
Impact of Covid-19 on incidence, survival and mortality of non-Hodgkin's lymphoma in Northern Ireland

(A comparison between April-December of 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) is funded by the Public Health Agency and is based in Queen's University, Belfast.

NICR uses data provided by patients and collected by the health service as part of their care and support.

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.



INCIDENCE

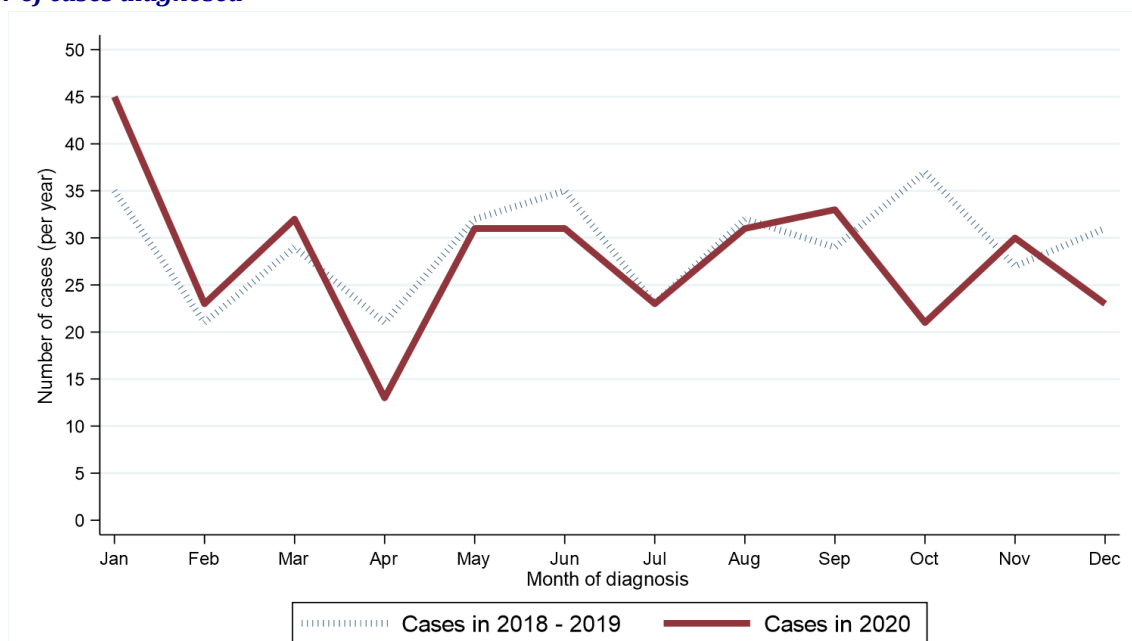
During the April-December period when Covid-19 was present the number of cases of non-Hodgkin's lymphoma diagnosed decreased by 10.6% (28 patients) from 264 per year in 2018 - 2019 to 236 in 2020.

Table 1: Number of non-Hodgkin's lymphoma cases diagnosed in 2018-2020 by month and year of diagnosis

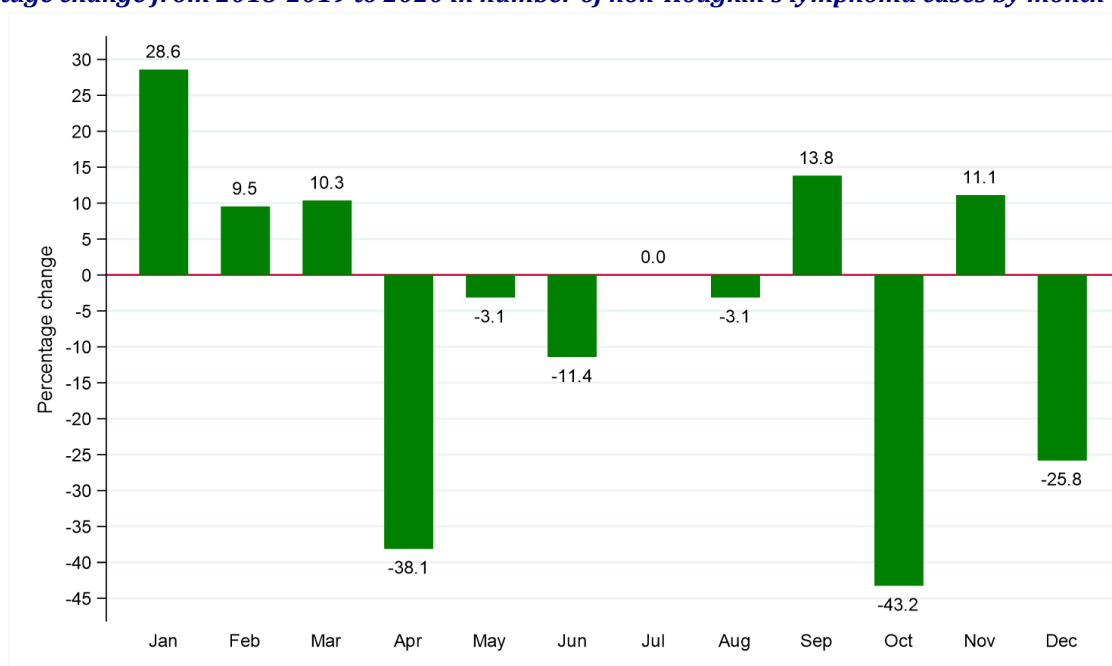
Period of diagnosis	Annual total	Month diagnosed											
		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept	Oct	Nov	Dec
2018-2019*	349	35	21	29	21	32	35	23	32	29	37	27	31
2020	336	45	23	32	13	31	31	23	31	33	21	30	23

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

Figure 1: Number of non-Hodgkin's lymphoma cases diagnosed in 2018-2020 by month and year of diagnosis
(a) Number of cases diagnosed



(b) Percentage change from 2018-2019 to 2020 in number of non-Hodgkin's lymphoma cases by month of diagnosis



GENDER

Excluding the first quarter of each year among males the number of cases of non-Hodgkin's lymphoma diagnosed decreased by 6.1% from 148 per year in 2018 - 2019 to 139 in 2020. Between the same two time periods the number of cases among females decreased by 16.4% from 116 per year to 97. The change in case distribution by gender between 2018 - 2019 and 2020 was not statistically significant.

