Impact of Covid-19 on incidence, survival and mortality of malignant melanoma 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.

N. Ireland Cancer Registry

Queen's University Belfast

HSC Public Health Agency

INCIDENCE

During the April-December period when Covid-19 was present the number of cases of malignant melanoma diagnosed decreased by 38.6% (129 patients) from 334 per year in 2018 - 2019 to 205 in 2020.

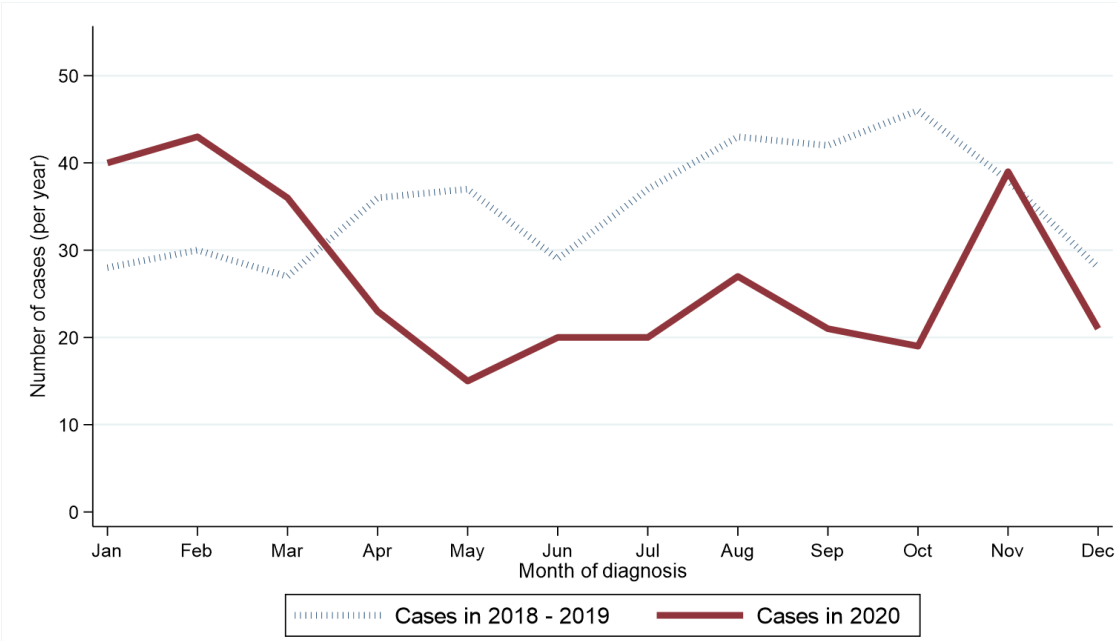
Table 1: Number of malignant melanoma cases diagnosed in 2018-2020 by month and year of diagnosis

Period of diagnosis	Annual total	Month diagnosed											
		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept	Oct	Nov	Dec
2018-2019*	419	28	30	27	36	37	29	37	43	42	46	38	28
2020	324	40	43	36	23	15	20	20	27	21	19	39	21

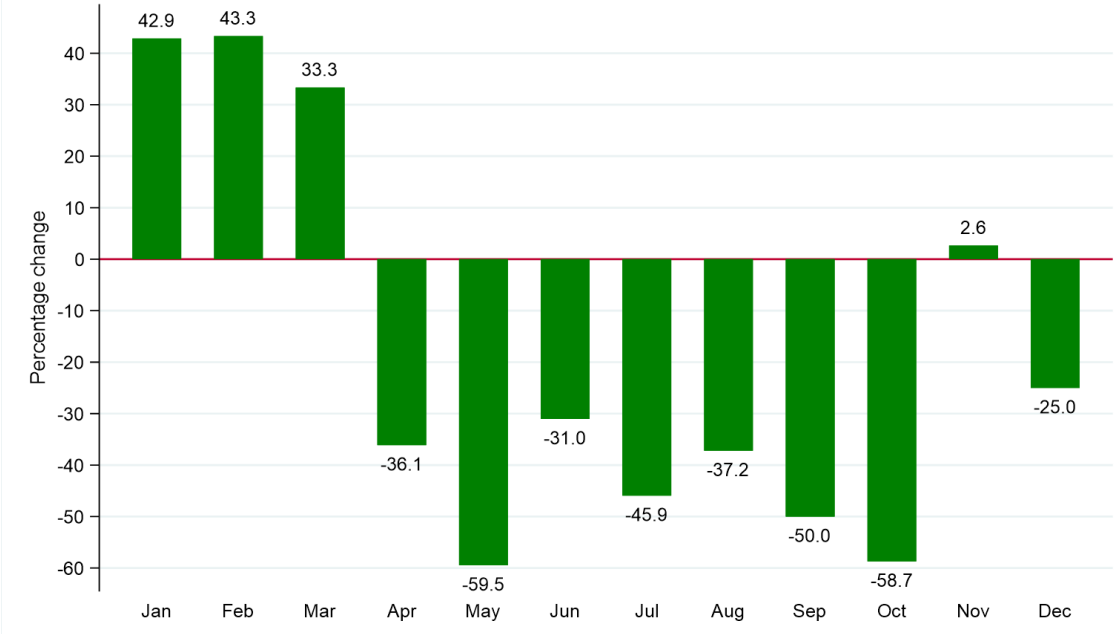
** Average cases per year rounded to the nearest integer. Row sums may thus differ slightly from the total.*

