
Recent trends in incidence, survival and mortality of multiple myeloma in Northern Ireland

(A comparison between April-December of 2021, 2020 and 2018-2019)

Further information

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

Phone: +44 (0)28 9097 6028 **e-mail:** nicr@qub.ac.uk

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

During the April-December period the number of cases of multiple myeloma diagnosed decreased between 2018-2019 and 2021 by 11.3% from 142 cases per year to 126 cases.

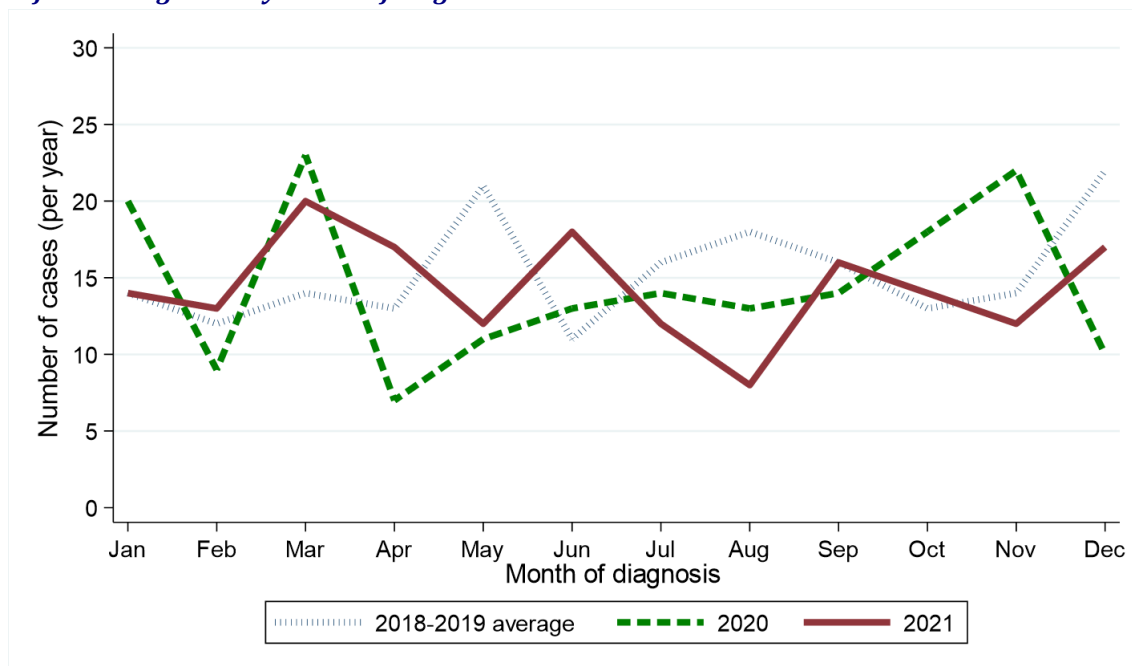
Table 1: Number of multiple myeloma cases diagnosed in 2018-2021 by month and year of diagnosis

Period of diagnosis	Annual total	Month diagnosed											
		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept	Oct	Nov	Dec
2018-2019*	180	14	12	14	13	21	11	16	18	16	13	14	22
2020	174	20	9	23	7	11	13	14	13	14	18	22	10
2021	173	14	13	20	17	12	18	12	8	16	14	12	17

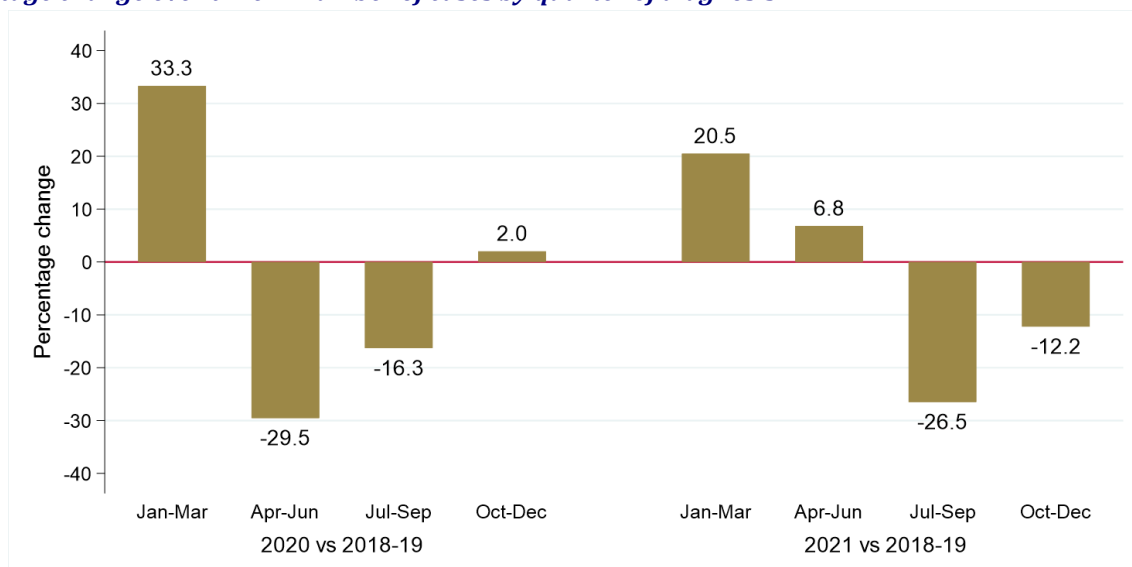
* Average cases per year rounded to the nearest integer. Row sums may thus differ slightly from the total.

