# Impact of Covid-19 on incidence, survival and mortality of brain cancer in Northern Ireland

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


### Further information

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### Acknowledgements

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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 brain cancer diagnosed decreased by 5.0% (6 patients) from 121 per year in 2018 - 2019 to 115 in 2020.

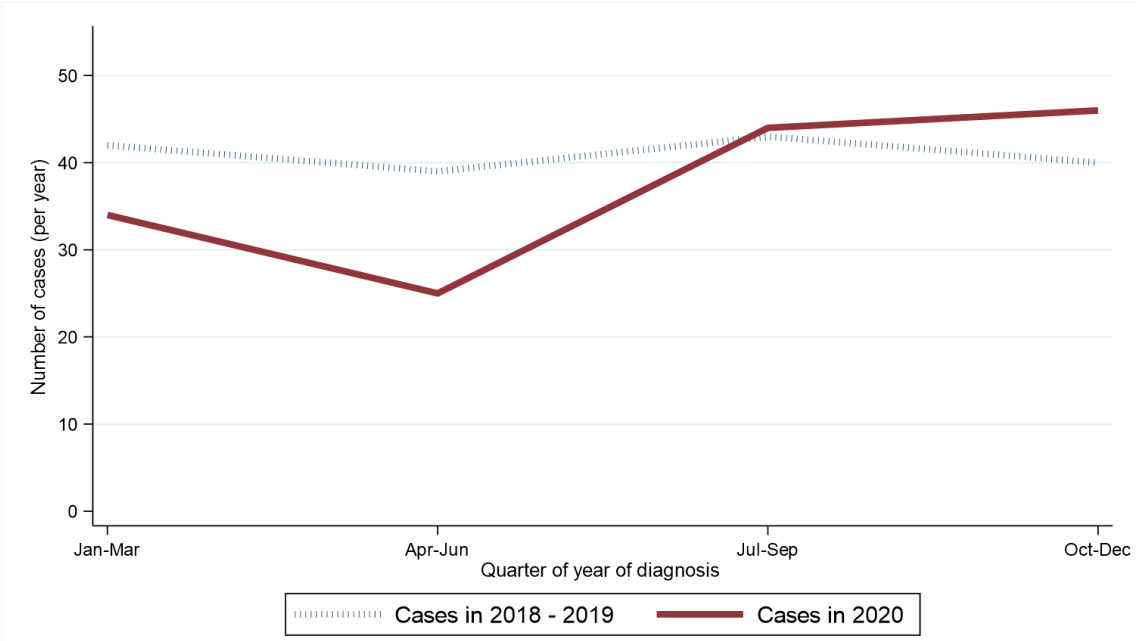
***Table 1: Number of brain cancer cases diagnosed in 2018-2020 by quarter and year of diagnosis***

| Period of diagnosis | Annual total | Quarter of year diagnosed | | | |
|---|---|---|---|---|---|
| | | Jan-Mar | Apr-Jun | Jul-Sept | Oct-Dec |
| **2018-2019*** | 163 | 42 | 39 | 43 | 40 |
| **2020** | 149 | 34 | 25 | 44 | 46 |

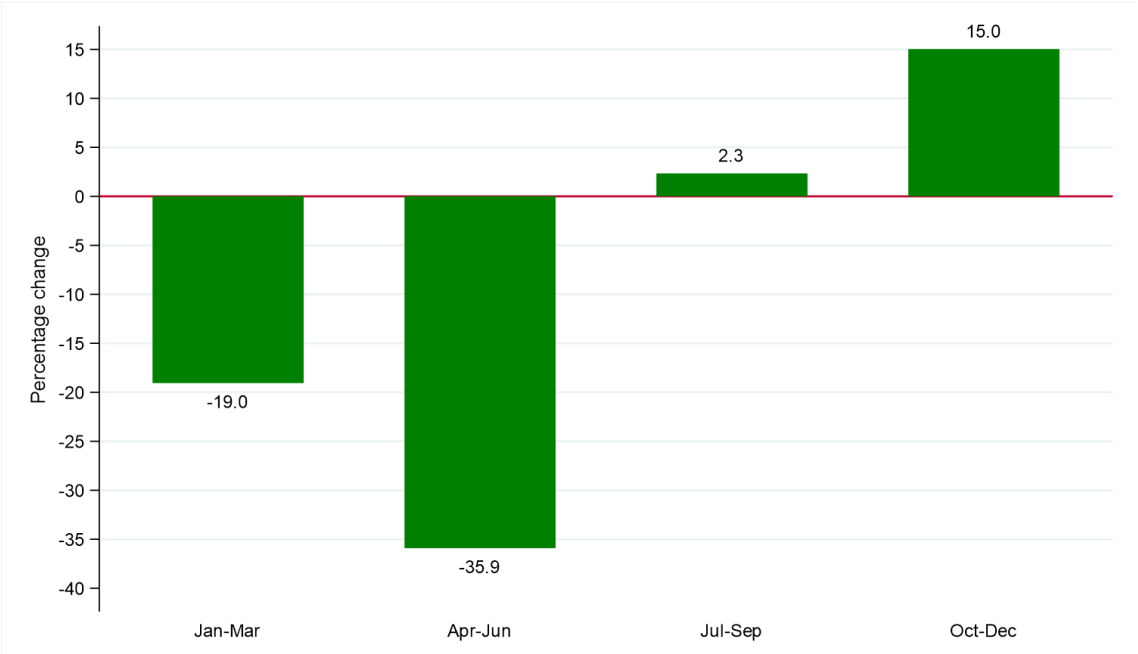
** Average cases per year rounded to the nearest integer. Row sums may thus differ slightly from the total.*

