Recent trends in incidence, survival and mortality of cervical cancer in Northern Ireland

(A comparison between April-December of 2021, 2020 and 2018-2019)

Further information

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

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Acknowledgements

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INCIDENCE

During the April-December period the number of cases of cervical cancer diagnosed decreased between 2018-2019 and 2021 by 11.4% from 70 cases per year to 62 cases.

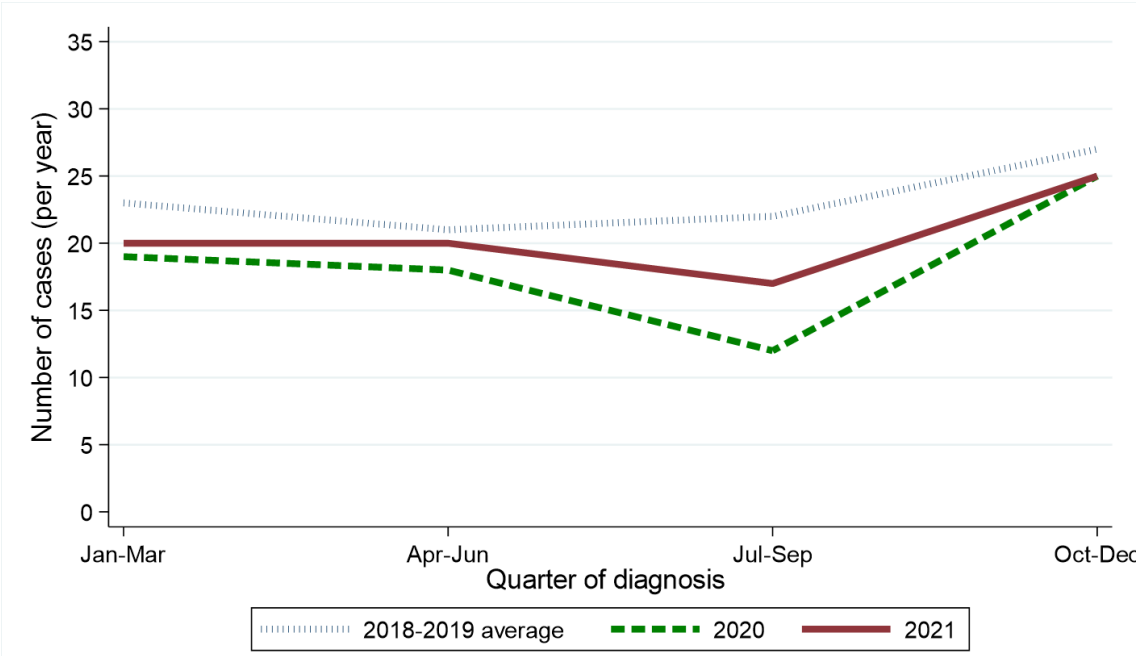
Table 1: Number of cervical cancer cases diagnosed in 2018-2021 by quarter and year of diagnosis

Period of diagnosis	Annual total	Quarter diagnosed			
		Jan-Mar	Apr-Jun	Jul-Sept	Oct-Dec
2018-2019*	92	23	21	22	27
2020	74	19	18	12	25
2021	82	20	20	17	25

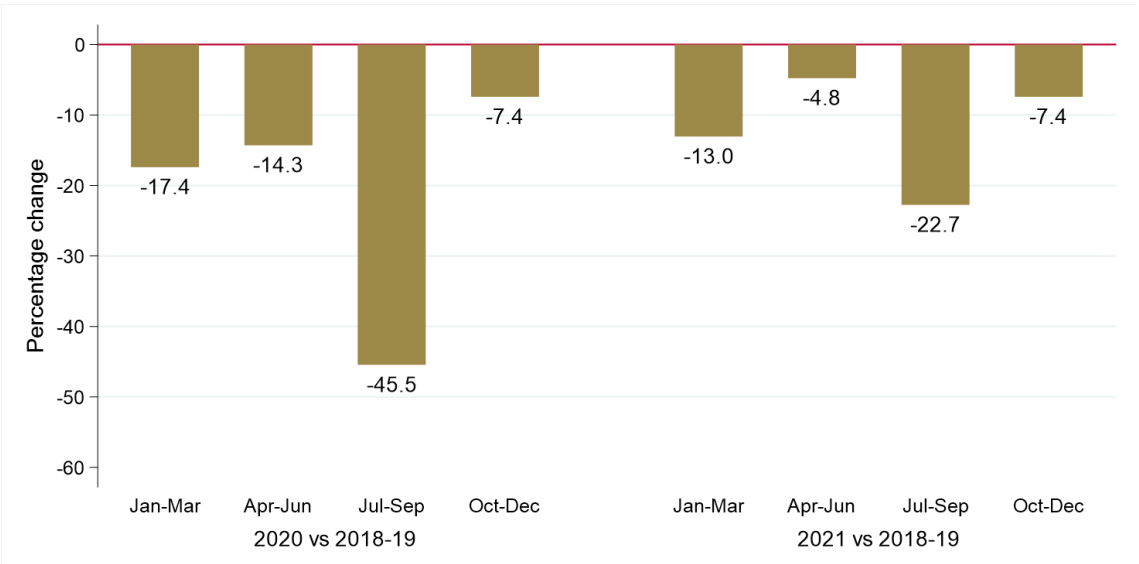
** Average cases per year rounded to the nearest integer. Row sums may thus differ slightly from the total.*

Figure 1: Number of cervical cancer cases diagnosed in 2018-2021 by quarter and year of diagnosis

(a) Number of cases diagnosed by quarter of diagnosis



(b) Percentage change over time in number of cases by quarter of diagnosis



AGE

Excluding the first quarter of each year the number of cases of cervical cancer diagnosed among those aged 0 to 34 decreased by 61.1% from 18 per year in 2018-2019 to 7 in 2021. Between the same two time periods the number of cases of cervical cancer diagnosed among those aged 35 to 44 increased by 64.7% from 17 per year in 2018-2019 to 28 in 2021. The change in case distribution by age between 2018-2019 and 2021 was statistically significant (p = 0.008).