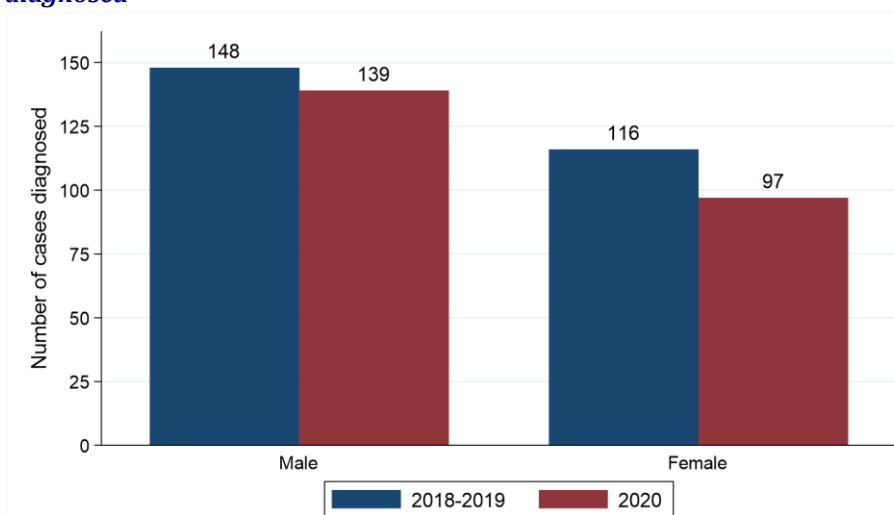
Table 2: Number and proportion of non-Hodgkin's lymphoma cases diagnosed in April-December of 2018-2020 by gender and period of diagnosis

Gender	Period of diagnosis (Apr-Dec)		Percentage change
	2018-2019*	2020	
Male	148 (56.1%)	139 (58.9%)	-6.1% (9 patients)
Female	116 (43.9%)	97 (41.1%)	-16.4% (19 patients)
All persons	264	236	-10.6% (28 patients)

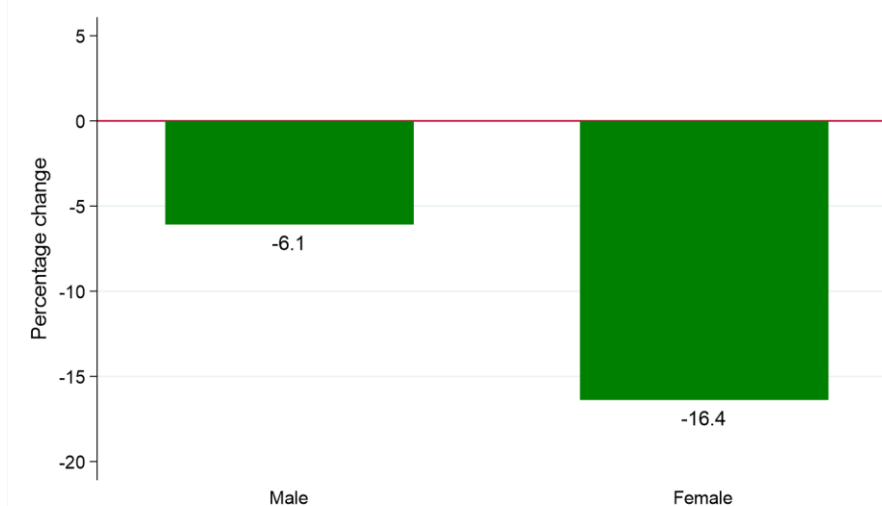
* Average cases per year rounded to the nearest integer. Column sums may thus differ slightly from the total.

Figure 2: Non-Hodgkin's lymphoma cases diagnosed in April-December of 2018-2020 by gender and period of diagnosis

(a) Number of cases diagnosed



(b) Percentage change from 2018-2019 to 2020 in number of non-Hodgkin's lymphoma cases by gender



AGE

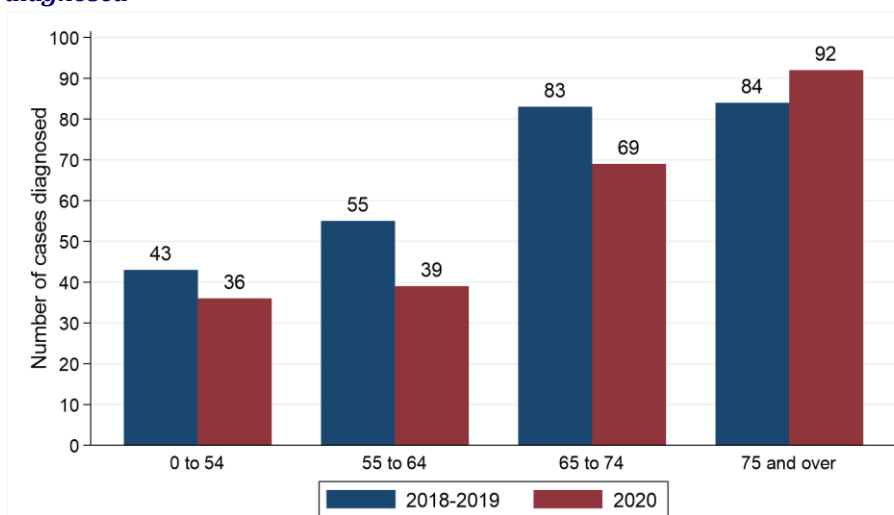
Excluding the first quarter of each year among people aged 55 to 64 the number of cases of non-Hodgkin's lymphoma diagnosed decreased by 29.1% from 55 per year in 2018 - 2019 to 39 in 2020. Between the same two time periods, the number of cases among people aged 75 and over increased by 9.5% from 84 per year to 92. The change in case distribution by age between 2018 - 2019 and 2020 was not statistically significant.

