Recent trends in incidence, survival and mortality of stomach 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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N. Ireland Cancer Registry

Queen's University Belfast

HSC Public Health Agency

INCIDENCE

During the April-December period the number of cases of stomach cancer diagnosed increased between 2018-2019 and 2021 by 13.0% from 138 cases per year to 156 cases.

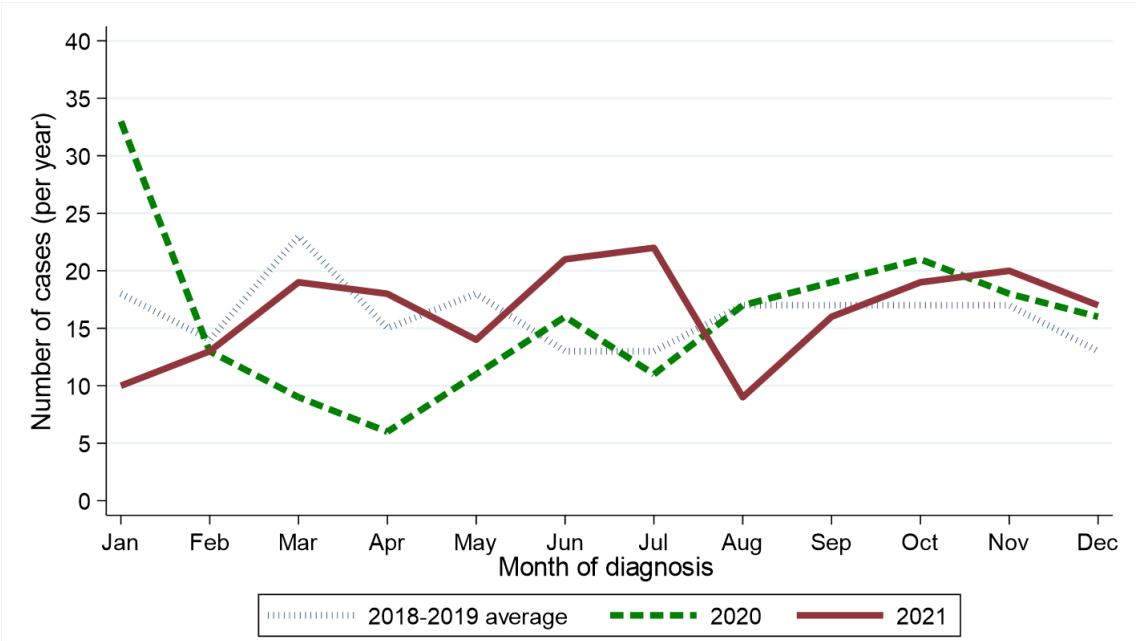
Table 1: Number of stomach cancer cases diagnosed in 2018-2021 by month and year of diagnosis

Period of diagnosis	Annual total	Month diagnosed											
		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept	Oct	Nov	Dec
2018-2019*	193	18	14	23	15	18	13	13	17	17	17	17	13
2020	190	33	13	9	6	11	16	11	17	19	21	18	16
2021	198	10	13	19	18	14	21	22	9	16	19	20	17

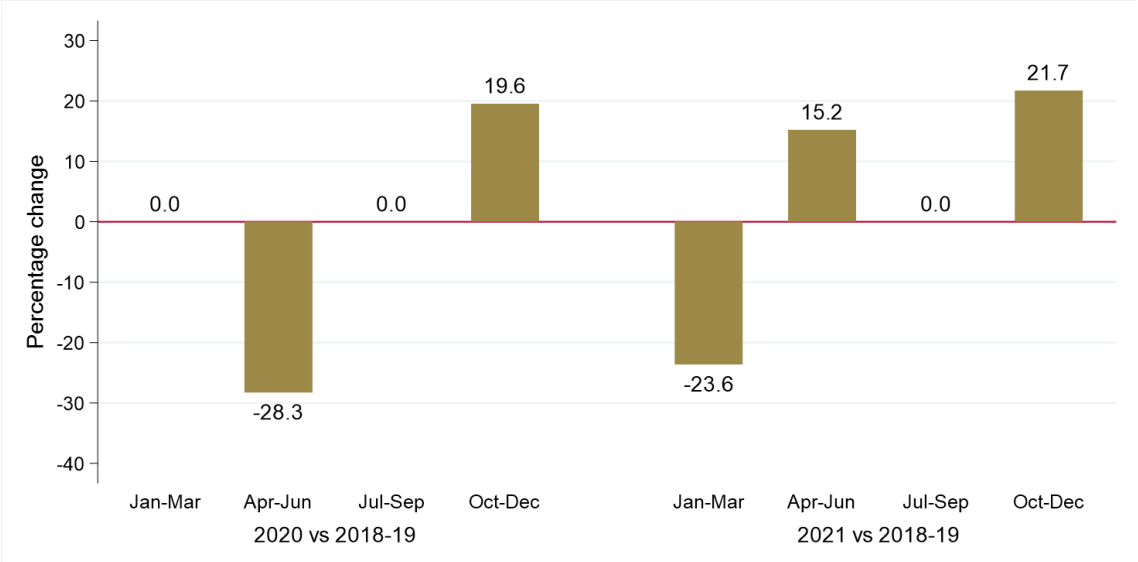
** Average cases per year rounded to the nearest integer. Row sums may thus differ slightly from the total.*