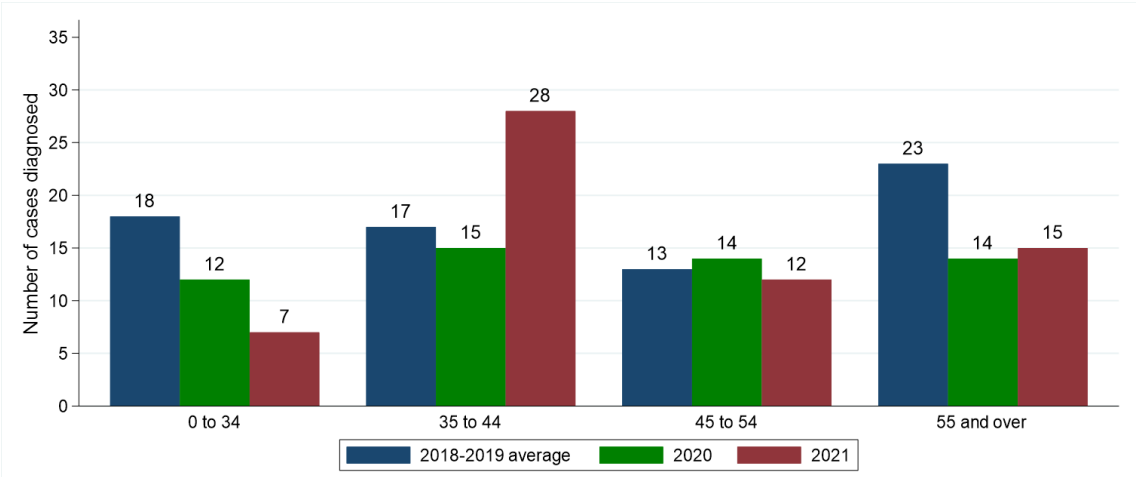
Table 2: Number and proportion of cervical cancer cases diagnosed in April-December of 2018-2021 by age and period of diagnosis

Age	Period of diagnosis (Apr-Dec)			Percentage change	
	2018-2019*	2020	2021	2020 vs 2018-2019	2021 vs 2018-2019
All ages	70	55	62	-21.4%	-11.4%
0 to 34	18 (25.7%)	12 (21.8%)	7 (11.3%)	-33.3%	-61.1%
35 to 44	17 (24.3%)	15 (27.3%)	28 (45.2%)	-11.8%	+64.7%
45 to 54	13 (18.6%)	14 (25.5%)	12 (19.4%)	+7.7%	-7.7%
55 and over	23 (32.9%)	14 (25.5%)	15 (24.2%)	-39.1%	-34.8%

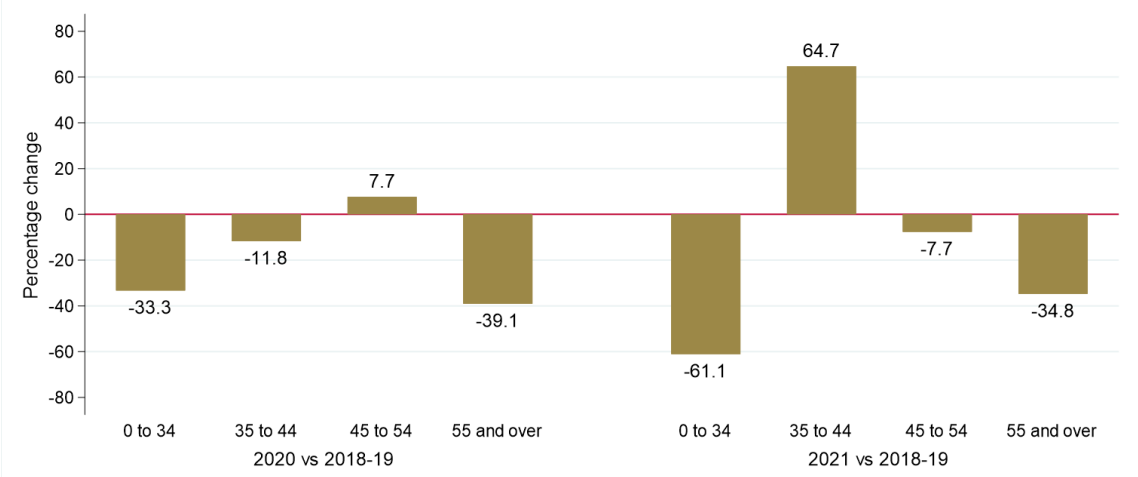
** Average cases per year rounded to the nearest integer. Column sums may thus differ slightly from the total.*

Figure 2: Number of cervical cancer cases diagnosed in April-December of 2018-2021 by age and period of diagnosis

(a) Number of cases diagnosed



(b) Percentage change over time in number of cases



HEALTH AND SOCIAL CARE TRUST

Excluding the first quarter of each year the number of cases of cervical cancer diagnosed among those resident in Northern HSCT decreased by 57.9% from 19 per year in 2018-2019 to 8 in 2021. Between the same two time periods the number of cases of cervical cancer diagnosed among those resident in Western HSCT increased by 133.3% from 9 per year in 2018-2019 to 21 in 2021. The change in case distribution by Health and Social Care Trust between 2018-2019 and 2021 was statistically significant (p = 0.002).

