
Recent trends in incidence, survival and mortality of lymphoma 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

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INCIDENCE

During the April-December period the number of cases of lymphoma diagnosed increased between 2018-2019 and 2021 by 11.9% from 319 cases per year to 357 cases.

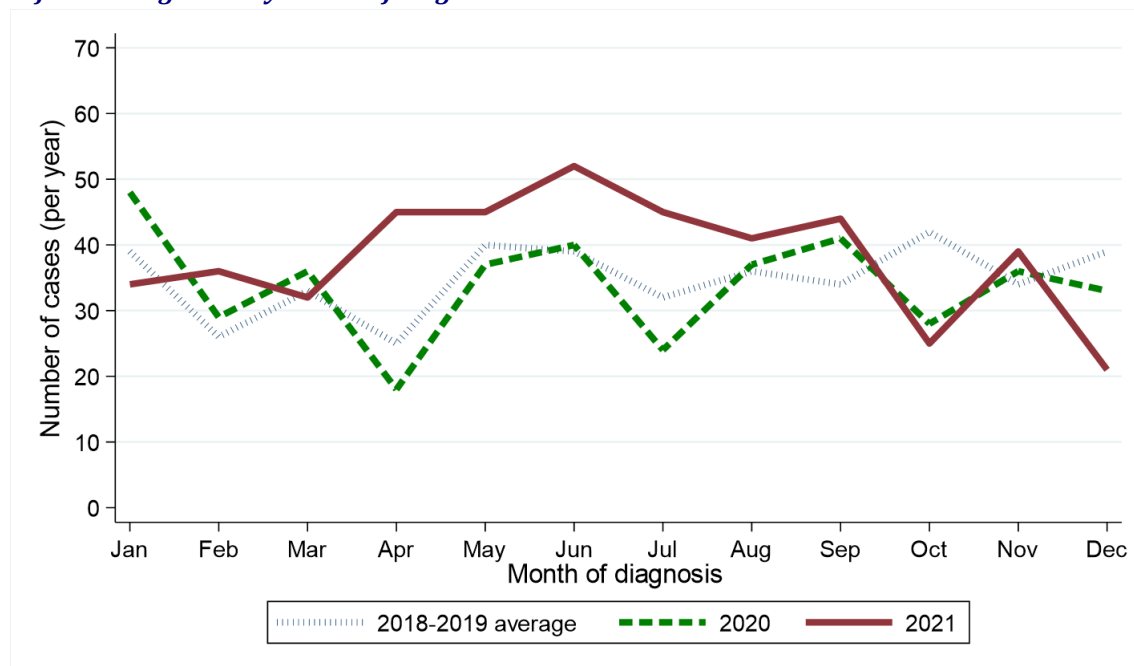
Table 1: Number of lymphoma cases diagnosed in 2018-2021 by month and year of diagnosis

Period of diagnosis	Annual total	Month diagnosed											
		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept	Oct	Nov	Dec
2018-2019*	417	39	26	33	25	40	39	32	36	34	42	34	39
2020	407	48	29	36	18	37	40	24	37	41	28	36	33
2021	459	34	36	32	45	45	52	45	41	44	25	39	21

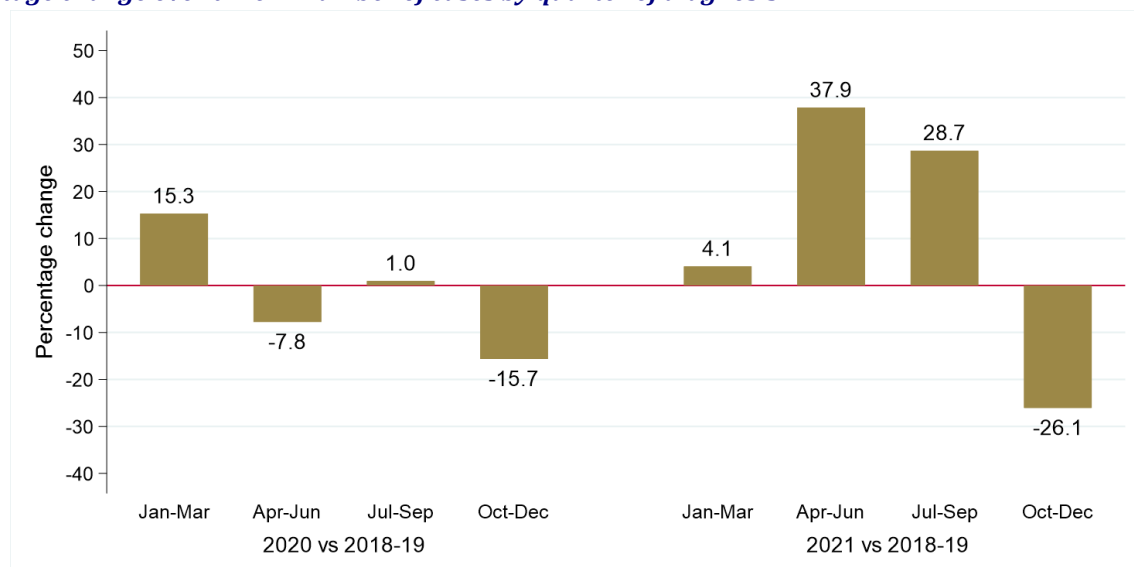
* Average cases per year rounded to the nearest integer. Row sums may thus differ slightly from the total.

