
Multiple myeloma

1993-2021

(Including plasma cell neoplasms)

(ICD10 codes: C90)



Northern Ireland Cancer Registry, 2024

An official statistics publication

ABOUT THIS REPORT

Contents

This report includes information on incidence of multiple myeloma (including plasma cell neoplasms) as recorded by the Northern Ireland Cancer Registry (NICR). Incidence data is available annually from 1993 to 2021, however in order to provide stable and robust figures the majority of information presented in this report is based upon the average number of cases diagnosed in the last five years.

Methodology

The methodology used in producing the statistics presented in this report, including details of data sources, classifications and coding are available in the accompanying methodology report available at: www.qub.ac.uk/research-centres/nicr/CancerInformation/official-statistics.

Official statistics

The incidence, prevalence and survival statistics in this publication are designated as official statistics signifying that they comply with the Code of Practice for Official Statistics. Further information on this code is available at code.statisticsauthority.gov.uk.

Cancer mortality data

The NI Statistics and Research Agency (NISRA) is the official statistics provider of cancer mortality data in Northern Ireland. However, for completeness, data on cancer mortality is also provided in this report. While analysis is conducted by NICR staff, the original data is provided courtesy of the General Register Office (NI) via the Department of Health.

Reuse of information

The information in this report (and any supplementary material) is available for reuse free of charge and without the need to contact NICR. However, we request that NICR is acknowledged as the source of any reused information. The following reference is recommended:

Northern Ireland Cancer Registry 2024. Multiple myeloma: 1993-2021. Available at: www.qub.ac.uk/research-centres/nicr

Further information

Further information is available at: www.qub.ac.uk/research-centres/nicr

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Acknowledgements

The Northern Ireland Cancer Registry (NICR) uses data provided by patients and collected by the health service as part of their care and support.

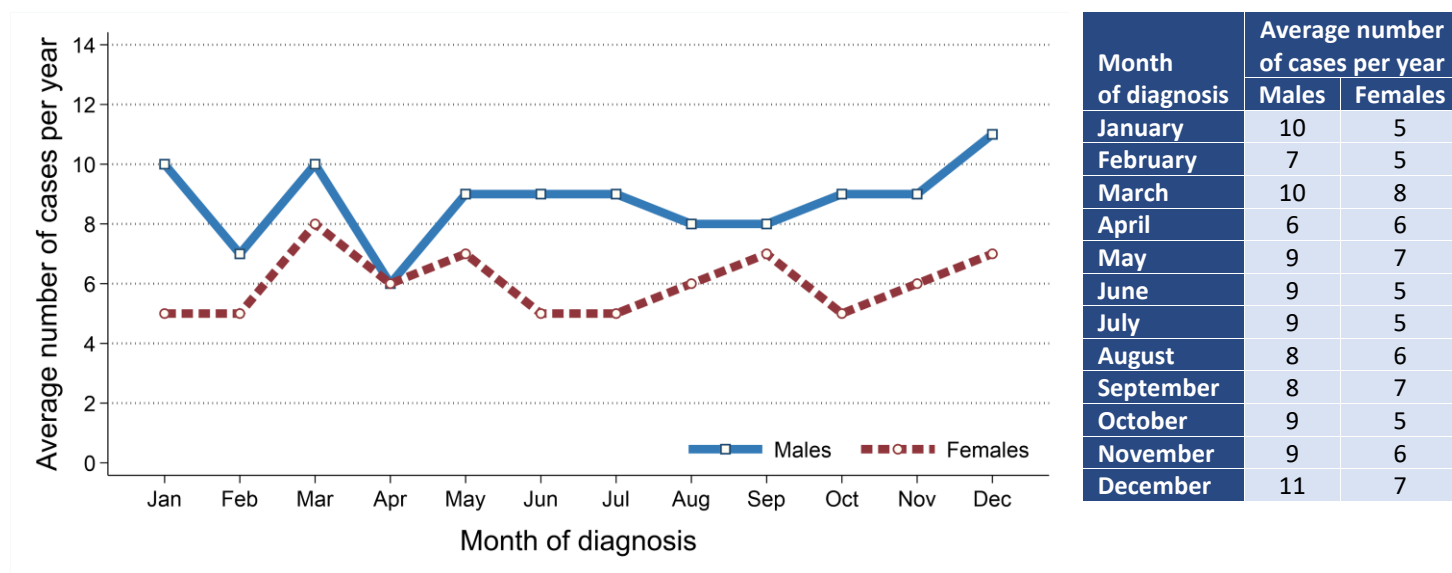
NICR is funded by the Public Health Agency and is based in Queen's University, Belfast.



INCIDENCE

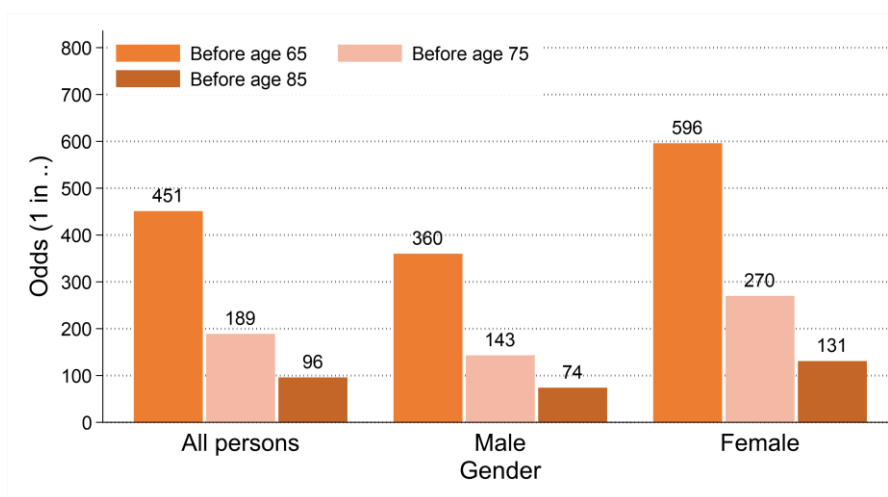
- There were 886 cases of multiple myeloma (including plasma cell neoplasms) diagnosed during 2017-2021 in Northern Ireland. On average this was 177 cases per year.
- During this period 39.8% of multiple myeloma cases were among women (Male cases: 533, Female cases: 353). On average there were 107 male and 71 female cases of multiple myeloma per year.
- The most common diagnosis month during 2017-2021 was December among males with 11 cases per year and March among females with 8 cases per year.

Figure 1: Average number of cases of multiple myeloma per year in 2017-2021 by month of diagnosis



- Multiple myeloma made up 2.1% of all male and 1.4% of all female cancer cases (excluding non-melanoma skin cancer).
- The multiple myeloma incidence rates for each gender were 11.5 cases per 100,000 males and 7.4 cases per 100,000 females.
- The odds of developing multiple myeloma before age 85 was 1 in 74 for men and 1 in 131 for women.

