
Impact of Covid-19 on incidence, survival and mortality of female breast cancer in Northern Ireland

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

Further information

Further information is available at: www.qub.ac.uk/research-centres/nicr

Phone: +44 (0)28 9097 6028

e-mail: nicr@qub.ac.uk

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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

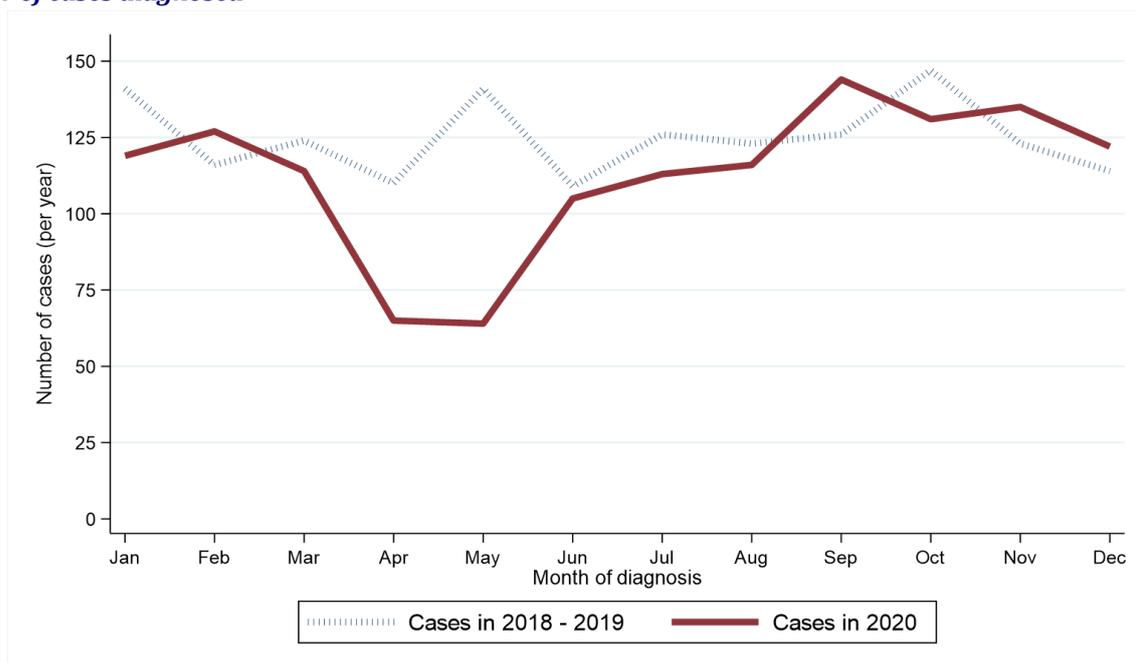
During the April-December period when Covid-19 was present the number of cases of breast cancer diagnosed among females decreased by 11.0% (123 patients) from 1,118 per year in 2018 - 2019 to 995 in 2020.

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

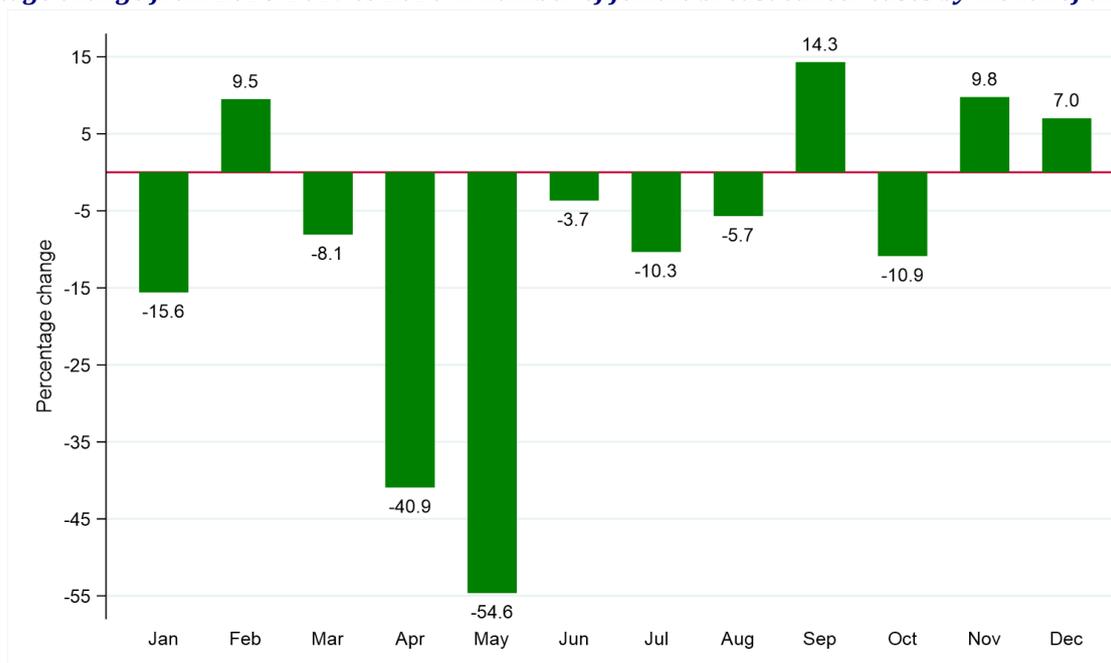
Period of diagnosis	Annual total	Month diagnosed											
		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept	Oct	Nov	Dec
2018-2019*	1,498	141	116	124	110	141	109	126	123	126	147	123	114
2020	1,355	119	127	114	65	64	105	113	116	144	131	135	122

