

Non-Hodgkin Lymphoma in Queensland

An Overview 2012



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Foreword

Non-Hodgkin Lymphoma in Queensland: An Overview 2012 provides clinicians, cancer patients and their families with up to date and relevant information on Non-Hodgkin Lymphoma (NHL) in Queensland.

This report presents cancer data for 2009 and projections for 2013. It is part of a series of cancer specific reports and is part of the Oncology Analysis System (OASys) online library.

The report has four parts. NHL projections for 2013 is presented in part one, part two presents Queensland NHL statistics, part three presents NHL statistics for Queensland Hospital and Health Services and part four presents a state-wide view of multi-disciplinary team data for Queensland public hospitals participating in multi-disciplinary meetings.

We hope that the inclusion of multi-disciplinary data and Hospital and Health Services information provides a new perspective to assist in the planning, management and treatment of NHL in Queensland.

Highlights

In 2013:

- Non-Hodgkin Lymphoma (NHL) is expected to be the 7th most common cancer diagnosed in Queensland.
- NHL is projected to show a 16% increase in the number of new cases from 2009 to 2013.

In 2009:

- 808 new cases of NHL were diagnosed in Queensland; of these 449 cases were reported in males and 359 in females.
- Between 1982 and 2009 the number of new cases of NHL among Queensland residents increased by 241%.
- The age-standardised mortality rate has been decreasing each year from 1998. In 2009 the rate was 4.7 deaths per 100,000.
- Diffuse Large B-cell Lymphoma (DLBCL) is one of the most common NHL morphologies diagnosed in Queensland. Accounting for 36% (292) of all new cases and 37% (76) of all NHL related deaths.
- Age standardised incidence rates varied by remoteness of residence from 2007 to 2009. Inner regional areas had the highest rate of 18.9 new cases per 100,000.
- Male mortality age standardised rates were higher than female mortality rates in all areas by remoteness of residence from 2007 to 2009.
- It is estimated more than 2,911 people were living with a diagnosis of NHL in the previous five years.²
- 2005 to 2009 5 year relative survival was 73%. This is an increase of 23% from the 5 year relative survival of 50% from 1982 to 1988.²

In 2008:

- Queensland's world age-standardised incidence rate of 12 new cases per 100,000 was estimated to be the 6th highest in the world.
- Queensland's world age-standardised mortality rate of 2.5 deaths per 100,000 was one of the lowest in the world and was less than the expected Australian and World mortality rates of 3.8 and 2.7 deaths per 100,000 respectively.¹

Part 1

Non-Hodgkin Lymphoma Projections

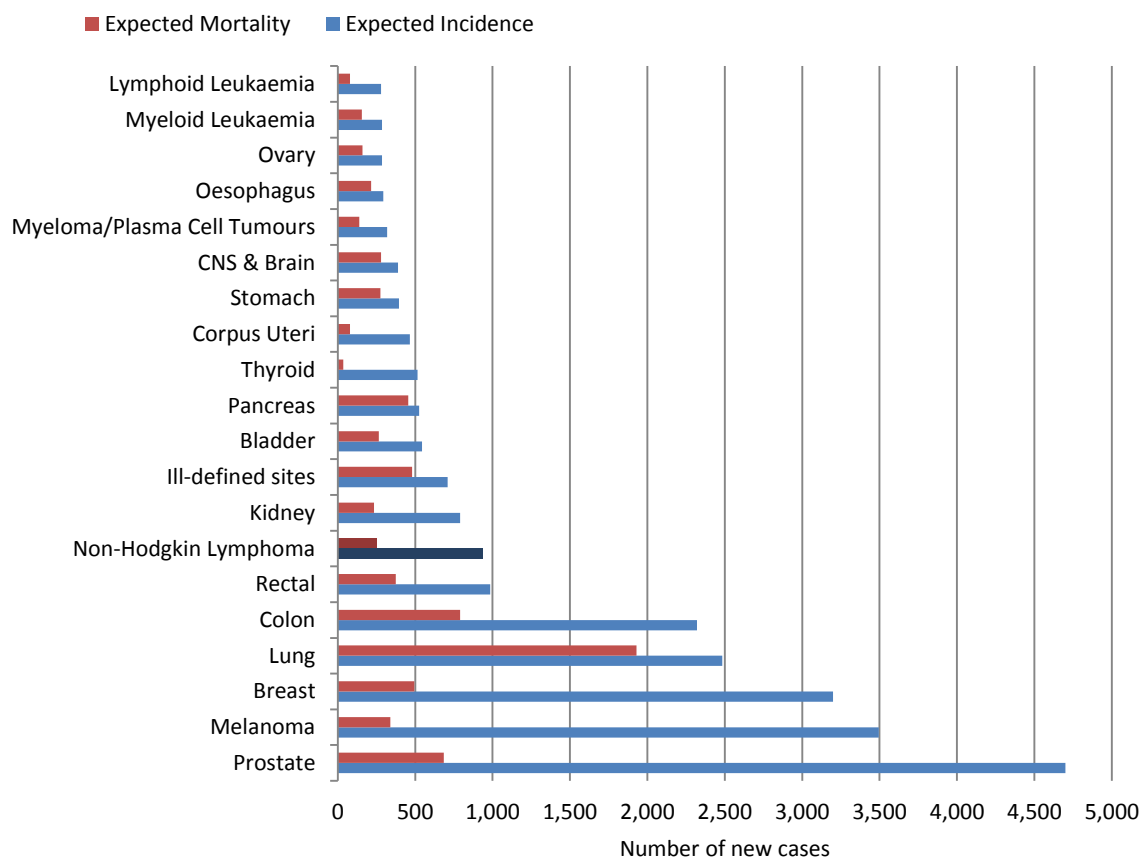


Expected Incidence and Mortality

The number of new cancer cases in Queensland is expected to rise 16% from 2009 to 2013. NHL is expected to be the 7th most common cancer diagnosed with 935 new cases (Figure 1). 525 new cases of NHL are expected to be male (56%) and 410 female (44%).

In 2013, NHL is expected to be the cause of 3% (250) of all cancer related deaths (9,015) (Figure 1). 82% (210) of deaths from NHL are expected to be persons aged 65 and above. 60% (150) of NHL deaths are expected to be male and 40% (100) female.

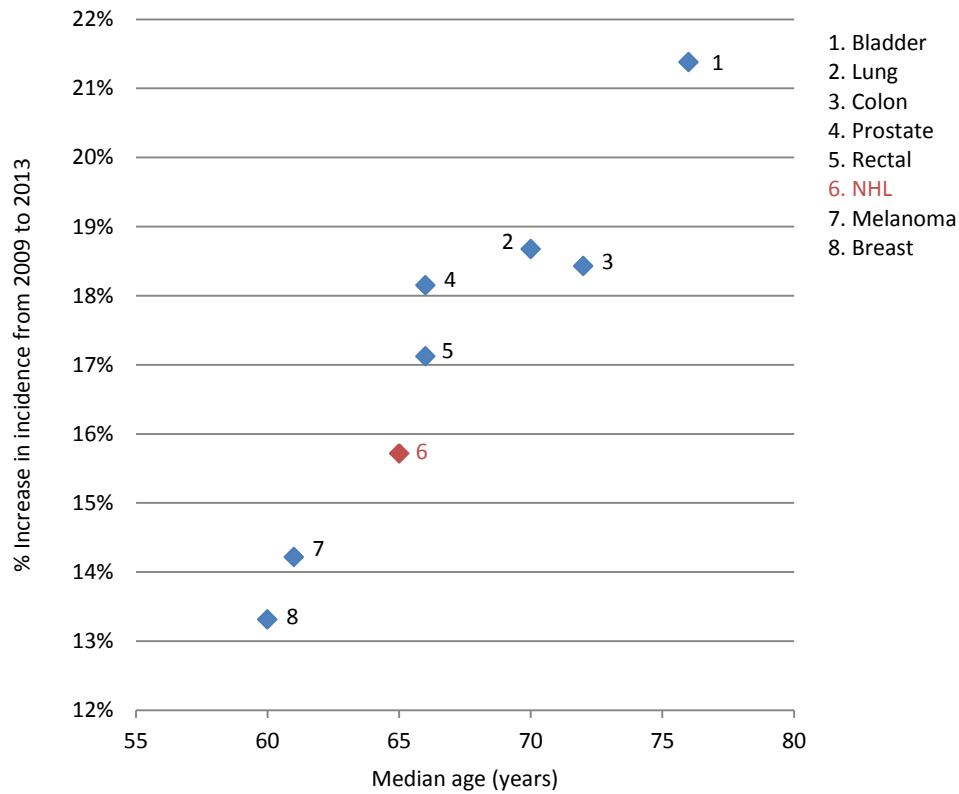
Figure 1: Top 20 cancer sites, Incidence and Mortality, Queensland, 2013



Source: Oncology Analysis System, Queensland Cancer Control Analysis Team

The expected relative increase in the incidence of common cancers from 2009 to 2013 is displayed in figure 2. Assuming no change in incidence rates during this period, NHL is projected to show a 16% increase in the number of new cases. These projections provide an indication of the likely burden of NHL and the demand for Haematological services in 2013.

