Queensland Cancer Quality Index

Indicators of safe, quality cancer care

Cancer care in public and private hospitals 2003-2017





Partnership

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Cancer Council Queensland is a community-based organisation dedicated to serving the community in cancer.



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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Indicators of safe, quality cancer care Cancer care in public and private hospitals 2013-2017

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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)(<u>https://cancerallianceqld.health.qld.gov.au</u>). The report tracks Queensland's progress 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 sixteen indicators (Walpole, Theile, Philpot et al. 2019).

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 15 years of data from 2003-2017, 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. 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), hospitals, treatment facilities and Queensland Health with cancer information and tools to deliver the best patient care.

Where has the data come from?

Since 2004 QCCAT 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 populationbased 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 approximately 50 million records between 1982–2017. Our matching and linking processes provide the 730,000+ matched and linked records of cancer patients between 1982–2017 which provide the data for The Queensland Cancer Quality Index.

The Cancer Index should be interpreted in the context of the previous publications by The Partnership. To access previous publication, go to <u>https://cancerallianceqld.health.qld.gov.au/reports-publications.</u>

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 other publications by The Partnership. 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 and appendix section.

Further information is available via Queensland's web-based Oncology Analysis System (OASys) at <u>https://cancerallianceqld.health.qld.gov.au/qoolcentral</u>.

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 intends to report on The Cancer Index every year. Rather than wait for perfect data, The Partnership have chosen to report on a subset of the indicators needed to provide a complete picture of the safety and quality of cancer care in Queensland. This suite of indicators will be expanded on as more data becomes available.

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?

This third release reports on data spanning 15 years of cancer care and highlights where the health system has performed well and where improvements are possible.

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

Relative Survival					1
(% of people who we was the only cause o	ould have survived if cancer of death)		Queensland		Australia ¹
Cancer group	Cancer	2003-2007 5 Year Survival	2008-2012 5 Year Survival	2013-2017 5 Year Survival	2012-2016 5 Year Survival
Breast	Breast	89%	91%	92%	91%
	Colorectal	67%	69%	71%	70%
Colorectal	Colon	67%	69%	71%	70%
	Rectal	59%	60%	60%	70%
CNS and brain	Brain	22%	24%	22%	22%
	Cervical	76%	74%	73%	74%
	Ovarian	46%	49%	50%	47%
Gynaecological	Uterine	82%	85%	84%	83%
	Vulva	74%	74%	73%	72%
	Head and neck	60%	63%	67%	71%
	Hypopharynx	31%	30%	42%	36%
	Larynx	66%	61%	70%	65%
	Major Salivary Glands	77%	80%	83%	77%
Head and neck	Nasal Cavity and Paranasal Sinuses	66%	63%	57%	57%
	Nasopharynx	64%	63%	60%	68%
	Oral Cavity	65%	65%	66%	**
	Oropharynx	53%	66%	71%	70%
	Other Pharynx	32%	36%	52%	**
	Biliary tract*	25%	26%	20%	**
Hepatobiliary	Liver	15%	19%	20%	20%
	Pancreatic	6%	8%	12%	11%
	Lung	13%	16%	20%	19%
Lung	Non-small cell lung	12%	16%	21%	**
Prostate	Prostate	89%	93%	95%	95%
Linner Cl	Gastric	27%	29%	32%	31%
upper GI	Oesophagus	17%	24%	25%	22%
	Bladder	57%	52%	57%	54%
Urological	Testicular	97%	99%	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). ** National comparative data not available.

¹ AIHW Australian Cancer Database 2016. Australian Institute of Health and Welfare (AIHW) 2020 Cancer Data in Australia; Canberra: AIHW.

< https://www.aihw.gov.au/reports/cancer/cancer-data-in-australia/contents/cancer-survival-data-visualisation />.

1.2 | Queenslanders receiving Multidisciplinary Team review

How many Queenslanders with cancer receive multidisciplinary team (MDT) review?

MDT Review			Queensland	
Cancer group	Cancer	2003-2007 MDT number	2008-2012 MDT number	2013-2017 MDT number
Breast	Breast	(rate*) 311 (2%)	(rate*) 3.954 (27%)	(rate*) 6,615
	Colon	(376) 114 (1%)	1,785 (18%)	3,235 (31%)
	Rectal	84 (2%)	1,086 (24%)	1,945 (40%)
CNS and brain	Brain	62 (5%)	420 (27%)	800 (48%)
	Cervical	5 (1%)	149 (17%)	114 (12%)
Gvnaecological	Ovarian	8 (1%)	145 (12%)	134 (10%)
,	Uterine	14 (1%)	280 (13%)	220 (9%)
	Vulva	1 (<1%)	62 (21%)	44 (12%)
	Head and neck	151 (5%)	1,918 (59%)	3,211 (81%)
	Hypopharynx	6 (4%)	125 (67%)	209 (84%)
	Larynx	23 (4%)	322 (55%)	472 (77%)
	Major salivary glands	10 (5%)	109 (50%)	194 (76%)
Head and neck	Nasal cavity and paranasal sinuses	13 (11%)	83 (60%)	152 (86%)
	Nasopharynx	4 (5%)	49 (55%)	87 (83%)
	Oral cavity	54 (6%)	566 (58%)	874 (79%)
	Oropharynx	37 (5%)	618 (64%)	1,187 (85%)
	Other pharynx	4 (4%)	46 (54%)	36 (61%)
Hepatobiliary	Liver	10 (1%)	182 (15%)	520 (30%)
	Pancreatic, biliary tract & duodenal	10 (<1%)	409 (13%)	910 (23%)
Lung	Non-small cell lung	2,152 (29%)	3,608 (42%)	4,460 (46%)
Prostate	Prostate	158 (1%)	654 (3%)	1,668 (8%)
Upper GI	Oesophagogastric	53 (2%)	962 (29%)	1,607 (43%)
Urological	Bladder	4 (<1%)	131 (6%)	360 (14%)
Urological	Testicular	3 (<1%)	58 (8%)	187 (22%)

* Percentage of cancer patients with documented MDT review.

MDT rates includes facilities that use QOOL, or Townsville ROIS, or lung cancer conference at PA Hospital. 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.

1.3 | Queenslanders receiving cancer surgery

How many Queenslanders with cancer receive surgery?

