Impact of Covid-19 on incidence, survival and mortality of bladder cancer 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.

INCIDENCE

During the April-December period when Covid-19 was present the number of cases of bladder cancer diagnosed decreased by 6.1% (11 patients) from 181 per year in 2018 - 2019 to 170 in 2020.

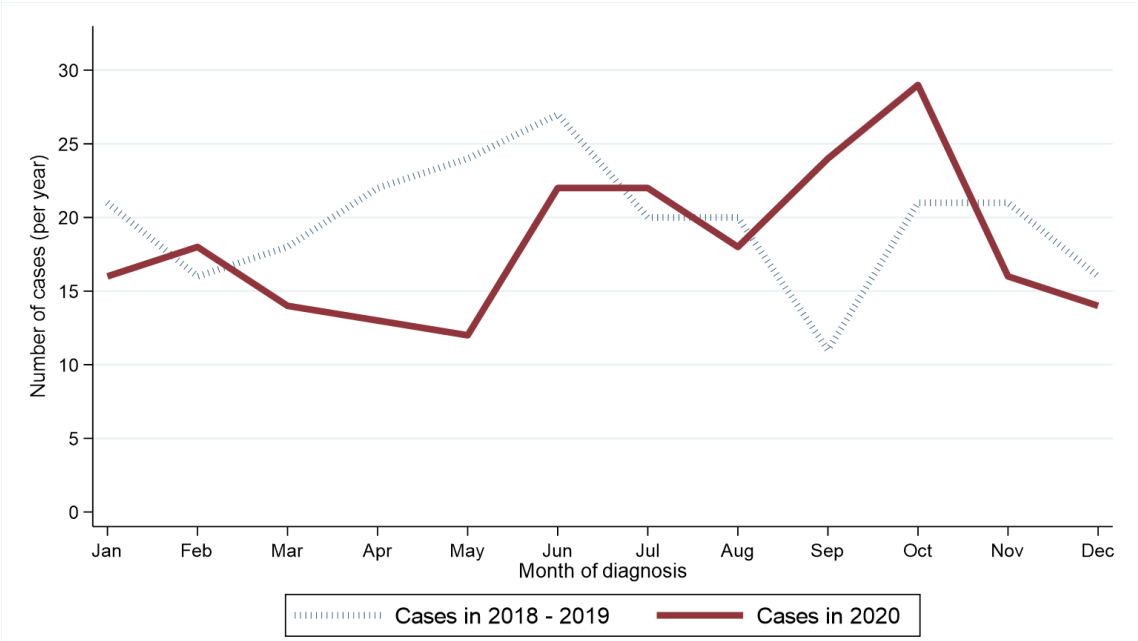
Table 1: Number of bladder cancer cases diagnosed in 2018-2020 by month and year of diagnosis

Period of diagnosis	Annual total	Month diagnosed											
		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept	Oct	Nov	Dec
2018-2019*	235	21	16	18	22	24	27	20	20	11	21	21	16
2020	218	16	18	14	13	12	22	22	18	24	29	16	14

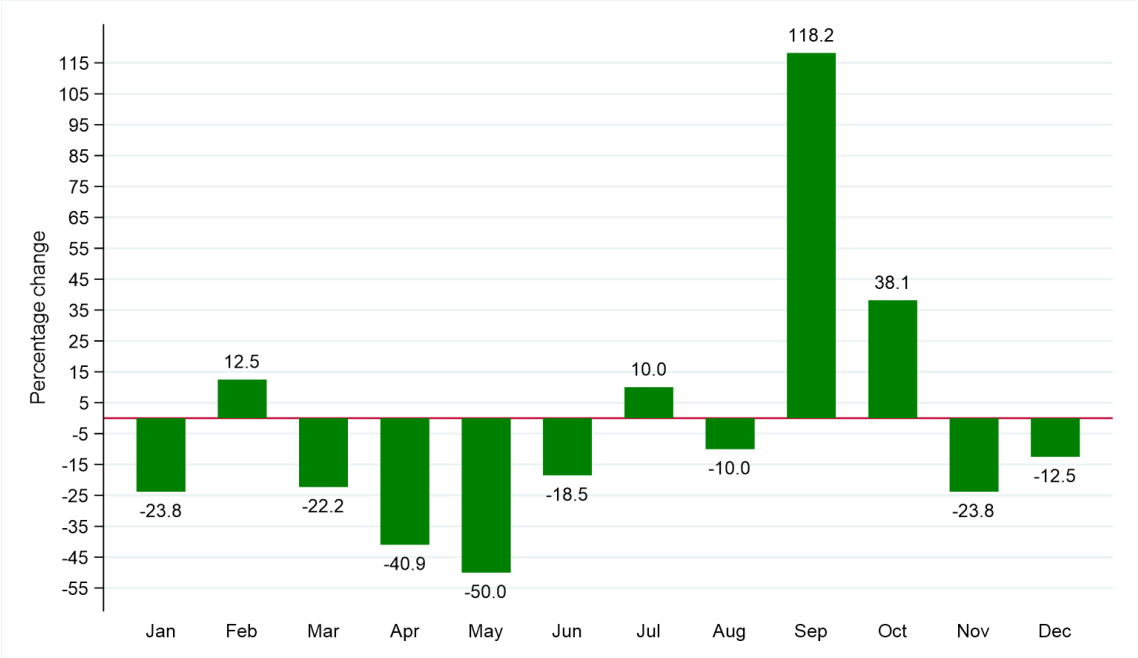
** Average cases per year rounded to the nearest integer. Row sums may thus differ slightly from the total.*

Figure 1: Number of bladder 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 bladder cancer cases by month of diagnosis



GENDER

Excluding the first quarter of each year among males the number of cases of bladder cancer diagnosed decreased by 10.0% from 130 per year in 2018 - 2019 to 117 in 2020. Between the same two time periods the number of cases among females increased by 3.9% from 51 per year to 53. The change in case distribution by gender between 2018 - 2019 and 2020 was not statistically significant.