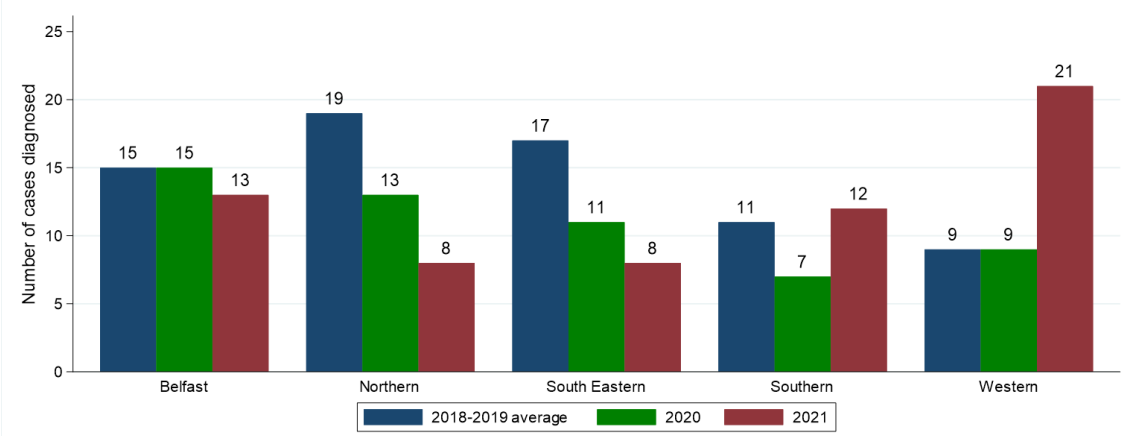
Table 3: Number and proportion of cervical cancer cases diagnosed in April-December of 2018-2021 by Health and Social Care Trust and period of diagnosis

Health and Social Care Trust	Period of diagnosis (Apr-Dec)			Percentage change	
	2018-2019*	2020	2021	2020 vs 2018-2019	2021 vs 2018-2019
Northern Ireland	70	55	62	-21.4%	-11.4%
Belfast	15 (21.4%)	15 (27.3%)	13 (21.0%)	0.0%	-13.3%
Northern	19 (27.1%)	13 (23.6%)	8 (12.9%)	-31.6%	-57.9%
South Eastern	17 (24.3%)	11 (20.0%)	8 (12.9%)	-35.3%	-52.9%
Southern	11 (15.7%)	7 (12.7%)	12 (19.4%)	-36.4%	+9.1%
Western	9 (12.9%)	9 (16.4%)	21 (33.9%)	0.0%	+133.3%

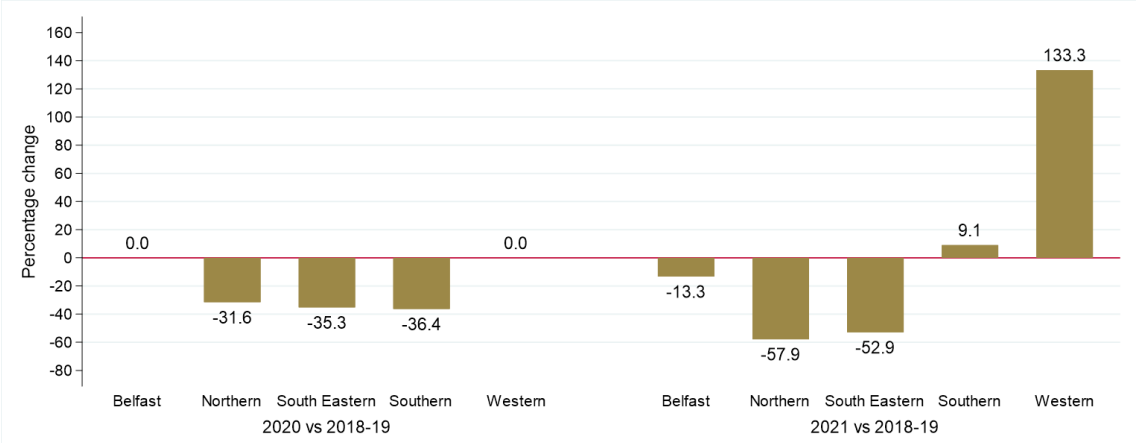
** Average cases per year rounded to the nearest integer. Column sums may thus differ slightly from the total.*
Note: Cases with unknown Health and Social Care Trust are included in totals.

Figure 3: Number of cervical cancer cases diagnosed in April-December of 2018-2021 by Health and Social Care Trust and period of diagnosis

(a) Number of cases diagnosed



(b) Percentage change over time in number of cases



SOCIO-ECONOMIC DEPRIVATION

Excluding the first quarter of each year the number of cases of cervical cancer diagnosed among those resident in the least deprived quintile decreased by 20.0% from 10 per year in 2018-2019 to 8 in 2021. Between the same two time periods the number of cases of cervical cancer diagnosed among those resident in the most deprived quintile increased by 17.6% from 17 per year in 2018-2019 to 20 in 2021. The change in case distribution by deprivation quintile between 2018-2019 and 2021 was not statistically significant.