Figure 1: Number of lymphoma 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

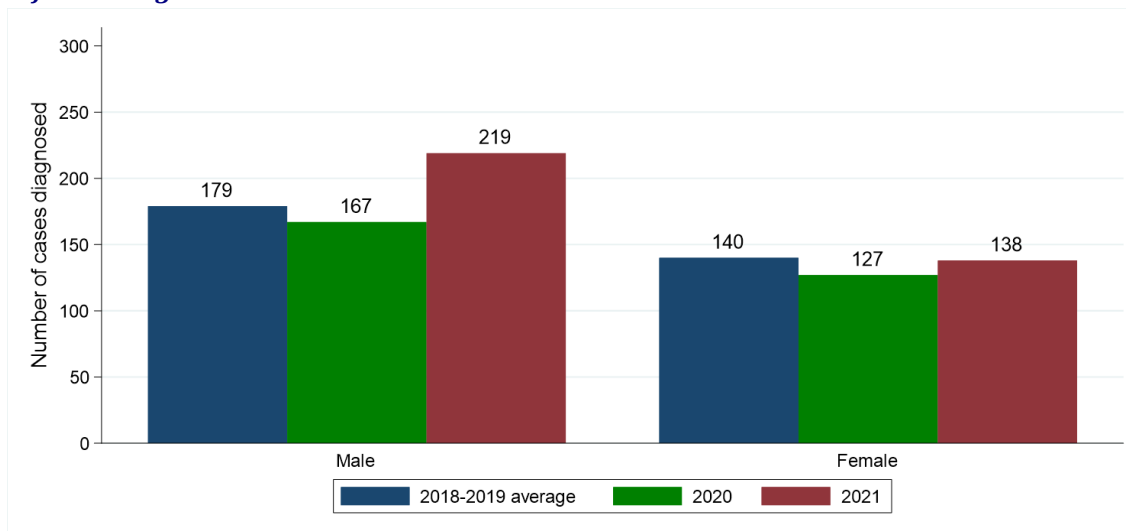
Excluding the first quarter of each year the number of male lymphoma cases diagnosed increased by 22.3% from 179 per year in 2018-2019 to 219 in 2021. Between the same two time periods the number of female lymphoma cases diagnosed decreased by 1.4% from 140 per year in 2018-2019 to 138 in 2021. The change in case distribution by gender between 2018-2019 and 2021 was not statistically significant.

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

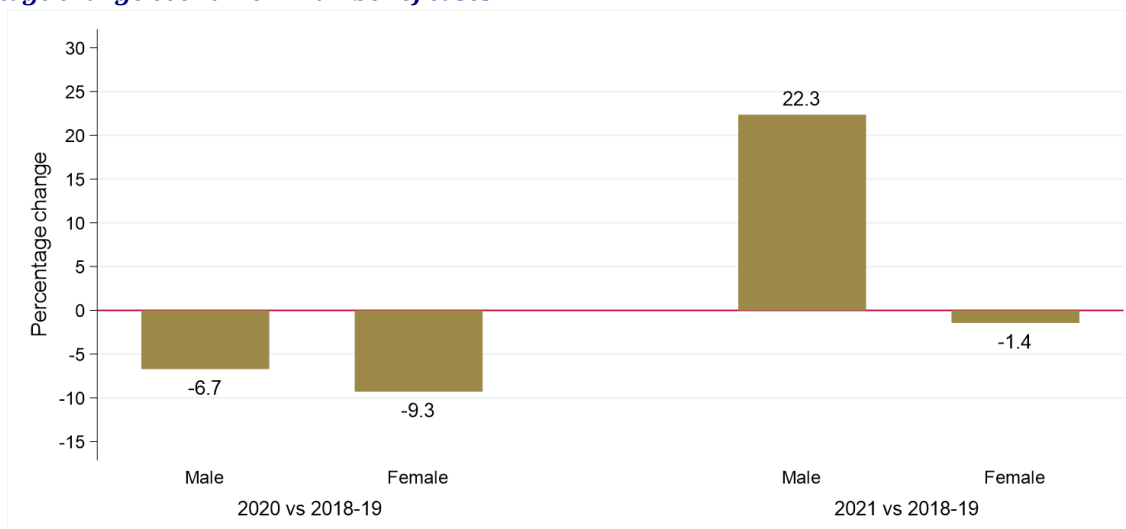
Gender	Period of diagnosis (Apr-Dec)			Percentage change	
	2018-2019*	2020	2021	2020 vs 2018-2019	2021 vs 2018-2019
All persons	319	294	357	-7.8%	+11.9%
Male	179 (56.1%)	167 (56.8%)	219 (61.3%)	-6.7%	+22.3%
Female	140 (43.9%)	127 (43.2%)	138 (38.7%)	-9.3%	-1.4%

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

Figure 2: Number of lymphoma 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

