
Impact of Covid-19 on incidence, survival and mortality of non-invasive brain tumours 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

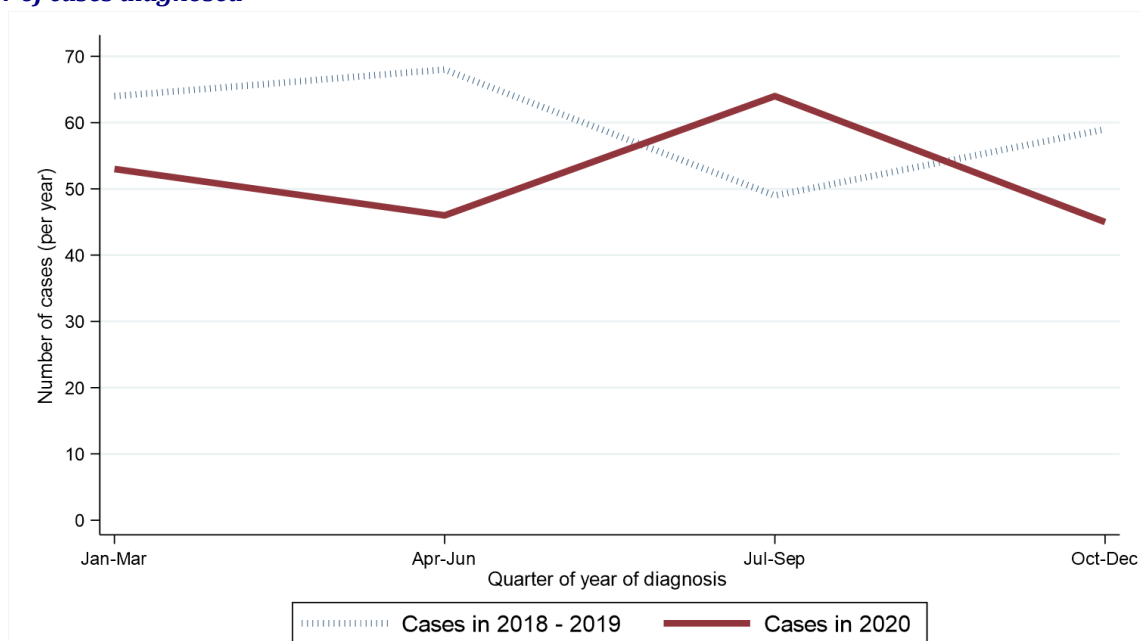
During the April-December period when Covid-19 was present the number of cases of non-invasive brain tumour diagnosed decreased by 11.4% (20 patients) from 175 per year in 2018 - 2019 to 155 in 2020.

Table 1: Number of non-invasive brain tumour cases diagnosed in 2018-2020 by quarter and year of diagnosis

Period of diagnosis	Annual total	Quarter of year diagnosed			
		Jan-Mar	Apr-Jun	Jul-Sept	Oct-Dec
2018-2019*	239	64	68	49	59
2020	208	53	46	64	45

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

Figure 1: Number of non-invasive brain tumour cases diagnosed in 2018-2020 by quarter and year of diagnosis
(a) Number of cases diagnosed



(b) Percentage change from 2018-2019 to 2020 in number of non-invasive brain tumour cases by quarter of year of diagnosis



GENDER

Excluding the first quarter of each year among males the number of cases of non-invasive brain tumour diagnosed decreased by 34.8% from 66 per year in 2018 - 2019 to 43 in 2020. Between the same two time periods the number of cases among females increased by 1.8% from 110 per year to 112. The change in case distribution by gender between 2018 - 2019 and 2020 was statistically significant ($p = 0.035$).

