatment is ≤30 days)</i>											
Cancer group	Cancer	2006-2010 Time to first cancer treatment			2011-2015 Time to first cancer treatment			2016-2020 Time to first cancer treatment			P-value
		First Nations peoples All	Non First Nations peoples Public	Non First Nations peoples Private	First Nations peoples All	Non First Nations peoples Public	Non First Nations peoples Private	First Nations peoples All	Non First Nations peoples Public	Non First Nations peoples Private	
Breast	Breast	59%	52%	86%	47%	44%	79%	33%	32%	78%	
Colorectal	Colon	72%	68%	81%	58%	61%	80%	62%	58%	81%	
	Rectal	54%	42%	70%	40%	35%	68%	32%	34%	62%	
CNS and brain	Brain	66%	74%	87%	80%	76%	83%	69%	83%	84%	**
Gynaecological	Cervical	20%	31%	54%	38%	20%	46%	30%	18%	47%	**
	Ovarian	61%	76%	91%	65%	80%	92%	75%	74%	89%	
	Uterine	41%	34%	86%	28%	29%	84%	24%	23%	80%	
	Vulva	10%	27%	61%	35%	20%	65%	17%	17%	51%	
Head and neck	Head and neck	33%	36%	76%	34%	34%	68%	32%	37%	67%	
	Hypopharynx	31%	33%	80%	73%	35%	65%	15%	41%	53%	
	Larynx	27%	42%	89%	24%	43%	73%	47%	50%	73%	
	Major salivary glands	81%	56%	82%	91%	53%	76%	27%	47%	71%	
	Nasal cavity and paranasal sinuses	65%	39%	81%	67%	53%	85%	67%	54%	67%	
	Nasopharynx	56%	27%	72%	37%	45%	42%	29%	34%	68%	
	Oral cavity	34%	37%	63%	24%	36%	60%	28%	36%	58%	
	Oropharynx	31%	29%	77%	34%	25%	67%	29%	29%	73%	
Hepatobiliary	Other pharynx	0%	18%	76%	0%	19%	59%	-	41%	55%	
	Liver	31%	52%	63%	42%	36%	65%	43%	36%	62%	
	Pancreatic, biliary tract & duodenal	53%	46%	74%	49%	44%	73%	48%	47%	73%	
Lung	Non-small cell lung	44%	41%	67%	35%	36%	61%	40%	37%	61%	
Prostate	Prostate	6%	7%	5%	10%	7%	8%	14%	10%	10%	**
Upper GI	Oesophagogastric	37%	35%	64%	35%	33%	59%	30%	32%	57%	
Urological	Bladder	56%	36%	46%	30%	34%	42%	43%	41%	42%	
	Testicular	99%	97%	97%	96%	97%	98%	96%	97%	99%	

Rates have been adjusted for age and sex.

\*\*P-value <0.05 & \*\*\*P-value < 0.001 indicate significant difference in rates for 2016-2020 between First Nations peoples treated in any hospital and non First Nations peoples treated in a public hospital.

\* Treatment includes IV systemic therapy, radiation therapy, and/or surgery. Oral systemic therapy is not included in analysis.

## 5.3 | Socioeconomically disadvantaged

**What percentage of socioeconomically disadvantaged patients received their first cancer treatment\* within 30 days from diagnosis?**

Time to first cancer treatment (% patients whose time from diagnosis to first cancer treatment is ≤30 days)		Queensland									P-value <sub>trend</sub>
Cancer group	Cancer	2006-2010			2011-2015			2016-2020			
		Disad- vantaged	Middle	Affluent	Disad- vantaged	Middle	Affluent	Disad- vantaged	Middle	Affluent	
Breast	Breast	65%	72%	82%	55%	64%	77%	45%	56%	72%	***
Colorectal	Colon	73%	75%	77%	66%	71%	76%	62%	69%	76%	***
	Rectal	53%	57%	65%	45%	52%	62%	41%	49%	60%	***
CNS and brain	Brain	83%	79%	74%	79%	78%	82%	81%	82%	90%	**
Gynaecological	Cervical	31%	37%	55%	28%	28%	39%	23%	27%	34%	**
	Ovarian	78%	84%	90%	81%	87%	89%	82%	79%	86%	
	Uterine	50%	63%	74%	50%	57%	73%	40%	51%	64%	***
	Vulva	41%	37%	64%	37%	38%	46%	26%	31%	49%	
Head and neck	Head and neck	45%	48%	51%	39%	45%	52%	39%	46%	56%	***
	Hypopharynx	47%	35%	32%	41%	44%	31%	38%	42%	35%	
	Larynx	57%	57%	56%	51%	53%	63%	49%	60%	58%	
	Major salivary glands	62%	70%	76%	50%	71%	64%	59%	57%	57%	
	Nasal cavity and paranasal sinuses	60%	59%	51%	57%	65%	69%	48%	62%	68%	
	Nasopharynx	37%	34%	44%	41%	50%	19%	33%	42%	33%	
	Oral cavity	37%	47%	54%	38%	43%	59%	37%	42%	61%	***
	Oropharynx	36%	42%	46%	31%	37%	43%	30%	41%	54%	***
	Other pharynx	33%	24%	51%	13%	34%	16%	26%	52%	-	
Hepatobiliary	Liver	54%	54%	66%	43%	45%	46%	41%	43%	45%	
	Pancreatic, biliary tract & duodenal	61%	59%	71%	54%	60%	68%	53%	59%	72%	***
Lung	Non-small cell lung	47%	51%	60%	42%	45%	58%	43%	46%	58%	***
Prostate	Prostate	5%	6%	5%	7%	7%	12%	9%	9%	15%	***
Upper GI	Oesophagogastric	44%	49%	60%	38%	44%	57%	34%	44%	60%	***
Urological	Bladder	42%	40%	40%	37%	37%	48%	40%	42%	45%	
	Testicular	97%	97%	99%	97%	98%	97%	96%	98%	100%	**