Figure 1: Number of multiple myeloma cases diagnosed in 2018-2021 by month/quarter and year of diagnosis

(a) Number of cases diagnosed by month of diagnosis



(b) Percentage change over time in number of cases by quarter of diagnosis



GENDER

Excluding the first quarter of each year the number of male multiple myeloma cases diagnosed decreased by 2.4% from 85 per year in 2018-2019 to 83 in 2021. Between the same two time periods the number of female multiple myeloma cases diagnosed decreased by 24.6% from 57 per year in 2018-2019 to 43 in 2021. The change in case distribution by gender between 2018-2019 and 2021 was not statistically significant.

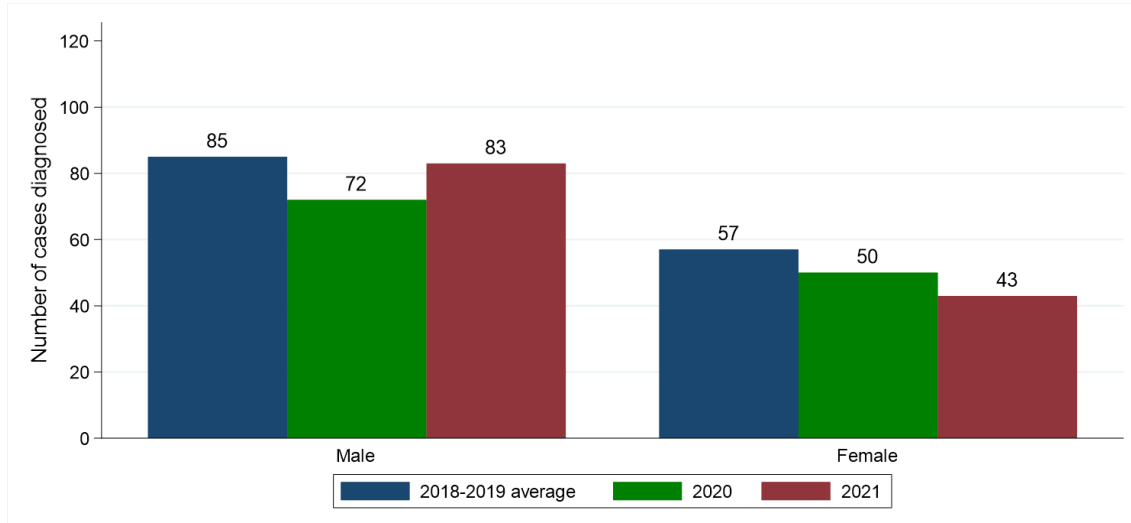
Table 2: Number and proportion of multiple myeloma cases diagnosed in April-December of 2018-2021 by gender and period of diagnosis

Gender	Period of diagnosis (Apr-Dec)			Percentage change	
	2018-2019*	2020	2021	2020 vs 2018-2019	2021 vs 2018-2019
All persons	142	122	126	-14.1%	-11.3%
Male	85 (59.9%)	72 (59.0%)	83 (65.9%)	-15.3%	-2.4%
Female	57 (40.1%)	50 (41.0%)	43 (34.1%)	-12.3%	-24.6%

