
Impact of Covid-19 on incidence, survival and mortality of leukaemia in Northern Ireland

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

Further information

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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 leukaemia diagnosed decreased by 11.2% (23 patients) from 205 per year in 2018 - 2019 to 182 in 2020.

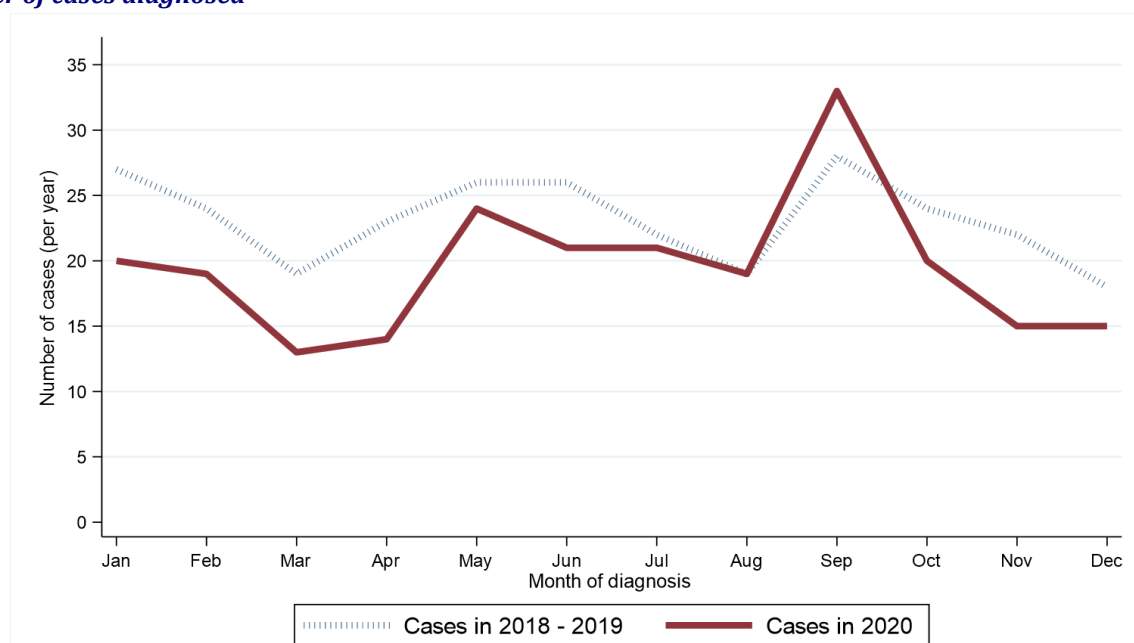
Table 1: Number of leukaemia cases diagnosed in 2018-2020 by month and year of diagnosis

Period of diagnosis	Annual total	Month diagnosed											
		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept	Oct	Nov	Dec
2018-2019*	274	27	24	19	23	26	26	22	19	28	24	22	18
2020	234	20	19	13	14	24	21	21	19	33	20	15	15

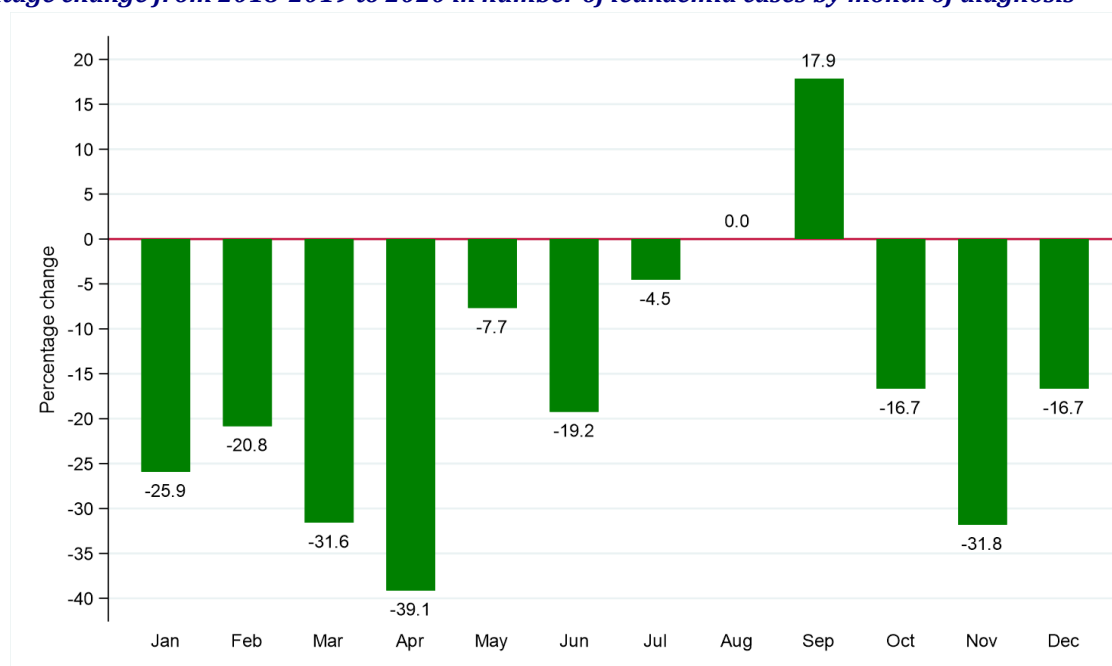
* Average cases per year rounded to the nearest integer. Row sums may thus differ slightly from the total.