Table 3: Number and proportion of non-Hodgkin's lymphoma cases diagnosed in April-December of 2018-2020 by age and period of diagnosis

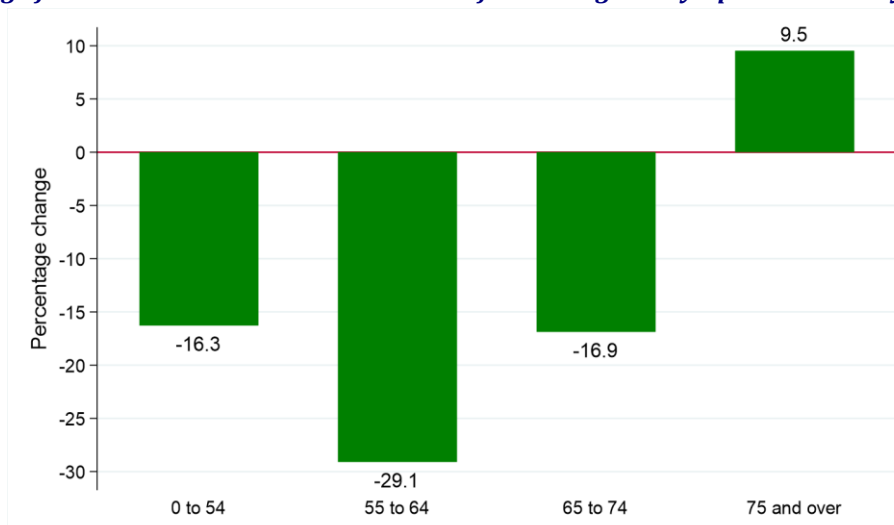
Age group	Period of diagnosis (Apr-Dec)		Percentage change
	2018-2019*	2020	
0 to 54	43 (16.3%)	36 (15.3%)	-16.3% (7 patients)
55 to 64	55 (20.8%)	39 (16.5%)	-29.1% (16 patients)
65 to 74	83 (31.4%)	69 (29.2%)	-16.9% (14 patients)
75 and over	84 (31.8%)	92 (39.0%)	+9.5% (8 patients)
All ages	264	236	-10.6% (28 patients)

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

Figure 3: Non-Hodgkin's lymphoma cases diagnosed in April-December of 2018-2020 by age and period of diagnosis
(a) Number of cases diagnosed



(b) Percentage change from 2018-2019 to 2020 in number of non-Hodgkin's lymphoma cases by age at diagnosis



HEALTH AND SOCIAL CARE TRUST

Excluding the first quarter of each year among residents of Northern HSCT the number of cases of non-Hodgkin's lymphoma diagnosed decreased by 34.6% from 78 per year in 2018 - 2019 to 51 in 2020. Between the same two time periods the number of cases among residents of South Eastern HSCT increased by 19.2% from 52 per year to 62. The change in case distribution by HSCT between 2018 - 2019 and 2020 was not statistically significant.

Table 4: Number and proportion of non-Hodgkin's lymphoma cases diagnosed in April-December of 2018-2020 by Health and Social Care Trust and period of diagnosis

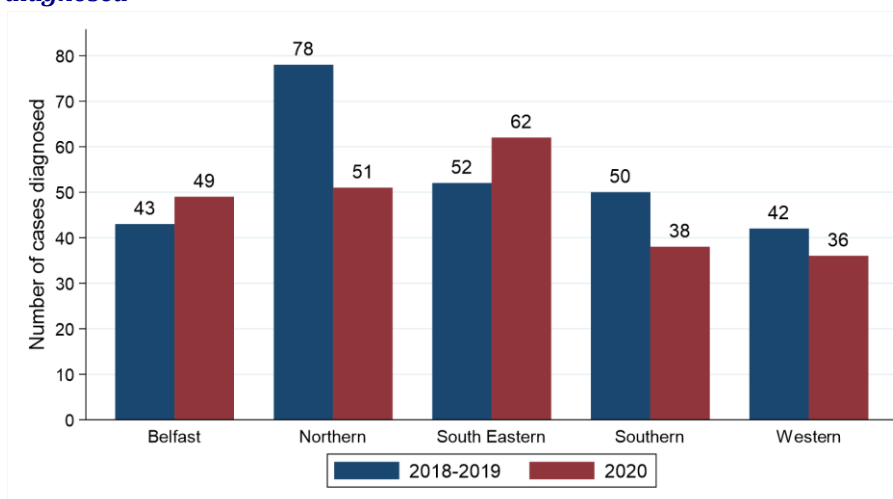
Health and Social Care Trust	Period of diagnosis (Apr-Dec)		Percentage change
	2018-2019*	2020	
Belfast HSCT	43 (16.3%)	49 (20.8%)	+14.0% (6 patients)
Northern HSCT	78 (29.5%)	51 (21.6%)	-34.6% (27 patients)
South Eastern HSCT	52 (19.7%)	62 (26.3%)	+19.2% (10 patients)
Southern HSCT	50 (18.9%)	38 (16.1%)	-24.0% (12 patients)
Western HSCT	42 (15.9%)	36 (15.3%)	-14.3% (6 patients)
Northern Ireland	264	236	-10.6% (28 patients)

