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

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

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## Further information

Further information is available at: [www.qub.ac.uk/research-centres/nicr](http://www.qub.ac.uk/research-centres/nicr)

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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

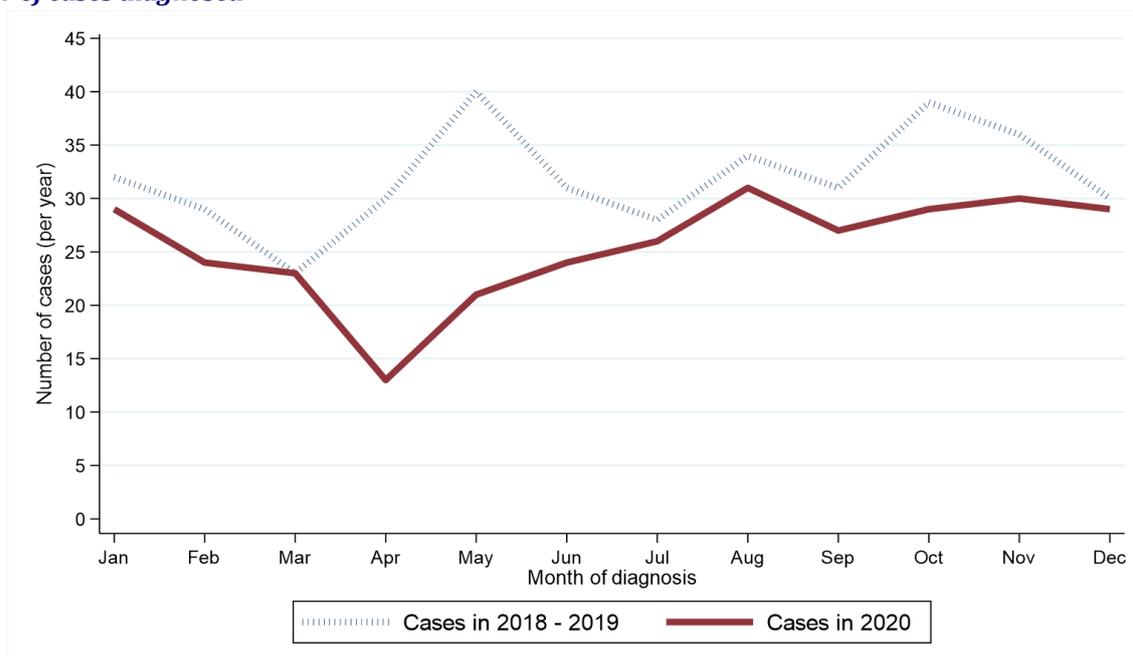
During the April-December period when Covid-19 was present the number of cases of head and neck cancer diagnosed decreased by 22.8% (68 patients) from 298 per year in 2018 - 2019 to 230 in 2020.

**Table 1: Number of head and neck cancer cases diagnosed in 2018-2020 by month and year of diagnosis**

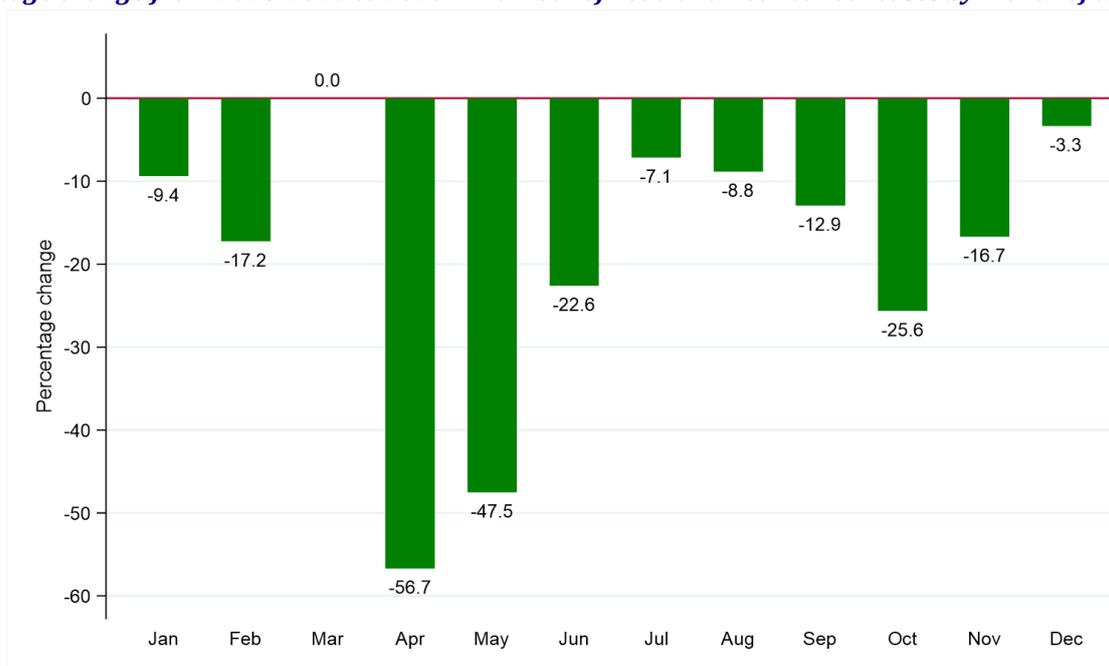
Period of diagnosis	Annual total	Month diagnosed											
		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept	Oct	Nov	Dec
2018-2019*	382	32	29	23	30	40	31	28	34	31	39	36	30
2020	306	29	24	23	13	21	24	26	31	27	29	30	29

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

**Figure 1: Number of head and neck cancer 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 head and neck cancer cases by month of diagnosis