Figure 1: Number of leukaemia 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 leukaemia cases by month of diagnosis



GENDER

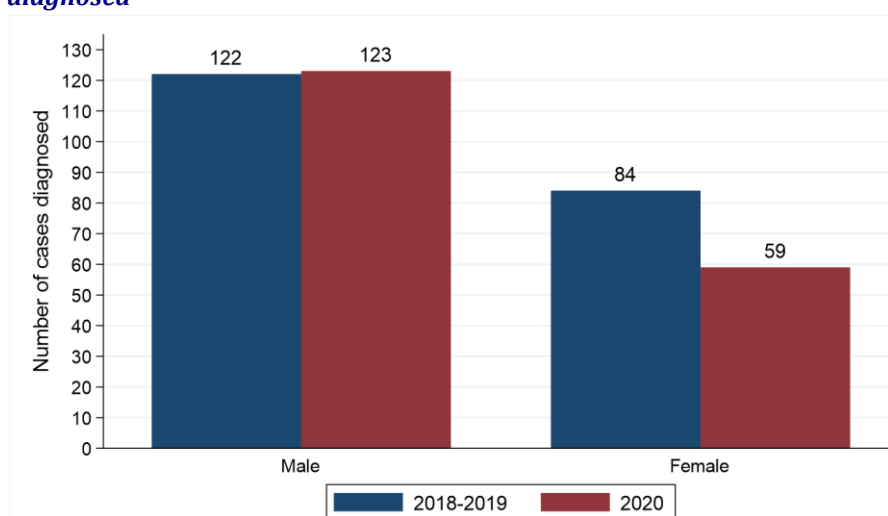
Excluding the first quarter of each year among males the number of cases of leukaemia diagnosed increased by 0.8% from 122 per year in 2018 - 2019 to 123 in 2020. Between the same two time periods the number of cases among females decreased by 29.8% from 84 per year to 59. The change in case distribution by gender between 2018 - 2019 and 2020 was not statistically significant.

Table 2: Number and proportion of leukaemia cases diagnosed in April-December of 2018-2020 by gender and period of diagnosis

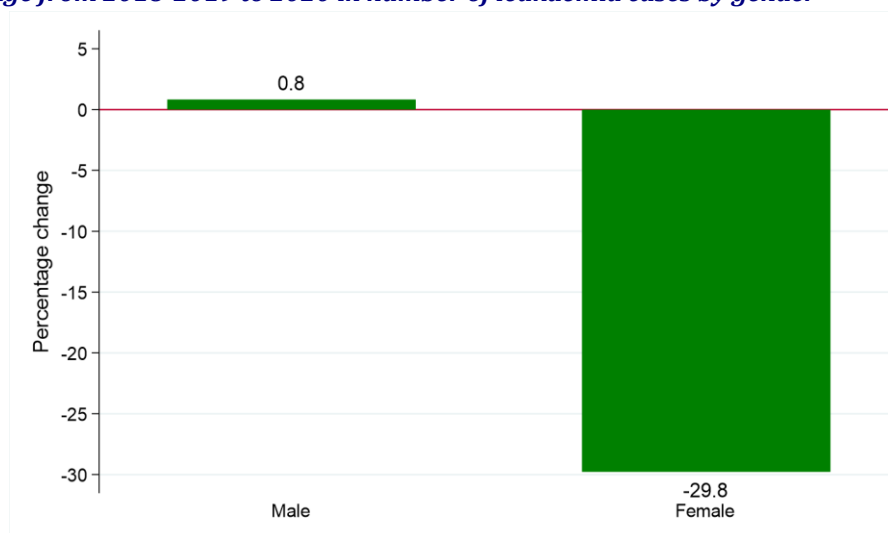
Gender	Period of diagnosis (Apr-Dec)		Percentage change
	2018-2019*	2020	
Male	122 (59.5%)	123 (67.6%)	+0.8% (1 patient)
Female	84 (41.0%)	59 (32.4%)	-29.8% (25 patients)
All persons	205	182	-11.2% (23 patients)

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

Figure 2: Leukaemia 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 leukaemia cases by gender



