CANCERS OF THE BLOOD

This document provides statistical information about haematological and lymphoid tissue cancers (blood cancers) in Northern Ireland. This includes leukaemia, lymphoma, and myeloma.

Leukaemia summary table

NUMBER OF CASES PER YEAR (2009-2013)			NUMBER OF DEATHS PER YEAR (2009-2013)		
Male	Female	Both sexes	Male	Female	Both sexes
116	80	196	65	44	109
FIVE-YEAR SURVIVAL (2004-2008)			**21-YEAR PREVALENCE (2013)**		
Male	Female	Both sexes	Male	Female	Both sexes
48.4%	47.6%	48.2%	713	543	1,256

Lymphoma summary table

NUMBER OF CASES PER YEAR (2009-2013)			NUMBER OF DEATHS PER YEAR (2009-2013)		
Male	Female	Both sexes	Male	Female	Both sexes
212	174	386	66	59	125
FIVE-YEAR SURVIVAL (2004-2008)			**21-YEAR PREVALENCE (2013)**		
Male	Female	Both sexes	Male	Female	Both sexes
60.6%	65.3%	62.9%	1,627	1,521	3,148

Myeloma summary table

NUMBER OF CASES PER YEAR (2009-2013)			NUMBER OF DEATHS PER YEAR (2009-2013)		
Male	Female	Both sexes	Male	Female	Both sexes
66	50	117	35	32	66
FIVE-YEAR SURVIVAL (2004-2008)			**21-YEAR PREVALENCE (2013)**		
Male	Female	Both sexes	Male	Female	Both sexes
44.7%	50.8%	47.1%	366	261	627

INCIDENCE

Between 2009 and 2013 there were an average of 699 people diagnosed with a form of blood cancer each year. Of these 699 diagnoses, 56% were in men and 44% were in women. The probability of being diagnosed with a form of blood cancer in Northern Ireland before the age of 75 varies from 1 in 250 for myeloma to approximately 1 in 70 for lymphoma (probability of a leukaemia diagnosis is 1 in 143). Men are consistently more likely to be diagnosed with all forms of blood cancer (including leukaemia, lymphoma, and myeloma) when compared to women.

Incidence trends

Table 1: Incidence of leukaemia by gender and year of diagnosis: 2004-2013

	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Males	104	98	96	102	123	106	131	131	103	109
Females	74	90	88	69	89	84	83	98	70	67
Both	178	188	184	171	212	190	214	229	173	176

Table 2: Incidence of lymphoma by gender and year of diagnosis: 2004-2013

	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Males	156	155	154	169	171	182	206	223	229	219
Females	165	154	142	188	164	159	178	193	171	169
Both	321	309	296	357	335	341	384	416	400	388

Table 3: Incidence of myeloma by gender and year of diagnosis: 2004-2013

	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Males	64	87	80	85	70	73	50	78	61	69
Females	48	57	69	45	49	58	52	52	41	49
Both	112	144	149	130	119	131	102	130	102	118

Over a ten-year period the number of blood cancer cases each year has increased in males and females from 611 in 2004 to 682 in 2013. After accounting for changes in the age of the population, incidence of leukaemia and myeloma has remained stable in men and women in Northern Ireland. Incidence of lymphoma in men has increased by over 3% each year since 2002 after a non-statistically significant decrease in incidence between 1994 and 2002 (see figure 1). Incidence of lymphoma in women has steadily increased by almost 1% each year since 1994 (see figure 2).