Figure 2: Projected percentage change in cancer incidence for common cancers by median age of diagnosis, Queensland, 2009 to 2013



Source: Oncology Analysis System, Queensland Cancer Control Analysis Team

Part 2

Non-Hodgkin Lymphoma in Queensland

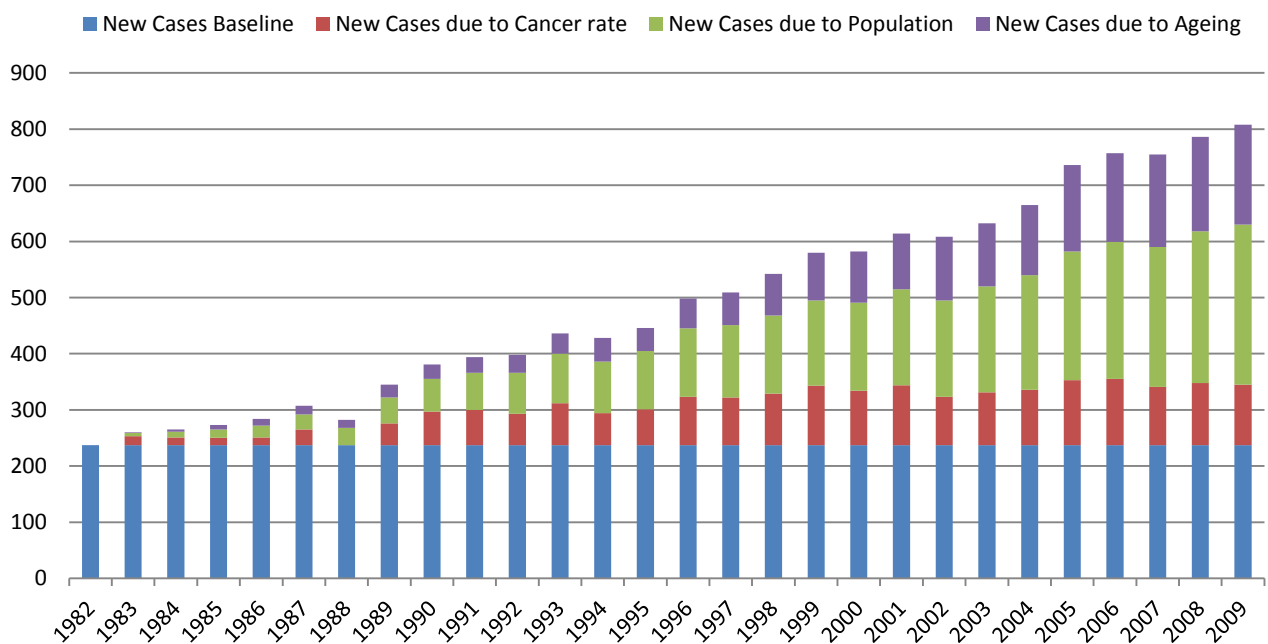


Incidence and Mortality

The total number of new cases of NHL in Queensland generally increases each year. However when expressed as a proportion of the population and weighted to a fixed age distribution, the incidence, expressed as an *age-standardised* rate, remains relatively stable. This means that despite the annual increase in the number of new cases, NHL is not necessarily becoming more common or more frequent in the population.

Between 1982 and 2009 the number of new cases of NHL among Queensland residents increased 241%. In 1982, 237 new cases of NHL were identified, increasing to 808 in 2009. This increase was largely due to population growth and ageing. The NHL cancer rate accounted for a smaller proportion of the total increase in new cases (Figure 3).

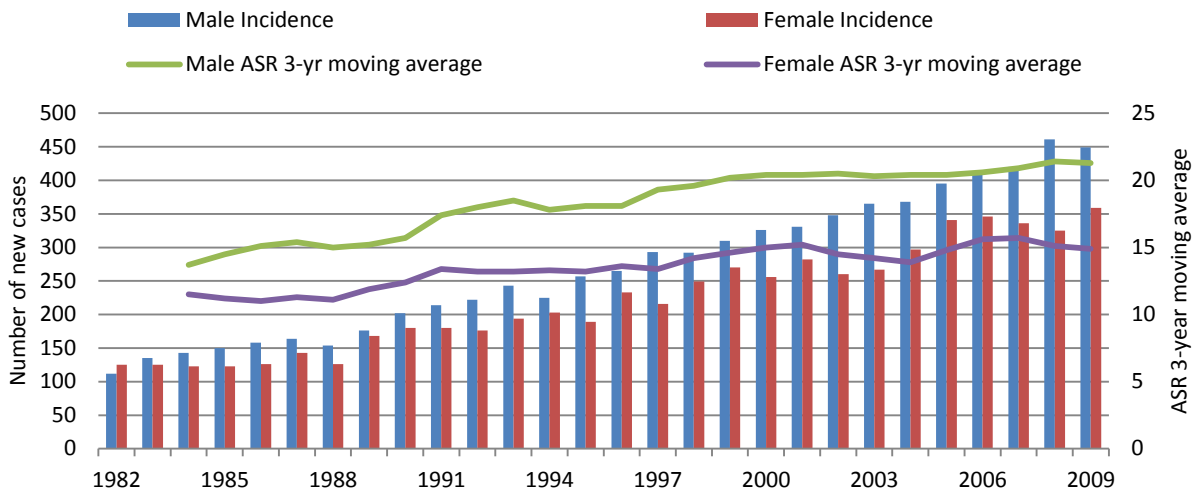
Figure 3: Growth in NHL new cases, Queensland, 1982 to 2009



Source: Oncology Analysis System, Queensland Cancer Control Analysis Team

Between 1982 and 2009 the numbers of new cases of NHL continued to rise. The male 3 year moving average age-standardised incidence rate increased from 13.7 in 1984 to 21.3 new cases per 100,000 in 2009. The female incidence rate increased from 11.5 to 14.9 new cases per 100,000 between 1984 and 2009 (Figure 4).

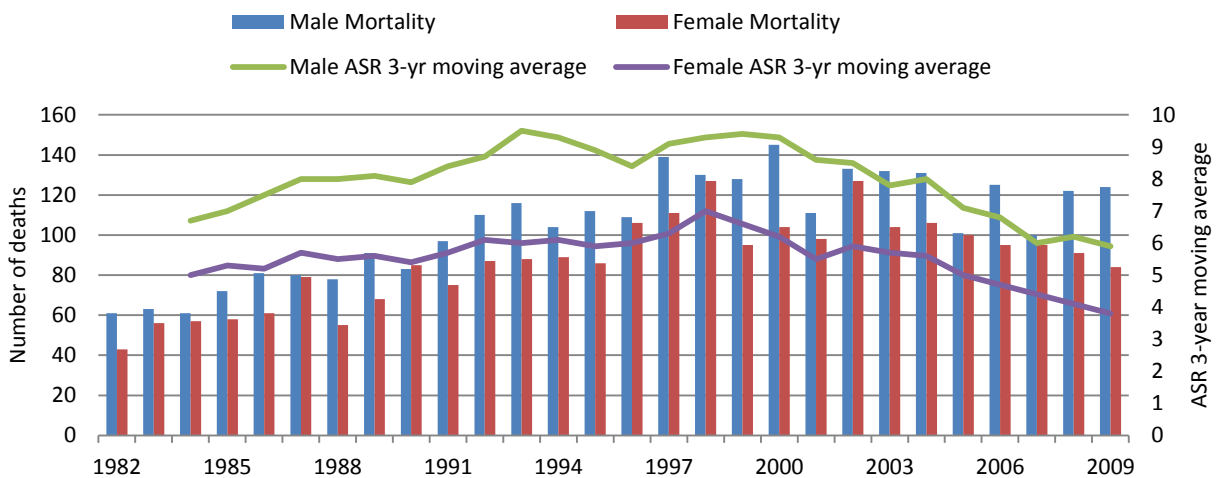
Figure 4: Trends in NHL incidence rates and number of new cases, Queensland, 1982 to 2009



Source: Oncology Analysis System, Queensland Cancer Control Analysis Team

3-yr moving average age-standardised mortality rates have been declining since 1998. The Queensland mortality rate peaked at 8 deaths per 100,000 in 1998 and has been declining since. The male mortality rate decreased from 6.7 in 1984 to 5.9 deaths per 100,000 in 2009. The female mortality rate decreased from 5.0 in 1984 to 3.8 deaths per 100,000 in 2009 (Figure 5).