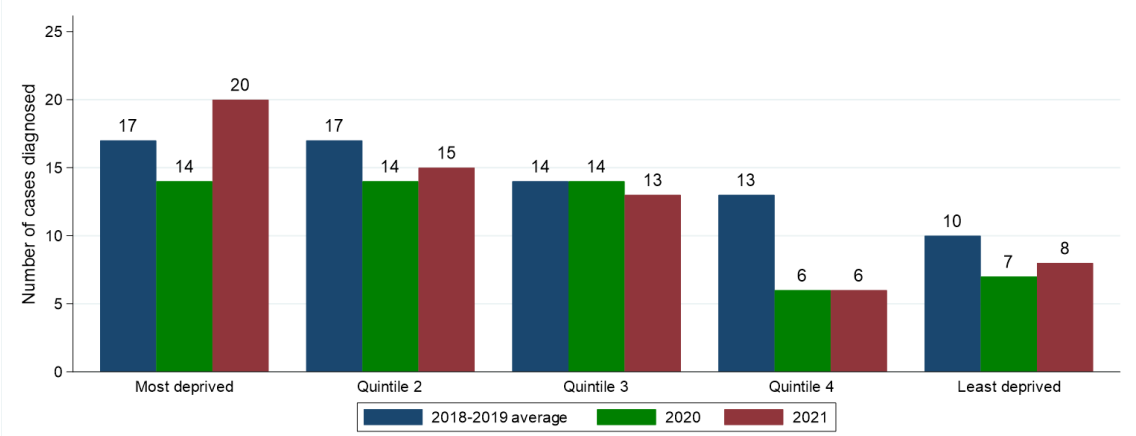
Table 4: Number and proportion of cervical cancer cases diagnosed in April-December of 2018-2021 by deprivation quintile and period of diagnosis

Deprivation quintile	Period of diagnosis (Apr-Dec)			Percentage change	
	2018-2019*	2020	2021	2020 vs 2018-2019	2021 vs 2018-2019
Northern Ireland	70	55	62	-21.4%	-11.4%
Most deprived	17 (24.3%)	14 (25.5%)	20 (32.3%)	-17.6%	+17.6%
Quintile 2	17 (24.3%)	14 (25.5%)	15 (24.2%)	-17.6%	-11.8%
Quintile 3	14 (20.0%)	14 (25.5%)	13 (21.0%)	0.0%	-7.1%
Quintile 4	13 (18.6%)	6 (10.9%)	6 (9.7%)	-53.8%	-53.8%
Least deprived	10 (14.3%)	7 (12.7%)	8 (12.9%)	-30.0%	-20.0%

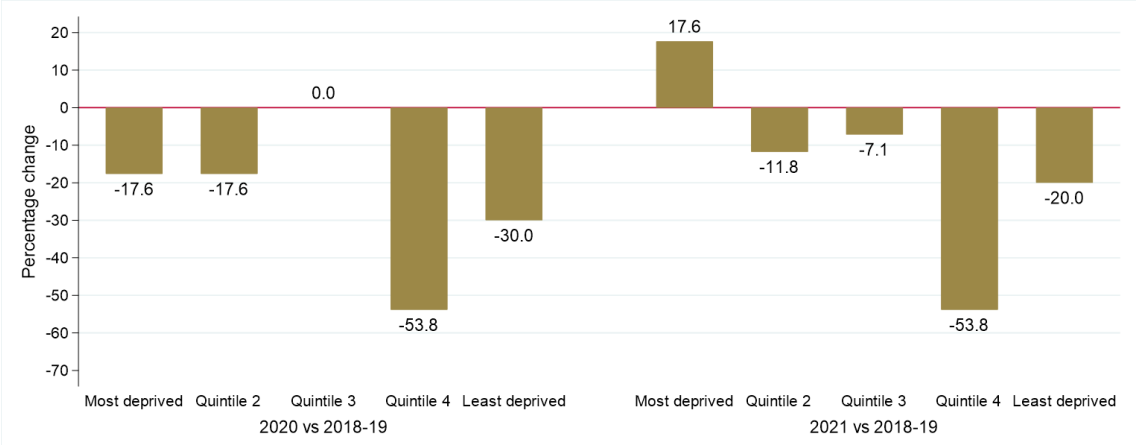
** Average cases per year rounded to the nearest integer. Column sums may thus differ slightly from the total.*
Note: Cases with unknown deprivation quintile are included in totals.

Figure 4: Number of cervical cancer cases diagnosed in April-December of 2018-2021 by deprivation quintile and period of diagnosis

(a) Number of cases diagnosed



(b) Percentage change over time in number of cases



STAGE AT DIAGNOSIS

The number of cervical cancer cases diagnosed at stage I in April to December of each year increased by 3.4% from 29 per year in 2018-2019 to 30 in 2021. In addition the number of cervical cancer cases diagnosed at stage IV decreased by 44.4% from 9 per year in 2018-2019 to 5 in 2021. As a proportion of all cases, stage IV diagnosis decreased from 12.9% in 2018-2019 to 8.1% in 2021. The change in stage distribution between 2018-2019 and 2021 was not statistically significant.

