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 (2010-2014)			NUMBER OF DEATHS PER YEAR (2010-2014)		
Male	Female	Both sexes	Male	Female	Both sexes
121	81	202	68	46	114
FIVE-YEAR SURVIVAL (2005-2009)			**22-YEAR PREVALENCE (2014)**		
Male	Female	Both sexes	Male	Female	Both sexes
48.5%	49.6%	48.9%	735	560	1,295

Lymphoma summary table

NUMBER OF CASES PER YEAR (2010-2014)			NUMBER OF DEATHS PER YEAR (2010-2014)		
Male	Female	Both sexes	Male	Female	Both sexes
218	182	400	72	63	135
FIVE-YEAR SURVIVAL (2005-2009)			**22-YEAR PREVALENCE (2014)**		
Male	Female	Both sexes	Male	Female	Both sexes
61.2%	66.5%	63.8%	1,673	1,574	3,247

Myeloma summary table

NUMBER OF CASES PER YEAR (2010-2014)			NUMBER OF DEATHS PER YEAR (2010-2014)		
Male	Female	Both sexes	Male	Female	Both sexes
69	53	122	35	35	70
FIVE-YEAR SURVIVAL (2005-2009)			**22-YEAR PREVALENCE (2014)**		
Male	Female	Both sexes	Male	Female	Both sexes
50.2%	53.3%	51.5%	383	270	653

INCIDENCE

Between 2010 and 2014 there were an average of 724 people diagnosed with a form of blood cancer each year. Of these 724 diagnoses, 57% were in men and 43% 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 259 for myeloma to approximately 1 in 70 for lymphoma (probability of a leukaemia diagnosis is 1 in 145). The odds of developing a form of blood cancer are consistently higher in men compared to women.

Incidence trends

Table 1: Incidence of leukaemia by gender and year of diagnosis: 2005-2014

	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
Males	99	97	102	123	109	136	131	110	124	104
Females	90	90	71	89	86	83	99	74	76	74
Both	189	187	173	212	195	219	230	184	200	178

Table 2: Incidence of lymphoma by gender and year of diagnosis: 2005-2014

	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
Males	156	154	170	171	182	206	223	230	226	203
Females	154	142	188	164	159	179	192	172	175	192
Both	310	296	358	335	341	385	415	402	401	395

Table 3: Incidence of myeloma by gender and year of diagnosis: 2005-2014

	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
Males	87	80	85	71	74	53	78	62	75	79
Females	57	69	45	49	59	53	53	41	54	64
Both	144	149	130	120	133	106	131	103	129	143

Over a ten-year period the number of blood cancer cases each year has increased in males and females from 643 in 2005 to 716 in 2014. 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 almost 3% each year since 2002 after a non-statistically significant decrease in incidence between 1993 and 2002 (see figure 1). Incidence of lymphoma in women has steadily increased significantly by almost 3% each year since 1993 (see figure 2).