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

(a) Number of cases diagnosed by month of diagnosis



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



GENDER

Excluding the first quarter of each year the number of male stomach cancer cases diagnosed increased by 16.9% from 83 per year in 2018-2019 to 97 in 2021. Between the same two time periods the number of female stomach cancer cases diagnosed increased by 5.4% from 56 per year in 2018-2019 to 59 in 2021. The change in case distribution by gender between 2018-2019 and 2021 was not statistically significant.

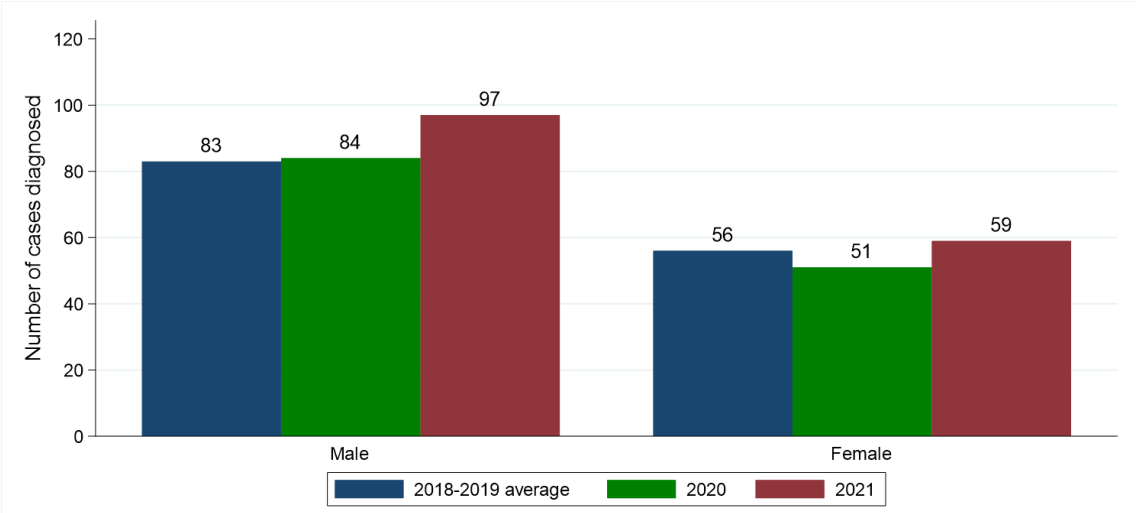
Table 2: Number and proportion of stomach cancer cases diagnosed in April-December of 2018-2021 by gender and period of diagnosis

Gender	Period of diagnosis (Apr-Dec)			Percentage change	
	2018-2019*	2020	2021	2020 vs 2018-2019	2021 vs 2018-2019
All persons	138	135	156	-2.2%	+13.0%
Male	83 (60.1%)	84 (62.2%)	97 (62.2%)	+1.2%	+16.9%
Female	56 (40.6%)	51 (37.8%)	59 (37.8%)	-8.9%	+5.4%