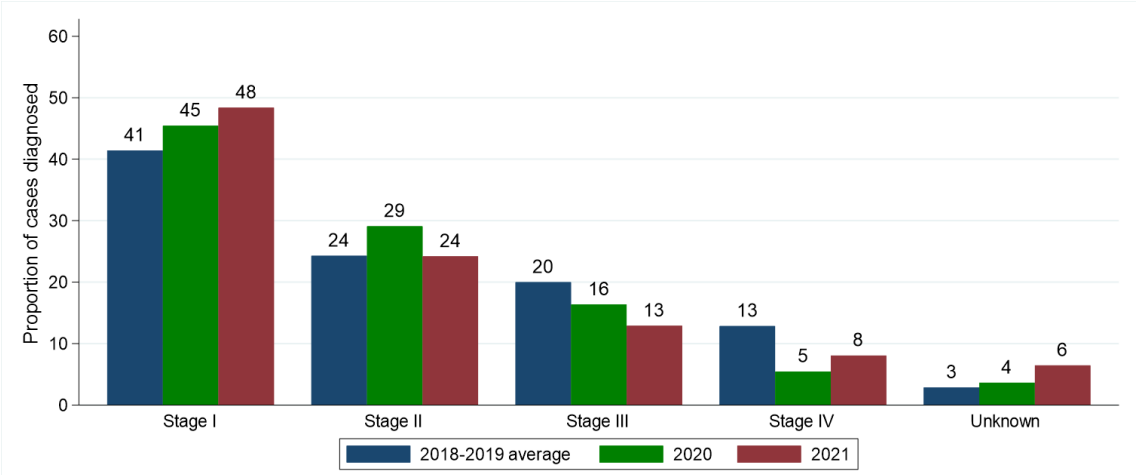
Table 5: Number and proportion of cervical cancer cases diagnosed in April-December of 2018-2021 by stage and period of diagnosis

Stage at diagnosis	Period of diagnosis (Apr-Dec)			Percentage change	
	2018-2019*	2020	2021	2020 vs 2018-2019	2021 vs 2018-2019
All stages	70	55	62	-21.4%	-11.4%
Stage I	29 (41.4%)	25 (45.5%)	30 (48.4%)	-13.8%	+3.4%
Stage II	17 (24.3%)	16 (29.1%)	15 (24.2%)	-5.9%	-11.8%
Stage III	14 (20.0%)	9 (16.4%)	8 (12.9%)	-35.7%	-42.9%
Stage IV	9 (12.9%)	3 (5.5%)	5 (8.1%)	-66.7%	-44.4%
Unknown	2 (2.9%)	2 (3.6%)	4 (6.5%)	0.0%	+100.0%

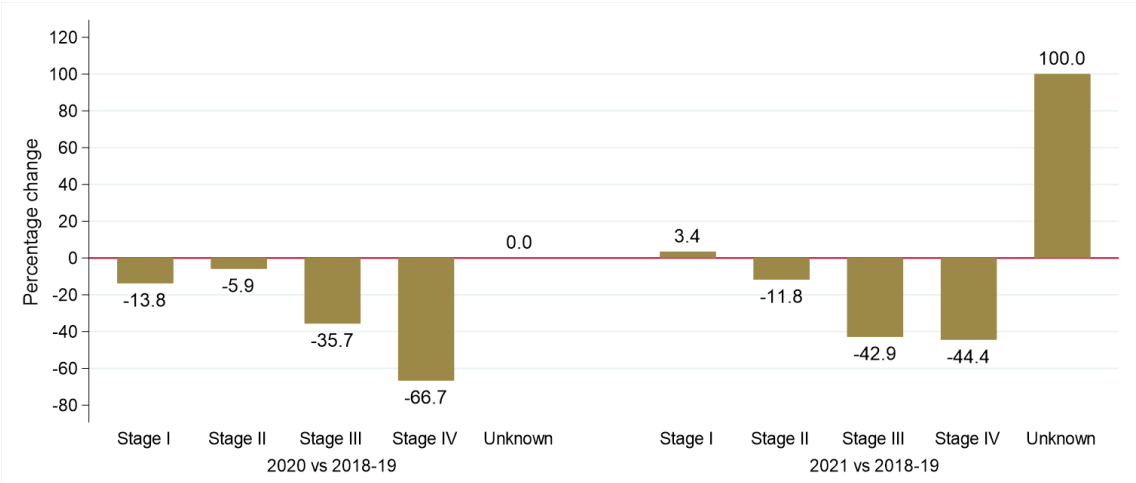
** Average cases per year rounded to the nearest integer. Column sums may thus differ slightly from the total.*

Figure 5: Proportion of cervical cancer cases diagnosed in April-December of 2018-2021 by stage and period of diagnosis

(a) Proportion of cases diagnosed



(b) Percentage change over time in number of cases



TREATMENT

Excluding the first quarter of each year the number of cervical cancer cases resulting in treatment by surgery within six months decreased by 7.1% from 28 per year in 2018-2019 to 26 in 2021. The resulting increase in the proportion receiving surgery from 40.0% in 2018-2019 to 41.9% in 2021 was not statistically significant.

Between the same two time periods the number of cervical cancer cases resulting in treatment by systemic therapy decreased by 23.7% from 38 per year in 2018-2019 to 29 in 2021. The resulting decrease in the proportion receiving systemic therapy from 54.3% in 2018-2019 to 46.8% in 2021 was not statistically significant.