***Figure 1: Number of brain cancer 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 brain cancer cases by quarter of year of diagnosis***



## GENDER

Excluding the first quarter of each year among males the number of cases of brain cancer diagnosed decreased by 19.8% from 81 per year in 2018 - 2019 to 65 in 2020. Between the same two time periods the number of cases among females increased by 25.0% from 40 per year to 50. The change in case distribution by gender between 2018 - 2019 and 2020 was not statistically significant.

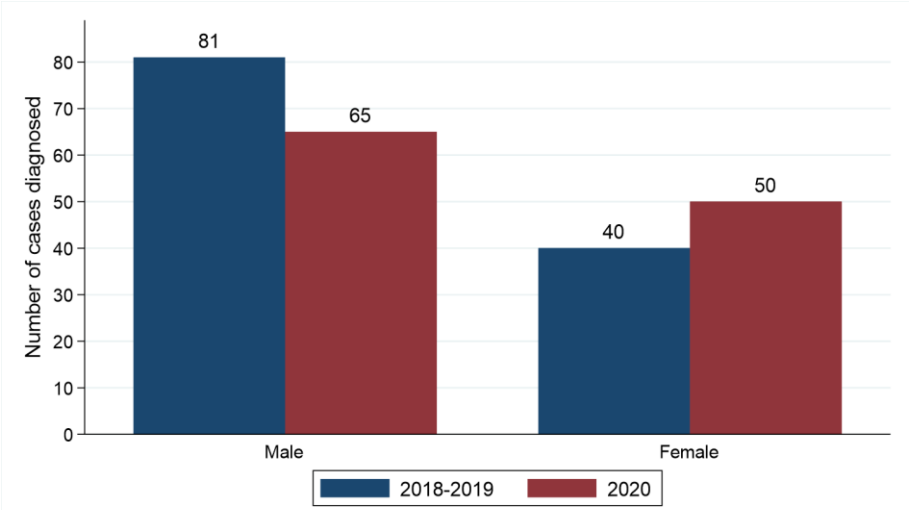
***Table 2: Number and proportion of brain cancer cases diagnosed in April-December of 2018-2020 by gender and period of diagnosis***

| Gender | Period of diagnosis (Apr-Dec) | | Percentage change |
|---|---|---|---|
| | 2018-2019* | 2020 | |
| **Male** | 81 (66.9%) | 65 (56.5%) | -19.8% (16 patients) |
| **Female** | 40 (33.1%) | 50 (43.5%) | +25.0% (10 patients) |
| **All persons** | 121 | 115 | -5.0% (6 patients) |

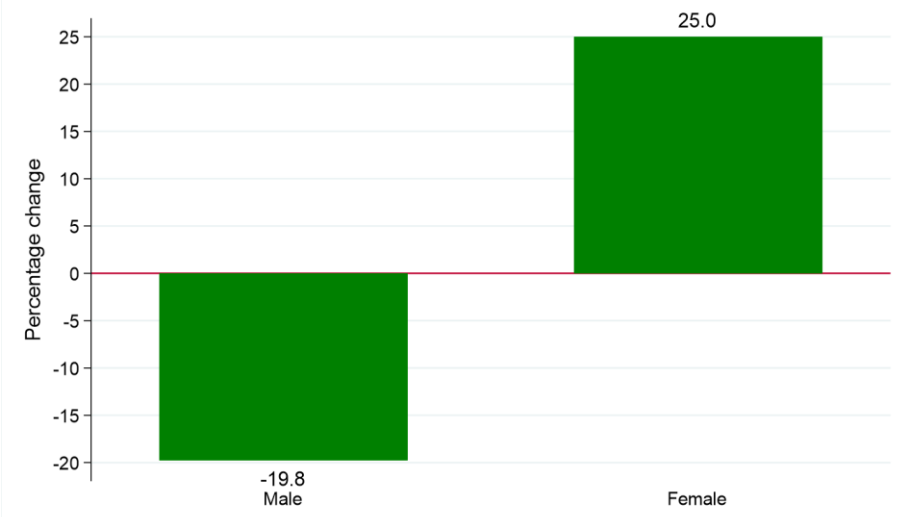
** Average cases per year rounded to the nearest integer. Column sums may thus differ slightly from the total.*