Figure 1: Number of malignant melanoma 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 malignant melanoma cases by month of diagnosis



GENDER

Excluding the first quarter of each year among males the number of cases of malignant melanoma diagnosed decreased by 39.3% from 150 per year in 2018 - 2019 to 91 in 2020. Between the same two time periods the number of cases among females decreased by 38.4% from 185 per year to 114. The change in case distribution by gender between 2018 - 2019 and 2020 was not statistically significant.

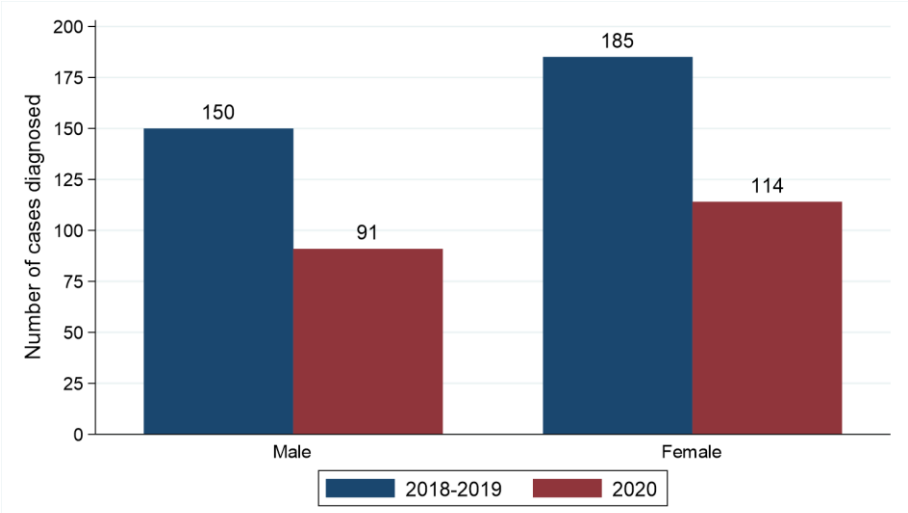
Table 2: Number and proportion of malignant melanoma cases diagnosed in April-December of 2018-2020 by gender and period of diagnosis

Gender	Period of diagnosis (Apr-Dec)		Percentage change
	2018-2019*	2020	
Male	150 (44.9%)	91 (44.4%)	-39.3% (59 patients)
Female	185 (55.4%)	114 (55.6%)	-38.4% (71 patients)
All persons	334	205	-38.6% (129 patients)

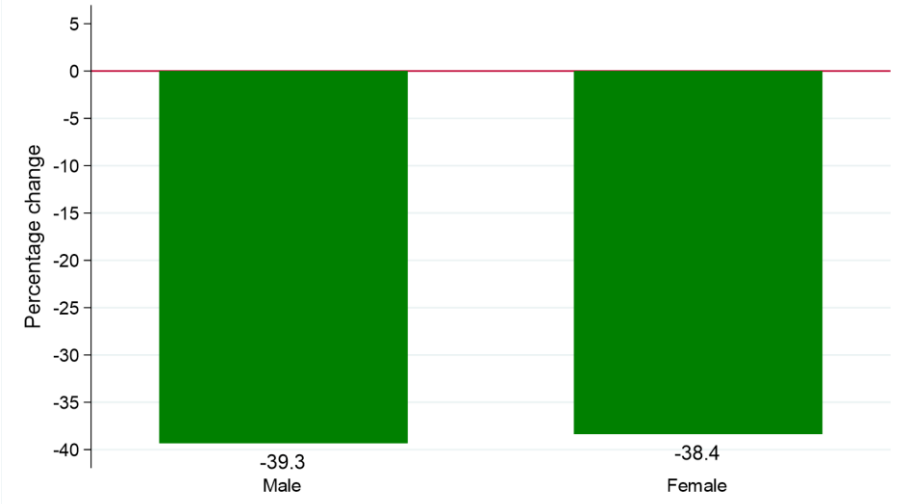
** Average cases per year rounded to the nearest integer. Column sums may thus differ slightly from the total.*

Figure 2: Malignant melanoma 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 malignant melanoma cases by gender



AGE

Excluding the first quarter of each year among people aged 65 to 74 the number of cases of malignant melanoma diagnosed decreased by 49.3% from 75 per year in 2018 - 2019 to 38 in 2020. Between the same two time periods, the number of cases among people aged 55 to 64 decreased by 15.1% from 53 per year to 45. The change in case distribution by age between 2018 - 2019 and 2020 was not statistically significant.