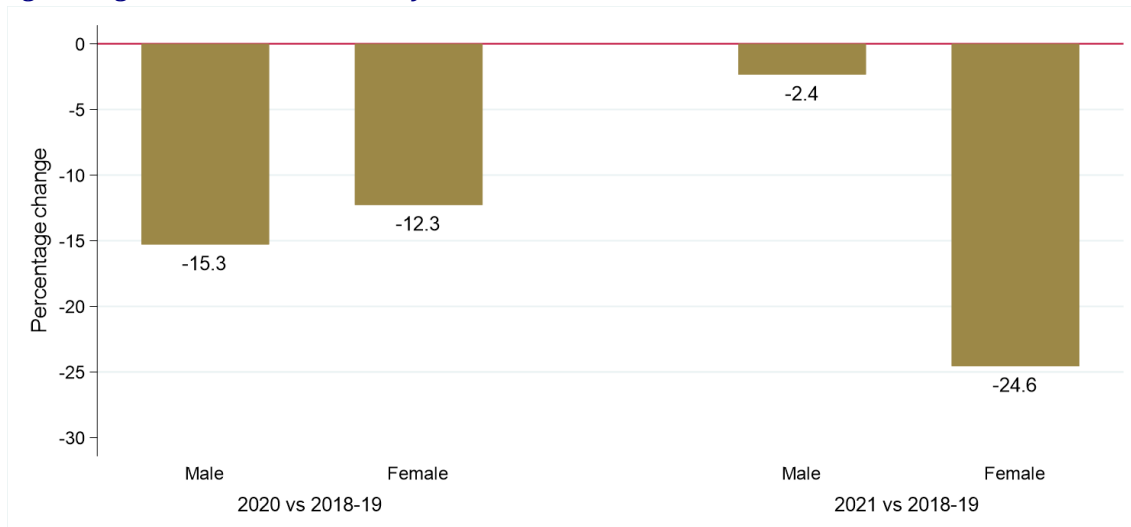
* Average cases per year rounded to the nearest integer. Column sums may thus differ slightly from the total.

Figure 2: Number of multiple myeloma cases diagnosed in April-December of 2018-2021 by gender and period of diagnosis

(a) Number of cases diagnosed



(b) Percentage change over time in number of cases



AGE

Excluding the first quarter of each year the number of cases of multiple myeloma diagnosed among those aged 0 to 54 decreased by 43.8% from 16 per year in 2018-2019 to 9 in 2021. Between the same two time periods the number of cases of multiple myeloma diagnosed among those aged 55 to 64 increased by 17.4% from 23 per year in 2018-2019 to 27 in 2021. The change in case distribution by age between 2018-2019 and 2021 was not statistically significant.

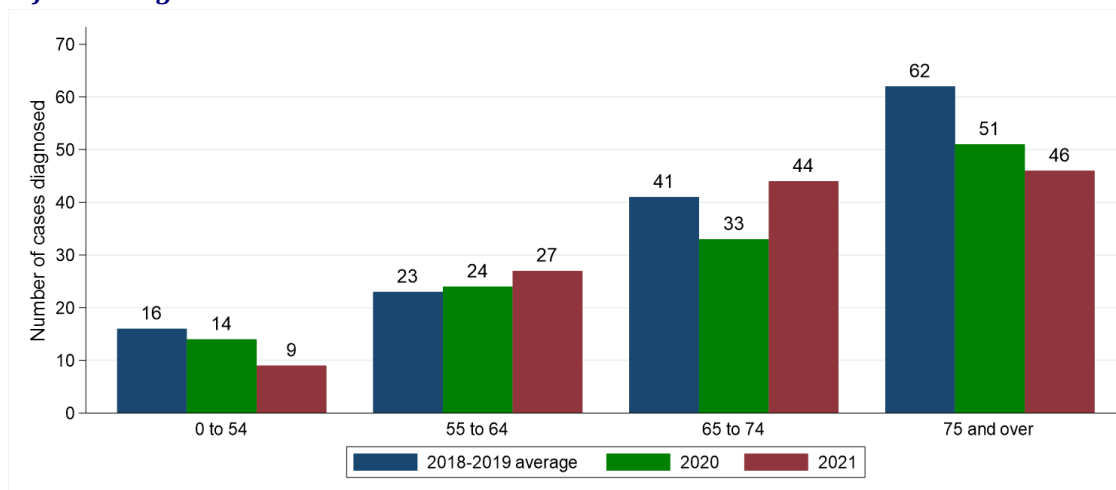
Table 3: Number and proportion of multiple myeloma cases diagnosed in April-December of 2018-2021 by age and period of diagnosis

Age	Period of diagnosis (Apr-Dec)			Percentage change	
	2018-2019*	2020	2021	2020 vs 2018-2019	2021 vs 2018-2019
All ages	142	122	126	-14.1%	-11.3%
0 to 54	16 (11.3%)	14 (11.5%)	9 (7.1%)	-12.5%	-43.8%
55 to 64	23 (16.2%)	24 (19.7%)	27 (21.4%)	+4.3%	+17.4%
65 to 74	41 (28.9%)	33 (27.0%)	44 (34.9%)	-19.5%	+7.3%
75 and over	62 (43.7%)	51 (41.8%)	46 (36.5%)	-17.7%	-25.8%