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

Figure 1: Number of female breast 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 female breast cancer cases by month of diagnosis



AGE

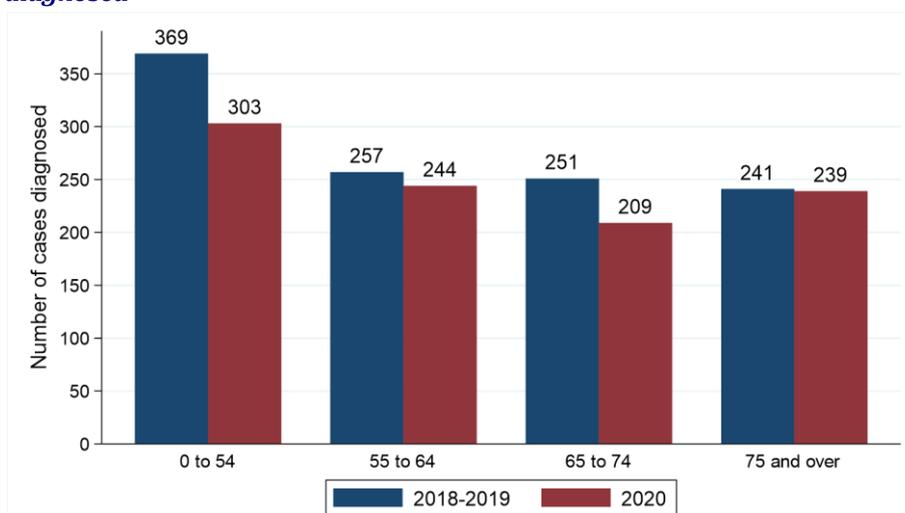
Excluding the first quarter of each year among women aged 0 to 54 the number of cases of breast cancer diagnosed decreased by 17.9% from 369 per year in 2018 - 2019 to 303 in 2020. Between the same two time periods, the number of cases among women aged 75 and over decreased by 0.8% from 241 per year to 239. The change in case distribution by age between 2018 - 2019 and 2020 was not statistically significant.

Table 2: Number and proportion of female breast cancer cases diagnosed in April-December of 2018-2020 by age and period of diagnosis

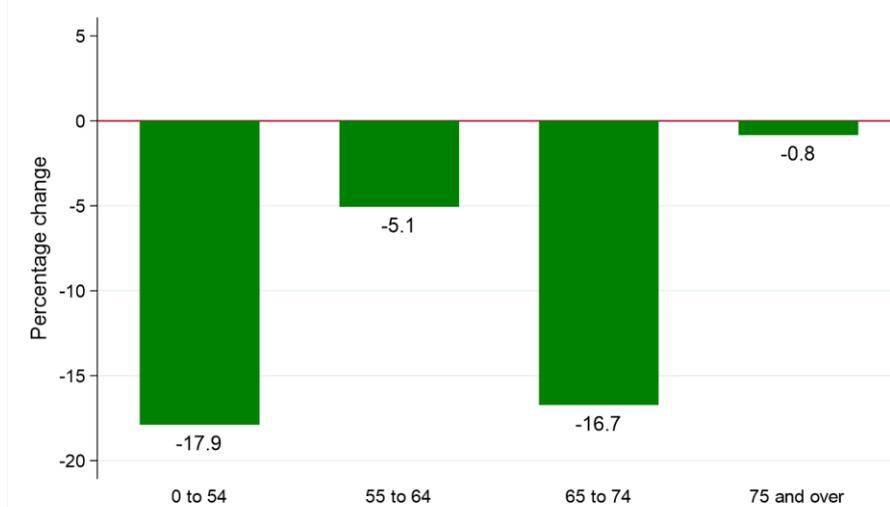
Age group	Period of diagnosis (Apr-Dec)		Percentage change
	2018-2019*	2020	
0 to 54	369 (33.0%)	303 (30.5%)	-17.9% (66 patients)
55 to 64	257 (23.0%)	244 (24.5%)	-5.1% (13 patients)
65 to 74	251 (22.5%)	209 (21.0%)	-16.7% (42 patients)
75 and over	241 (21.6%)	239 (24.0%)	-0.8% (2 patients)
All ages	1,118	995	-11.0% (123 patients)

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

Figure 2: Breast 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 female breast cancer 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 female breast cancer diagnosed decreased by 29.0% from 321 per year in 2018 - 2019 to 228 in 2020. Between the same two time periods the number of cases among residents of Southern HSCT increased by 5.9% from 203 per year to 215. The change in case distribution by HSCT between 2018 - 2019 and 2020 was statistically significant ($p = 0.008$).