Rates have been adjusted for age and sex.

\*\*P-value<sub>trend</sub> < 0.05 & \*\*\*P-value<sub>trend</sub> < 0.001 indicate significant difference in rates for 2016-2020 across socioeconomic groups. (Refer to Glossary for further information on P-value<sub>trend</sub>).

\*Treatment includes IV systemic therapy, radiation therapy, and/or surgery. Oral systemic therapy is not included in analysis.

# Appendix

## What are the incidence and mortality counts and age-standardised rates (ASR) by cancer, 2006-2020?<sup>§</sup>

Cancer group	Cancer	2006-2010				2011-2015				2016-2020			
		Incidence	Incidence ASR	Mortality	Mortality ASR	Incidence	Incidence ASR	Mortality	Mortality ASR	Incidence	Incidence ASR	Mortality	Mortality ASR
Breast	Breast	13,638	62.7	2,493	11.5	16,201	65.5	2,769	11.0	18,464	66.2	3,033	10.5
Colorectal	Colorectal	14,402	67.5	4,872	22.9	15,446	62.5	5,184	20.9	16,341	56.9	5,631	19.2
	Colon	9,831	46.3	3,279	15.4	10,508	42.7	3,503	14.2	11,322	39.4	3,829	13.1
	Rectal	3,487	16.1	1,122	5.2	3,772	15.2	1,238	4.9	3,764	13.2	1,256	4.3
CNS and brain	Brain	1,474	6.9	1,175	5.5	1,607	6.6	1,362	5.5	1,842	6.7	1,484	5.2
Gynaecological	Cervical	844	7.9	257	2.3	988	8.5	278	2.2	1,126	8.9	278	2.0
	Ovarian	1,216	10.8	723	6.2	1,433	11.1	857	6.5	1,463	9.9	908	5.9
	Uterine	1,973	17.5	337	3.0	2,405	18.5	389	3.0	2,784	18.8	519	3.3
	Vulva	258	2.3	70	0.6	358	2.8	90	0.6	416	2.8	110	0.7
Head and neck	Head and neck	4,228	19.5	1,166	5.4	4,893	19.6	1,289	5.1	5,239	18.2	1,385	4.7
	Hypopharynx	194	0.9	118	0.5	242	0.9	128	0.5	238	0.8	147	0.5
	Larynx	628	2.9	229	1.1	603	2.4	224	0.9	641	2.2	197	0.7
	Major Salivary Glands	233	1.1	46	0.2	248	1.0	51	0.2	285	1.0	50	0.2
	Nasal Cavity and Paranasal Sinuses	131	0.6	44	0.2	159	0.6	59	0.2	219	0.8	84	0.3
	Nasopharynx	91	0.4	42	0.2	105	0.4	36	0.1	138	0.5	53	0.2
	Oral Cavity	1,986	9.2	334	1.6	2,126	8.6	408	1.6	1,968	6.9	419	1.4
	Oropharynx	857	3.9	282	1.3	1,345	5.3	340	1.3	1,693	5.8	406	1.4
	Other Pharynx	108	0.5	71	0.3	65	0.3	43	0.2	57	0.2	29	0.1
Hepatobiliary	Biliary tract*	27	0.1	26	0.1	73	0.3	51	0.2	98	0.3	98	0.3
	Liver	1,147	5.3	847	3.9	1,536	6.1	1,093	4.4	2,232	7.6	1,435	4.8
	Pancreatic	2,295	10.7	1,993	9.3	2,785	11.1	2,321	9.3	3,623	12.4	2,973	10.1
Lung	Lung	10,265	47.9	8,082	37.8	11,511	45.9	8,854	35.5	14,281	48.2	9,537	32.1
	Non-small cell lung	8,320	38.8	6,528	30.6	9,231	36.8	7,068	28.3	11,109	37.5	7,156	24.1
Prostate	Prostate	19,200	182.6	3,063	34.1	20,543	165.1	3,258	30.2	23,062	157.9	3,497	26.4
Upper GI	Gastric	1,907	8.9	1,169	5.5	2,184	8.8	1,276	5.1	2,429	8.3	1,301	4.5
	Oesophagus	1,225	5.7	906	4.2	1,401	5.5	997	4.0	1,647	5.6	1,108	3.7
Urological	Bladder	2,318	10.9	962	4.6	2,613	10.5	1,074	4.3	2,928	9.9	1,204	4.1
	Testicular	711	6.9	22	0.2	796	7.1	20	0.2	938	8.0	33	0.3