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

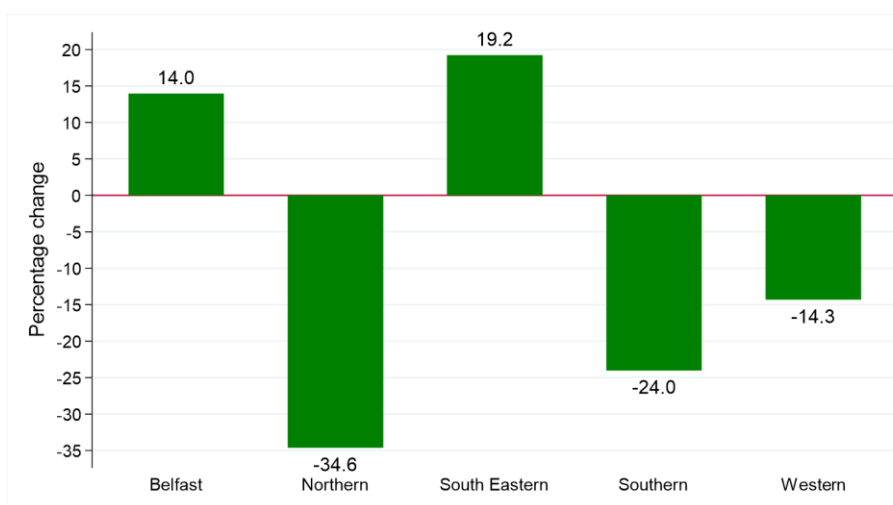
Note: Cases with unknown Health and Social Care Trust are included in totals

Figure 4: Non-Hodgkin's lymphoma cases diagnosed in April-December of 2018-2020 by Health and Social Care Trust and period of diagnosis

(a) Number of cases diagnosed



(b) Percentage change from 2018-2019 to 2020 in number of non-Hodgkin's lymphoma cases by Health and Social Care Trust



DEPRIVATION

Excluding the first quarter of each year among residents of the most deprived areas the number of cases of non-Hodgkin's lymphoma diagnosed increased by 2.8% from 36 per year in 2018 - 2019 to 37 in 2020. Between the same two time periods the number of cases among residents of the least deprived areas decreased by 5.0% from 60 per year to 57. The change in case distribution by deprivation quintile between 2018 - 2019 and 2020 was not statistically significant.

Table 5: Number and proportion of non-Hodgkin's lymphoma cases diagnosed in April-December of 2018-2020 by deprivation quintile and period of diagnosis

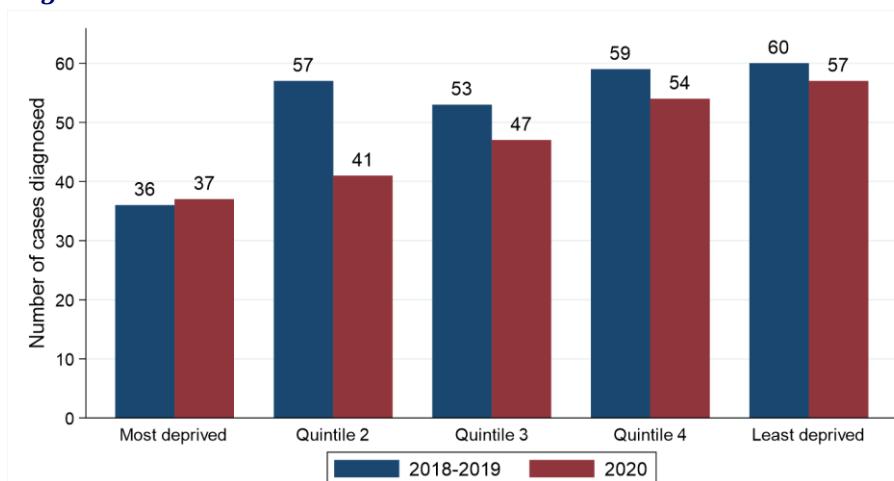
Deprivation quintile	Period of diagnosis (Apr-Dec)		Percentage change
	2018-2019*	2020	
Most deprived	36 (13.6%)	37 (15.7%)	+2.8% (1 patient)
Quintile 2	57 (21.6%)	41 (17.4%)	-28.1% (16 patients)
Quintile 3	53 (20.1%)	47 (19.9%)	-11.3% (6 patients)
Quintile 4	59 (22.3%)	54 (22.9%)	-8.5% (5 patients)
Least deprived	60 (22.7%)	57 (24.2%)	-5.0% (3 patients)
Northern Ireland	264	236	-10.6% (28 patients)

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

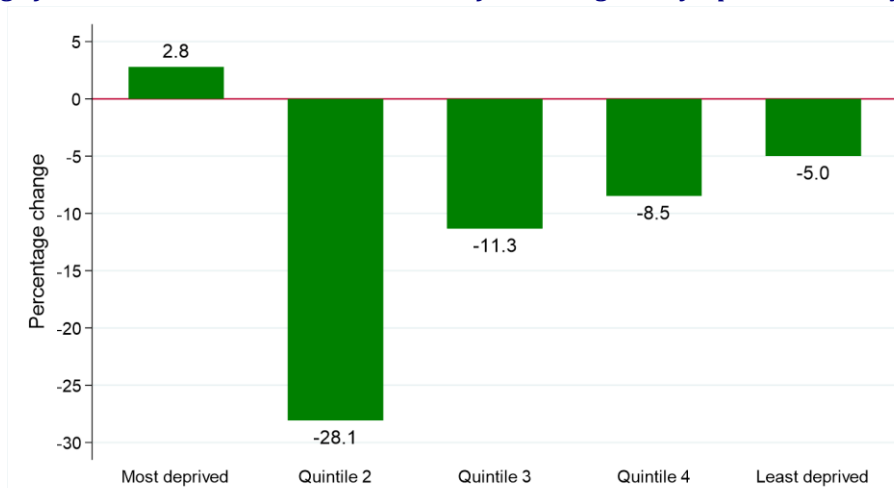
Note: Cases with unknown deprivation quintile are included in totals

