

11

Chapter

Surgery for Testicular Cancer

Infocus – access and flows for
public & private patients
2002-2011

Queensland Health

Queensland Cancer Control
Safety and Quality Partnership

Queensland Cancer Control Analysis Team

For more information:

Queensland Cancer Control Analysis Team
Queensland Health
Radiation Oncology Mater Centre
31 Raymond Terrace
South Brisbane Queensland 4001 Australia
Tel: (61+) (07) 3840 3200
Email: gccat@health.qld.gov.au
<https://gccat.health.qld.gov.au>

Cancer Surgery in Queensland: Infocus - access and flows for public & private patients 2002-2011

Chapter 11: Testicular Cancer

Suggested citation:

Queensland Government. Cancer Surgery in Queensland: Infocus - access and flows for public & private patients 2002-2011. Chapter 11 Testicular Cancer. Queensland Health, Brisbane 2002-2011

Copyright protects this publication. However, the Queensland Government has no objection to this material being reproduced with acknowledgement, except for commercial purposes

Permission to reproduce for commercial purposes should be sought from:

The Manager
Queensland Cancer Control Analysis Team
Queensland Health
Radiation Oncology Mater Centre
31 Raymond Terrace
South Brisbane Queensland 4001

ISBN: 978-1-876532-06-2

Published by Queensland Health

September 2014

© The State of Queensland

Queensland Health 2014

Acknowledgements

The authors acknowledge and appreciate the work of the staff of the Cancer Council Queensland who operate and maintain the Queensland Cancer Registry and the Queensland Health staff who contribute to and participate in the maintenance of the Queensland Cancer Registry, the Admitted Patient Data Collection, the online Oncology Analysis System (OASys), Queensland Oncology Online (QOOL) and other tools which support the collection, analysis and interpretation of cancer data in Queensland.

We acknowledge the Cancer Control Safety and Quality Partnership (The Partnership) subcommittees and clinical leads, who have contributed to and participated in the creation of this report.

Testicular cancer clinical lead
Nigel Duglison

Cancer Surgery in Queensland: Infocus – access and flows for public & private patients 2002-2011. Chapter 11 Testicular Cancer has been prepared by Michael Blake, Danica Cossio, Nathan Dunn, Tania Eden, Tracey Guan, Julie Moore, Shoni Philpot and Nancy Tran the Queensland Cancer Control Analysis Team.

Table of contents

Introduction	1
Data sources and methods	1
How the cohorts were identified	2
Time periods	3
Exclusions.....	3
Identification and categorisation of cancer related procedures.....	3
Number of testicular cancer ICD-10-AM 7 th edition coded procedures	4
Surgery rate for testicular cancer	5
Surgery rate for testicular cancer by patient residence.....	6
Surgery rate for testicular cancer by HHS performing surgery	6
Characteristics of patients receiving testicular surgery by patient residence	7
Lymph node excision rate for testicular cancer by patient residence	8
Lymph node excision rate for testicular cancer by HHS performing surgery.....	8
Patient flows	9
10 year testicular cancer patient flows for surgery	10
Surgery rates.....	14
10 year surgery rates for testicular surgery by patient residence	15
10 year surgery rates for testicular surgery by HHS performing surgery.....	16
Technical appendix	17
How different counting rules can be applied to a patient	18
Definitions.....	19

Introduction

In 2014 an estimated 165 new cases of invasive testicular cancer will be diagnosed among Queensland residents¹. The number of new cases is expected to reach 185 by 2021¹.

Testicular cancer is a chapter in the *Cancer Surgery in Queensland: Infocus - access and flows for public & private patients 2002-2011* series and should be read in conjunction with the background document, available at <https://qccat.health.qld.gov.au/>

Surgery is a critical component of the curative treatment of testicular cancer. This chapter is focused on two dimensions of access to cancer care services – surgery rates and patient flows. It provides population wide information on rates of surgery provision and flows based on patient Hospital and Health Service (HHS) of residence. The chapter contains information on testicular cancer surgery in Queensland from 2002 - 2011 and reflections on the trends in the data observed over the most recent three year time period 2009 - 2011.

For the first time, a population profile for testicular cancer surgery in Queensland and the HHSs is described including the characteristics of testicular cancer patients who receive surgery. Importantly, it provides information on the number and demographic characteristics of testicular cancer patients who do not receive surgery and where they live according to HHS of residence.

The baseline information provided in this chapter will inform the planning and funding of cancer services, provide HHSs with locally meaningful information and contribute to our understanding of variation in testicular cancer surgery across Queensland. This information enables Queensland to compare themselves with other Australian states and territories, internationally and published literature.

This chapter is framed around five important questions relevant to cancer surgery in Queensland.

1. How many Queenslanders who are newly diagnosed with testicular cancer have a surgical procedure as a result of their diagnosis?
2. What are the characteristics of Queenslanders who have a surgical procedure as a result of their testicular cancer diagnosis and those that do not have a surgical procedure?
3. What types of surgery are performed for patients who are diagnosed with testicular cancer?
4. What number of surgeries is performed by HHSs for Queenslanders newly diagnosed with testicular cancer?
5. Where do patients receive their surgery?