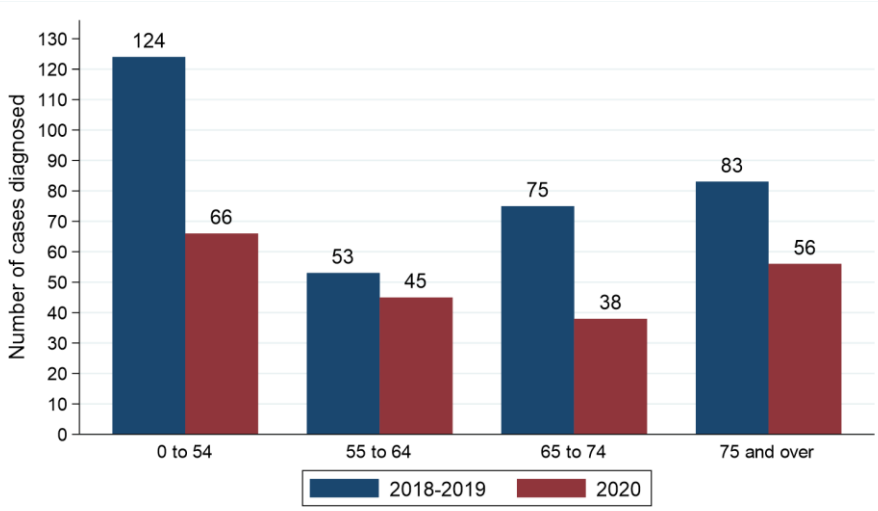
Table 3: Number and proportion of malignant melanoma cases diagnosed in April-December of 2018-2020 by age and period of diagnosis

Age group	Period of diagnosis (Apr-Dec)		Percentage change
	2018-2019*	2020	
0 to 54	124 (37.1%)	66 (32.2%)	-46.8% (58 patients)
55 to 64	53 (15.9%)	45 (22.0%)	-15.1% (8 patients)
65 to 74	75 (22.5%)	38 (18.5%)	-49.3% (37 patients)
75 and over	83 (24.9%)	56 (27.3%)	-32.5% (27 patients)
All ages	334	205	-38.6% (129 patients)

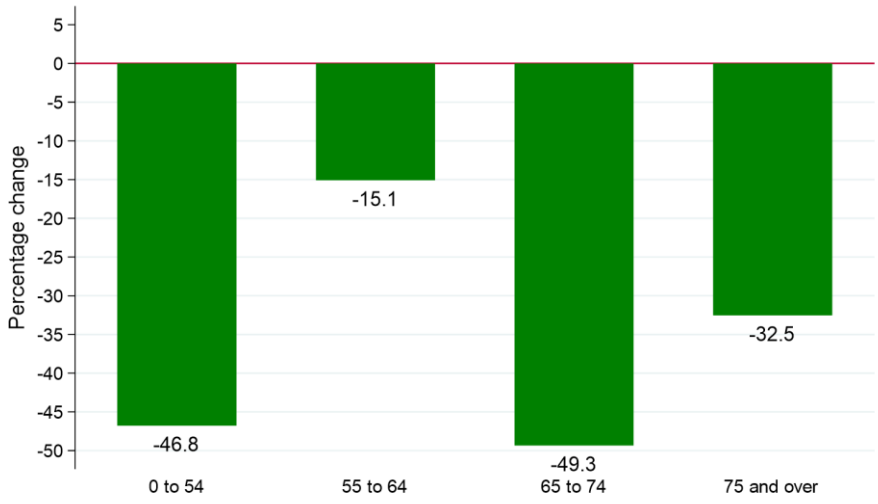
** Average cases per year rounded to the nearest integer. Column sums may thus differ slightly from the total.*

Figure 3: Malignant melanoma 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 malignant melanoma 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 malignant melanoma diagnosed decreased by 48.3% from 89 per year in 2018 - 2019 to 46 in 2020. Between the same two time periods the number of cases among residents of Belfast HSCT decreased by 26.0% from 50 per year to 37. The change in case distribution by HSCT between 2018 - 2019 and 2020 was not statistically significant.

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

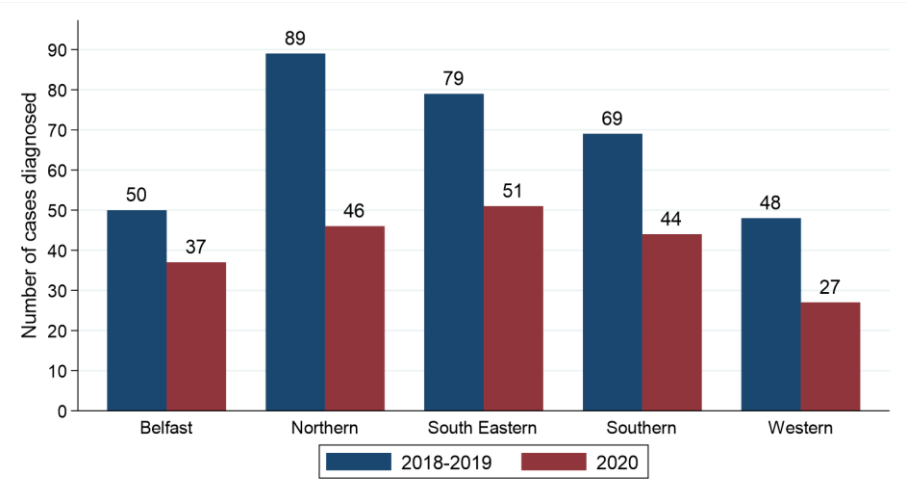
Health and Social Care Trust	Period of diagnosis (Apr-Dec)		Percentage change
	2018-2019*	2020	
Belfast HSCT	50 (15.0%)	37 (18.0%)	-26.0% (13 patients)
Northern HSCT	89 (26.6%)	46 (22.4%)	-48.3% (43 patients)
South Eastern HSCT	79 (23.7%)	51 (24.9%)	-35.4% (28 patients)
Southern HSCT	69 (20.7%)	44 (21.5%)	-36.2% (25 patients)
Western HSCT	48 (14.4%)	27 (13.2%)	-43.8% (21 patients)
Northern Ireland	334	205	-38.6% (129 patients)