The number of cervical cancer cases treated with radiotherapy decreased by 21.4% from 42 per year in 2018-2019 to 33 in 2021. The resulting decrease in the proportion receiving radiotherapy from 60.0% in 2018-2019 to 53.2% in 2021 was not statistically significant.

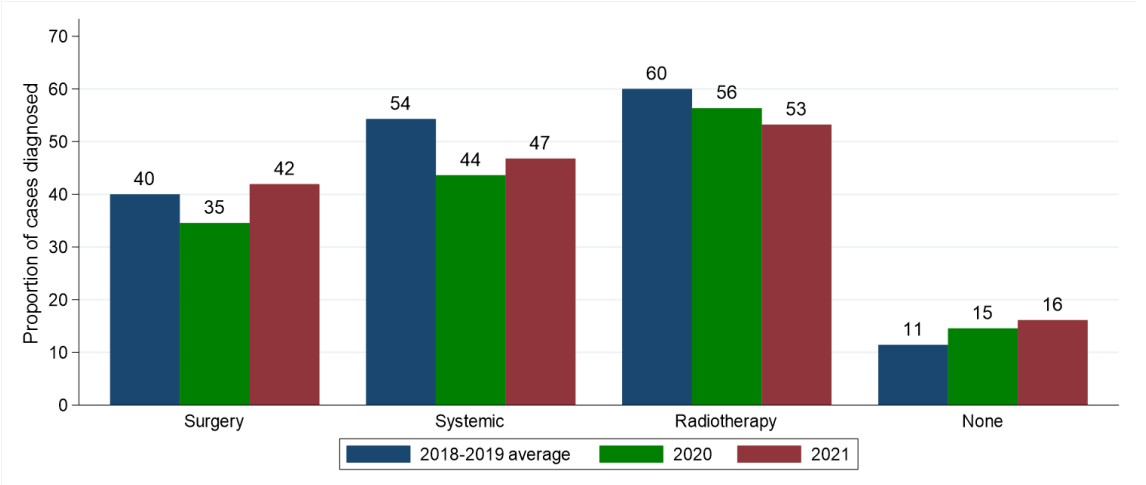
Excluding the first quarter of each year the number of cervical cancer cases receiving none of these treatments within six months of diagnosis increased by 25.0% from 8 per year in 2018-2019 to 10 in 2021. The resulting increase in the proportion receiving none of these treatments from 11.4% in 2018-2019 to 16.1% in 2021 was not statistically significant.

Table 6: Number and proportion of cervical cancer cases diagnosed in April-December of 2018-2021 by treatment type (within six months of diagnosis) and period of diagnosis

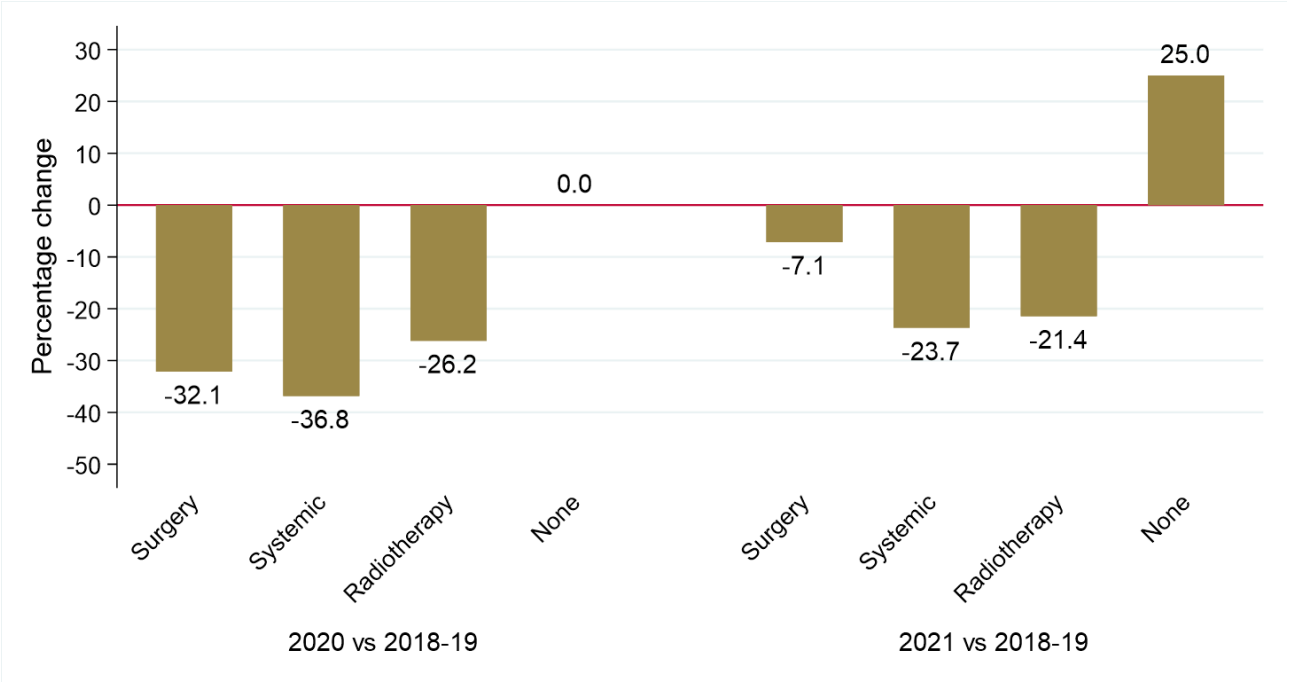
Treatment type	Period of diagnosis (Apr-Dec)			Percentage change	
	2018-2019*	2020	2021	2020 vs 2018-2019	2021 vs 2018-2019
Surgery	28 (40.0%)	19 (34.5%)	26 (41.9%)	-32.1%	-7.1%
Systemic therapy	38 (54.3%)	24 (43.6%)	29 (46.8%)	-36.8%	-23.7%
Radiotherapy	42 (60.0%)	31 (56.4%)	33 (53.2%)	-26.2%	-21.4%
None of these treatments	8 (11.4%)	8 (14.5%)	10 (16.1%)	0.0%	+25.0%