Figure 5: Trends in NHL mortality rates and number of deaths, Queensland, 1982 to 2009



Source: Oncology Analysis System, Queensland Cancer Control Analysis Team

Common Morphologies

Diffuse Large B-cell Lymphoma (DLBCL) was the most common NHL morphology diagnosed in Queensland. In 2009 it accounted for 36% (292) of all new cases and 37% (76) of all NHL related deaths (Table 1).

Follicular Lymphomas were the 2nd most common NHL morphology with 180 new cases diagnosis in 2009. Due to its indolent nature only 12% of people who were diagnosed with Follicular Lymphoma died from the disease in 2009.

Table 1: Most common NHL morphologies, incidence and mortality, Queensland, 2009

Morphology	Incidence Count (%)	Mortality Count (%)
Diffuse Large B-cell Lymphoma	292 (36)	76 (37)
Follicular Lymphoma	180 (22)	24 (12)
Marginal zone B-cell Lymphoma	41 (5)	5 (2)
Lymphoma, small B Lymphocytic	33 (4)	9 (4)
Mantle Cell Lymphoma	33 (4)	21 (10)
Angioimmunoblastic T-cell lymphoma	16 (2)	5 (2)
Mature T-cell lymphoma	16 (2)	9 (4)
Lymphoma, lymphoplasmacytic	15 (2)	4 (2)
Other*	71 (9)	14 (7)
Not specified ⁺	111 (14)	41 (20)
Total	808	208

*Morphologies that did not make the top 10 are grouped in 'Other'

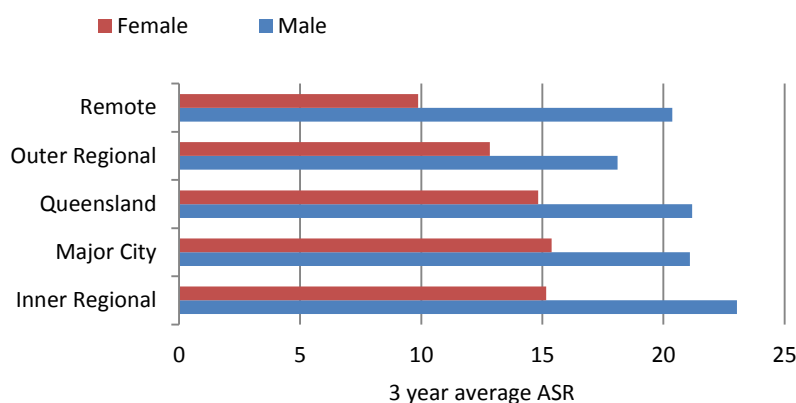
+Not specified are Lymphomas that have been classified as a 'Non-Hodgkin Lymphoma' or 'Malignant Lymphoma'

Source: Oncology Analysis System, Queensland Cancer Control Analysis Team

Regional, National and International Comparison

Age-standardised incidence rates varied by remoteness of residence for both males and females from 2007 to 2009. The highest male incidence rate was in inner regional areas with 23 new cases per 100,000. The highest female incidence rate was in Major Cities with 15.4 new cases per 100,000 (Figure 6).

Figure 6: 3-year average age-standardised incidence rates by remoteness of residence, 2007-2009

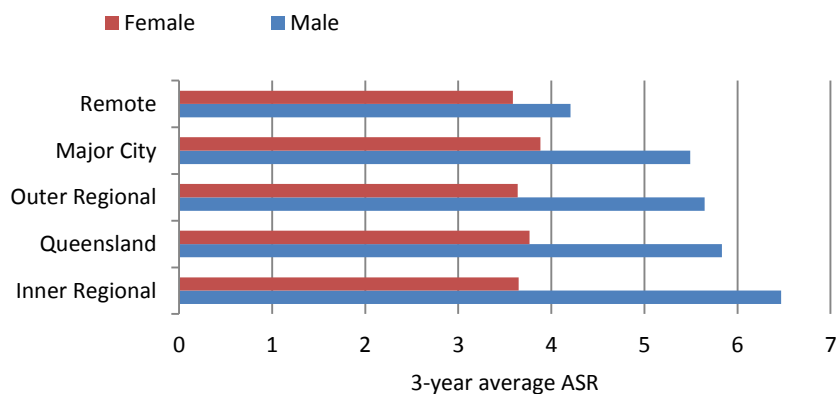


*Remote and Very Remote

Source: Oncology Analysis System, Queensland Cancer Control Analysis Team

Male mortality age-standardised rates were higher than female rates in all areas from 2007 to 2009 (Figure 7). The highest male mortality rates were in inner regional areas with 6.5 deaths per 100,000. The highest female mortality rates of 3.9 deaths per 100,000 were in major cities.

Figure 7: 3-year average age-standardised mortality rates by remoteness of residence, 2007-2009



*Remote and Very Remote

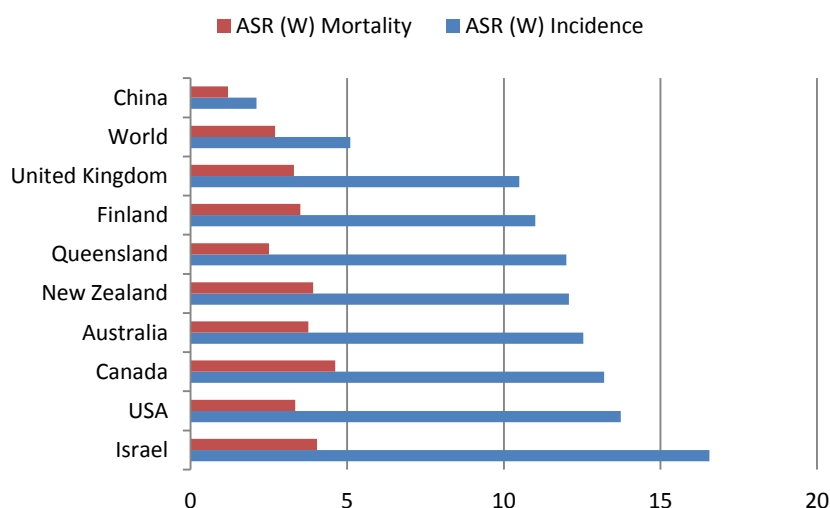
Source: Oncology Analysis System, Queensland Cancer Control Analysis Team

In 2008, it was estimated that NHL was the 9th most common cancer diagnosis in the world, affecting approximately 356,000 people.¹ These estimations are based on the most recent data available at the International Agency for Research on Cancer (IARC) and on information publically available on the internet. An international, national and regional comparison by world age-standardised rate is displayed in Figure 8. Large differences in incidence exist internationally with the highest incidence (17 new cases per 100,000) in Israel. Queensland's age-standardised world incidence rate of 12 new cases per 100,000 was estimated to be the 6th highest in the world.

Queensland's age-standardised world mortality rate of 2.5 deaths per 100,000 was one of the lowest in world and was less than the Australian and World mortality rates of 3.8 and 2.7 deaths per 100,000 respectively.