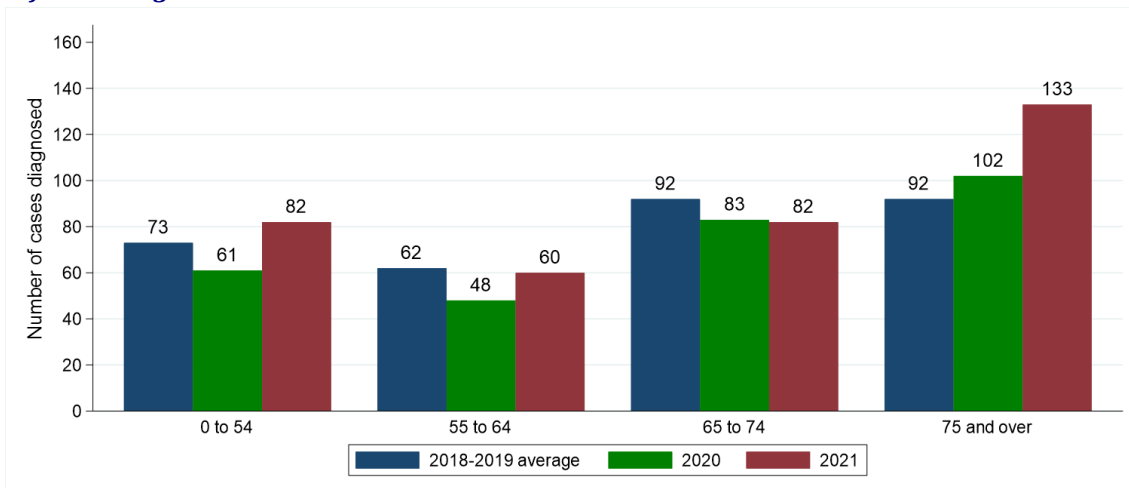
Excluding the first quarter of each year the number of cases of lymphoma diagnosed among those aged 65 to 74 decreased by 10.9% from 92 per year in 2018-2019 to 82 in 2021. Between the same two time periods the number of cases of lymphoma diagnosed among those aged 75 and over increased by 44.6% from 92 per year in 2018-2019 to 133 in 2021. The change in case distribution by age between 2018-2019 and 2021 was statistically significant ($p = 0.032$).

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

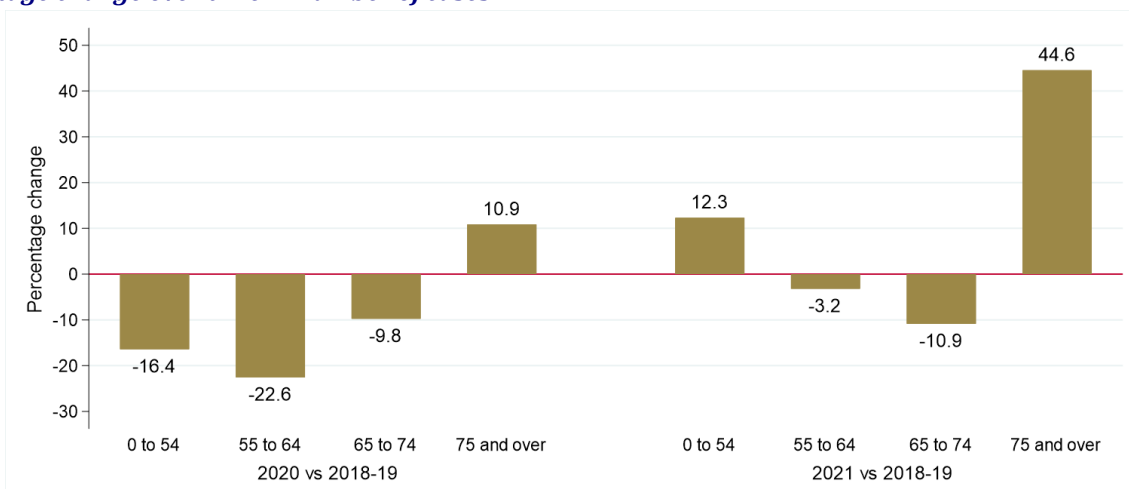
Age	Period of diagnosis (Apr-Dec)			Percentage change	
	2018-2019*	2020	2021	2020 vs 2018-2019	2021 vs 2018-2019
All ages	319	294	357	-7.8%	+11.9%
0 to 54	73 (22.9%)	61 (20.7%)	82 (23.0%)	-16.4%	+12.3%
55 to 64	62 (19.4%)	48 (16.3%)	60 (16.8%)	-22.6%	-3.2%
65 to 74	92 (28.8%)	83 (28.2%)	82 (23.0%)	-9.8%	-10.9%
75 and over	92 (28.8%)	102 (34.7%)	133 (37.3%)	+10.9%	+44.6%

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

Figure 3: Number of lymphoma 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 lymphoma diagnosed among those resident in Western HSCT increased by 4.1% from 49 per year in 2018-2019 to 51 in 2021. Between the same two time periods the number of cases of lymphoma diagnosed among those resident in Southern HSCT increased by 23.0% from 61 per year in 2018-2019 to 75 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 lymphoma cases diagnosed in April-December of 2018-2021 by Health and Social Care Trust and period of diagnosis