Figure 5: Non-Hodgkin's lymphoma cases diagnosed in April-December of 2018-2020 by deprivation quintile and period of diagnosis

(a) Number of cases diagnosed



(b) Percentage change from 2018-2019 to 2020 in number of non-Hodgkin's lymphoma cases by deprivation quintile



BASIS OF DIAGNOSIS

Excluding the first quarter of each year the number of non-Hodgkin's lymphoma cases diagnosed pathologically decreased by 12.0% from 251 per year in 2018 - 2019 to 221 in 2020, while the number of cases diagnosed clinically increased by 11.1% from 9 per year to 10. The change in case distribution by basis of diagnosis between 2018 - 2019 and 2020 was not statistically significant.

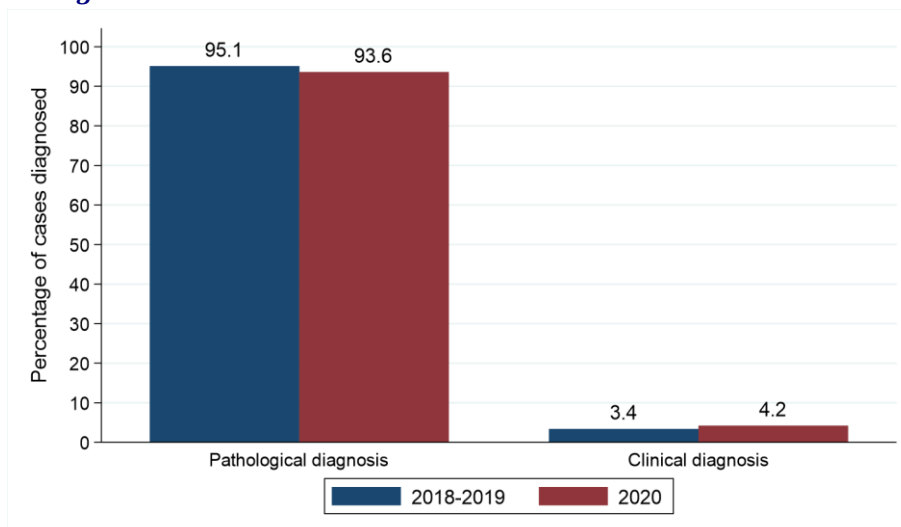
Table 6: Number and proportion of non-Hodgkin's lymphoma cases diagnosed in April-December of 2018-2020 by basis and period of diagnosis

Basis of diagnosis	Period of diagnosis (Apr-Dec)		Percentage change
	2018-2019*	2020	
Pathological diagnosis	251 (95.1%)	221 (93.6%)	-12.0% (30 patients)
Clinical diagnosis	9 (3.4%)	10 (4.2%)	+11.1% (1 patient)
Death certificate only/Unknown	5 (1.9%)	5 (2.1%)	0.0% (0 patients)
All groups	264	236	-10.6% (28 patients)

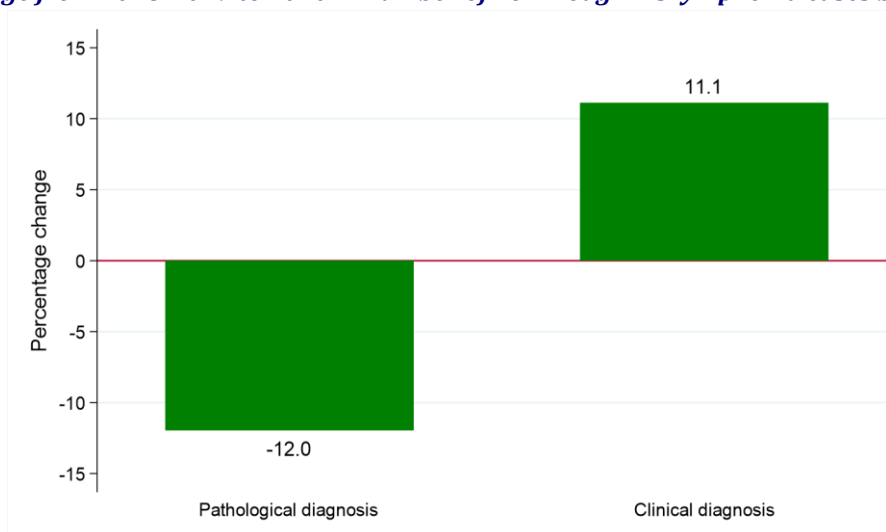
* Average cases per year rounded to the nearest integer. Column sums may thus differ slightly from the total.

Figure 6: Non-Hodgkin's lymphoma cases diagnosed in April-December of 2018-2020 by basis and period of diagnosis

(a) Proportion of cases diagnosed



(b) Percentage change from 2018-2019 to 2020 in number of non-Hodgkin's lymphoma cases by basis of diagnosis



STAGE

Excluding the first quarter of each year the number of non-Hodgkin's lymphoma cases diagnosed at Stage I decreased by 28.9% from 38 per year in 2018 - 2019 to 27 in 2020. Between the same two time periods the number of cases diagnosed at Stage IV increased by 5.1% from 99 per year to 104. The change in case distribution by stage at diagnosis between 2018 - 2019 and 2020 was not statistically significant.