## GENDER

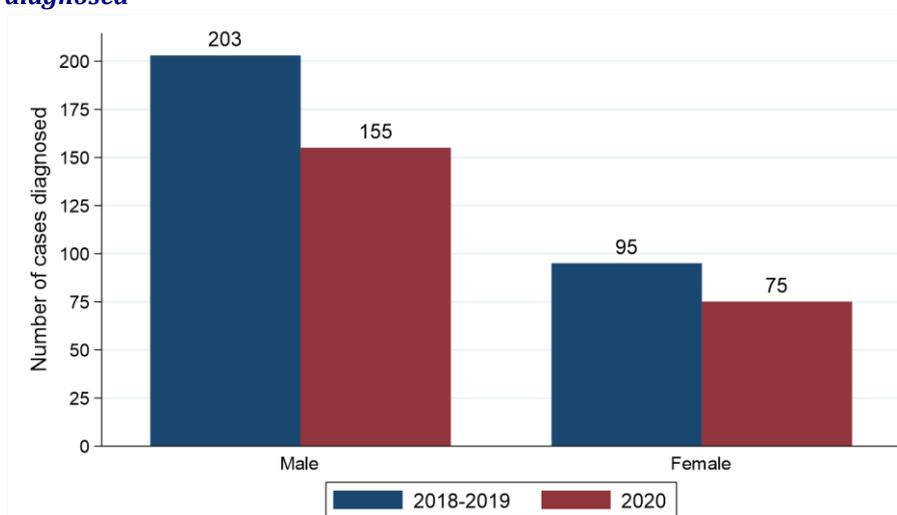
Excluding the first quarter of each year among males the number of cases of head and neck cancer diagnosed decreased by 23.6% from 203 per year in 2018 - 2019 to 155 in 2020. Between the same two time periods the number of cases among females decreased by 21.1% from 95 per year to 75. The change in case distribution by gender between 2018 - 2019 and 2020 was not statistically significant.

**Table 2: Number and proportion of head and neck 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	203 (68.1%)	155 (67.4%)	-23.6% (48 patients)
Female	95 (31.9%)	75 (32.6%)	-21.1% (20 patients)
All persons	298	230	-22.8% (68 patients)

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

**Figure 2: Head and neck 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 head and neck cancer cases by gender**



## AGE

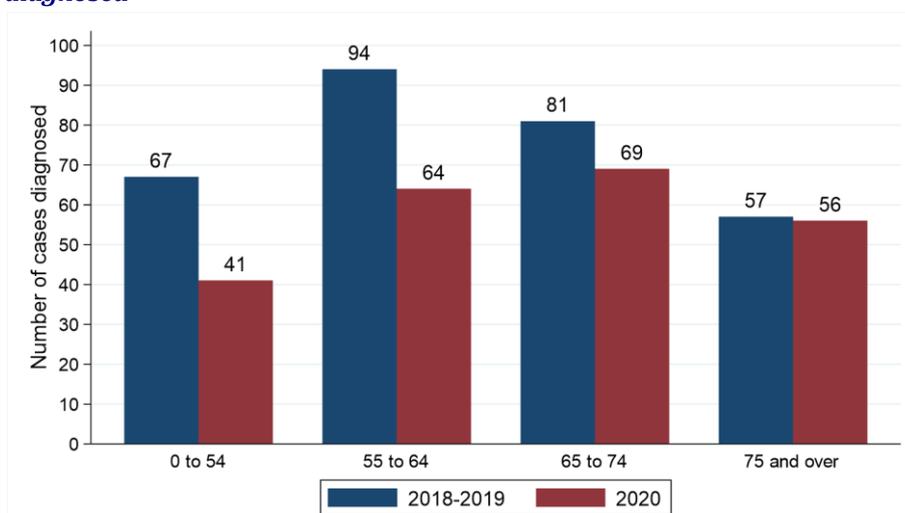
Excluding the first quarter of each year among people aged 0 to 54 the number of cases of head and neck cancer diagnosed decreased by 38.8% from 67 per year in 2018 - 2019 to 41 in 2020. Between the same two time periods, the number of cases among people aged 75 and over decreased by 1.8% from 57 per year to 56. The change in case distribution by age between 2018 - 2019 and 2020 was not statistically significant.

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

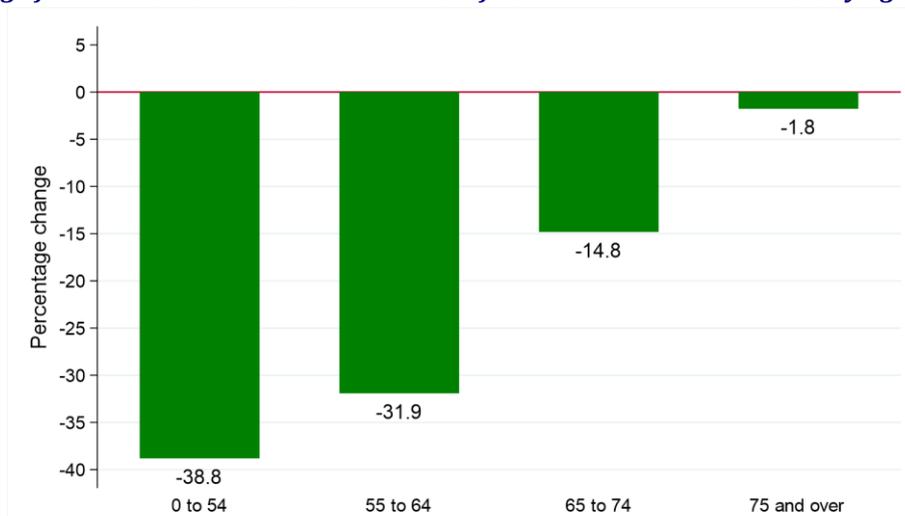
Age group	Period of diagnosis (Apr-Dec)		Percentage change
	2018-2019*	2020	
0 to 54	67 (22.5%)	41 (17.8%)	-38.8% (26 patients)
55 to 64	94 (31.5%)	64 (27.8%)	-31.9% (30 patients)
65 to 74	81 (27.2%)	69 (30.0%)	-14.8% (12 patients)
75 and over	57 (19.1%)	56 (24.3%)	-1.8% (1 patients)
All ages	298	230	-22.8% (68 patients)