***Figure 2: Brain cancer 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 brain cancer cases by gender***



## AGE

Excluding the first quarter of each year among people aged 65 to 74 the number of cases of brain cancer diagnosed decreased by 30.0% from 30 per year in 2018 - 2019 to 21 in 2020. Between the same two time periods, the number of cases among people aged 0 to 54 increased by 5.9% from 34 per year to 36. The change in case distribution by age between 2018 - 2019 and 2020 was not statistically significant.

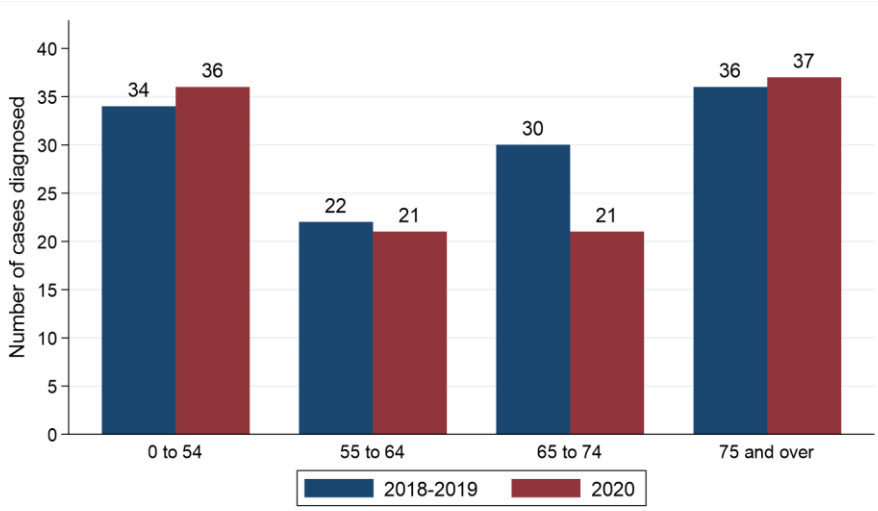
***Table 3: Number and proportion of brain cancer cases diagnosed in April-December of 2018-2020 by age and period of diagnosis***

| Age group | Period of diagnosis (Apr-Dec) | | Percentage change |
|---|---|---|---|
| | 2018-2019* | 2020 | |
| **0 to 54** | 34 (28.1%) | 36 (31.3%) | +5.9% (2 patients) |
| **55 to 64** | 22 (18.2%) | 21 (18.3%) | -4.5% (1 patient) |
| **65 to 74** | 30 (24.8%) | 21 (18.3%) | -30.0% (9 patients) |
| **75 and over** | 36 (29.8%) | 37 (32.2%) | +2.8% (1 patient) |
| **All ages** | 121 | 115 | -5.0% (6 patients) |

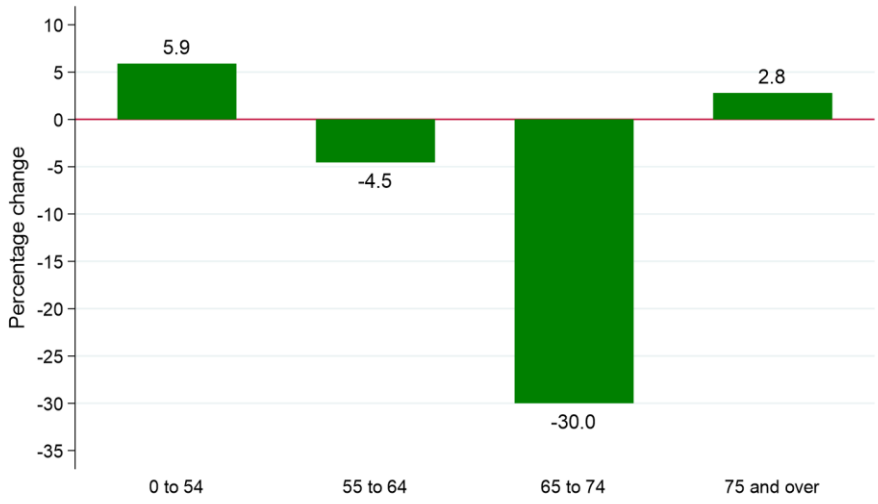
** Average cases per year rounded to the nearest integer. Column sums may thus differ slightly from the total.*

***Figure 3: Brain cancer 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 brain cancer cases by age at diagnosis***



## HEALTH AND SOCIAL CARE TRUST

Excluding the first quarter of each year among residents of Western HSCT the number of cases of brain cancer diagnosed decreased by 28.6% from 21 per year in 2018 - 2019 to 15 in 2020. Between the same two time periods the number of cases among residents of Belfast HSCT increased by 17.4% from 23 per year to 27. The change in case distribution by HSCT between 2018 - 2019 and 2020 was not statistically significant.