Figure 2: Odds of developing multiple myeloma in 2017-2021



INCIDENCE BY AGE

- The median age of patients diagnosed with multiple myeloma during 2017-2021 was 72 years (Males: 71, Females: 73).
- The risk of developing multiple myeloma varied by age, with 37.5% of men and 45.9% of women diagnosed with multiple myeloma aged 75 and over at diagnosis.
- In contrast, 10.2% of patients diagnosed with multiple myeloma were aged 0 to 54 at diagnosis.

Figure 3: Average number of cases of multiple myeloma diagnosed per year in 2017-2021 by age at diagnosis

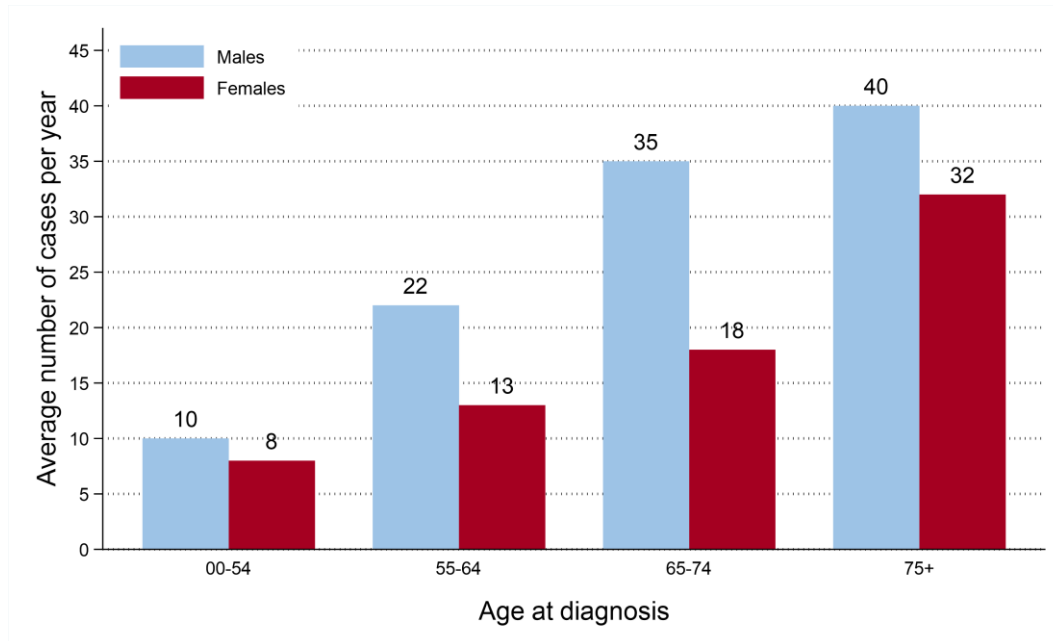
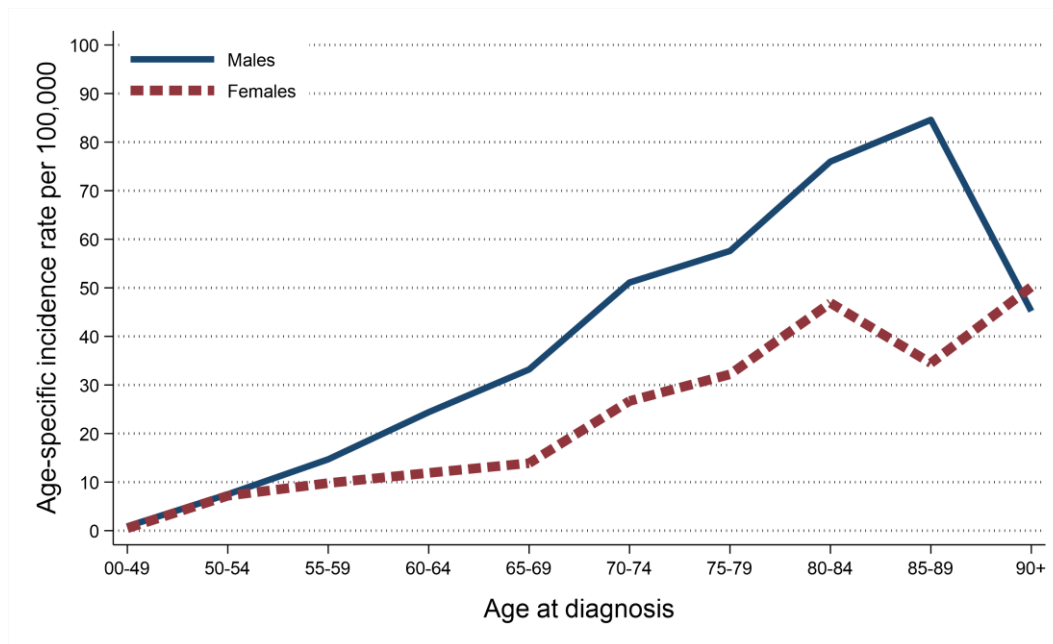


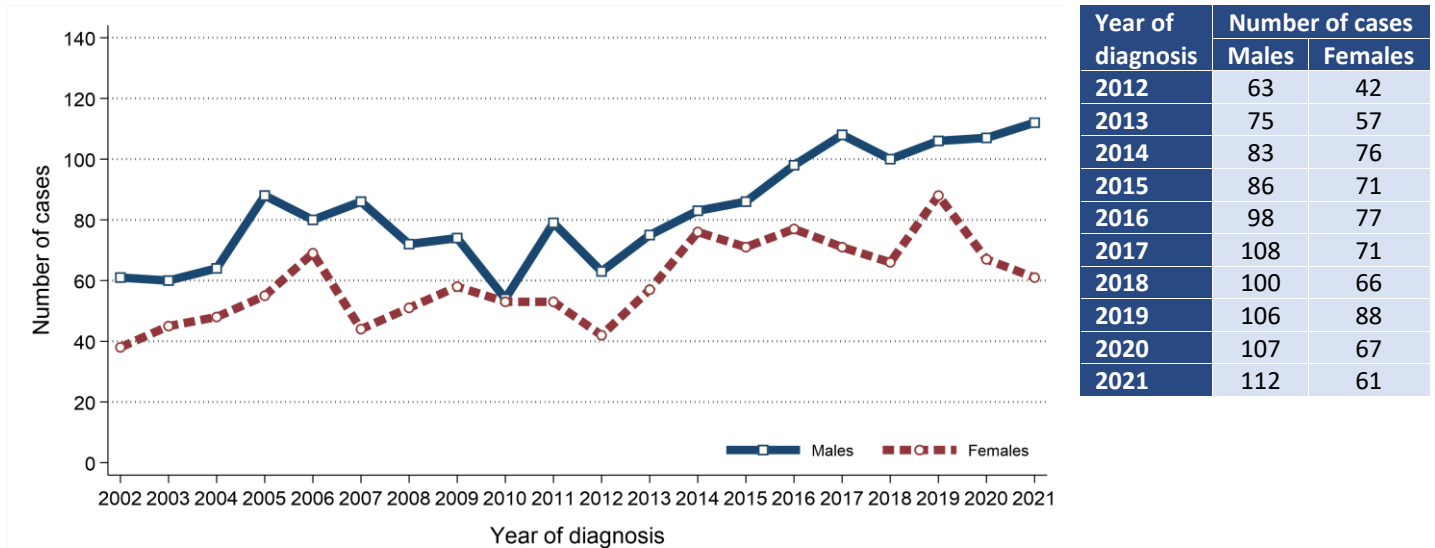
Figure 4: Age-specific incidence rates of multiple myeloma in 2017-2021



