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# Recent trends in incidence and survival of malignant sarcoma in Northern Ireland

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

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## Further information

Further information is available at: [www.qub.ac.uk/research-centres/nicr](http://www.qub.ac.uk/research-centres/nicr)

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## Acknowledgements

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# INCIDENCE

During the April-December period the number of cases of malignant sarcoma diagnosed decreased between 2018-2019 and 2021 by 26.7% from 75 cases per year to 55 cases.

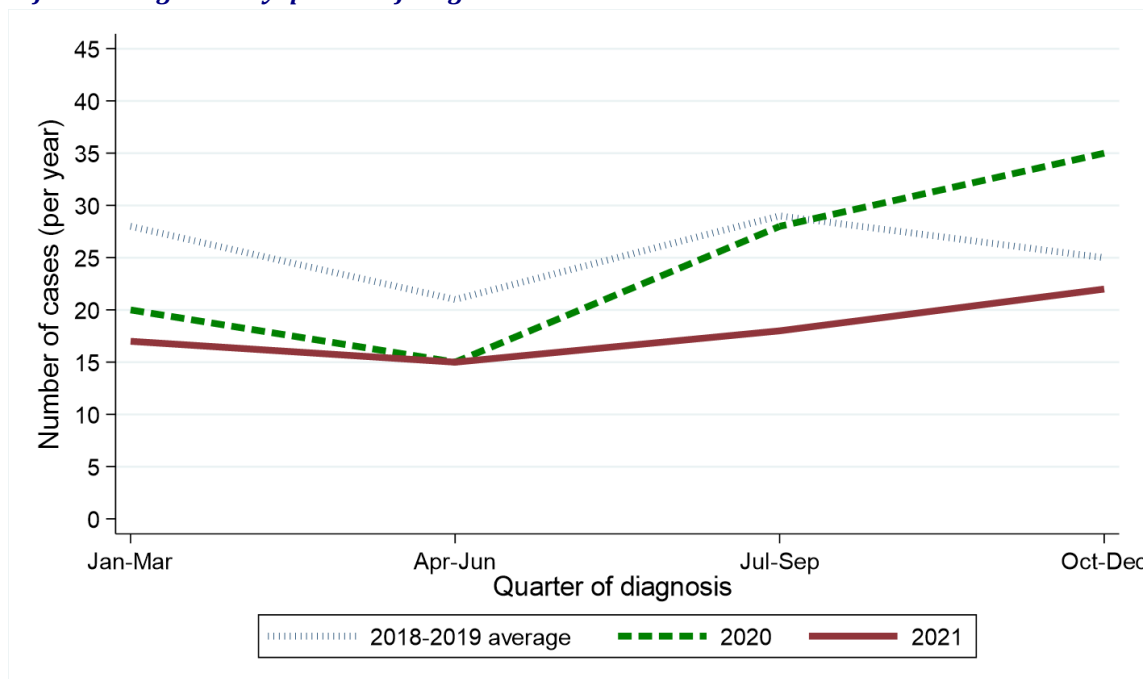
**Table 1: Number of malignant sarcoma cases diagnosed in 2018-2021 by quarter and year of diagnosis**

Period of diagnosis	Annual total	Quarter diagnosed			
		Jan-Mar	Apr-Jun	Jul-Sept	Oct-Dec
2018-2019*	102	28	21	29	25
2020	98	20	15	28	35
2021	72	17	15	18	22