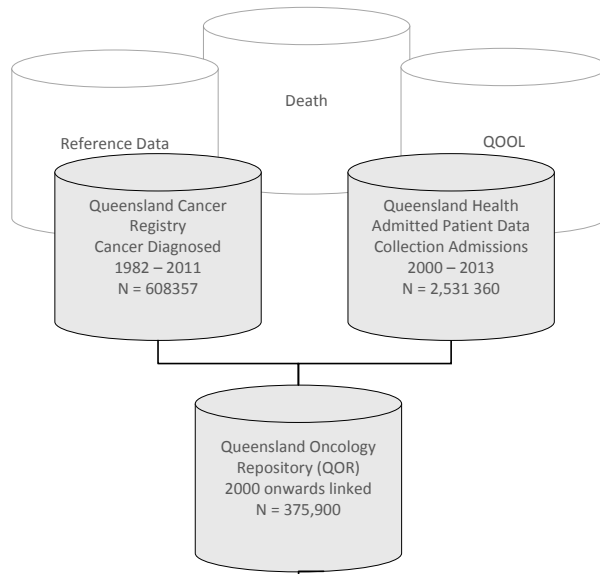
Data sources and methods

Key to QCCAT's program of work is our ability to link population based cancer information on an individual patient basis, using a master linkage key specifically developed by our team. This matched and linked data is housed in the Queensland Oncology Repository (QOR), a resource managed by QCCAT. This centralised repository, QOR, compiles and collates data from a range of source systems including Queensland Cancer Registry, hospital admissions data, death data, treatment systems, public and private pathology, hospital clinical data systems and QOOL. QOR contains approximately 32 million records between 1982 – 2013. Our matching and linking processes provide the 375 900 matched and linked records of cancer patients between 2000 – 2011, which are the starting point for this analysis. This chapter is structured around four cohorts of patients: **Queensland Cancer Cohort; Testicular Cancer Cohort; Testicular Surgery Cohort** and the **No Surgery Cohort**.

¹ Queensland Health. *Oncology Analysis System (OASys). Queensland Cancer Control Analysis Team: Brisbane; 2014.*
<https://qccat.health.qld.gov.au/OASys>. Accessed 01/08/2014

How the cohorts were identified

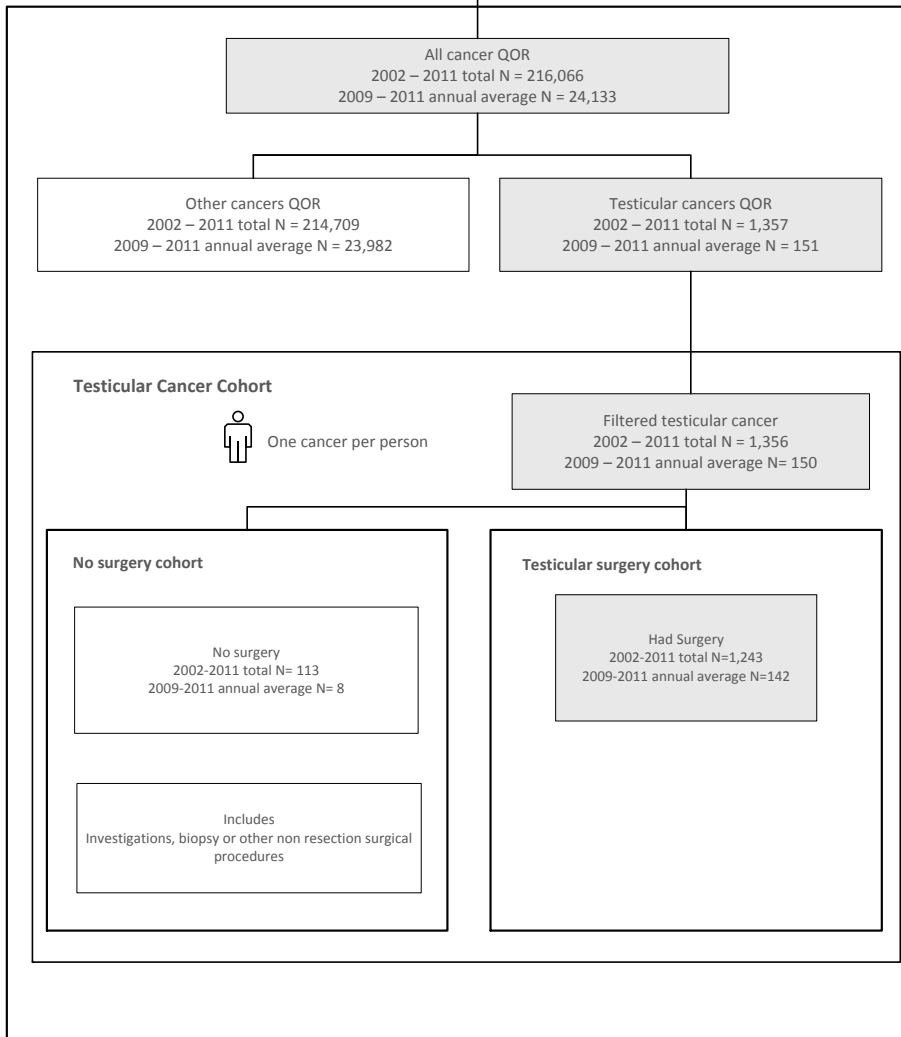
2002 – 2011 AND 2009 – 2011 ANNUAL AVERAGE
PUBLIC & PRIVATE HOSPITAL PATIENTS



Queensland Oncology Repository
QOR consolidates patient information for Queensland and contains data on invasive, benign and uncertain cancers, patient demographics, surgery, chemotherapy, radiotherapy and death. QOR also contains data collected by clinicians at MDT meetings

Sophisticated matching and linking is performed to identify all persons with cancer who had surgery

Queensland Cancer Cohort



Queensland Cancer Cohort
Includes: Queensland Invasive Cancer incidence
Discharged patients from public or private hospitals
Queensland residents
All ages

Testicular surgery cohort
Filtered cases
Potential duplicate records
If 2 or more diagnosis of same cancer earliest retained

- Rules**
1. If the surgery happened > 1 month before the date of diagnosis then the surgery is excluded
 2. If two of the same types of surgery happened on the same day count the surgery once

No surgery cohort
Includes Qld residents of all ages diagnosed with testicular cancer who did not undergo surgery in the surgical cohort time period, as defined by the procedures on page 4.