INCIDENCE TRENDS

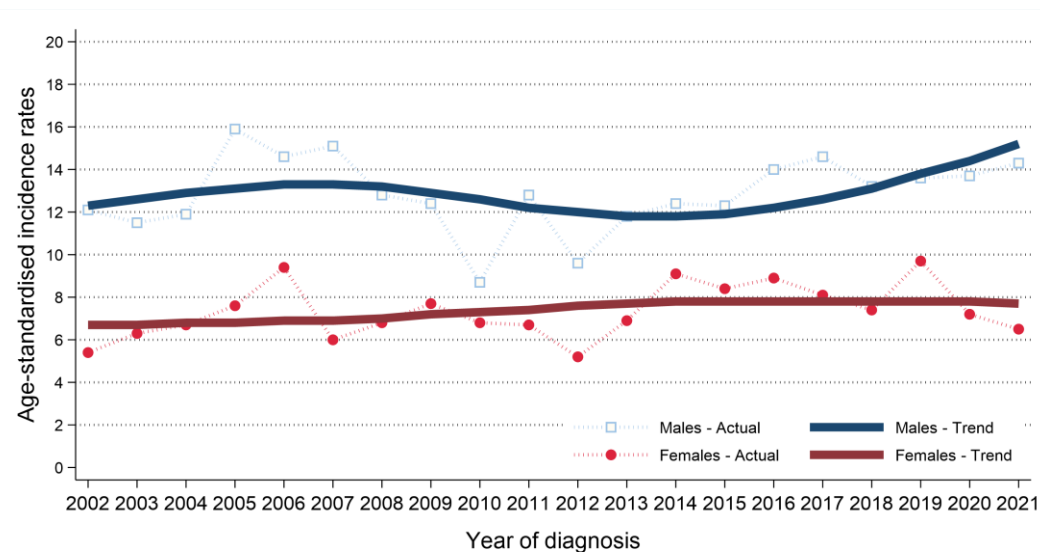
- The number of cases of multiple myeloma among males increased between 2012-2016 and 2017-2021 by 31.6% from 405 cases (81 cases per year) to 533 cases (107 cases per year).
- The number of cases of multiple myeloma among females increased between 2012-2016 and 2017-2021 by 9.3% from 323 cases (65 cases per year) to 353 cases (71 cases per year).

Figure 5: Trends in number of cases of multiple myeloma diagnosed from 2002 to 2021



- Male age-standardised multiple myeloma incidence rates increased between 2012-2016 and 2017-2021 by 14.9% from 12.1 to 13.9 cases per 100,000 males. This change was not statistically significant.
- Female age-standardised multiple myeloma incidence rates did not change between 2012-2016 and 2017-2021 with 7.8 cases per 100,000 females in each period of time.

Figure 6: Trends in incidence rates of multiple myeloma from 2002 to 2021



Age-standardised incidence rates illustrate the change in the number of cases within a population of a fixed size and age structure (2013 European Standard).

They thus represent changes other than those caused by population growth and/or ageing.

Trends can also be influenced by changes in how cancer is classified and coded. (e.g. the move from ICD-0-2 to ICD-0-3 in 2019).

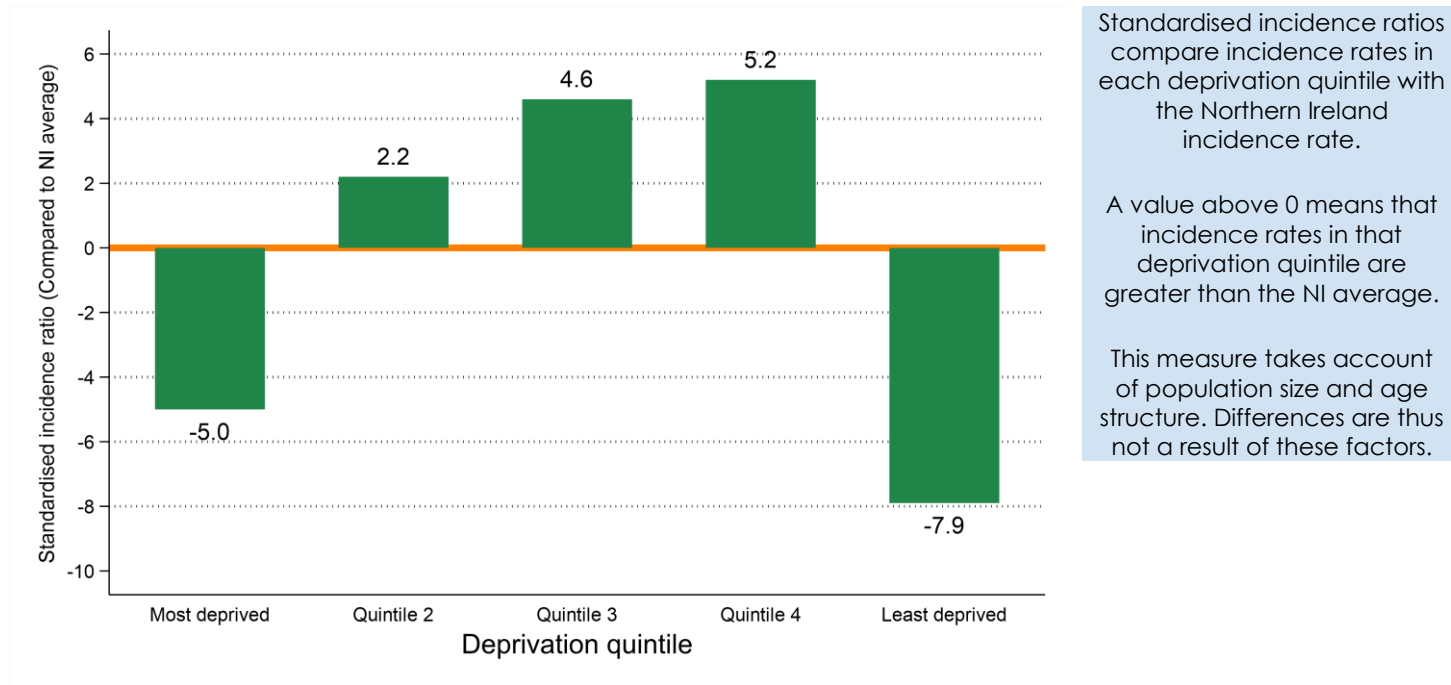
INCIDENCE BY DEPRIVATION

- The number of cases of multiple myeloma diagnosed during 2017-2021 varied in each deprivation quintile due to variations in population size and age.
- After accounting for these factors, incidence rates:
 - in the most socio-economically deprived areas did not vary significantly from the NI average.
 - in the least socio-economically deprived areas did not vary significantly from the NI average.