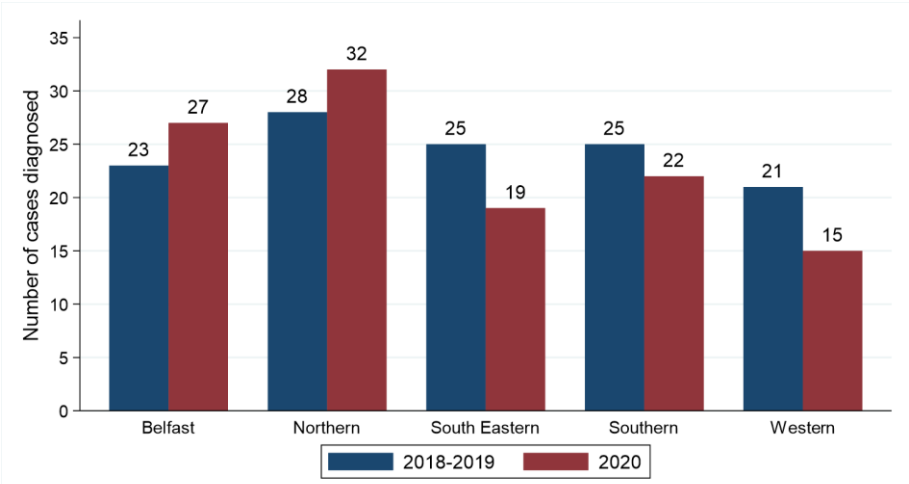
***Table 4: Number and proportion of brain cancer cases diagnosed in April-December of 2018-2020 by Health and Social Care Trust and period of diagnosis***

| Health and Social Care Trust | Period of diagnosis (Apr-Dec) | | Percentage change |
|---|---|---|---|
| | 2018-2019* | 2020 | |
| **Belfast HSCT** | 23 (19.0%) | 27 (23.5%) | +17.4% (4 patients) |
| **Northern HSCT** | 28 (23.1%) | 32 (27.8%) | +14.3% (4 patients) |
| **South Eastern HSCT** | 25 (20.7%) | 19 (16.5%) | -24.0% (6 patients) |
| **Southern HSCT** | 25 (20.7%) | 22 (19.1%) | -12.0% (3 patients) |
| **Western HSCT** | 21 (17.4%) | 15 (13.0%) | -28.6% (6 patients) |
| **Northern Ireland** | 121 | 115 | -5.0% (6 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: Brain cancer 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 brain cancer 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 brain cancer diagnosed decreased by 23.8% from 21 per year in 2018 - 2019 to 16 in 2020. Between the same two time periods the number of cases among residents of the least deprived areas increased by 29.2% from 24 per year to 31. The change in case distribution by deprivation quintile between 2018 - 2019 and 2020 was not statistically significant.

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

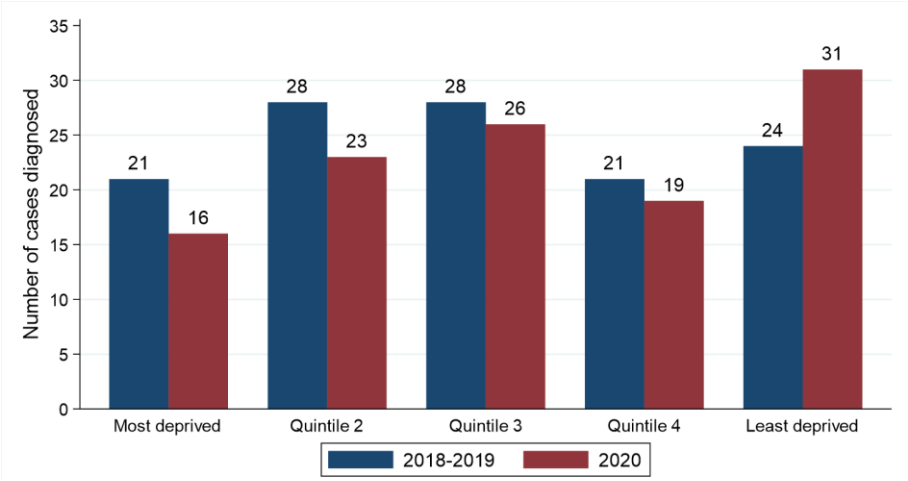
| Deprivation quintile | Period of diagnosis (Apr-Dec) | | Percentage change |
|---|---|---|---|
| | 2018-2019* | 2020 | |
| **Most deprived** | 21 (17.4%) | 16 (13.9%) | -23.8% (5 patients) |
| **Quintile 2** | 28 (23.1%) | 23 (20.0%) | -17.9% (5 patients) |
| **Quintile 3** | 28 (23.1%) | 26 (22.6%) | -7.1% (2 patients) |
| **Quintile 4** | 21 (17.4%) | 19 (16.5%) | -9.5% (2 patients) |
| **Least deprived** | 24 (19.8%) | 31 (27.0%) | +29.2% (7 patients) |
| **Northern Ireland** | 121 | 115 | -5.0% (6 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: Brain cancer 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 brain cancer cases by deprivation quintile***