Time periods

Time period – 01 December 2001 to 31 December 2013

Diagnosis year - 01 January 2002 to 31 December 2011

Cancer definitions - the site and morphology of the cancers have been coded according to the International Classification of Diseases for Oncology, 3rd edition (ICD-O-3).

Site	ICD-0-3	Morphology
Malignant neoplasm of testis	C62	All
Undescended testis	C62.0	
Descended testis	C62.1	
Testis, unspecified	C62.9	

Exclusions

The following exclusions apply:

- Non Queensland residents
- People not admitted to a hospital in Queensland for invasive testicular cancer

Identification and categorisation of cancer related procedures

A testicular surgery performed up to one month prior to or anytime within twelve months following a cancer diagnosis was included. The following process was used to assign a testicular surgery to patients with cancer:

- Potential cancer related procedures were identified for testicular cancer from the Australian Classification of Health Interventions (ACHI) International Classification of Diseases (ICD-10-AM) 7th Edition, 2010
- Identified procedures were reviewed by expert clinicians for completeness and accuracy

A lymph node excision procedure was identified for testicular cancer surgery patients where an excision was performed within 3 months following a cancer diagnosis.

Number of testicular cancer ICD-10-AM 7th edition coded procedures

The following tables outlines the relevant testicular procedures included in this report for Queensland residents (both public & private) diagnosed with invasive testicular cancer:

ICD-10-AM	PROCEDURE/GROUPING	NUMBER OF PROCEDURES		
		2002-2011	Annual average 2009 -2011	2011
	ORCHIDECTOMY	1268	143	145
30641-00	Orchidectomy, unilateral	1183	131	131
30641-01	Orchidectomy, bilateral	12	1	1
30641-02	Orchidectomy with insertion of testicular prosthesis, unilateral	69	10	12
30641-03	Orchidectomy with insertion of testicular prosthesis, bilateral	4	1	1
30644-09	Excision of spermatic cord	18	1	0
	LYMPH NODE EXCISION	81	10	7
30329-00	Excision of lymph node of groin	5	1	1
30329-01	Regional excision of lymph nodes of groin	1	0	0
90282-00	Excision of lymph node of other site	3	0	0
90282-01	Regional excision of lymph nodes of other site	1	0	0
37607-00	Radical excision of retroperitoneal lymph nodes	29	4	5
37610-00	Radical excision of retroperitoneal lymph nodes, subsequent	39	5	1
90282-02	Radical excision of lymph nodes of other site	3	0	0

DEFINITIVE
SURGERY
MUTUALLY
EXCLUSIVE

Surgery rate for testicular cancer

ANNUAL AVERAGE YEAR OF DIAGNOSIS 2009 – 2011
PUBLIC & PRIVATE HOSPITAL PATIENTS

Characteristic	Annual Average		Had Surgery		No Surgery	
	Testicular cancer cohort	(Qld %)	n	(row %)	n	(row %)
Queensland	150	(100%)	142	(94%)	8	(6%)
Age Group						
0-14	1	(1%)	1	(100%)		
15-24	27	(18%)	27	(99%)	1	(4%)
25-34	54	(36%)	52	(96%)	2	(4%)
35-44	40	(27%)	38	(95%)	2	(5%)
45-54	20	(14%)	19	(93%)	1	(7%)
55-64	6	(4%)	4	(76%)	1	(24%)
65+	3	(2%)	2	(70%)	2	(60%)
Indigenous Status						
Indigenous	5	(3%)	5	(100%)		
Non-Indigenous	126	(84%)	121	(96%)	5	(4%)
Not Stated/Unknown	19	(13%)	16	(84%)	3	(16%)
Socioeconomic Status						
Affluent	27	(18%)	26	(95%)	1	(5%)
Middle	103	(68%)	98	(95%)	5	(5%)
Disadvantaged	20	(13%)	18	(92%)	2	(8%)
Unknown	1	(1%)			1	(100%)
Remoteness						
Major City	106	(70%)	101	(96%)	4	(4%)
Inner Regional	22	(15%)	21	(93%)	2	(7%)
Outer Regional	21	(14%)	19	(92%)	2	(8%)
Remote & Very Remote	1	(1%)	1	(100%)		
Qld Unknown	1	(1%)			1	(100%)
Diagnosis Basis						
Histology	148	(98%)	141	(95%)	7	(5%)
Cytology						
Clinical	2	(2%)	1	(43%)	1	(57%)
Other	1	(1%)			1	(100%)
Comorbidity						
0	144	(96%)	137	(95%)	8	(5%)
1	5	(3%)	4	(86%)	1	(21%)
2+	1	(1%)	1	(100%)		

In the interest of completeness, annual average numbers have been included with fewer than 16 cases. Numbers < 16 should be interpreted with caution due to poor reliability of calculations based on small numbers. Annual average numbers have been rounded up to the nearest whole number for those with less than one, therefore the totals may not add up.