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

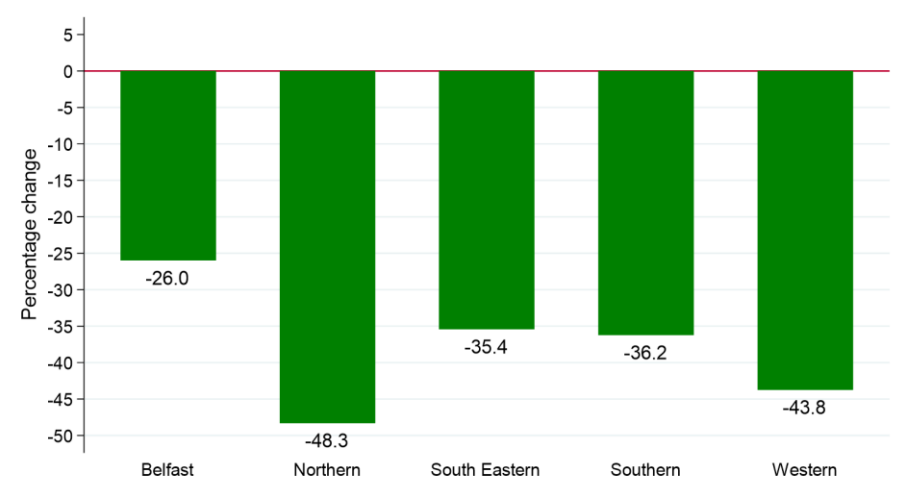
Note: Cases with unknown Health and Social Care Trust are included in totals

Figure 4: Malignant melanoma 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 malignant melanoma 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 malignant melanoma diagnosed decreased by 28.6% from 42 per year in 2018 - 2019 to 30 in 2020. Between the same two time periods the number of cases among residents of the least deprived areas decreased by 44.7% from 76 per year to 42. The change in case distribution by deprivation quintile between 2018 - 2019 and 2020 was not statistically significant.

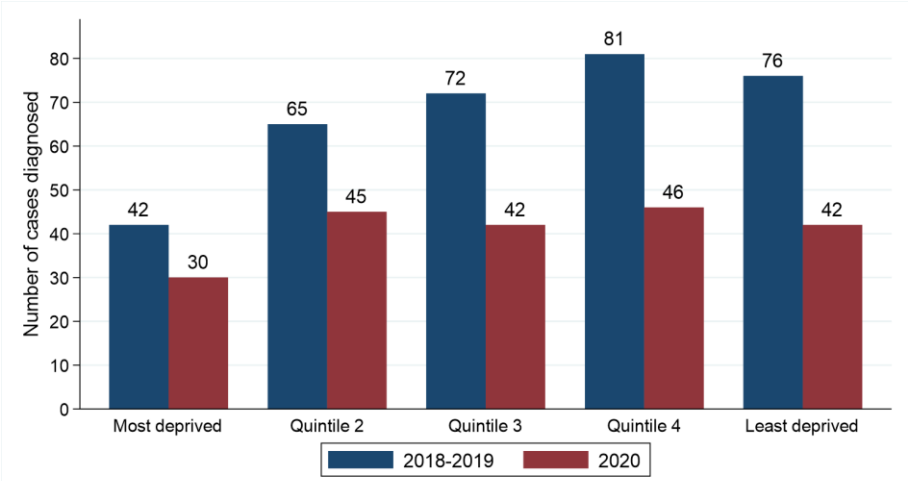
Table 5: Number and proportion of malignant melanoma cases diagnosed in April-December of 2018-2020 by deprivation quintile and period of diagnosis

Deprivation quintile	Period of diagnosis (Apr-Dec)		Percentage change
	2018-2019*	2020	
Most deprived	42 (12.6%)	30 (14.6%)	-28.6% (12 patients)
Quintile 2	65 (19.5%)	45 (22.0%)	-30.8% (20 patients)
Quintile 3	72 (21.6%)	42 (20.5%)	-41.7% (30 patients)
Quintile 4	81 (24.3%)	46 (22.4%)	-43.2% (35 patients)
Least deprived	76 (22.8%)	42 (20.5%)	-44.7% (34 patients)
Northern Ireland	334	205	-38.6% (129 patients)