Table 1: Number of cases of multiple myeloma diagnosed in 2017-2021 by deprivation quintile

Deprivation quintile	All persons		Male		Female	
	Total cases in period	Average cases per year	Total cases in period	Average cases per year	Total cases in period	Average cases per year
Northern Ireland	886	177	533	107	353	71
Most deprived
Quintile 2	137	27	78	16	59	12
Quintile 3	181	36	108	22	73	15
Quintile 4	195	39	128	26	67	13
Least deprived	198	40	123	25	75	15
Unknown	175	35	96	19	79	16
Unknown	0	0	0	0	0	0

Figure 7: Standardised incidence ratio comparing deprivation quintile to Northern Ireland for multiple myeloma diagnosed in 2017-2021



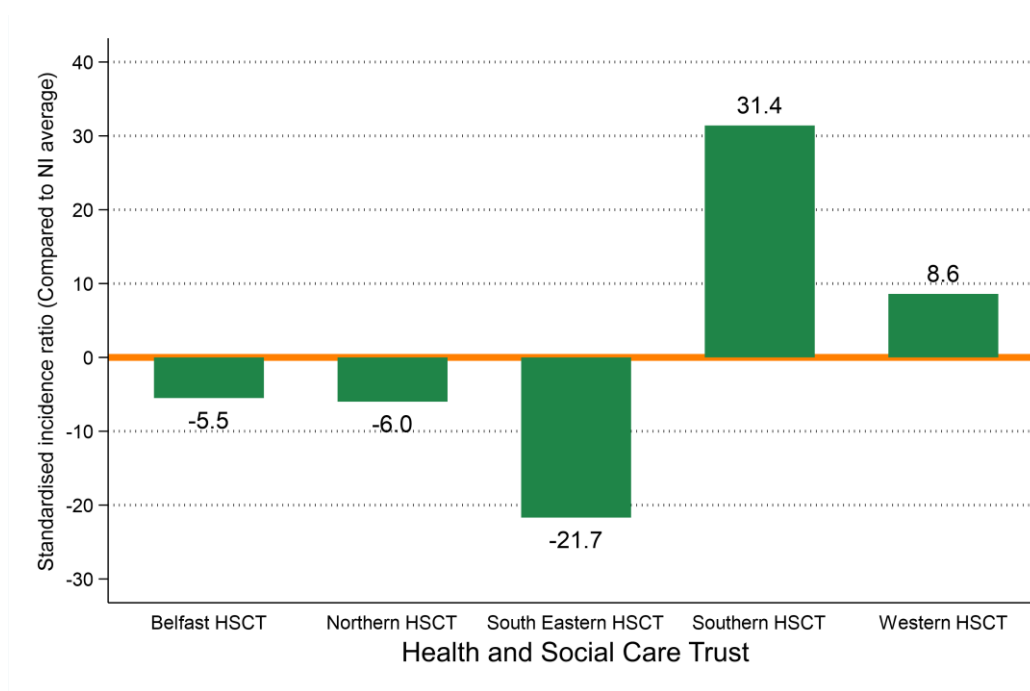
INCIDENCE BY HEALTH AND SOCIAL CARE TRUST

- The number of cases of multiple myeloma diagnosed during 2017-2021 varied in each Health and Social Care Trust due to variations in population size and age.
- After accounting for these factors, incidence rates:
 - in Belfast HSCT did not vary significantly from the NI average.
 - in Northern HSCT did not vary significantly from the NI average.
 - in South Eastern HSCT were 21.7% lower than the NI average.
 - in Southern HSCT were 31.4% higher than the NI average.
 - in Western HSCT did not vary significantly from the NI average.

Table 2: Number of cases of multiple myeloma diagnosed in 2017-2021 by Health and Social Care Trust

Health and Social Care Trust	All persons		Male		Female	
	Total cases in period	Average cases per year	Total cases in period	Average cases per year	Total cases in period	Average cases per year
Northern Ireland	886	177	533	107	353	71
Belfast HSCT	151	30	86	17	65	13
Northern HSCT	222	44	136	27	86	17
South Eastern HSCT	147	29	90	18	57	11
Southern HSCT	217	43	132	26	85	17
Western HSCT	149	30	89	18	60	12
Unknown	0	0	0	0	0	0

Figure 8: Standardised incidence ratio comparing Health and Social Care Trust to Northern Ireland for multiple myeloma diagnosed in 2017-2021



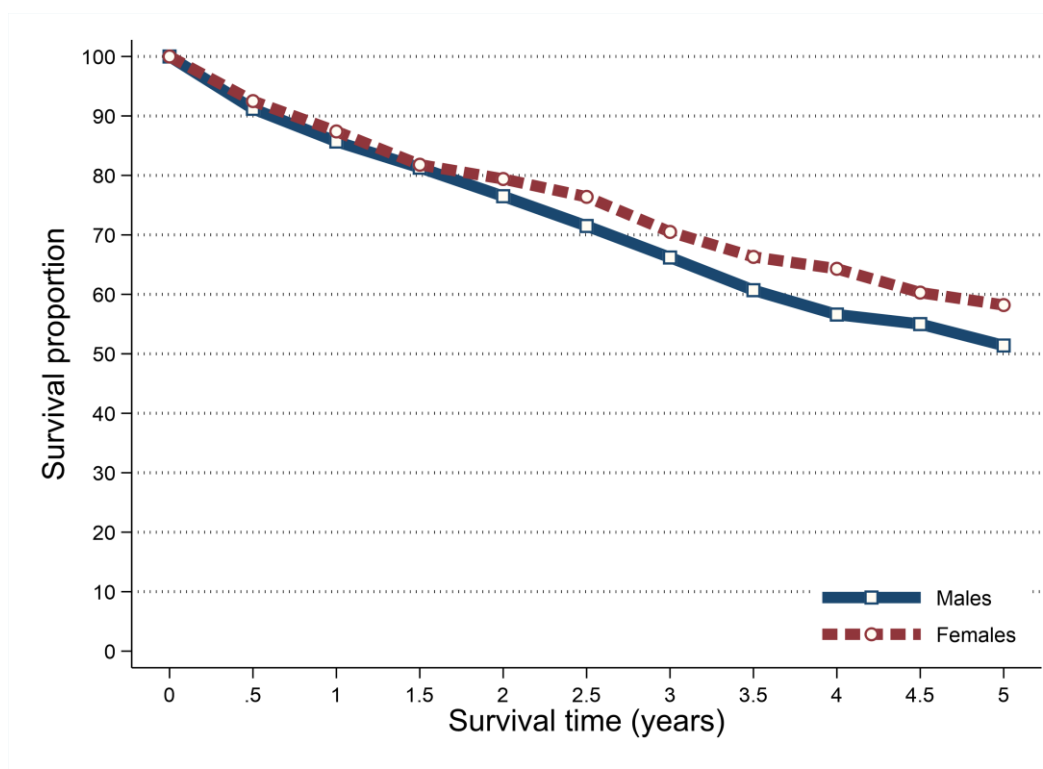
SURVIVAL

- 80.3% of patients were alive one year and 42.8% were alive five years from a multiple myeloma diagnosis in 2012-2016. (observed survival)
- Age-standardised net survival (ASNS), which removes the effect of deaths from causes unrelated to cancer, was 86.3% one year and 54.2% five years from a multiple myeloma diagnosis in 2012-2016.
- Five-year survival (ASNS) for multiple myeloma patients diagnosed in 2012-2016 was 51.4% among men and 58.2% among women.