## BASIS OF DIAGNOSIS

Excluding the first quarter of each year the number of brain cancer 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 11.5% from 52 per year to 46. The change in case distribution by basis of diagnosis between 2018 - 2019 and 2020 was not statistically significant.

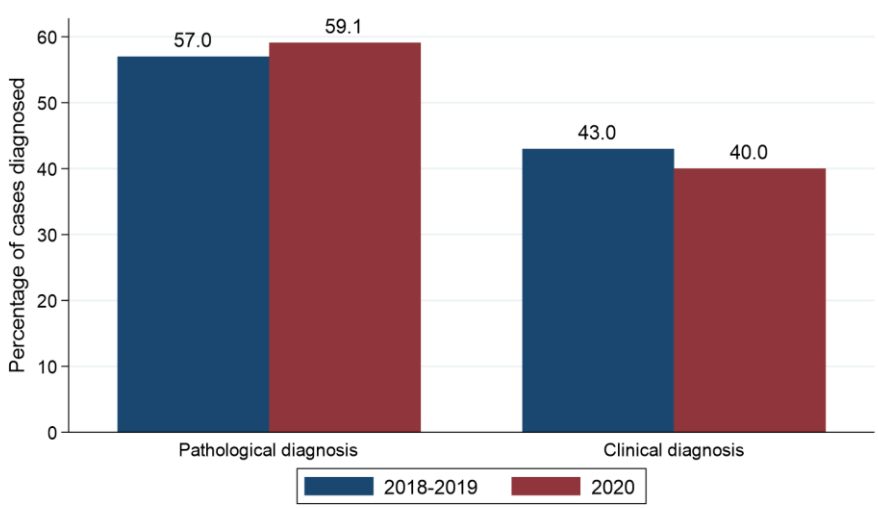
***Table 6: Number and proportion of brain cancer cases diagnosed in April-December of 2018-2020 by basis and period of diagnosis***

| Basis of diagnosis | Period of diagnosis (Apr-Dec) | | Percentage change |
|---|---|---|---|
| | 2018-2019* | 2020 | |
| **Pathological diagnosis** | 69 (57.0%) | 68 (59.1%) | -1.4% (1 patient) |
| **Clinical diagnosis** | 52 (43.0%) | 46 (40.0%) | -11.5% (6 patients) |
| **Death certificate only/Unknown** | 1 (0.8%) | 1 (0.9%) | 0.0% (0 patients) |
| **All groups** | 121 | 115 | -5.0% (6 patients) |

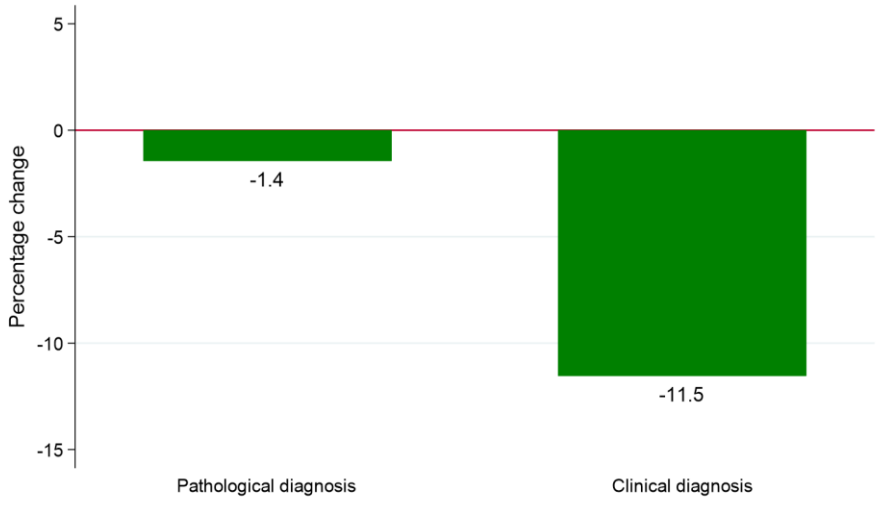
** Average cases per year rounded to the nearest integer. Column sums may thus differ slightly from the total.*

***Figure 6: Brain cancer 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 brain cancer cases by basis of diagnosis***



## METHOD OF HOSPITAL ADMISSION

Excluding the first quarter of each year the number of cases of brain cancer where the patient had an emergency admission recorded as the most recent hospital admission type up to 30 days prior to diagnosis decreased by 4.0% from 50 per year in 2018 - 2019 to 48 in 2020. The change in case distribution by hospital admission type between 2018 - 2019 and 2020 was not statistically significant.