No statistically significant change compared to 2018-2019

Figure 6: Proportion of cervical cancer cases diagnosed in April-December of 2018-2021 by treatment type (within six months of diagnosis) and period of diagnosis
(a) Proportion of cases diagnosed



(b) Percentage change over time in number of cases



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

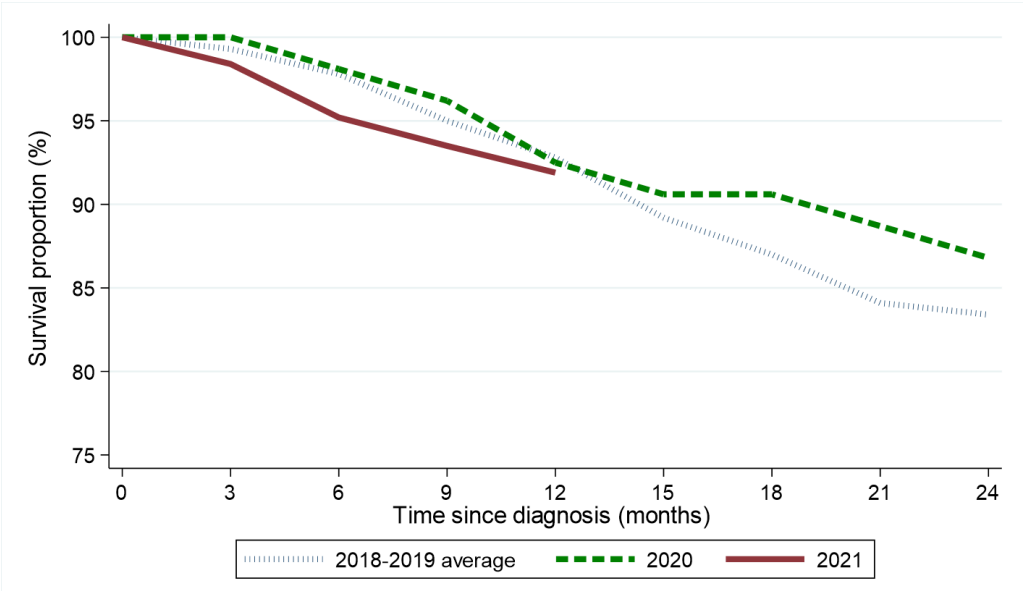
Survival among cervical cancer patients six months after diagnosis decreased from 97.8% among those diagnosed in April-December of 2018-2019 to 95.2% among those diagnosed in April-December of 2021. This change was not statistically significant. Between the same two diagnosis periods, one-year survival decreased from 92.8% to 91.9%. This change was not statistically significant. The log-rank test of equality indicates no statistically significant difference between the survival functions for 2018-2019 and 2021 (p=0.682).

Table 7: Observed survival for patients with cervical cancer diagnosed in April-December of 2018-2021 by period of diagnosis

Survival time	Period of diagnosis (Apr-Dec)		
	2018-2019	2020	2021
Three months	99.3% (95.0% - 99.9%)	100.0%	98.4% (89.1% - 99.8%)
Six months	97.8% (93.5% - 99.3%)	98.1% (87.4% - 99.7%)	95.2% (85.7% - 98.4%)
One year	92.8% (87.0% - 96.1%)	92.5% (81.1% - 97.1%)	91.9% (81.7% - 96.6%)
Two years	83.4% (76.1% - 88.6%)	86.8% (74.3% - 93.5%)	-

No statistically significant reductions compared to 2018-2019

Figure 7: Observed survival for patients with cervical cancer diagnosed in April-December of 2018-2021 by period of diagnosis



DEATHS FROM COVID-19

During 2021 there were a total of 5 deaths from Covid-19 among cervical cancer patients diagnosed at any point since 1993.