It was estimated that NHL was the 12th most common cause of cancer death in the world in 2008.¹

Figure 8: Estimated international NHL incidence and mortality comparison by world ASR, selected countries, 2008



Country	ASR (W) Incidence	ASR (W) Mortality
Israel	17	4.0
USA	14	3.3
Canada	13	4.6
Australia	13	3.8
New Zealand	12	3.9
Queensland	12	2.5
Finland	11	3.5
United Kingdom	10	3.3
World	5.1	2.7
China	2.1	1.2

Source: Ferlay J, Shin HR, Bray F, Forman D, Mathers C and Parkin DM. GLOBOCAN 2008 v1.2, Cancer Incidence and Mortality Worldwide: IARC CancerBase No. 10 [Internet]. Lyon, France: International Agency for Research on Cancer; 2010. Available from: <http://globocan.iarc.fr>, accessed on 14/June/2012

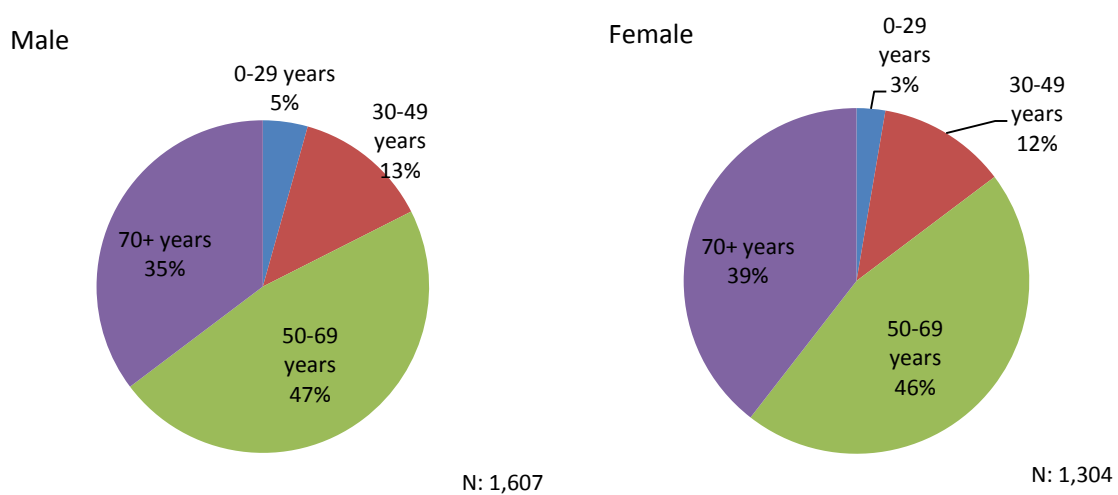
Queensland ASR (W) sourced from Oncology Analysis System, Queensland Cancer Control Analysis Team

Prevalence

Prevalence represents the number of people living with a cancer and is a measure of the burden of the disease for the individual, families and society.

The prevalence of NHL is increasing in Queensland as more people are diagnosed with the disease and survival improves. It was estimated, by the end of 2009, more than 2,911 people were living with a diagnosis of NHL in the previous five years.² NHL 5-yr prevalence was higher in males than females with 1,607 and 1,304 cases respectively. Persons aged 50 to 69 had the highest prevalence percentages for both males and females (Figure 9).

Figure 9: NHL 5-yr prevalence by age and sex, Queensland, 2009



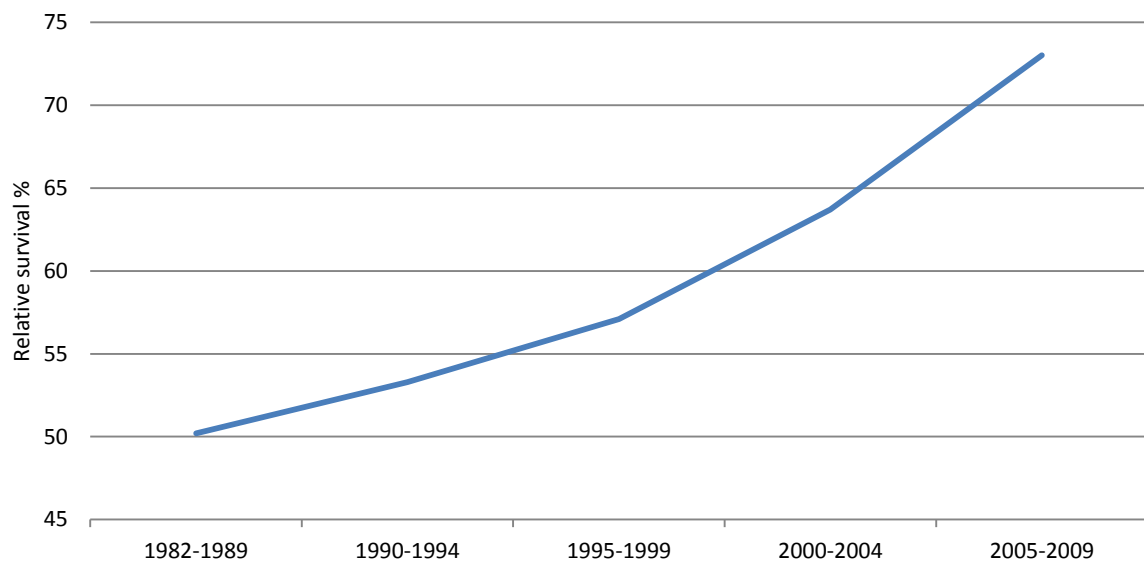
Source: Cancer in Queensland 1982-2009. Incidence, mortality, survival and prevalence. Queensland Cancer Registry, Cancer Council Queensland: Brisbane

Survival

Relative survival is a measure of the survival of a group of persons with a condition, such as cancer, relative to a comparable group from the general population without the condition. For cancer, five year relative survival represents the proportion of patients alive five years after diagnosis, taking into account age, gender and year of diagnosis.

From 2005 to 2009 5 year relative survival was 73%, an increase of 23% from the 1982 to 1989 5 year relative survival of 50% (Figure 10).²

Figure 10: NHL 5 year relative survival, Queensland, 1982 to 2009

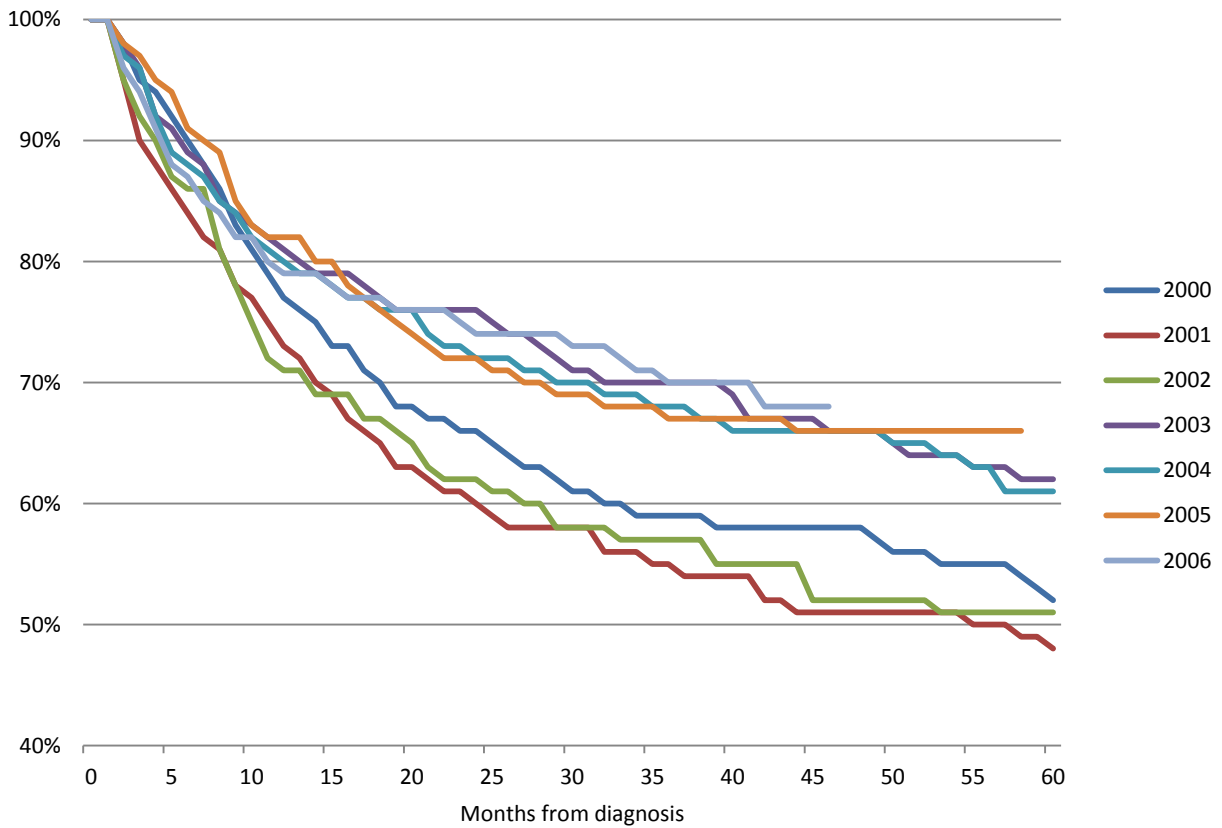


Source: *Cancer in Queensland 1982-2009. Incidence, mortality, survival and prevalence.* Queensland Cancer Registry, Cancer Council Queensland: Brisbane