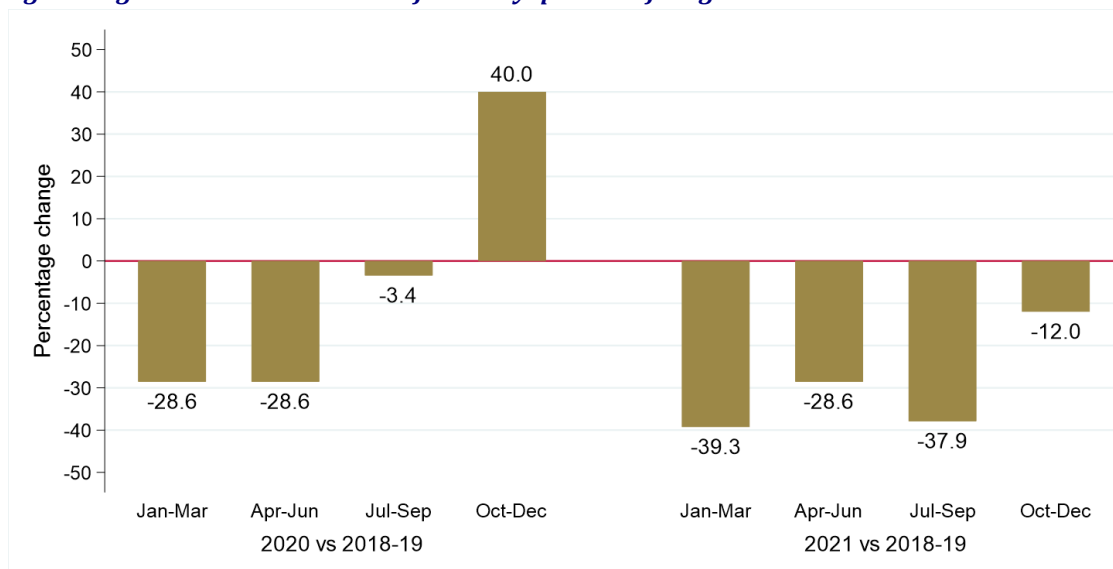
\* Average cases per year rounded to the nearest integer. Row sums may thus differ slightly from the total.

**Figure 1: Number of malignant sarcoma cases diagnosed in 2018-2021 by quarter and year of diagnosis**

**(a) Number of cases diagnosed by quarter 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 malignant sarcoma cases diagnosed decreased by 30.0% from 40 per year in 2018-2019 to 28 in 2021. Between the same two time periods the number of female malignant sarcoma cases diagnosed decreased by 22.9% from 35 per year in 2018-2019 to 27 in 2021. The change in case distribution by gender between 2018-2019 and 2021 was not statistically significant.

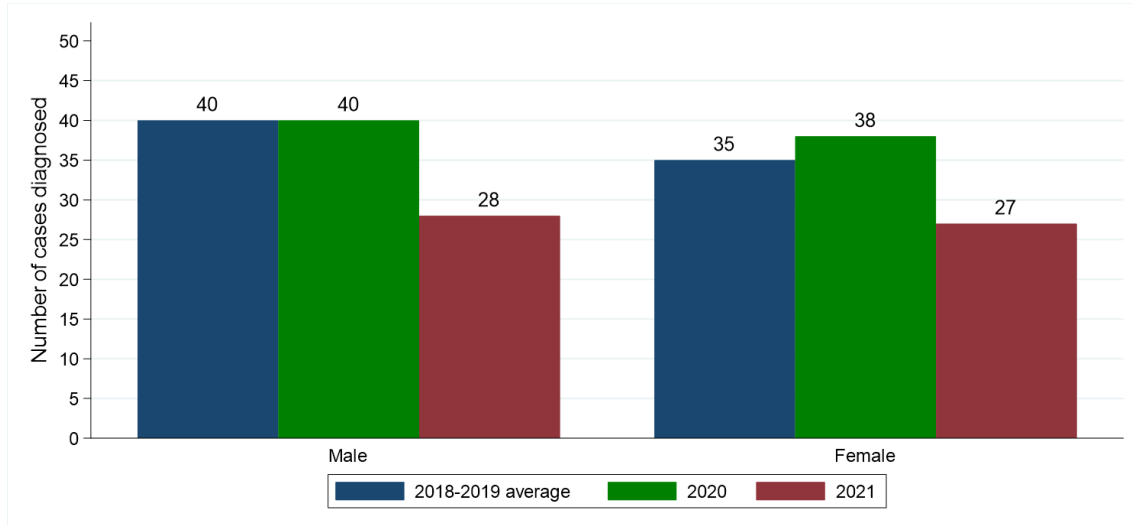
**Table 2: Number and proportion of malignant sarcoma cases diagnosed in April-December of 2018-2021 by gender and period of diagnosis**