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

**Figure 3: Head and neck 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 head and neck cancer 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 head and neck cancer diagnosed decreased by 37.8% from 74 per year in 2018 - 2019 to 46 in 2020. Between the same two time periods the number of cases among residents of Southern HSCT decreased by 4.2% from 48 per year to 46. The change in case distribution by HSCT between 2018 - 2019 and 2020 was not statistically significant.

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

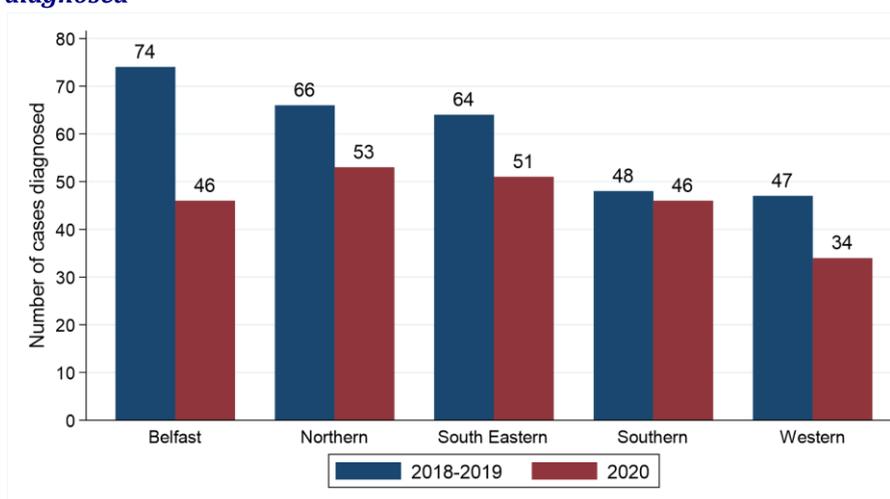
Health and Social Care Trust	Period of diagnosis (Apr-Dec)		Percentage change
	2018-2019*	2020	
Belfast HSCT	74 (24.8%)	46 (20.0%)	-37.8% (28 patients)
Northern HSCT	66 (22.1%)	53 (23.0%)	-19.7% (13 patients)
South Eastern HSCT	64 (21.5%)	51 (22.2%)	-20.3% (13 patients)
Southern HSCT	48 (16.1%)	46 (20.0%)	-4.2% (2 patients)
Western HSCT	47 (15.8%)	34 (14.8%)	-27.7% (13 patients)
Northern Ireland	298	230	-22.8% (68 patients)

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

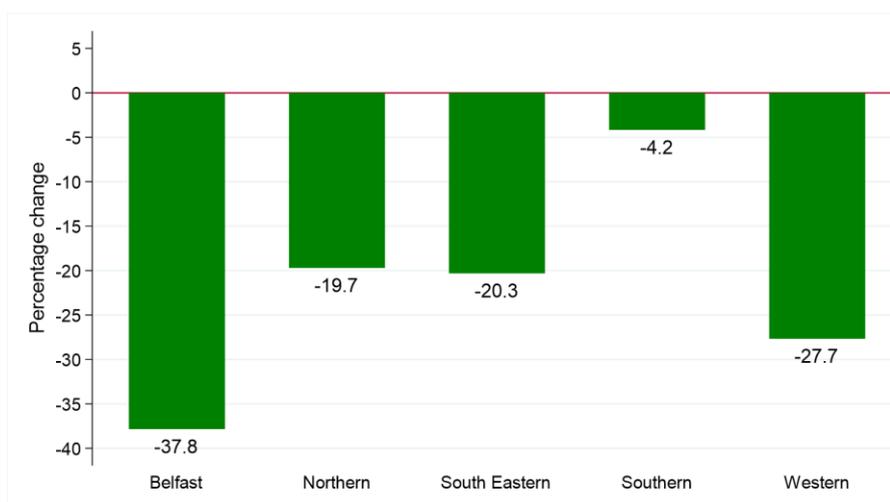
Note: Cases with unknown Health and Social Care Trust are included in totals

**Figure 4: Head and neck 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 head and neck 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 head and neck cancer diagnosed decreased by 23.5% from 81 per year in 2018 - 2019 to 62 in 2020. Between the same two time periods the number of cases among residents of the least deprived areas decreased by 36.5% from 52 per year to 33. The change in case distribution by deprivation quintile between 2018 - 2019 and 2020 was not statistically significant.