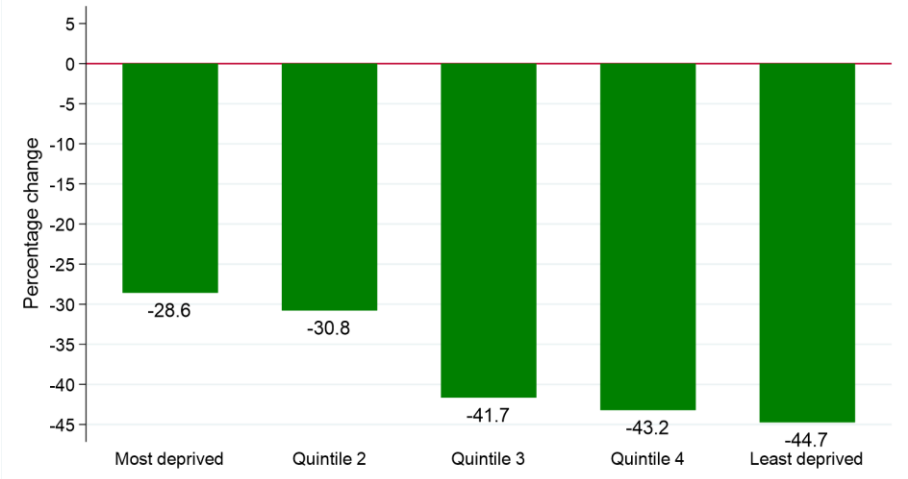
** Average cases per year rounded to the nearest integer. Column sums may thus differ slightly from the total.*
Note: Cases with unknown deprivation quintile are included in totals

Figure 5: Malignant melanoma 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 malignant melanoma cases by deprivation quintile



STAGE

Excluding the first quarter of each year the number of malignant melanoma cases diagnosed at Stage I decreased by 44.8% from 212 per year in 2018 - 2019 to 117 in 2020. Between the same two time periods the number of cases diagnosed at Stage IV decreased by 22.2% from 9 per year to 7. The change in case distribution by stage at diagnosis between 2018 - 2019 and 2020 was not statistically significant.

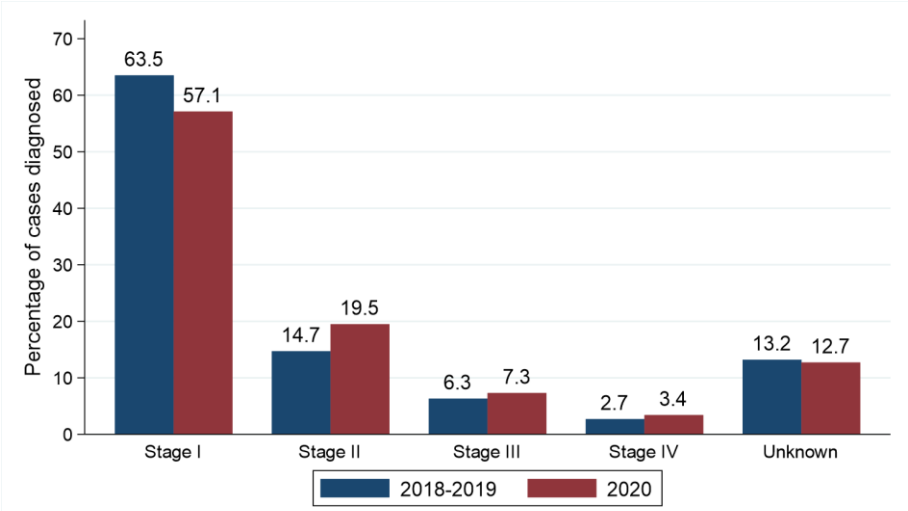
Table 6: Number and proportion of malignant melanoma cases diagnosed in April-December of 2018-2020 by stage at diagnosis and period of diagnosis

Stage at diagnosis	Period of diagnosis (Apr-Dec)		Percentage change
	2018-2019*	2020	
Stage I	212 (63.5%)	117 (57.1%)	-44.8% (95 patients)
Stage II	49 (14.7%)	40 (19.5%)	-18.4% (9 patients)
Stage III	21 (6.3%)	15 (7.3%)	-28.6% (6 patients)
Stage IV	9 (2.7%)	7 (3.4%)	-22.2% (2 patients)
Unknown	44 (13.2%)	26 (12.7%)	-40.9% (18 patients)
All stages	334	205	-38.6% (129 patients)