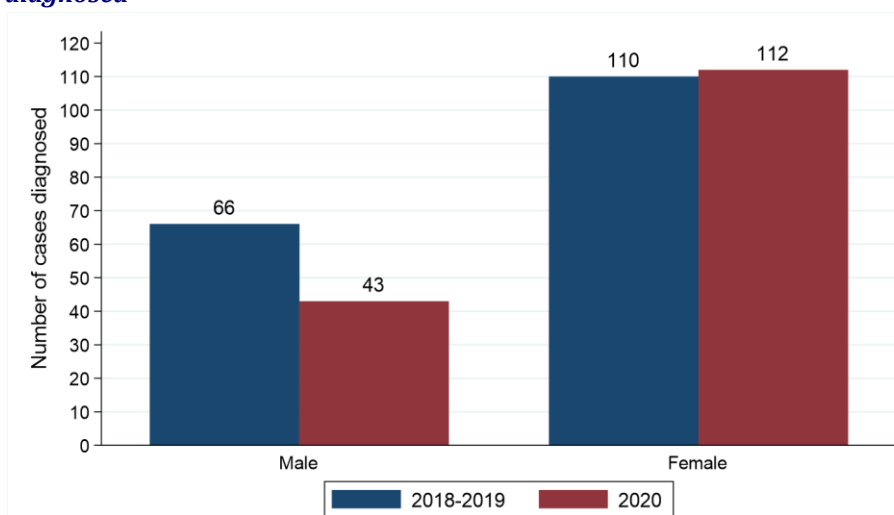
Table 2: Number and proportion of non-invasive brain tumour cases diagnosed in April-December of 2018-2020 by gender and period of diagnosis

Gender	Period of diagnosis (Apr-Dec)		Percentage change
	2018-2019*	2020	
Male	66 (37.7%)	43 (27.7%)	-34.8% (23 patients)
Female	110 (62.9%)	112 (72.3%)	+1.8% (2 patients)
All persons	175	155	-11.4% (20 patients)

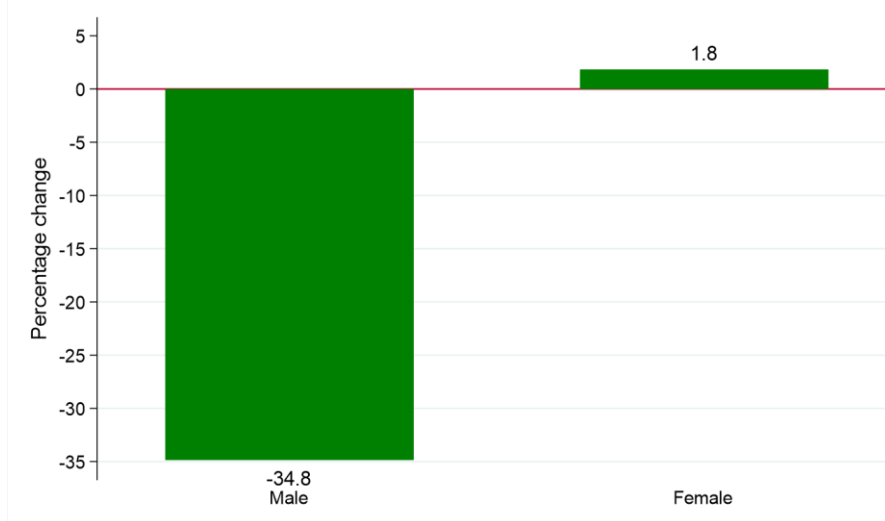
* Average cases per year rounded to the nearest integer. Column sums may thus differ slightly from the total.

Figure 2: Non-invasive brain tumour 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-invasive brain tumour cases by gender



AGE

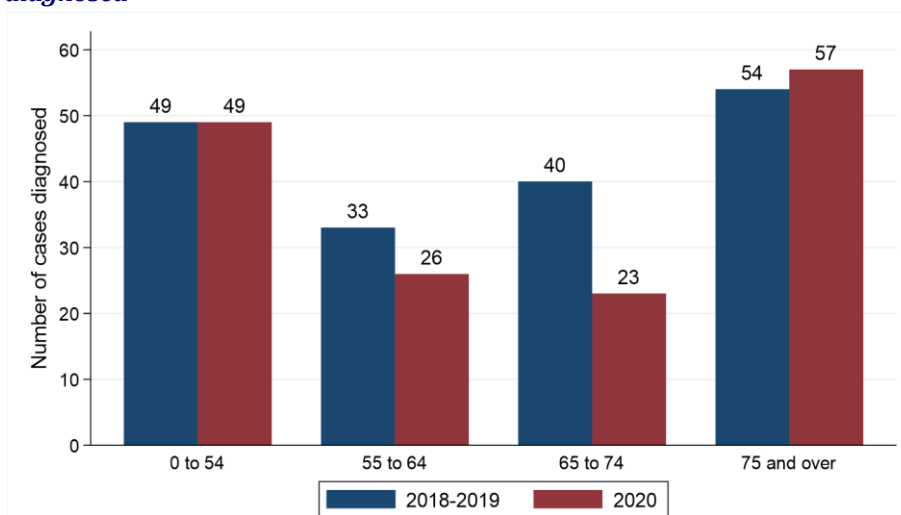
Excluding the first quarter of each year among people aged 65 to 74 the number of cases of non-invasive brain tumour diagnosed decreased by 42.5% from 40 per year in 2018 - 2019 to 23 in 2020. Between the same two time periods, the number of cases among people aged 75 and over increased by 5.6% from 54 per year to 57. The change in case distribution by age between 2018 - 2019 and 2020 was not statistically significant.