Table 3: Survival from multiple myeloma for patients diagnosed in 2012-2016

Time since diagnosis	All persons		Male		Female	
	Observed survival	Age-standardised net survival	Observed survival	Age-standardised net survival	Observed survival	Age-standardised net survival
6 months	87.7%	91.7%	87.9%	91.2%	87.5%	92.5%
One year	80.3%	86.3%	80.7%	85.7%	79.7%	87.4%
Two years	69.1%	77.6%	69.8%	76.5%	68.1%	79.4%
Five years	42.8%	54.2%	41.5%	51.4%	44.4%	58.2%

Figure 9: Age-standardised net survival from multiple myeloma for patients diagnosed in 2012-2016



Observed survival examines the time between diagnosis and death from any cause, however, due to the inclusion of non-cancer deaths it may not fully reflect how changes in cancer care impact survival from cancer.

Age-standardised net survival provides an estimate of patient survival which has been adjusted to take account of deaths unrelated to cancer. It is more widely used to assess the impact of changes in cancer care on patient survival.

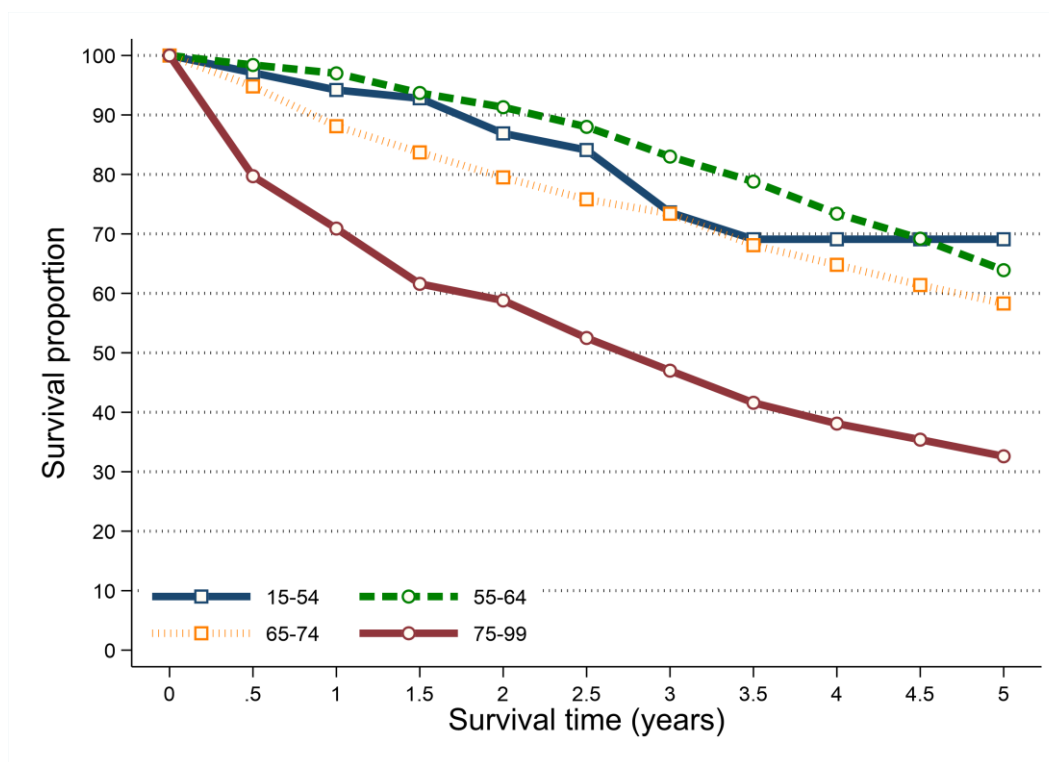
SURVIVAL BY AGE

- Survival from multiple myeloma among patients diagnosed during 2012-2016 was related to age with better five-year survival among younger age groups.
- Five-year net survival ranged from 69.1% among patients aged 15 to 54 at diagnosis to 32.6% among those aged 75 to 99.

Table 4: Net survival from multiple myeloma for patients diagnosed in 2012-2016 by age at diagnosis

Age group	All persons	
	One-year	Five-years
15 to 54	94.2%	69.1%
55 to 64	97.0%	63.9%
65 to 74	88.1%	58.3%
75 to 99	70.9%	32.6%

Figure 10: Net survival from multiple myeloma for patients diagnosed in 2012-2016 by age at diagnosis