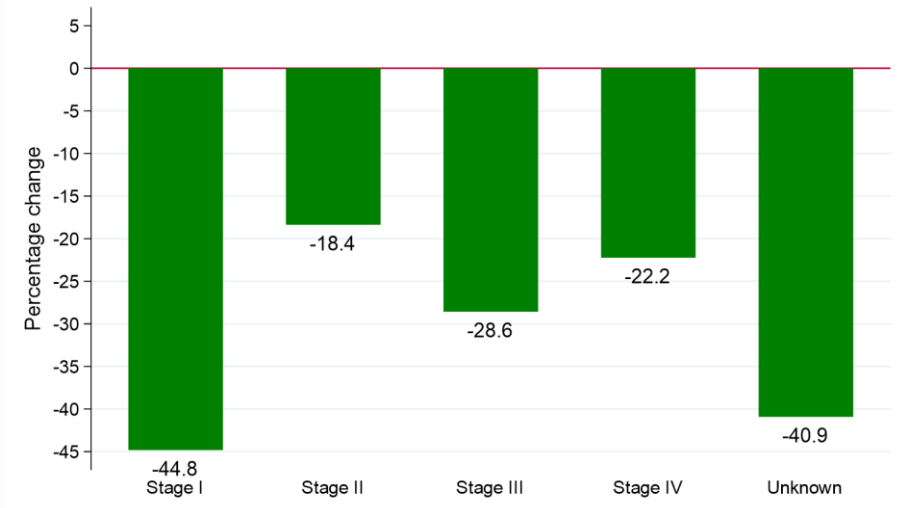
** Average cases per year rounded to the nearest integer. Column sums may thus differ slightly from the total.*

Figure 6: Malignant melanoma 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 malignant melanoma cases by stage at diagnosis



TREATMENT

Excluding the first quarter of each year the number of malignant melanoma cases where the patient was treated with surgery (within six months of diagnosis) decreased by 53.2% from 250 per year for those diagnosed in 2018 - 2019 to 117 for those diagnosed in 2020. The resulting change in the proportion receiving surgery from 74.9% in 2018 - 2019 to 57.1% in 2020 was statistically significant ($p < 0.001$).

Between the same two time periods the number of cases where the patient was treated with chemotherapy (within six months) increased by 28.6% from 7 per year to 9. The resulting change in the proportion receiving chemotherapy from 2.1% in 2018 - 2019 to 4.4% in 2020 was not statistically significant.

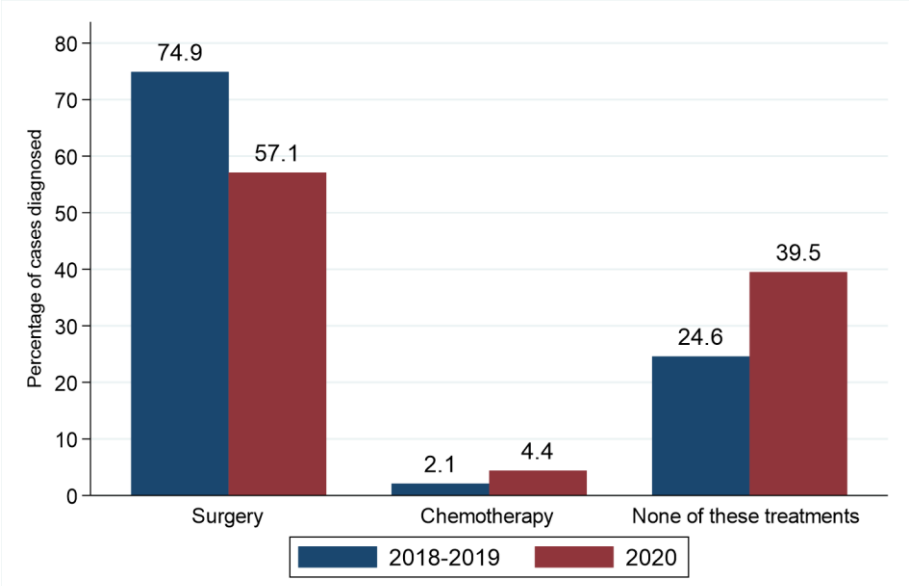
The proportion of patients receiving none of surgery or chemotherapy (within six months of diagnosis) who were diagnosed in April-December 2020 was 39.5%. This compared to 24.6% of those diagnosed in 2018 - 2019. This change was statistically significant ($p < 0.001$).

Table 7: Number and proportion of malignant melanoma cases diagnosed in April-December of 2018-2020 by treatment type and period of diagnosis

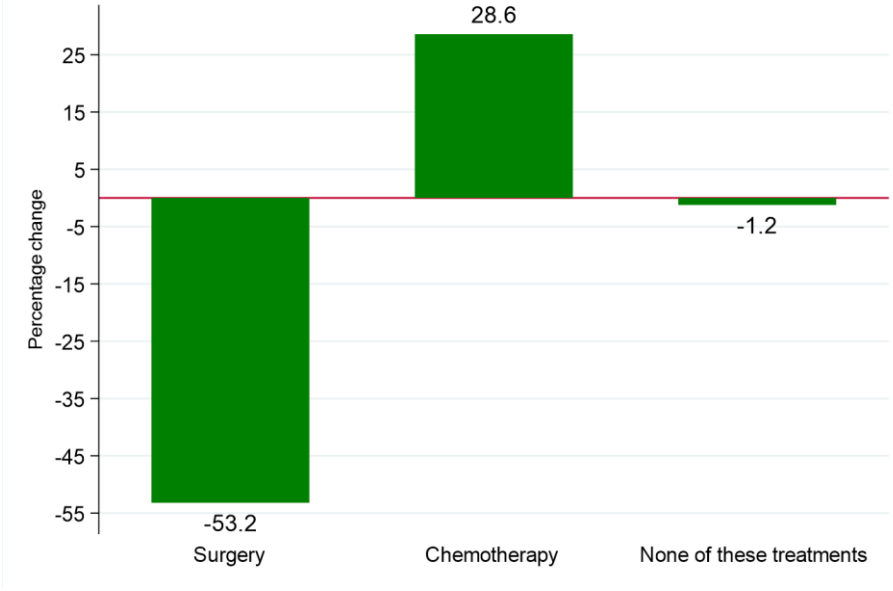
Treatment type	Period of diagnosis (Apr-Dec)		Percentage change
	2018-2019 average	2020	
Surgery	250 (74.9%)	117 (57.1%)*	-53.2% (133 patients)
Chemotherapy	7 (2.1%)	9 (4.4%)	+28.6% (2 patients)
None of these treatments	82 (24.6%)	81 (39.5%)*	-1.2% (1 patient)