AGE

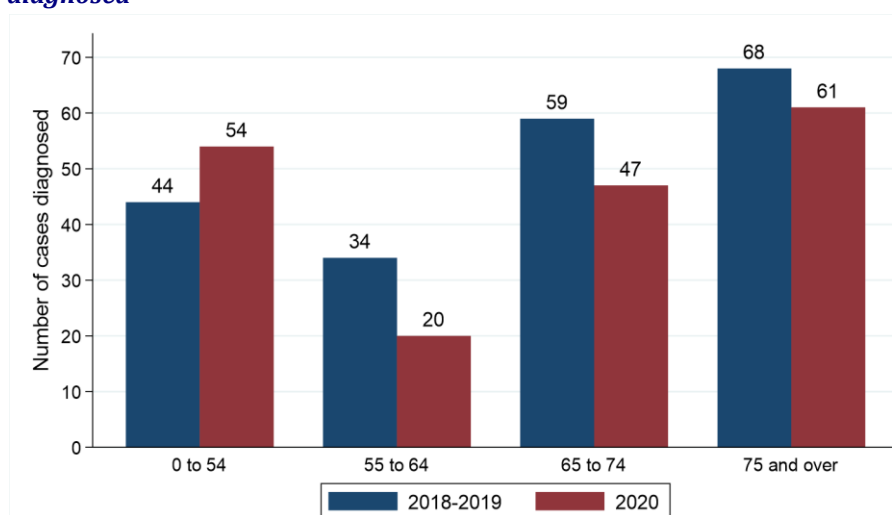
Excluding the first quarter of each year among people aged 55 to 64 the number of cases of leukaemia diagnosed decreased by 41.2% from 34 per year in 2018 - 2019 to 20 in 2020. Between the same two time periods, the number of cases among people aged 0 to 54 increased by 22.7% from 44 per year to 54. The change in case distribution by age between 2018 - 2019 and 2020 was not statistically significant.

Table 3: Number and proportion of leukaemia cases diagnosed in April-December of 2018-2020 by age and period of diagnosis

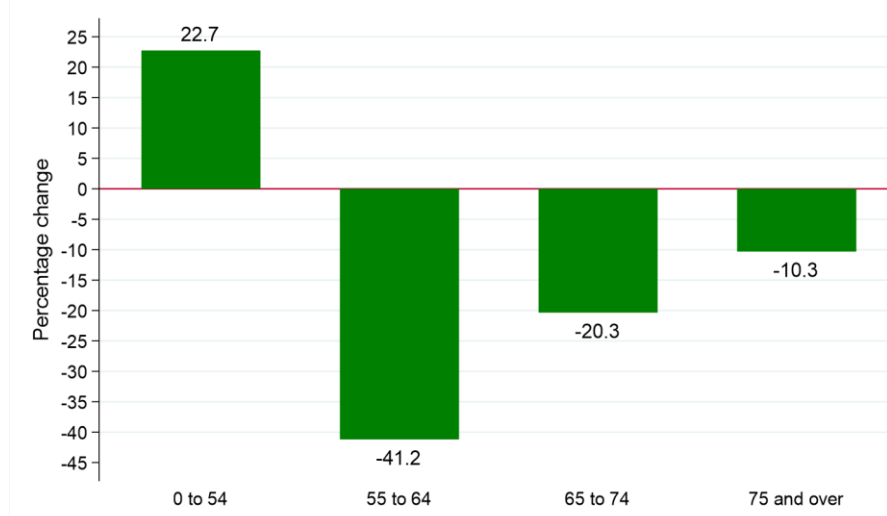
Age group	Period of diagnosis (Apr-Dec)		Percentage change
	2018-2019*	2020	
0 to 54	44 (21.5%)	54 (29.7%)	+22.7% (10 patients)
55 to 64	34 (16.6%)	20 (11.0%)	-41.2% (14 patients)
65 to 74	59 (28.8%)	47 (25.8%)	-20.3% (12 patients)
75 and over	68 (33.2%)	61 (33.5%)	-10.3% (7 patients)
All ages	205	182	-11.2% (23 patients)

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

Figure 3: Leukaemia 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 leukaemia cases by age at diagnosis



HEALTH AND SOCIAL CARE TRUST

Excluding the first quarter of each year among residents of Belfast HSCT the number of cases of leukaemia diagnosed decreased by 36.8% from 38 per year in 2018 - 2019 to 24 in 2020. Between the same two time periods the number of cases among residents of South Eastern HSCT increased by 16.3% from 43 per year to 50. The change in case distribution by HSCT between 2018 - 2019 and 2020 was not statistically significant.