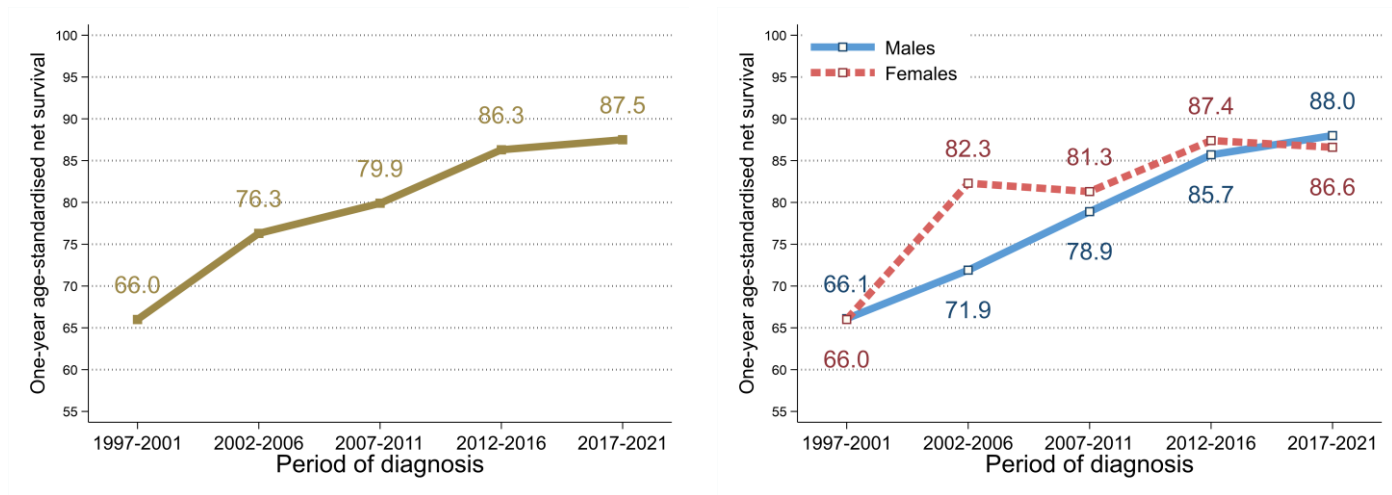


SURVIVAL TRENDS

ONE-YEAR NET SURVIVAL

- Between 2012-2016 and 2017-2021 there was no significant change in one-year survival (ASNS) from multiple myeloma.
- Compared to 1997-2001 one-year survival (ASNS) from multiple myeloma in 2017-2021 increased significantly from 66.0% to 87.5%. This increase was significant for males (66.1% to 88.0%) and females (66.0% to 86.6%).

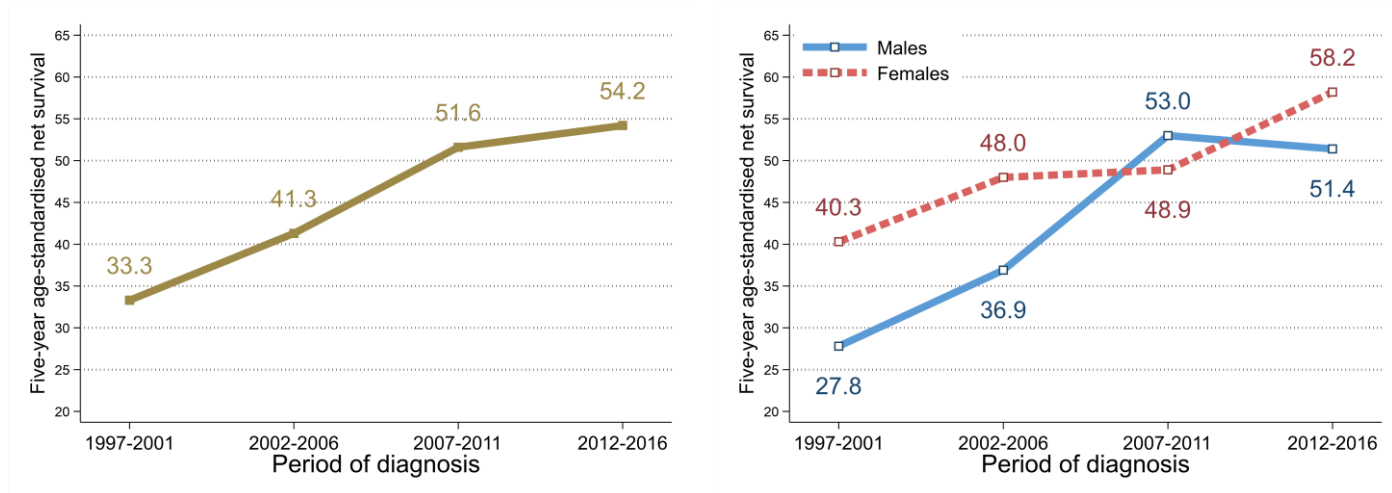
Figure 11: Trends in one-year age-standardised net survival from multiple myeloma in 1997-2021



FIVE-YEAR NET SURVIVAL

- Between 2007-2011 and 2012-2016 there was no significant change in five-year survival (ASNS) from multiple myeloma.
- Compared to 1997-2001 five-year survival (ASNS) from multiple myeloma in 2012-2016 increased significantly from 33.3% to 54.2%. This increase was significant for males (27.8% to 51.4%) and females (40.3% to 58.2%).

Figure 12: Trends in five-year age-standardised net survival from multiple myeloma in 1997-2016



PREVALENCE

- At the end of 2021, there were 978 people (Males: 576; Females: 402) living with multiple myeloma who had been diagnosed with the disease during 1997-2021.
- Of these 15.3% had been diagnosed in the previous year (one-year prevalence) and 85.4% in the previous 10 years (ten-year prevalence).
- 41.4% of multiple myeloma survivors were aged 75 and over at the end of 2021.

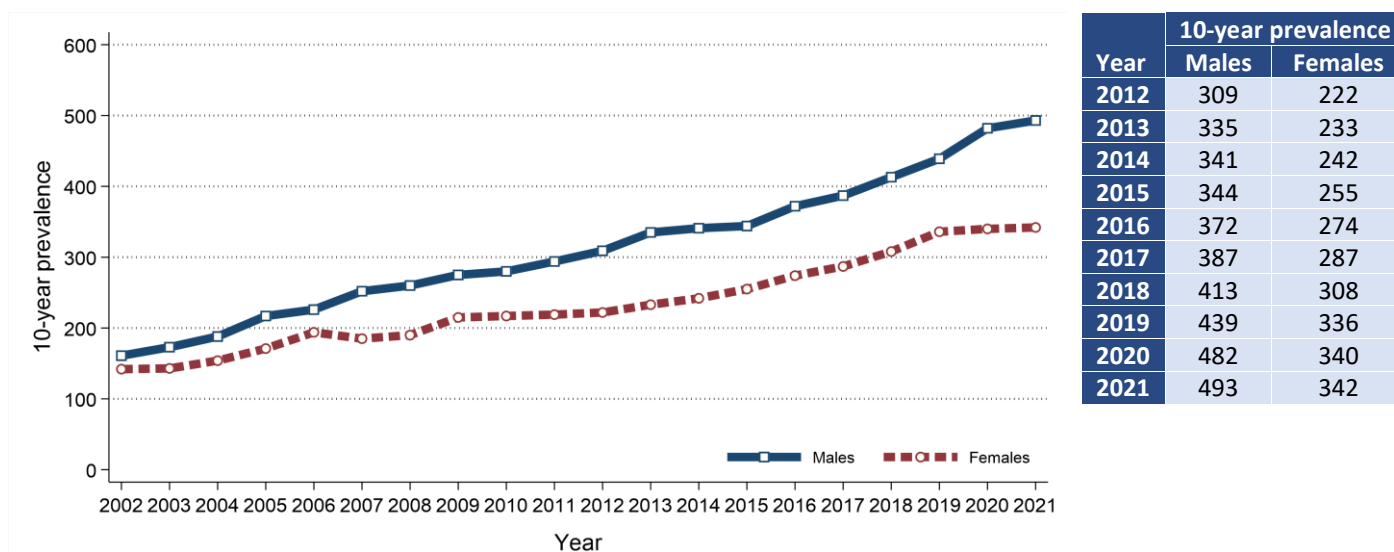
Table 5: 25-year prevalence of multiple myeloma by age at end of 2021

Gender	Age at end of 2021	25-year prevalence	Time since diagnosis			
			0 to 1 year	1 to 5 years	5 to 10 years	10 to 25 years
All persons	All ages	978	150	453	232	143
	0 to 74	573	95	269	131	78
	75 and over	405	55	184	101	65
Male	All ages	576	101	267	125	83
	0 to 74	356	62	172	74	48
	75 and over	220	39	95	51	35
Female	All ages	402	49	186	107	60
	0 to 74	217	33	97	57	30
	75 and over	185	16	89	50	30

PREVALENCE TRENDS

- 10-year prevalence of multiple myeloma among males increased between 2016 and 2021 by 32.5% from 372 survivors to 493 survivors.
- 10-year prevalence of multiple myeloma among females increased between 2016 and 2021 by 24.8% from 274 survivors to 342 survivors.