Table 3: Number and proportion of non-invasive brain tumour cases diagnosed in April-December of 2018-2020 by age and period of diagnosis

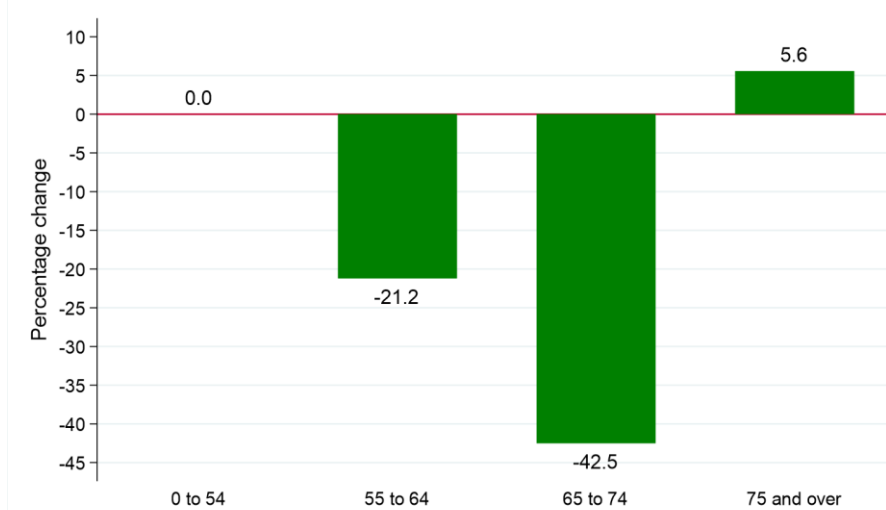
Age group	Period of diagnosis (Apr-Dec)		Percentage change
	2018-2019*	2020	
0 to 54	49 (28.0%)	49 (31.6%)	0.0% (0 patients)
55 to 64	33 (18.9%)	26 (16.8%)	-21.2% (7 patients)
65 to 74	40 (22.9%)	23 (14.8%)	-42.5% (17 patients)
75 and over	54 (30.9%)	57 (36.8%)	+5.6% (3 patients)
All ages	175	155	-11.4% (20 patients)

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

Figure 3: Non-invasive brain tumour 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-invasive brain tumour 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 non-invasive brain tumour 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 Southern HSCT increased by 14.8% from 27 per year to 31. The change in case distribution by HSCT between 2018 - 2019 and 2020 was not statistically significant.

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

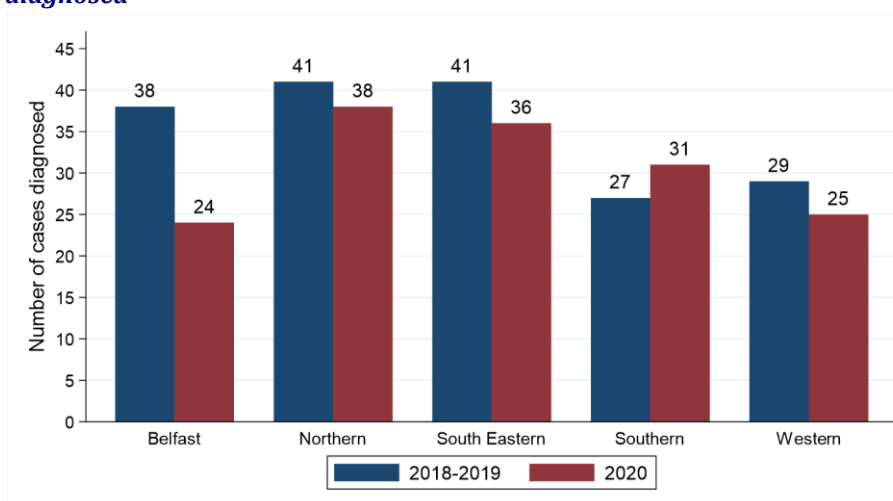
Health and Social Care Trust	Period of diagnosis (Apr-Dec)		Percentage change
	2018-2019*	2020	
Belfast HSCT	38 (21.7%)	24 (15.5%)	-36.8% (14 patients)
Northern HSCT	41 (23.4%)	38 (24.5%)	-7.3% (3 patients)
South Eastern HSCT	41 (23.4%)	36 (23.2%)	-12.2% (5 patients)
Southern HSCT	27 (15.4%)	31 (20.0%)	+14.8% (4 patients)
Western HSCT	29 (16.6%)	25 (16.1%)	-13.8% (4 patients)
Northern Ireland	175	155	-11.4% (20 patients)