NET SURVIVAL

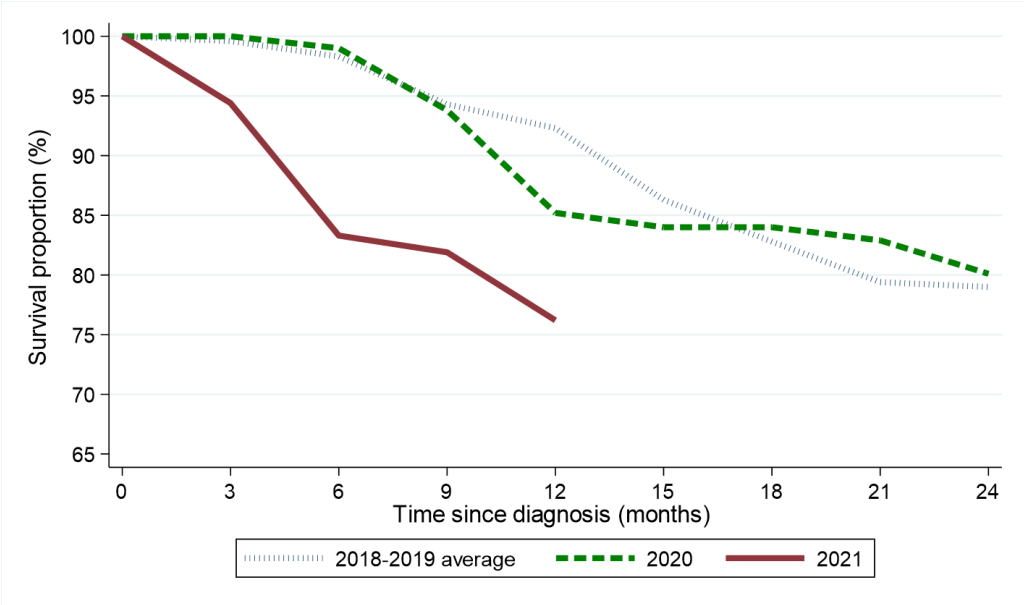
Net survival among cervical cancer patients six months after diagnosis decreased from 98.3% among those diagnosed in April-December of 2018-2019 to 83.3% among those diagnosed in April-December of 2021. This change was not statistically significant. Between the same two diagnosis periods, one-year net survival decreased from 92.3% to 76.2%. This change was not statistically significant.

Table 8: Age-standardised net survival for patients with cervical cancer diagnosed in April-December of 2018-2021 by period of diagnosis

Survival time	Period of diagnosis (Apr-Dec)		
	2018-2019	2020	2021
Three months	99.6% (98.8% - 100.0%)	100.0%	94.4% (84.4% - 100.0%)
Six months	98.3% (96.2% - 100.0%)	99.0% (97.1% - 100.0%)	83.3% (65.6% - 100.0%)
One year	92.3% (86.9% - 98.1%)	85.2% (70.7% - 100.0%)	76.2% (54.6% - 100.0%)
Two years	79.0% (70.1% - 89.0%)	80.1% (65.6% - 97.8%)	-

No statistically significant reductions compared to 2018-2019

Figure 8: Age-standardised net survival for patients with cervical cancer diagnosed in April-December of 2018-2021 by period of diagnosis



Note: All patients are followed up to the end of 2022. This enables calculation of two-year survival for patients diagnosed in 2018-2020, however only survival up to one year from diagnosis can be calculated for patients diagnosed in 2021.

MORTALITY

During the April-December period the number of deaths from cervical cancer decreased between 2018-2019 and 2021 by 18.8% from 16 deaths per year to 13 deaths.

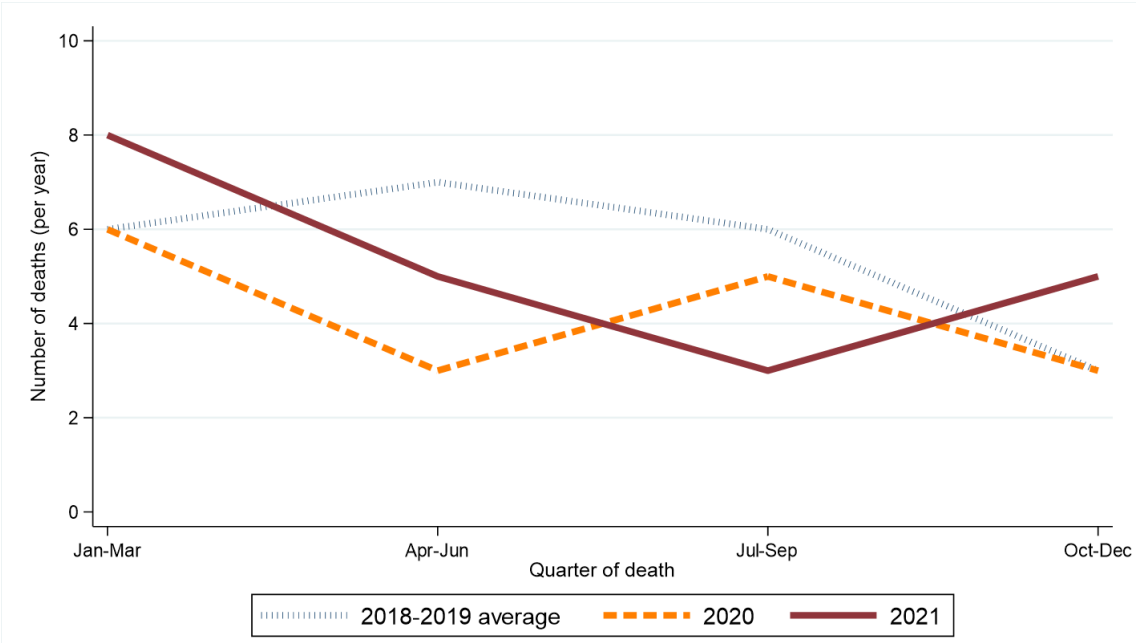
Table 9: Number of cervical cancer deaths in 2018-2021 by quarter and year of death

Period of death	Annual total	Quarter of death			
		Jan-Mar	Apr-Jun	Jul-Sept	Oct-Dec
2018-2019*	22	6	7	6	3
2020	17	6	3	5	3
2021	21	8	5	3	5

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

Figure 9: Number of cervical cancer deaths in 2018-2021 by quarter and year of death

(a) Number of deaths by quarter of death



(b) Percentage change over time in number of deaths by quarter of death