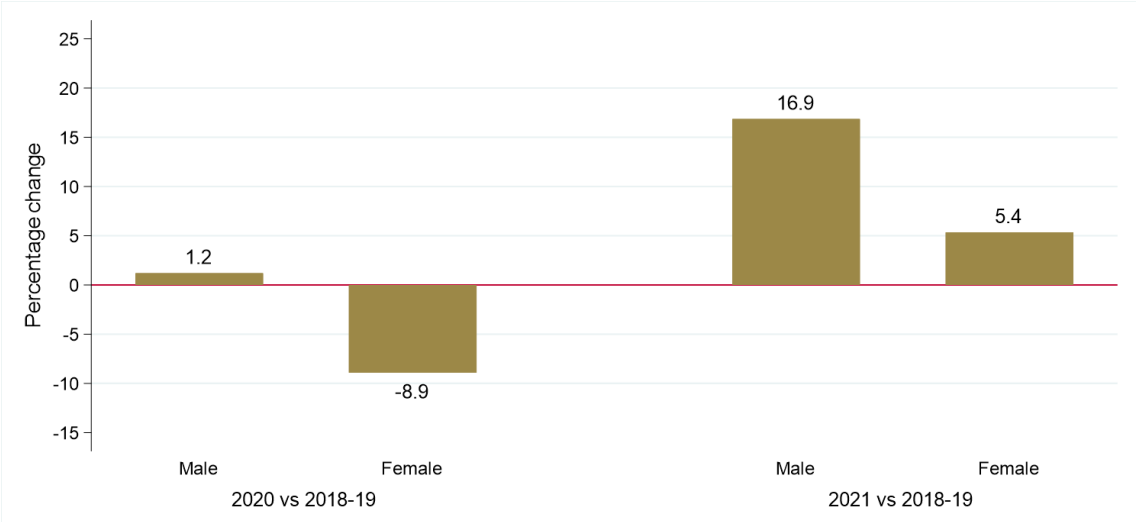
** Average cases per year rounded to the nearest integer. Column sums may thus differ slightly from the total.*

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

(a) Number of cases diagnosed



(b) Percentage change over time in number of cases



AGE

Excluding the first quarter of each year the number of cases of stomach cancer diagnosed among those aged 55 to 64 decreased by 36.0% from 25 per year in 2018-2019 to 16 in 2021. Between the same two time periods the number of cases of stomach cancer diagnosed among those aged 75 and over increased by 45.0% from 60 per year in 2018-2019 to 87 in 2021. The change in case distribution by age between 2018-2019 and 2021 was statistically significant (p = 0.037).

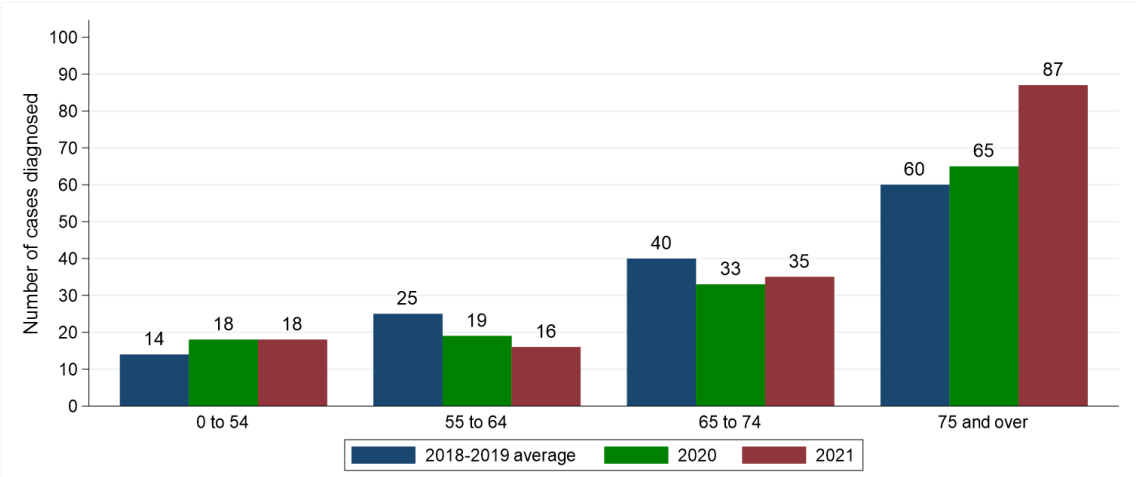
Table 3: Number and proportion of stomach cancer cases diagnosed in April-December of 2018-2021 by age and period of diagnosis

Age	Period of diagnosis (Apr-Dec)			Percentage change	
	2018-2019*	2020	2021	2020 vs 2018-2019	2021 vs 2018-2019
All ages	138	135	156	-2.2%	+13.0%
0 to 54	14 (10.1%)	18 (13.3%)	18 (11.5%)	+28.6%	+28.6%
55 to 64	25 (18.1%)	19 (14.1%)	16 (10.3%)	-24.0%	-36.0%
65 to 74	40 (29.0%)	33 (24.4%)	35 (22.4%)	-17.5%	-12.5%
75 and over	60 (43.5%)	65 (48.1%)	87 (55.8%)	+8.3%	+45.0%