Figure 1: Trends in blood cancer incidence rates: 1993-2013 in males : 1993-2013

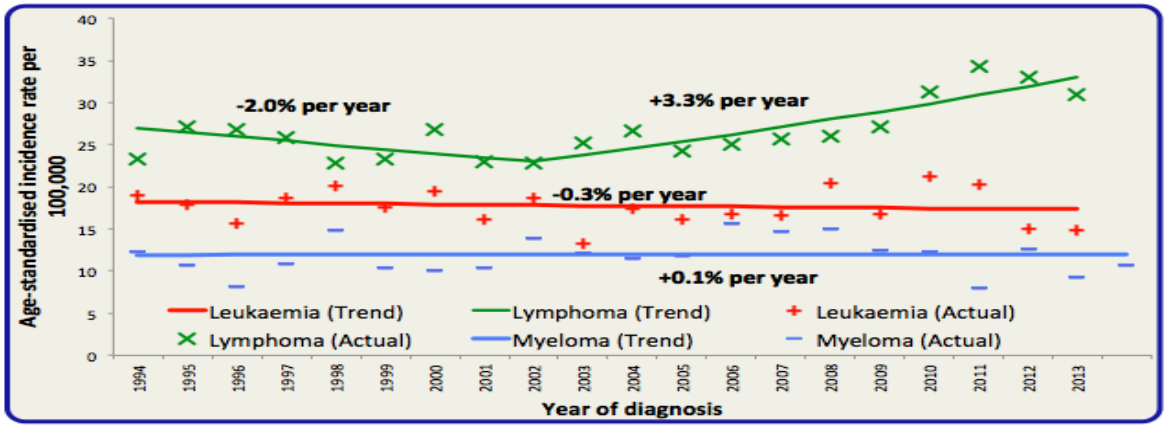
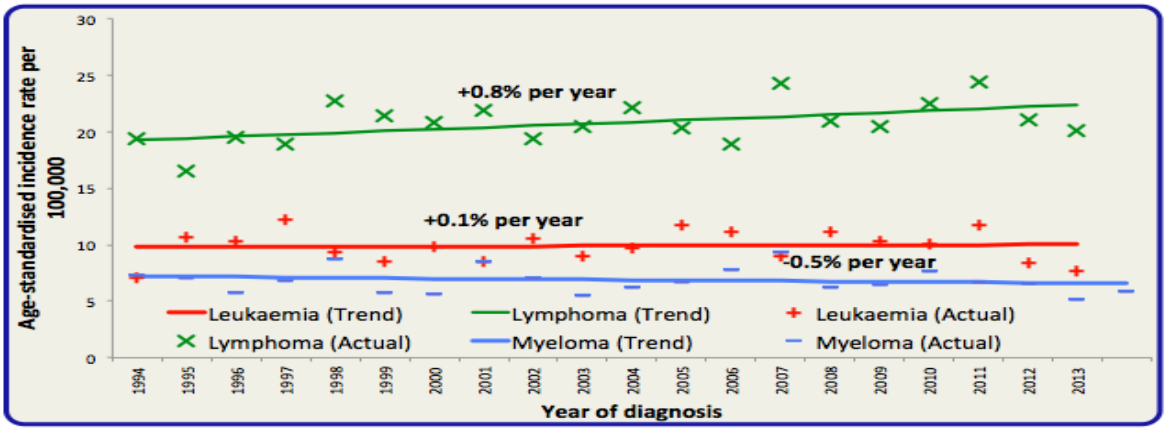


Figure 2: Trends in blood cancer incidence rates: 1993-2013 in females : 1993-2013