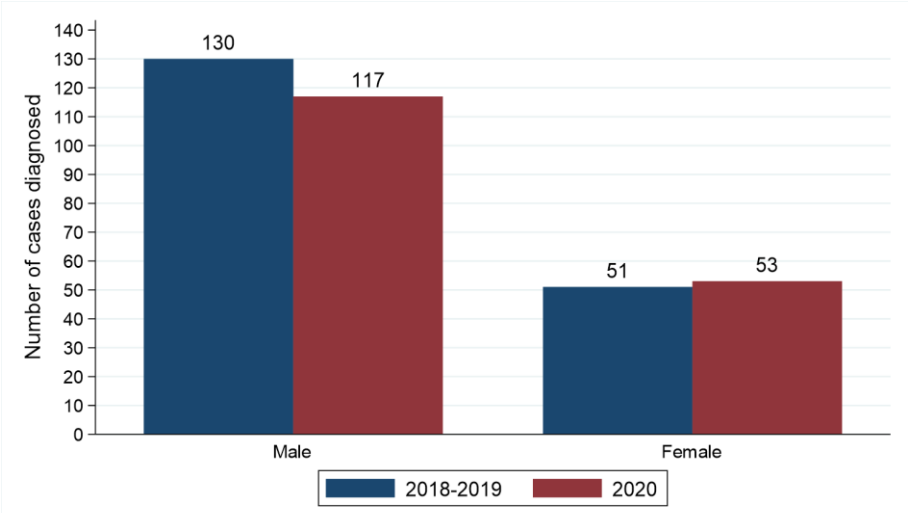
Table 2: Number and proportion of bladder cancer cases diagnosed in April-December of 2018-2020 by gender and period of diagnosis

Gender	Period of diagnosis (Apr-Dec)		Percentage change
	2018-2019*	2020	
Male	130 (71.8%)	117 (68.8%)	-10.0% (13 patients)
Female	51 (28.2%)	53 (31.2%)	+3.9% (2 patients)
All persons	181	170	-6.1% (11 patients)

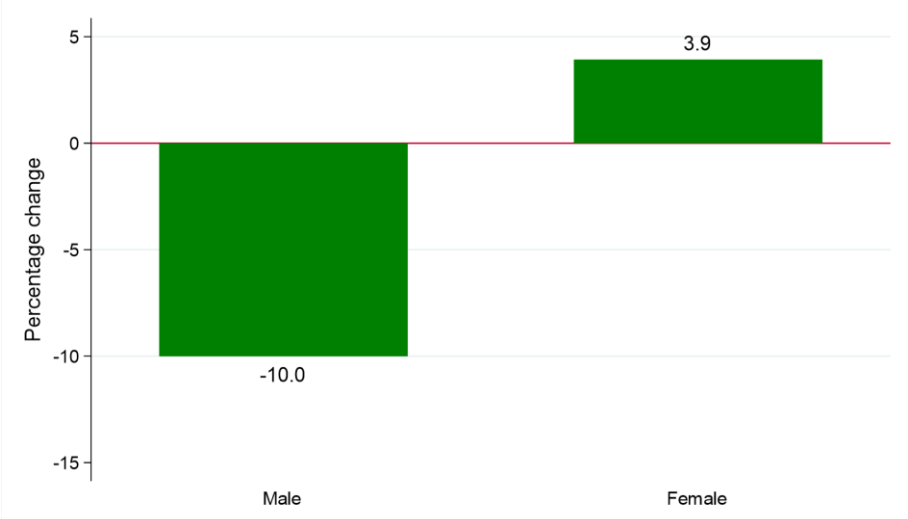
** Average cases per year rounded to the nearest integer. Column sums may thus differ slightly from the total.*

Figure 2: Bladder 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 bladder cancer cases by gender



AGE

Excluding the first quarter of each year among people aged 0 to 54 the number of cases of bladder cancer diagnosed decreased by 75.0% from 12 per year in 2018 - 2019 to 3 in 2020. Between the same two time periods, the number of cases among people aged 55 to 64 increased by 37.5% from 24 per year to 33. The change in case distribution by age between 2018 - 2019 and 2020 was statistically significant (p = 0.011).

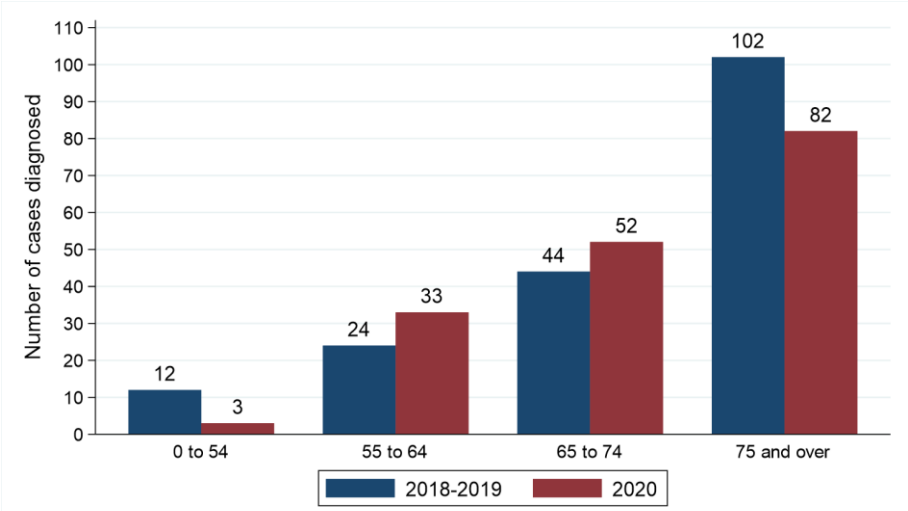
Table 3: Number and proportion of bladder cancer cases diagnosed in April-December of 2018-2020 by age and period of diagnosis

Age group	Period of diagnosis (Apr-Dec)		Percentage change
	2018-2019*	2020	
0 to 54	12 (6.6%)	3 (1.8%)	-75.0% (9 patients)
55 to 64	24 (13.3%)	33 (19.4%)	+37.5% (9 patients)
65 to 74	44 (24.3%)	52 (30.6%)	+18.2% (8 patients)
75 and over	102 (56.4%)	82 (48.2%)	-19.6% (20 patients)
All ages	181	170	-6.1% (11 patients)