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

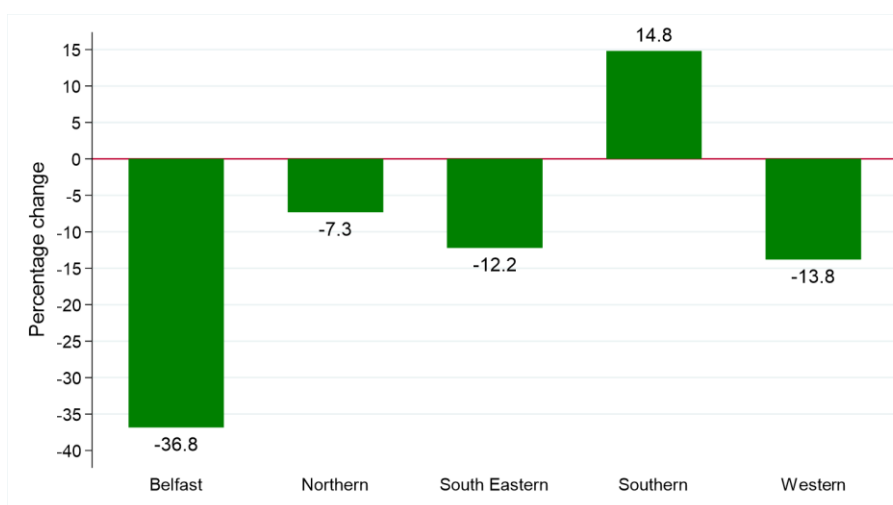
Note: Cases with unknown Health and Social Care Trust are included in totals

Figure 4: Non-invasive brain tumour 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-invasive brain tumour 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-invasive brain tumour diagnosed decreased by 12.5% from 32 per year in 2018 - 2019 to 28 in 2020. Between the same two time periods the number of cases among residents of the least deprived areas decreased by 18.8% from 32 per year to 26. The change in case distribution by deprivation quintile between 2018 - 2019 and 2020 was not statistically significant.

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

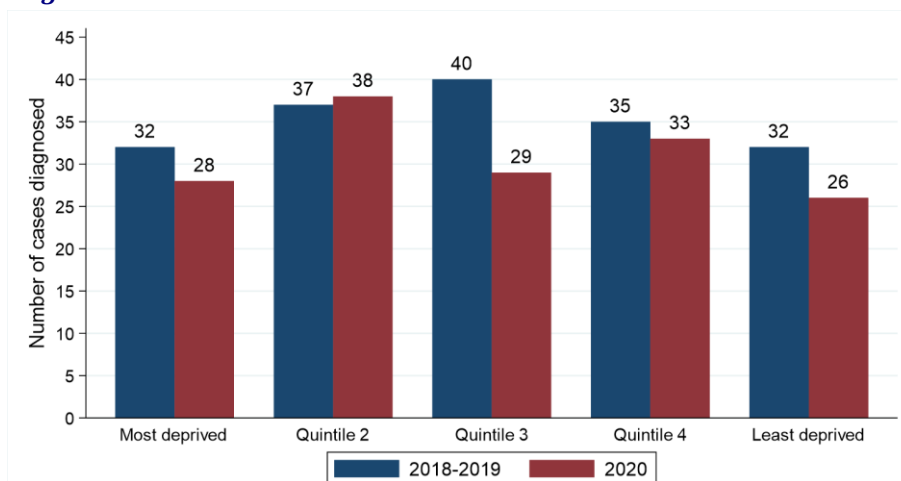
Deprivation quintile	Period of diagnosis (Apr-Dec)		Percentage change
	2018-2019*	2020	
Most deprived	32 (18.3%)	28 (18.1%)	-12.5% (4 patients)
Quintile 2	37 (21.1%)	38 (24.5%)	+2.7% (1 patient)
Quintile 3	40 (22.9%)	29 (18.7%)	-27.5% (11 patients)
Quintile 4	35 (20.0%)	33 (21.3%)	-5.7% (2 patients)
Least deprived	32 (18.3%)	26 (16.8%)	-18.8% (6 patients)
Northern Ireland	175	155	-11.4% (20 patients)