Table 3: Number and proportion of female breast cancer cases diagnosed in April-December of 2018-2020 by Health and Social Care Trust and period of diagnosis

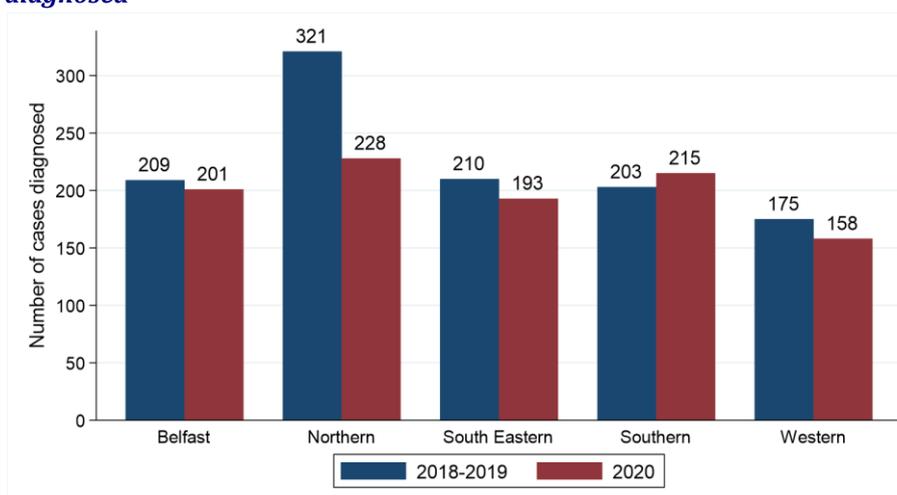
Health and Social Care Trust	Period of diagnosis (Apr-Dec)		Percentage change
	2018-2019*	2020	
Belfast HSCT	209 (18.7%)	201 (20.2%)	-3.8% (8 patients)
Northern HSCT	321 (28.7%)	228 (22.9%)	-29.0% (93 patients)
South Eastern HSCT	210 (18.8%)	193 (19.4%)	-8.1% (17 patients)
Southern HSCT	203 (18.2%)	215 (21.6%)	+5.9% (12 patients)
Western HSCT	175 (15.7%)	158 (15.9%)	-9.7% (17 patients)
Northern Ireland	1,118	995	-11.0% (123 patients)

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

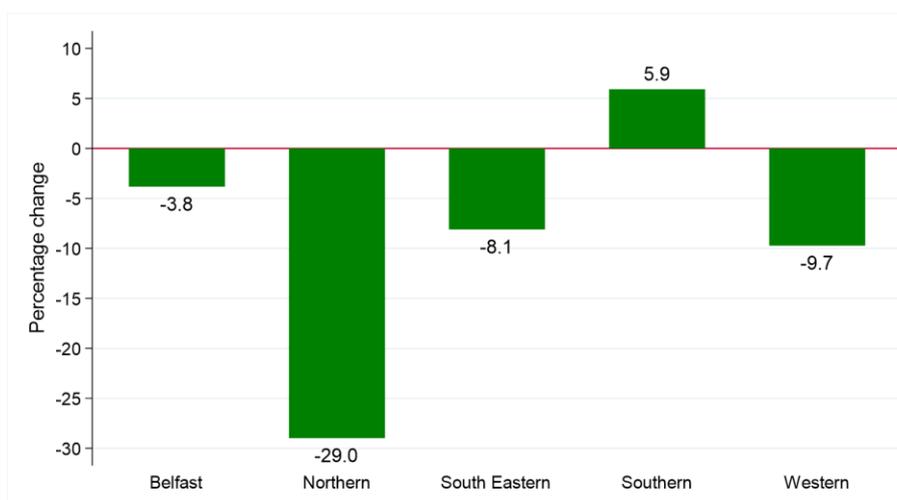
Note: Cases with unknown Health and Social Care Trust are included in totals

Figure 3: Female breast 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 female breast 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 female breast cancer diagnosed increased by 11.4% from 176 per year in 2018 - 2019 to 196 in 2020. Between the same two time periods the number of cases among residents of the least deprived areas decreased by 20.5% from 239 per year to 190. The change in case distribution by deprivation quintile between 2018 - 2019 and 2020 was not statistically significant.

Table 4: Number and proportion of female breast cancer cases diagnosed in April-December of 2018-2020 by deprivation quintile and period of diagnosis

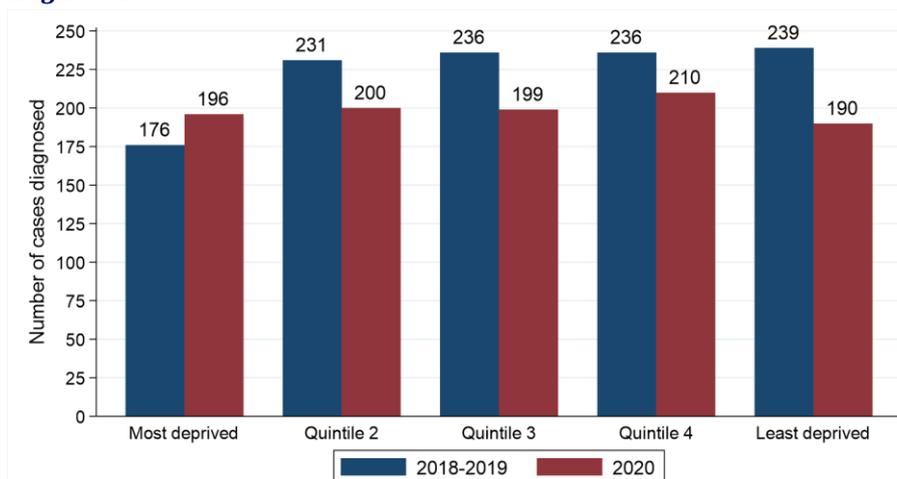
Deprivation quintile	Period of diagnosis (Apr-Dec)		Percentage change
	2018-2019*	2020	
Most deprived	176 (15.7%)	196 (19.7%)	+11.4% (20 patients)
Quintile 2	231 (20.7%)	200 (20.1%)	-13.4% (31 patients)
Quintile 3	236 (21.1%)	199 (20.0%)	-15.7% (37 patients)
Quintile 4	236 (21.1%)	210 (21.1%)	-11.0% (26 patients)
Least deprived	239 (21.4%)	190 (19.1%)	-20.5% (49 patients)
Northern Ireland	1,118	995	-11.0% (123 patients)