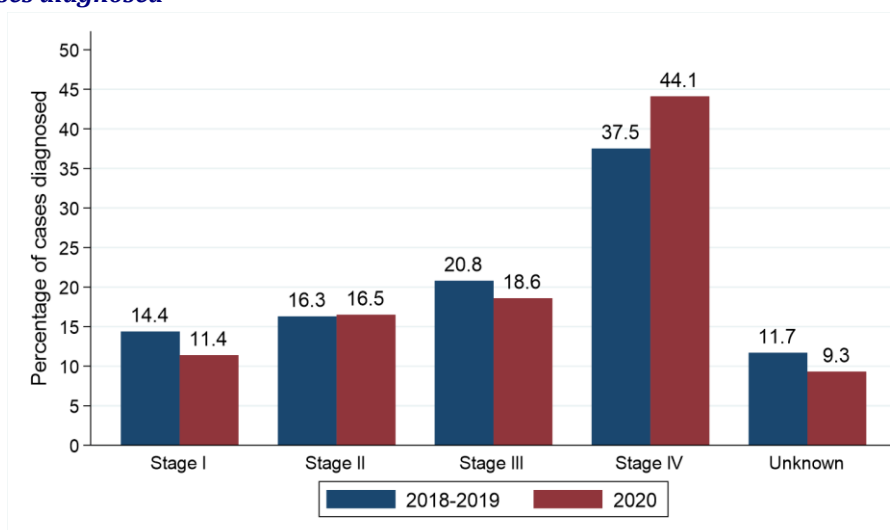
Table 7: Number and proportion of non-Hodgkin's lymphoma cases diagnosed in April-December of 2018-2020 by stage at diagnosis and period of diagnosis

Stage at diagnosis	Period of diagnosis (Apr-Dec)		Percentage change
	2018-2019*	2020	
Stage I	38 (14.4%)	27 (11.4%)	-28.9% (11 patients)
Stage II	43 (16.3%)	39 (16.5%)	-9.3% (4 patients)
Stage III	55 (20.8%)	44 (18.6%)	-20.0% (11 patients)
Stage IV	99 (37.5%)	104 (44.1%)	+5.1% (5 patients)
Unknown	31 (11.7%)	22 (9.3%)	-29.0% (9 patients)
All stages	264	236	-10.6% (28 patients)

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

Figure 7: Non-Hodgkin's lymphoma cases diagnosed in April-December of 2018-2020 by stage and period of diagnosis

(a) Proportion of cases diagnosed



(b) Percentage change from 2018-2019 to 2020 in number of non-Hodgkin's lymphoma cases by stage at diagnosis



METHOD OF HOSPITAL ADMISSION

Excluding the first quarter of each year the number of cases of non-Hodgkin's lymphoma where the patient had an emergency admission recorded as the most recent hospital admission type up to 30 days prior to diagnosis decreased by 16.4% from 61 per year in 2018 - 2019 to 51 in 2020. The change in case distribution by hospital admission type between 2018 - 2019 and 2020 was not statistically significant.

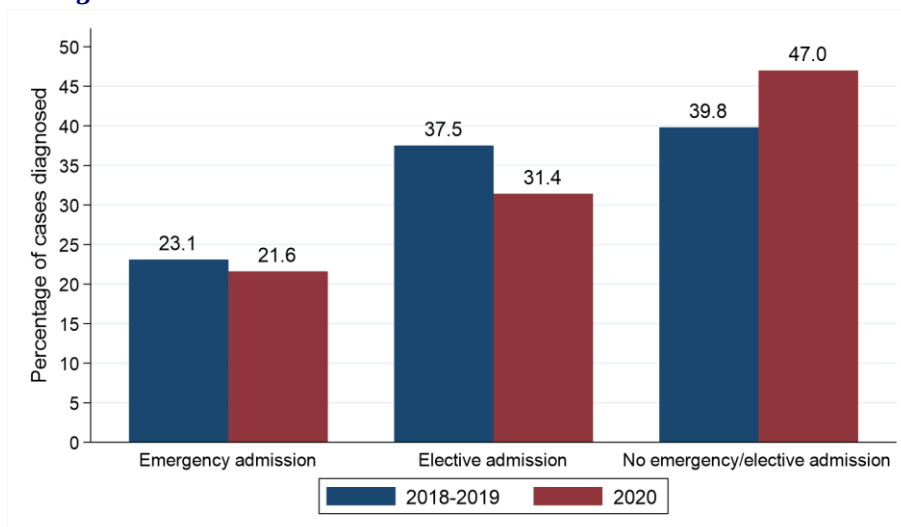
Table 8: Number and proportion of non-Hodgkin's lymphoma cases diagnosed in April-December of 2018-2020 by method of admission to hospital and period of diagnosis

Method of admission to hospital	Period of diagnosis (Apr-Dec)		Percentage change
	2018-2019*	2020	
Emergency admission	61 (23.1%)	51 (21.6%)	-16.4% (10 patients)
Elective admission	99 (37.5%)	74 (31.4%)	-25.3% (25 patients)
No emergency/elective admission recorded	105 (39.8%)	111 (47.0%)	+5.7% (6 patients)
All persons	264	236	-10.6% (28 patients)