Gender	Period of diagnosis (Apr-Dec)			Percentage change	
	2018-2019*	2020	2021	2020 vs 2018-2019	2021 vs 2018-2019
<b>All persons</b>	75	78	55	+4.0%	-26.7%
<b>Male</b>	40 (53.3%)	40 (51.3%)	28 (50.9%)	0.0%	-30.0%
<b>Female</b>	35 (46.7%)	38 (48.7%)	27 (49.1%)	+8.6%	-22.9%

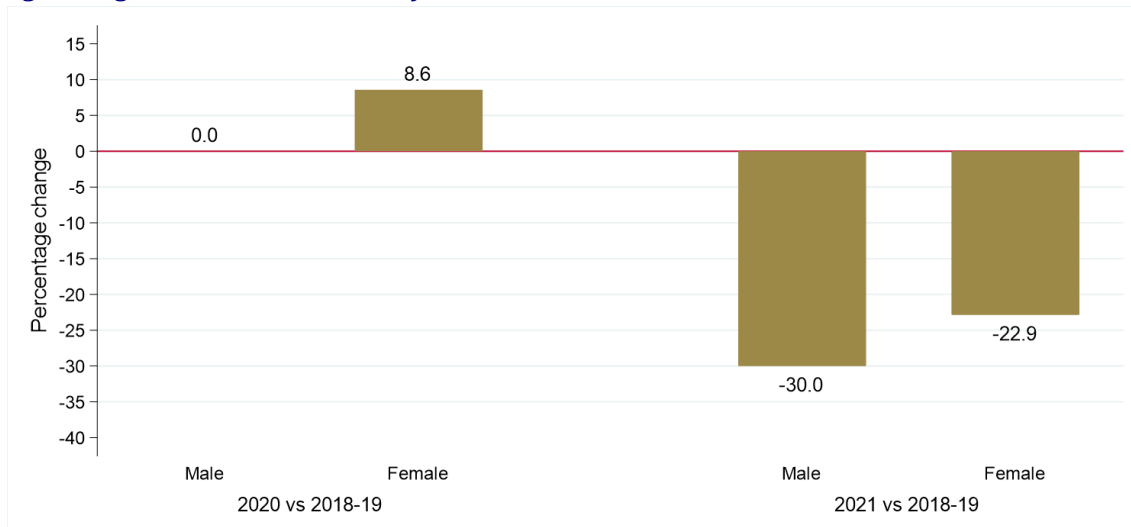
\* Average cases per year rounded to the nearest integer. Column sums may thus differ slightly from the total.

**Figure 2: Number of malignant sarcoma 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 malignant sarcoma diagnosed among those aged 55 to 64 decreased by 38.5% from 13 per year in 2018-2019 to 8 in 2021. Between the same two time periods the number of cases of malignant sarcoma diagnosed among those aged 65 to 74 decreased by 17.6% from 17 per year in 2018-2019 to 14 in 2021. The change in case distribution by age between 2018-2019 and 2021 was not statistically significant.