Surgery number	Surgery number						
(Number of cancer	patients receiving surge	ery)		Queensianu			
			2003-2007	2008-2012	2013-2017		
Cancer group	Cancer	Surgery type	Surgery number	Surgery number	Surgery number		
			(rate*)	(rate*)	(rate*)		
Durant	Durant	D	10,796	13,191	15,229		
Breast	Breast	Breast cancer surgery	(91%)	(91%)	(91%)		
	Colon	Major resection	6,837	7,792	8,039		
Colorectal	coloni		(80%)	(79%)	(76%)		
	Rectal	Major resection	3,101	3,144	3,079		
		,	(72%)	(69%)	(63%)		
CNS and brain	Brain	Major resection	1,069	1,285	1,366		
			(81%)	207	(82%)		
	Cervical	Major resection	(40%)	(35%)	(36%)		
			678	789	846		
	Ovarian	Major resection	(63%)	(65%)	(64%)		
Gynaecological	Lite alloca		195	30	45		
	Oterine	Major resection	(11%)	(1%)	(2%)		
	Vulva	Major resection	165	224	259		
	vulva		(80%)	(78%)	(69%)		
	Head and neck Hypopharynx	Major resection Major resection	1,662	1,850	2,121		
			(59%)	(57%)	(54%)		
			85	80	111		
			(50%)	(43%)	(45%)		
	Larynx	Major resection	360	(58%)	(56%)		
	Major salivary	Major resection	187	188	227		
			(86%)	(86%)	(89%)		
	Nasal cavity and		53	97	109		
Head and neck	paranasal sinuses	Major resection	(47%)	(70%)	(61%)		
	Naconharuny	Major resection	6	9	12		
			(8%)	(10%)	(12%)		
	Oral cavity	Major resection	630	764	865		
			(73%)	(78%)	(79%)		
	Oropharynx	Major resection	307	345	440		
	· · ·		(44%)	(35%)	(32%)		
	Other pharynx	Major resection	(20%)	(249/)	15		
			162	244	298		
	Liver	Major resection	(18%)	(19%)	(17%)		
Hepatobiliary	Pancreatic. biliarv		330	423	475		
	tract & duodenal	Pancreaticoduodenectomy	(13%)	(14%)	(12%)		
lung	Non small call lung	Major reception	1,292	1,489	2,041		
Lung	Non-small cell lung	Major resection	(18%)	(17%)	(21%)		
Prostate	Prostate	Prostatectomy	4,355	8,056	9,269		
Trostate	Trostate	rostatectomy	(28%)	(39%)	(47%)		
Upper GI	Oesophagogastric	Major resection	1,000	1,001	999		
••		•	(34%)	(30%)	(27%)		
	Bladder	Cystectomy	38/	4/2	526		
Urological			(16%)	(21%)	(20%)		
	Testicular	Orchidectomy	(94%)	(96%)	(96%)		
			(J-T/U)	130701	(50/0)		

Rates have been adjusted for age and sex.

* Percentage of cancer patients receiving cancer surgery.

1.4 | Queenslanders receiving radiation therapy

How many Queenslanders with cancer receive radiation therapy?

Radiation therapy			Queensland	
(Number of cancer pat	ients receiving radiation therapy)		Queensianu	
		2003-2007	2008-2012	2013-2017
Cancer group	Cancer	Radiation therapy	Radiation therapy	Radiation therapy
cancer group	cancer	number	number	number
		(rate*)	(rate*)	(rate*)
Breast	Breast	7,324	9,534	11,254
Dicast	bicast	(61%)	(66%)	(67%)
Colorectal	Colon	981	1,030	860
		(11%)	(10%)	(8%)
	Rectal	1,549	1,962	1,984
		(36%)	(43%)	(41%)
CNS and brain	Brain	743	984	1,068
		(56%)	(63%)	(65%)
	Cervical	397	449	484
		(49%)	(51%)	(51%)
	Ovarian	128	134	116
Gynaecological		(12%)	(11%)	(9%)
	Uterine	483	623	/13
		(28%)	(29%)	(29%)
	Vulva	/b (270()	108	140
		(37%)	(38%)	(3/%)
	Head and neck	1,860	2,284	(700()
		(00%)	(70%)	200
	Hypopharynx	(76%)	(020%)	(91%)
		(70%)	(0370)	(01/0)
	Larynx	(67%)	(73%)	(75%)
		130	1/8	155
	Major salivary glands	(60%)	(67%)	(61%)
	Nasal cavity and paranasal	77	96	127
Head and neck	sinuses	(66%)	(70%)	(72%)
		65	73	91
	Nasopharynx	(83%)	(80%)	(89%)
		448	512	501
	Oral cavity	(52%)	(52%)	(46%)
		524	815	1.199
	Oropharynx	(77%)	(84%)	(86%)
		78	62	43
	Other pharynx	(69%)	(73%)	(72%)
	1 been	54	141	278
l levetekilien.	Liver	(6%)	(11%)	(16%)
Hepatobiliary	Pancreatic, biliary tract &	185	323	425
	duodenal	(8%)	(10%)	(11%)
lung	Non small call lung	3,363	4,319	5,091
Lulig		(45%)	(51%)	(53%)
Prostate	Prostato	6,558	8,102	6,990
FIUSIALE	FIUSIALE	(41%)	(41%)	(34%)
	Oosonhagogastric	888	1,188	1,363
opper di	Uesupilagugasti it	(31%)	(36%)	(37%)
	Bladder	586	760	770
Urological		(26%)	(34%)	(29%)
orological	Tosticular	154	55	22
		(25%)	(7%)	(3%)

Rates have been adjusted for age and sex.

* Percentage of cancer patients receiving radiation therapy.

1.5 | Queenslanders receiving intravenous systemic therapy

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

Systemic therapy	Systemic therapy Queensland					
(Number of cancer pat	ients receiving systemic therapy)		Queensianu			
		2003-2007	2008-2012	2013-2017		
Cancor group	Cancor	Systemic therapy	Systemic therapy	Systemic therapy		
Cancer group	Cancer	number	number	number		
		(rate*)	(rate*)	(rate*)		
Broact	Proost	5,358	7,167	8,224		
Breast	Breast	(44%)	(49%)	(50%)		
Colorectal	Colon	2,693	3,105	3,353		
	60011	(32%)	(31%)	(32%)		
colorcetar	Rectal	1,921	2,051	2,155		
	neetai	(45%)	(45%)	(44%)		
CNS and brain	Brain	257	375	416		
		(19%)	(24%)	(25%)		
	Cervical	252	344	450		
		(31%)	(40%)	(47%)		
	Ovarian	/50	855	929		
Gynaecological		(70%)	(70%)	(70%)		
	Uterine	351	564	631		
		(21%)	(27%)	(26%)		
	Vulva	(1.40/)	JZ (100/)	(220/)		
		012	1 217	1 790		
	Head and neck	(37%)	(40%)	(46%)		
		67	92	132		
	Hypopharynx	(39%)	(49%)	(54%)		
		130	167	187		
	Larynx	(21%)	(29%)	(31%)		
		27	34	25		
	Major salivary glands	(13%)	(15%)	(10%)		
Lload and neak	Nasal cavity and paranasal	33	41	66		
Hedu allu Heck	sinuses	(27%)	(31%)	(38%)		
	Nasonharvny	58	65	79		
		(74%)	(71%)	(78%)		
	Oral cavity	207	236	232		
		(24%)	(24%)	(22%)		
	Oropharynx	341	643	1,036		
		(50%)	(66%)	(75%)		
	Other pharynx	49	39	33		
		(43%)	(48%)	(55%)		
	Liver	162	303	412		
Hepatobiliary	Dancroatic biliany tract &	(10%)	(24%)	(24%)		
	duodenal	(35%)	(40%)	(13%)		
	uuuuenai	2 551	2 357	(4370)		
Lung	Non-small cell lung	(34%)	(39%)	(45%)		
		2.378	2.291	1.835		
Prostate	Prostate	(15%)	(11%)	(9%)		
		1,036	1,334	1,606		
Upper GI	Uesophagogastric	(36%)	(40%)	(43%)		
	Diaddar	791	863	1,191		
Urological	Bladder	(34%)	(39%)	(45%)		
orological	Testigular	278	436	484		
	resticular	(45%)	(59%)	(57%)		

Rates have been adjusted for age and sex.