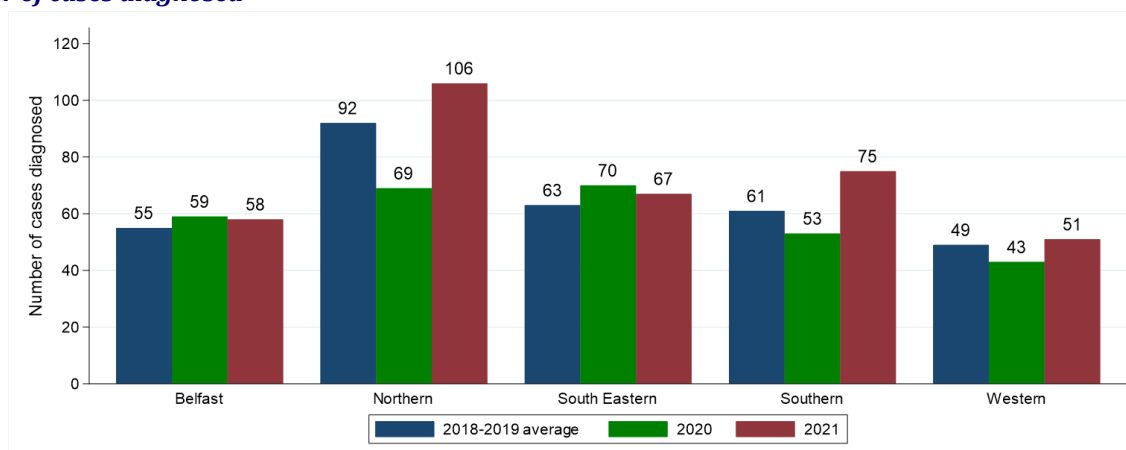
Health and Social Care Trust	Period of diagnosis (Apr-Dec)			Percentage change	
	2018-2019*	2020	2021	2020 vs 2018-2019	2021 vs 2018-2019
Northern Ireland	319	294	357	-7.8%	+11.9%
Belfast	55 (17.2%)	59 (20.1%)	58 (16.2%)	+7.3%	+5.5%
Northern	92 (28.8%)	69 (23.5%)	106 (29.7%)	-25.0%	+15.2%
South Eastern	63 (19.7%)	70 (23.8%)	67 (18.8%)	+11.1%	+6.3%
Southern	61 (19.1%)	53 (18.0%)	75 (21.0%)	-13.1%	+23.0%
Western	49 (15.4%)	43 (14.6%)	51 (14.3%)	-12.2%	+4.1%

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

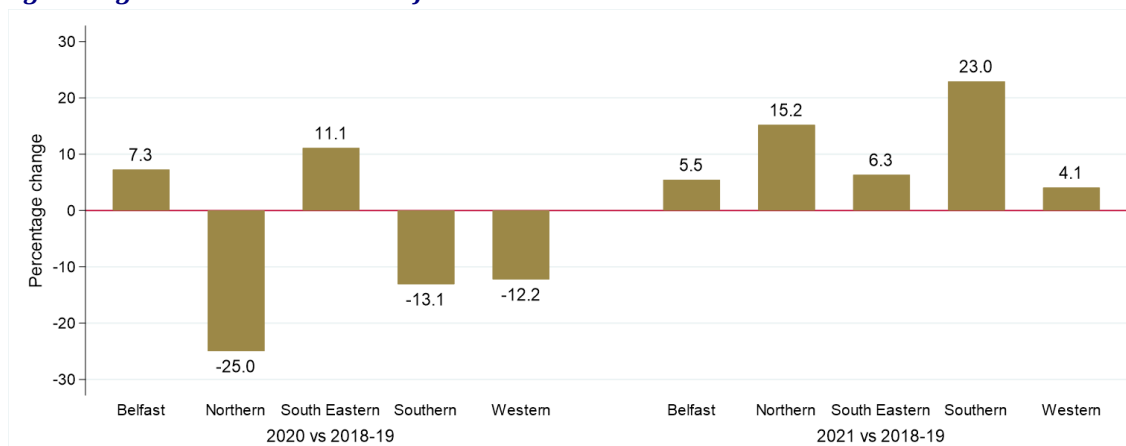
Note: Cases with unknown Health and Social Care Trust are included in totals.

Figure 4: Number of lymphoma 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 lymphoma diagnosed among those resident in the least deprived quintile increased by 2.9% from 70 per year in 2018-2019 to 72 in 2021. Between the same two time periods the number of cases of lymphoma diagnosed among those resident in the most deprived quintile increased by 16.0% from 50 per year in 2018-2019 to 58 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 lymphoma cases diagnosed in April-December of 2018-2021 by deprivation quintile and period of diagnosis

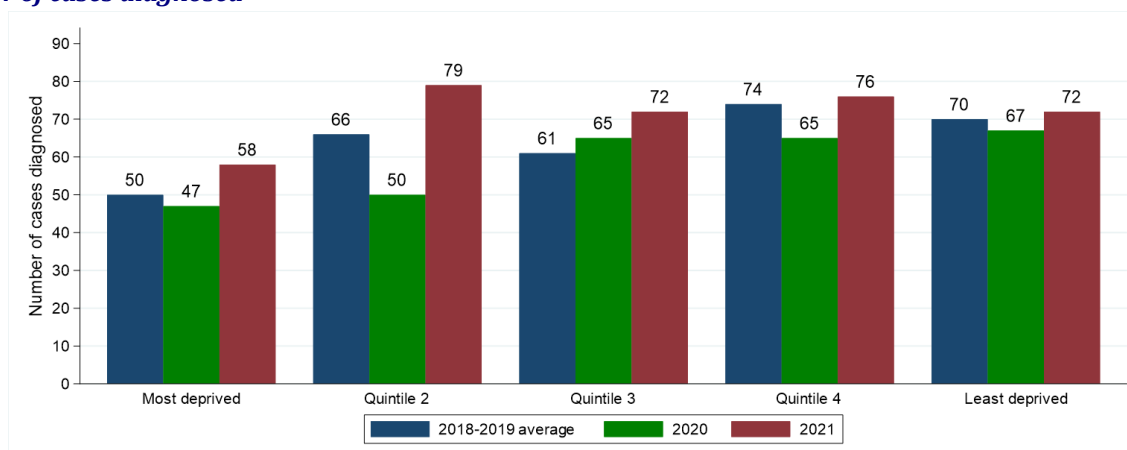
Deprivation quintile	Period of diagnosis (Apr-Dec)			Percentage change	
	2018-2019*	2020	2021	2020 vs 2018-2019	2021 vs 2018-2019
Northern Ireland	319	294	357	-7.8%	+11.9%
Most deprived	50 (15.7%)	47 (16.0%)	58 (16.2%)	-6.0%	+16.0%
Quintile 2	66 (20.7%)	50 (17.0%)	79 (22.1%)	-24.2%	+19.7%
Quintile 3	61 (19.1%)	65 (22.1%)	72 (20.2%)	+6.6%	+18.0%
Quintile 4	74 (23.2%)	65 (22.1%)	76 (21.3%)	-12.2%	+2.7%
Least deprived	70 (21.9%)	67 (22.8%)	72 (20.2%)	-4.3%	+2.9%