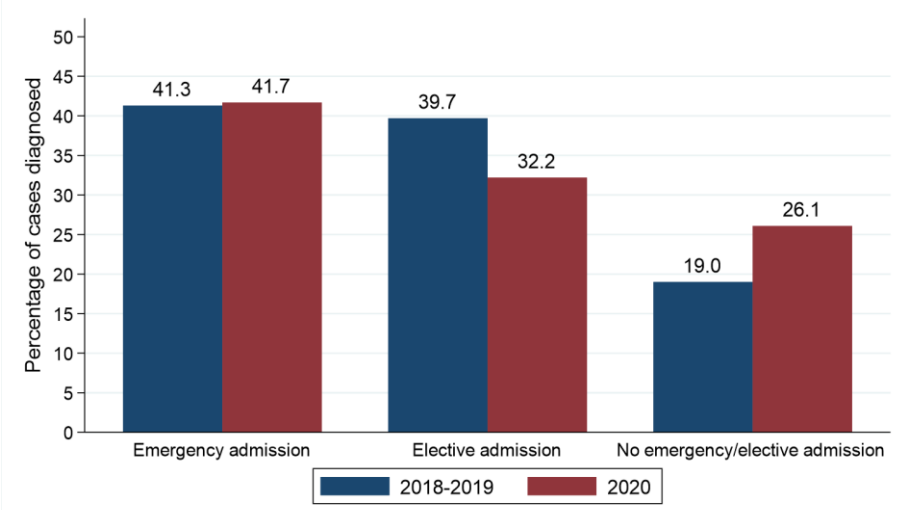
***Table 7: Number and proportion of brain cancer cases diagnosed in April-December of 2018-2020 by method of admission to hospital and period of diagnosis***

| Method of admission to hospital | Period of diagnosis (Apr-Dec) | | Percentage change |
|---|---|---|---|
| | 2018-2019* | 2020 | |
| **Emergency admission** | 50 (41.3%) | 48 (41.7%) | -4.0% (2 patients) |
| **Elective admission** | 48 (39.7%) | 37 (32.2%) | -22.9% (11 patients) |
| **No emergency/elective admission recorded** | 23 (19.0%) | 30 (26.1%) | +30.4% (7 patients) |
| **All persons** | 121 | 115 | -5.0% (6 patients) |

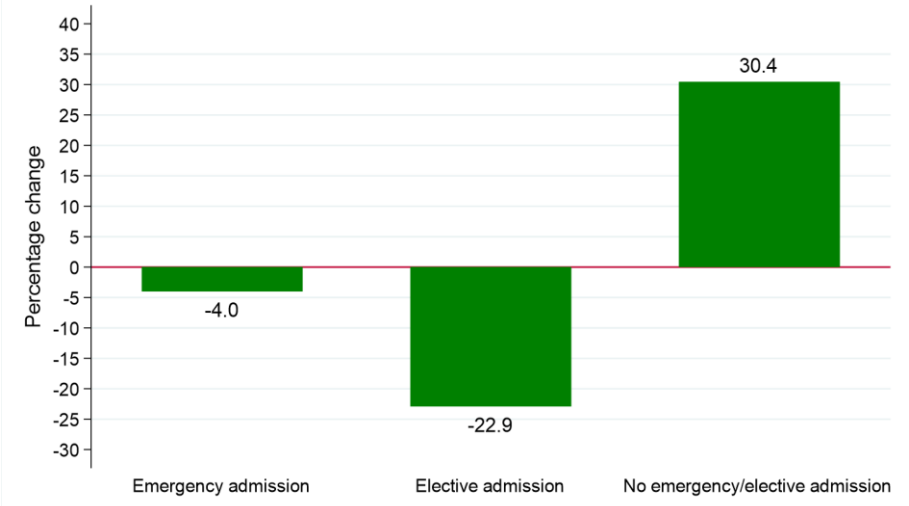
** Average cases per year rounded to the nearest integer. Column sums may thus differ slightly from the total.*

***Figure 7: Brain cancer 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 brain cancer 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