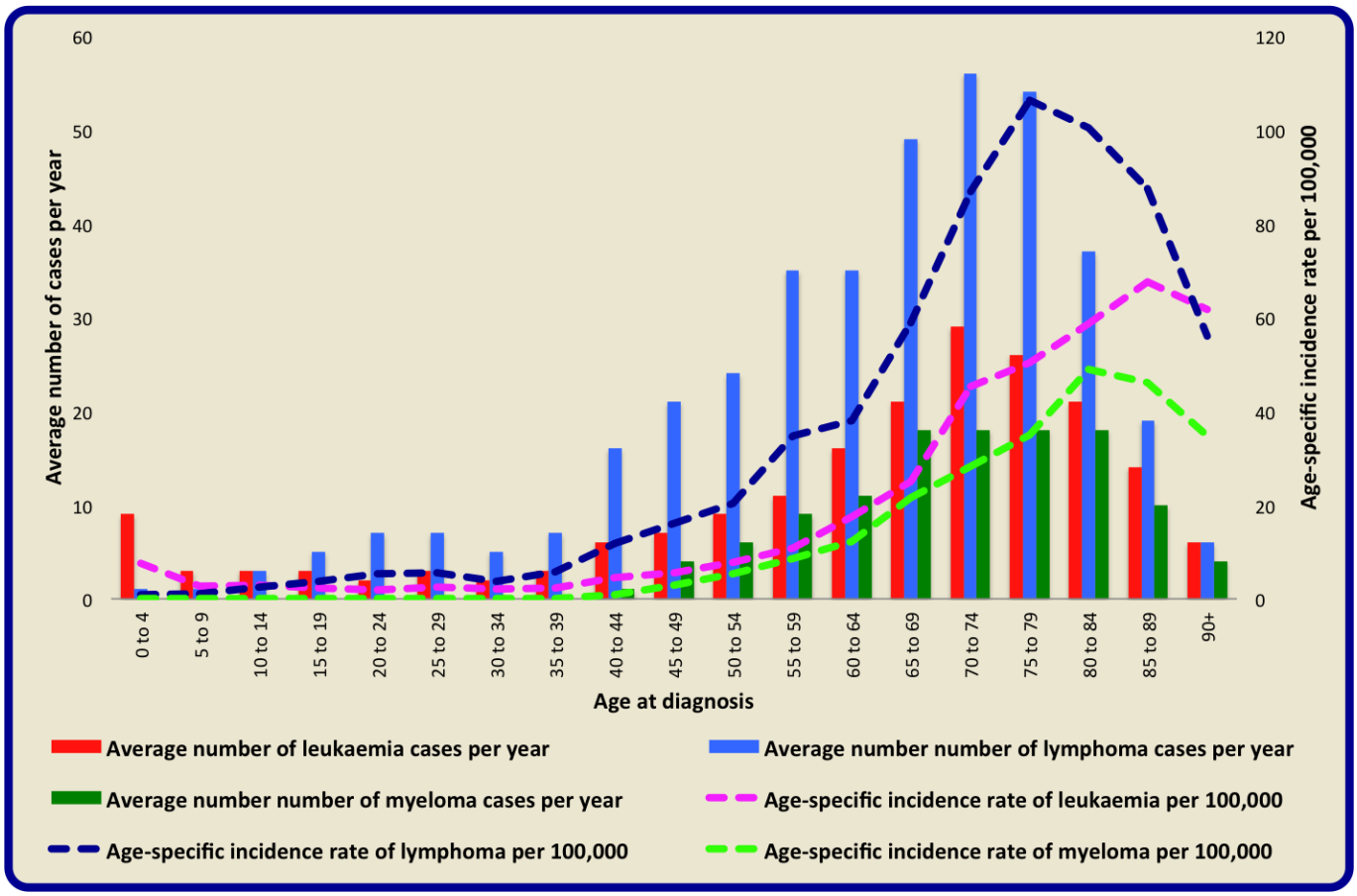


Incidence and age

The incidence of all three forms of blood cancer is associated with increasing age although some subtle differences exist between each type of cancer. There is an early peak in leukaemia incidence rate per 100,000 between the ages of 0-4 before incidence falls to a baseline of approximately 3-4 cases per 100,000 of the population. After the age of 60 there is a steady increase in incidence of leukaemia, which peaks at almost 70 cases per 100,000 of the population between ages of 85-89.