* Percentage of cancer patients receiving IV systemic therapy.

2 | Efficient

Optimally using resources to achieve desired outcomes.



2.1 | Hospital stay

How long do people having cancer surgery stay in hospital?

Length of stay											
(Median time in a	lays between the admis	ssion and discharge date of car	cer sur	gery)			Queensia				
Cancer group	Cancer	Surgery type		2003-200)7		2008-20	12		2013-20	17
			All	Public	Private	All	Public	Private	All	Public	Private
Breast	Breast	Breast cancer surgery	2	2	3	2	1	2	1	1	1
Colorectal	Colon	Major resection	9	9	9	8	8	7	7	7	7
	Rectal	Major resection	10	10	9	8	9	8	8	9	7
CNS and brain	Brain	Major resection	9	10	8	10	11	9	9	9	8
	Cervical	Major resection	5	6	5	3	3	4	2	2	3
Gynaecological	Ovarian	Major resection	8	8	9	7	6	8	6	5	6
Gynaecological	Uterine	Major resection	2	2	1	1	1	1	1	1	1
	Vulva	Major resection	8	8	6	6	7	4	6	7	5
	Head and neck	Major resection	3	7	1	2	6	1	2	5	1
	Hypopharynx	Major resection	19	21	1	15	16	1	15	16	1
	Larynx	Major resection	1	8	1	1	5	1	1	2	1
	Major salivary glands	Major resection	2	3	2	2	3	2	3	3	2
Head and neck	Nasal cavity and paranasal sinuses	Major resection	2	5	2	2	3	1	3	5	1
	Nasopharynx	Major resection	1	-	1	3	7	1	1	1	1
	Oral cavity	Major resection	6	8	2	6	8	2	5	8	2
	Oropharynx	Major resection	2	2	1	1	1	1	1	1	1
	Other pharynx	Major resection	9	14	1	6	6	5	2	2	2
Honatobilian	Liver	Major resection	11	11	11	9	9	10	8	7	9
riepatobiliary	Pancreatic, biliary tract & duodenal	Pancreaticoduodenectomy	18	18	18	15	15	15	13	12	14
Lung	Non-small cell lung	Major resection	8	8	8	8	7	8	6	6	7
Ophthalmic	Prostate	Prostatectomy	5	5	5	3	4	3	2	3	2
Linner Gi	Gastric	Gastrectomy	13	14	13	13	13	12	10	10	11
opper di	Oesophagus	Oesophagectomy	15	17	15	16	16	16	14	15	13
	Bladder	Cystectomy	13	14	13	13	13	13	12	12	13
Urological	Testicular	Orchidectomy	1	1	1	1	1	1	1	1	1

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	In-Hospital Queensland						
(% patients who di	ie in hospital following o	cancer surgery)	2002 2007	2008 2012	2012 2017		
			2003-2007 In-Hosnital	2000-2012 In-Hospital	2013-2017 In-Hospital		
Cancer group	Cancer	Surgery type	mortality	mortality	mortality		
			(rate*)	(rate*)	(rate*)		
- .	_	_					
Breast	Breast	Breast cancer surgery	<0.1%	<0.1%	0%		
Colorectal	Colon	Major resection	2.9%	2.4%	1.7%		
	Rectal	Major resection	2.4%	1.6%	1%		
CNS and brain	Brain	Major resection	3.8%	2.2%	1.2%		
	Cervical	Major resection	0%	0%	0%		
Gynaocological	Ovarian	Major resection	1.5%	0.3%	0%		
Gynaecological	Uterine	Major resection	0%	0%	0%		
	Vulva	Major resection	0.7%	0%	0%		
	Head and neck	Major resection	0.3%	0.4%	0.3%		
	Hypopharynx	Major resection	1.2%	1.3%	1.7%		
	Larynx	Major resection	0%	0.3%	0.3%		
	Major salivary glands	Major resection	0%	0%	0%		
Head and neck	Nasal cavity and paranasal sinuses	Major resection	0%	0%	0%		
	Nasopharynx	Major resection	0%	0%	0%		
	Oral cavity	Major resection	0.5%	0.6%	0.4%		
	Oropharynx	Major resection	0.3%	0.3%	0%		
	Other pharynx	Major resection	0%	0%	0%		
Henatohiliany	Liver	Major resection	4.9%	2.2%	1.7%		
	Pancreatic, biliary tract & duodenal	Pancreaticoduodenectomy	4%	2.6%	2.4%		
Lung	Non-small cell lung	Major resection	1.7%	1.3%	0.5%		
Prostate	Prostate	Prostatectomy	0.1%	<0.1%	<0.1%		
Upper GI	Gastric	Gastrectomy	4.1%	2.4%	1.7%		
	Oesophagus	Oesophagectomy	0.4%	1.2%	0.4%		
Urological	Bladder	Cystectomy	1.6%	0.7%	0.7%		
eroio _b ica	Testicular	Orchidectomy	0.2%	0.1%	0%		

3.2 | 30 day mortality

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

30 day mortalit		ancer surgery)		Queensland		Other sources~
Cancer group	Cancer	Surgery type	2003-2007 30 day mortality (rate*)	2008-2012 30 day mortality (rate*)	2013-2017 30 day mortality (rate*)	30 day mortality (rate*)
Breast	Breast	Breast cancer surgery	0.1%	0.1%	<0.1%	0.2%1
Calanastal	Colon	Major resection	3.2%	2.8%	2.2%	3.4% ²
Colorectal	Rectal	Major resection	2.5%	1.7%	1%	3.3% ²
CNS and brain	Brain	Major resection	9.3%	5.8%	4.4%	3.0% ³
	Cervical	Major resection	0%	0%	0%	N/A
Currenteriori	Ovarian	Major resection	1%	0.4%	0.5%	2.0%4
Gynaecological	Uterine	Major resection	0%	3.2%	2.5%	0.5% ⁵
	Vulva	Major resection	0.6%	0%	0.7%	N/A
	Head and neck	Major resection	0.3%	0.8%	0.9%	0.8%6
	Hypopharynx	Major resection	0%	1.3%	2.6%	N/A
	Larynx	Major resection	0.3%	0.3%	1.2%	2.8% ⁷
	Major salivary glands	Major resection	0.6%	0%	0.6%	N/A
Head and neck	Nasal cavity and paranasal sinuses	Major resection	0%	1.8%	0%	N/A
	Nasopharynx	Major resection	0%	0%	0%	N/A
	Oral cavity	Major resection	0.3%	0.6%	0.9%	1.0%8
	Oropharynx	Major resection	0.3%	1.5%	0.2%	0.7% ⁹
	Other pharynx	Major resection	0%	0%	0%	N/A
	Liver	Major resection	5%	2.2%	1.7%	1.8%10
Hepatobiliary	Pancreatic, biliary tract & duodenal	Pancreaticoduodenectomy	4.3%	1.8%	2%	2.0% ¹¹
Lung	Non-small cell lung	Major resection	2%	1.4%	0.6%	3.0%12
Prostate	Prostate	Prostatectomy	0.2%	0.1%	<0.1%	0.2%13
	Gastric	Gastrectomy	3.4%	2.4%	2%	4.0% ¹⁴
Upper Gl	Oesophagus	Oesophagectomy	0.8%	0.4%	1.3%	4.0% ¹⁴
	Bladder	Cystectomy	2.1%	0.7%	0.9%	2.0%15
Urological	Testicular	Orchidectomy	0.4%	0.1%	0.1%	N/A

*Rates have been adjusted for age and sex. ~ Other sources include published data see reference list for further information.