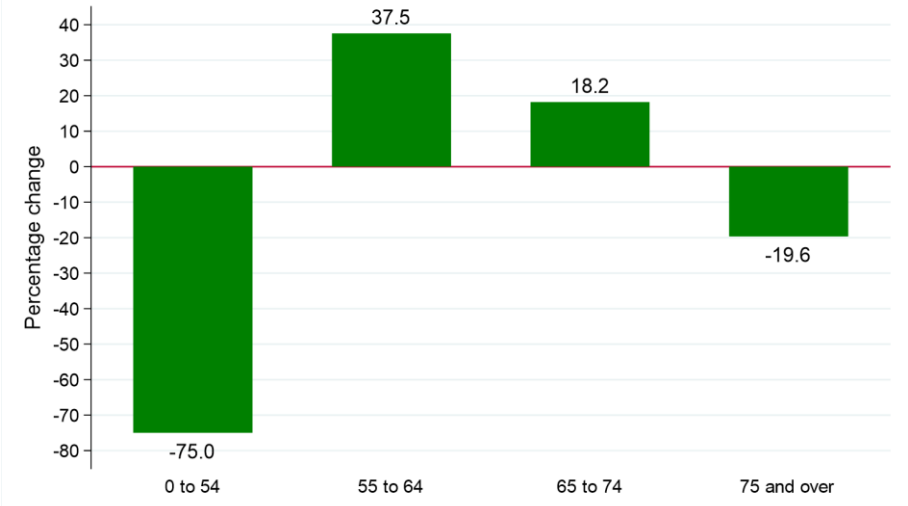
** Average cases per year rounded to the nearest integer. Column sums may thus differ slightly from the total.*

Figure 3: Bladder 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 bladder 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 bladder cancer diagnosed decreased by 17.6% from 51 per year in 2018 - 2019 to 42 in 2020. Between the same two time periods the number of cases among residents of Western HSCT increased by 37.5% from 24 per year to 33. The change in case distribution by HSCT between 2018 - 2019 and 2020 was not statistically significant.

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

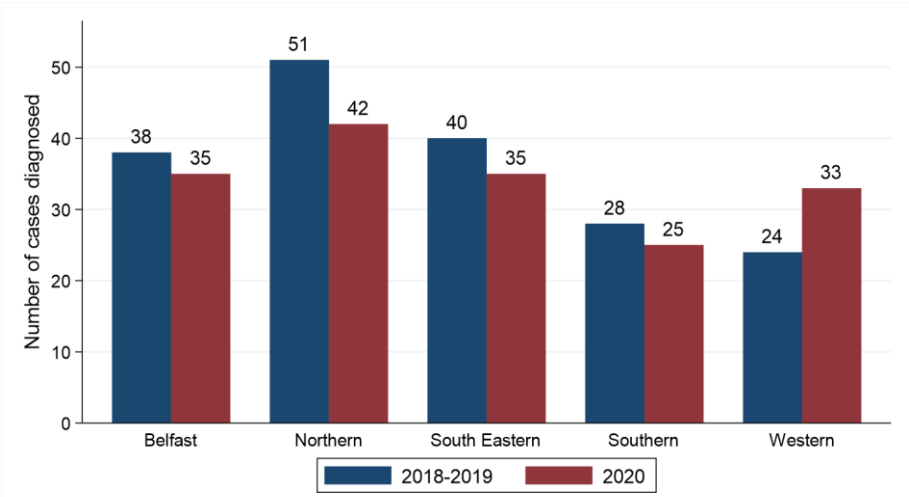
Health and Social Care Trust	Period of diagnosis (Apr-Dec)		Percentage change
	2018-2019*	2020	
Belfast HSCT	38 (21.0%)	35 (20.6%)	-7.9% (3 patients)
Northern HSCT	51 (28.2%)	42 (24.7%)	-17.6% (9 patients)
South Eastern HSCT	40 (22.1%)	35 (20.6%)	-12.5% (5 patients)
Southern HSCT	28 (15.5%)	25 (14.7%)	-10.7% (3 patients)
Western HSCT	24 (13.3%)	33 (19.4%)	+37.5% (9 patients)
Northern Ireland	181	170	-6.1% (11 patients)

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

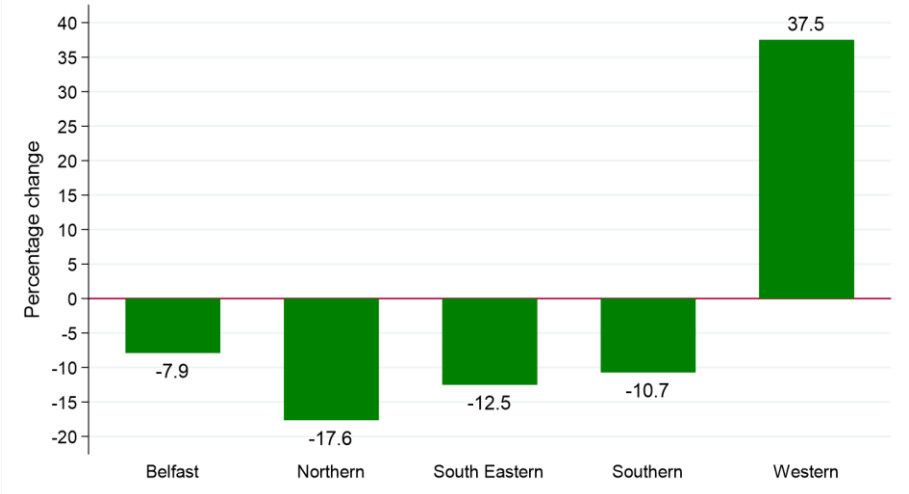
Note: Cases with unknown Health and Social Care Trust are included in totals

Figure 4: Bladder 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 bladder 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 bladder cancer diagnosed decreased by 25.0% from 32 per year in 2018 - 2019 to 24 in 2020. Between the same two time periods the number of cases among residents of the least deprived areas decreased by 24.4% from 41 per year to 31. The change in case distribution by deprivation quintile between 2018 - 2019 and 2020 was not statistically significant.