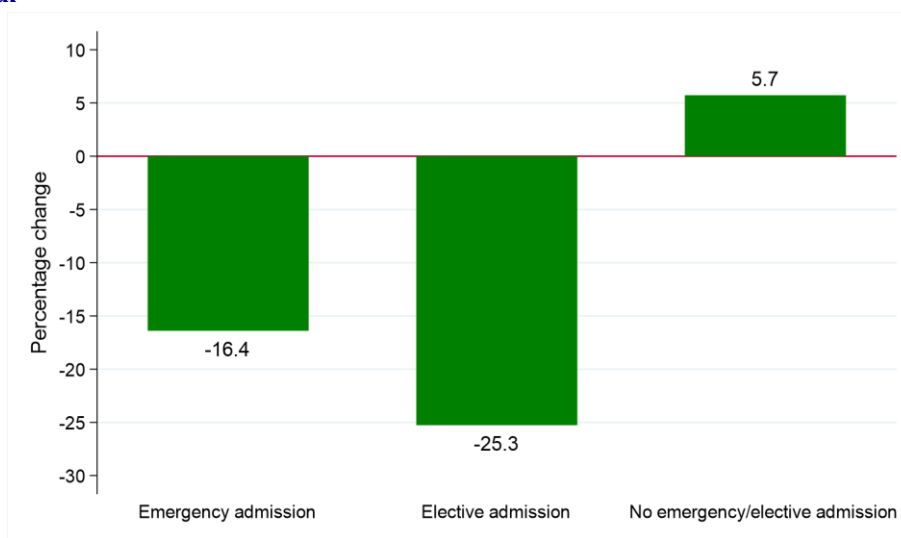
* Average cases per year rounded to the nearest integer. Column sums may thus differ slightly from the total.

Figure 8: Non-Hodgkin's lymphoma cases diagnosed in April-December of 2018-2020 by method of admission to hospital and period of diagnosis

(a) Proportion of cases diagnosed



(b) Percentage change from 2018-2019 to 2020 in number of non-Hodgkin's lymphoma cases by method of admission to hospital



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

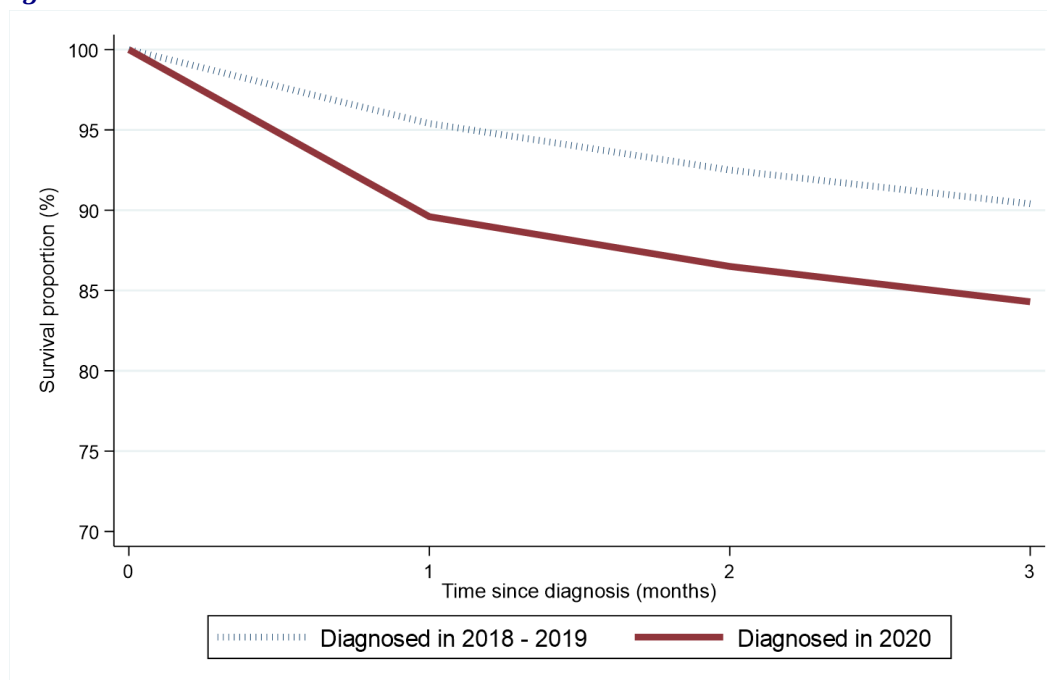
Survival among non-Hodgkin's lymphoma patients one month after diagnosis decreased from 95.4% among those diagnosed in April-December of 2018 - 2019 to 89.6% among those diagnosed in April-December of 2020. This change was statistically significant. Between the same two diagnosis periods, three-month survival decreased from 90.4% to 84.3%. This change was not statistically significant.

Table 9: Observed survival for patients with non-Hodgkin's lymphoma diagnosed in April-December of 2018-2020 by period of diagnosis

Survival time	Period of diagnosis (Apr-Dec)	
	2018-2019	2020
1 month	95.4% (93.2% - 96.9%)	89.6% (84.8% - 92.9%)*
2 months	92.5% (89.9% - 94.5%)	86.5% (81.4% - 90.3%)
3 months	90.4% (87.5% - 92.6%)	84.3% (79.0% - 88.4%)

* Statistically significant reduction

Figure 9: Observed survival for patients with non-Hodgkin's lymphoma diagnosed in April-December of 2018-2020 by period of diagnosis



DEATHS FROM COVID-19

During 2020 there were a total of 14 deaths from Covid-19 among non-Hodgkin's lymphoma patients diagnosed at any point since 1993.