** Statistically significant change*

Figure 7: Malignant melanoma 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 malignant melanoma 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

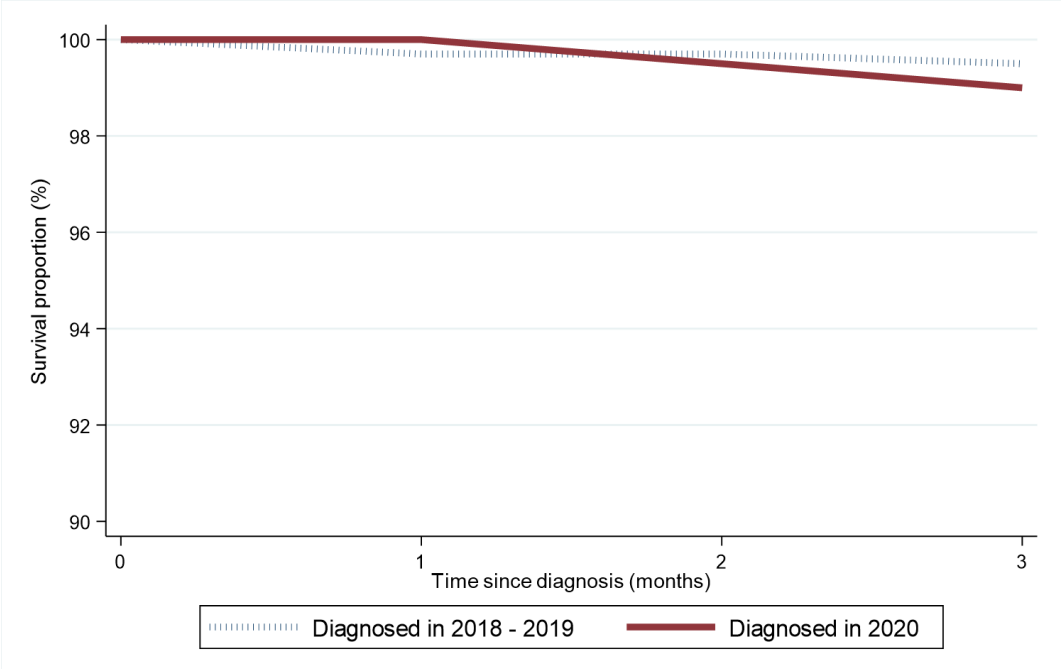
Survival among malignant melanoma patients one month after diagnosis increased from 99.7% among those diagnosed in April-December of 2018 - 2019 to 100.0% among those diagnosed in April-December of 2020. This change was statistically significant. Between the same two diagnosis periods, three-month survival decreased from 99.5% to 99.0%. This change was not statistically significant.

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

Survival time	Period of diagnosis (Apr-Dec)	
	2018-2019	2020
1 month	99.7% (98.8% - 99.9%)	100%
2 months	99.7% (98.8% - 99.9%)	99.5% (96.5% - 99.9%)
3 months	99.5% (98.6% - 99.9%)	99.0% (96.1% - 99.7%)

No statistically significant reductions

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



DEATHS FROM COVID-19

During 2020 there were a total of 18 deaths from Covid-19 among malignant melanoma patients diagnosed at any point since 1993.