DEFINITIVE
SURGERY
MUTUALLY
EXCLUSIVE

Surgery rate for testicular cancer by patient residence

ANNUAL AVERAGE YEAR OF DIAGNOSIS 2009 – 2011
PUBLIC & PRIVATE HOSPITAL PATIENTS

	Annual Average		Had Surgery		No Surgery	
	Testicular cancer cohort	(Qld %)	n	(row %)	n	(row %)
Queensland	150	(100%)	142	(94%)	8	(6%)
HHS (patient residence)						
Metro South	39	(26%)	38	(97%)	1	(3%)
Metro North	26	(17%)	25	(95%)	1	(5%)
Gold Coast	22	(14%)	20	(92%)	2	(8%)
Sunshine Coast	14	(9%)	13	(98%)	1	(7%)
Cairns and Hinterland	8	(6%)	8	(96%)	1	(12%)
Townsville	8	(5%)	7	(92%)	1	(13%)
West Moreton	8	(5%)	7	(96%)	1	(13%)
Darling Downs	8	(5%)	7	(92%)		
Central Queensland	6	(4%)	6	(95%)	1	(16%)
Wide Bay	5	(3%)	4	(86%)	1	(21%)
Mackay	5	(4%)	5	(94%)	1	(19%)
South West	1	(1%)	1	(100%)		
Torres Strait and Cape York	1	(1%)	1	(100%)		
Qld Unknown	1	(1%)			1	(100%)

*No patients from North West or Central West were reported as having testicular cancer.

Surgery rate for testicular cancer by HHS performing surgery

ANNUAL AVERAGE YEAR OF DIAGNOSIS 2009 – 2011
PUBLIC & PRIVATE HOSPITAL PATIENTS

	Annual Average	
	Had Surgery	(col %)
Queensland	142	(100%)
HHS (performing surgery)		
Metro South	51	(36%)
Metro North	30	(21%)
Gold Coast	18	(13%)
Sunshine Coast	12	(9%)
Townsville	8	(5%)
West Moreton	6	(4%)
Cairns and Hinterland	5	(3%)
Mackay	4	(3%)
Central Queensland	3	(2%)
Darling Downs	3	(2%)
Wide Bay	2	(1%)

DEFINITIVE
SURGERY
MUTUALLY
EXCLUSIVE

*The South West, North West, Central West, Torres Strait & Cape York and Qld Unknown HHSs did not perform testicular cancer surgery.

In the interest of completeness, annual average numbers have been included with fewer than 16 cases. Numbers < 16 should be interpreted with caution due to the poor reliability of calculations based on small numbers. Annual average numbers have been rounded up to the nearest whole number for those with less than one. For example if a HHS performed one surgery from 2009 - 2011 the annual average will be rounded up to one to reflect that this HHS is performing surgery. Therefore the totals may not add up.

Characteristics of patients receiving testicular surgery by patient residence

ANNUAL AVERAGE YEAR OF DIAGNOSIS 2009 – 2011

PUBLIC & PRIVATE HOSPITAL PATIENTS

DEFINITIVE
SURGERY
MUTUALLY
EXCLUSIVE

	Had Surgery		Median Age at Diagnosis yrs	Disadvantaged		Indigenous		One or more comorbidities		Private		Emergency	
	n	(Qld %)		n	(row %)	n	(row %)	n	(row %)	n	(row %)	n	(row %)
Queensland	142		33 yrs	18	(13%)	5	(3%)	5	(4%)	65	(46%)	10	(7%)
HHS (patient residence)													
Metro South	38	(27%)	32 yrs	5	(13%)	2	(4%)	1	(3%)	16	(43%)	4	(10%)
Metro North	25	(17%)	33 yrs	3	(14%)			1	(5%)	12	(50%)	1	(4%)
Gold Coast	20	(14%)	32 yrs					1	(5%)	10	(50%)	1	(5%)
Sunshine Coast	13	(9%)	36 yrs	1	(8%)			1	(8%)	6	(45%)	1	(8%)
Cairns and Hinterland	8	(6%)	36 yrs	2	(25%)	1	(13%)	1	(13%)	3	(42%)	1	(13%)
Darling Downs	7	(5%)	31 yrs	2	(23%)					4	(50%)	1	(14%)
Townsville	7	(5%)	31 yrs	2	(23%)	2	(27%)	1	(14%)	2	(23%)	1	(14%)
West Moreton	7	(5%)	31 yrs	1	(14%)					4	(59%)	1	(14%)
Central Queensland	6	(4%)	35 yrs					1	(17%)	4	(61%)	1	(17%)
Mackay	5	(4%)	29 yrs	1	(20%)	1	(20%)	1	(20%)	2	(47%)	1	(20%)
Wide Bay	4	(3%)	36 yrs	3	(75%)					1	(25%)	1	(25%)
Torres Strait and Cape York	1	(1%)	29 yrs	1	(100%)	1	(100%)					1	(100%)
South West	1	(1%)	27 yrs					1	(100%)	1	(100%)		

*No patients from North West, Central West or Qld Unknown were reported as undergoing testicular surgery

In the interest of completeness, annual average numbers have been included with fewer than 16 cases. Numbers < 16 should be interpreted with caution due to the poor reliability of calculations based on small numbers. Annual average numbers have been rounded up to the nearest whole number for those with less than one. For example if a HHS performed one surgery from 2009 - 2011 the annual average will be rounded up to one to reflect that this HHS is performing surgery. Therefore the totals may not add up.