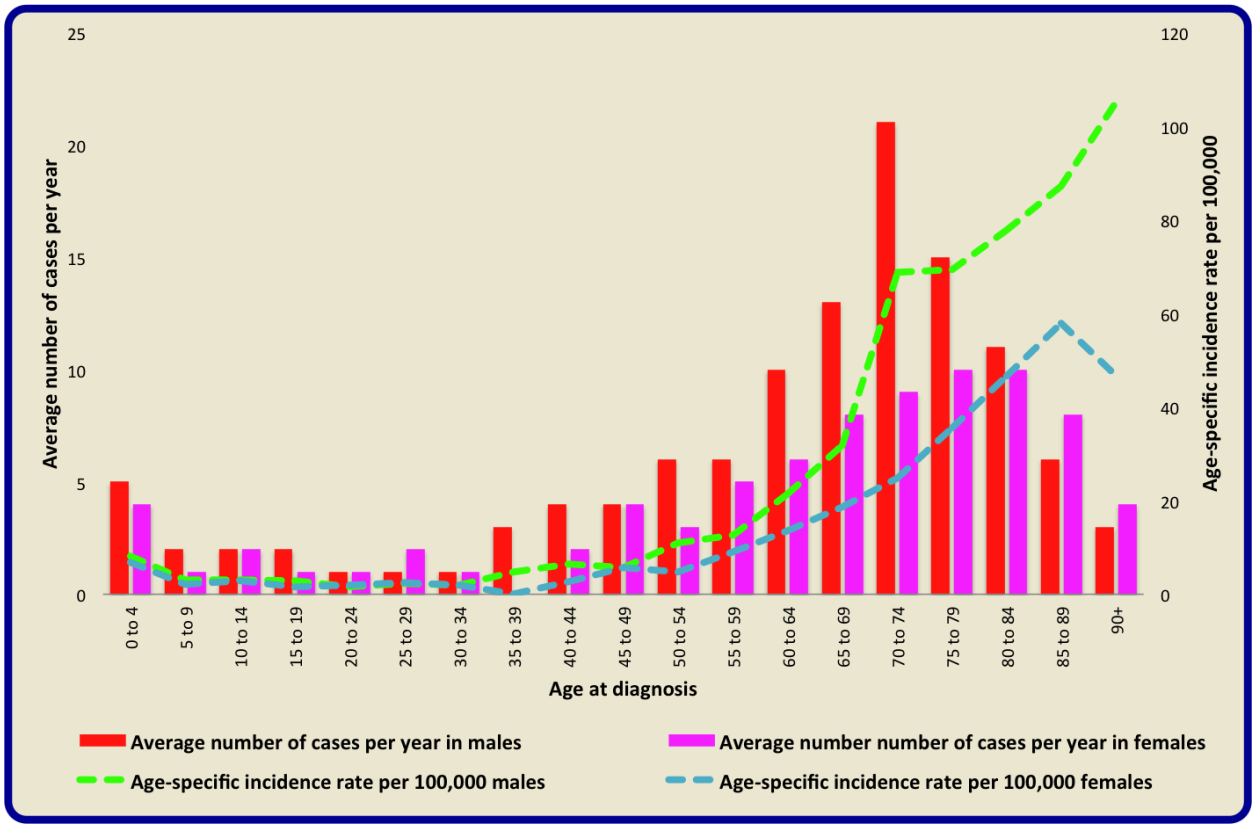
Incidence of lymphoma remains low until the age of 50. Thereafter, incidence steadily rises before reaching a peak of over 100 cases per 100,000 of the population (i.e. 1 case per 1,000) between the ages of 75 and 85. Incidence of lymphoma steadily decreases after the age of 85. Myeloma incidence is *strongly linked* with age. Adults aged between 80 and 89 years experience the highest incidence (almost 50 cases per 100,000 of the population) of myeloma.