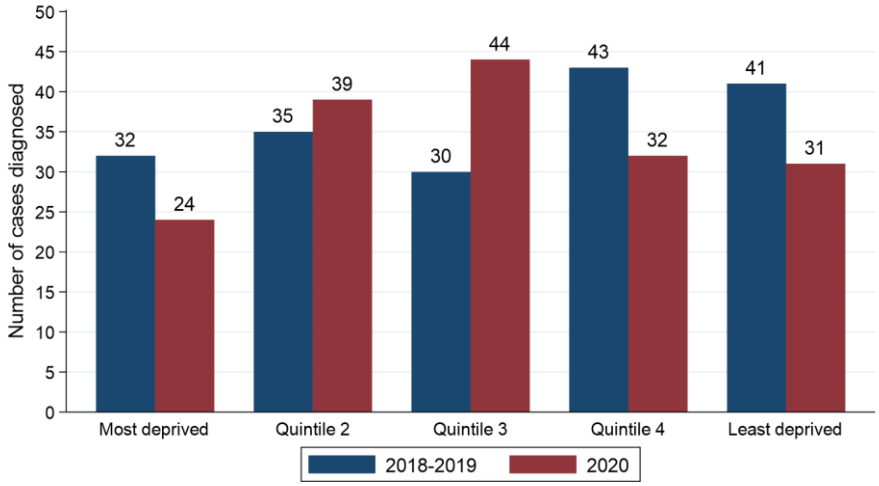
Table 5: Number and proportion of bladder cancer cases diagnosed in April-December of 2018-2020 by deprivation quintile and period of diagnosis

Deprivation quintile	Period of diagnosis (Apr-Dec)		Percentage change
	2018-2019*	2020	
Most deprived	32 (17.7%)	24 (14.1%)	-25.0% (8 patients)
Quintile 2	35 (19.3%)	39 (22.9%)	+11.4% (4 patients)
Quintile 3	30 (16.6%)	44 (25.9%)	+46.7% (14 patients)
Quintile 4	43 (23.8%)	32 (18.8%)	-25.6% (11 patients)
Least deprived	41 (22.7%)	31 (18.2%)	-24.4% (10 patients)
Northern Ireland	181	170	-6.1% (11 patients)

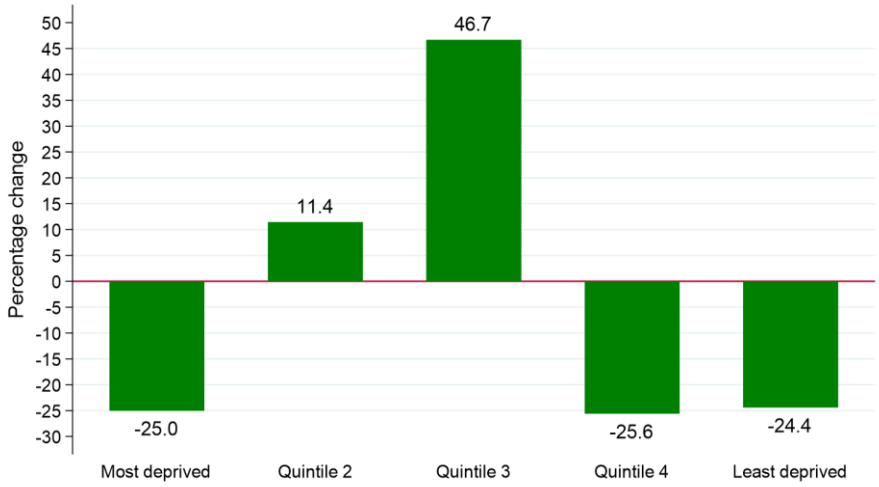
** Average cases per year rounded to the nearest integer. Column sums may thus differ slightly from the total.*
Note: Cases with unknown deprivation quintile are included in totals

Figure 5: Bladder 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 bladder cancer cases by deprivation quintile



BASIS OF DIAGNOSIS

Excluding the first quarter of each year the number of bladder cancer cases diagnosed pathologically decreased by 7.3% from 164 per year in 2018 - 2019 to 152 in 2020, while the number of cases diagnosed clinically increased by 6.7% from 15 per year to 16. The change in case distribution by basis of diagnosis between 2018 - 2019 and 2020 was not statistically significant.

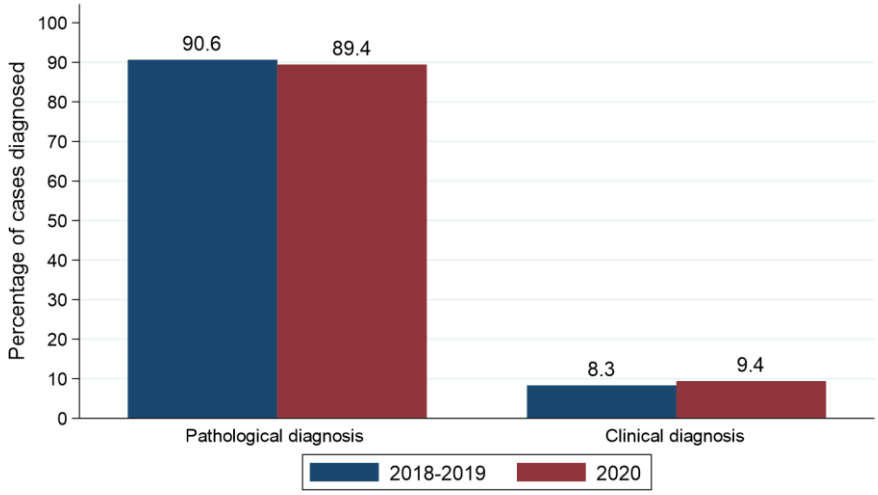
Table 6: Number and proportion of bladder cancer cases diagnosed in April-December of 2018-2020 by basis and period of diagnosis

Basis of diagnosis	Period of diagnosis (Apr-Dec)		Percentage change
	2018-2019*	2020	
Pathological diagnosis	164 (90.6%)	152 (89.4%)	-7.3% (12 patients)
Clinical diagnosis	15 (8.3%)	16 (9.4%)	+6.7% (1 patients)
Death certificate only	1 (0.6%)	0 (0.0%)	-100.0% (1 patients)
Unknown	2 (1.1%)	2 (1.2%)	0.0% (0 patients)
All groups	181	170	-6.1% (11 patients)