Table 4: Number and proportion of leukaemia cases diagnosed in April-December of 2018-2020 by Health and Social Care Trust and period of diagnosis

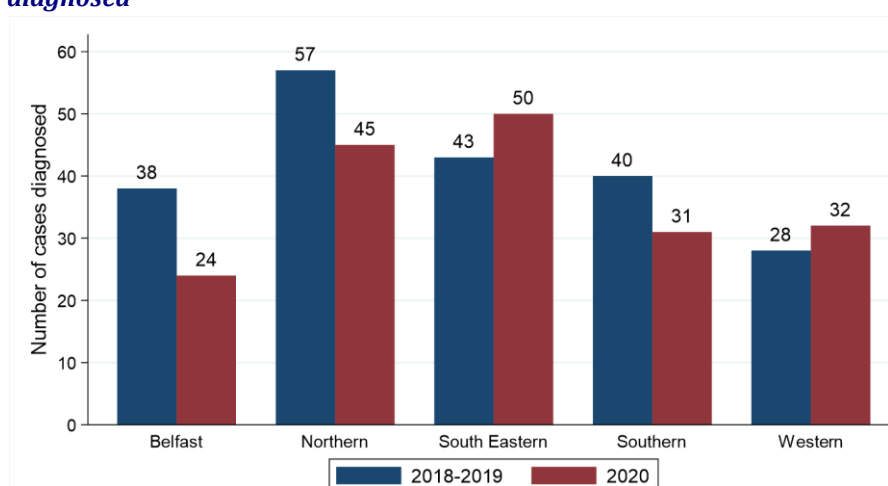
Health and Social Care Trust	Period of diagnosis (Apr-Dec)		Percentage change
	2018-2019*	2020	
Belfast HSCT	38 (18.5%)	24 (13.2%)	-36.8% (14 patients)
Northern HSCT	57 (27.8%)	45 (24.7%)	-21.1% (12 patients)
South Eastern HSCT	43 (21.0%)	50 (27.5%)	+16.3% (7 patients)
Southern HSCT	40 (19.5%)	31 (17.0%)	-22.5% (9 patients)
Western HSCT	28 (13.7%)	32 (17.6%)	+14.3% (4 patients)
Northern Ireland	205	182	-11.2% (23 patients)

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

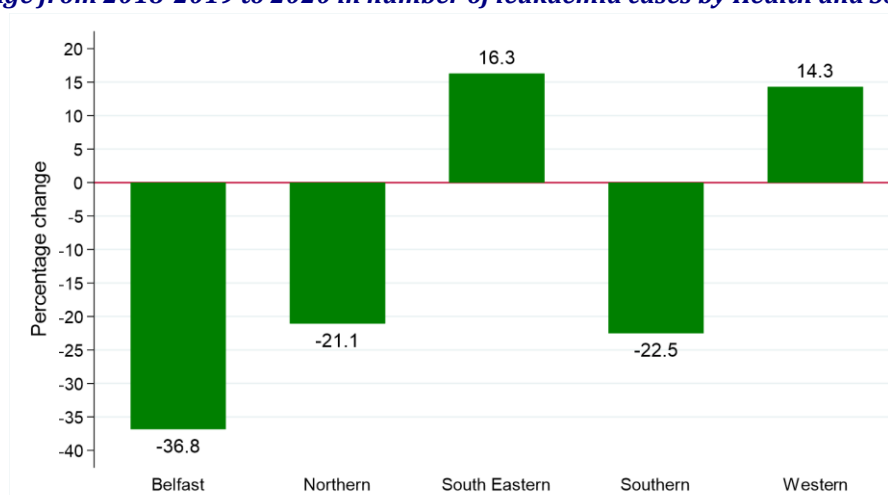
Note: Cases with unknown Health and Social Care Trust are included in totals

Figure 4: Leukaemia 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 leukaemia 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 leukaemia diagnosed decreased by 10.0% from 30 per year in 2018 - 2019 to 27 in 2020. Between the same two time periods the number of cases among residents of the least deprived areas decreased by 15.6% from 45 per year to 38. The change in case distribution by deprivation quintile between 2018 - 2019 and 2020 was not statistically significant.

Table 5: Number and proportion of leukaemia cases diagnosed in April-December of 2018-2020 by deprivation quintile and period of diagnosis