Figure 3: Incidence of blood cancer by age, gender, and type: 2009-2013



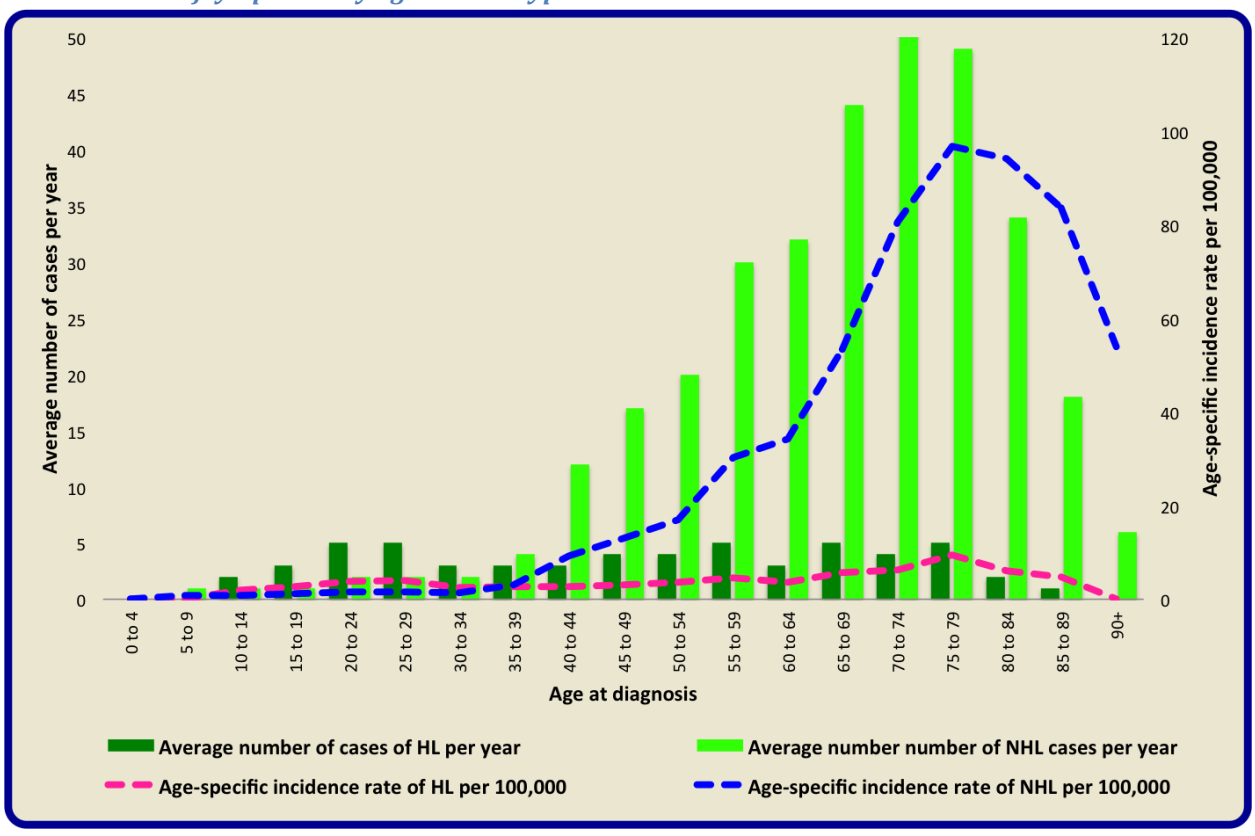
Further analysis to explore differences in incidence of blood cancers between gender and type produces some interesting information. Incidence of leukaemia in males and females remains low after an early peak during infancy. After the age of 60 incidence of leukaemia in males and females begins to separate out, with male incidence rate increasing to a peak of over 100 cases per 100,000 people in males over the age of 90. Women experience a lower leukaemia incidence rate than men with a peak of 57.8 cases per 100,000 females between the ages of 85 and 89 (see figure 4).

Figure 4: Incidence of leukaemia by age and gender: 2009-2013



Age-standardised incidence of NHL (non-Hodgkin's lymphoma) in males and females combined is higher than HL (Hodgkin's lymphoma) per 100,00 of the population (see figure 5). Incidence of NHL is strongly linked with age with peak incidence in patients aged 70-89. Incidence of HL never exceeds an average of 10 cases per 100,000 of the population in both genders are combined.