Diffuse Large B-Cell Lymphoma Crude Survival

Diffuse Large B-Cell Lymphoma (DLBCL) is a type of B-cell lymphoma and is an aggressive form of NHL that has accounted for 26% of new cases of NHL in Queensland from 1982 to 2009. Due to its aggressive nature, it usually requires immediate treatment. A combination of chemotherapies and the monoclonal antibody Rituximab (Rituxan) can lead to a cure in a large number of people with this form of Lymphoma.³ From 1982 to 2009 an average of 130 new cases of DLBCL were diagnosed each year in Queensland. For many years, cyclophosphamide, doxorubicin, vincristine, and prednisone (CHOP) was the standard therapy for DLBCL. International studies have shown that the addition of rituximab to CHOP chemotherapy has resulted in a dramatic improvement in outcome for DLBCL patients of all ages.⁴

Figure 11: Kaplan Meier DLBCL crude survival curve, Queensland, 2000 to 2006



Source: Oncology Analysis System, Queensland Cancer Control Analysis Team

Part 3

Non Hodgkin Lymphoma by Hospital and Health Service



Population Characteristics

The median age for NHL patients in Queensland was 69 with a range of 48-70 years across Hospital and Health Services from 2005 to 2009. NHL was more common in males representing between 50-70% of incidence across the state. The majority of NHL patients reside in Metro South and Metro North, together they contribute 42% of the total incidence (Table 2).

Literature suggests that socioeconomic disadvantaged groups, those living in rural and remote communities and Aboriginal and Torres Strait Islander communities experience higher mortality and morbidity rates.^{5,6} At least 20% of people who were diagnosed with NHL and living in Cape York, Darling Downs, South West, Wide Bay or Torres Strait-Northern Peninsula were socioeconomically disadvantaged.

Table 2: NHL population characteristics by HHS, Queensland, 2005 to 2009

HHS	Incidence	Median Age	% Male	% Affluent	Socioeconomic Status		
					% Middle	% Disadvantaged	% Unknown
Cairns and Hinterland	184	64	57		83	17	
Cape York	<10	48	50		50	50	
Central Queensland	142	66	55		96	4	
Central West	13	70	62		85	15	
Darling Downs	298	68	60	1	75	24	
Gold Coast	459	67	56	9	91		
Mackay	127	62	57		89	11	
Metro North	794	66	55	37	57	6	
Metro South	821	64	51	28	62	10	
North West	24	59	63		84	8	8
Qld Unknown	20	66	70				100
South West	27	70	67		70	30	
Sunshine Coast	385	68	55		94	6	
Torres Strait-Northern Peninsula	<10	55	50			100	
Townsville	152	65	57	16	70	14	
West Moreton	159	64	59	6	86	8	
Wide Bay	230	67	63		42	58	
Queensland	3843	66	56	16	71	12	1

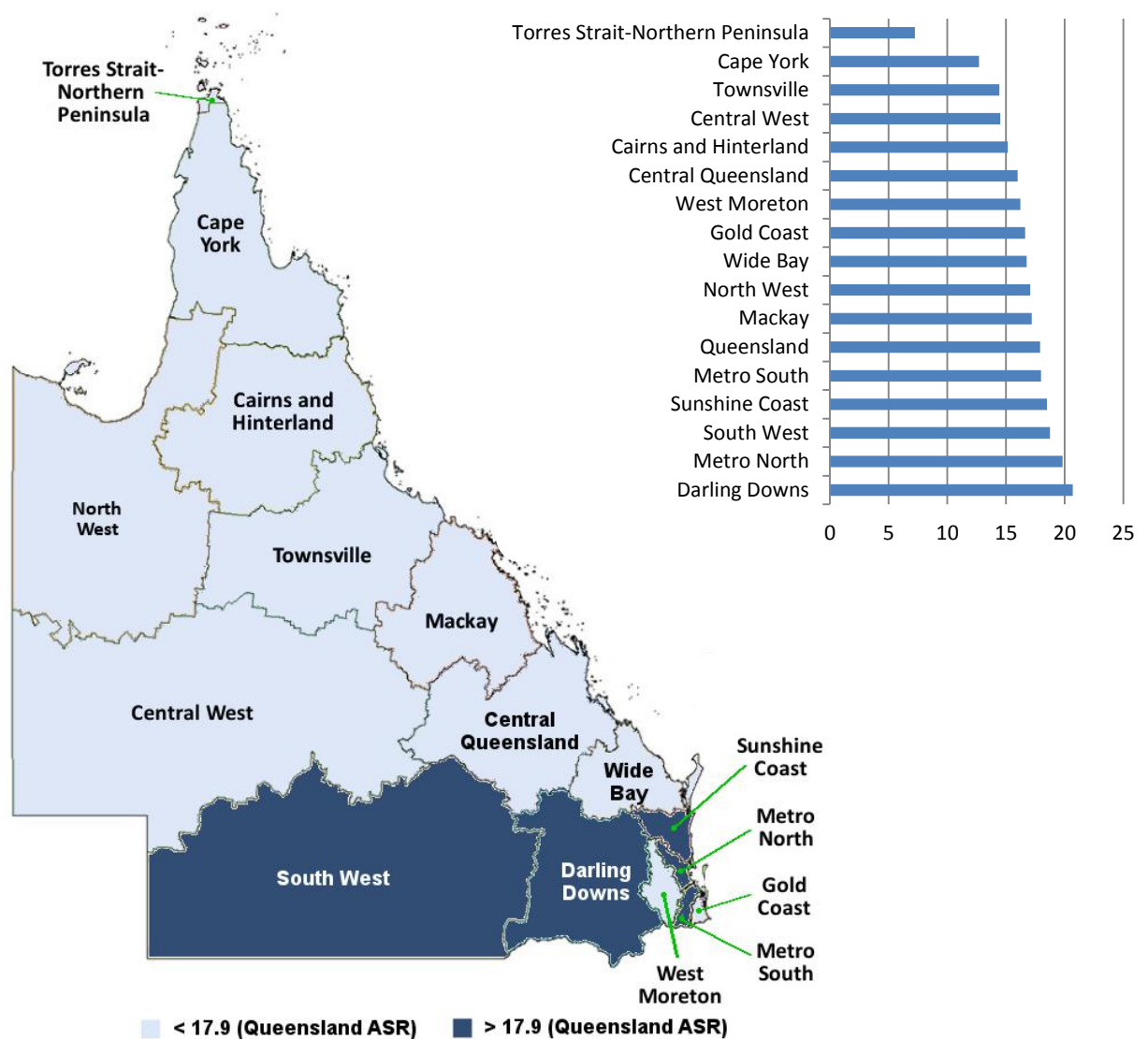
Shading represents those who have more than 20% disadvantaged (Australian standard).

Source: Oncology Analysis System, Queensland Cancer Control Analysis Team

Incidence and Mortality

Age-standardised incidence rates varied across the state for each Hospital and Health Service from 2007 to 2009 (Figure 12). Darling Downs had the highest incidence rate of 20.7 new cases per 100,000. Darling Downs, Metro North, South West, Sunshine Coast and Metro North HHS all had higher incidence rates than the Queensland average of 17.9 new cases per 100,000 (Figure 12).