Lymph node excision rate for testicular cancer by patient residence

ANNUAL AVERAGE YEAR OF DIAGNOSIS 2009 – 2011
PUBLIC & PRIVATE HOSPITAL PATIENTS

EVER HAD
MUTUALLY
EXCLUSIVE

	Annual Average		Lymph Node Excision		No Lymph Node Excision	
	Had Surgery	(Qld %)	n	(row %)	n	(row %)
Queensland	142	(100%)	7	(5%)	135	(95%)
HHS (patient residence)						
Metro South	38	(27%)	3	(7%)	36	(93%)
Metro North	25	(17%)	1	(4%)	24	(96%)
Gold Coast	20	(14%)			20	(100%)
Sunshine Coast	13	(9%)	2	(13%)	12	(88%)
Cairns and Hinterland	8	(6%)	1	(13%)	8	(96%)
Townsville	7	(5%)	1	(14%)	7	(91%)
West Moreton	7	(5%)			7	(100%)
Darling Downs	7	(5%)	1	(14%)	7	(91%)
Central Queensland	6	(4%)	1	(17%)	6	(94%)
Wide Bay	4	(3%)			4	(100%)
Mackay	5	(4%)			5	(100%)
South West	1	(1%)			1	(100%)
Torres Strait and Cape York	1	(1%)			1	(100%)

*No patients from North West, Central West or Qld Unknown were reported as having testicular cancer surgery.

Lymph node excision rate for testicular cancer by HHS performing surgery

ANNUAL AVERAGE YEAR OF DIAGNOSIS 2009 – 2011
PUBLIC & PRIVATE HOSPITAL PATIENTS

DEFINITIVE
SURGERY
MUTUALLY
EXCLUSIVE

	Annual Average		Lymph Node Excision		No Lymph Node Excision	
	Had Surgery	(col %)	n	(row %)	n	(row %)
Queensland	142	(100%)	7	(5%)	135	(95%)
HHS (performing surgery)						
Metro South	51	(36%)	4	(50%)	47	(35%)
Metro North	30	(21%)	2	(23%)	28	(21%)
Gold Coast	18	(13%)			18	(13%)
Sunshine Coast	12	(9%)	1	(18%)	11	(8%)
Townsville	8	(5%)	1	(14%)	7	(5%)
West Moreton	6	(4%)			6	(5%)
Cairns and Hinterland	5	(3%)			5	(3%)
Mackay	4	(3%)			4	(3%)
Central Queensland	3	(2%)			3	(2%)
Darling Downs	3	(2%)			3	(2%)
Wide Bay	2	(1%)			2	(1%)

*The South West, North West, Central West, Torres Strait & Cape York and Qld Unknown HHSs did not perform testicular cancer surgery.

Patient flows



10 year testicular cancer patient flows for surgery

YEAR OF DIAGNOSIS 2002 – 2011 (COL% ROW %)

PUBLIC & PRIVATE HOSPITAL PATIENTS

Hospitals performing surgery* HHS (patient residence)	HHS of surgery							
	Metro South 10	Metro North 13	Gold Coast 5	Sunshine Coast 6	Cairns and Hinterland 4	Townsville 3	West Moreton 2	Darling Downs 4
Metro South	268~ (66% 86%)	39 (14% 13%)	1 (1% 0%)				2 (5% 1%)	
Metro North	46 (11% 19%)	197 (71% 80%)		1 (1% 0%)			1 (3% 0%)	
Gold Coast	10 (2% 6%)	3 (1% 2%)	152 (99% 92%)					
Sunshine Coast	5 (1% 5%)	10 (4% 10%)		87 (93% 84%)				1 (2% 1%)
Cairns and Hinterland	16 (4% 24%)				49 (94% 72%)	2 (3% 3%)		1 (2% 1%)
Townsville	3 (1% 5%)	2 (1% 3%)				61 (86% 92%)		
West Moreton	12 (3% 22%)	7 (3% 13%)	1 (1% 2%)	1 (1% 2%)			32 (84% 59%)	1 (2% 2%)
Darling Downs	25 (6% 36%)	2 (1% 3%)					2 (5% 3%)	41 (87% 59%)
Central Queensland	10 (2% 17%)	6 (2% 10%)					1 (3% 2%)	1 (2% 2%)
Wide Bay	5 (1% 11%)	12 (4% 26%)		4 (4% 9%)				
Mackay	4 (1% 10%)					8 (11% 20%)		
South West	1 (0% 20%)	1 (0% 20%)						2 (4% 40%)
Torres Strait and Cape York	1 (0% 25%)				3 (6% 75%)			
North West								
Central West								
Qld Unknown				1 (1% 100%)				
Queensland	406~	279	154	94	52	71	38	47
Qld (%)	(33%)	(22%)	(12%)	(8%)	(4%)	(6%)	(3%)	(4%)
Annual Average	41	28	15	9	5	7	4	5

*the number of hospitals within a HHS performing testicular surgery

~Using Metro South as an example:

311 – Total number of patients who lived in Metro South.

268 – Number of patients who had testicular surgery in Metro South and lived in Metro South.

86% – Of the 311 patients who lived in Metro South 268 had testicular surgery in Metro South (268/311 = 86%).

406 – Total number of testicular surgeries that Metro South performed.

66% – Of the 406 patients who had testicular surgery in Metro South 268 also lived in Metro South (268/406 = 66%).