Figure 5: Incidence of lymphoma by age and subtype: 2009-2013

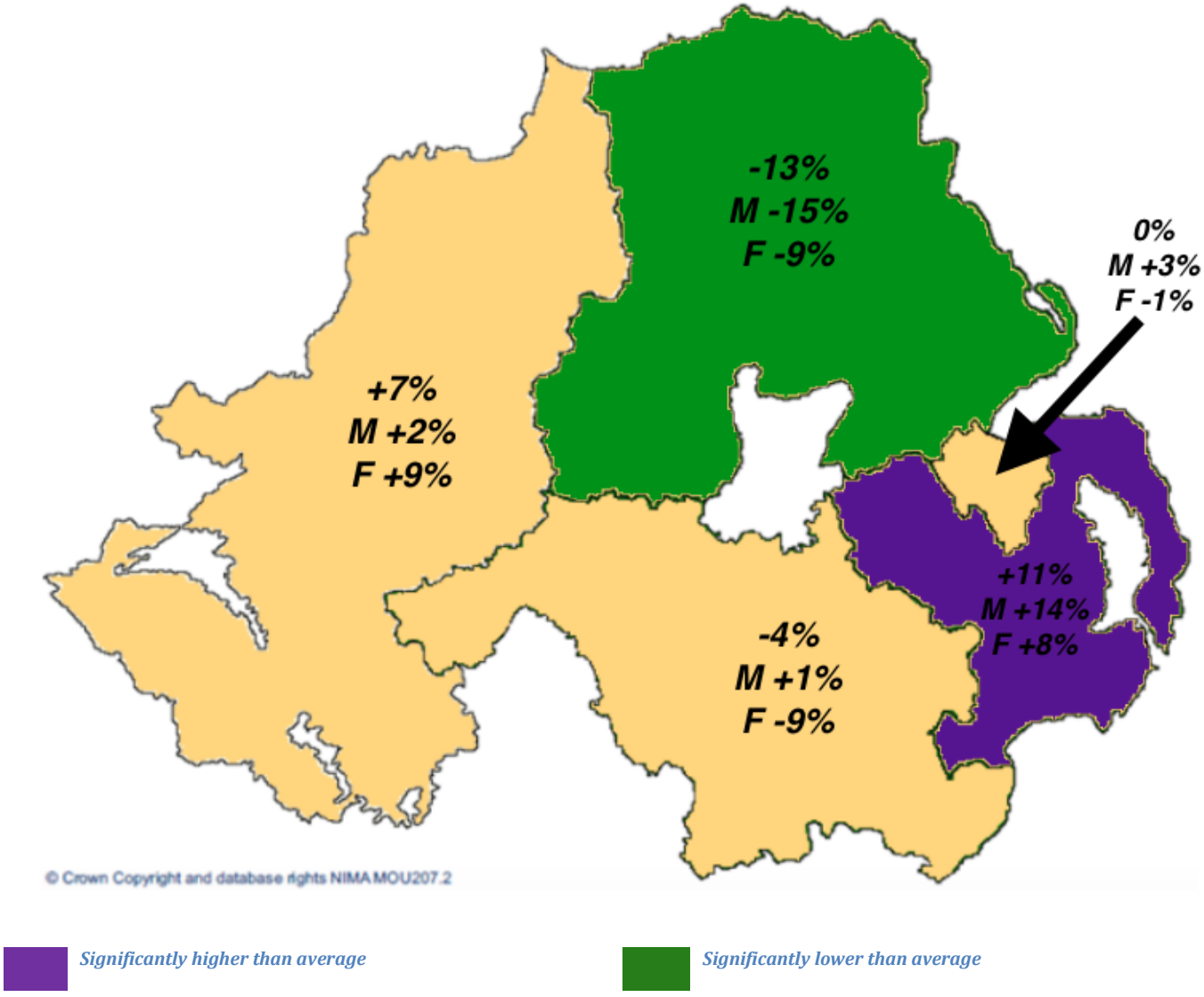


Incidence by Trust area

Leukaemia incidence rates in 2009-2013 were 11% above the NI average in people living in the South Eastern Health and Social Care Trust (HSCT) and 13% below the NI average in people living in the Northern Health and Social Care Trust (refer to figure 5).

When both genders were combined there were no statistically significant differences in incidence of lymphoma or myeloma between trusts when compared to the NI average incidence.

Figure 6: Leukaemia incidence rates compared to the NI average by HSC Trust of residence: 2009-2013



Incidence by deprivation

In 2009-2013 no association between incidences of any of the three forms of blood cancer and socioeconomic deprivation were observed in Northern Ireland suggesting that blood cancer risk factors are independent of socioeconomic status.