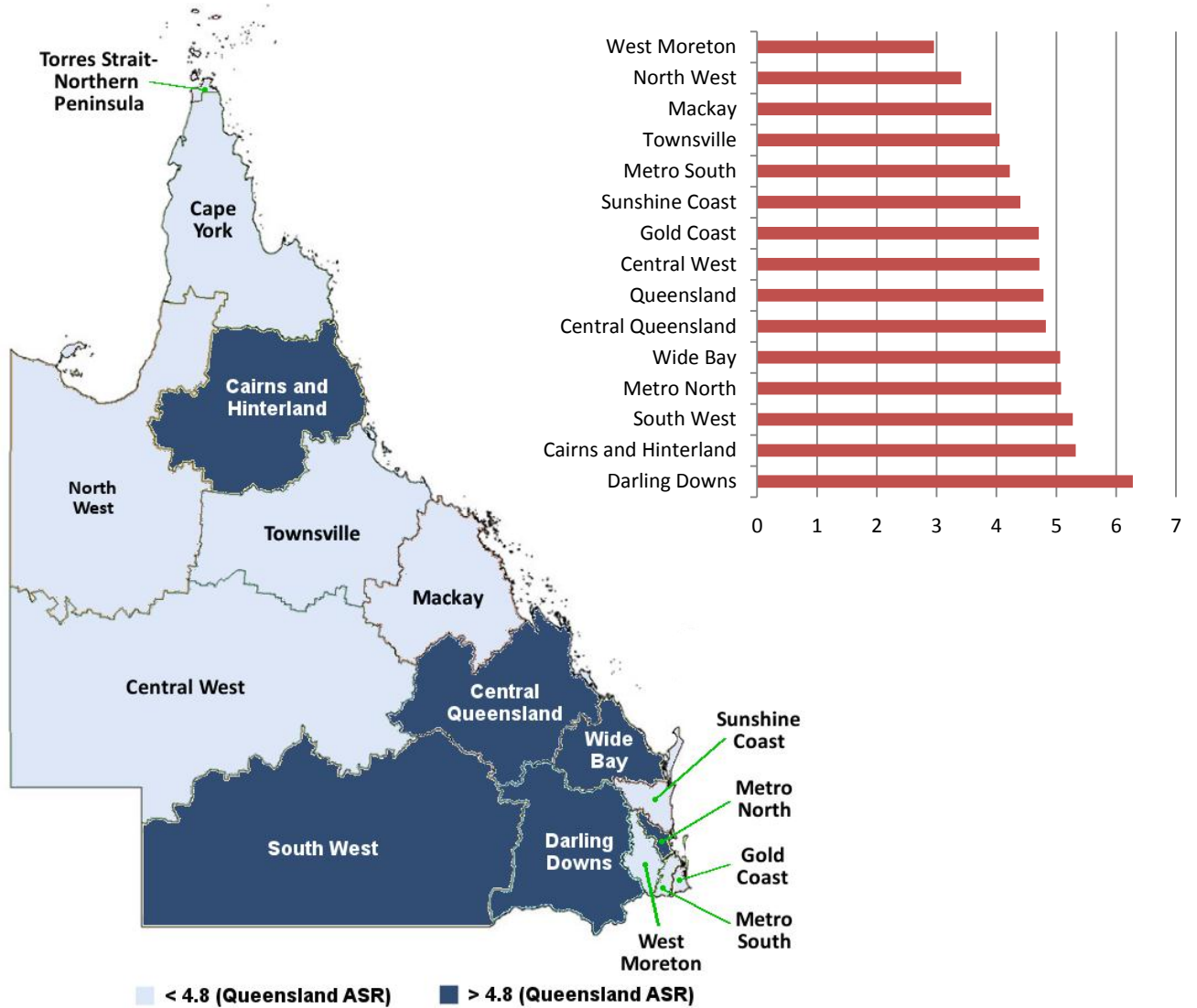
Figure 12: 3-year average age standardised incidence rates for NHL by HHS, Queensland, 2007-2009



Source: Oncology Analysis System, Queensland Cancer Control Analysis Team

Mortality rates varied state-wide for each HHS. Darling Downs had the highest mortality rate of 6.3 deaths per 100,000. Central Queensland, Wide Bay, Metro North, South West, Darling Downs and Cairns and Hinterland had rates higher than the Queensland average of 4.8 deaths per 100,000 (Figure 13).

Figure 13: 3-year average age standardised mortality rates for NHL by HHS, Queensland, 2007-2009

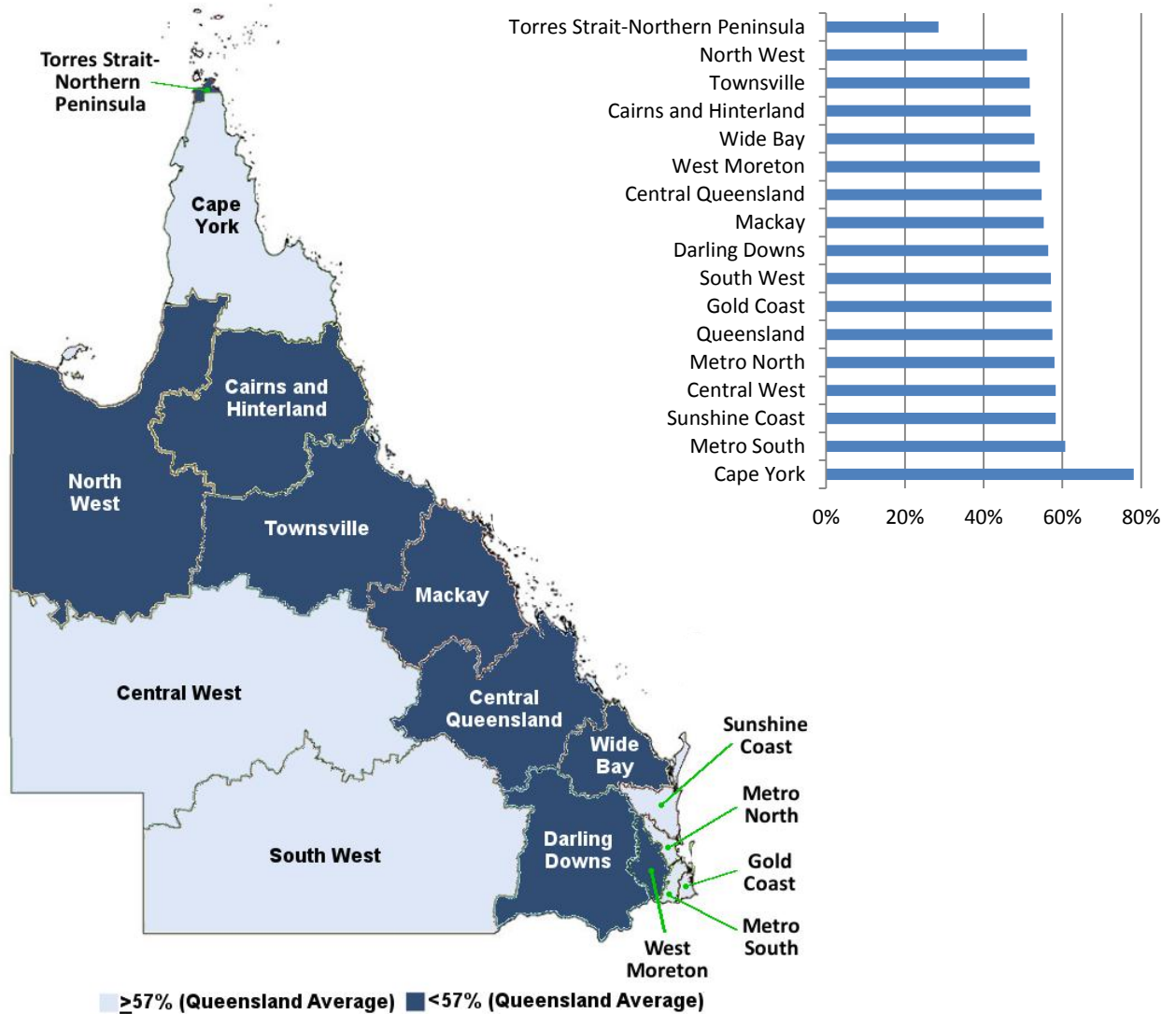


Source: Oncology Analysis System, Queensland Cancer Control Analysis Team

Crude Survival

From 1982 to 2009, crude survival varied state wide for each HHS. Cape York had the highest 5-year crude survival with 78%. Torres Strait-Northern Peninsula had the lowest 5-yr crude survival with 29% (Figure 14). Variations could be caused by many things including socioeconomic status, access to health services and chance.⁵

Figure 14: NHL 5-yr crude survival by HHS, Queensland, 1982 to 2009



Source: Oncology Analysis System, Queensland Cancer Control Analysis Team

Part 4

Multi-disciplinary Care of Non-Hodgkin Lymphoma in Queensland



Multi-disciplinary Meetings

Review by a multi-disciplinary team (MDT) is an important part of multi-disciplinary care for people with NHL. In Queensland public hospitals multi-disciplinary review takes place in regular multi-disciplinary meetings (MDM). At a MDM clinicians come together to diagnose, stage and plan their patient's treatment.