Figure 1: Trends in blood cancer incidence rates: 1993-2014 in males: 1993-2014

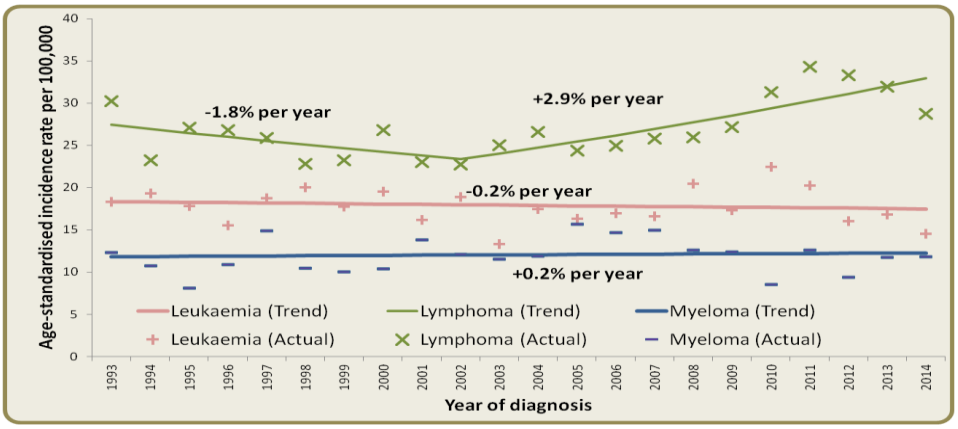
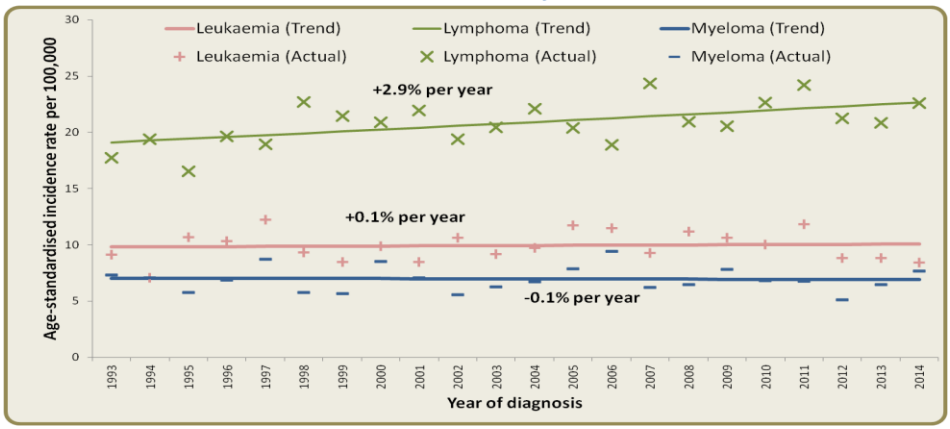


Figure 2: Trends in blood cancer incidence rates: 1993-2014 in females : 1993-2014