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

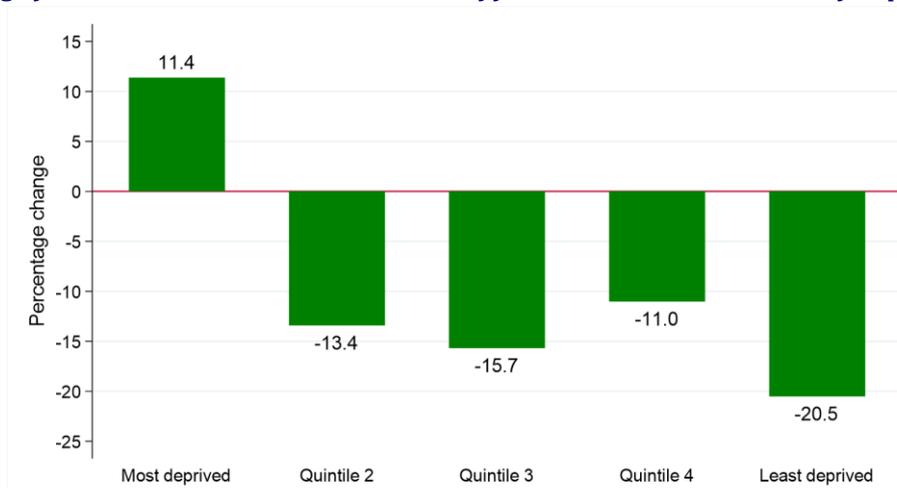
Note: Cases with unknown deprivation quintile are included in totals

Figure 4: Female breast 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 female breast cancer cases by deprivation quintile



STAGE

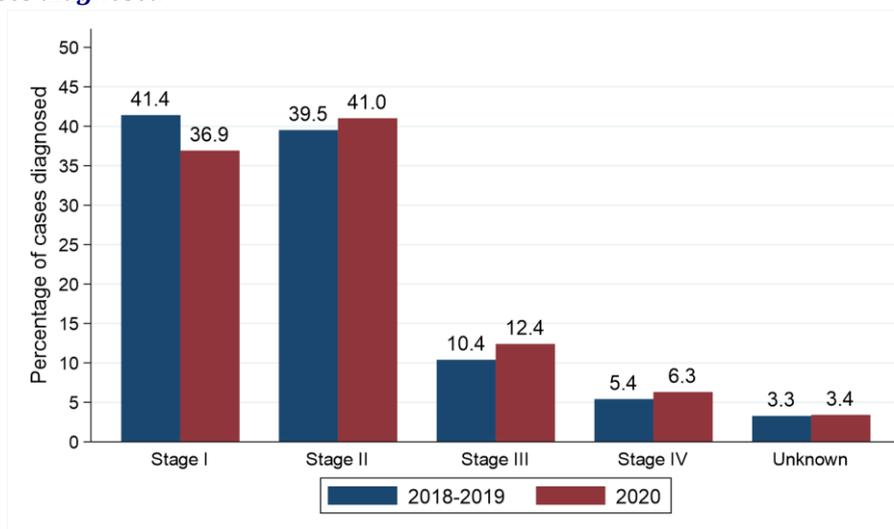
Excluding the first quarter of each year the number of female breast cancer cases diagnosed at Stage I decreased by 20.7% from 463 per year in 2018 - 2019 to 367 in 2020. Between the same two time periods the number of cases diagnosed at Stage IV increased by 5.0% from 60 per year to 63. The change in case distribution by stage at diagnosis between 2018 - 2019 and 2020 was not statistically significant.

Table 5: Number and proportion of female breast cancer cases diagnosed in April-December of 2018-2020 by stage at diagnosis and period of diagnosis

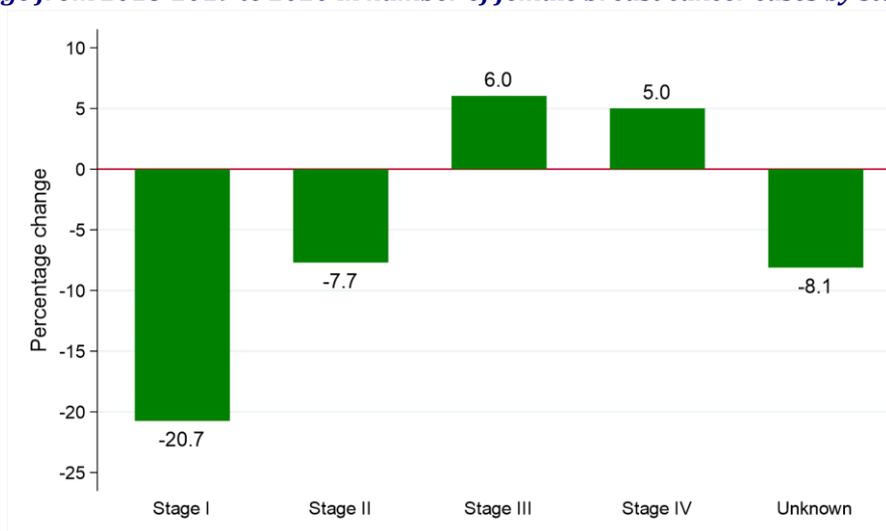
Stage at diagnosis	Period of diagnosis (Apr-Dec)		Percentage change
	2018-2019*	2020	
Stage I	463 (41.4%)	367 (36.9%)	-20.7% (96 patients)
Stage II	442 (39.5%)	408 (41.0%)	-7.7% (34 patients)
Stage III	116 (10.4%)	123 (12.4%)	+6.0% (7 patients)
Stage IV	60 (5.4%)	63 (6.3%)	+5.0% (3 patients)
Unknown	37 (3.3%)	34 (3.4%)	-8.1% (3 patients)
All stages	1,118	995	-11.0% (123 patients)