Clinicians can use Queensland Oncology Online (QOOL) to electronically capture and communicate important clinical information such as diagnosis, cancer stage, and recommended treatment. QOOL enables clinicians across Queensland to participate in local and state-wide audit and peer review activities.

In 2011, 23 hospitals across Queensland utilised QOOL to support 51 individual MDMs. The Royal Brisbane & Women's, Princess Alexandra and Gold Coast Hospitals had established Lymphoma MDMs. A small number of NHL patients were reviewed at other hospitals. Combined, these hospitals have reviewed 219 unique patients with a diagnosis of NHL in 2011. The following information is based on those 219 patients.

Number of NHL patients reviewed at a Lymphoma MDM, by Hospital, 2011

In 2011 at least 219 NHL patients were reviewed at a MDM.

Every lymphoma patient should be given the opportunity of having their case reviewed by a MDT.

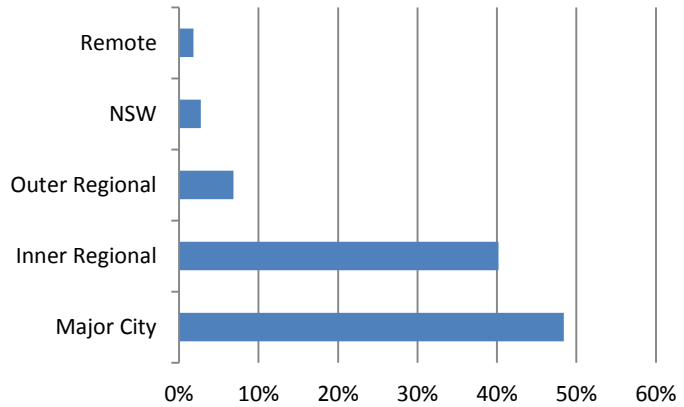
42% of patients had their case reviewed at a MDT more than once.

Hospital	Initial Review	Subsequent Review	Total Reviews
Royal Brisbane & Women's	110	66	176
Princess Alexandra	65	29	94
Gold Coast	35	28	63
Other Facilities	9	1	10
Total	219	124	343

Source: Queensland Oncology Online, Queensland Cancer Control Analysis Team

NHL patients reviewed at a Lymphoma MDM, by remoteness of residence, 2011

88% (194) of NHL patients who were reviewed by a MDM reside in a Major City or Inner Regional area.

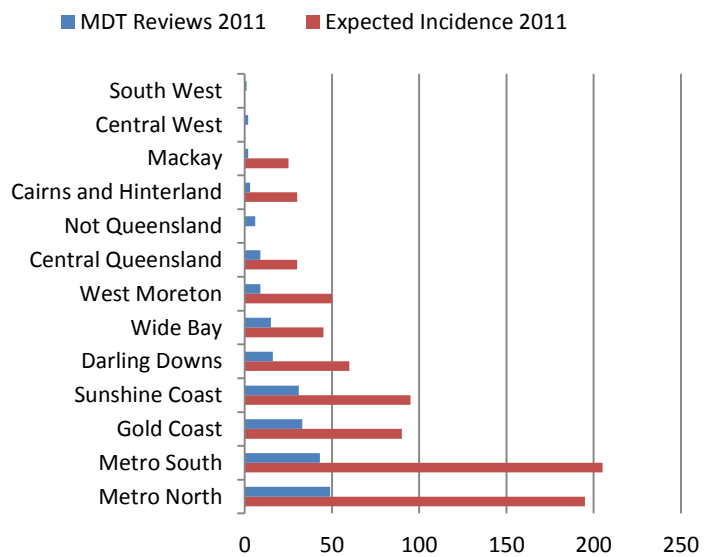


Remoteness of residence	Total Count (%)
Major City	106 (48)
Inner Regional	88 (40)
Outer Regional	15 (7)
New South Wales	6 (3)
Remote & Very Remote	4 (2)
Total	219

Source: Queensland Oncology Online, Queensland Cancer Control Analysis Team

Number of NHL patients reviewed at a Lymphoma MDM and expected incidence, 2011

825 new cases of NHL are expected to occur in Queensland in 2011. It can be estimated that 26% (219) of these patients received a MDM review.

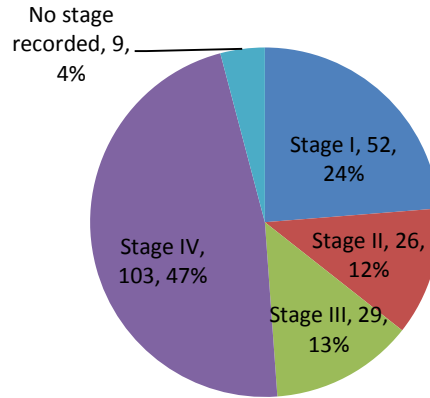


Source: Queensland Oncology Online, Queensland Cancer Control Analysis Team

Ann Arbor Stage Distribution of NHL patients reviewed at a MDM, 2011

96% of patients reviewed by a MDM had a Ann Arbor stage recorded.

60% of patients staged had advanced stage disease (Ann Arbor stage III/IV)



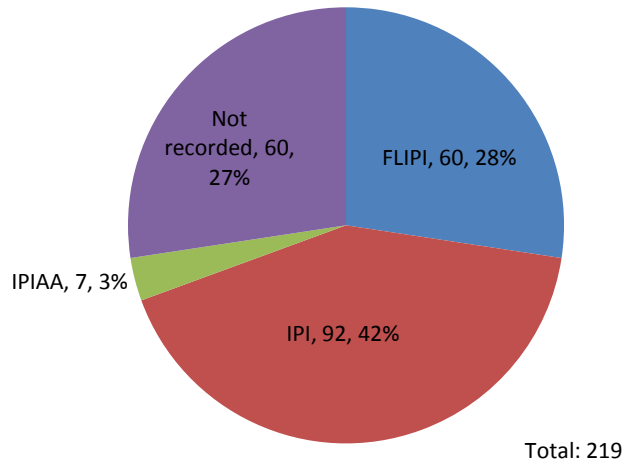
Total: 219

Facilities	Stage I Count (%)	Stage II Count (%)	Stage III Count (%)	Stage IV Count (%)	Unknown Count (%)	Total Count
Royal Brisbane & Women's	20 (18)	9 (8)	13 (12)	62 (56)	6 (5)	110
Princess Alexandra	19 (29)	9 (14)	7 (11)	29 (45)	1 (1)	65
Gold Coast	11 (31)	8 (23)	5 (14)	9 (26)	2 (6)	35
Other Facilities	2 (22)		4 (44)	3 (33)		9
Total	52 (24)	26 (12)	29 (13)	103 (47)	9 (4)	219

Source: Queensland Oncology Online, Queensland Cancer Control Analysis Team

Prognostic Scoring Systems of NHL patients reviewed at a MDM, 2011

73% of patients reviewed by a MDM had a prognostic score recorded.