Figure 13: Trends in 10-year prevalence of multiple myeloma in 2002-2021



MORTALITY

- There were 421 deaths from multiple myeloma (including plasma cell neoplasms) during 2017-2021 in Northern Ireland. On average this was 84 deaths per year.
- During this period 44.9% of multiple myeloma deaths were among women (Male deaths: 232, Female deaths: 189). On average there were 46 male and 38 female deaths from multiple myeloma per year.
- Multiple myeloma deaths made up 2.0% of all male cancer deaths and 1.8% of all female cancer deaths.
- The median age of patients who died from multiple myeloma during 2017-2021 was 77 years (Males: 76, Females: 77).
- The risk of dying from multiple myeloma varied by age, with 17.2% of men and 25.9% of women who died from multiple myeloma aged 85 and over at death.
- In contrast, 15.7% of patients who died from multiple myeloma were aged 0 to 64 at death.

Figure 14: Average number of deaths from multiple myeloma per year in 2017-2021 by age at death

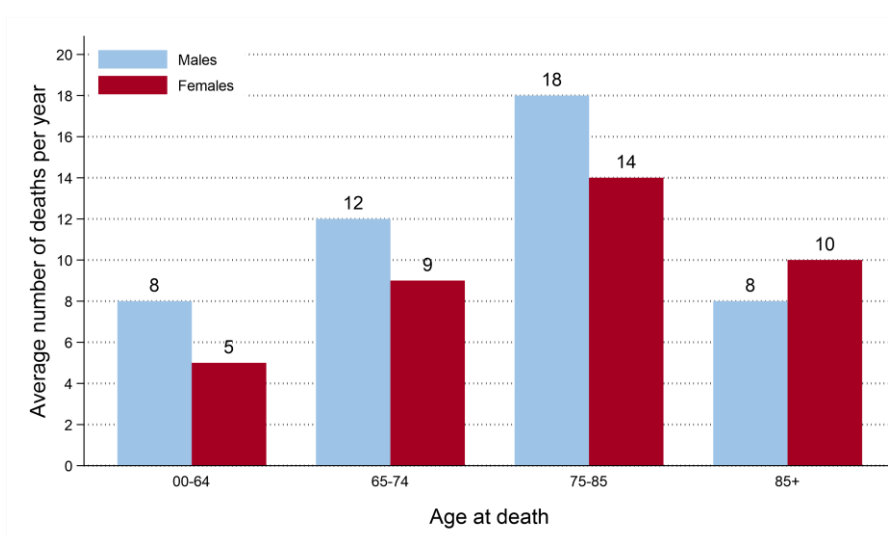
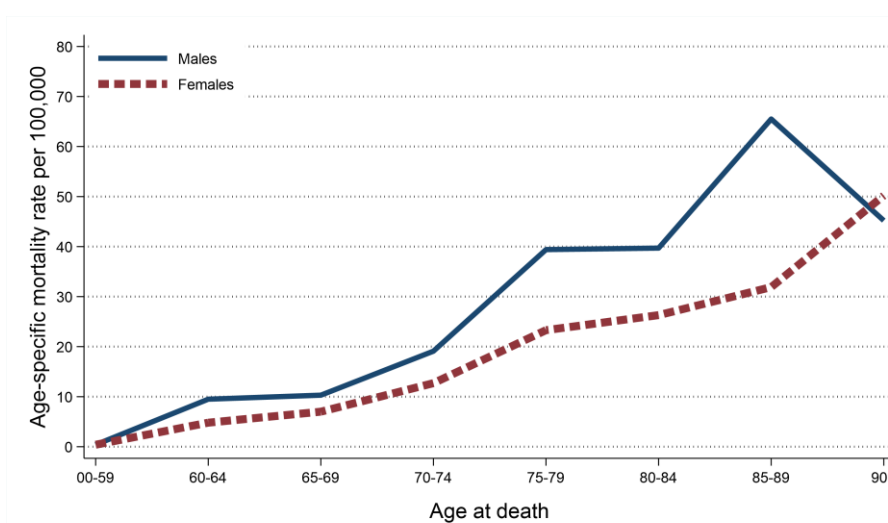


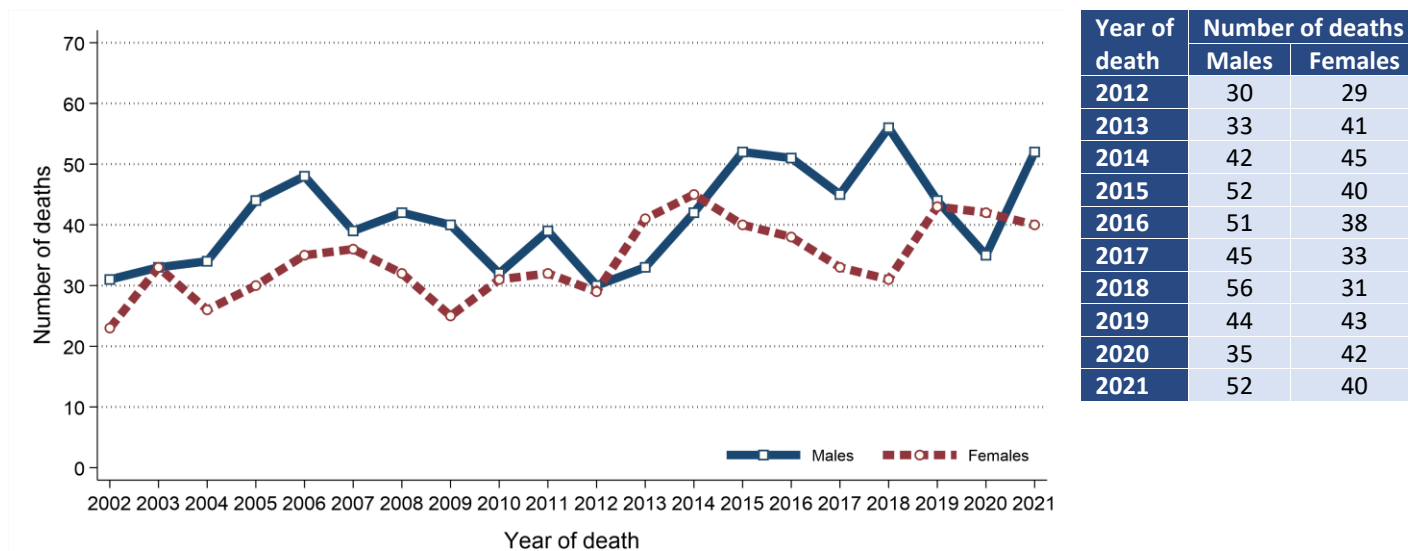
Figure 15: Age-specific mortality rates of multiple myeloma in 2017-2021