N/A No appropriate references identified.

3.3 | 90 day mortality

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

90 day mortality	90 day mortality (% patients who die < 90 days following cancer surgery)			Queensland			
Cancer group	Cancer	Surgery type	2003-2007 90 day mortality (rate*)	2008-2012 90 day mortality (rate*)	2013-2017 90 day mortality (rate*)		
Breast	Breast	Breast cancer surgery	0.3%	0.2%	0.2%		
Colorestal	Colon	Major resection	6.1%	5%	3.9%		
Colorectai	Rectal	Major resection	4.5%	3.3%	2.3%		
CNS and brain	Brain	Major resection	25%	21%	15.9%		
	Cervical	Major resection	0%	0%	0.3%		
Currancelogical	Ovarian	Major resection	2.8%	1.4%	1.4%		
Gynaecological	Uterine	Major resection	1%	5.9%	2.5%		
	Vulva	Major resection	1.1%	0.9%	1.2%		
	Head and neck	Major resection	1.7%	1.6%	1.6%		
	Hypopharynx	Major resection	7.1%	3.7%	3.6%		
	Larynx	Major resection	2.6%	1.1%	2.1%		
	Major salivary glands	Major resection	1%	1.3%	0.8%		
Head and neck	Nasal cavity and paranasal sinuses	Major resection	0%	3.5%	1.1%		
	Nasopharynx	Major resection	0%	0%	0%		
	Oral cavity	Major resection	1.1%	1.3%	1.8%		
	Oropharynx	Major resection	1.3%	2.1%	0.7%		
	Other pharynx	Major resection	0%	0%	0%		
Henetekilien	Liver	Major resection	7.7%	4.4%	2.6%		
перагорінагу	Pancreatic, biliary tract & duodenal	Pancreaticoduodenectomy	7.2%	2.8%	3.6%		
Lung	Non-small cell lung	Major resection	4.2%	3.2%	1.5%		
Prostate	Prostate	Prostatectomy	0.2%	0.2%	0.1%		
	Gastric	Gastrectomy	6.6%	4.1%	3.4%		
opper GI	Oesophagus	Oesophagectomy	0.9%	2.8%	2.1%		
linele -tl	Bladder	Cystectomy	6%	3.4%	2%		
orological	Testicular	Orchidectomy	0.6%	0.3%	0.1%		

3.4 | 1 year surgical survival

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

1 year surgical s	1 year surgical survival Queensland (% patients still alive 1 year after cancer surgery) Queensland								
Cancer group	Cancer	Surgery type	2003-2007 1 yr survival (rate*)	2008-2012 1 yr survival (rate*)	2013-2017 1 yr survival (rate*)				
Breast	Breast	Breast cancer surgery	98%	99%	99%				
Colorostal	Colon	Major resection	85%	88%	90%				
Colorectai	Rectal	Major resection	88%	91%	93%				
CNS and brain	Brain	Major resection	31%	41%	52%				
	Cervical	Major resection	99%	98%	97%				
Gunaacological	Ovarian	Major resection	90%	91%	92%				
Gynaecological	Uterine	Major resection	98%	87%	93%				
	Vulva	Major resection	88%	90%	92%				
	Head and neck	Major resection	90%	91%	92%				
	Hypopharynx	Major resection	70%	78%	78%				
	Larynx	Major resection	89%	90%	93%				
	Major salivary glands	Major resection	96%	96%	96%				
Head and neck	Nasal cavity and paranasal sinuses	Major resection	89%	84%	89%				
	Nasopharynx	Major resection	85%	100%	100%				
	Oral cavity	Major resection	89%	92%	91%				
	Oropharynx	Major resection	93%	93%	96%				
	Other pharynx	Major resection	85%	82%	87%				
11 t - h 11	Liver	Major resection	75%	86%	91%				
Hepatobiliary	Pancreatic, biliary tract & duodenal	Pancreaticoduodenectomy	73%	80%	83%				
Lung	Non-small cell lung	Major resection	83%	89%	93%				
Prostate	Prostate	Prostatectomy	99%	99%	100%				
Lippor Gl	Gastric	Gastrectomy	77%	82%	84%				
	Oesophagus	Oesophagectomy	87%	83%	82%				
Urological	Bladder	Cystectomy	77%	82%	85%				
UIUUgical	Testicular	Orchidectomy	99%	99%	99%				

3.5 | 2 year surgical survival

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

2 year surgical so	urvival	raanul	Queensland				
Cancer group	Cancer	Surgery type	2003-2007 2 yr survival (rate*)	2008-2012 2 yr survival (rate*)	2013-2017 2 yr survival (rate*)		
Breast	Breast	Breast cancer surgery	96%	97%	97%		
Colorestal	Colon	Major resection	76%	80%	83%		
Colorectai	Rectal	Major resection	79%	84%	88%		
CNS and brain	Brain	Major resection	23%	27%	32%		
	Cervical	Major resection	97%	94%	97%		
Currancelogical	Ovarian	Major resection	77%	82%	83%		
Gynaecological	Uterine	Major resection	92%	89%	78%		
	Vulva	Major resection	80%	86%	85%		
	Head and neck	Major resection	79%	82%	85%		
	Hypopharynx	Major resection	54%	58%	66%		
	Larynx	Major resection	77%	81%	82%		
	Major salivary glands	Major resection	89%	91%	91%		
Head and neck	Nasal cavity and paranasal sinuses	Major resection	81%	74%	81%		
	Nasopharynx	Major resection	83%	91%	80%		
	Oral cavity	Major resection	79%	82%	85%		
	Oropharynx	Major resection	83%	87%	91%		
	Other pharynx	Major resection	72%	68%	86%		
Honotobilion	Liver	Major resection	64%	73%	81%		
Repatobiliary	Pancreatic, biliary tract & duodenal	Pancreaticoduodenectomy	52%	61%	63%		
Lung	Non-small cell lung	Major resection	70%	79%	86%		
Prostate	Prostate	Prostatectomy	98%	99%	99%		
Unner Gl	Gastric	Gastrectomy	63%	70%	73%		
	Oesophagus	Oesophagectomy	69%	68%	71%		
	Bladder	Cystectomy	62%	71%	75%		
	Testicular	Orchidectomy	98%	98%	99%		

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 treatment¹ within 30 days of diagnosis?