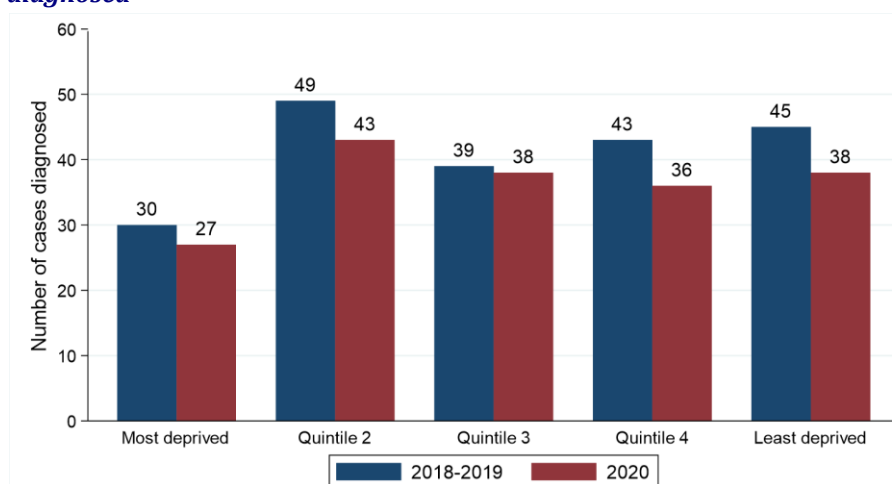
Deprivation quintile	Period of diagnosis (Apr-Dec)		Percentage change
	2018-2019*	2020	
Most deprived	30 (14.6%)	27 (14.8%)	-10.0% (3 patients)
Quintile 2	49 (23.9%)	43 (23.6%)	-12.2% (6 patients)
Quintile 3	39 (19.0%)	38 (20.9%)	-2.6% (1 patient)
Quintile 4	43 (21.0%)	36 (19.8%)	-16.3% (7 patients)
Least deprived	45 (22.0%)	38 (20.9%)	-15.6% (7 patients)
Northern Ireland	205	182	-11.2% (23 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: Leukaemia 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 leukaemia cases by deprivation quintile



BASIS OF DIAGNOSIS

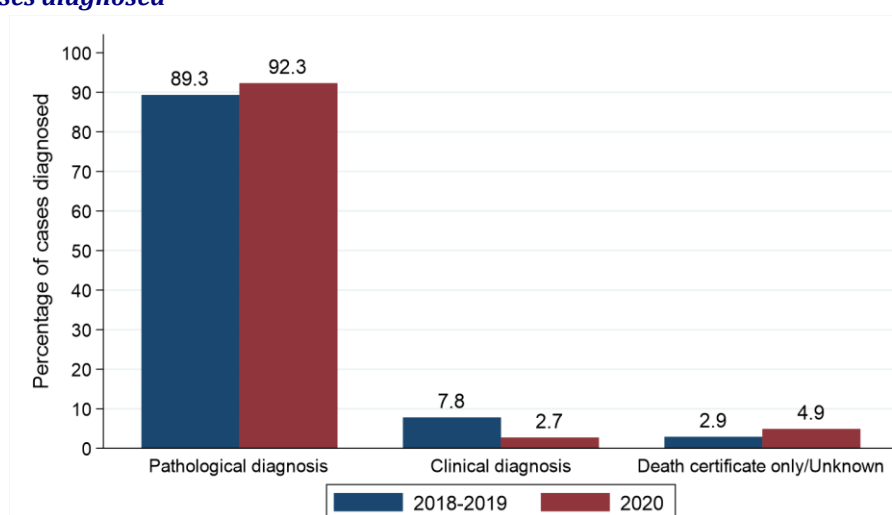
Excluding the first quarter of each year the number of leukaemia cases diagnosed pathologically decreased by 8.2% from 183 per year in 2018 - 2019 to 168 in 2020, while the number of cases diagnosed clinically decreased by 68.8% from 16 per year to 5. The change in case distribution by basis of diagnosis between 2018 - 2019 and 2020 was statistically significant ($p = 0.034$).

Table 6: Number and proportion of leukaemia cases diagnosed in April-December of 2018-2020 by basis and period of diagnosis

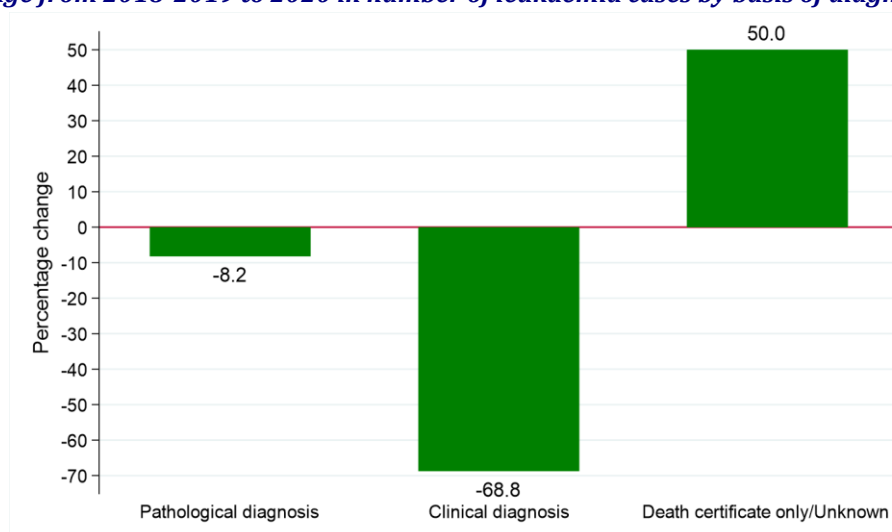
Basis of diagnosis	Period of diagnosis (Apr-Dec)		Percentage change
	2018-2019*	2020	
Pathological diagnosis	183 (89.3%)	168 (92.3%)	-8.2% (15 patients)
Clinical diagnosis	16 (7.8%)	5 (2.7%)	-68.8% (11 patients)
Death certificate only/Unknown	6 (2.9%)	9 (4.9%)	+50.0% (3 patients)
All groups	205	182	-11.2% (23 patients)