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

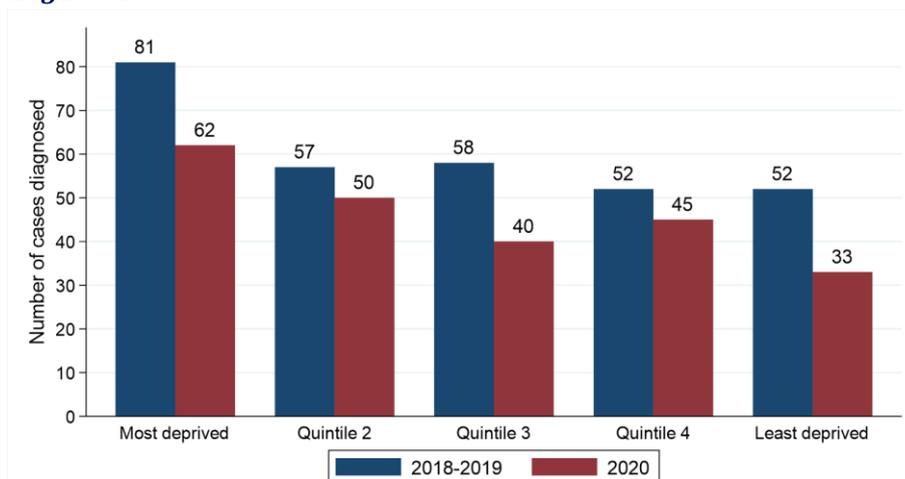
Deprivation quintile	Period of diagnosis (Apr-Dec)		Percentage change
	2018-2019*	2020	
Most deprived	81 (27.2%)	62 (27.0%)	-23.5% (19 patients)
Quintile 2	57 (19.1%)	50 (21.7%)	-12.3% (7 patients)
Quintile 3	58 (19.5%)	40 (17.4%)	-31.0% (18 patients)
Quintile 4	52 (17.4%)	45 (19.6%)	-13.5% (7 patients)
Least deprived	52 (17.4%)	33 (14.3%)	-36.5% (19 patients)
Northern Ireland	298	230	-22.8% (68 patients)

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

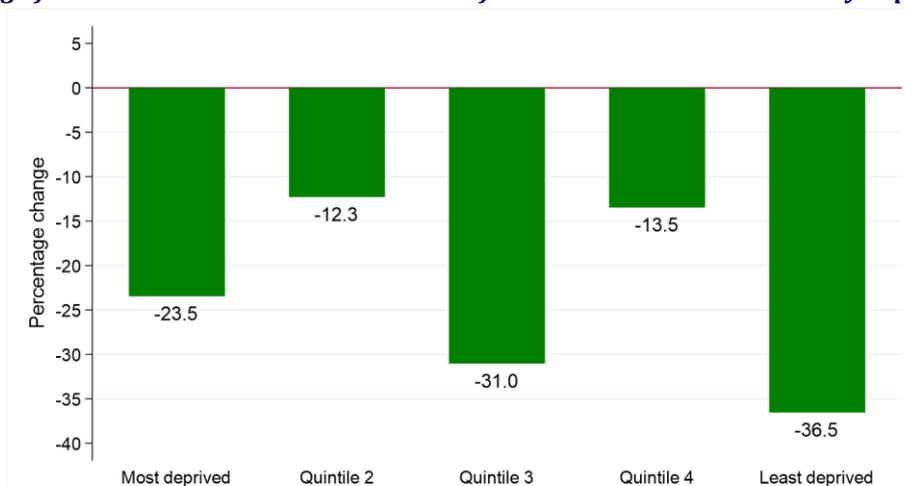
Note: Cases with unknown deprivation quintile are included in totals

**Figure 5: Head and neck 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 head and neck cancer cases by deprivation quintile



## STAGE

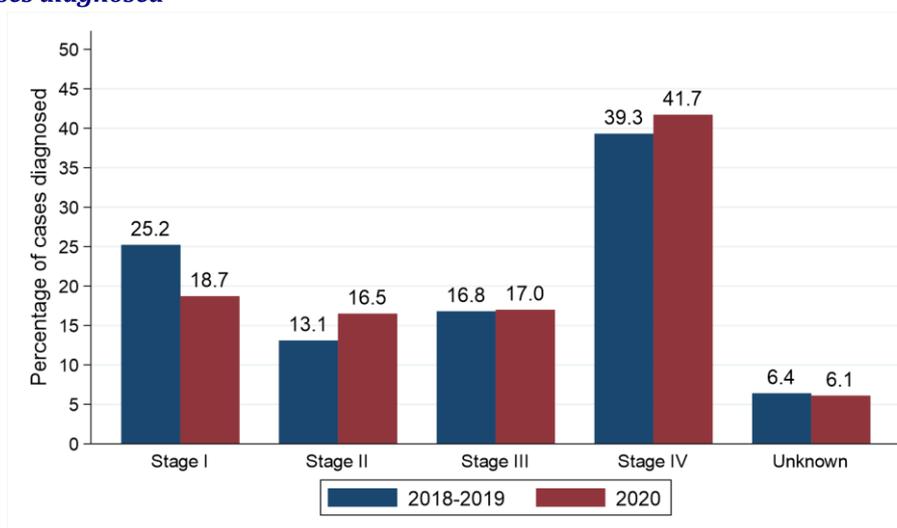
Excluding the first quarter of each year the number of head and neck cancer cases diagnosed at Stage I decreased by 42.7% from 75 per year in 2018 - 2019 to 43 in 2020. Between the same two time periods the number of cases diagnosed at Stage IV increased by 17.9% from 96 per year to 117. The change in case distribution by stage at diagnosis between 2018 - 2019 and 2020 was not statistically significant.