Time to first cance (% patients whose	r treatment time from diagnosis to first	cancer tr	eatment is :	≤30 days)		Quee	nsland				
			2003-200	7		2008-201	2		201	3-2017	
Cancer group	Cancer	Tir	ne to first c	ancer	Time to first cancer			Time to first cancer			
		All	Public	Private	All	Public	Private	All	Public	Private	P-value
Breast	Breast	76%	60%	88%	68%	48%	84%	61%	41%	78%	 ***
Calanadal	Colon	78%	74%	82%	73%	64%	81%	71%	61%	82%	 ***
Colorectal	Rectal	61%	50%	71%	55%	39%	71%	51%	36%	66%	 ***
CNS and brain	Brain	78%	73%	86%	79%	75%	86%	80%	79%	83%	1
	Cervical	40%	34%	54%	32%	22%	54%	29%	22%	45%	" ***
Gynaacological	Ovarian	87%	81%	92%	84%	77%	90%	88%	82%	94%	 ***
Gynaecological	Uterine	63%	34%	90%	62%	36%	86%	53%	25%	82%	 ***
	Vulva	45%	32%	61%	41%	25%	65%	33%	19%	55%	 ***
	Head and neck	53%	40%	81%	47%	36%	73%	46%	37%	66%	 ***
	Hypopharynx	45%	39%	78%	43%	38%	68%	41%	38%	60%	**
	Larynx	60%	45%	94%	57%	44%	82%	56%	48%	71%	 ***
	Major salivary glands	74%	63%	84%	66%	51%	82%	62%	51%	74%	 ***
Head and neck	Nasal cavity and paranasal sinuses	61%	47%	87%	64%	47%	89%	61%	52%	78%	 **
	Nasopharynx	36%	30%	74%	44%	39%	63%	48%	45%	62%	
	Oral cavity	51%	40%	71%	44%	39%	58%	46%	40%	59%	 ***
	Oropharynx	45%	34%	80%	39%	26%	79%	39%	28%	67%	***
	Other pharynx	41%	33%	77%	26%	17%	74%	34%	31%	42%	1
Hanatahilian	Liver	58%	52%	66%	56%	52%	63%	48%	41%	63%	 ***
перасорінагу	Pancreatic, biliary tract & duodenal	66%	57%	74%	63%	49%	73%	57%	45%	69%	 ***
Lung	Non-small cell lung	55%	47%	70%	48%	38%	64%	48%	38%	62%	 ***
Prostate	Prostate	6%	5%	6%	5%	4%	6%	9%	7%	10%	 ***
Upper GI	Oesophagogastric	55%	42%	69%	47%	34%	62%	46%	36%	58%	***
	Bladder	41%	39%	43%	39%	33%	45%	41%	38%	44%	**
urological	Testicular	97%	97%	97%	98%	98%	97%	98%	96%	99%	 **

*Rates have been adjusted for age and sex. **P-value <0.05 & ***P-value < 0.001 indicate significant difference in rates for 2013-2017 between patients treated in public and private facilities.

4.2 | Remoteness

What percentage of patients living outside a major city received cancer treatment¹

Rural and remot	e first cancer treatmen	t				Queensland					
(% of patients rea	ceiving first cancer trea	tment)				Queensianu					
			2003-2007			2008-2012			2013-2017		
Cancer group	Cancer	First	cancer treat	ment	First o	ancer treat	ment		First cancer	treatment	t
		Rural & Remote	Regional	Metro- politan	Rural & Remote	Regional	Metro- politan	Rural & Remote	Regional	Metro- politan	P- value _{trend}
Breast	Breast	93%	95%	95%	93%	95%	95%	93%	96%	95%	
Colorostal	Colon	90%	93%	94%	90%	93%	94%	91%	92%	92%	
Colorectal	Rectal	96%	96%	96%	96%	96%	96%	94%	95%	93%	
CNS and brain	Brain	86%	81%	86%	87%	88%	86%	84%	86%	87%	
	Cervical	90%	88%	93%	90%	92%	93%	90%	96%	95%	
	Ovarian	77%	78%	86%	79%	79%	84%	80%	78%	84%	
Gynaecological	Uterine	94%	94%	96%	93%	95%	95%	90%	91%	91%	
	Vulva	92%	95%	92%	82%	90%	92%	81%	88%	87%	
	Head and neck	81%	89%	89%	89%	90%	92%	90%	92%	92%	**
	Hypopharynx	82%	90%	86%	86%	90%	87%	88%	89%	88%	
	Larynx	81%	89%	92%	87%	90%	93%	90%	95%	94%	
	Major salivary glands	96%	93%	93%	97%	94%	94%	98%	93%	94%	
Head and neck	Nasal cavity and paranasal sinuses	74%	81%	85%	100%	91%	92%	76%	89%	89%	
	Nasopharynx	81%	86%	91%	89%	82%	92%	78%	97%	94%	
	Oral cavity	78%	88%	86%	90%	87%	91%	89%	90%	89%	
	Oropharynx	82%	91%	91%	89%	91%	93%	90%	93%	96%	***
	Other pharynx	67%	80%	73%	68%	91%	75%	100%	61%	74%	
Henatohiliary	Liver	23%	30%	37%	35%	41%	42%	33%	38%	45%	***
riepatobiliary	Pancreatic, biliary tract & duodenal	39%	45%	46%	42%	49%	50%	44%	52%	54%	***
Lung	Non-small cell lung	54%	63%	66%	62%	68%	72%	70%	75%	77%	 ***
Prostate	Prostate	62%	67%	67%	70%	72%	73%	71%	75%	75%	**
Upper GI	Oesophagogastric	59%	63%	68%	65%	66%	68%	63%	63%	65%	
	Bladder	83%	87%	90%	89%	90%	90%	90%	87%	88%	
Urological	Testicular	97%	99%	97%	99%	99%	98%	99%	99%	98%	

*Rates have been adjusted for age and sex. **P-value_{trend} <0.05 & ***P- value_{trend} <0.001 indicate significant difference in rates for 2013-2017 across remoteness of residence.

4.3 | Time to first treatment \leq 30 days

What percentage of patients living outside a major city received their first cancer treatment¹ within 30 days of diagnosis?

Rural and remot (% patients whose days)	te first cancer treatme se time from diagnosis	ent s to first can	icer treatme	ent is ≤30		Queensland					
		2003-2007			2008-2012			2013-2017			
Cancer group	Cancer	Time to fi	irst cancer t	reatment	Time to fi	irst cancer ti	reatment	Time	e to first cano	er treatm	ent
		Rural & Remote	Regional	Metro- politan	Rural & Remote	Regional	Metro- politan	Rural & Remote	Regional	Metro- politan	P- value _{trend}
Breast	Breast	73%	74%	77%	62%	64%	71%	51%	57%	65%	***
Colorectal	Colon	81%	78%	78%	72%	72%	73%	63%	68%	73%	***
	Rectal	60%	63%	61%	52%	51%	57%	45%	47%	54%	 ***
CNS and brain	Brain	80%	79%	77%	80%	85%	76%	78%	80%	81%	1
	Cervical	35%	34%	43%	26%	33%	33%	33%	29%	29%	
Gynaecological	Ovarian	82%	86%	88%	82%	82%	85%	83%	89%	88%	 !
Gynaccological	Uterine	57%	62%	65%	58%	61%	63%	42%	51%	56%	
	Vulva	28%	39%	51%	48%	36%	42%	20%	29%	36%	**
	Head and neck	48%	53%	54%	42%	42%	50%	38%	43%	50%	 ***
	Hypopharynx	41%	53%	44%	41%	31%	47%	37%	45%	42%	1
	Larynx	55%	62%	61%	56%	53%	59%	44%	60%	58%	 **
	Major salivary glands	68%	71%	76%	69%	51%	70%	65%	63%	61%	1
Head and neck	Nasal cavity and paranasal sinuses	76%	61%	58%	72%	58%	65%	47%	56%	68%	
	Nasopharynx	59%	49%	31%	29%	58%	45%	64%	53%	44%	1
	Oral cavity	48%	53%	51%	36%	38%	49%	34%	38%	52%	***
	Oropharynx	36%	38%	50%	34%	35%	41%	30%	32%	43%	 ***
	Other pharynx	37%	41%	42%	7%	40%	26%	40%	14%	37%	1
Honatobiliany	Liver	62%	46%	60%	51%	54%	58%	40%	56%	47%	
nepatobiliary	Pancreatic, biliary tract & duodenal	61%	69%	66%	62%	59%	64%	61%	54%	58%	
Lung	Non-small cell lung	55%	55%	55%	52%	47%	47%	50%	46%	48%	1
Prostate	Prostate	9%	5%	5%	5%	5%	6%	8%	8%	10%	***
Upper GI	Oesophagogastric	52%	53%	56%	44%	47%	47%	34%	38%	51%	***
Urological	Bladder	39%	41%	42%	39%	41%	38%	36%	40%	42%	 **
orological	Testicular	95%	97%	97%	96%	99%	98%	97%	96%	98%	1

÷.