ASR: age standardised rate per 100,000 population.

\* Biliary tract (not incl Bile Ducts and Vater C240-C241).

§ Head and neck (not incl External lip C000-C002).

# Glossary

## **1 year survival**

All-cause crude survival: the percentage of patients still alive after 1 year from their last cancer surgery.

## **2 year survival**

All-cause crude survival: the percentage of patients still alive after 2 years from their last cancer surgery.

## **30 day mortality**

The percentage of patients that die within 30 days following their last cancer surgery.

## **90 day mortality**

The percentage of patients that die within 90 days following their last cancer surgery.

## **Age and sex adjusted figures**

Rates have been adjusted by age and sex to account for any differences in cancer populations across the two periods of interest.

## **Affluent**

The group of patients whose socioeconomic status is affluent (refer to **Socioeconomic status** in Glossary).

## **Age-standardised incidence/mortality (ASR)**

The number of new cases or deaths per 100,000 that would have occurred in a given population if the age distribution of that population was the same as that of the Australian population in 2001 and if the age-specific rates observed in the population of interest had prevailed. In international comparisons, the World Standard Population was used as the reference population.

Age-standardised rates are independent of the age-structure of the population of interest and are therefore useful in making comparisons between different populations and time periods.

## **Annual average**

The sum of the numbers divided by how many numbers are being averaged. For example, 2010-2014 incidence annual average is the sum of incidence from 2010 to 2014 divided by 5.

## **Disadvantaged**

The group of patients whose socioeconomic status is disadvantaged (refer to **Socioeconomic status** in Glossary).

## **Five-year survival**

All-cause crude survival: the percentage of cases still alive five year after diagnosis.



**Five-year relative survival**

Relative survival is a net survival measure representing cancer survival in the absence of other causes of death. Relative survival is defined as the ratio of the proportion of observed survivors in a cohort of cancer patients to the proportion of expected survivors in a comparable set of cancer free individuals.

Relative survival is calculated by dividing observed survival by expected survival, where the numerator and denominator have been matched for age, sex and calendar year.

Observed survival refers to the proportion of people alive for a given amount of time after a diagnosis of cancer; it is calculated from population-based cancer data. Expected survival refers to the proportion of people in the general population alive for a given amount of time and is calculated from life tables of the entire Australian population, assumed to be cancer free.

Changes to cancer incidence rates and the underlying life tables to may lead to fluctuations in relative survival estimates. Accordingly, caution should be used when making comparisons to historically reported rates of relative survival.

**First cancer treatment**

The first treatment the patient had for their cancer – either surgery, radiation therapy or intravenous systemic therapy.

**First Nations peoples**

The terminology First Nations peoples refers to the Aboriginal peoples and Torres Strait Islander peoples, their nations, societies, and language groups that have occupied these lands since time immemorial.

**Hospital Stay**

The median time in days between the admission and discharge date of a patient's cancer surgery.

**Incidence (new cases)**

The number of new cases of cancer diagnosed in a defined population during a specified time period. For example, 2014 incidence is the number of cancers which were first diagnosed between 1 January 2014 and 31 December 2014.

**In-Hospital mortality**

The percentage of patients that die in hospital following their last cancer surgery.

**Intravenous systemic therapy**

Includes Queensland residents of all ages diagnosed with invasive cancer who had intravenous systemic therapy after diagnosis.

**Length of stay**

The average in number of days patients stay in hospital for their cancer surgery.

**Middle**

The group of patients whose socioeconomic status is middle (refer to **Socioeconomic status** in Glossary).

**MDT Review**

Cancer patients are discussed by a Multidisciplinary Team to make sure that all available treatment options are considered.