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

Figure 5: Female breast 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 female breast cancer cases by stage at diagnosis



METHOD OF HOSPITAL ADMISSION

Excluding the first quarter of each year the number of cases of female breast 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 17.2% from 29 per year in 2018 - 2019 to 24 in 2020. The change in case distribution by hospital admission type between 2018 - 2019 and 2020 was not statistically significant.

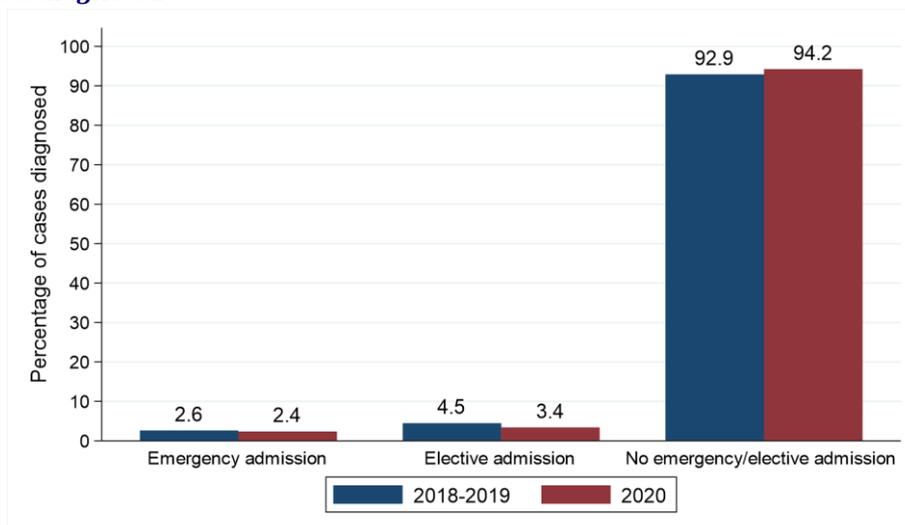
Table 6: Number and proportion of female breast cancer cases diagnosed in April-December of 2018-2020 by method of admission to hospital and period of diagnosis

Method of admission to hospital	Period of diagnosis (Apr-Dec)		Percentage change
	2018-2019*	2020	
Emergency admission	29 (2.6%)	24 (2.4%)	-17.2% (5 patients)
Elective admission	50 (4.5%)	34 (3.4%)	-32.0% (16 patients)
No emergency/elective admission recorded	1,039 (92.9%)	937 (94.2%)	-9.8% (102 patients)
All persons	1,118	995	-11.0% (123 patients)

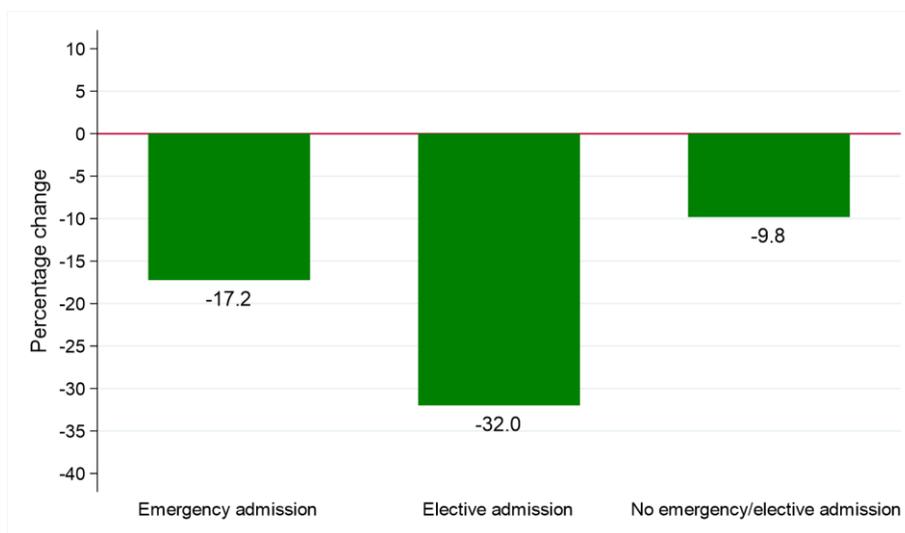
* Average cases per year rounded to the nearest integer. Column sums may thus differ slightly from the total.