* 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 lymphoma 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



STAGE AT DIAGNOSIS

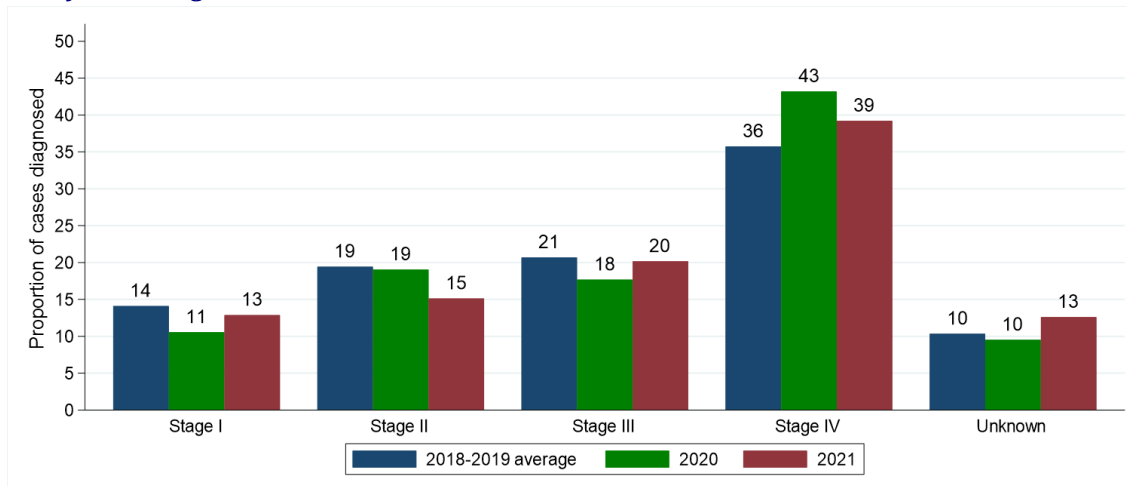
The number of lymphoma cases diagnosed at stage I in April to December of each year increased by 2.2% from 45 per year in 2018-2019 to 46 in 2021. In addition the number of lymphoma cases diagnosed at stage IV increased by 22.8% from 114 per year in 2018-2019 to 140 in 2021. As a proportion of all cases, stage IV diagnosis increased from 35.7% in 2018-2019 to 39.2% in 2021. The change in stage distribution between 2018-2019 and 2021 was not statistically significant.

Table 6: Number and proportion of lymphoma cases diagnosed in April-December of 2018-2021 by stage and period of diagnosis

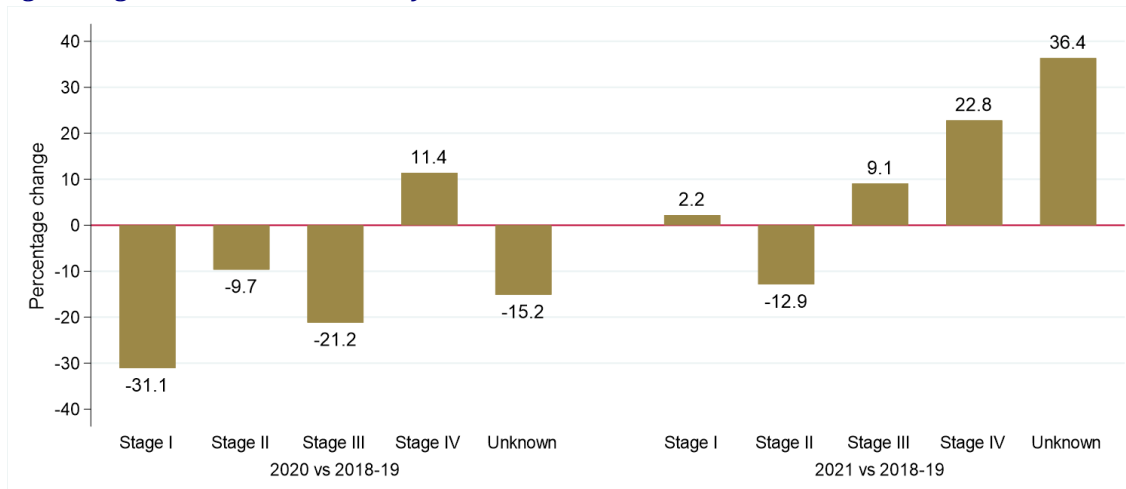
Stage at diagnosis	Period of diagnosis (Apr-Dec)			Percentage change	
	2018-2019*	2020	2021	2020 vs 2018-2019	2021 vs 2018-2019
All stages	319	294	357	-7.8%	+11.9%
Stage I	45 (14.1%)	31 (10.5%)	46 (12.9%)	-31.1%	+2.2%
Stage II	62 (19.4%)	56 (19.0%)	54 (15.1%)	-9.7%	-12.9%
Stage III	66 (20.7%)	52 (17.7%)	72 (20.2%)	-21.2%	+9.1%
Stage IV	114 (35.7%)	127 (43.2%)	140 (39.2%)	+11.4%	+22.8%
Unknown	33 (10.3%)	28 (9.5%)	45 (12.6%)	-15.2%	+36.4%

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

Figure 6: Proportion of lymphoma cases diagnosed in April-December of 2018-2021 by stage and period of diagnosis
(a) Proportion of cases diagnosed



(b) Percentage change over time in number of cases



TREATMENT

Excluding the first quarter of each year the number of lymphoma cases resulting in treatment by systemic therapy within six months increased by 0.5% from 217 per year in 2018-2019 to 218 in 2021. The resulting decrease in the proportion receiving systemic therapy from 68.0% in 2018-2019 to 61.1% in 2021 was statistically significant ($p = 0.028$).