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

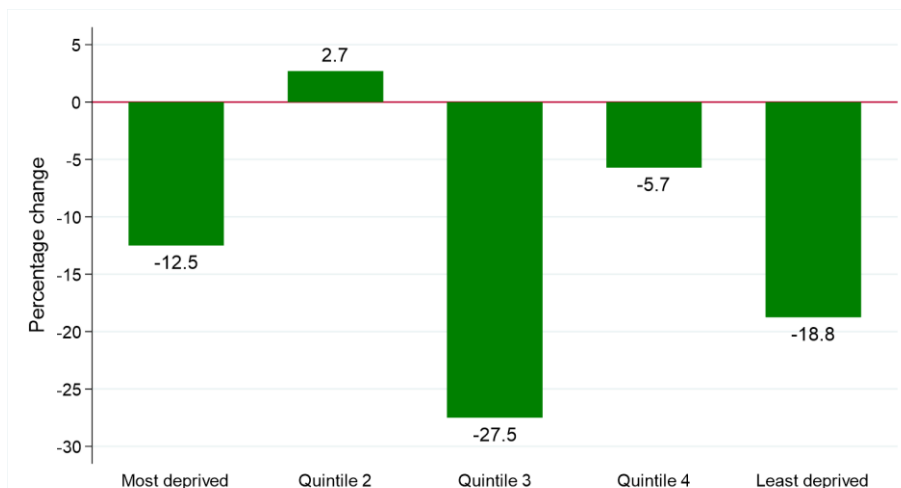
Note: Cases with unknown deprivation quintile are included in totals

Figure 5: Non-invasive brain tumour 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-invasive brain tumour cases by deprivation quintile



BASIS OF DIAGNOSIS

Excluding the first quarter of each year the number of non-invasive brain tumour cases diagnosed pathologically decreased by 1.4% from 69 per year in 2018 - 2019 to 68 in 2020, while the number of cases diagnosed clinically decreased by 25.2% from 103 per year to 77. The change in case distribution by basis of diagnosis between 2018 - 2019 and 2020 was statistically significant ($p = 0.025$).

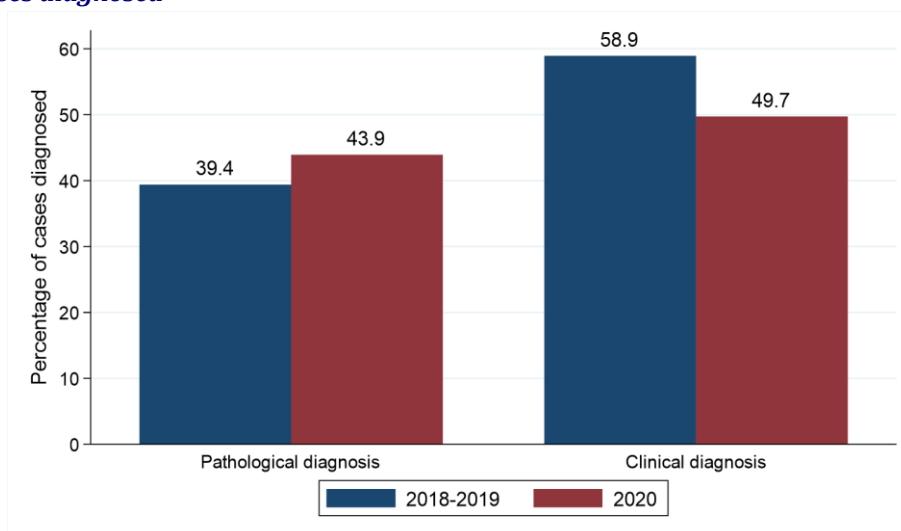
Table 6: Number and proportion of non-invasive brain tumour cases diagnosed in April-December of 2018-2020 by basis and period of diagnosis