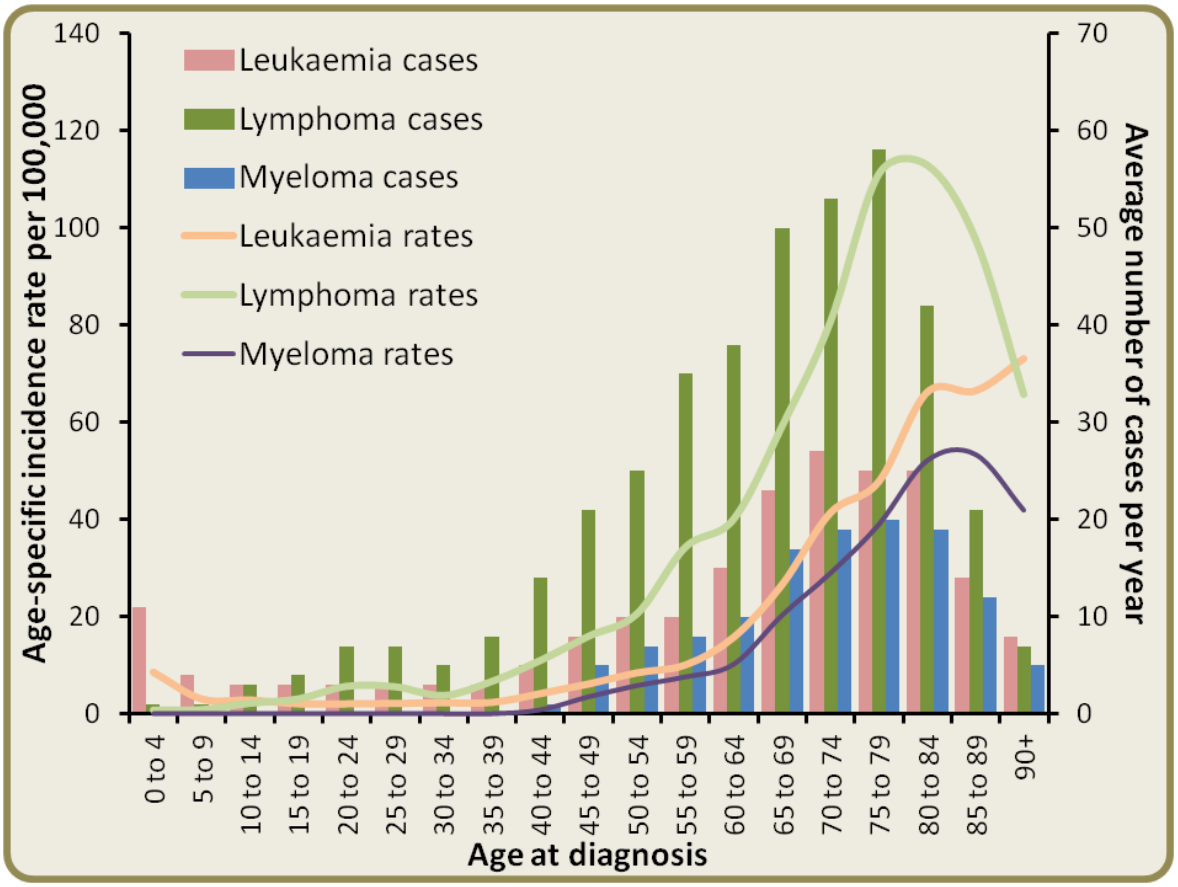


Incidence and age

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 over 70 cases per 100,000 of the population in ages of over 90.

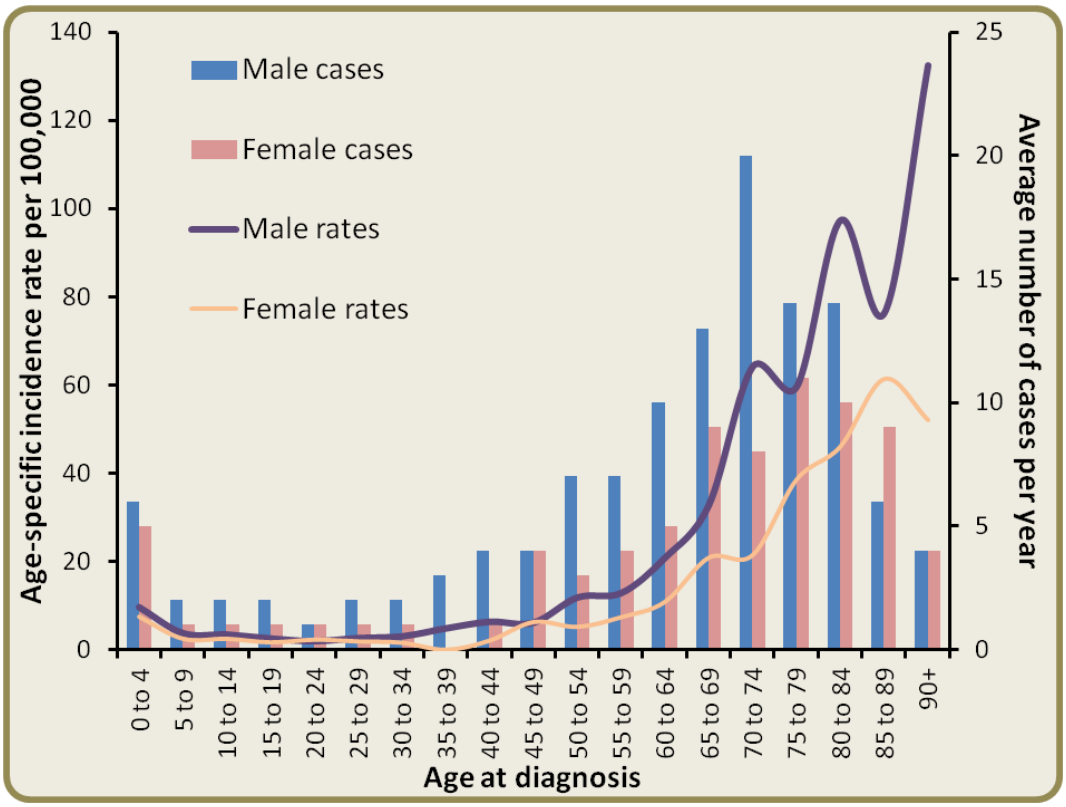
Incidence of lymphoma remains low until the age of 40. Thereafter, incidence steadily rises before reaching a peak of over 100 cases per 100,000 of the population (i.e. 1 case per 1,000) between the ages of 75 and 85. Incidence of lymphoma steadily decreases after the age of 85. Myeloma incidence is strongly linked with age. Adults aged between 80 and 89 years experience the highest incidence (over 50 cases per 100,000 of the population) of myeloma.