Between the same two time periods the number of lymphoma cases resulting in treatment by radiotherapy increased by 39.5% from 38 per year in 2018-2019 to 53 in 2021. The resulting increase in the proportion receiving radiotherapy from 11.9% in 2018-2019 to 14.8% in 2021 was not statistically significant.

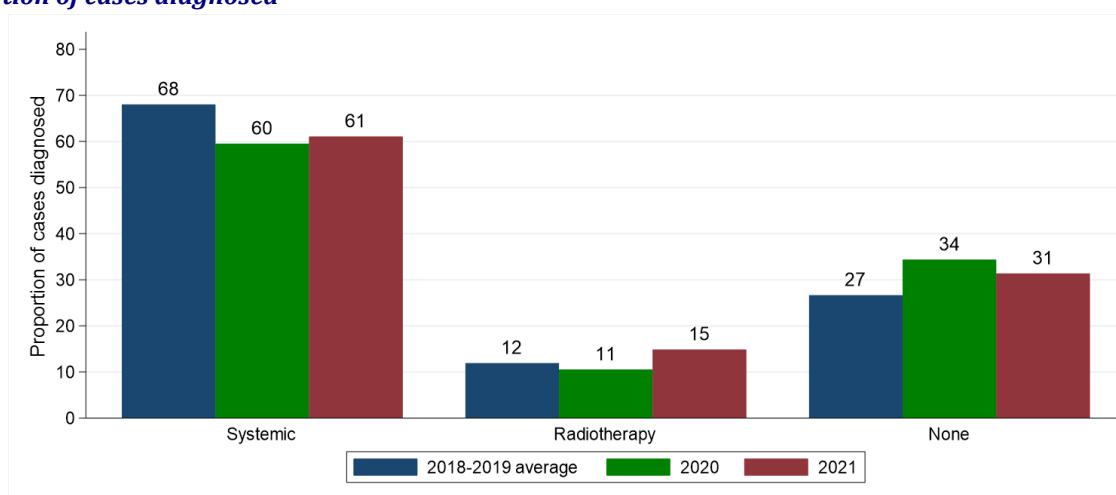
Excluding the first quarter of each year the number of lymphoma cases receiving none of these treatments within six months of diagnosis increased by 31.8% from 85 per year in 2018-2019 to 112 in 2021. The resulting increase in the proportion receiving none of these treatments from 26.6% in 2018-2019 to 31.4% in 2021 was not statistically significant.

Table 7: Number and proportion of lymphoma cases diagnosed in April-December of 2018-2021 by treatment type (within six months of diagnosis) and period of diagnosis

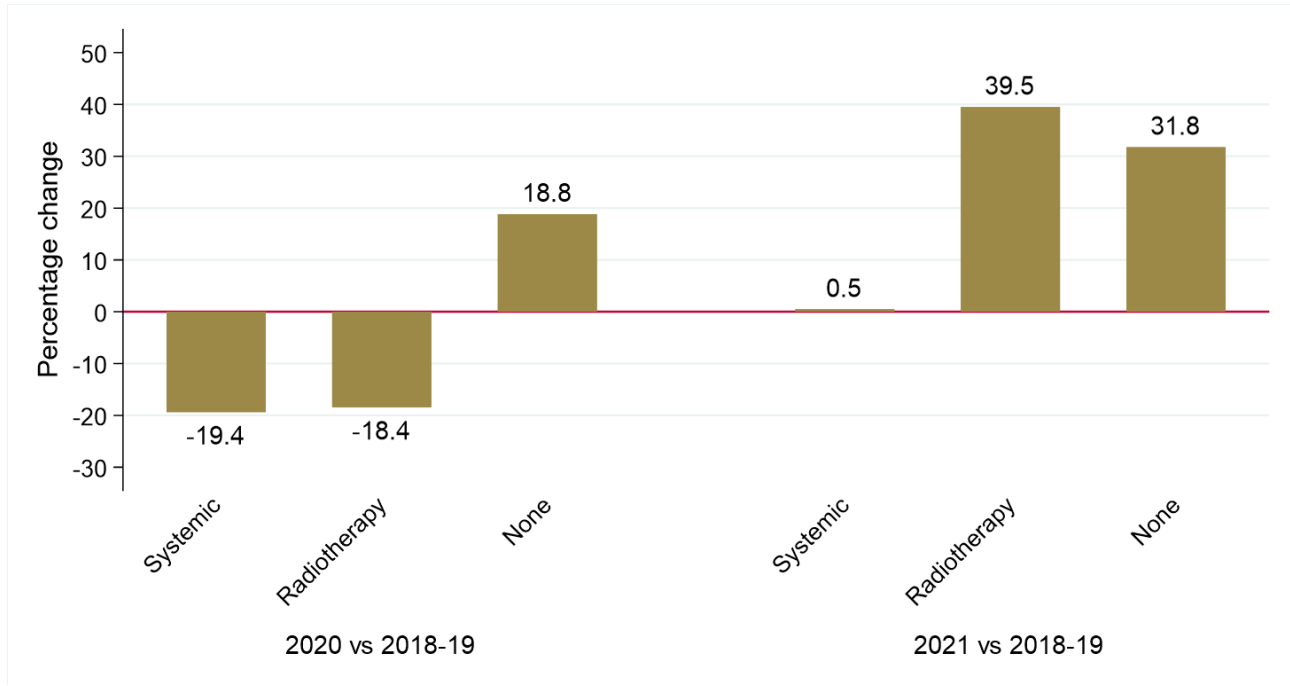
Treatment type	Period of diagnosis (Apr-Dec)			Percentage change	
	2018-2019*	2020	2021	2020 vs 2018-2019	2021 vs 2018-2019
Systemic therapy	217 (68.0%)	175 (59.5%)*	218 (61.1%)*	-19.4%	+0.5%
Radiotherapy	38 (11.9%)	31 (10.5%)	53 (14.8%)	-18.4%	+39.5%
None of these treatments	85 (26.6%)	101 (34.4%)*	112 (31.4%)	+18.8%	+31.8%