Figure 6: Female breast 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 female breast cancer cases by method of admission to hospital



TREATMENT

Excluding the first quarter of each year the number of female breast cancer cases where the patient was treated with surgery (within six months of diagnosis) decreased by 14.1% from 859 per year for those diagnosed in 2018 - 2019 to 738 for those diagnosed in 2020. The resulting change in the proportion receiving surgery from 76.8% in 2018 - 2019 to 74.2% 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 12.7% from 393 per year to 343. The resulting change in the proportion receiving chemotherapy from 35.2% in 2018 - 2019 to 34.5% in 2020 was not statistically significant.

The number of female breast cancer cases where the patient was treated with radiotherapy (within six months of diagnosis) decreased by 25.1% from 509 per year for those diagnosed in April-December of 2018 - 2019 to 381 for those diagnosed in April-December of 2020. The resulting change in the proportion receiving radiotherapy from 45.5% in 2018 - 2019 to 38.3% in 2020 was statistically significant ($p < 0.001$).

Between the same two time periods the number of cases where the patient was treated with hormone therapy (within six months) decreased by 9.2% from 725 per year to 658. The resulting change in the proportion receiving hormone therapy from 64.8% in 2018 - 2019 to 66.1% in 2020 was not statistically significant.

The proportion of patients receiving none of surgery, chemotherapy, radiotherapy or hormone therapy (within six months of diagnosis) who were diagnosed in April-December 2020 was 3.7%. This compared to 2.5% of those diagnosed in 2018 - 2019. This change was statistically significant ($p = 0.047$).

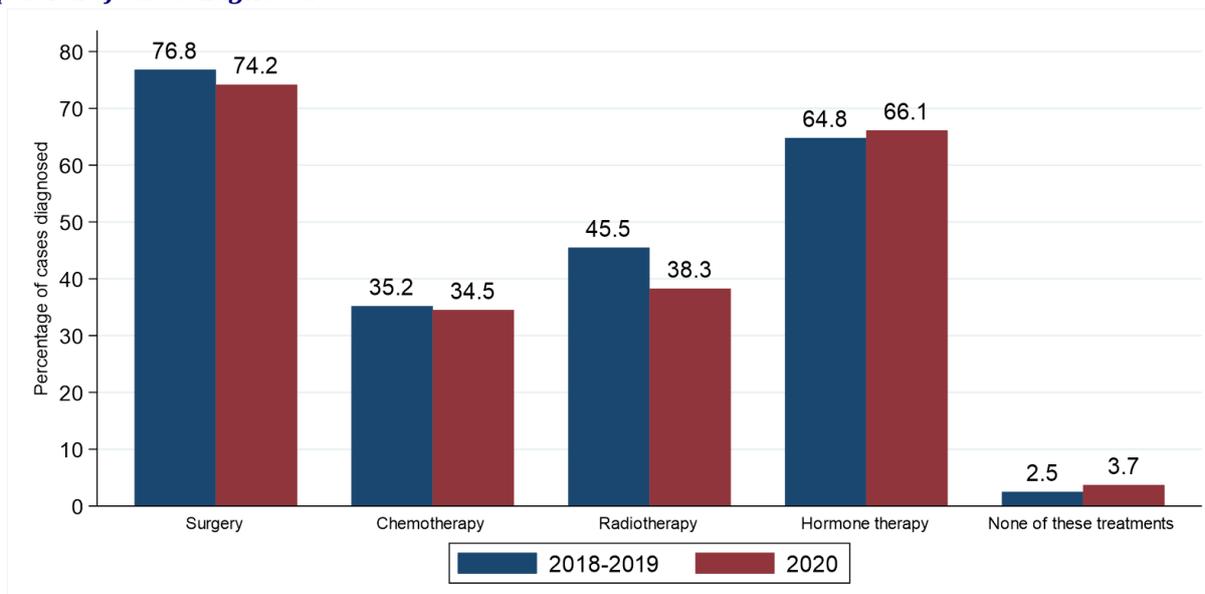
Table 7: Number and proportion of female breast cancer cases diagnosed in April-December of 2018-2020 by treatment type and period of diagnosis

Treatment type	Period of diagnosis (Apr-Dec)		Percentage change
	2018-2019 average	2020	
Surgery	859 (76.8%)	738 (74.2%)	-14.1% (121 patients)
Chemotherapy	393 (35.2%)	343 (34.5%)	-12.7% (50 patients)
Radiotherapy	509 (45.5%)	381 (38.3%)*	-25.1% (128 patients)
Hormone therapy	725 (64.8%)	658 (66.1%)	-9.2% (67 patients)
None of these treatments	28 (2.5%)	37 (3.7%)*	+32.1% (9 patients)