**Table 6: Number and proportion of head and neck cancer cases diagnosed in April-December of 2018-2020 by stage at diagnosis and period of diagnosis**

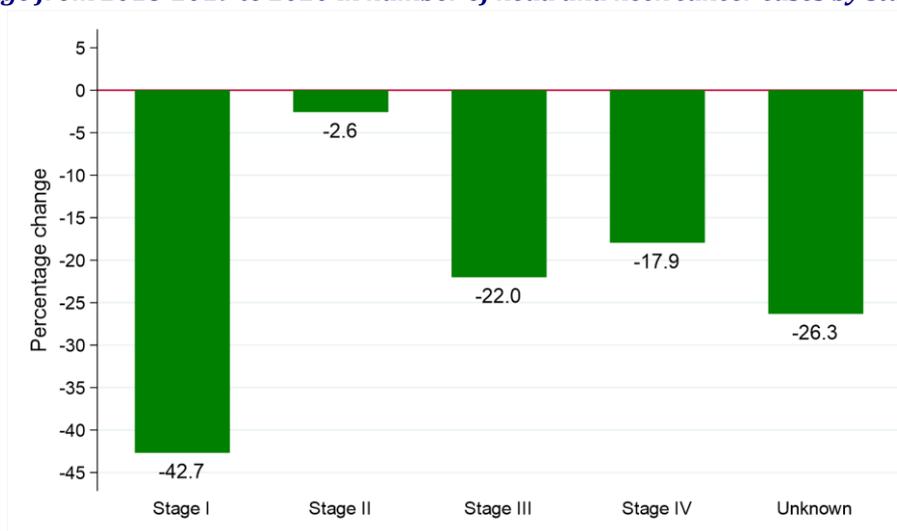
Stage at diagnosis	Period of diagnosis (Apr-Dec)		Percentage change
	2018-2019*	2020	
Stage I	75 (25.2%)	43 (18.7%)	-42.7% (32 patients)
Stage II	39 (13.1%)	38 (16.5%)	-2.6% (1 patients)
Stage III	50 (16.8%)	39 (17.0%)	-22.0% (11 patients)
Stage IV	117 (39.3%)	96 (41.7%)	-17.9% (21 patients)
Unknown	19 (6.4%)	14 (6.1%)	-26.3% (5 patients)
All stages	298	230	-22.8% (68 patients)

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

**Figure 6: Head and neck cancer 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 head and neck cancer cases by stage at diagnosis



## METHOD OF HOSPITAL ADMISSION

Excluding the first quarter of each year the number of cases of head and neck cancer where the patient had an emergency admission recorded as the most recent hospital admission type up to 30 days prior to diagnosis increased by 53.3% from 15 per year in 2018 - 2019 to 23 in 2020. The change in case distribution by hospital admission type between 2018 - 2019 and 2020 was statistically significant ( $p = 0.011$ ).

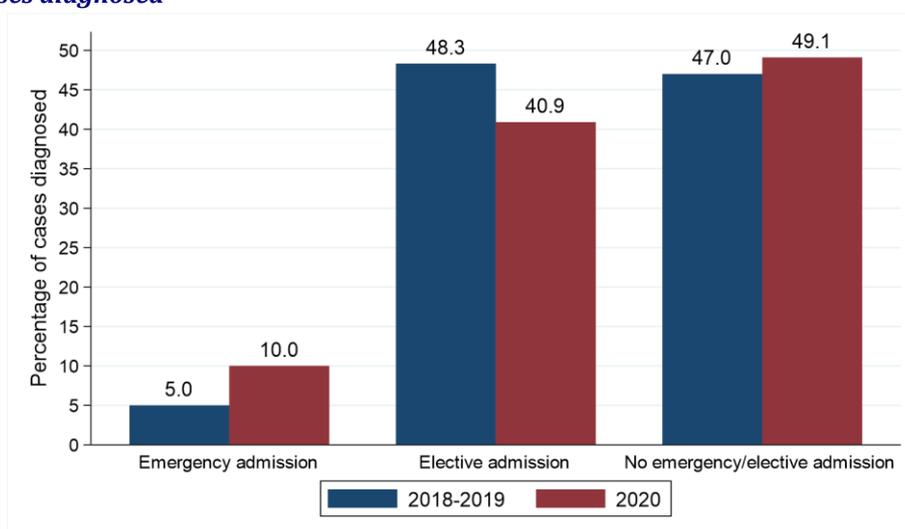
**Table 7: Number and proportion of head and neck cancer cases diagnosed in April-December of 2018-2020 by method of admission to hospital and period of diagnosis**

Method of admission to hospital	Period of diagnosis (Apr-Dec)		Percentage change
	2018-2019*	2020	
Emergency admission	15 (5.0%)	23 (10.0%)	+53.3% (8 patients)
Elective admission	144 (48.3%)	94 (40.9%)	-34.7% (50 patients)
No emergency/elective admission recorded	140 (47.0%)	113 (49.1%)	-19.3% (27 patients)
All persons	298	230	-22.8% (68 patients)

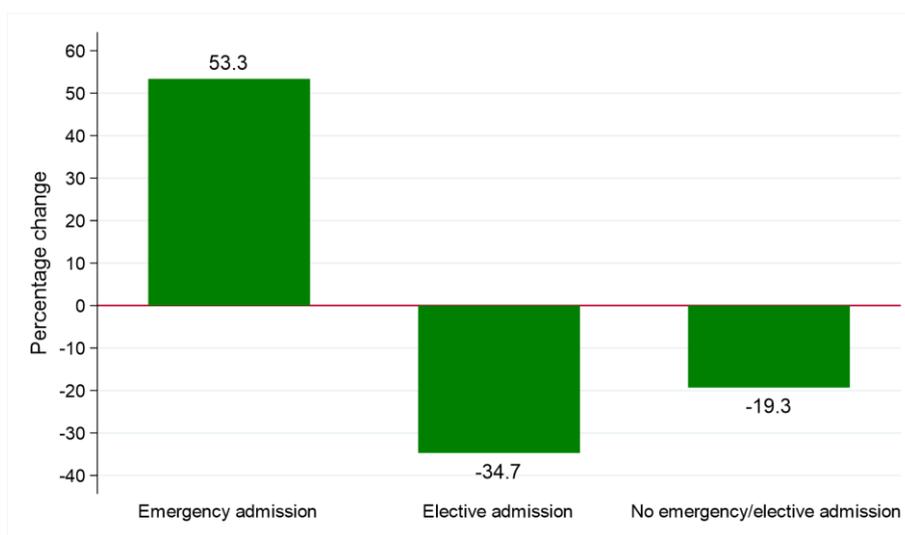
\* Average cases per year rounded to the nearest integer. Column sums may thus differ slightly from the total.