* Statistically significant change compared to 2018-2019

Figure 7: Proportion of lymphoma cases diagnosed in April-December of 2018-2021 by treatment type (within six months of diagnosis) and period of diagnosis
(a) Proportion 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

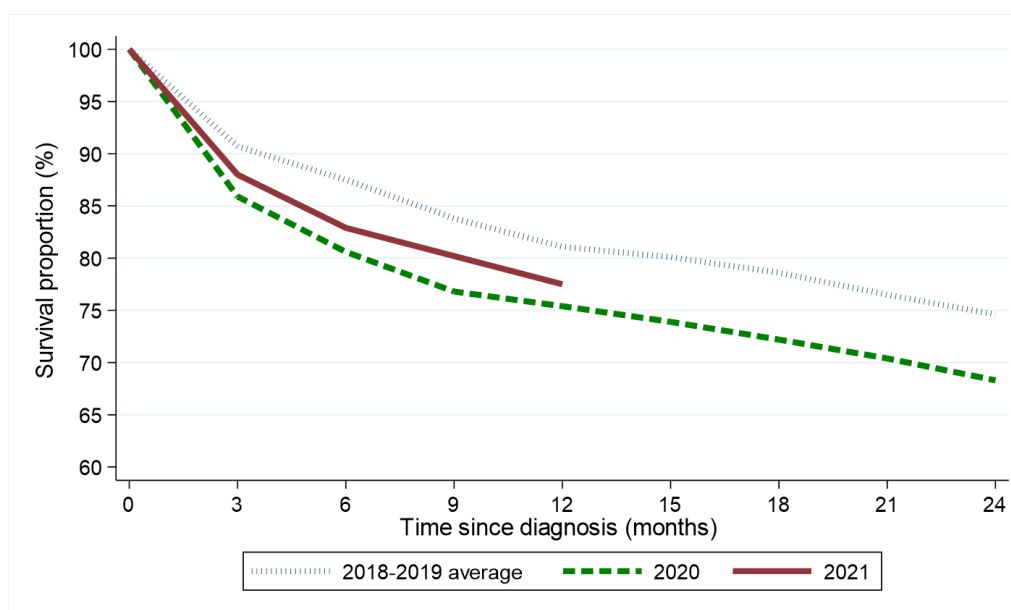
Survival among lymphoma patients six months after diagnosis decreased from 87.5% among those diagnosed in April-December of 2018-2019 to 82.9% among those diagnosed in April-December of 2021. This change was not statistically significant. Between the same two diagnosis periods, one-year survival decreased from 81.1% to 77.5%. 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 ($p=0.089$).

Table 8: Observed survival for patients with lymphoma diagnosed in April-December of 2018-2021 by period of diagnosis

Survival time	Period of diagnosis (Apr-Dec)		
	2018-2019	2020	2021
Three months	90.7% (88.1% - 92.7%)	85.9% (81.3% - 89.5%)	88.0% (84.0% - 91.0%)
Six months	87.5% (84.6% - 89.8%)	80.6% (75.5% - 84.8%)	82.9% (78.4% - 86.5%)
One year	81.1% (77.8% - 83.9%)	75.4% (69.9% - 80.0%)	77.5% (72.6% - 81.6%)
Two years	74.6% (71.0% - 77.8%)	68.3% (62.5% - 73.3%)	-

No statistically significant reductions compared to 2018-2019

Figure 8: Observed survival for patients with lymphoma diagnosed in April-December of 2018-2021 by period of diagnosis



DEATHS FROM COVID-19

During 2021 there were a total of 32 deaths from Covid-19 among lymphoma patients diagnosed at any point since 1993. Among the patients who died of Covid-19, 5 were diagnosed with lymphoma in 2021, 7 were diagnosed in 2020 and 20 were diagnosed in 1993-2019.