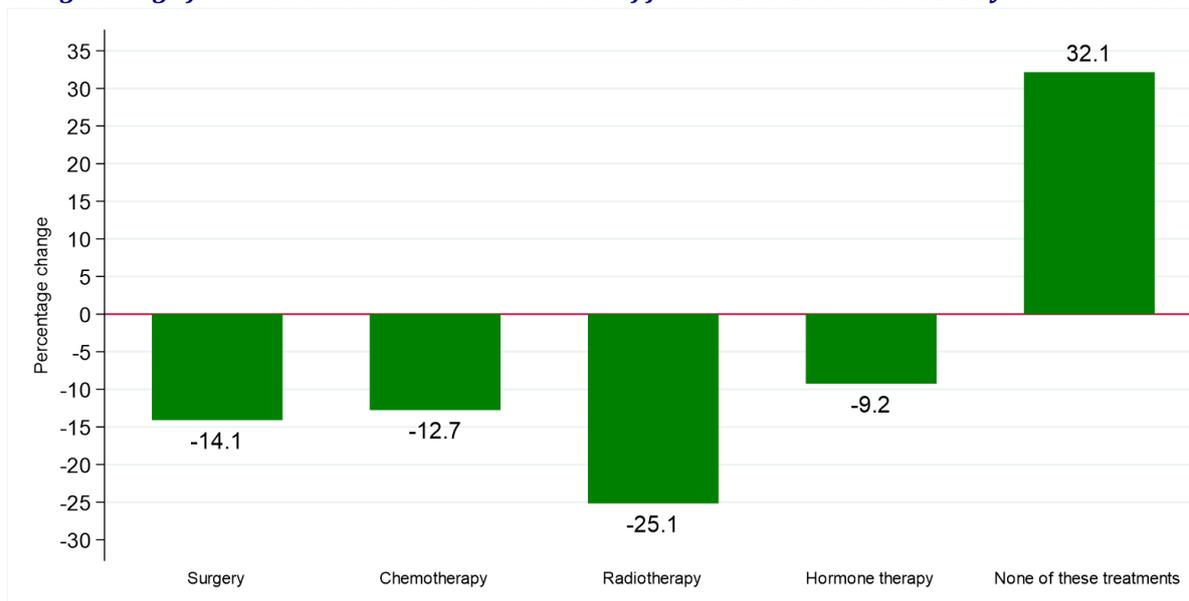
* Statistically significant change

Figure 7: Female breast 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 female breast 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

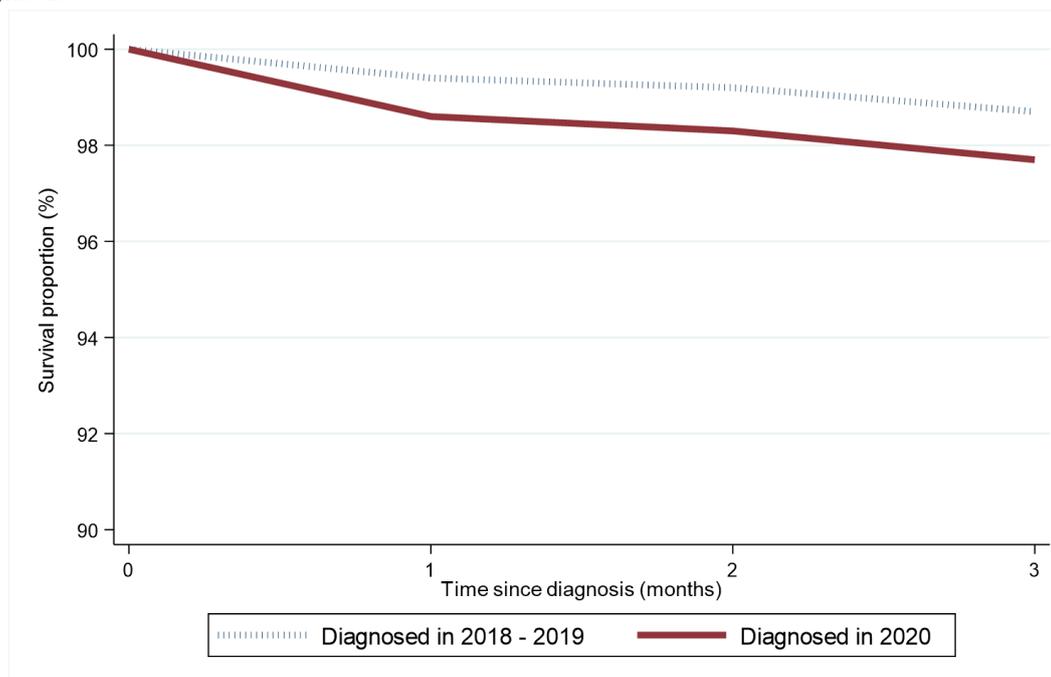
Survival among female breast cancer patients one month after diagnosis decreased from 99.4% among those diagnosed in April-December of 2018 - 2019 to 98.6% among those diagnosed in April-December of 2020. This change was not statistically significant. Between the same two diagnosis periods, three-month survival decreased from 98.7% to 97.7%. This change was not statistically significant.

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

Survival time	Period of diagnosis (Apr-Dec)	
	2018-2019	2020
1 month	99.4% (99.0% - 99.7%)	98.6% (97.6% - 99.2%)
2 months	99.2% (98.7% - 99.5%)	98.3% (97.2% - 98.9%)
3 months	98.7% (98.1% - 99.1%)	97.7% (96.5% - 98.5%)

No statistically significant reductions

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



DEATHS FROM COVID-19

During 2020 there were a total of 66 deaths from Covid-19 among female breast cancer patients diagnosed at any point since 1993. Among the patients who died of Covid-19, 4 were diagnosed with female breast cancer in 2020, while 4 were diagnosed in 2019.