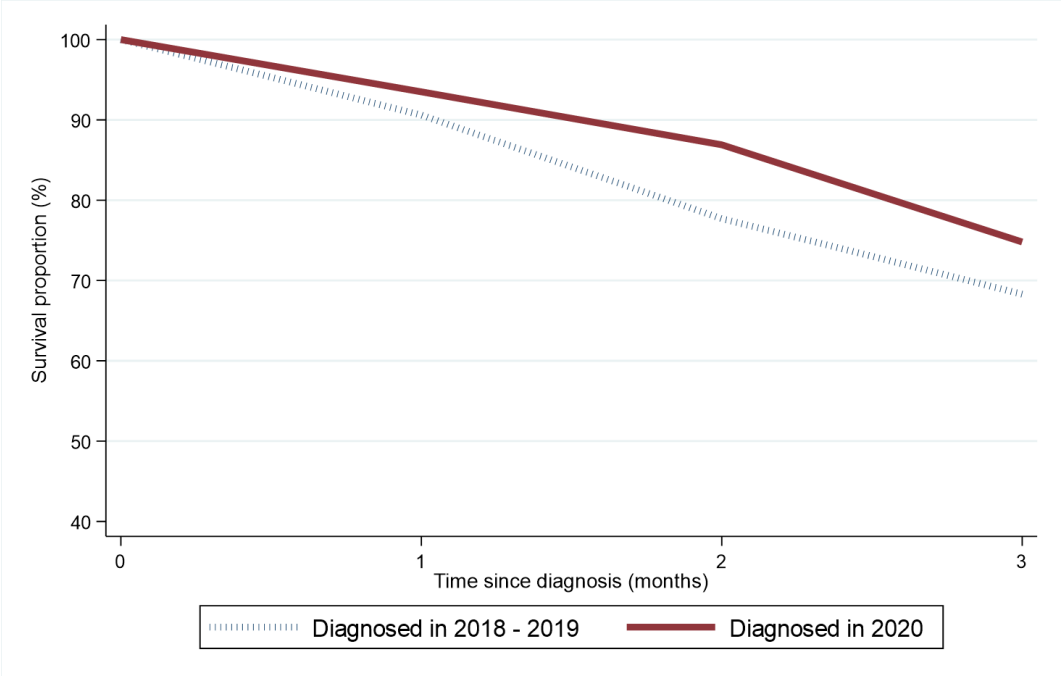
Survival among brain cancer patients one month after diagnosis increased from 90.6% among those diagnosed in April-December of 2018 - 2019 to 93.5% among those diagnosed in April-December of 2020. This change was not statistically significant. Between the same two diagnosis periods, three-month survival increased from 68.3% to 74.8%. This change was not statistically significant.

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

| Survival time | Period of diagnosis (Apr-Dec) | |
|---|---|---|
| | 2018-2019 | 2020 |
| **1 month** | 90.6% (86.0% - 93.8%) | 93.5% (86.8% - 96.8%) |
| **2 months** | 77.7% (71.6% - 82.6%) | 86.9% (78.9% - 92.0%) |
| **3 months** | 68.3% (61.8% - 74.0%) | 74.8% (65.4% - 81.9%) |

*No statistically significant reductions*

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




## NET SURVIVAL

Age-standardised net survival (which takes account of deaths from other causes such as Covid-19) among brain cancer patients one month after diagnosis increased from 93.0% among those diagnosed in April-December of

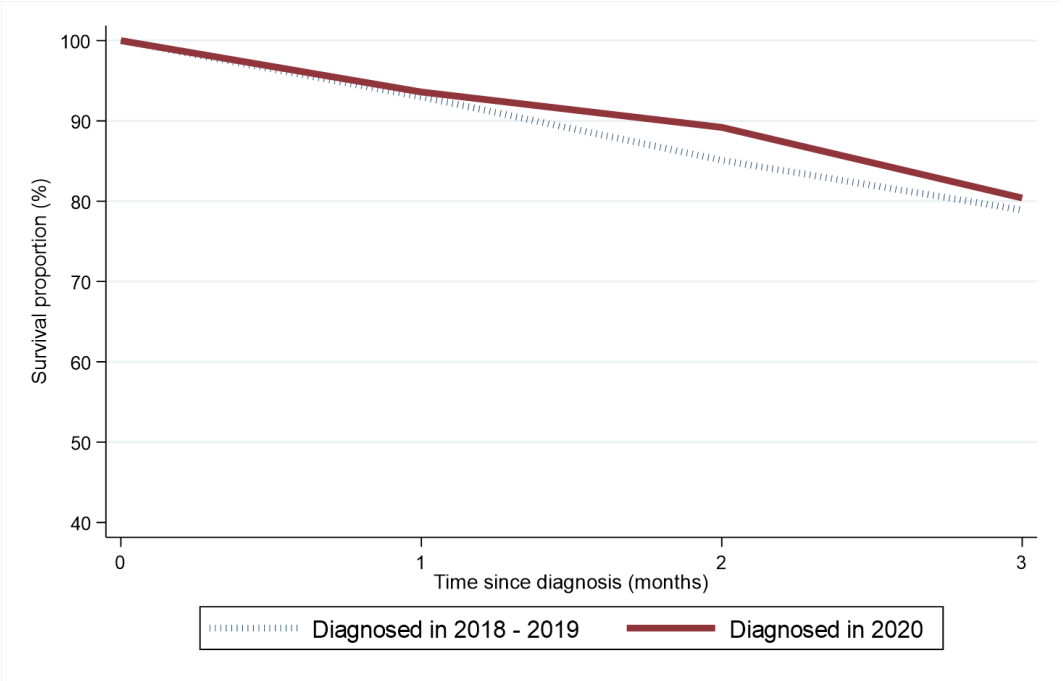
2018 - 2019 to 93.6% among those diagnosed in April-December of 2020. This change was not statistically significant. Between the same two time periods, three-month age-standardised net survival increased from 78.9% to 80.4%. This change was not statistically significant.