NET SURVIVAL

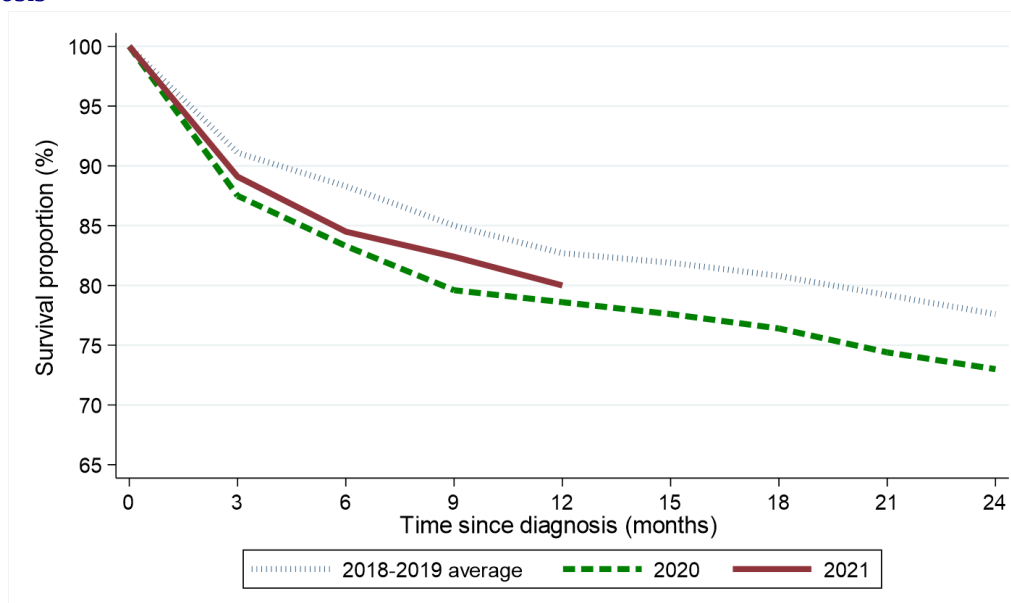
Net survival among lymphoma patients six months after diagnosis decreased from 88.3% among those diagnosed in April-December of 2018-2019 to 84.5% among those diagnosed in April-December of 2021. This change was not statistically significant. Between the same two diagnosis periods, one-year net survival decreased from 82.7% to 80.0%. This change was not statistically significant.

Table 9: Age-standardised net survival for patients with lymphoma diagnosed in April-December of 2018-2021 by period of diagnosis

Survival time	Period of diagnosis (Apr-Dec)		
	2018-2019	2020	2021
Three months	91.1% (88.8% - 93.5%)	87.5% (83.6% - 91.5%)	89.1% (85.7% - 92.7%)
Six months	88.3% (85.6% - 91.1%)	83.3% (78.9% - 88.0%)	84.5% (80.5% - 88.7%)
One year	82.7% (79.5% - 86.0%)	78.6% (73.7% - 83.9%)	80.0% (75.4% - 84.8%)
Two years	77.6% (73.9% - 81.5%)	73.0% (67.5% - 79.0%)	-

No statistically significant reductions compared to 2018-2019

Figure 9: Age-standardised net survival for patients with lymphoma 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 lymphoma increased between 2018-2019 and 2021 by 15.4% from 91 deaths per year to 105 deaths.

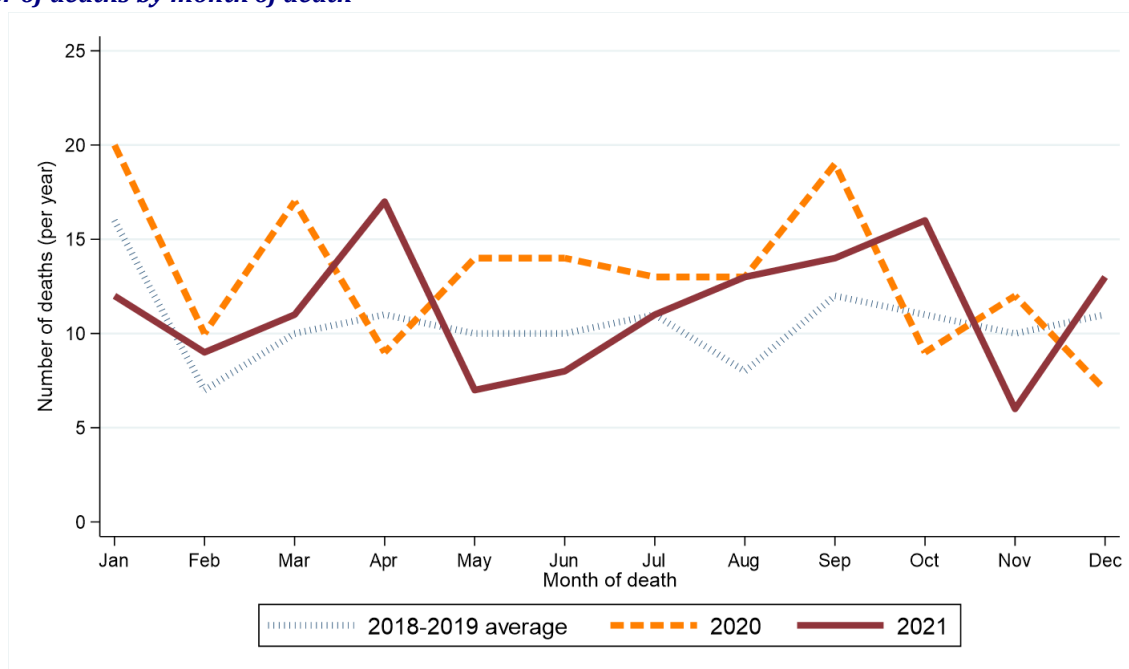
Table 10: Number of lymphoma deaths in 2018-2021 by month and year of death

Period of death	Annual total	Month death occurred											
		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept	Oct	Nov	Dec
2018-2019*	123	16	7	10	11	10	10	11	8	12	11	10	11
2020	157	20	10	17	9	14	14	13	13	19	9	12	7
2021	137	12	9	11	17	7	8	11	13	14	16	6	13

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

Figure 10: Number of lymphoma deaths in 2018-2021 by month/quarter and year of death

(a) Number of deaths by month of death



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