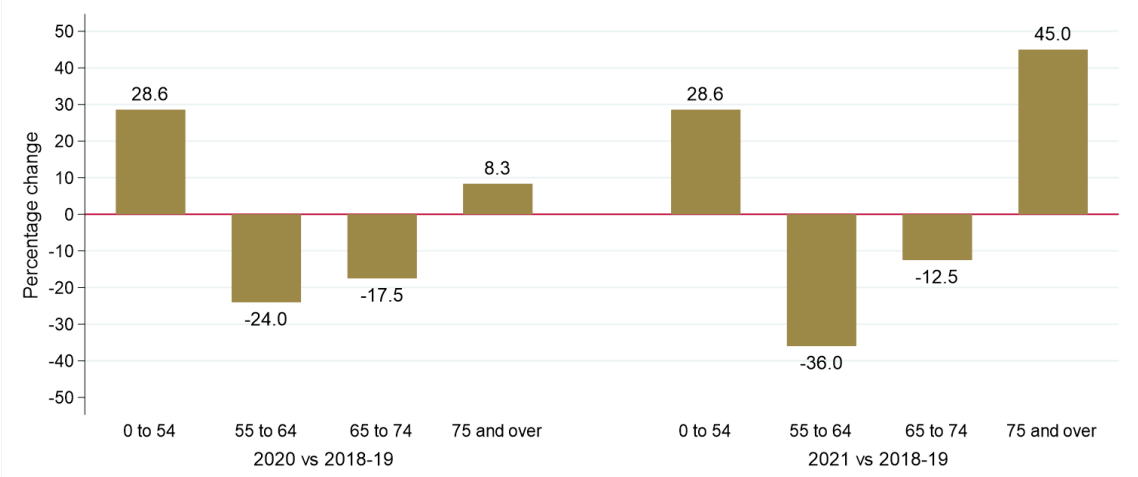
** Average cases per year rounded to the nearest integer. Column sums may thus differ slightly from the total.*

Figure 3: Number of stomach 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 stomach cancer diagnosed among those resident in Southern HSCT decreased by 18.5% from 27 per year in 2018-2019 to 22 in 2021. Between the same two time periods the number of cases of stomach cancer diagnosed among those resident in South Eastern HSCT increased by 58.3% from 24 per year in 2018-2019 to 38 in 2021. The change in case distribution by Health and Social Care Trust between 2018-2019 and 2021 was not statistically significant.

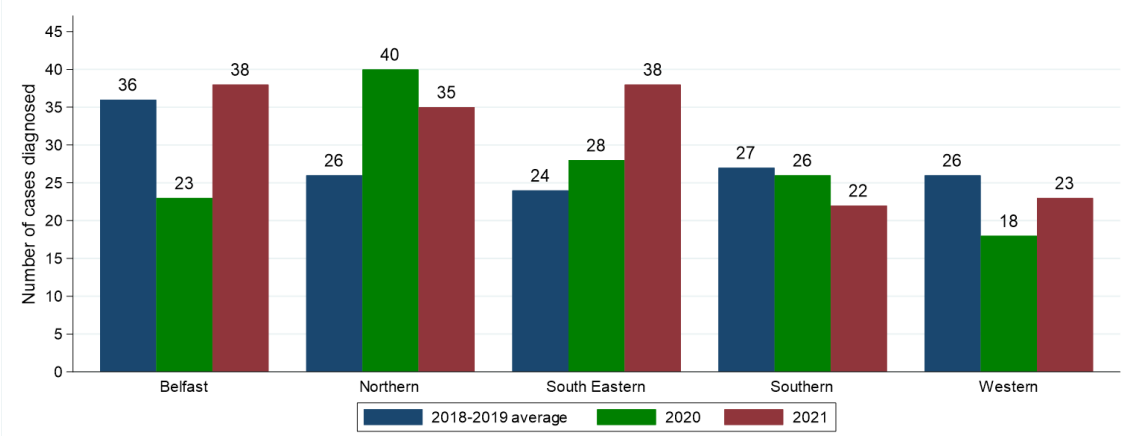
Table 4: Number and proportion of stomach cancer cases diagnosed in April-December of 2018-2021 by Health and Social Care Trust and period of diagnosis