10 year testicular cancer patient flows for surgery

YEAR OF DIAGNOSIS 2002 – 2011 (COL% ROW %)

PUBLIC & PRIVATE HOSPITAL PATIENTS

DEFINITIVE
SURGERY
MUTUALLY
EXCLUSIVE

HHS of surgery							Qld 64	%
Central Queensland 4	Wide Bay 6	Mackay 3	South West 1	North West 1	Central West 1	Children's Health Queensland 1		
						1 (100% 0%)	311~	(25%)
							245	(20%)
							165	(13%)
							103	(8%)
							68	(5%)
							66	(5%)
							54	(4%)
							70	(6%)
41 (95% 69%)							59	(5%)
	25 (100% 54%)						46	(4%)
1 (2% 3%)		27 (100% 68%)					40	(3%)
			1 (100% 20%)				5	(0%)
				4 (100% 100%)			4	(0%)
					1 (100% 50%)		2	(0%)
1 (2% 50%)							1	(0%)
43 (3%)	25 (2%)	27 (2%)	1 (0%)	4 (0%)	1 (0%)	1 (0%)	1243	(100%)
4	3	3	0	0	0	0		

2011 testicular cancer patient flows for surgery

YEAR OF DIAGNOSIS 2011 (COL%. ROW%)

PUBLIC & PRIVATE HOSPITAL PATIENTS

DEFINITIVE
SURGERY
MUTUALLY
EXCLUSIVE

Hospitals performing surgery* HHS (patient residence)	HHS of surgery					
	Metro South 6	Metro North 6	Gold Coast 4	Sunshine Coast 3	Cairns and Hinterland 4	Townsville 3
Metro South	41~ (69% 87%)	6 (27% 13%)				
Metro North	4 (7% 21%)	15 (68% 79%)				
Gold Coast	1 (2% 6%)		16 (100% 94%)			
Sunshine Coast	1 (2% 8%)			11 (100% 92%)		
Cairns and Hinterland	2 (3% 20%)				8 (100% 80%)	
Townsville						8 (100% 100%)
West Moreton	1 (2% 25%)					
Darling Downs	5 (8% 56%)	1 (5% 11%)				
Central Queensland	3 (5% 38%)					
Wide Bay						
Mackay	1 (2% 14%)					
South West						
Torres Strait and Cape York						
North West						
Central West						
Qld Unknown						
Queensland Qld (%)	59~ (41%)	22 (15%)	16 (11%)	11 (8%)	8 (6%)	8 (6%)

*the number of hospitals within a HHS performing testicular surgery

~Using Metro South as an example:

47 – Total number of patients who lived in Metro South.

41 – Number of patients who had testicular surgery in Metro South and lived in Metro South.

87% – Of the 47 patients who lived in Metro South 41 had testicular surgery in Metro South (41/47 = 87%).

59 – Total number of testicular surgeries that Metro South performed.

69% – Of the 59 patients who had testicular surgery in Metro South 41 also lived in Metro South (41/59 = 69%).

2011 testicular cancer patient flows for surgery

YEAR OF DIAGNOSIS 2011 (COL%. ROW%)

PUBLIC & PRIVATE HOSPITAL PATIENTS

HHS of surgery					Qld	
West Moreton 2	Darling Downs 2	Central Queensland 2	Wide Bay 2	Mackay 2	n	%
					47~	(33%)
					19	(13%)
					17	(12%)
					12	(8%)
					10	(7%)
					8	(6%)
3 (75% 75%)					4	(3%)
1 (25% 11%)	2 (50% 22%)				9	(6%)
	1 (25% 13%)	4 (100% 50%)			8	(6%)
			2 (100% 100%)		2	(1%)
				6 (100% 86%)	7	(5%)
	1 (25% 100%)				1	(1%)
4 (3%)	4 (3%)	4 (3%)	2 (1%)	6 (4%)	144	(100%)