NET SURVIVAL

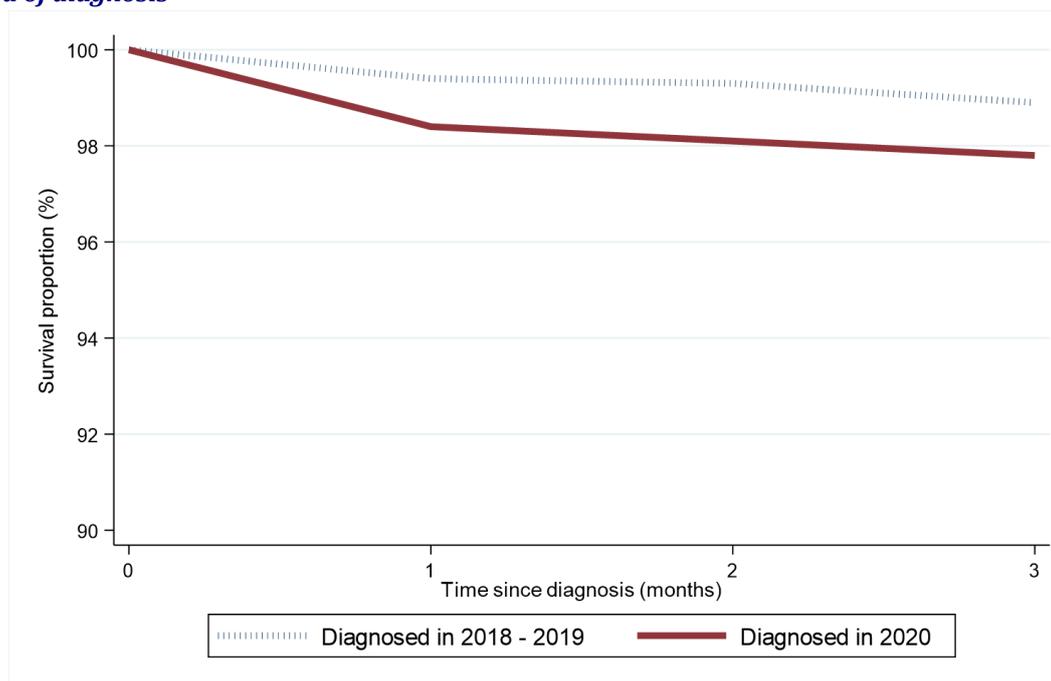
Age-standardised net survival (which takes account of deaths from other causes such as Covid-19) among female breast cancer patients one month after diagnosis decreased from 99.4% among those diagnosed in April-December of 2018 - 2019 to 98.4% among those diagnosed in April-December of 2020. This change was not statistically significant. Between the same two time periods, three-month age-standardised net survival decreased from 98.9% to 97.8%. This change was not statistically significant.

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

Survival time	Period of diagnosis (Apr-Dec)	
	2018-2019	2020
1 month	99.4% (99.0% - 99.8%)	98.4% (97.4% - 99.4%)
2 months	99.3% (98.7% - 99.9%)	98.1% (97.0% - 99.3%)
3 months	98.9% (98.3% - 99.5%)	97.8% (96.7% - 99.0%)

No statistically significant reductions

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



CANCER MORTALITY

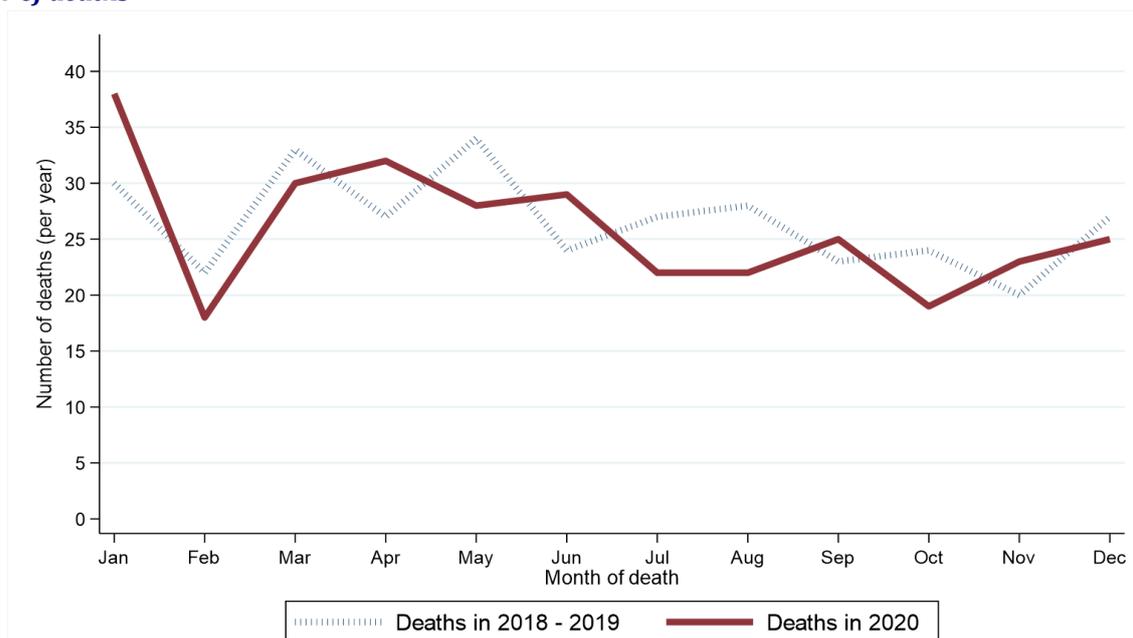
During the April-December period when Covid-19 was present the number of deaths from breast cancer among females decreased by 2.6% from 231 per year in 2018 - 2019 to 225 in 2020.

Table 10: Number of female breast 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*	314	30	22	33	27	34	24	27	28	23	24	20	27
2020	311	38	18	30	32	28	29	22	22	25	19	23	25

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

Figure 10: Number of female breast 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 female breast cancer deaths by month of death