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	138	135	156	-2.2%	+13.0%
Belfast	36 (26.1%)	23 (17.0%)	38 (24.4%)	-36.1%	+5.6%
Northern	26 (18.8%)	40 (29.6%)	35 (22.4%)	+53.8%	+34.6%
South Eastern	24 (17.4%)	28 (20.7%)	38 (24.4%)	+16.7%	+58.3%
Southern	27 (19.6%)	26 (19.3%)	22 (14.1%)	-3.7%	-18.5%
Western	26 (18.8%)	18 (13.3%)	23 (14.7%)	-30.8%	-11.5%

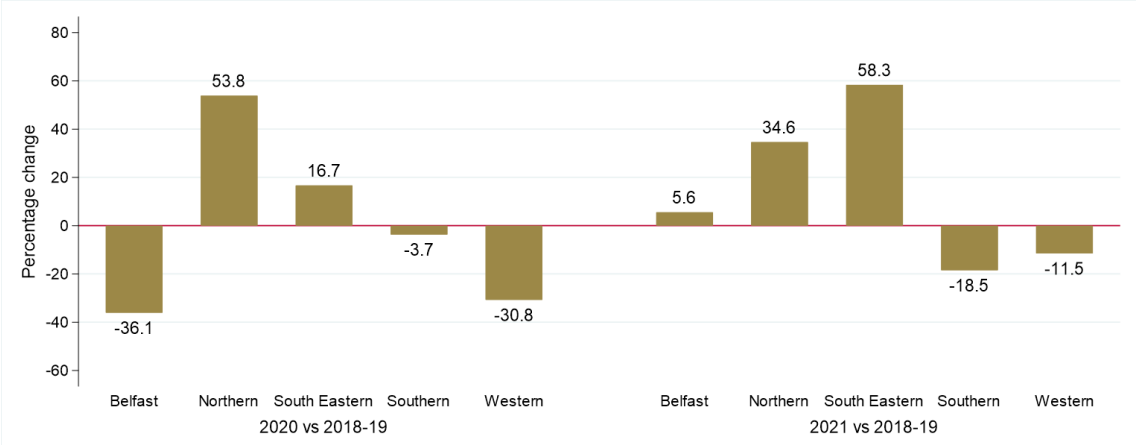
** Average cases per year rounded to the nearest integer. Column sums may thus differ slightly from the total.*
Note: Cases with unknown Health and Social Care Trust are included in totals.

Figure 4: Number of stomach 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 stomach cancer diagnosed among those resident in the least deprived quintile did not change between 2018-2019 and 2021 with an average of 24 diagnosed each year. Between the same two time periods the number of cases of stomach cancer diagnosed among those resident in the most deprived quintile did not change between 2018-2019 and 2021 with an average of 32 diagnosed each year. The change in case distribution by deprivation quintile between 2018-2019 and 2021 was not statistically significant.

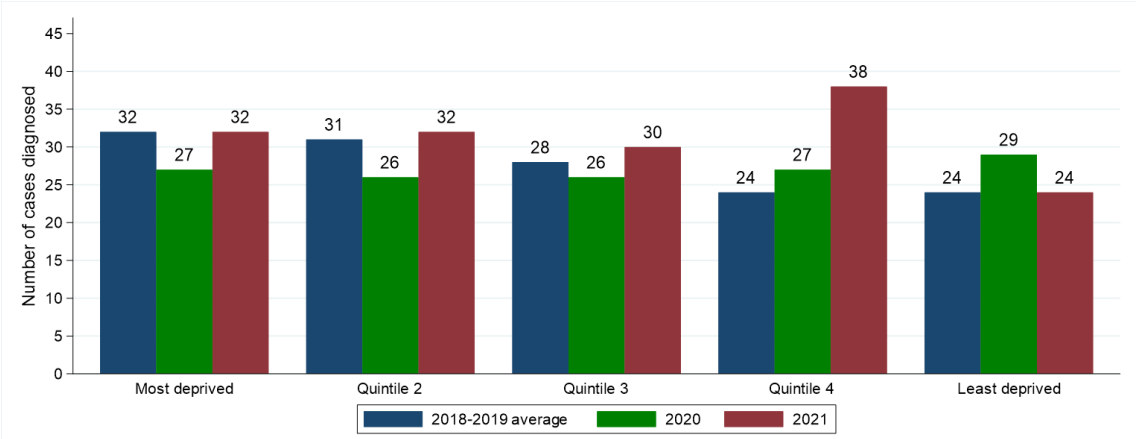
Table 5: Number and proportion of stomach cancer cases diagnosed in April-December of 2018-2021 by deprivation quintile and period of diagnosis