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

Figure 6: Leukaemia 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 leukaemia cases by basis of diagnosis



METHOD OF HOSPITAL ADMISSION

Excluding the first quarter of each year the number of cases of leukaemia where the patient had an emergency admission recorded as the most recent hospital admission type up to 30 days prior to diagnosis increased by 2.0% from 50 per year in 2018 - 2019 to 51 in 2020. The change in case distribution by hospital admission type between 2018 - 2019 and 2020 was statistically significant ($p = 0.027$).

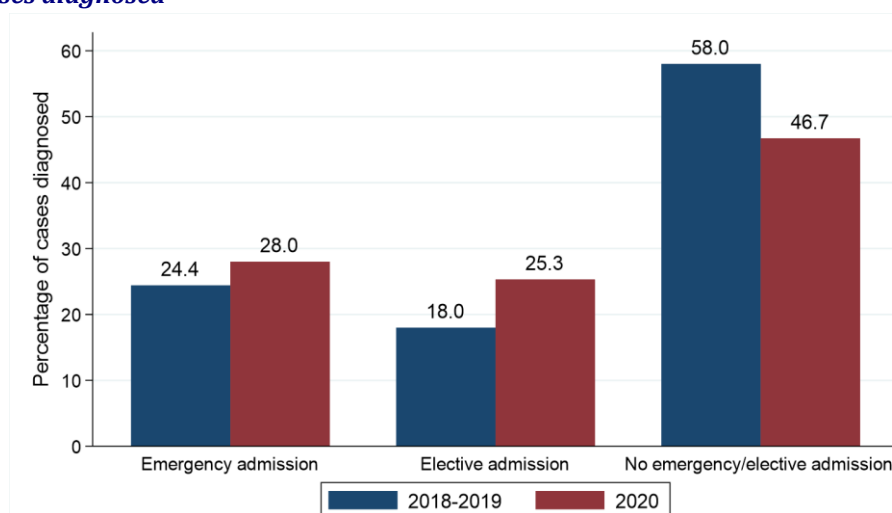
Table 7: Number and proportion of leukaemia cases diagnosed in April-December of 2018-2020 by method of admission to hospital and period of diagnosis

Method of admission to hospital	Period of diagnosis (Apr-Dec)		Percentage change
	2018-2019*	2020	
Emergency admission	50 (24.4%)	51 (28.0%)	+2.0% (1 patient)
Elective admission	37 (18.0%)	46 (25.3%)	+24.3% (9 patients)
No emergency/elective admission recorded	119 (58.0%)	85 (46.7%)	-28.6% (34 patients)
All persons	205	182	-11.2% (23 patients)

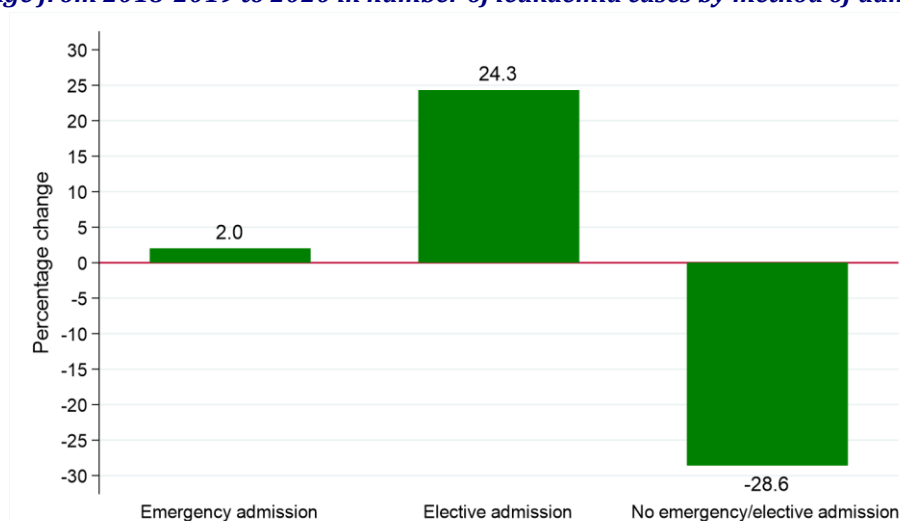
* Average cases per year rounded to the nearest integer. Column sums may thus differ slightly from the total.