Figure 3: Incidence of blood cancer by age and type: 2010-2014



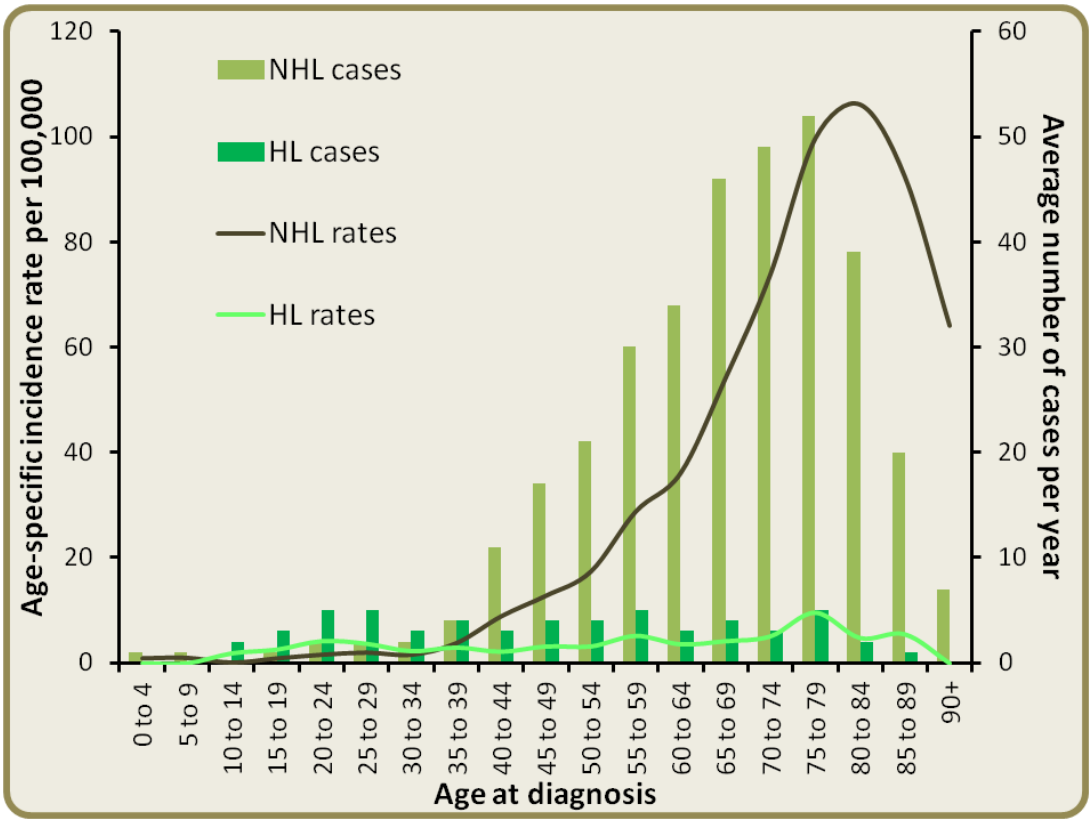
Further analysis to explore differences in incidence of blood cancers between gender and type produces some interesting information. Incidence of leukaemia in males and females remains low after an early peak during infancy. After the age of 60 incidence of leukaemia in males and females begins to separate 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 61.4 cases per 100,000 females between the ages of 85 and 89 (see figure 4).