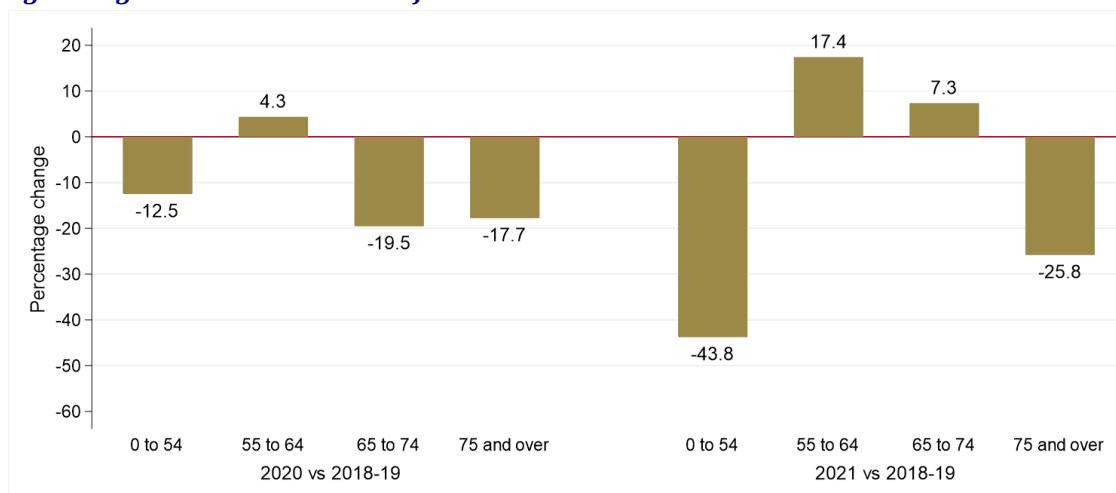
* Average cases per year rounded to the nearest integer. Column sums may thus differ slightly from the total.

Figure 3: Number of multiple myeloma cases diagnosed in April-December of 2018-2021 by age and period of diagnosis

(a) Number of cases diagnosed



(b) Percentage change over time in number of cases



HEALTH AND SOCIAL CARE TRUST

Excluding the first quarter of each year the number of cases of multiple myeloma diagnosed among those resident in Belfast HSCT decreased by 35.5% from 31 per year in 2018-2019 to 20 in 2021. Between the same two time periods the number of cases of multiple myeloma diagnosed among those resident in Northern HSCT increased by 27.6% from 29 per year in 2018-2019 to 37 in 2021. The change in case distribution by Health and Social Care Trust between 2018-2019 and 2021 was not statistically significant.

Table 4: Number and proportion of multiple myeloma cases diagnosed in April-December of 2018-2021 by Health and Social Care Trust and period of diagnosis

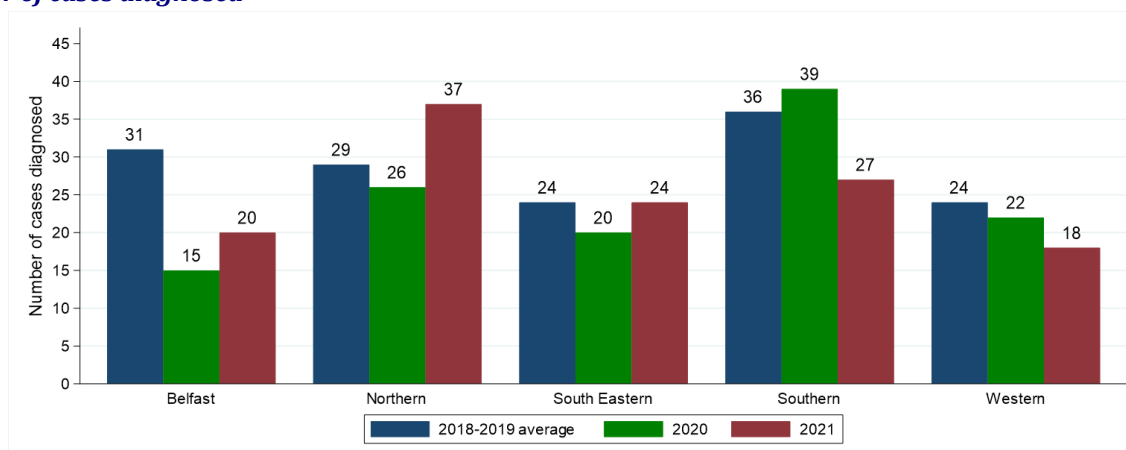
Health and Social Care Trust	Period of diagnosis (Apr-Dec)			Percentage change	
	2018-2019*	2020	2021	2020 vs 2018-2019	2021 vs 2018-2019
Northern Ireland	142	122	126	-14.1%	-11.3%
Belfast	31 (21.8%)	15 (12.3%)	20 (15.9%)	-51.6%	-35.5%
Northern	29 (20.4%)	26 (21.3%)	37 (29.4%)	-10.3%	+27.6%
South Eastern	24 (16.9%)	20 (16.4%)	24 (19.0%)	-16.7%	0.0%
Southern	36 (25.4%)	39 (32.0%)	27 (21.4%)	+8.3%	-25.0%
Western	24 (16.9%)	22 (18.0%)	18 (14.3%)	-8.3%	-25.0%