Figure 7: Leukaemia 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 leukaemia 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

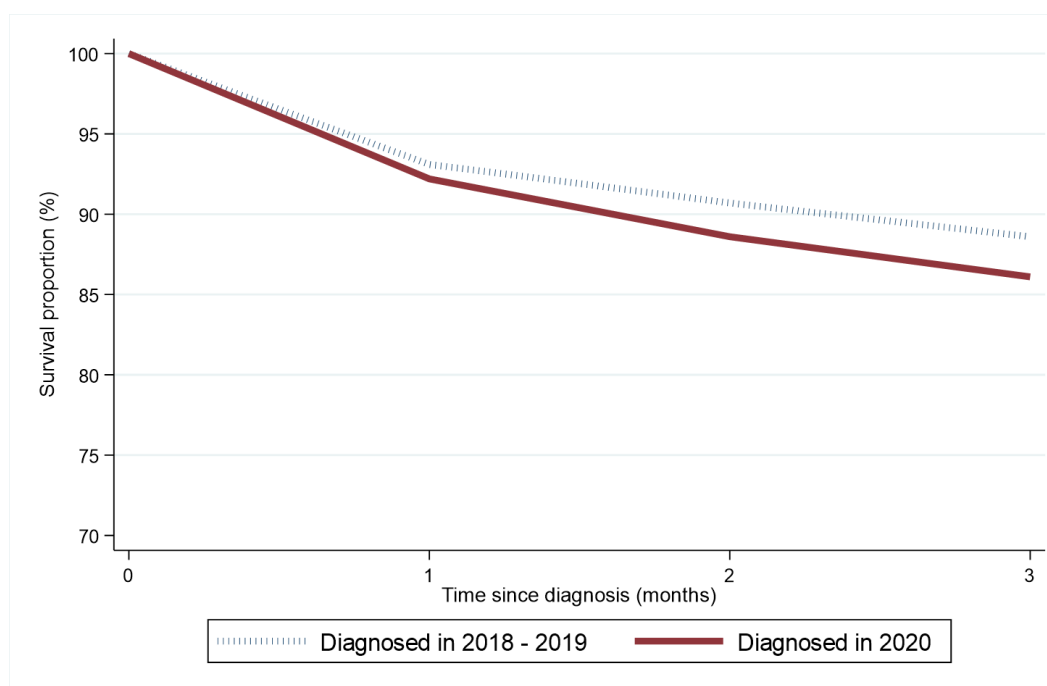
Survival among leukaemia patients one month after diagnosis decreased from 93.1% among those diagnosed in April-December of 2018 - 2019 to 92.2% among those diagnosed in April-December of 2020. This change was not statistically significant. Between the same two diagnosis periods, three-month survival decreased from 88.6% to 86.1%. This change was not statistically significant.

Table 8: Observed survival for patients with leukaemia diagnosed in April-December of 2018-2020 by period of diagnosis

Survival time	Period of diagnosis (Apr-Dec)	
	2018-2019	2020
1 month	93.1% (90.0% - 95.3%)	92.2% (86.9% - 95.4%)
2 months	90.7% (87.3% - 93.2%)	88.6% (82.6% - 92.5%)
3 months	88.6% (84.9% - 91.4%)	86.1% (79.9% - 90.6%)

No statistically significant reductions

Figure 8: Observed survival for patients with leukaemia diagnosed in April-December of 2018-2020 by period of diagnosis



DEATHS FROM COVID-19

During 2020 there were a total of 19 deaths from Covid-19 among leukaemia patients diagnosed at any point since 1993.

NET SURVIVAL

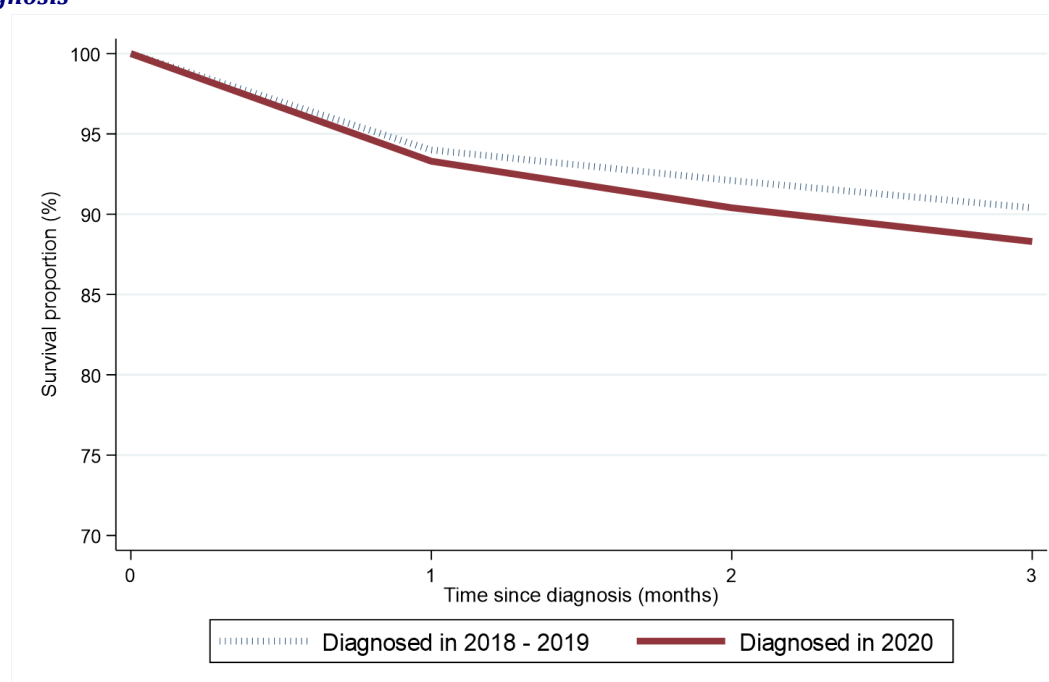
Age-standardised net survival (which takes account of deaths from other causes such as Covid-19) among leukaemia patients one month after diagnosis decreased from 94.0% among those diagnosed in April-December of 2018 - 2019 to 93.3% among those diagnosed in April-December of 2020. This change was not statistically significant. Between the same two time periods, three-month age-standardised net survival decreased from 90.4% to 88.3%. This change was not statistically significant.