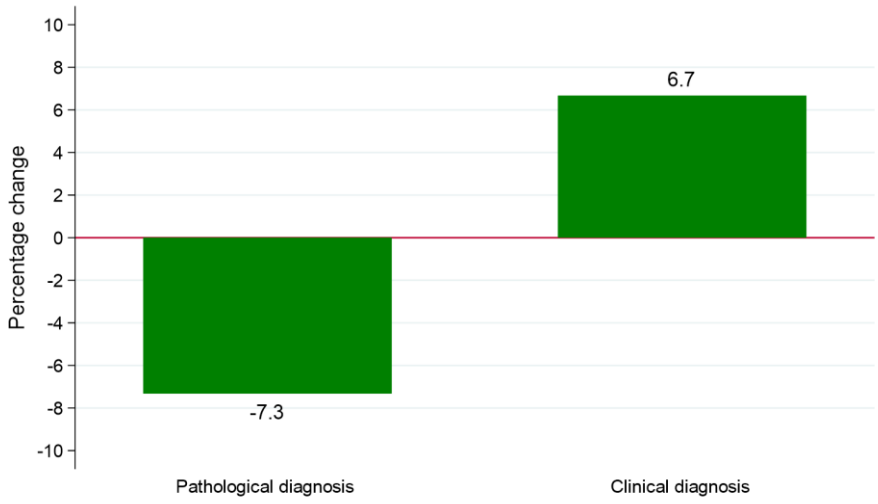
** Average cases per year rounded to the nearest integer. Column sums may thus differ slightly from the total.*

Figure 6: Bladder 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 bladder cancer cases by basis of diagnosis



STAGE

Excluding the first quarter of each year the number of bladder cancer cases diagnosed at Stage I decreased by 23.0% from 74 per year in 2018 - 2019 to 57 in 2020. Between the same two time periods the number of cases diagnosed at Stage IV increased by 44.4% from 18 per year to 26. The change in case distribution by stage at diagnosis between 2018 - 2019 and 2020 was not statistically significant.

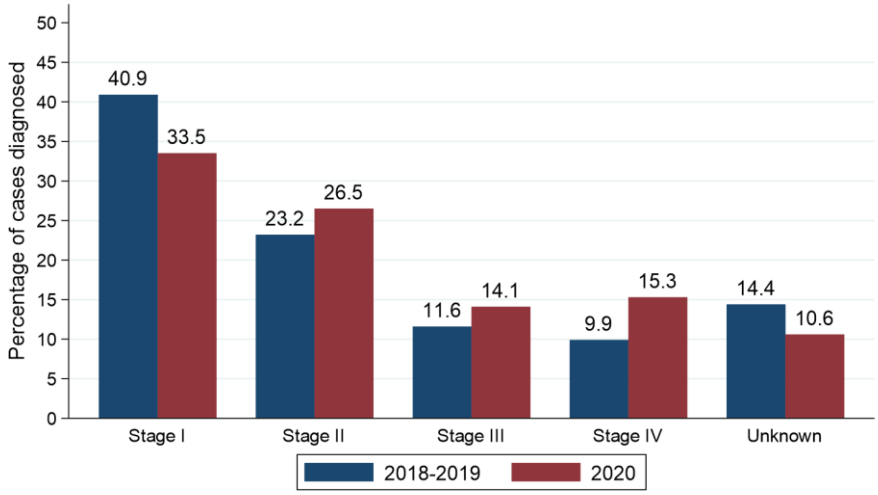
Table 7: Number and proportion of bladder cancer cases diagnosed in April-December of 2018-2020 by stage at diagnosis and period of diagnosis

Stage at diagnosis	Period of diagnosis (Apr-Dec)		Percentage change
	2018-2019*	2020	
Stage I	74 (40.9%)	57 (33.5%)	-23.0% (17 patients)
Stage II	42 (23.2%)	45 (26.5%)	+7.1% (3 patients)
Stage III	21 (11.6%)	24 (14.1%)	+14.3% (3 patients)
Stage IV	18 (9.9%)	26 (15.3%)	+44.4% (8 patients)
Unknown	26 (14.4%)	18 (10.6%)	-30.8% (8 patients)
All stages	181	170	-6.1% (11 patients)

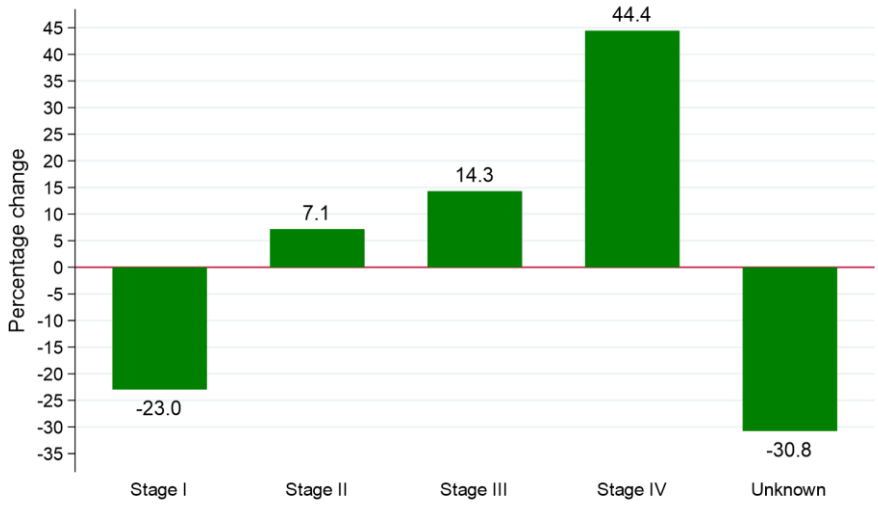
** Average cases per year rounded to the nearest integer. Column sums may thus differ slightly from the total.*

Figure 7: Bladder 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 bladder cancer cases by stage at diagnosis



METHOD OF HOSPITAL ADMISSION

Excluding the first quarter of each year the number of cases of bladder 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 50.0% from 24 per year in 2018 - 2019 to 36 in 2020. The change in case distribution by hospital admission type between 2018 - 2019 and 2020 was statistically significant (p = 0.047).