* Average cases per year rounded to the nearest integer. Column sums may thus differ slightly from the total.

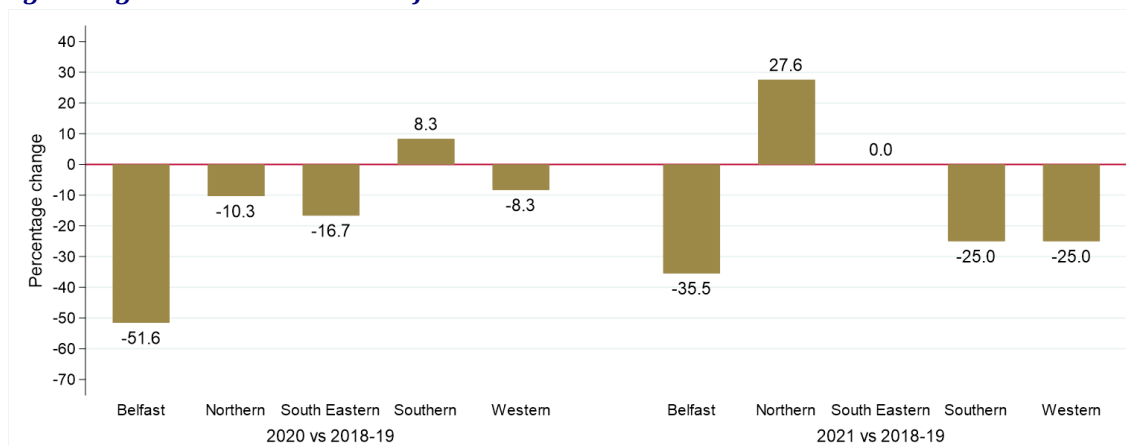
Note: Cases with unknown Health and Social Care Trust are included in totals.

Figure 4: Number of multiple myeloma cases diagnosed in April-December of 2018-2021 by Health and Social Care Trust and period of diagnosis

(a) Number of cases diagnosed



(b) Percentage change over time in number of cases



SOCIO-ECONOMIC DEPRIVATION

Excluding the first quarter of each year the number of cases of multiple myeloma diagnosed among those resident in the most deprived quintile decreased by 12.0% from 25 per year in 2018-2019 to 22 in 2021. Between the same two time periods the number of cases of multiple myeloma diagnosed among those resident in the least deprived quintile did not change between 2018-2019 and 2021 with an average of 30 diagnosed each year. The change in case distribution by deprivation quintile between 2018-2019 and 2021 was not statistically significant.

Table 5: Number and proportion of multiple myeloma cases diagnosed in April-December of 2018-2021 by deprivation quintile and period of diagnosis