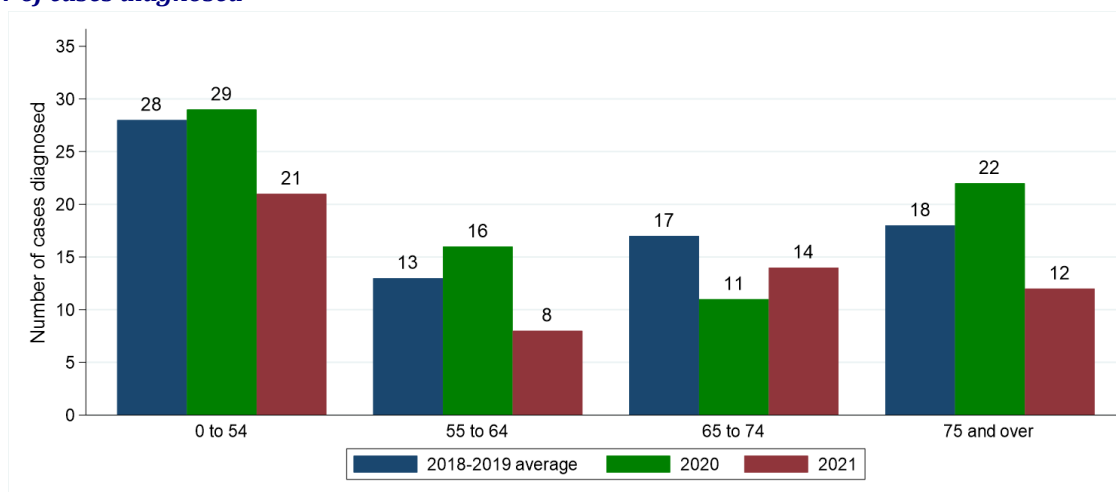
**Table 3: Number and proportion of malignant sarcoma cases diagnosed in April-December of 2018-2021 by age and period of diagnosis**

Age	Period of diagnosis (Apr-Dec)			Percentage change	
	2018-2019*	2020	2021	2020 vs 2018-2019	2021 vs 2018-2019
All ages	75	78	55	+4.0%	-26.7%
0 to 54	28 (37.3%)	29 (37.2%)	21 (38.2%)	+3.6%	-25.0%
55 to 64	13 (17.3%)	16 (20.5%)	8 (14.5%)	+23.1%	-38.5%
65 to 74	17 (22.7%)	11 (14.1%)	14 (25.5%)	-35.3%	-17.6%
75 and over	18 (24.0%)	22 (28.2%)	12 (21.8%)	+22.2%	-33.3%

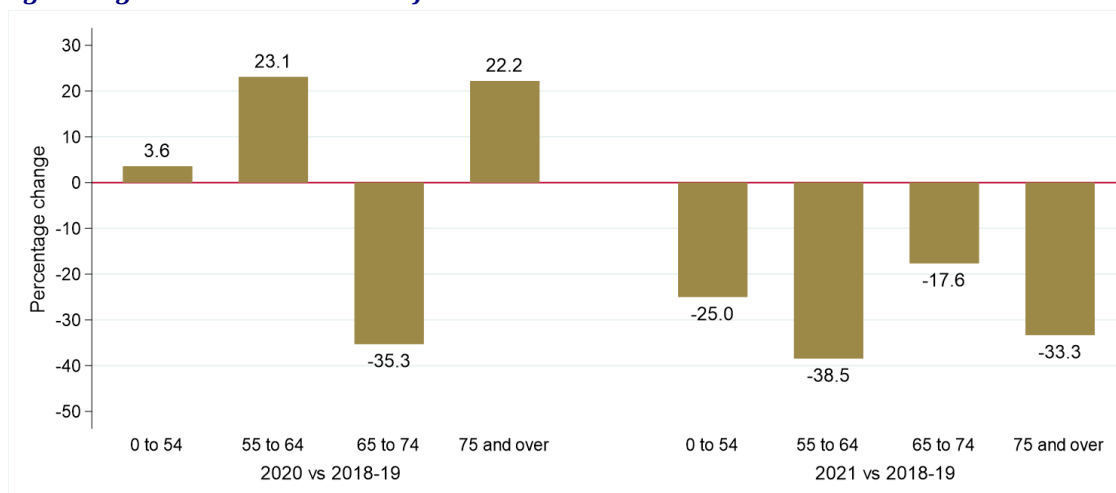
\* Average cases per year rounded to the nearest integer. Column sums may thus differ slightly from the total.