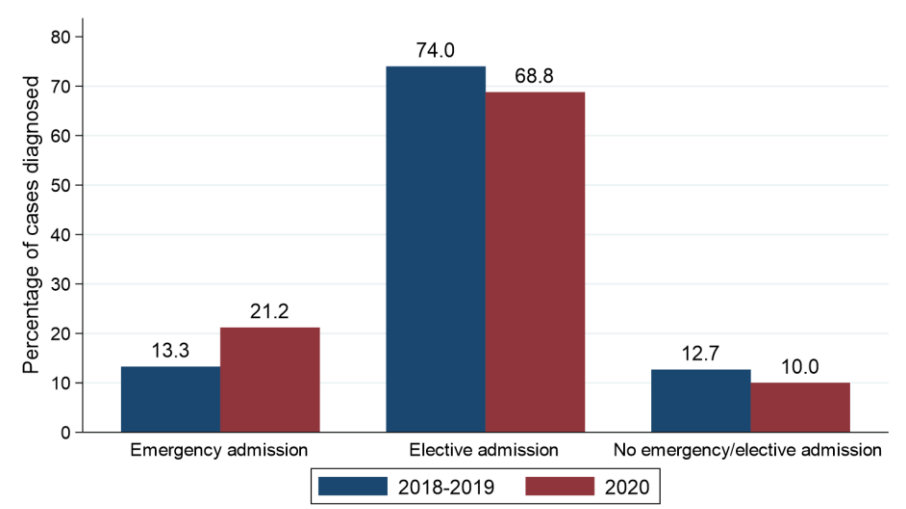
Table 8: Number and proportion of bladder cancer cases diagnosed in April-December of 2018-2020 by method of admission to hospital and period of diagnosis

Method of admission to hospital	Period of diagnosis (Apr-Dec)		Percentage change
	2018-2019*	2020	
Emergency admission	24 (13.3%)	36 (21.2%)	+50.0% (12 patients)
Elective admission	134 (74.0%)	117 (68.8%)	-12.7% (17 patients)
No emergency/elective admission recorded	23 (12.7%)	17 (10.0%)	-26.1% (6 patients)
All persons	181	170	-6.1% (11 patients)

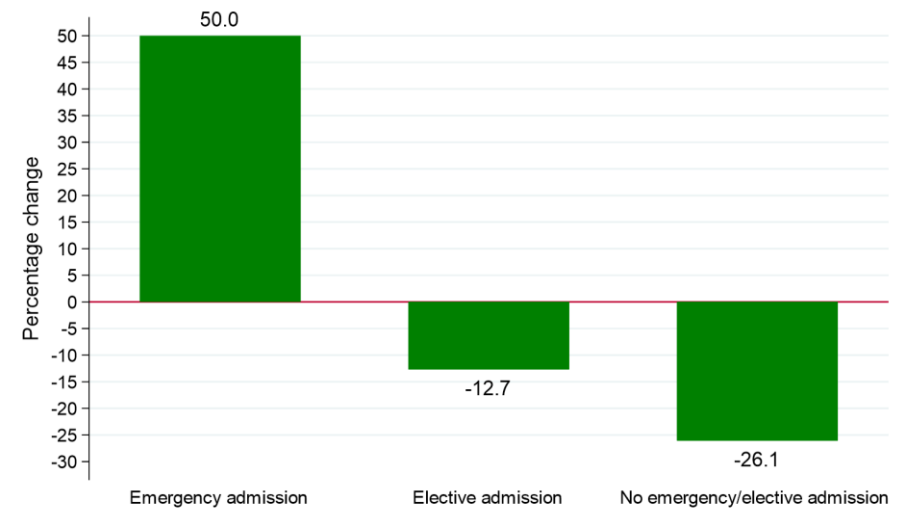
** Average cases per year rounded to the nearest integer. Column sums may thus differ slightly from the total.*

Figure 8: Bladder 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 bladder cancer cases by method of admission to hospital



TREATMENT

Excluding the first quarter of each year the number of bladder cancer cases where the patient was treated with surgery (within six months of diagnosis) decreased by 3.3% from 152 per year for those diagnosed in 2018 - 2019 to 147 for those diagnosed in 2020. The resulting change in the proportion receiving surgery from 84.0% in 2018 - 2019 to 86.5% 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) increased by 14.6% from 48 per year to 55. The resulting change in the proportion receiving chemotherapy from 26.5% in 2018 - 2019 to 32.4% in 2020 was not statistically significant.

The number of bladder cancer cases where the patient was treated with radiotherapy (within six months of diagnosis) decreased by 22.7% from 44 per year for those diagnosed in April-December of 2018 - 2019 to 34 for those diagnosed in April-December of 2020. The resulting change in the proportion receiving radiotherapy from 24.3% in 2018 - 2019 to 20.0% in 2020 was not statistically significant.

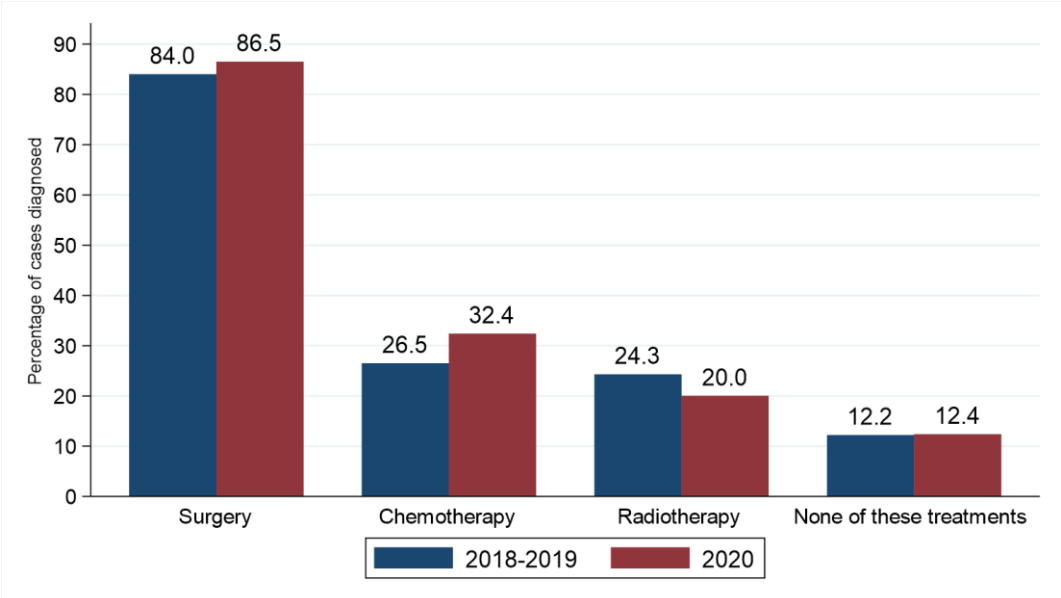
The proportion of patients receiving none of surgery, chemotherapy or radiotherapy (within six months of diagnosis) who were diagnosed in April-December 2020 was 12.4%. This compared to 12.2% of those diagnosed in 2018 - 2019. This change was not statistically significant.