Basis of diagnosis	Period of diagnosis (Apr-Dec)		Percentage change
	2018-2019*	2020	
Pathological diagnosis	69 (39.4%)	68 (43.9%)	-1.4% (1 patient)
Clinical diagnosis	103 (58.9%)	77 (49.7%)	-25.2% (26 patients)
Death certificate only/Unknown	4 (2.3%)	10 (6.5%)	+150.0% (6 patients)
All groups	175	155	-11.4% (20 patients)

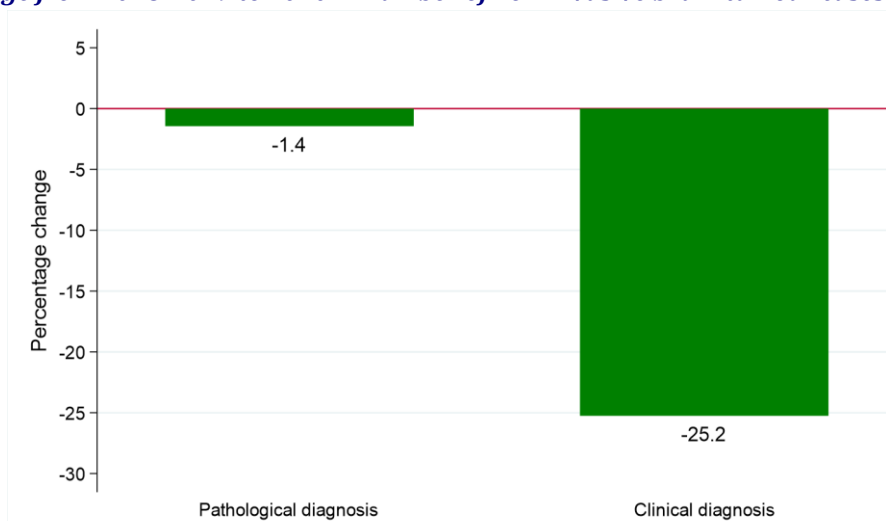
* Average cases per year rounded to the nearest integer. Column sums may thus differ slightly from the total.

Figure 6: Non-invasive brain tumour 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-invasive brain tumour cases by basis of diagnosis



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

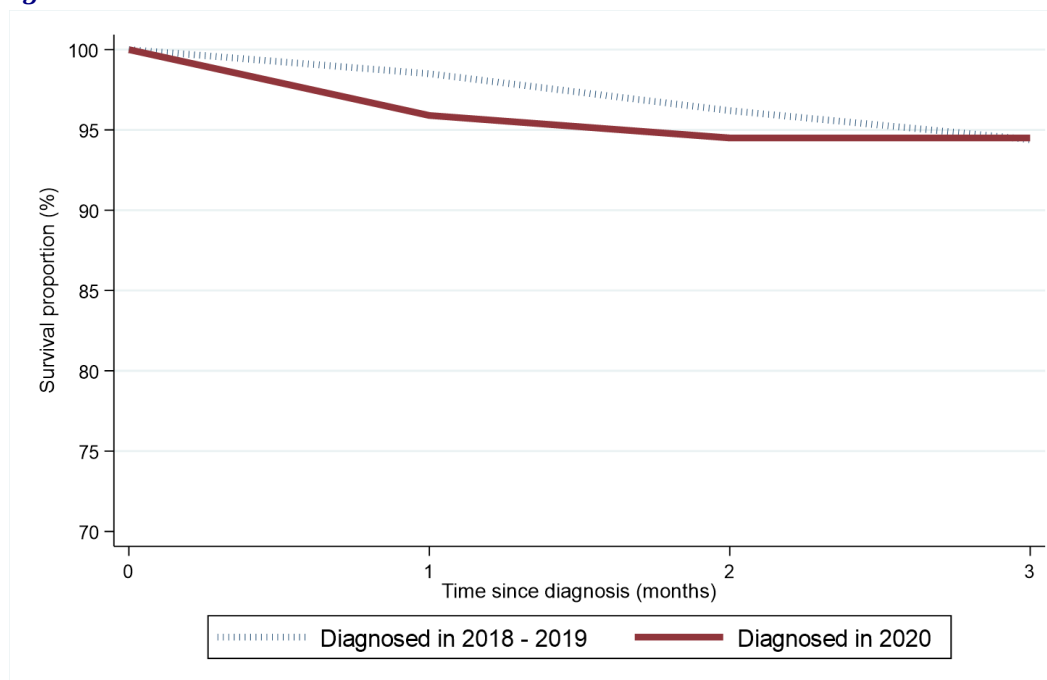
Survival among non-invasive brain tumour patients one month after diagnosis decreased from 98.5% among those diagnosed in April-December of 2018 - 2019 to 95.9% among those diagnosed in April-December of 2020. This change was not statistically significant. Between the same two diagnosis periods, three-month survival increased from 94.4% to 94.5%. This change was not statistically significant.