**Figure 3: Number of malignant sarcoma 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 malignant sarcoma diagnosed among those resident in Belfast HSCT decreased by 56.3% from 16 per year in 2018-2019 to 7 in 2021. Between the same two time periods the number of cases of malignant sarcoma diagnosed among those resident in Southern HSCT increased by 16.7% from 12 per year in 2018-2019 to 14 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 malignant sarcoma cases diagnosed in April-December of 2018-2021 by Health and Social Care Trust and period of diagnosis**

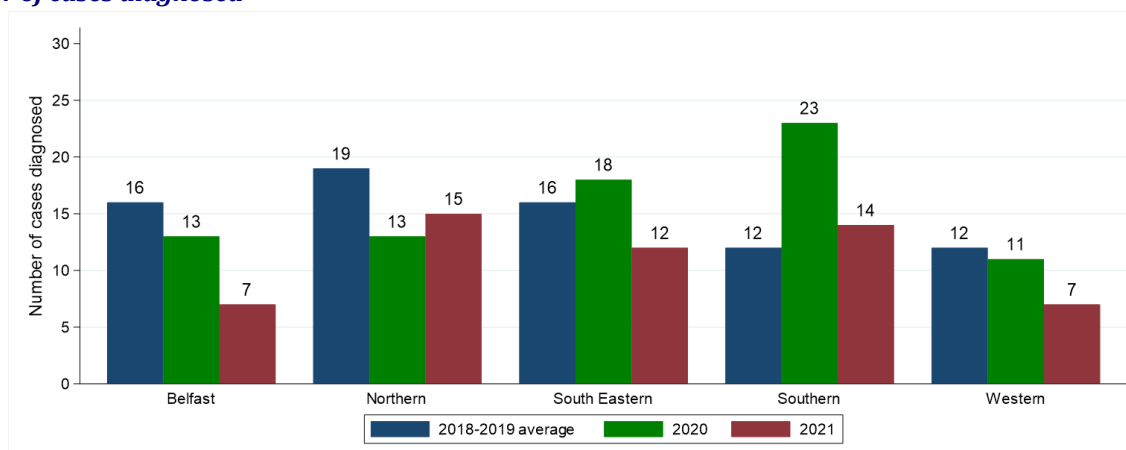
Health and Social Care Trust	Period of diagnosis (Apr-Dec)			Percentage change	
	2018-2019*	2020	2021	2020 vs 2018-2019	2021 vs 2018-2019
<b>Northern Ireland</b>	75	78	55	+4.0%	-26.7%
<b>Belfast</b>	16 (21.3%)	13 (16.7%)	7 (12.7%)	-18.8%	-56.3%
<b>Northern</b>	19 (25.3%)	13 (16.7%)	15 (27.3%)	-31.6%	-21.1%
<b>South Eastern</b>	16 (21.3%)	18 (23.1%)	12 (21.8%)	+12.5%	-25.0%
<b>Southern</b>	12 (16.0%)	23 (29.5%)	14 (25.5%)	+91.7%	+16.7%
<b>Western</b>	12 (16.0%)	11 (14.1%)	7 (12.7%)	-8.3%	-41.7%

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

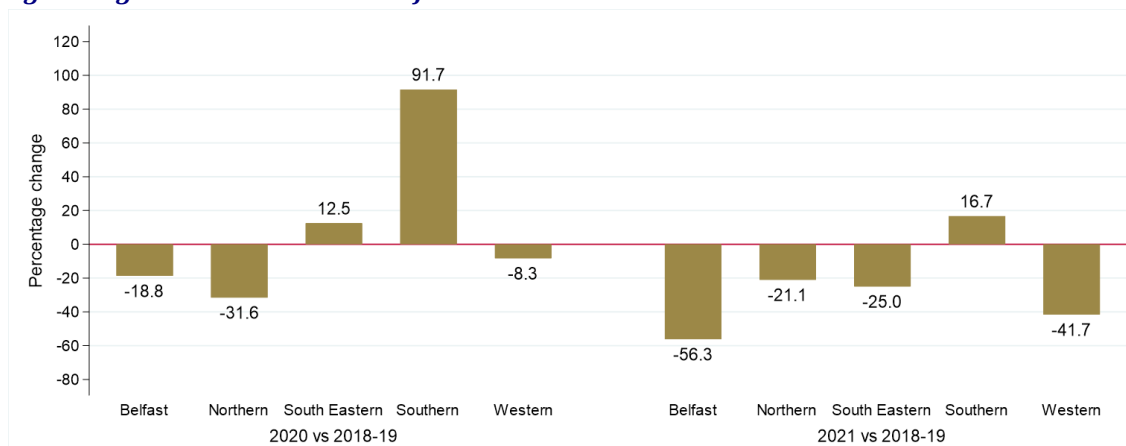
Note: Cases with unknown Health and Social Care Trust are included in totals.