*Rates have been adjusted for age and sex.

P-valuetrend <0.05 & *P- valuetrend < 0.001 indicate significant difference in rates for 2013-2017 across remoteness of residence.

5 Equitable

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

5.1 | Over 75 years

What percentage of patients aged ≥75 received their first cancer treatment¹ within 30 days of diagnosis?

Time to first car	icer treatment							
(% patients who treatment is ≤30	se time from diagnosis) days)	to first cancer		Queen	sland			
Cancer group	Cancer	2003 Time to fi treat	-2007 irst cancer ment	2008-2 Time to fir treatn	2012 st cancer nent	Tim	2013-2017 ne to first can treatment	cer
		Age < 75	Age ≥75	Age < 75	Age ≥75	Age < 75	Age ≥75	P-value
Breast	Breast	76%	76%	69%	65%	62%	60%	
Coloractal	Colon	77%	81%	71%	77%	69%	73%	 ***
colorectar	Rectal	60%	66%	53%	62%	49%	57%	 ***
CNS and brain	Brain	75%	93%	78%	89%	79%	93%	 ***
	Cervical	40%	47%	31%	37%	29%	35%	1 1
Cupacological	Ovarian	88%	84%	85%	78%	88%	87%	1
Gynaecological	Uterine	64%	61%	62%	64%	54%	49%	1
	Vulva	41%	54%	35%	58%	32%	35%	
	Head and neck	52%	58%	46%	50%	46%	47%	1
	Hypopharynx	47%	38%	41%	50%	43%	35%	1
	Larynx	57%	73%	55%	65%	55%	59%	•
	Major salivary glands	78%	62%	69%	51%	64%	55%	i I I
Head and neck	Nasal cavity and paranasal sinuses	60%	68%	62%	67%	60%	67%	1
	Nasopharynx	37%	0%	47%	0%	44%	80%	 **
	Oral cavity	50%	54%	45%	43%	47%	43%	1
	Oropharynx	46%	42%	39%	38%	39%	33%	1
	Other pharynx	40%	45%	25%	38%	33%	33%	•
	Liver	57%	66%	56%	61%	47%	50%	i
Hepatobiliary	Pancreatic, biliary tract & duodenal	66%	68%	64%	59%	59%	53%	 **
Lung	Non-small cell lung	57%	51%	50%	43%	48%	45%	 **
Ophthalmic	Prostate	5%	7%	5%	6%	9%	9%	1
Upper Gl	Oesophagogastric	56%	54%	47%	45%	45%	48%	1
	Bladder	38%	44%	35%	43%	39%	43%	**
Urological	Testicular	97%	75%	98%	100%	98%	100%)

P-value <0.05 & *P-value < 0.001 indicate significant difference in rates for 2013-2017 between age <75 and ≥75.
 ¹ Treatment includes IV systemic therapy, radiation therapy, and/or surgery. Oral systemic therapy is not included in analysis.

5.2 | Indigenous

What percentage of Indigenous patients received their first cancer treatment¹ within 30 days of diagnosis?

Time to first cancer treatment Queensland											
(% patients who	se time from diagnosi	s to first cance	er treatme	ent is ≤30 c	lays)						
		20	03-2007		20	08-2012			2013-20	017	
Cancer group	Cancer	Time to first	cancer tr	eatment	Time to first	cancer tr	eatment	Time to	first canc	er treatme	ent
editer Steap	currect	Indigenous	Non-In	digenous	Indigenous	Non-Inc	digenous	Indigenous	Non-Inc	digenous	P-
		All	Public	Private	All	Public	Private	All	Public	Private	value
Breast	Breast	63%	60%	88%	55%	48%	84%	39%	41%	78%	
Colorectal	Colon	73%	74%	82%	74%	64%	81%	57%	61%	82%	
Colorectar	Rectal	58%	50%	71%	55%	38%	71%	37%	36%	66%	1
CNS and brain	Brain	63%	73%	86%	71%	75%	86%	75%	79%	83%	
	Cervical	24%	35%	53%	25%	22%	54%	36%	21%	45%	**
Gunaacological	Ovarian	68%	82%	92%	63%	77%	90%	76%	82%	94%	
Gynaecological	Uterine	44%	34%	89%	43%	36%	86%	26%	25%	82%	
	Vulva	0%	33%	61%	22%	26%	65%	21%	18%	55%	
	Head and neck	39%	40%	81%	36%	36%	74%	33%	38%	66%	
	Hypopharynx	60%	38%	78%	24%	38%	71%	64%	36%	61%	1
	Larynx	10%	46%	93%	45%	44%	82%	32%	49%	72%	
	Major salivary glands	100%	62%	84%	75%	51%	82%	0%	52%	74%	1
Head and neck	Nasal cavity and paranasal sinuses	100%	44%	87%	48%	47%	89%	-	52%	78%	
	Nasopharynx	76%	27%	74%	0%	42%	63%	75%	44%	62%	1
	Oral cavity	42%	39%	71%	37%	39%	58%	21%	40%	59%	
	Oropharynx	29%	34%	80%	37%	26%	79%	30%	28%	67%	
	Other pharynx	38%	32%	77%	0%	17%	73%	0%	31%	47%	
Henatohiliary	Liver	41%	53%	66%	29%	52%	63%	52%	41%	63%	
riepatobiliary	Pancreatic, biliary tract & duodenal	58%	57%	74%	68%	49%	73%	47%	46%	69%	
Lung	Non-small cell lung	51%	47%	70%	38%	38%	65%	40%	38%	62%	1
Ophthalmic	Prostate	3%	5%	6%	5%	4%	6%	10%	7%	10%	1
Upper GI	Oesophagogastric	42%	42%	69%	41%	34%	62%	33%	36%	59%	
	Bladder	53%	39%	43%	44%	33%	45%	37%	38%	43%	1
UUUBICAI	Testicular	100%	97%	97%	96%	98%	97%	100%	96%	99%	

*Rates have been adjusted for age and sex. **P-value <0.05 & ***P-value < 0.001 indicate significant difference in rates for 2013-2017 between Indigenous patients treated in any hospital and non-

Indigenous patients treated in a public hospital.

5.3 | Socioeconomically disadvantaged

What percentage of socioeconomically disadvantaged patients received their first cancer treatment¹ within 30 days from diagnosis?