Table 7: Observed survival for patients with non-invasive brain tumours diagnosed in April-December of 2018-2020 by period of diagnosis

Survival time	Period of diagnosis (Apr-Dec)	
	2018-2019	2020
1 month	98.5% (96.5% - 99.4%)	95.9% (91.1% - 98.1%)
2 months	96.2% (93.5% - 97.8%)	94.5% (89.3% - 97.2%)
3 months	94.4% (91.4% - 96.4%)	94.5% (89.3% - 97.2%)

No statistically significant reductions

Figure 7: Observed survival for patients with non-invasive brain tumours diagnosed in April-December of 2018-2020 by period of diagnosis



DEATHS FROM COVID-19

During 2020 there were a total of 22 deaths from Covid-19 among non-invasive brain tumour patients diagnosed at any point since 1993.

NET SURVIVAL

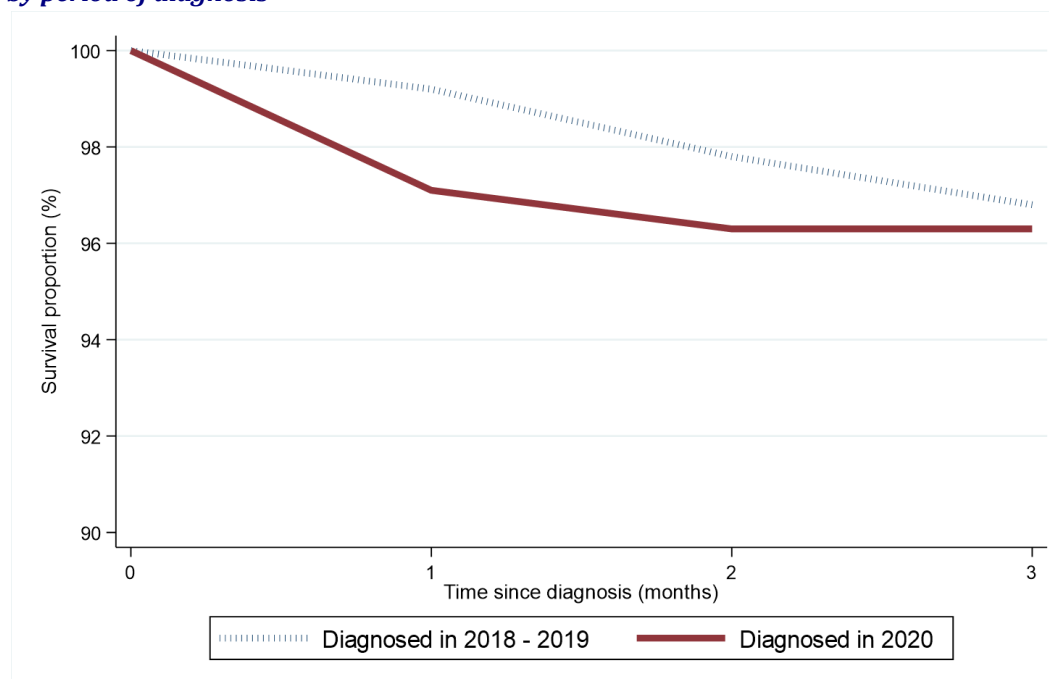
Age-standardised net survival (which takes account of deaths from other causes such as Covid-19) among non-invasive brain tumour patients one month after diagnosis decreased from 99.2% among those diagnosed in April-December of 2018 - 2019 to 97.1% among those diagnosed in April-December of 2020. This change was not statistically significant. Between the same two time periods, three-month age-standardised net survival decreased from 96.8% to 96.3%. This change was not statistically significant.