**Figure 4: Number of malignant sarcoma 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 malignant sarcoma diagnosed among those resident in the most deprived quintile decreased by 50.0% from 14 per year in 2018-2019 to 7 in 2021. Between the same two time periods the number of cases of malignant sarcoma diagnosed among those resident in the least deprived quintile decreased by 6.7% from 15 per year in 2018-2019 to 14 in 2021. The change in case distribution by deprivation quintile between 2018-2019 and 2021 was not statistically significant.

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

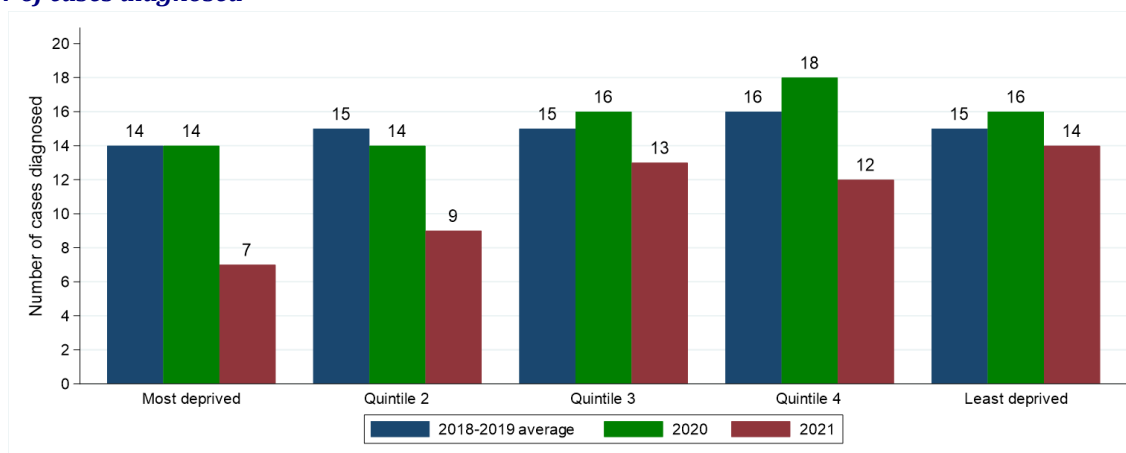
Deprivation quintile	Period of diagnosis (Apr-Dec)			Percentage change	
	2018-2019*	2020	2021	2020 vs 2018-2019	2021 vs 2018-2019
<b>Northern Ireland</b>	75	78	55	+4.0%	-26.7%
<b>Most deprived</b>	14 (18.7%)	14 (17.9%)	7 (12.7%)	0.0%	-50.0%
<b>Quintile 2</b>	15 (20.0%)	14 (17.9%)	9 (16.4%)	-6.7%	-40.0%
<b>Quintile 3</b>	15 (20.0%)	16 (20.5%)	13 (23.6%)	+6.7%	-13.3%
<b>Quintile 4</b>	16 (21.3%)	18 (23.1%)	12 (21.8%)	+12.5%	-25.0%
<b>Least deprived</b>	15 (20.0%)	16 (20.5%)	14 (25.5%)	+6.7%	-6.7%