NET SURVIVAL

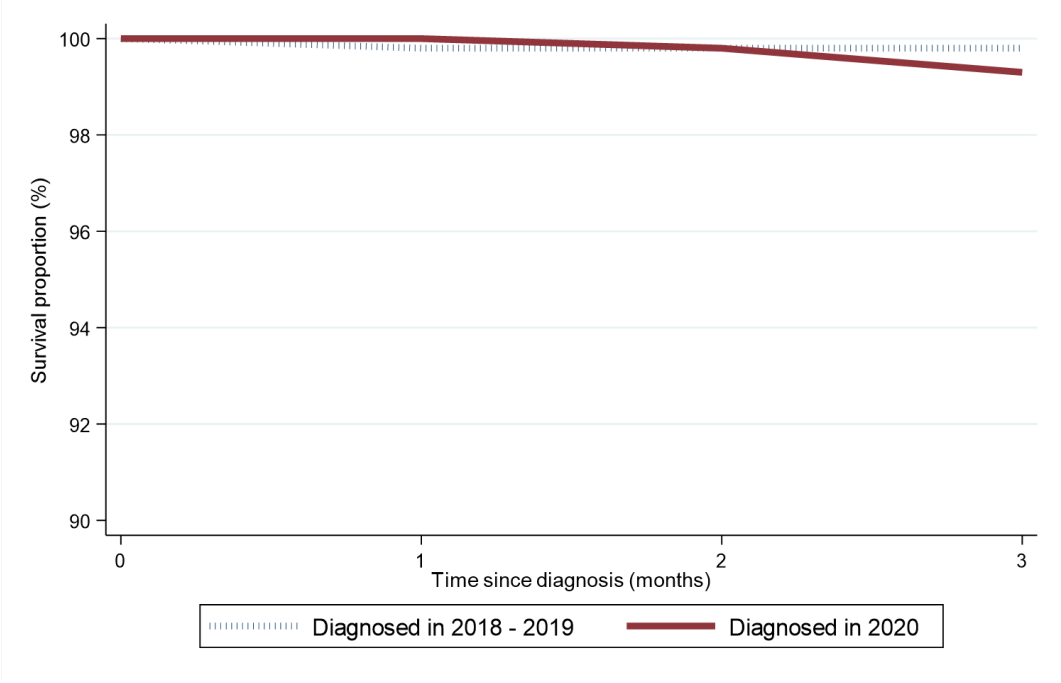
Age-standardised net survival (which takes account of deaths from other causes such as Covid-19) among malignant melanoma patients one month after diagnosis increased from 99.8% among those diagnosed in April-December of 2018 - 2019 to 100.0% among those diagnosed in April-December of 2020. This change was not statistically significant. Between the same two time periods, three-month age-standardised net survival decreased from 99.8% to 99.3%. This change was not statistically significant.

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

Survival time	Period of diagnosis (Apr-Dec)	
	2018-2019	2020
1 month	99.8% (99.4% - 100.0%)	100%
2 months	99.8% (99.4% - 100.0%)	99.8% (99.0% - 100.0%)
3 months	99.8% (99.4% - 100.0%)	99.3% (98.1% - 100.0%)

No statistically significant reductions

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



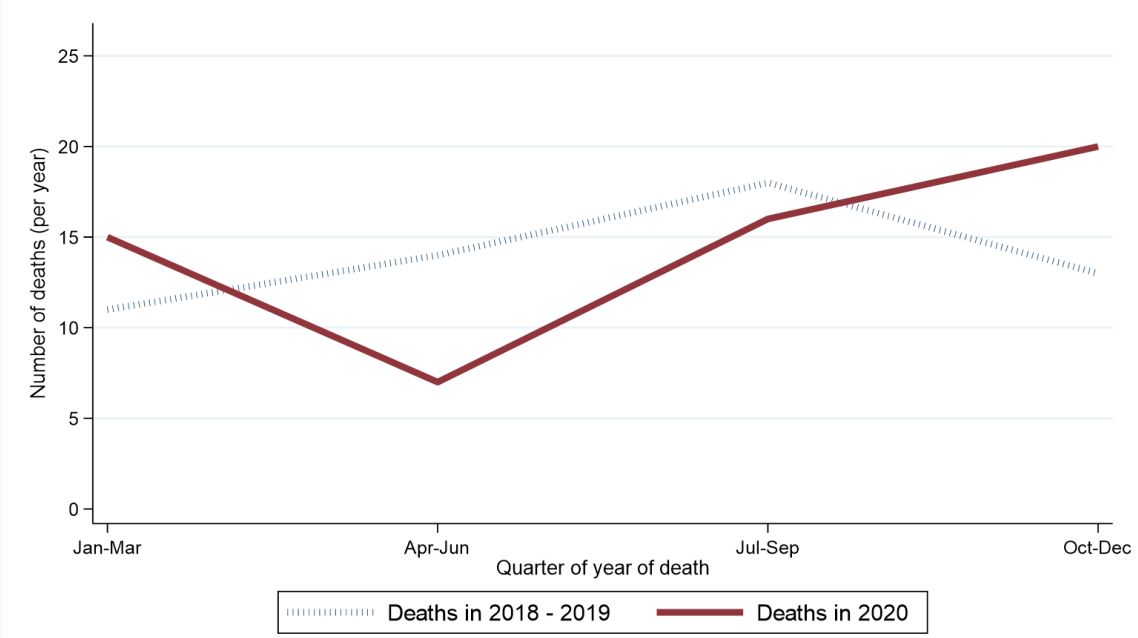
During the April-December period when Covid-19 was present the number of deaths from malignant melanoma decreased by 4.4% from 45 per year in 2018 - 2019 to 43 in 2020.

Table 10: Number of malignant melanoma 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*	56	11	14	18	13
2020	58	15	7	16	20

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

Figure 10: Number of malignant melanoma 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 malignant melanoma deaths by quarter of year of death