Deprivation quintile	Period of diagnosis (Apr-Dec)			Percentage change	
	2018-2019*	2020	2021	2020 vs 2018-2019	2021 vs 2018-2019
Northern Ireland	138	135	156	-2.2%	+13.0%
Most deprived	32 (23.2%)	27 (20.0%)	32 (20.5%)	-15.6%	0.0%
Quintile 2	31 (22.5%)	26 (19.3%)	32 (20.5%)	-16.1%	+3.2%
Quintile 3	28 (20.3%)	26 (19.3%)	30 (19.2%)	-7.1%	+7.1%
Quintile 4	24 (17.4%)	27 (20.0%)	38 (24.4%)	+12.5%	+58.3%
Least deprived	24 (17.4%)	29 (21.5%)	24 (15.4%)	+20.8%	0.0%

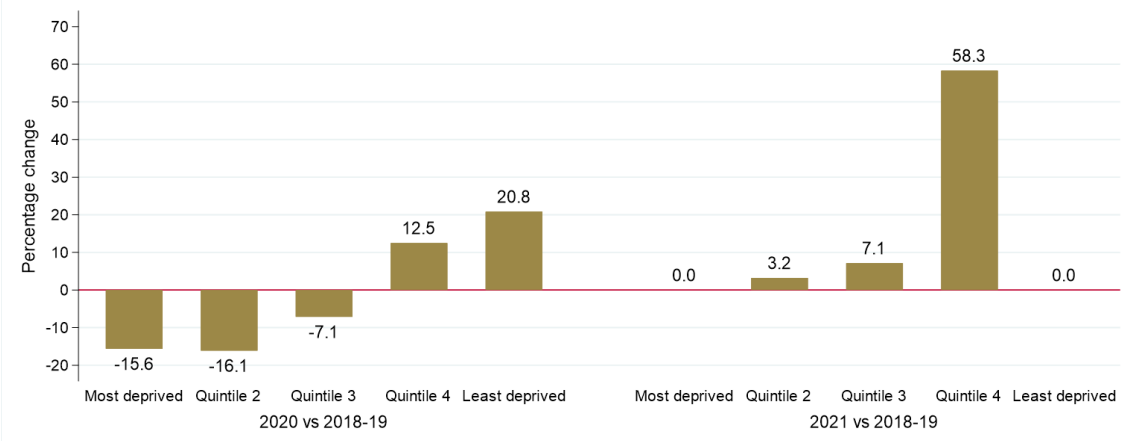
** Average cases per year rounded to the nearest integer. Column sums may thus differ slightly from the total.*
Note: Cases with unknown deprivation quintile are included in totals.

Figure 5: Number of stomach 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



BASIS OF DIAGNOSIS

Excluding the first quarter of each year the number of cases of stomach cancer diagnosed via histology/cytology increased by 12.5% from 128 per year in 2018-2019 to 144 in 2021. As a proportion of all cases, histology/cytology diagnosis decreased from 92.8% in 2018-2019 to 92.3% in 2021. The change in case distribution by basis of diagnosis between 2018-2019 and 2021 was not statistically significant.

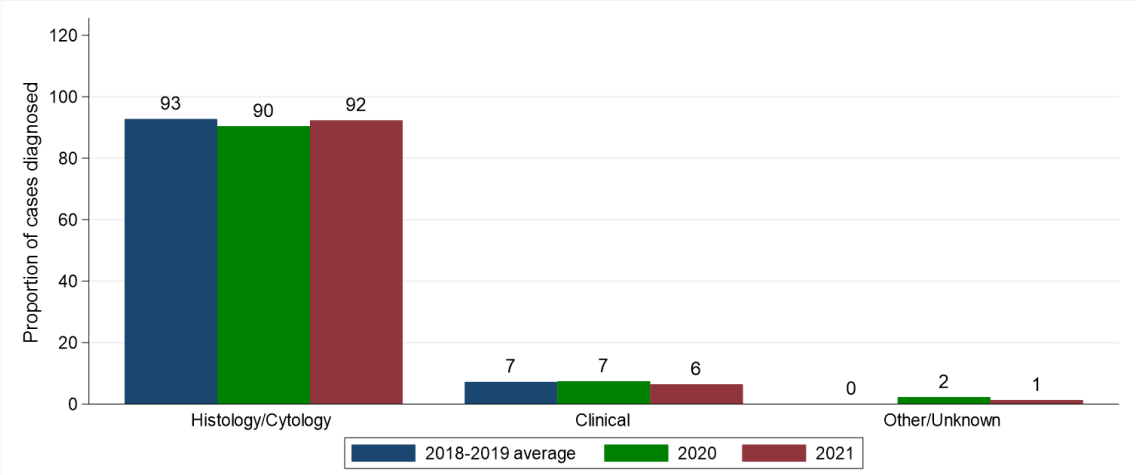
Table 6: Number and proportion of stomach cancer cases diagnosed in April-December of 2018-2021 by basis and period of diagnosis