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

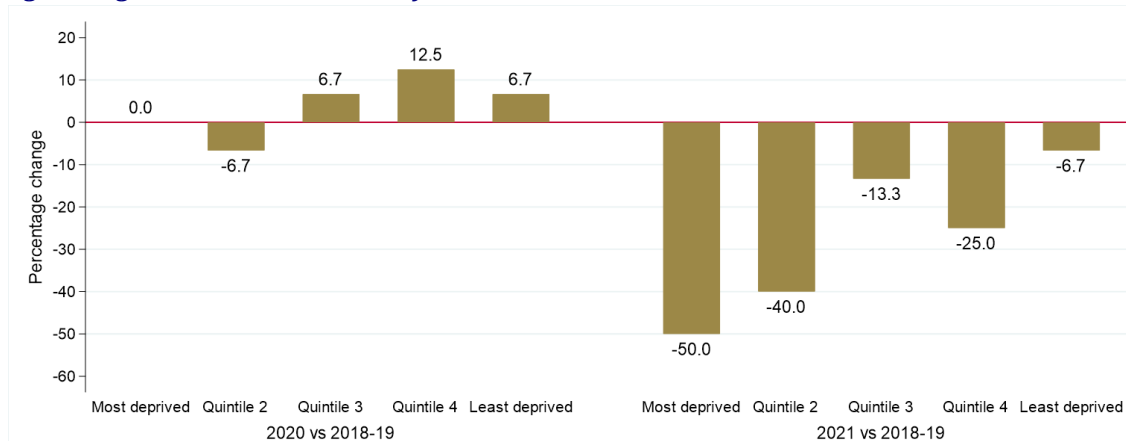
Note: Cases with unknown deprivation quintile are included in totals.

**Figure 5: Number of malignant sarcoma 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

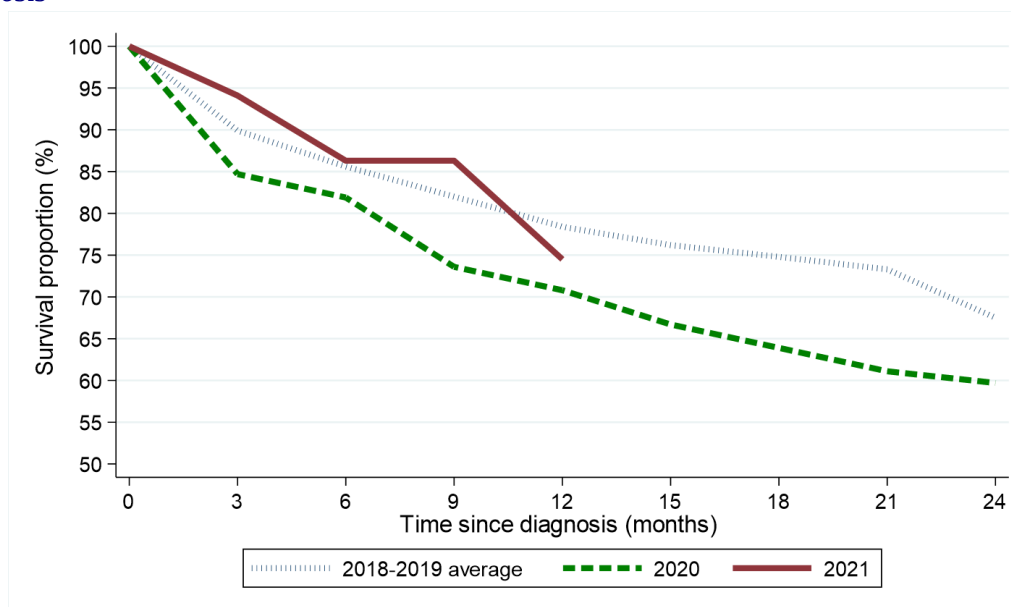
Survival among malignant sarcoma patients six months after diagnosis increased from 85.6% among those diagnosed in April-December of 2018-2019 to 86.3% among those diagnosed in April-December of 2021. This change was not statistically significant. Between the same two diagnosis periods, one-year survival decreased from 78.4% to 74.5%. 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 ( $p=0.695$ ).