Surgery rates



10 year surgery rates for testicular surgery by patient residence

YEAR OF DIAGNOSIS 2002 – 2011
PUBLIC & PRIVATE HOSPITAL PATIENTS

DEFINITIVE
SURGERY
MUTUALLY
EXCLUSIVE

	Testicular cancer cohort		Had Surgery		Year of Diagnosis																			
					2002		2003		2004		2005		2006		2007		2008		2009		2010		2011	
	N	(col %)	n	(row %)	n	(%)	n	(%)	n	(%)	n	(%)	n	(%)	n	(%)	n	(%)	n	(%)	n	(%)		
Queensland	1356	(100%)	1243	(92%)	118	(89%)	103	(89%)	102	(89%)	119	(88%)	121	(88%)	111	(95%)	143	(94%)	149	(96%)	133	(94%)	144	(94%)
HHS (patient residence)																								
Metro South	327	(24%)	311	(95%)	30	(94%)	23	(92%)	29	(91%)	31	(97%)	33	(89%)	22	(96%)	28	(100%)	45	(100%)	23	(100%)	47	(94%)
Metro South	269	(20%)	245	(91%)	28	(85%)	27	(90%)	22	(88%)	19	(100%)	19	(76%)	32	(97%)	24	(92%)	26	(93%)	29	(97%)	19	(95%)
Gold Coast	186	(14%)	165	(89%)	10	(77%)	15	(88%)	16	(84%)	9	(75%)	16	(94%)	14	(88%)	25	(93%)	23	(88%)	20	(91%)	17	(100%)
Sunshine Coast	109	(8%)	103	(94%)	11	(92%)	5	(83%)	4	(80%)	11	(92%)	14	(93%)	10	(100%)	8	(100%)	14	(93%)	14	(100%)	12	(100%)
Darling Downs	75	(6%)	70	(93%)	6	(100%)	5	(83%)	6	(100%)	12	(92%)	2	(67%)	6	(100%)	11	(100%)	10	(100%)	3	(100%)	9	(82%)
Townsville	73	(5%)	66	(90%)	10	(83%)	3	(75%)	7	(100%)	3	(75%)	4	(100%)	7	(100%)	10	(91%)	7	(100%)	7	(100%)	8	(80%)
Cairns and Hinterland	72	(5%)	68	(94%)	4	(100%)	7	(88%)	4	(100%)	9	(100%)	6	(100%)	4	(67%)	10	(100%)	6	(100%)	8	(89%)	10	(100%)
Central Queensland	63	(5%)	59	(94%)	5	(100%)	6	(86%)	6	(100%)	7	(88%)	7	(100%)	3	(100%)	7	(88%)	2	(100%)	8	(89%)	8	(100%)
West Moreton	60	(4%)	54	(90%)	6	(100%)	4	(80%)	3	(100%)	6	(67%)	6	(100%)	2	(100%)	5	(83%)	10	(100%)	8	(89%)	4	(100%)
Wide Bay	55	(4%)	46	(84%)	4	(80%)	7	(100%)	1	(50%)	1	(25%)	6	(75%)	6	(100%)	9	(100%)	4	(80%)	6	(86%)	2	(100%)
Mackay	45	(3%)	40	(89%)	3	(75%)			2	(67%)	8	(89%)	6	(100%)	2	(100%)	4	(80%)	2	(100%)	6	(86%)	7	(100%)
North West	5	(0%)	4	(80%)							1	(100%)			2	(100%)	1	(100%)						
South West	5	(0%)	5	(100%)					1	(100%)	2	(100%)					1	(100%)					1	(100%)
Torres Strait and Cape York	4	(0%)	4	(100%)					1	(100%)			2	(100%)							1	(100%)		
Central West	2	(0%)	2	(100%)			1	(100%)							1	(100%)								
Qld Unknown	6	(0%)	1	(17%)	1	(100%)																		

Note: %'s for each year are used to show the percentage of patients who had surgery out of the total number of incidences for that year of testicular cancer. For example in Queensland in 2002 there were 118 patients who had surgery which is 89% of the total incidences of testicular cancer in 2002.

10 year surgery rates for testicular surgery by HHS performing surgery

YEAR OF DIAGNOSIS 2002 – 2011
PUBLIC & PRIVATE HOSPITAL PATIENTS

DEFINITIVE
SURGERY
MUTUALLY
EXCLUSIVE

	Had Surgery		Year of Diagnosis																			
			2002		2003		2004		2005		2006		2007		2008		2009		2010		2011	
	n	(row %)	n	(%)	n	(%)	n	(%)	n	(%)	n	(%)	n	(%)	n	(%)	n	(%)	n	(%)	n	(%)
Queensland	1243	(100%)	118	(100%)	103	(100%)	102	(100%)	119	(100%)	121	(100%)	111	(100%)	143	(100%)	149	(100%)	133	(100%)	144	(100%)
HHS (performing surgery)																						
Metro South	406	(33%)	33	(28%)	28	(27%)	34	(33%)	45	(38%)	37	(31%)	36	(32%)	40	(28%)	56	(38%)	38	(29%)	59	(41%)
Metro North	279	(22%)	33	(28%)	28	(27%)	22	(22%)	27	(23%)	24	(20%)	30	(27%)	26	(18%)	35	(23%)	32	(24%)	22	(15%)
Gold Coast	154	(12%)	9	(8%)	16	(16%)	16	(16%)	7	(6%)	15	(12%)	13	(12%)	24	(17%)	20	(13%)	18	(14%)	16	(11%)
Sunshine Coast	94	(8%)	11	(9%)	4	(4%)	5	(5%)	7	(6%)	11	(9%)	9	(8%)	10	(7%)	14	(9%)	12	(9%)	11	(8%)
Townsville	71	(6%)	10	(8%)	3	(3%)	8	(8%)	5	(4%)	6	(5%)	7	(6%)	9	(6%)	7	(5%)	8	(6%)	8	(6%)
Cairns and Hinterland	52	(4%)	3	(3%)	7	(7%)	4	(4%)	8	(7%)	7	(6%)	2	(2%)	7	(5%)	2	(1%)	4	(3%)	8	(6%)
Darling Downs	47	(4%)	7	(6%)	4	(4%)	5	(5%)	7	(6%)	3	(2%)	5	(5%)	8	(6%)	4	(3%)			4	(3%)
Central Queensland	43	(3%)	5	(4%)	6	(6%)	5	(5%)	4	(3%)	6	(5%)	1	(1%)	6	(4%)			6	(5%)	4	(3%)
West Moreton	38	(3%)	3	(3%)	1	(1%)	1	(1%)	2	(2%)	4	(3%)	2	(2%)	6	(4%)	8	(5%)	7	(5%)	4	(3%)
Mackay	27	(2%)	2	(2%)			1	(1%)	5	(4%)	4	(3%)	1	(1%)	1	(1%)	2	(1%)	5	(4%)	6	(4%)
Wide Bay	25	(2%)	2	(2%)	5	(5%)	1	(1%)	1	(1%)	4	(3%)	2	(2%)	4	(3%)	1	(1%)	3	(2%)	2	(1%)
North West	4	(0%)							1	(1%)			2	(2%)	1	(1%)						
Central West	1	(0%)			1	(1%)																
Children's Health Queensland	1	(0%)										1	(1%)									
South West	1	(0%)												1	(1%)							

*The Torres Strait & Cape York and Qld Unknown HHSs did not perform testicular surgery.