Table 8: Age-standardised net survival for patients with non-invasive brain tumours diagnosed in April-December of 2018-2020 by period of diagnosis

Survival time	Period of diagnosis (Apr-Dec)	
	2018-2019	2020
1 month	99.2% (98.4% - 100.0%)	97.1% (94.7% - 99.6%)
2 months	97.8% (96.5% - 99.2%)	96.3% (93.5% - 99.2%)
3 months	96.8% (95.1% - 98.5%)	96.3% (93.5% - 99.2%)

No statistically significant reductions

Figure 8: Age-standardised net survival for patients with non-invasive brain tumours diagnosed in April-December of 2018-2020 by period of diagnosis



CANCER MORTALITY

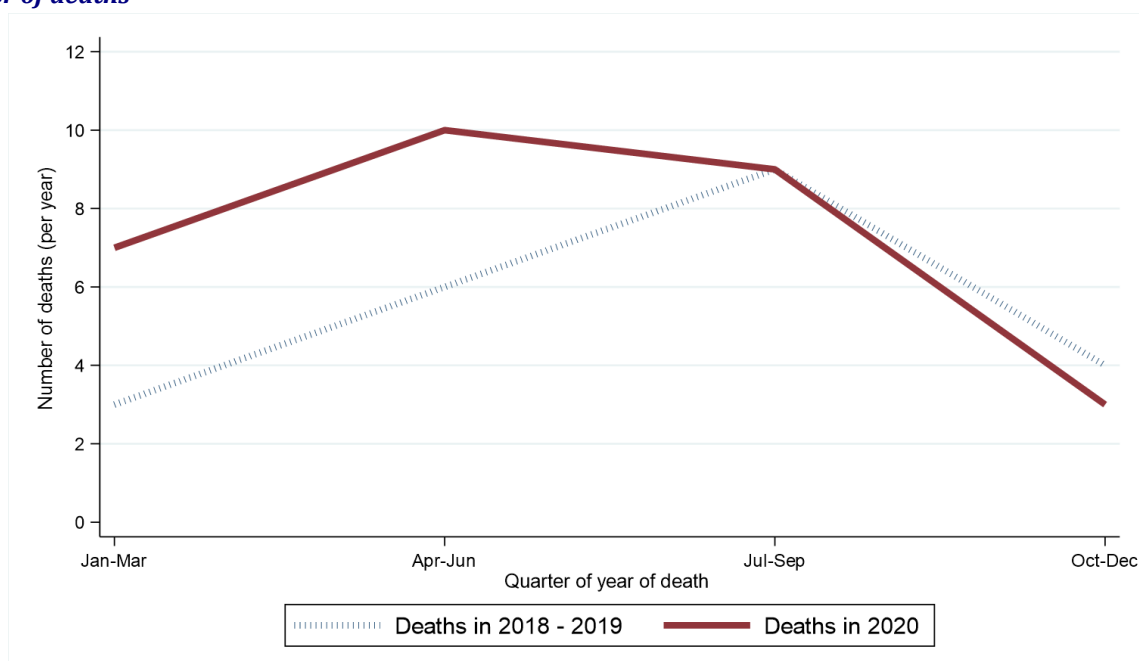
During the April-December period when Covid-19 was present the number of deaths from non-invasive brain tumours increased by 22.2% from 18 per year in 2018 - 2019 to 22 in 2020.

Table 9: Number of non-invasive brain tumour deaths in 2018-2020 by quarter and year of death

Period of death	Annual total	Quarter of year death occurred			
		Jan-Mar	Apr-Jun	Jul-Sept	Oct-Dec
2018-2019*	21	3	6	9	4
2020	29	7	10	9	3

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

Figure 9: Number of non-invasive brain tumour deaths in 2018-2020 by quarter and year of death
(a) Number of deaths



(b) Percentage change from 2018-2019 to 2020 in number of non-invasive brain tumour deaths by quarter of year of death