**Table 6: Observed survival for patients with malignant sarcoma diagnosed in April-December of 2018-2021 by period of diagnosis**

Survival time	Period of diagnosis (Apr-Dec)		
	2018-2019	2020	2021
Three months	89.9% (83.6% - 93.9%)	84.7% (74.1% - 91.2%)	94.1% (82.9% - 98.1%)
Six months	85.6% (78.6% - 90.5%)	81.9% (70.9% - 89.1%)	86.3% (73.4% - 93.2%)
One year	78.4% (70.6% - 84.4%)	70.8% (58.9% - 79.9%)	74.5% (60.2% - 84.3%)
Two years	67.5% (59.0% - 74.6%)	59.7% (47.5% - 70.0%)	-

*No statistically significant reductions compared to 2018-2019*

**Figure 6: Observed survival for patients with malignant sarcoma diagnosed in April-December of 2018-2021 by period of diagnosis**



## NET SURVIVAL

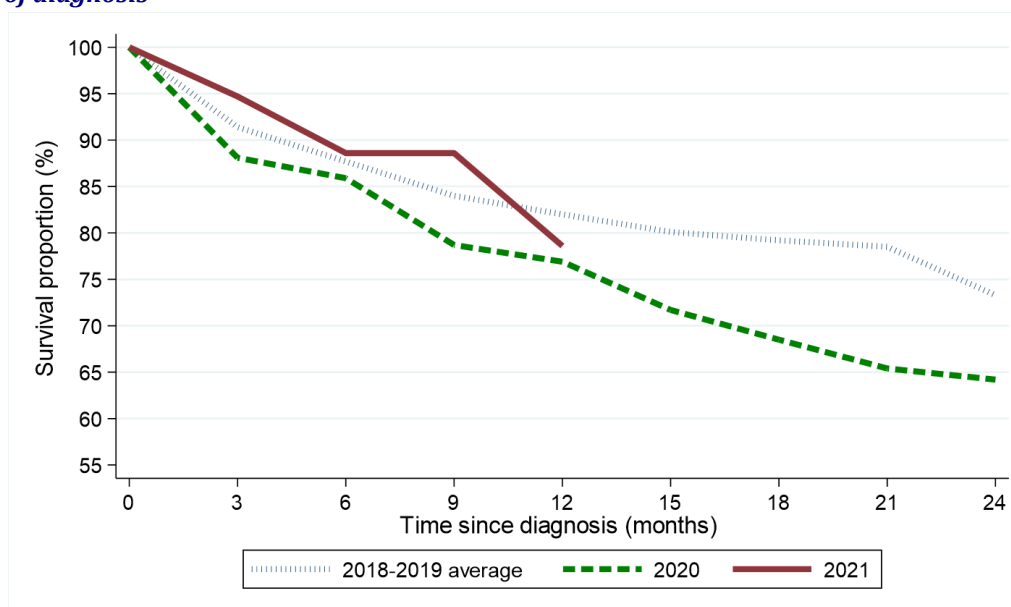
Net survival among malignant sarcoma patients six months after diagnosis increased from 87.7% among those diagnosed in April-December of 2018-2019 to 88.6% among those diagnosed in April-December of 2021. This change was not statistically significant. Between the same two diagnosis periods, one-year net survival decreased from 82.0% to 78.6%. This change was not statistically significant.

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

Survival time	Period of diagnosis (Apr-Dec)		
	2018-2019	2020	2021
<b>Three months</b>	91.4% (86.9% - 96.2%)	88.1% (81.5% - 95.3%)	94.7% (88.6% - 100.0%)
<b>Six months</b>	87.7% (82.4% - 93.4%)	85.9% (78.5% - 94.0%)	88.6% (80.3% - 97.7%)
<b>One year</b>	82.0% (75.7% - 88.9%)	76.9% (67.6% - 87.5%)	78.6% (68.1% - 90.7%)
<b>Two years</b>	73.3% (65.8% - 81.6%)	64.2% (53.4% - 77.2%)	-

*No statistically significant reductions compared to 2018-2019*

**Figure 7: Age-standardised net survival for patients with malignant sarcoma 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.*