Queensland

Time to first cancer treatment

(% patients whose time from diagnosis to first cancer treatment is \leq 30

uuys)											
			2003-2007		Time to fi	rst cancer 2008-2012	treatment		2013-2017		
Cancer group	Cancer	Disad- vantaged	Middle	Affluent	Disadv- antaged	Middle	Affluent	Disad- vantaged	Middle	Affluent	P- value _{trend}
Breast	Breast	72%	75%	85%	61%	69%	80%	50%	60%	70%	 ***
	Colon	77%	78%	80%	70%	73%	78%	62%	70%	79%	i ***
Colorectal	Rectal	58%	62%	63%	50%	55%	64%	44%	52%	63%	 ***
CNS and brain	Brain	76%	78%	80%	82%	78%	78%	82%	82%	83%	
	Cervical	41%	37%	56%	26%	32%	46%	19%	29%	24%	I I I
	Ovarian	84%	87%	90%	77%	86%	89%	92%	83%	94%	
Gynaecological	Uterine	54%	65%	78%	55%	63%	73%	43%	55%	64%	 ***
	Vulva	40%	42%	73%	44%	39%	49%	29%	37%	40%	
	Head and neck	50%	54%	54%	42%	48%	52%	42%	50%	65%	
	Hypopharynx	53%	45%	10%	43%	42%	43%	16%	50%	82%	1
	Larynx	56%	62%	60%	54%	57%	64%	52%	65%	65%	
	Major salivary glands	73%	75%	62%	50%	71%	87%	44%	66%	82%	i I I
Head and neck	Nasal cavity and paranasal sinuses	64%	60%	56%	51%	69%	67%	47%	59%	69%	 **
	Nasopharynx	47%	29%	28%	35%	49%	46%	39%	47%	66%	
	Oral cavity	45%	52%	60%	39%	46%	50%	53%	52%	67%	**
	Oropharynx	40%	46%	54%	34%	40%	45%	33%	41%	55%	 ***
	Other pharynx	54%	36%	56%	26%	28%	0%	0%	75%	-	
Llonotobilion	Liver	55%	60%	53%	53%	57%	61%	53%	43%	50%	1
перагорінагу	Pancreatic, biliary tract & duodenal	63%	66%	73%	60%	62%	73%	51%	59%	72%	 ***
Lung	Non-small cell lung	52%	55%	64%	44%	48%	59%	46%	51%	69%	 ***
Ophthalmic	Prostate	5%	6%	5%	4%	5%	6%	9%	9%	14%	- ***
Upper GI	Oesophagogastric	51%	56%	62%	41%	47%	59%	37%	48%	61%	 ***
Urological	Bladder	39%	42%	43%	41%	37%	43%	43%	47%	37%	**
OLOIORICAI	Testicular	96%	97%	99%	97%	98%	98%	96%	98%	100%	1

*Rates have been adjusted for age and sex.

P- value_{trend} <0.05 & *P- value_{trend} < 0.001 indicate significant difference in rates for 2013-2017 across socioeconomic groups.