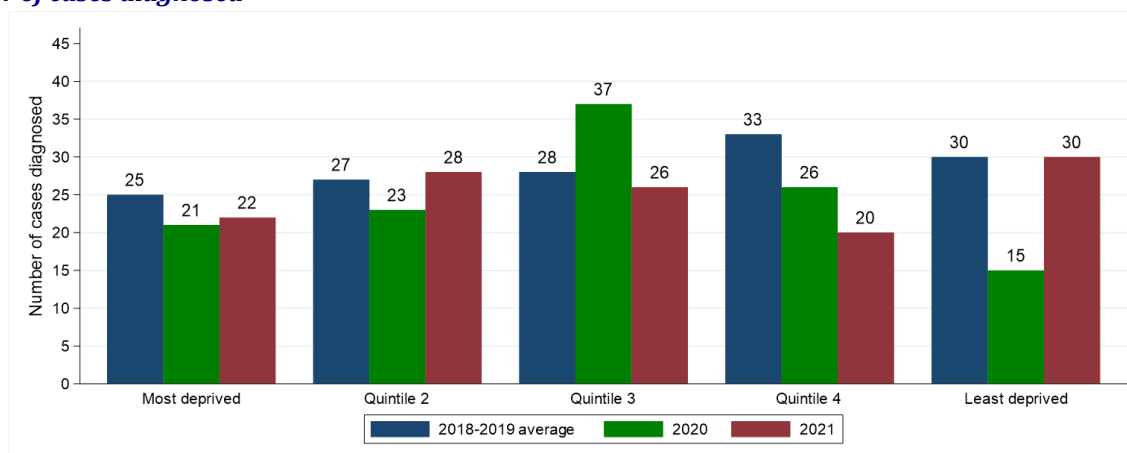
Deprivation quintile	Period of diagnosis (Apr-Dec)			Percentage change	
	2018-2019*	2020	2021	2020 vs 2018-2019	2021 vs 2018-2019
Northern Ireland	142	122	126	-14.1%	-11.3%
Most deprived	25 (17.6%)	21 (17.2%)	22 (17.5%)	-16.0%	-12.0%
Quintile 2	27 (19.0%)	23 (18.9%)	28 (22.2%)	-14.8%	+3.7%
Quintile 3	28 (19.7%)	37 (30.3%)	26 (20.6%)	+32.1%	-7.1%
Quintile 4	33 (23.2%)	26 (21.3%)	20 (15.9%)	-21.2%	-39.4%
Least deprived	30 (21.1%)	15 (12.3%)	30 (23.8%)	-50.0%	0.0%

* Average cases per year rounded to the nearest integer. Column sums may thus differ slightly from the total.

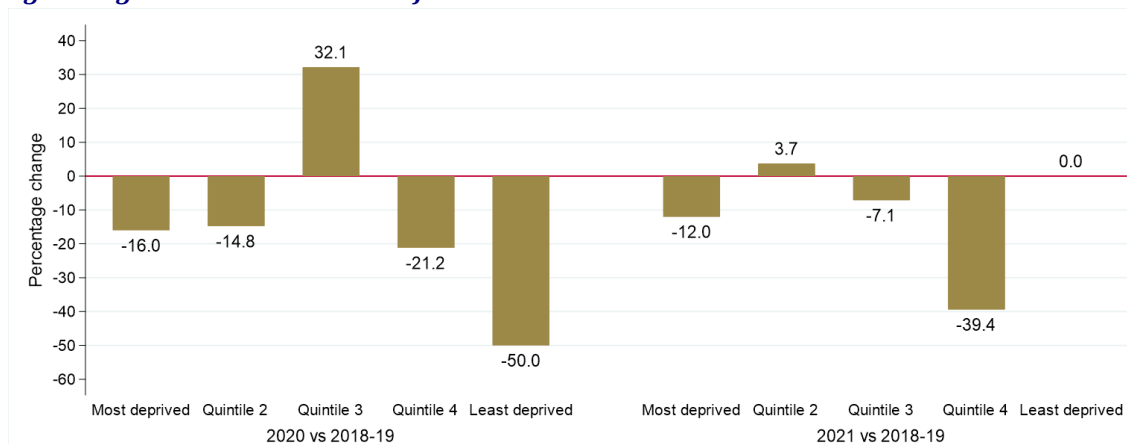
Note: Cases with unknown deprivation quintile are included in totals.

Figure 5: Number of multiple myeloma cases diagnosed in April-December of 2018-2021 by deprivation quintile and period of diagnosis

(a) Number of cases diagnosed



(b) Percentage change over time in number of cases



SURVIVAL

Changes in survival are 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 changes in age-standardised net survival are 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.