Figure 4: Incidence of leukaemia by age and gender: 2010-2014



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: 2010-2014



Incidence by Trust area

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

Incidence by deprivation

In 2010-2014 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 2005-2009 was 48.9% at five years. The age-standardised five-year survival for people diagnosed with lymphoma during the same time period was 63.8% whilst the age-standardised five-year survival for people diagnosed with myeloma during 2005-2009 was 51.5%. 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 2005-2009		
	Male	Female	Both sexes
6 months	77.3%	74.9%	76.2%
1 year	70.6%	64.7%	68.1%
5 years	48.5%	49.6%	48.9%

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

Time since diagnosis	Diagnosed 2005-2009		
	Male	Female	Both sexes
6 months	82.0%	83.5%	82.7%
1 year	77.2%	79.4%	78.3%
5 years	61.2%	66.5%	63.8%

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

Time since diagnosis	Diagnosed 2005-2009		
	Male	Female	Both sexes
6 months	86.2%	88.9%	87.3%
1 year	77.4%	84.2%	80.3%
5 years	50.2%	53.3%	51.5%

Survival Trends

Five-year survival for all forms of blood cancer in Northern Ireland has increased from the 1993-1999 diagnosis period to the 2005-2009 diagnosis period in both males and females. Five-year survival after a diagnosis of leukaemia between 1993-1999 was 33.6% and 48.9% between 2005-2009. Five-year survival after a diagnosis of lymphoma between 1993-1999 was 46.7% and 63.8% between 2005-2009. Five-year survival after a diagnosis of myeloma between 1993-1999 was 30.1% and 51.5% between 2005-2009.

This means that five-year survival for all forms of blood cancer has increased by at least 15% from the 1993-1999 to 2005-2009 diagnostic period.

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

Period of diagnosis	Male	Female	Both sexes
1993-1999	33.3%	33.6%	33.6%
2000-2004	40.1%	47.4%	43.2%
2005-2009	48.5%	49.6%	48.9%

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

Period of diagnosis	Male	Female	Both sexes
1993-1999	44.9%	49.1%	46.7%
2000-2004	53.2%	58.6%	55.8%
2005-2009	61.2%	66.5%	63.8%

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

Period of diagnosis	Male	Female	Both sexes
1993-1999	26.2%	34.8%	30.1%
2000-2004	33.5%	41.8%	36.5%
2005-2009	50.2%	53.3%	51.5%

MORTALITY

In 2009-2013 there were an average of 319 deaths from blood cancer each year of which 135 (42%) were due to lymphoma, 114 (36%) were due to leukaemia, and 70 (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 2.3% each year from 1993 to 2006 before a non-significant rise of 2.5%. Myeloma rates fell by 1.4% and lymphoma rates by 1.3% each year, both significantly.