Table 9: Number and proportion of bladder cancer cases diagnosed in April-December of 2018-2020 by treatment type and period of diagnosis

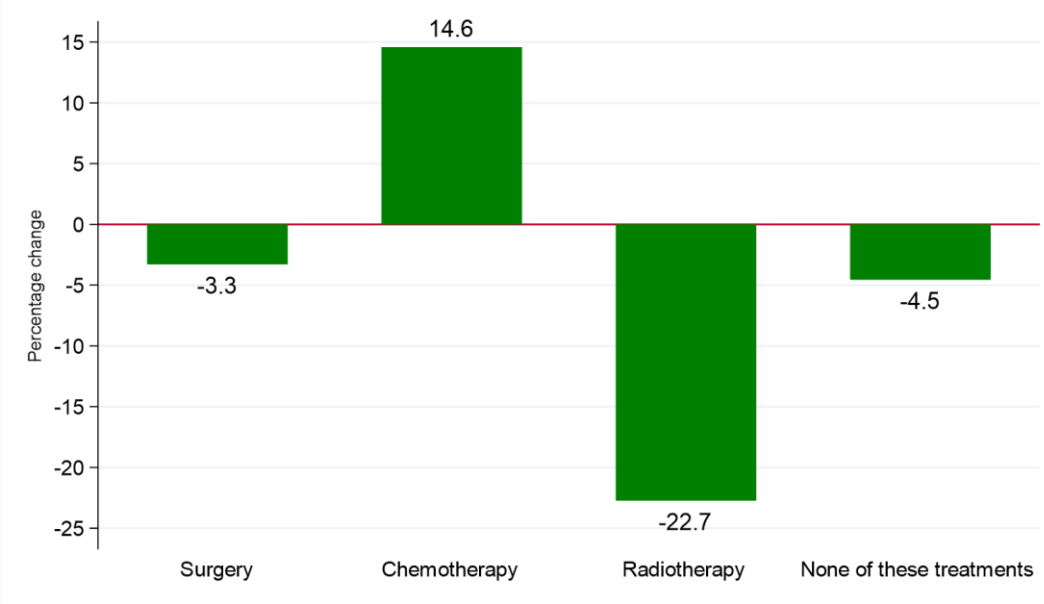
Treatment type	Period of diagnosis (Apr-Dec)		Percentage change
	2018-2019 average	2020	
Surgery	152 (84.0%)	147 (86.5%)	-3.3% (5 patients)
Chemotherapy	48 (26.5%)	55 (32.4%)	+14.6% (7 patients)
Radiotherapy	44 (24.3%)	34 (20.0%)	-22.7% (10 patients)
None of these treatments	22 (12.2%)	21 (12.4%)	-4.5% (1 patients)

No statistically significant changes

Figure 9: Bladder 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 bladder cancer cases by treatment received



⑩ Impact of Covid-19 on incidence, survival and mortality of bladder cancer

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

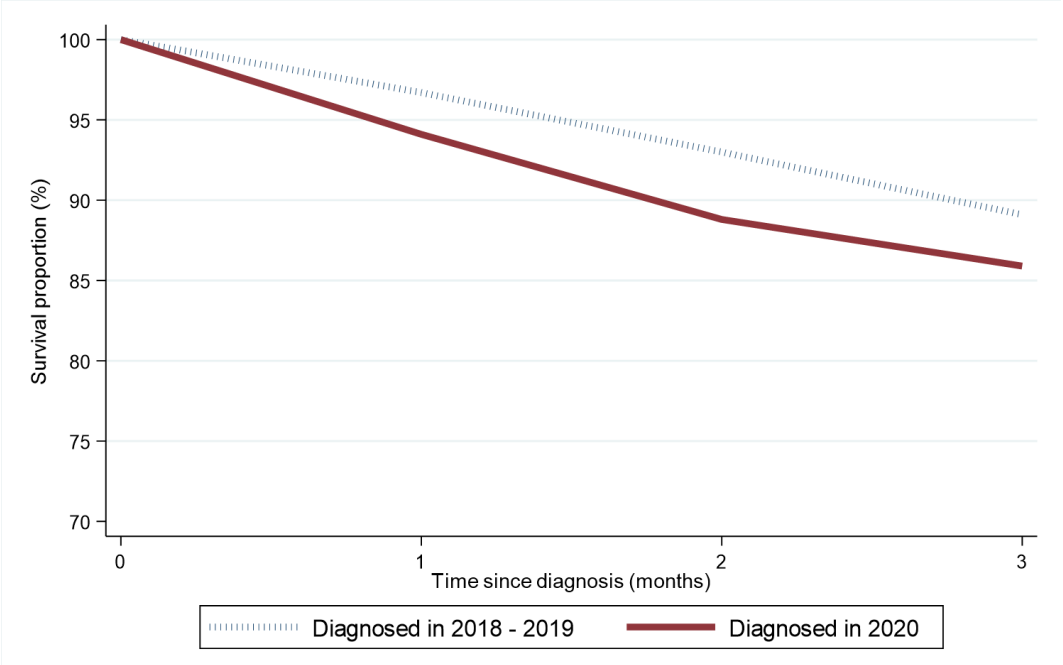
Survival among bladder cancer patients one month after diagnosis decreased from 96.7% among those diagnosed in April-December of 2018 - 2019 to 94.1% among those diagnosed in April-December of 2020. This change was not statistically significant. Between the same two diagnosis periods, three-month survival decreased from 89.1% to 85.9%. This change was not statistically significant.

Table 10: Observed survival for patients with bladder cancer diagnosed in April-December of 2018-2020 by period of diagnosis

Survival time	Period of diagnosis (Apr-Dec)	
	2018-2019	2020
1 month	96.7% (94.2% - 98.1%)	94.1% (89.3% - 96.8%)
2 months	93.0% (89.9% - 95.2%)	88.8% (83.0% - 92.7%)
3 months	89.1% (85.4% - 91.9%)	85.9% (79.7% - 90.3%)

No statistically significant reductions

Figure 10: Observed survival for patients with bladder cancer diagnosed in April-December of 2018-2020 by period of diagnosis



DEATHS FROM COVID-19

During 2020 there were a total of 14 deaths from Covid-19 among bladder cancer patients diagnosed at any point since 1993. Among the patients who died of Covid-19, 3 were diagnosed with bladder cancer in 2020, while 2 were diagnosed in 2019.