Note: %'s for each year are used to show the percentage of patients who had surgery out of the total number of surgeries for that year for testicular cancer. For example in Queensland in 2002 Metro South performed 28% of the total testicular cancer surgeries.

Technical appendix



How different counting rules can be applied to a patient

Hierarchy was used to determine definitive surgery for a patient. For example if a patient had an orchidectomy – unilateral and an excision of lesion of testicle then the patients definitive surgery will be orchidectomy - unilateral.

Order of the testicular surgery hierarchy (high to low):

1. Orchidectomy with insertion of testicular prosthesis, bilateral
2. Orchidectomy, bilateral
3. Orchidectomy with insertion of testicular prosthesis, unilateral
4. Orchidectomy, unilateral
5. Excision of spermatic cord

Definitions

Annual average

Annual average refers to the sum of numbers divided by the number of years being reported. In this report annual average numbers have been rounded up to the nearest whole number for those with less than 1.

Chargeable status - public and private

On admission to hospital, an eligible patient must elect to be either a public or private patient.

A public patient is a patient who:

- Elects to be treated as a public patient, and so cannot choose the doctor who treats them, or
- Is receiving treatment in a private hospital under a contract arrangement with a public hospital or health authority.

A private patient is a patient who, by choosing the doctor who will treat them (provided the doctor has 'right of private practice' or is a general practitioner/specialist with admitting rights) has elected to be treated as a private patient.

Cohort

Queensland cancer cohort

Queenslanders who were identified in Queensland Oncology Repository as being diagnosed with cancer between 1 January 2002 and 31 December 2011.

Testicular cancer cohort

Queenslanders who were diagnosed with testicular cancer between 1 January 2002 and 31 December 2011.

Testicular cancer surgery cohort

Anyone in the testicular cancer cohort who had any of the identified cancer related procedures from one month before or within twelve months of diagnosis as outlined on page 4.

No surgery cohort

Anyone in the testicular cancer surgery cohort who did not undergo surgery as an admitted patient in the surgical cohort time period, as defined by the procedures outlined on page 4.

Col %

Percentage of the column total

Comorbidity

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

Comorbidity is derived from hospital admissions data following the Quan algorithm¹ 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. For example: a breast cancer can be a comorbidity to a lung cancer diagnosis and vice versa, if they are diagnosed within 12 months of each other.

Benign tumours are not considered comorbidities.

Co-morbidity list

AIDS	Acute myocardial	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		

Definitive surgery

The highest ranked surgery the patient ever had defined by the testicular cancer surgery hierarchy outline on page 18.

Diagnosis Basis

Confirmation of cancer through clinical or histological tests.

Elective Status*Emergency Admission*

A patient admitted to hospital at short notice because of clinical need or if alternative care is not available.

Elective Admission

A patient who is admitted into hospital for treatment from the waiting list.

Had surgery

Includes Queensland residents of all ages diagnosed with invasive testicular cancer in the testicular cohort time period.

Hospital and Health Service (HHS)

For residence considerations, the Hospital and Health Service is a geographic area defined by a collection of Statistical Local Areas (SLA). For public hospitals and health service facilities, the term Hospital and Health Service is synonymous with a group of Queensland Health facilities and staff responsible for providing and delivering health resources and services to an area which may consist of one or more residential areas.

Queensland Unknown residence includes addresses reported as overseas, unknown or not fixed.

Indigenous Status

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

Median age

The age that divides a population into two halves: one older than the median, the other younger than the median.

No surgery

Includes Queensland residents of all ages diagnosed with invasive testicular cancer who did not undergo surgery as an admitted patient in the surgical cohort time period, as defined by the procedures outlined on page 4.

Number of procedures

Includes Queensland residents of all ages diagnosed with invasive testicular cancer who underwent a relevant testicular cancer procedure. The procedure could have occurred at any time with no counting rules applied as outlined on page 2.

Patient flows

Col% is used to show the distribution of residence for the total group of patients who were operated on by a single HHS. Row% is used to show the proportion of patients residing in a given HHS who also receive their surgery in the same HHS, and what proportion had their surgery in another HHS.

Qld %

Percentage of the Queensland total.

Remoteness

The relative remoteness of residence at time of diagnosis, based on the Australian Standard Geographical Classification (ASGC). This document classifies remoteness into four groups: Major City, Inner Regional, Outer Regional, and Remote/Very remote.

Row %

Percentage of the row total

Sex

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

Socioeconomic status

Socioeconomic classification 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 Local Areas (SLA).

The ABS uses SEIFA scores to rank regions into ten groups or deciles numbered 1 to 10, with 1 being the most disadvantaged group and 10 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)
Affluent	1-2	20%
Middle	3-8	60%
Disadvantaged	9-10	20%

The proportion of cases in each group will vary depending on the subset of the population being examined. For example, the proportion in the Disadvantaged group may be higher than 20% when the data is limited to cancers that are more common in poor compared to rich people

For more information

Queensland Cancer Control Analysis Team
Queensland Health
Radiation Oncology Mater Centre
31 Raymond Terrace
South Brisbane Queensland 4001 Australia
Tel: (61+) (07) 3840 3200
Email: qccat@health.qld.gov.au
<https://qccat.health.qld.gov.au>

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. Data can also quickly become out-of-date. It is recommended that careful attention be paid to the contents of any data and if required QCCAT can be contacted with any questions regarding its use. If you find any errors or omissions, please report them to qccat@health.qld.gov.au