**Figure 7: Head and neck 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 head and neck cancer cases by method of admission to hospital**



## TREATMENT

Excluding the first quarter of each year the number of head and neck cancer cases where the patient was treated with surgery (within six months of diagnosis) decreased by 32.4% from 136 per year for those diagnosed in 2018 - 2019 to 92 for those diagnosed in 2020. The resulting change in the proportion receiving surgery from 45.6% in 2018 - 2019 to 40.0% in 2020 was not statistically significant.

Between the same two time periods the number of cases where the patient was treated with chemotherapy (within six months) decreased by 21.7% from 60 per year to 47. The resulting change in the proportion receiving chemotherapy from 20.1% in 2018 - 2019 to 20.4% in 2020 was not statistically significant.

The number of head and neck cancer cases where the patient was treated with radiotherapy (within six months of diagnosis) decreased by 25.5% from 184 per year for those diagnosed in April-December of 2018 - 2019 to 137 for those diagnosed in April-December of 2020. The resulting change in the proportion receiving radiotherapy from 61.7% in 2018 - 2019 to 59.6% in 2020 was not statistically significant.

The proportion of patients receiving none of surgery, chemotherapy or radiotherapy (within six months of diagnosis) who were diagnosed in April-December 2020 was 19.1%. This compared to 12.1% of those diagnosed in 2018 - 2019. This change was statistically significant ( $p = 0.009$ ).

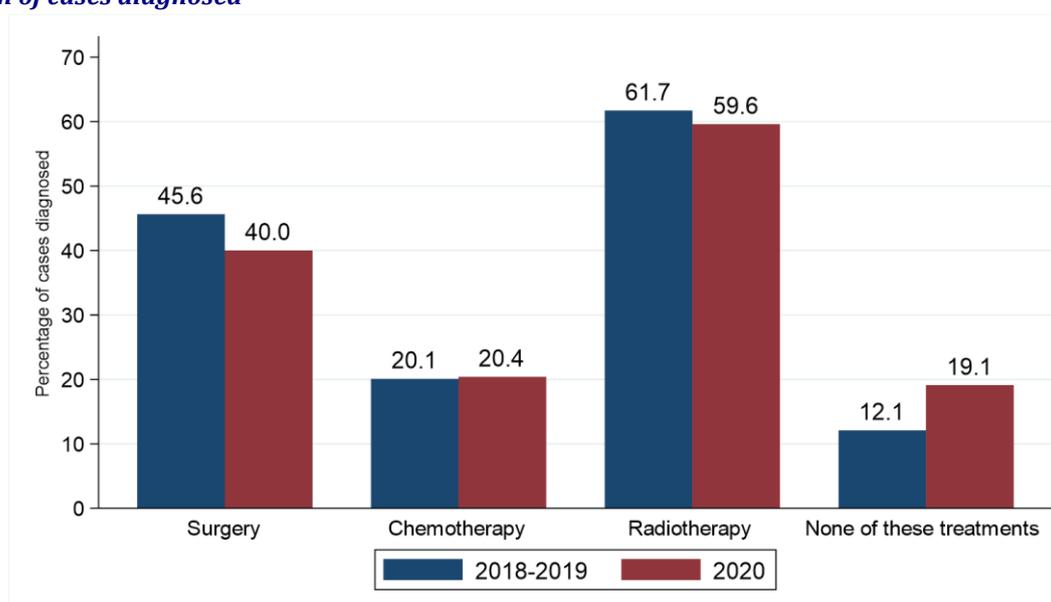
**Table 8: Number and proportion of head and neck cancer cases diagnosed in April-December of 2018-2020 by treatment type and period of diagnosis**

Treatment type	Period of diagnosis (Apr-Dec)		Percentage change
	2018-2019 average	2020	
<b>Surgery</b>	136 (45.6%)	92 (40.0%)	-32.4% (44 patients)
<b>Chemotherapy</b>	60 (20.1%)	47 (20.4%)	-21.7% (13 patients)
<b>Radiotherapy</b>	184 (61.7%)	137 (59.6%)	-25.5% (47 patients)
<b>None of these treatments</b>	36 (12.1%)	44 (19.1%)*	+22.2% (8 patients)