Appendix

Cancer groupCancer or objectIncidenceIncidenceMortalityMortalityIncidenceIncidenceMortalityMore	
Breast Breast 12,084 60.7 2,491 12.6 14,743 64.3 2,576 11.2 17,176 66.1 2,853 Colorectal 13,253 68.1 4,666 24.0 14,874 65.7 4,993 22.1 15,803 60.3 5,464 Colorectal 60/0 8,846 45.7 3,045 15.8 10,214 45.3 3,387 15.0 10,792 41.3 3,680 Colorectal 4,407 22.4 1,601 8.2 4,660 20.3 1,606 7.00 5,011 19.1 1,784 CNS and brain Brain 1,327 6.8 1,078 5.5 1,563 6.9 1,246 5.5 1,679 6.6 1,425 GVarian 1,108 10.8 690 6.6 1,301 10.9 776 6.3 1,379 10.2 881 GVarian 1,108 10.8 690 6.6 1,301 10.9 776 6.3	Mortality ASR
$ \begin{array}{ c c c c c c c c c c c c c c c c c c c$	10.8
ColorectalColor8,84645.73,04515.810,21445.33,38715.010,79241.33,680Retal4,40722.41,6018.24,66020.31,6067.05.0119.11,784CNS and brainBrain1,3276.81,0785.51,5536.91,2465.551,6796.61,425CNS and brainGervical8228.32362.38848.02512.109898.2304Gorain1,10810.86906.61,30110.97766.31,37910.2881Gorain1,10810.86906.61,30110.97766.31,37910.2881Gorain1,10810.86906.61,30110.97766.31,37910.2881Gurain1,10810.86906.61,30110.97766.31,37910.2881Head and1,10810.86.92,16118.13452.92,48818.1423Head and enck2,91614.61,1105.63,4411,491,2435.44,1931,571,297Head and enck6153.12271.25.982.62391.16392.32.1030Maior Glands2191.1430.22121.0480.2262	20.6
Rectal 4,407 22.4 1,601 8.2 4,660 20.3 1,606 7.0 5,011 19.1 1,784 CNS and brain Brain 1,327 6.8 1,078 5.5 1,563 6.9 1,246 5.5 1,679 6.6 1,425 Gynaecological Cervical 822 8.3 236 2.3 884 8.0 251 2.1 989 8.2 304 Gynaecological Ovarian 1,108 10.8 690 6.6 1,301 10.9 776 6.3 1,379 10.2 881 Ovarian 1,711 16.7 337 3.2 2,161 18.1 345 2.9 2,488 18.1 423 Vulva 208 2.0 56 0.5 299 2.5 84 0.7 385 2.8 103 Head and eck 2,916 14.6 1,110 5.6 3,441 14.9 1,243 5.4 4,193 15.7 <td>13.9</td>	13.9
CNS and brain Brain 1,327 6.8 1,078 5.5 1,563 6.9 1,246 5.5 1,679 6.6 1,425 Gynaecological Cervical 822 8.3 236 2.3 884 8.0 251 2.1 989 8.2 304 Gynaecological Ovarian 1,108 10.8 690 6.6 1,301 10.9 776 6.3 1,379 10.2 881 Uterine 1,711 16.7 337 3.2 2,161 18.1 345 2.9 2,488 18.1 423 Vulva 208 2.0 56 0.5 299 2.5 84 0.7 385 2.8 103 Head and neck 2,916 14.6 1,110 5.6 3,441 14.9 1,243 5.4 4,193 15.7 1,297 Head and neck 2,916 14.6 1,110 5.6 201 0.9 129 0.6 270 1.0 <td>6.7</td>	6.7
Gynaecological Cervical 822 8.3 236 2.3 884 8.0 251 2.1 989 8.2 304 Gynaecological Ovarian 1,108 10.8 690 6.6 1,301 10.9 776 6.3 1,379 10.2 881 Uterine 1,711 16.7 337 3.2 2,161 18.1 345 2.9 2,488 18.1 423 Vulva 208 2.0 56 0.5 299 2.5 84 0.7 385 2.8 103 Head and neck 2,916 14.6 1,110 5.6 3,441 14.9 1,243 5.4 4,193 15.7 1,297 Hypopharynx 172 0.9 112 0.6 201 0.9 129 0.6 270 1.0 134 Major Salivary Glands 219 1.1 43 0.2 221 1.0 48 0.2 262 1.0 50 <td>5.5</td>	5.5
Ovarian 1,108 10.8 690 6.6 1,301 10.9 776 6.3 1,379 10.2 881 Oyarian 1,711 16.7 337 3.2 2,161 18.1 345 2.9 2,488 18.1 423 Vulva 208 2.0 56 0.5 299 2.5 84 0.7 385 2.8 103 Head and neck 2,916 14.6 1,110 5.6 3,441 14.9 1,243 5.4 4,193 15.7 1,297 Hypopharynx 172 0.9 112 0.6 201 0.9 129 0.6 270 1.0 134 Larynx 615 3.1 227 1.2 598 2.6 239 1.1 639 2.3 210 Major Salivary Clands 219 1.1 43 0.2 221 1.0 48 0.2 262 1.0 50 <td>2.3</td>	2.3
Uterine 1,711 16.7 337 3.2 2,161 18.1 345 2.9 2,488 18.1 423 Vulva 208 2.0 56 0.5 299 2.5 84 0.7 385 2.8 103 Head and neck 2,916 14.6 1,110 5.6 3,441 14.9 1,243 5.4 4,193 15.7 1,297 Hypopharynx 172 0.9 112 0.6 201 0.9 129 0.6 270 1.0 134 Larynx 615 3.1 227 1.2 598 2.6 239 1.1 639 2.3 210 Major Salivary Glands 219 1.1 43 0.2 221 1.0 48 0.2 262 1.0 50	6.2
Vulva 208 2.0 56 0.5 299 2.5 84 0.7 385 2.8 103 Head and neck 2,916 14.6 1,110 5.6 3,441 14.9 1,243 5.4 4,193 15.7 1,297 Hypopharynx 172 0.9 112 0.6 201 0.9 129 0.6 270 1.0 134 Larynx 615 3.1 227 1.2 598 2.6 239 1.1 639 2.3 210 Major Salivary Glands 219 1.1 43 0.2 221 1.0 48 0.2 262 1.0 50	3.0
Head and neck 2,916 14.6 1,110 5.6 3,441 14.9 1,243 5.4 4,193 15.7 1,297 Hypopharynx 172 0.9 112 0.6 201 0.9 129 0.6 270 1.0 134 Larynx 615 3.1 227 1.2 598 2.6 239 1.1 639 2.3 210 Major Salivary Glands 219 1.1 43 0.2 221 1.0 48 0.2 262 1.0 50	0.7
Hypopharynx 172 0.9 112 0.6 201 0.9 129 0.6 270 1.0 134 Larynx 615 3.1 227 1.2 598 2.6 239 1.1 639 2.3 210 Major Salivary Glands 219 1.1 43 0.2 221 1.0 48 0.2 262 1.0 50	4.8
Larynx 615 3.1 227 1.2 598 2.6 239 1.1 639 2.3 210 Major Salivary Glands 219 1.1 43 0.2 221 1.0 48 0.2 262 1.0 50 Nasal Cavity and Nasal Cavity 2 2 1.0 48 0.2 262 1.0 50	0.5
Major Salivary 219 1.1 43 0.2 221 1.0 48 0.2 262 1.0 50 Glands Nasal Cavity Head and pack and	0.8
Nasal Cavity Head and nack and	0.2
Paranasal 117 0.6 43 0.2 145 0.6 56 0.2 183 0.7 70 Paranasal Sinuses	0.3
Nasopharynx 79 0.4 34 0.2 93 0.4 37 0.2 110 0.4 48	0.2
Oral Cavity 902 4.5 299 1.5 1,058 4.6 362 1.6 1,216 4.6 381	1.4
Oropharynx 698 3.5 284 1.4 1,031 4.4 304 1.3 1,447 5.4 370	1.4
Other 114 0.6 68 0.3 94 0.4 68 0.3 66 0.2 34 Pharynx	0.1
Biliary tract* 306 1.6 221 1.1 410 1.8 286 1.3 638 2.4 483	1.8
Hepatobiliary Liver 889 4.5 655 3.4 1,289 5.7 951 4.2 1,780 6.6 1,226	4.6
Pancreatic 2,048 10.5 1,812 9.3 2,479 10.9 2,166 9.5 3,055 11.5 2,549	9.5
Lung 9,096 46.7 7,509 38.7 10,763 47.2 8,363 36.8 12,614 47.2 9,172	34.3
Non-small 7,497 38.5 6,180 31.8 8,718 38.2 6,712 29.5 9,928 37.1 7,137	26.7
Prostate Prostate 16,163 173.0 2,895 36.0 20,245 179.4 3,234 33.6 20,403 153.7 3,219	27.5
Gastric 1,670 8.6 1,191 6.1 1,744 7.7 1,218 5.3 1,999 7.6 1,310	5.0
Oesophagus 1,118 5.7 876 4.5 1,319 5.7 944 4.1 1,447 5.4 1,049	3.9
Bladder 2,351 12.2 880 4.6 2,354 10.4 1,024 4.6 2,774 10.4 1,099	4.1
Testicular 620 3.2 26 0.1 752 3.5 20 0.1 852 3.7 24	0.1

What are the incidence and mortality counts and age-standardised rates (ASR) by cancer, 2003-2017?

ASR: age standardised rate per 100,000 population.

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.

Comorbidity

A clinical condition that has the potential to significantly affect a cancer patient's prognosis.

Comorbidity is derived from hospital admissions data following the Quan algorithm for classifying ICD-10 coded conditions, modified to exclude metastasis, which is represented by a separate and distinct metastasis dimension.

Comorbidity is limited to conditions coded in any admission episode between 12 months before and 12 months after the date of cancer diagnosis.

For any given cancer diagnosis, comorbidity is restricted to conditions other than the primary cancer. Benign tumours were not considered comorbidities.

Co-morbidity list:		
AIDS	Acute myocardial infarction	Cancer
Cerebrovascular disease	Congestive heart failure	Chronic obstructive pulmonary disease
Dementia	Diabetes	Diabetes + complications
Hemiplegia or Paraplegia	Mild liver disease	Moderate/severe liver disease
Peptic ulcer	Peripheral vascular disease	Renal disease
Rheumatoid disease		

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.

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.

Indigenous status

A measure of whether a person identifies as being of Aboriginal and/or Torres Strait Islander origin.

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 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-Indigenous

A measure of whether a person doesn't identify themselves as Indigenous

Over 75 years

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

P value

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.

Prevalence

The number of Queenslanders with a diagnosis of cancer who were alive on 31 December 2017.

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 <u>https://www.targetingcancer.com.au</u>

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, Indigenous status and age group, Pearson's chi square was used. For analysis by remoteness and socioeconomic status a non-parametric test such as the Cochrane-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). <u>https://www.abs.gov.au/websitedbs/d3310114.nsf/home/australian+statistical+geography+standard+(asgs).</u>

Surgery/Major Resection

Refer to Appendix 1.

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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Although care has been taken to ensure the accuracy, completeness and reliability of the information provided these data are released for purposes of quality assurance and are to be used with appropriate caution. Be aware that data can be altered subsequent to original distribution and that the information is therefore subject to change without notice. It is recommended that careful attention be paid to the contents of any data and if required CAQ can be contacted with any questions regarding its use. If you find any errors or omissions, please report them to <u>CancerAllianceQld@health.qld.gov.au</u>