NET SURVIVAL

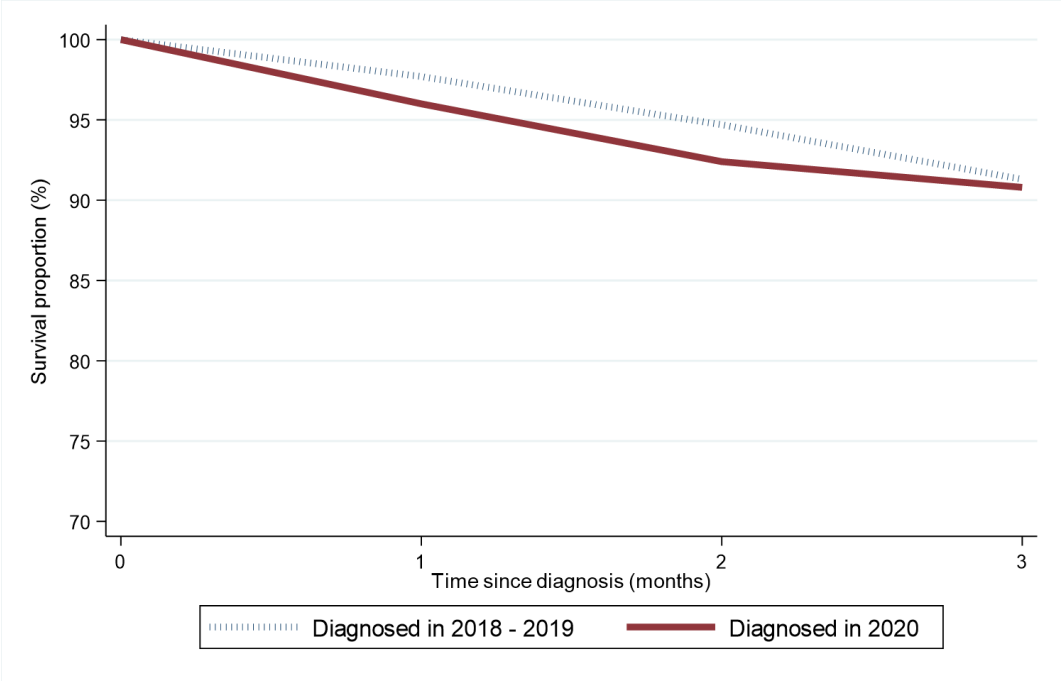
Age-standardised net survival (which takes account of deaths from other causes such as Covid-19) among bladder cancer patients one month after diagnosis decreased from 97.7% among those diagnosed in April-December of 2018 - 2019 to 96.0% among those diagnosed in April-December of 2020. This change was not statistically significant. Between the same two time periods, three-month age-standardised net survival decreased from 91.3% to 90.8%. This change was not statistically significant.

Table 11: Age-standardised net survival for patients with bladder cancer diagnosed in April-December of 2018-2020 by period of diagnosis

Survival time	Period of diagnosis (Apr-Dec)	
	2018-2019	2020
1 month	97.7% (96.7% - 98.7%)	96.0% (94.0% - 98.1%)
2 months	94.7% (92.9% - 96.6%)	92.4% (89.2% - 95.7%)
3 months	91.3% (89.0% - 93.7%)	90.8% (86.8% - 95.0%)

No statistically significant reductions

Figure 11: Age-standardised net survival for patients with bladder 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 bladder cancer decreased by 6.9% from 102 per year in 2018 - 2019 to 95 in 2020.

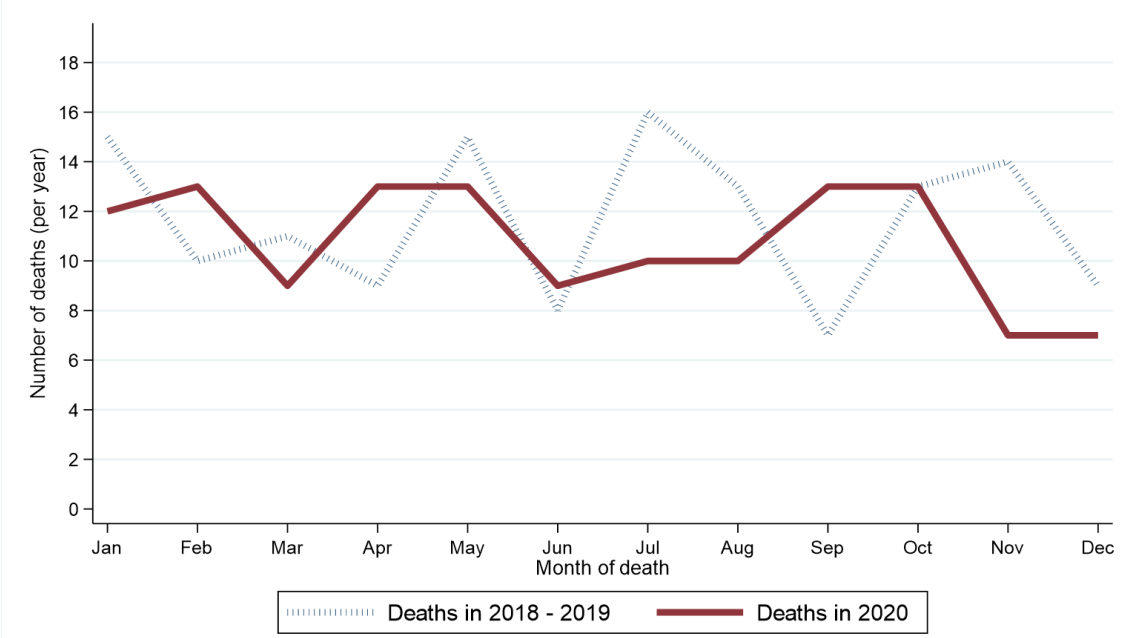
Table 12: Number of bladder cancer deaths in 2018-2020 by month and year of death

Period of death	Annual total	Month death occurred											
		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept	Oct	Nov	Dec
2018-2019*	137	15	10	11	9	15	8	16	13	7	13	14	9
2020	129	12	13	9	13	13	9	10	10	13	13	7	7

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

Figure 12: Number of bladder 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 bladder cancer deaths by month of death