OBSERVED SURVIVAL

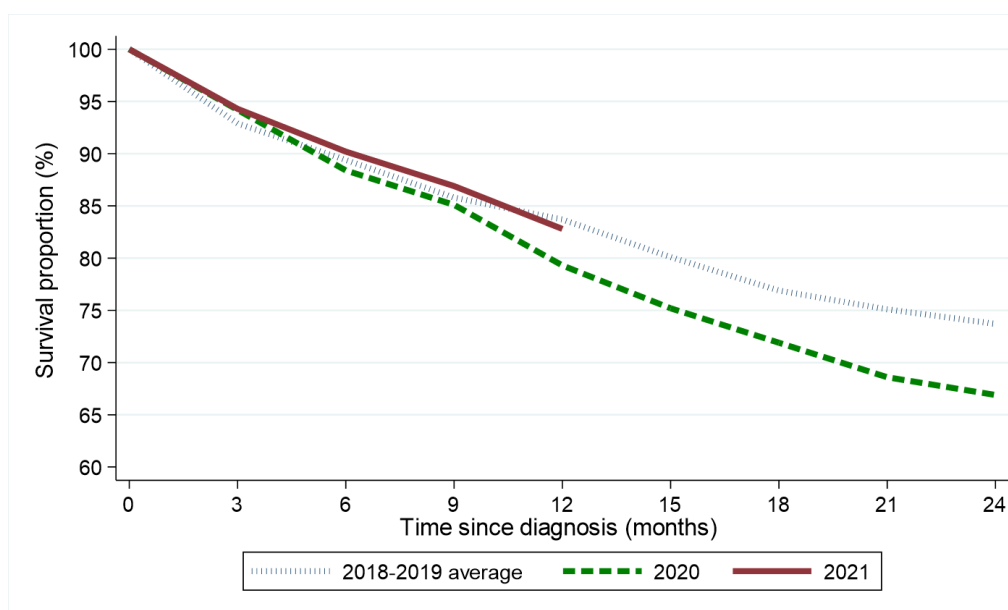
Survival among multiple myeloma patients six months after diagnosis increased from 89.4% among those diagnosed in April-December of 2018-2019 to 90.2% among those diagnosed in April-December of 2021. This change was not statistically significant. Between the same two diagnosis periods, one-year survival decreased from 83.7% to 82.8%. This change was not statistically significant. The log-rank test of equality indicates no statistically significant difference between the survival functions for 2018-2019 and 2021 ($p=0.540$).

Table 6: Observed survival for patients with multiple myeloma diagnosed in April-December of 2018-2021 by period of diagnosis

Survival time	Period of diagnosis (Apr-Dec)		
	2018-2019	2020	2021
Three months	92.9% (89.2% - 95.4%)	94.2% (88.2% - 97.2%)	94.3% (88.3% - 97.2%)
Six months	89.4% (85.1% - 92.4%)	88.4% (81.2% - 93.0%)	90.2% (83.3% - 94.3%)
One year	83.7% (78.8% - 87.5%)	79.3% (71.0% - 85.5%)	82.8% (74.8% - 88.4%)
Two years	73.7% (68.2% - 78.5%)	66.9% (57.8% - 74.5%)	-

No statistically significant reductions compared to 2018-2019

Figure 6: Observed survival for patients with multiple myeloma diagnosed in April-December of 2018-2021 by period of diagnosis



DEATHS FROM COVID-19

During 2021 there were a total of 13 deaths from Covid-19 among multiple myeloma patients diagnosed at any point since 1993.

NET SURVIVAL

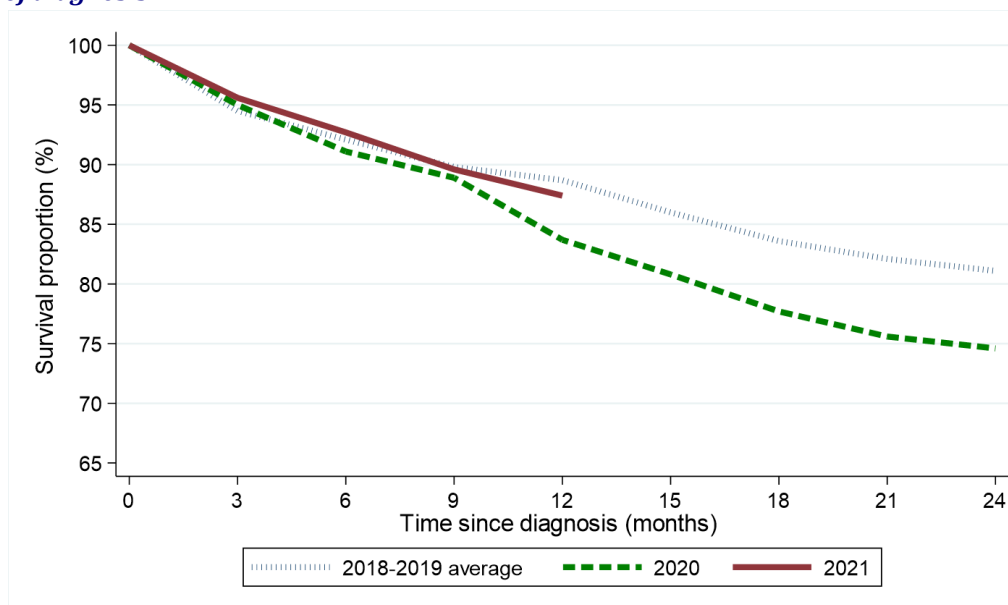
Net survival among multiple myeloma patients six months after diagnosis increased from 92.1% among those diagnosed in April-December of 2018-2019 to 92.7% among those diagnosed in April-December of 2021. This change was not statistically significant. Between the same two diagnosis periods, one-year net survival decreased from 88.7% to 87.4%. This change was not statistically significant.