Basis of diagnosis	Period of diagnosis (Apr-Dec)			Percentage change	
	2018-2019*	2020	2021	2020 vs 2018-2019	2021 vs 2018-2019
All types	138	135	156	-2.2%	+13.0%
Histology/Cytology	128 (92.8%)	122 (90.4%)	144 (92.3%)	-4.7%	+12.5%
Clinical	10 (7.2%)	10 (7.4%)	10 (6.4%)	0.0%	0.0%
Other/Unknown	0 (0.0%)	3 (2.2%)	2 (1.3%)	-	-

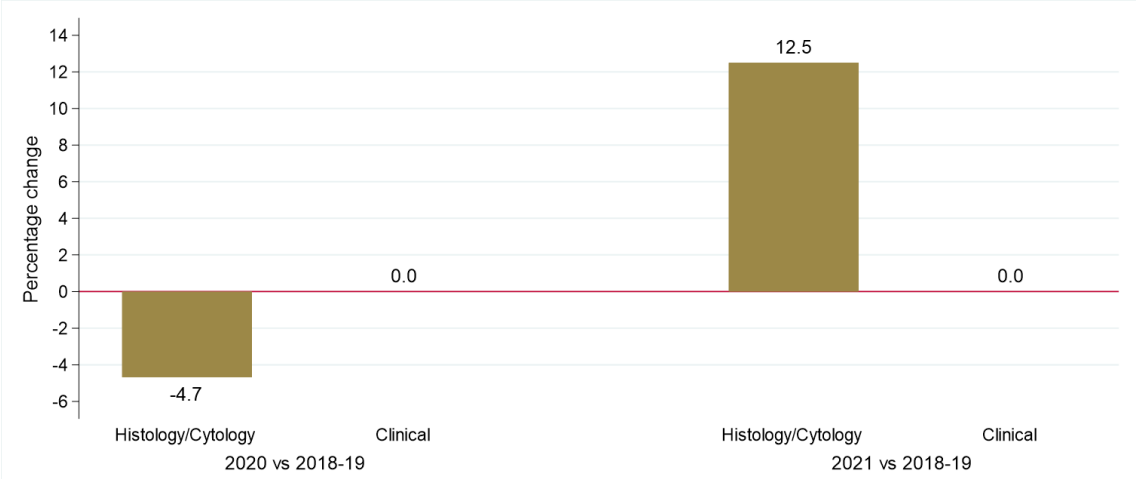
** Average cases per year rounded to the nearest integer. Column sums may thus differ slightly from the total.*

Figure 6: Proportion of stomach cancer cases diagnosed in April-December of 2018-2021 by basis and period of diagnosis

(a) Proportion of cases diagnosed



(b) Percentage change over time in number of cases



STAGE AT DIAGNOSIS

The number of stomach cancer cases diagnosed at stage I in April to December of each year increased by 90.9% from 11 per year in 2018-2019 to 21 in 2021. In addition the number of stomach cancer cases diagnosed at stage IV did not change between 2018-2019 and 2021 with an average of 66 diagnosed each year. As a proportion of all cases, stage IV diagnosis decreased from 47.8% in 2018-2019 to 42.3% in 2021. The change in stage distribution between 2018-2019 and 2021 was statistically significant (p = 0.020).

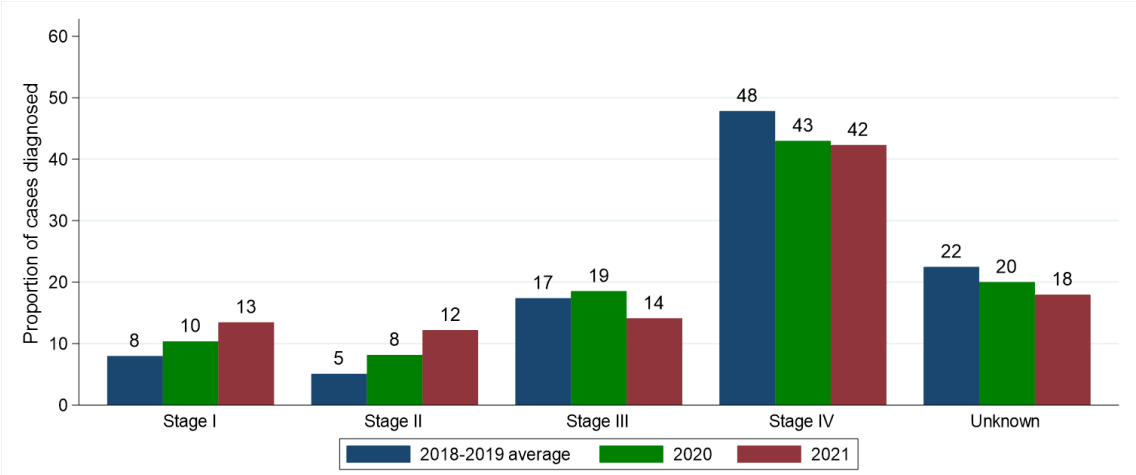
Table 7: Number and proportion of stomach cancer cases diagnosed in April-December of 2018-2021 by stage and period of diagnosis