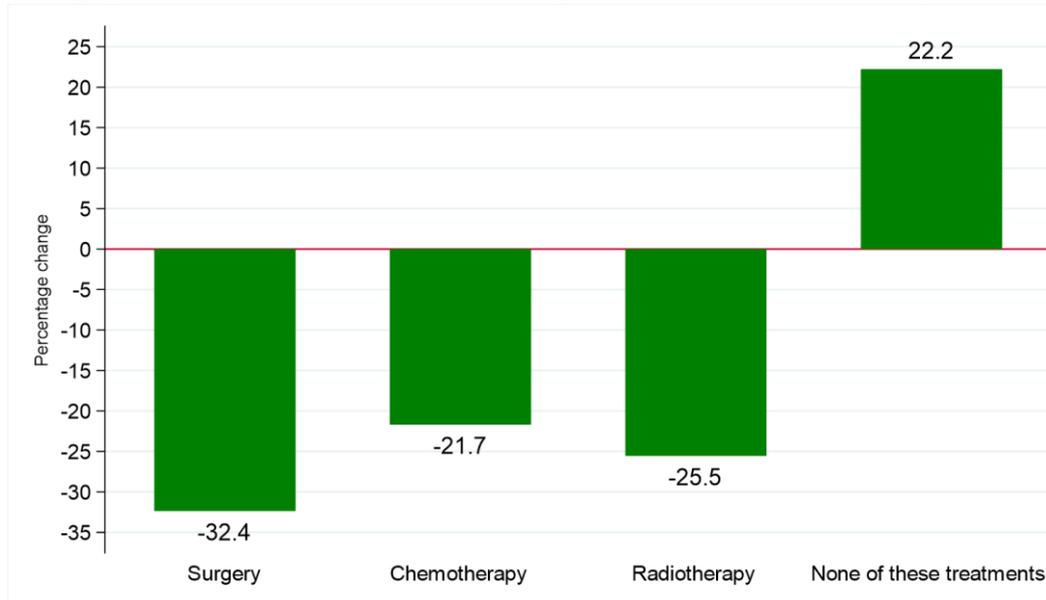
\* Statistically significant change

**Figure 8: Head and neck cancer cases diagnosed in April-December of 2018-2020 by treatment received and period of diagnosis**

**(a) Proportion of cases diagnosed**



*(b) Percentage change from 2018-2019 to 2020 in number of head and neck cancer cases by treatment received*



## 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

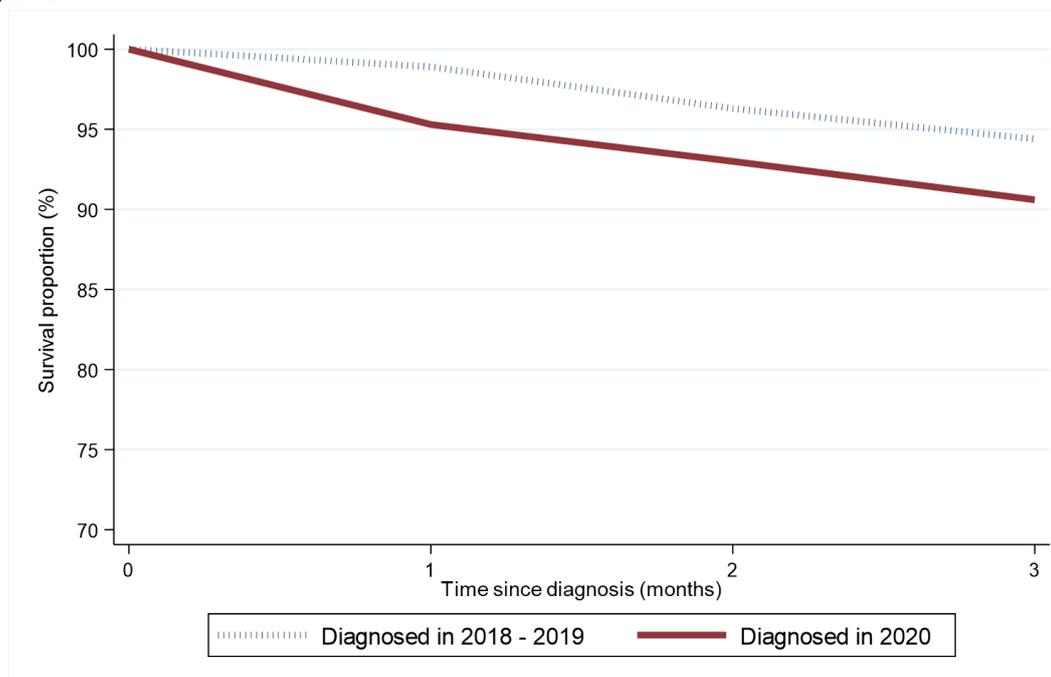
Survival among head and neck cancer patients one month after diagnosis decreased from 98.9% among those diagnosed in April-December of 2018 - 2019 to 95.3% among those diagnosed in April-December of 2020. This change was statistically significant. Between the same two diagnosis periods, three-month survival decreased from 94.4% to 90.6%. This change was not statistically significant.

**Table 9: Observed survival for patients with head and neck cancer diagnosed in April-December of 2018-2020 by period of diagnosis**

Survival time	Period of diagnosis (Apr-Dec)	
	2018-2019	2020
<b>1 month</b>	98.9% (97.7% - 99.5%)	95.3% (91.5% - 97.4%)*
<b>2 months</b>	96.3% (94.4% - 97.6%)	93.0% (88.6% - 95.7%)
<b>3 months</b>	94.4% (92.2% - 96.0%)	90.6% (85.8% - 93.8%)

\* Statistically significant reduction

**Figure 9: Observed survival for patients with head and neck cancer diagnosed in April-December of 2018-2020 by period of diagnosis**



## DEATHS FROM COVID-19

During 2020 there were a total of 12 deaths from Covid-19 among head and neck cancer patients diagnosed at any point since 1993.