SURVIVAL

The age-standardised five-year survival for people diagnosed with leukaemia between 2004-2008 was 48.2% at five years. The age-standardised five-year survival for people diagnosed with lymphoma during the same time period was 62.9% whilst the age-standardised five-year survival for people diagnosed with myeloma during 2004-2008 was 47.1%. Therefore, lymphoma is the most survivable of the blood cancers (HL has a higher five-year survival rate than NHL).

Table 4: Five-year leukaemia survival by survival time and gender

Time since diagnosis	Diagnosed 2004-2008		
	Male	Female	Both sexes
6 months	76.3%	74.0%	75.3%
1 year	69.2%	64.1%	67.3%
5 years	48.4%	47.6%	48.2%

Table 5: Five-year lymphoma survival by survival time and gender

Time since diagnosis	Diagnosed 2004-2008		
	Male	Female	Both sexes
6 months	81.1%	82.2%	81.7%
1 year	76.1%	77.4%	76.8%
5 years	60.6%	65.3%	62.9%

Table 6: Five-year myeloma survival by survival time and gender

Time since diagnosis	Diagnosed 2004-2008		
	Male	Female	Both sexes
6 months	83.4%	86.7%	84.8%
1 year	74.7%	82.0%	77.7%
5 years	44.7%	50.8%	47.1%

Survival Trends

Five-year survival for all forms of blood cancer in Northern Ireland has increased from the 1993-1998-diagnosis period to the 2004-2008-diagnosis period in both males and females. Five-year survival after a diagnosis of leukaemia between 1993-1998 was 32.2% and 48.2% between 2004-2008. Five-year survival after a diagnosis of lymphoma between 1993-1998 was 46.2% and 62.9% between 2004-2008. Five-year survival after a diagnosis of myeloma between 1993-1998 was 29.6% and 47.1% between 2004-2008.

This means that five-year survival for all forms of blood cancer has increased by at least 15% from the 1993-1998 to 2004-2008 diagnostic period.

Table 7: Five-year leukaemia survival by period of diagnosis and gender

Period of diagnosis	Male	Female	Both sexes
1993-1998	31.3%	33.3%	32.2%
1999-2003	36.8%	44.5%	40.4%
2004-2008	48.4%	47.6%	48.2%

Table 8: Five-year lymphoma survival by period of diagnosis and gender

Period of diagnosis	Male	Female	Both sexes
1993-1998	43.4%	48.5%	46.2%
1999-2003	50.5%	55.7%	53.1%
2004-2008	60.6%	65.3%	62.9%

Table 9: Five-year myeloma survival by period of diagnosis and gender

Period of diagnosis	Male	Female	Both sexes
1993-1998	26.7%	33.1%	29.6%
1999-2003	31.3%	43.1%	36.2%
2004-2008	44.7%	50.8%	47.1%

MORTALITY

In 2009-2013 there were an average of 300 deaths from blood cancer each year of which 125 (42%) were due to lymphoma, 109 (36%) were due to leukaemia, and 66 (22%) were due to myeloma.

Mortality trends

When adjusted for age and population change, mortality rates amongst all forms of blood cancer in men are falling. Leukaemia rates decreased by 2.2% each year from 1994 to 2008 before a non-significant rise of 5%. Myeloma rates fell by 7.6% after 2006 and lymphoma rates by 1.6% each year.