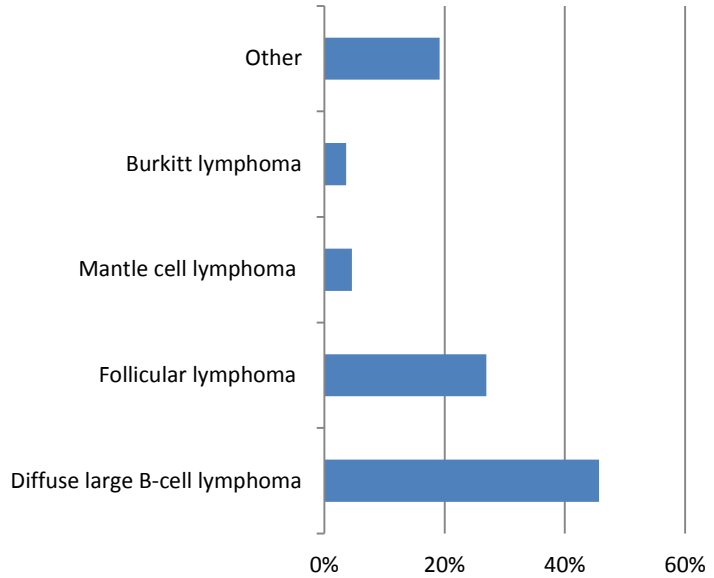
Prognostic Scoring System	Risk Group	Total Count (%)
International Prognostic Index (IPI)	High	26 (28)
	High Intermediate	14 (15)
	Low Intermediate	18 (20)
	Low	31 (34)
	Not recorded	3 (3)
IPI Total		92 (42)
Follicular Lymphoma International Prognosis Index (FLIPI)	High	13 (22)
	Intermediate	17 (28)
	Low	28 (47)
	Not recorded	2 (3)
FLIPI Total		60 (28)
International Prognostic Index Age Adjusted (IPIAA)	High	3 (43)
	High Intermediate	2 (29)
	Low Intermediate	1 (14)
	Low	1 (14)
IPIAA Total		7 (3)
Not recorded		60 (27)
Total		219

Source: Queensland Oncology Online, Queensland Cancer Control Analysis Team

Most common morphologies of NHL patients reviewed at a MDM, 2011

46% of the 219 patients reviewed at a MDM had a diagnosis of Diffuse Large B-cell Lymphoma.

Follicular Lymphoma's were the second most common type of NHL reviewed (27% of patients).



Royal Brisbane & Women's	Total Count (%)
Diffuse Large B-cell Lymphoma	46 (42)
Follicular Lymphoma	34 (31)
Burkitt Lymphoma	6 (5)
CLL/SLL	5 (5)
Other	19 (15)
Total	110

Princess Alexandra	Total Count (%)
Diffuse Large B-cell Lymphoma	30 (46)
Follicular Lymphoma	19 (29)
Mantle cell lymphoma	5 (8)
Burkitt Lymphoma	2 (3)
Other	9 (12)
Total	65

Gold Coast	Total Count (%)
Diffuse Large B-cell Lymphoma	19 (54)
Follicular Lymphoma	3 (9)
Not determined	3 (9)
MALT Lymphoma	2 (6)
Other	8 (19)
Total	35

Other Hospitals	Total Count (%)
Diffuse Large B-cell Lymphoma	5 (56)
Follicular Lymphoma	3 (33)
Lymphoma, unclassifiable	1 (11)
Total	9

*Morphologies that did not make the top 4 are grouped in Other
 Source: Queensland Oncology Online, Queensland Cancer Control Analysis Team

Appendix



Sources of Data

Oncology Analysis System

Oncology Analysis System (OASys) is a state-wide clinical cancer database with diagnostic, treatment, and outcome data on registry-notifiable invasive cancers diagnosed among Queensland residents of all ages (including children) from 1982 to 2009. The database includes inpatient data for public and private admissions and information systems for radiation oncology, pharmacy and pathology. Benign (non-invasive) cancers are excluded. New cancer cases are counted following the rules for counting multiple primary cancers as defined by the International Association for Research on Cancer (IARC). All data are de-identified and aggregated.

The data collection, linking and reporting of OASys data is performed under the auspices of Queensland Cancer Control Safety and Quality Partnership, a Quality Assurance Committee gazetted under Section 31, The Health Services Act 1991.

Queensland Oncology Repository

The Queensland Oncology Repository (QOR) is a cancer patient database developed and maintained by the Queensland Cancer Control Analysis Team (QCCAT; Queensland Health) to support Queensland's cancer control, safety, and quality assurance initiatives. QOR consolidates cancer patient information for the state and contains data on cancer diagnoses and deaths, surgery, chemotherapy, and radiotherapy. QOR also includes data collected by clinicians at multidisciplinary team (MDT) meetings across the state. For more information, visit <https://qccat.health.qld.gov.au/QOR>

Queensland Oncology Online

Queensland Oncology Online (QOOL) is an innovative web based system that integrates existing "data silos" and makes available just in time clinical information for multidisciplinary case conferencing, service improvement, monitoring safety and quality, and research.

QOOL has been developed to support clinicians to participate in multidisciplinary care and support the information needs of clinical networks and cancer services. This state-wide clinical registry aims to link patient information from multiple systems and facilitates the sharing of information between clinicians and facilities, producing a single patient summary view across the state.

QOOL provides the following functionality to cancer providers:

- Auto-population of demographic, pathology and death data from routine electronic sources, combined with additional clinical data, to provide an online clinical summary.
- Secure web access to the clinical summary for online scheduling, case conferencing, cancer care coordination and updating of clinical summary.
- Auto-generated GP/Specialist letter and case notes summary.
- Enables clinicians to record the critical information for each cancer episode, building a profile of the patient's journey, which is accessible by the multidisciplinary clinical team, independent of location of care.

As a result of collecting this information, clinicians are able to more effectively participate in audit and peer review activities as part of routine clinical practice. QCCAT in collaboration with partners and teams will apply a strong multidisciplinary approach to cancer service activities that includes primary care, community, allied health, clinicians and consumers. There is further hope that a strong partnership between public and private providers of oncology services will allow a greater focus on service improvement and safety.

In 2012 QOOL is being utilised by 23 hospitals across Queensland supporting 51 individual multidisciplinary meetings.

Glossary and common abbreviations

Age-standardised incidence/mortality rate (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.

Crude Survival

All-cause crude survival: the percentage of cancer cases still alive after a specified period of time from diagnosis. Survival curves use the Kaplan-Meier estimator of the probability of surviving beyond a specific time from diagnosis, with failure or event defined as death from any cause.

Hospital and Health Services (HHS)

For residence considerations, a 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 districts.

Incidence (new cases)

The number of new cases of cancer diagnosed in a defined population during a specified time period. For example, 2009 incidence is the number of cancers which were first diagnosed between 1 January 2009 and 31 December 2009.

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.

Prevalence

The number of Queenslanders with a diagnosis of cancer who were alive on 31 December 2009.

Relative survival

The rate of survival of persons diagnosed with cancer relative to the expected survival rate of the general population. Five-year relative survival represents the proportion of patients alive five years after diagnosis, taking into account age, gender and year of diagnosis.

Remoteness

The relative remoteness of residence at time of diagnosis, based on the Australian Standard Geographical Classification (ASGC).⁷ In this report, remoteness is classified into four groups: Major City, Inner Regional, Outer Regional, and Remote & Very Remote.

Methods

The incidence and mortality data in this report are based on cancer registrations for 2009 and for 1982-2009 for trend analysis. Except where noted, incidence and mortality rates are standardised to the Australian age-specific population in 2001.

The International Classification of Diseases for Oncology (ICD-O) has defined non-Hodgkin Lymphoma as those with morphology codes M959, M967-M972. Morphologies listed in this report are based on the ICD-O and are outlined in the following table.

Morphology	Classification	Morphology	Classification
Anaplastic large cell lymphoma, T cell and Null cell type	97143	Angioimmunoblastic T-cell lymphoma	97053
Burkitt Lymphoma	96873	Composite Hodgkin and non-Hodgkin Lymphoma	95963
Cutaneous T-cell lymphoma	97093	Follicular Lymphoma	96903, 96953, 96913, 96983
Hepatosplenic gamma-delta cell lymphoma	97163	Intestinal T-cell lymphoma	97173
Diffuse Large B-cell Lymphoma	96803	Lymphoma, large B-cell, diffuse, immunoblastic	96843
Lymphoma, lymphoplasmacytic	96713	Lymphoma, mixed small and large cell, diffuse	96753
Non-Hodgkin Lymphoma	95913	Lymphoma, small B lymphocytic	96703
Malignant lymphoma	95903	Mantle cell lymphoma	96733
Marginal zone B-cell lymphoma	96993	Mature T-cell lymphoma	97023
Mediastinal large B-cell lymphoma	96793	Mycosis fungoides	97003
NK/T-cell lymphoma, nasal and nasal-type	97193	Precursor B-cell lymphoblastic lymphoma	97283
Precursor cell lymphoblastic lymphoma	97273	Precursors T-cell lymphoblastic lymphoma	97293
Primary cutaneous CD30+ T-cell lymphoproliferative disorder	97183	Primary effusion lymphoma	96783
Sezary syndrome	97013	Splenic marginal zone B-cell lymphoma	96893
Subcutaneous panniculitis-like T-cell lymphoma	97083		

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