Table 7: Age-standardised net survival for patients with multiple myeloma diagnosed in April-December of 2018-2021 by period of diagnosis

Survival time	Period of diagnosis (Apr-Dec)		
	2018-2019	2020	2021
Three months	94.5% (91.9% - 97.1%)	95.0% (91.2% - 99.0%)	95.6% (92.3% - 99.0%)
Six months	92.1% (88.9% - 95.4%)	91.1% (86.1% - 96.4%)	92.7% (88.3% - 97.4%)
One year	88.7% (85.0% - 92.6%)	83.7% (77.1% - 90.9%)	87.4% (81.6% - 93.6%)
Two years	81.1% (76.3% - 86.2%)	74.6% (66.5% - 83.7%)	-

No statistically significant reductions compared to 2018-2019

Figure 7: Age-standardised net survival for patients with multiple myeloma diagnosed in April-December of 2018-2021 by period of diagnosis



Note: All patients are followed up to the end of 2022. This enables calculation of two-year survival for patients diagnosed in 2018-2020, however only survival up to one year from diagnosis can be calculated for patients diagnosed in 2021.

MORTALITY

During the April-December period the number of deaths from multiple myeloma increased between 2018-2019 and 2021 by 23.0% from 61 deaths per year to 75 deaths.

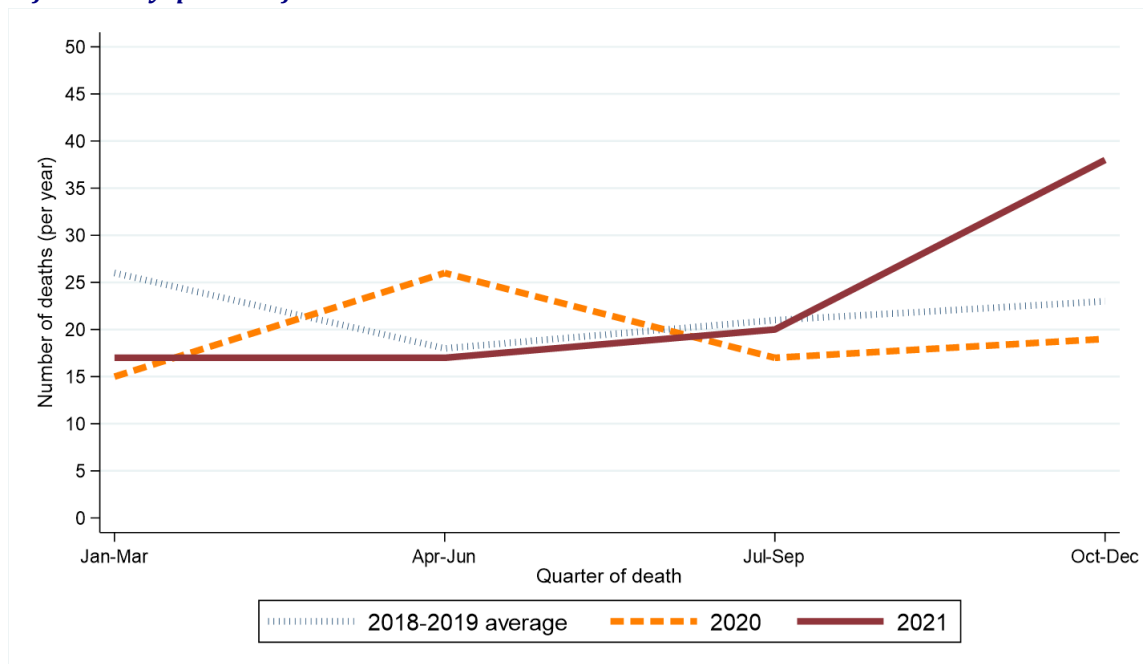
Table 8: Number of multiple myeloma deaths in 2018-2021 by quarter and year of death

Period of death	Annual total	Quarter of death			
		Jan-Mar	Apr-Jun	Jul-Sept	Oct-Dec
2018-2019*	87	26	18	21	23
2020	77	15	26	17	19
2021	92	17	17	20	38

* Average deaths per year rounded to the nearest integer. Row sums may thus differ slightly from the total.

Figure 8: Number of multiple myeloma deaths in 2018-2021 by quarter and year of death

(a) Number of deaths by quarter of death



(b) Percentage change over time in number of deaths by quarter of death