MORTALITY TRENDS

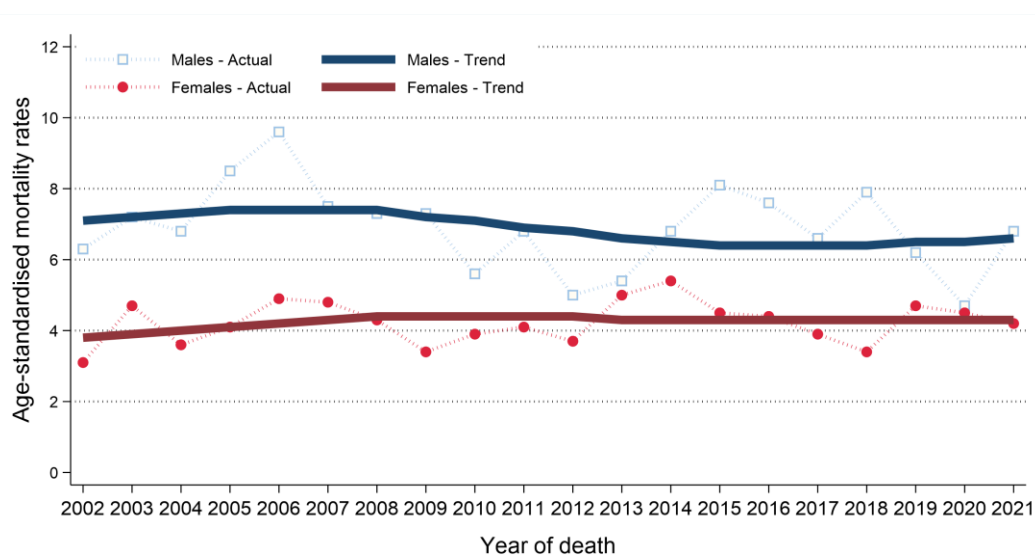
- The number of deaths from multiple myeloma among males increased between 2012-2016 and 2017-2021 by 11.5% from 208 deaths (42 deaths per year) to 232 deaths (46 deaths per year).
- The number of deaths from multiple myeloma among females decreased between 2012-2016 and 2017-2021 by 2.1% from 193 deaths (39 deaths per year) to 189 deaths (38 deaths per year).

Figure 16: Trends in the number of deaths from multiple myeloma from 2002 to 2021



- Male age-standardised multiple myeloma mortality rates decreased between 2012-2016 and 2017-2021 by 3.0% from 6.6 to 6.4 deaths per 100,000 males. This change was not statistically significant.
- Female age-standardised multiple myeloma mortality rates decreased between 2012-2016 and 2017-2021 by 10.9% from 4.6 to 4.1 deaths per 100,000 females. This change was not statistically significant.

Figure 17: Trends in mortality rates of multiple myeloma from 2002 to 2021



Age-standardised mortality rates illustrate the change in the number of deaths within a population of a fixed size and age structure (2013 European Standard).

They thus represent changes other than those caused by population growth and/or ageing.

Trends can also be influenced by changes in how cancer is classified and coded.

BACKGROUND NOTES

Cancer classification: Classification of tumour sites is carried out using ICD10 codes. For a listing and explanation of ICD10 codes see: World Health Organisation at <http://apps.who.int/classifications/icd10/browse/2010/en#/I>

Population data: Population data for Northern Ireland, and smaller geographic areas, are extracted from the NI mid-year population estimates available from the NI Statistics and Research Agency (available at www.nisra.gov.uk).

Geographic areas: Geographic areas are assigned based on a patient's postcode of usual residence at diagnosis using the Jan 2023 Central Postcode Directory (CPD) produced by the NI Statistics and Research Agency (available at www.nisra.gov.uk).

Deprivation quintiles: Super output areas (SOA) are assigned to each patient based on their postcode of usual residence at diagnosis. Using the SOA each patient is assigned a socio-economic deprivation quintile based on the 2017 Multiple Deprivation Measure. The 2017 Multiple Deprivation Measure is available from the NI Statistics and Research Agency (available at www.nisra.gov.uk).

Crude incidence/mortality rate: The number of cases/deaths per 100,000 person years in the population. Person years are the sum of the population over the number of years included.

Age-standardised incidence/mortality rates per 100,000 person years are estimates of the incidence/mortality rate if that population had a standard age structure. Throughout this report the 2013 European Standard Population has been used. Standardising to a common Standard Population allows comparisons of incidence/mortality rates to be made between different time periods and geographic areas while removing the effects of population change and ageing.

Standardised Incidence/Mortality Ratio (SIR/SMR) is the ratio of the number of cases/deaths observed in a population to the expected number of cases/deaths, based upon the age-specific rates in a reference population. This statistic is often used to compare incidence/mortality rates for geographic areas (e.g. Trusts) to the national incidence/mortality rates (i.e. Northern Ireland). An SIR/SMR of 100 indicates there is no difference between the geographic area and the national average.

Confidence intervals measure the precision of a statistic (e.g. multiple myeloma incidence rate). Typically, when numbers are low, precision is poorer and confidence intervals will be wider. As a general rule, when comparing statistics (e.g. multiple myeloma incidence rate in year 2012 vs year 2013), if the confidence interval around one statistic overlaps with the interval around another, it is unlikely that there is any real difference between the two. If there is no overlap, the difference is considered to be statistically significant.

Lifetime risk is estimated as the cumulative risk of getting cancer up to age 75/85, calculated directly from the age-specific incidence rates. The odds of developing the disease before age 75/85 is the inverse of the cumulative risk.

Prevalence is the number of cancer patients who are alive in the population on a specific date (31st December 2021 in this report). Since data from the NI Cancer Registry are only available since 1993, prevalence only refers to a fixed term (10 and 25 years in this report). There may be members of the population living with a diagnosis of cancer for more than 25 years.

Patient survival is evaluated using two measures. Observed survival examines the time between diagnosis and death from any cause. It thus represents what cancer patients experience, however, due to the inclusion of non-cancer deaths (e.g. heart disease), it may not reflect how changes in cancer care impact survival from cancer. Thus age-standardised net survival is also examined. This measure provides an estimate of patient survival which has been adjusted to take account of deaths unrelated to cancer. It also assumes a standard age distribution thereby removing the impact of changes in the age distribution of cancer patients on changes in survival over time. While this measure is hypothetical, as it assumes patients can only die from cancer related factors, it is a better indicator of the impact of changes in cancer care on patient survival.