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

| Survival time | Period of diagnosis (Apr-Dec) | |
|---|---|---|
| | 2018-2019 | 2020 |
| **1 month** | 93.0% (89.6% - 96.5%) | 93.6% (88.8% - 98.7%) |
| **2 months** | 85.1% (80.7% - 89.7%) | 89.2% (83.6% - 95.2%) |
| **3 months** | 78.9% (73.7% - 84.5%) | 80.4% (73.3% - 88.2%) |

*No statistically significant reductions*

***Figure 9: Age-standardised net survival for patients with brain cancer 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 brain cancer decreased by 1.1% from 94 per year in 2018 - 2019 to 93 in 2020.

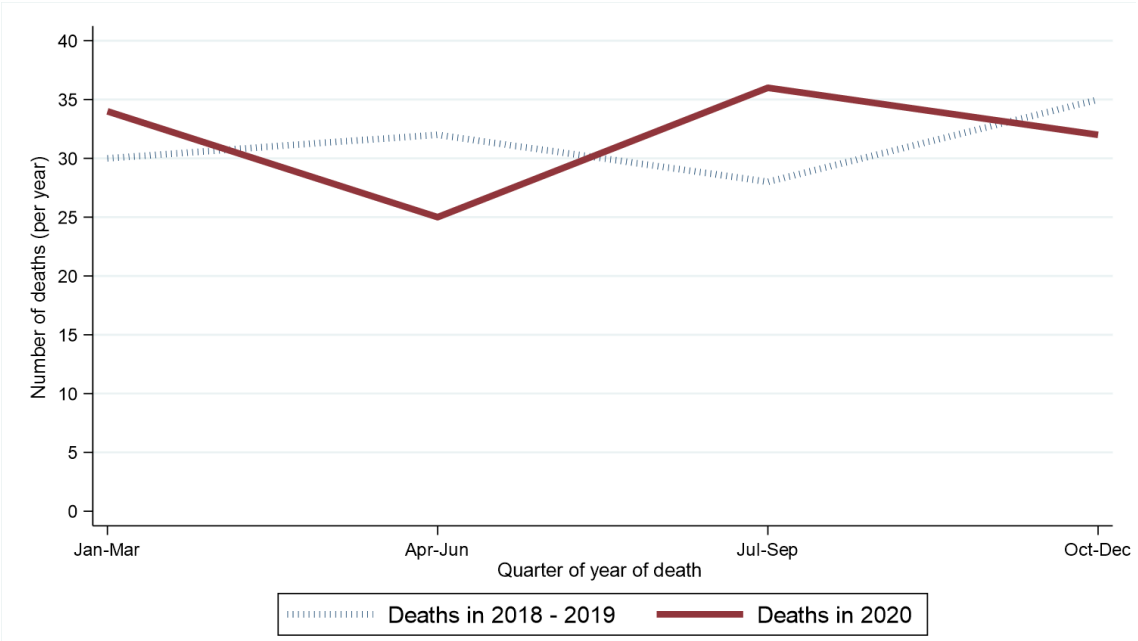
***Table 10: Number of brain cancer deaths in 2018-2020 by quarter and year of death***

| Period of death | Annual total | Quarter of year death occurred | | | |
|---|---|---|---|---|---|
| | | Jan-Mar | Apr-Jun | Jul-Sept | Oct-Dec |
| **2018-2019*** | 124 | 30 | 32 | 28 | 35 |
| **2020** | 127 | 34 | 25 | 36 | 32 |

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

***Figure 10: Number of brain cancer 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 brain cancer deaths by quarter of year of death***