## NET SURVIVAL

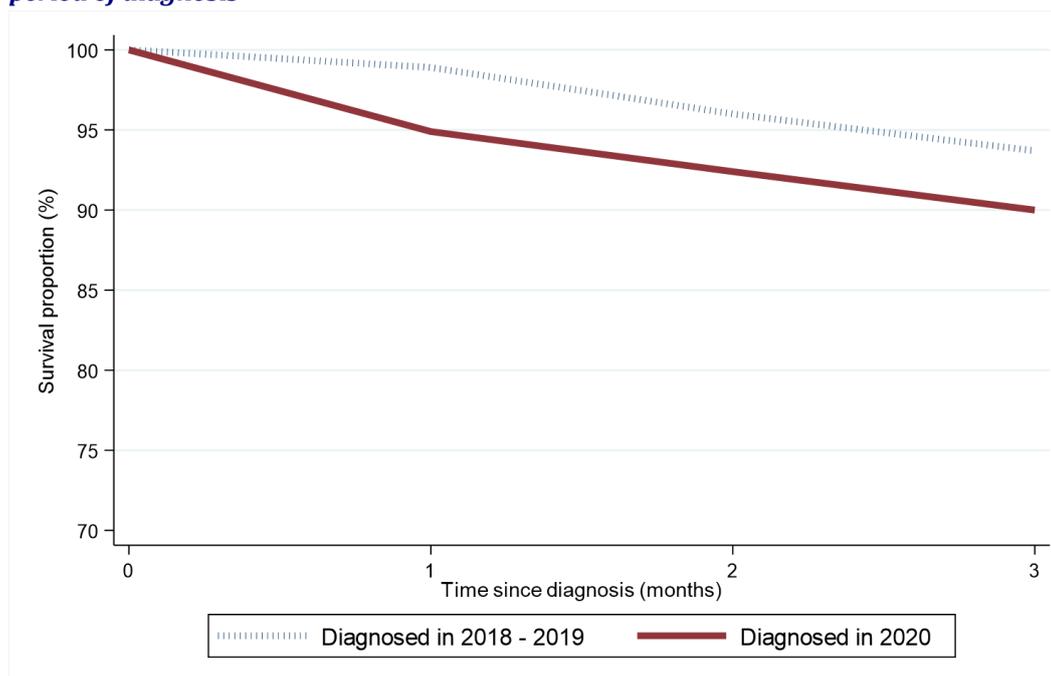
Age-standardised net survival (which takes account of deaths from other causes such as Covid-19) among head and neck cancer patients one month after diagnosis decreased from 98.9% among those diagnosed in April-December of 2018 - 2019 to 94.9% among those diagnosed in April-December of 2020. This change was not statistically significant. Between the same two time periods, three-month age-standardised net survival decreased from 93.7% to 90.0%. This change was not statistically significant.

**Table 10: Age-standardised net survival for patients with head and neck cancer diagnosed in April-December of 2018-2020 by period of diagnosis**

Survival time	Period of diagnosis (Apr-Dec)	
	2018-2019	2020
<b>1 month</b>	98.9% (97.9% - 99.9%)	94.9% (91.6% - 98.3%)
<b>2 months</b>	96.0% (94.1% - 97.9%)	92.4% (88.5% - 96.5%)
<b>3 months</b>	93.7% (91.3% - 96.1%)	90.0% (85.5% - 94.7%)

*No statistically significant reductions*

**Figure 10: Age-standardised net survival for patients with head and neck cancer diagnosed in April-December of 2018-2020 by period of diagnosis**



# CANCER MORTALITY

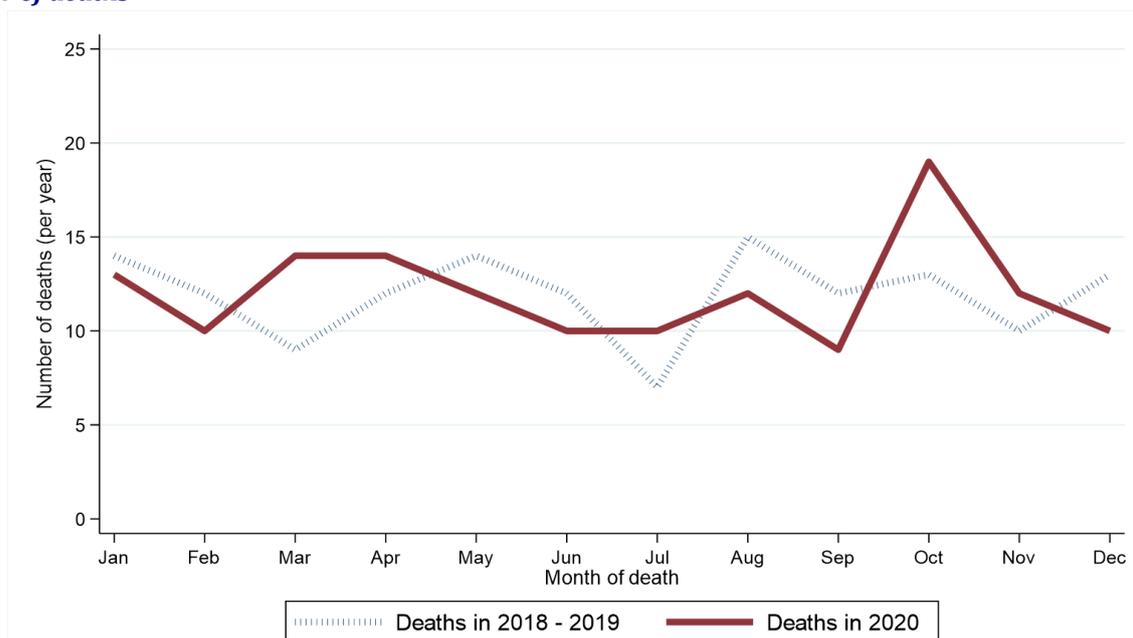
During the April-December period when Covid-19 was present the number of deaths from head and neck cancer increased by 2.9% from 105 per year in 2018 - 2019 to 108 in 2020.

**Table 11: Number of head and neck cancer 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*	139	14	12	9	12	14	12	7	15	12	13	10	13
2020	145	13	10	14	14	12	10	10	12	9	19	12	10

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

**Figure 11: Number of head and neck cancer 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 head and neck cancer deaths by month of death