Table 9: Age-standardised net survival for patients with leukaemia diagnosed in April-December of 2018-2020 by period of diagnosis

Survival time	Period of diagnosis (Apr-Dec)	
	2018-2019	2020
1 month	94.0% (91.6% - 96.4%)	93.3% (89.7% - 97.0%)
2 months	92.1% (89.4% - 94.8%)	90.4% (86.1% - 94.9%)
3 months	90.4% (87.4% - 93.5%)	88.3% (83.6% - 93.3%)

No statistically significant reductions

Figure 9: Age-standardised net survival for patients with leukaemia diagnosed in April-December of 2018-2020 by period of diagnosis



CANCER MORTALITY

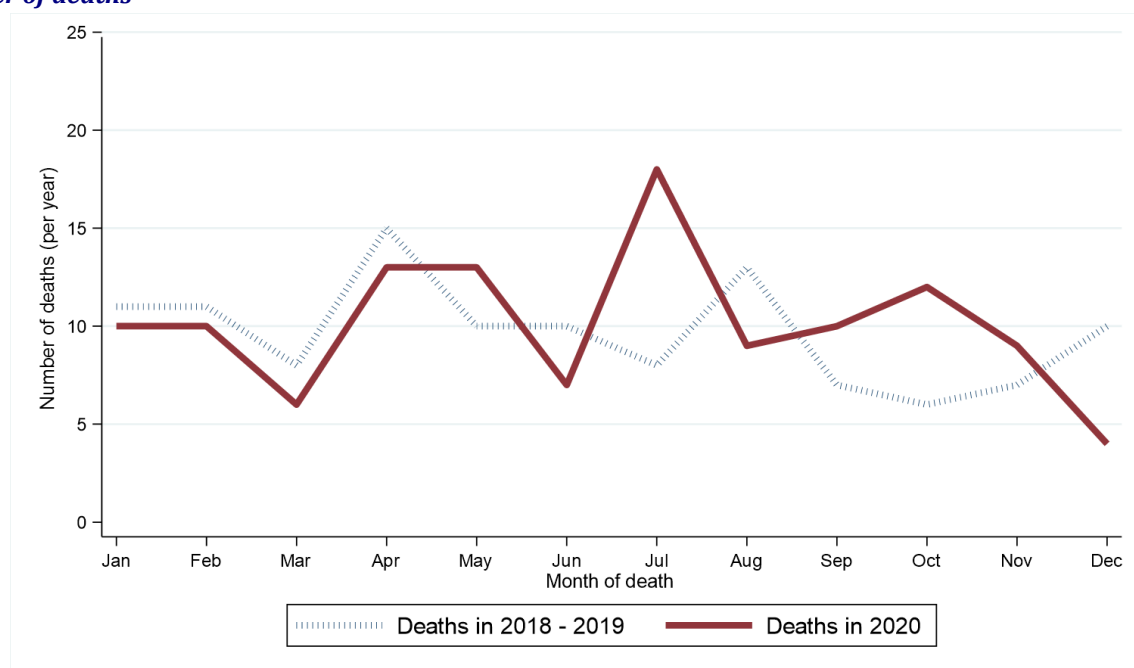
During the April-December period when Covid-19 was present the number of deaths from leukaemia increased by 14.5% from 83 per year in 2018 - 2019 to 95 in 2020.

Table 10: Number of leukaemia 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*	113	11	11	8	15	10	10	8	13	7	6	7	10
2020	121	10	10	6	13	13	7	18	9	10	12	9	4

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

Figure 10: Number of leukaemia 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 leukaemia deaths by month of death