**MDT number**

Number of cancer patients who had MDT review any time after diagnosis.

**Mortality (deaths)**

The number of deaths attributed to cancer in a defined population during a specified time period regardless of when the diagnosis of cancer was made.

**Non First Nations peoples**

A measure where a person does not identify as Aboriginal peoples and/or Torres Strait Islander peoples (First Nations peoples).

**Over 75 years**

Population divided into over 75 years and under 75 years, it describes Queensland's ageing population.

**P value/ P value trend**

The p-value is a number, calculated from a statistical test such as Pearson's chi square test. A p-value of <0.05 indicates the results are significant and there is less than a 5% probability the findings are due to chance alone.

To examine differences in proportions across subgroups such as public and private, Indigenous status and age group, Pearson's chi square (P value) was used.

The Cochran-Armitage test (P value trend) for trend was used for analysis by remoteness and socioeconomic status which provides a non-parametric test of the trend of the proportions of positive responses in the groups (such as patients who received treatment within 30 days of diagnosis).

**Prevalence**

The number of Queenslanders with a diagnosis of cancer who were alive on 31 December 2020.

**Private hospital**

All other hospitals that are not Queensland Health hospitals.

**Public hospital**

Queensland Health hospitals.

**QOOL**

QOOL supports cancer multidisciplinary teams by assisting meeting preparation, communication and documentation of essential clinical information such as diagnosis, cancer stage and recommended treatment plans. QOOL provides continuity of care and state-wide multidisciplinary team linkage and provides access to clinical outcomes and system performance data for quality improvement. The system provides a central view of patient data for multiple users, accessible at multiple locations.

### Radiation therapy

Includes Queensland residents of all ages diagnosed with invasive cancer who had radiation therapy after diagnosis. For further information on radiation therapy <https://www.targetingcancer.com.au>

### Remoteness

The relative remoteness of residence at time of diagnosis, derived from the Australian Standard Geographical Classification (ASGC). In this report, remoteness is classified into three groups based on the original ASGC grouping.

ASGC classifications	Modified ASGC classification
Major City	Metropolitan
Inner Regional	Regional
Outer Regional	
Remote	Rural and Remote
Very Remote	

An exception to this grouping is the metropolitan area of Townsville (originally classified as Rural). Townsville has been classified as Metropolitan because of the availability of tertiary level cancer services.

### Sex

Refers to the biological and physiological characteristics that define men and women.

### Socioeconomic status

Socioeconomic status is based on the Socio-Economic Indexes for Areas (SEIFA), a census-based measure of social and economic well-being developed by the Australian Bureau of Statistics (ABS) and aggregated at the level of Statistical Area Level 2 (SA2).

The ABS use SEIFA scores to rank regions into ten groups or deciles numbered one to ten, with one being the most disadvantaged and ten being the most affluent group. This ranking is useful at the national level, but the number of people in each decile often becomes too small for meaningful comparisons when applied to a subset of the population. For this reason, this document further aggregates SEIFA deciles into 3 socioeconomic groups.

SEIFA Group	Decile	Percentage of population (approximate)
Disadvantaged	1-2	20%
Middle	3-8	60%
Affluent	9-10	20%

### Statistical analysis

To examine differences in proportions across subgroups such as public and private, First Nations peoples and age group, Pearson's chi square was used. For analysis by remoteness and socioeconomic status a non-parametric test such as the Cochran-Armitage test for trend was used which provides a test of the trend of the proportions of positive responses in the groups (such as patients who received treatment within 30 days of diagnosis). All statistical analyses were conducted using Stata V5.1 (Stata Corp, College Station, TX, USA).

**Statistical Area Level 4 (SA4)**

Statistical Areas Level 4 (SA4) are geographical areas built from whole Statistical Areas Level 3 (SA3s).

[https://www.abs.gov.au/websitedbs/d3310114.nsf/home/australian+statistical+geography+standard+\(a+sgs\)](https://www.abs.gov.au/websitedbs/d3310114.nsf/home/australian+statistical+geography+standard+(a+sgs)).

**Surgery/Major Resection**

Refer to [The Cancer Index Technical Appendix](#).

**Surgery number**

Includes Queensland residents of all ages diagnosed with invasive cancer in the surgical cohort time period who underwent cancer surgery.

**Survival**

Relative survival is a net survival measure representing cancer survival in the absence of other causes of death. Relative survival is defined as the ratio of the proportion of observed survivors in a cohort of cancer patients to the proportion of expected survivors in a comparable set of cancer free individuals.

**Time to first cancer treatment**

Time between the patient's pathological diagnosis and their first cancer treatment.

**Timeliness**

A patient's time to cancer treatment from pathological diagnosis.

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## FOR MORE INFORMATION

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