NET SURVIVAL

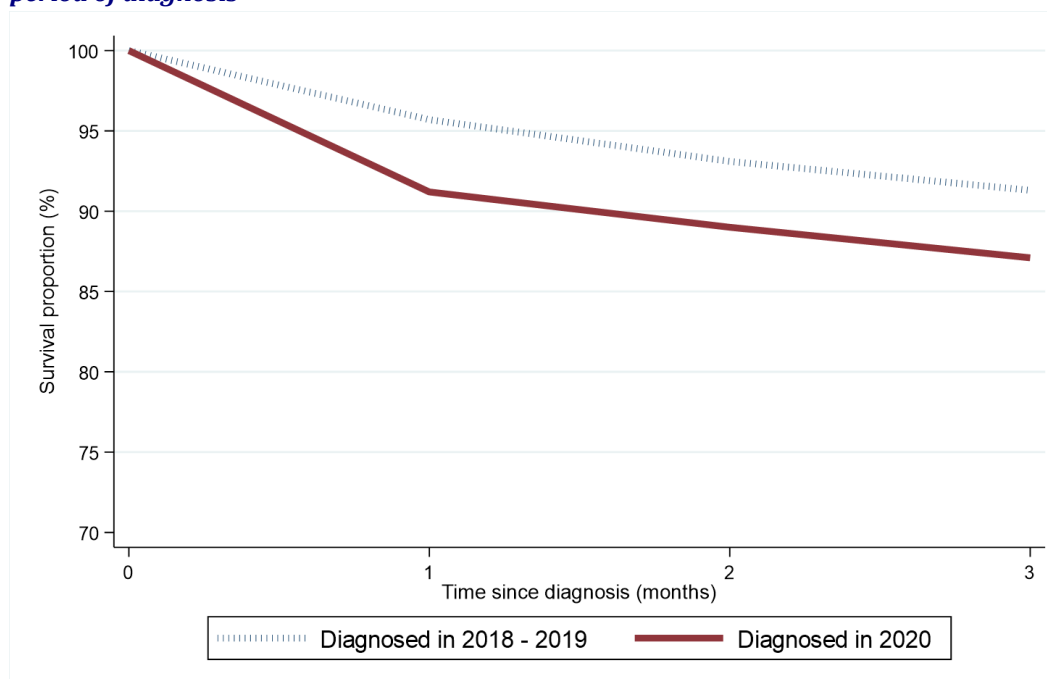
Age-standardised net survival (which takes account of deaths from other causes such as Covid-19) among non-Hodgkin's lymphoma patients one month after diagnosis decreased from 95.7% among those diagnosed in April-December of 2018 - 2019 to 91.2% among those diagnosed in April-December of 2020. This change was not statistically significant. Between the same two time periods, three-month age-standardised net survival decreased from 91.3% to 87.1%. This change was not statistically significant.

Table 10: Age-standardised net survival for patients with non-Hodgkin's lymphoma diagnosed in April-December of 2018-2020 by period of diagnosis

Survival time	Period of diagnosis (Apr-Dec)	
	2018-2019	2020
1 month	95.7% (93.8% - 97.6%)	91.2% (87.7% - 94.8%)
2 months	93.1% (90.9% - 95.3%)	89.0% (85.1% - 93.1%)
3 months	91.3% (88.8% - 93.8%)	87.1% (82.9% - 91.5%)

No statistically significant reductions

Figure 10: Age-standardised net survival for patients with non-Hodgkin's lymphoma diagnosed in April-December of 2018-2020 by period of diagnosis



CANCER MORTALITY

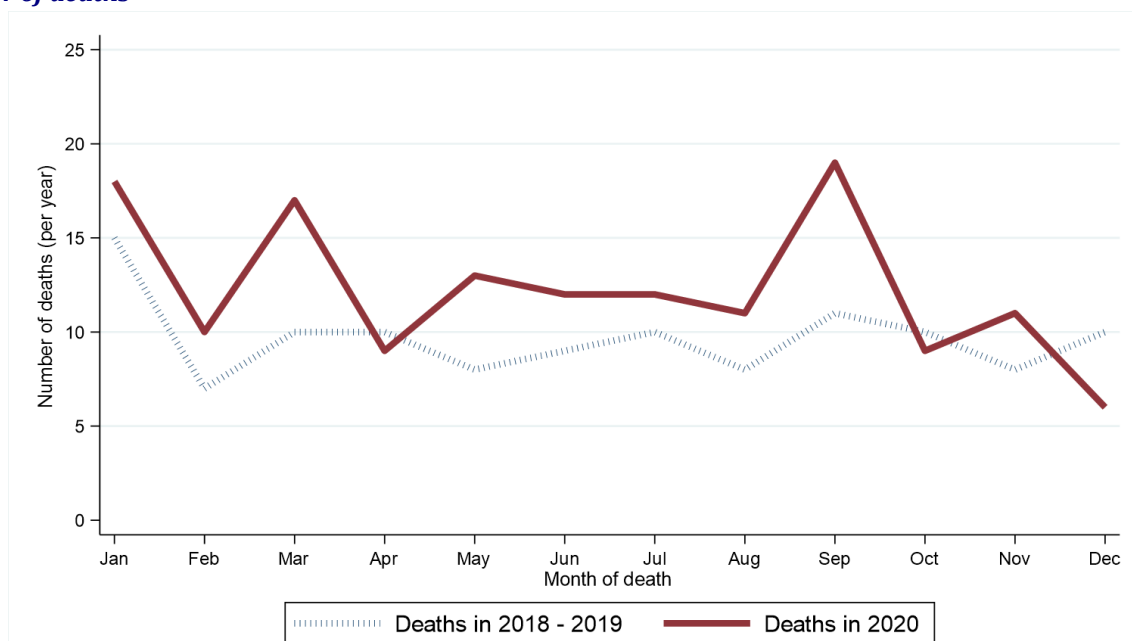
During the April-December period when Covid-19 was present the number of deaths from non-Hodgkin's lymphoma increased by 22.9% from 83 per year in 2018 - 2019 to 102 in 2020.

Table 11: Number of non-Hodgkin's lymphoma deaths in 2018-2020 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*	114	15	7	10	10	8	9	10	8	11	10	8	10
2020	147	18	10	17	9	13	12	12	11	19	9	11	6

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

Figure 11: Number of non-Hodgkin's lymphoma deaths in 2018-2020 by month and year of death
(a) Number of deaths



(b) Percentage change from 2018-2019 to 2020 in number of non-Hodgkin's lymphoma deaths by month of death