Figure 7: Trends in blood cancer mortality rates in men: 1993-2013

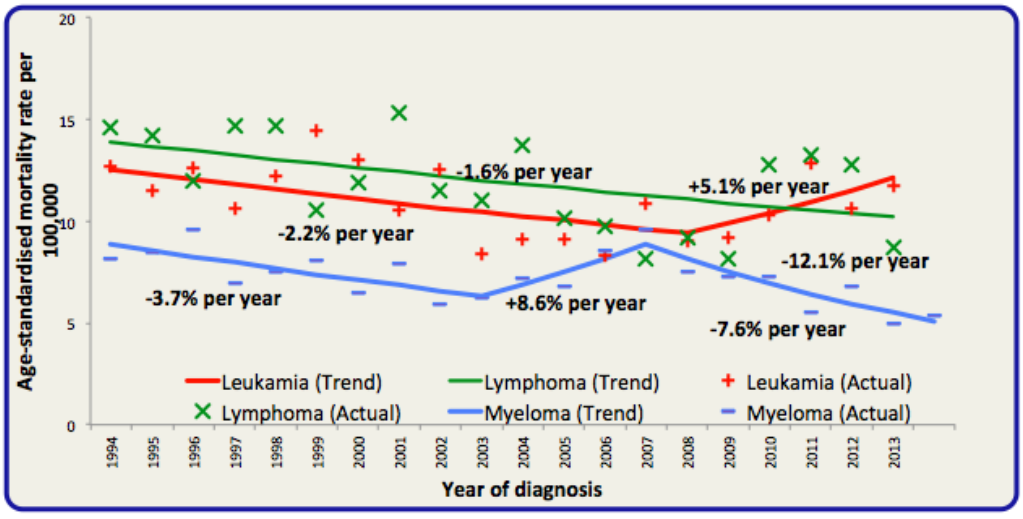
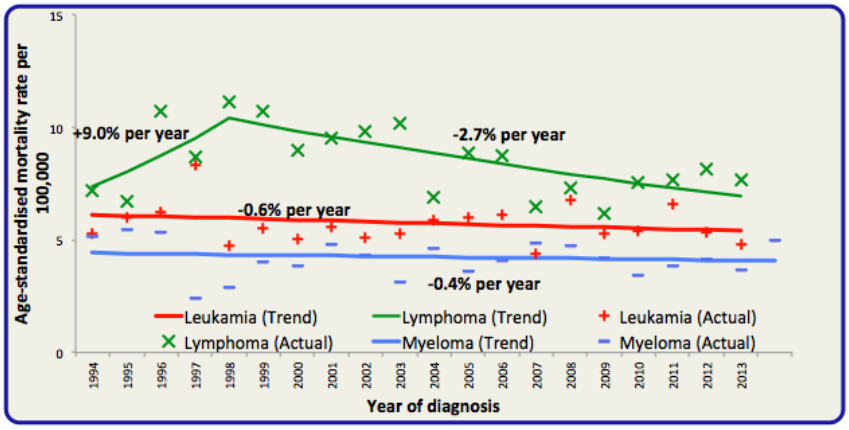


Figure 8: Trends in blood cancer mortality rates in women: 1993-2013



Leukaemia and myeloma mortality rates have remained stable in women during the previous twenty-year period. Lymphoma mortality rates have declined by almost 3% each year between 1998 and 2013 after a non-statistically significant rise.

PREVALENCE

At the end of 2013 there were a total of 5,031 people living with a haematological malignancy (blood cancer) of which 63% had a diagnosis of lymphoma (25% had a diagnosis of leukaemia and 13% had a diagnosis of myeloma), 54% of those diagnosed were men, 11% had been diagnosed within the previous year, and 61% were living with a diagnosis of blood cancer whilst under the age of 70.

Table 10: Number of people living with leukaemia at the end of 2013 who were diagnosed from 1993-2013 by time since diagnosis

Type	Age	Time since diagnosis				21-year Prevalence
		0-1 year	1-5 years	5-10 years	10-21 years	
Leukaemia	0-69	82	241	224	279	826
	70+	44	175	123	88	430
	All ages	126	416	347	367	1256

Table 11: Number of people living with lymphoma at the end of 2013 who were diagnosed from 1993-2013 by time since diagnosis

Type	Age	Time since diagnosis				21-year Prevalence
		0-1 year	1-5 years	5-10 years	10-21 years	
Lymphoma	0-69	206	597	532	621	1956
	70+	123	402	318	349	1192
	All ages	329	999	850	970	3148

Table 12: Number of people living with myeloma at the end of 2013 who were diagnosed from 1993-2013 by time since diagnosis

Type	Age	Time since diagnosis				21-year Prevalence
		0-1 year	1-5 years	5-10 years	10-21 years	
Myeloma	0-69	52	114	85	43	294
	70+	49	147	92	45	333
	All ages	101	261	177	88	627

FURTHER INFORMATION

Further data is available from the Northern Ireland Cancer Registry web site: **www.qub.ac.uk/nicr**

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