Figure 7: Trends in blood cancer mortality rates in men: 1993-2014

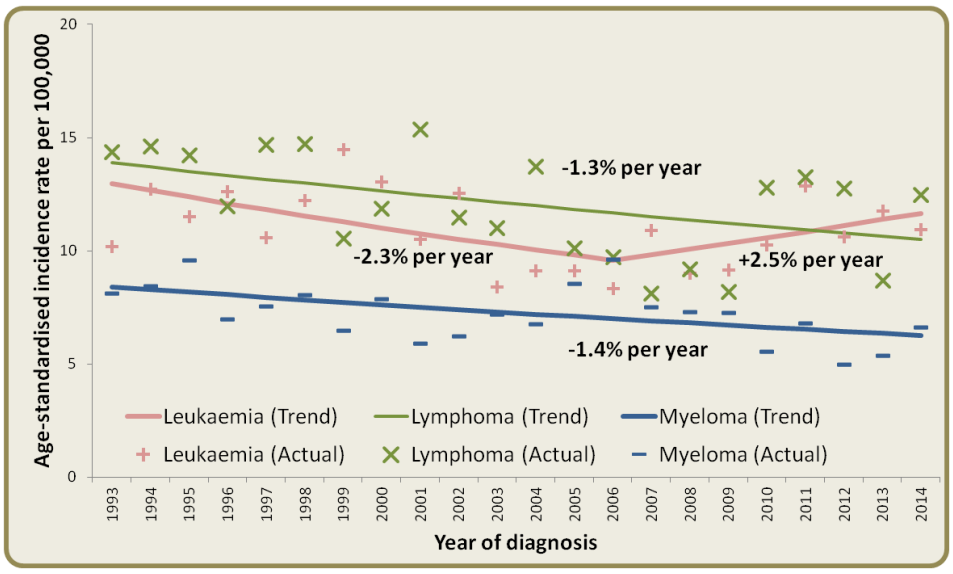
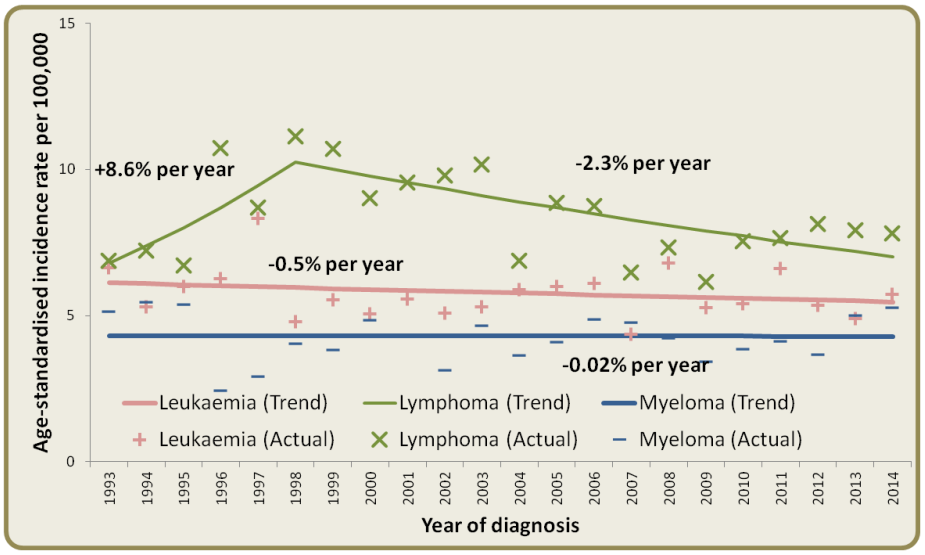


Figure 8: Trends in blood cancer mortality rates in women: 1993-2014



Leukaemia and myeloma mortality rates have remained stable in women during the previous twenty two year period. Lymphoma mortality rates have declined significantly by 2.3% each year between 1998 and 2014 after a non-statistically significant rise.

PREVALENCE

At the end of 2014 there were a total of 5,195 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 60% 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 2014 who were diagnosed from 1993-2014 by time since diagnosis

Type	Age	Time since diagnosis				22-year Prevalence
		0-1 year	1-5 years	5-10 years	10-22 years	
Leukaemia	0-69	72	256	214	293	835
	70+	45	172	139	104	460
	All ages	117	428	353	397	1295

Table 11: Number of people living with lymphoma at the end of 2014 who were diagnosed from 1993-2014 by time since diagnosis

Type	Age	Time since diagnosis				22-year Prevalence
		0-1 year	1-5 years	5-10 years	10-22 years	
Lymphoma	0-69	194	620	538	644	1996
	70+	131	416	319	385	1251
	All ages	325	1036	857	1029	3247

Table 12: Number of people living with myeloma at the end of 2014 who were diagnosed from 1993-2014 by time since diagnosis

Type	Age	Time since diagnosis				22-year Prevalence
		0-1 year	1-5 years	5-10 years	10-22 years	
Myeloma	0-69	45	112	81	49	287
	70+	72	146	96	52	366
	All ages	117	258	177	101	653

Further Information

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

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