Stage at diagnosis	Period of diagnosis (Apr-Dec)			Percentage change	
	2018-2019*	2020	2021	2020 vs 2018-2019	2021 vs 2018-2019
All stages	138	135	156	-2.2%	+13.0%
Stage I	11 (8.0%)	14 (10.4%)	21 (13.5%)	+27.3%	+90.9%
Stage II	7 (5.1%)	11 (8.1%)	19 (12.2%)	+57.1%	+171.4%
Stage III	24 (17.4%)	25 (18.5%)	22 (14.1%)	+4.2%	-8.3%
Stage IV	66 (47.8%)	58 (43.0%)	66 (42.3%)	-12.1%	0.0%
Unknown	31 (22.5%)	27 (20.0%)	28 (17.9%)	-12.9%	-9.7%

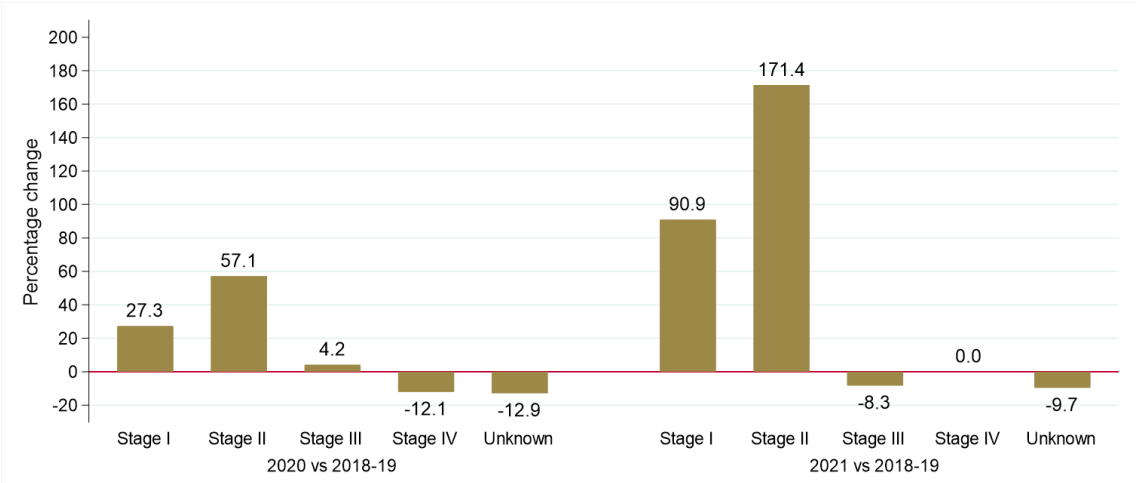
** Average cases per year rounded to the nearest integer. Column sums may thus differ slightly from the total.*

Figure 7: Proportion of stomach 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 stomach cancer cases resulting in treatment by surgery within six months increased by 36.4% from 55 per year in 2018-2019 to 75 in 2021. The resulting increase in the proportion receiving surgery from 39.9% in 2018-2019 to 48.1% in 2021 was not statistically significant.

Between the same two time periods the number of stomach cancer cases resulting in treatment by systemic therapy did not change between 2018-2019 and 2021 with an average of 56 each year. The resulting decrease in the proportion receiving systemic therapy from 40.6% in 2018-2019 to 35.9% in 2021 was not statistically significant.

The number of stomach cancer cases treated with radiotherapy increased by 22.2% from 9 per year in 2018-2019 to 11 in 2021. The resulting increase in the proportion receiving radiotherapy from 6.5% in 2018-2019 to 7.1% in 2021 was not statistically significant.

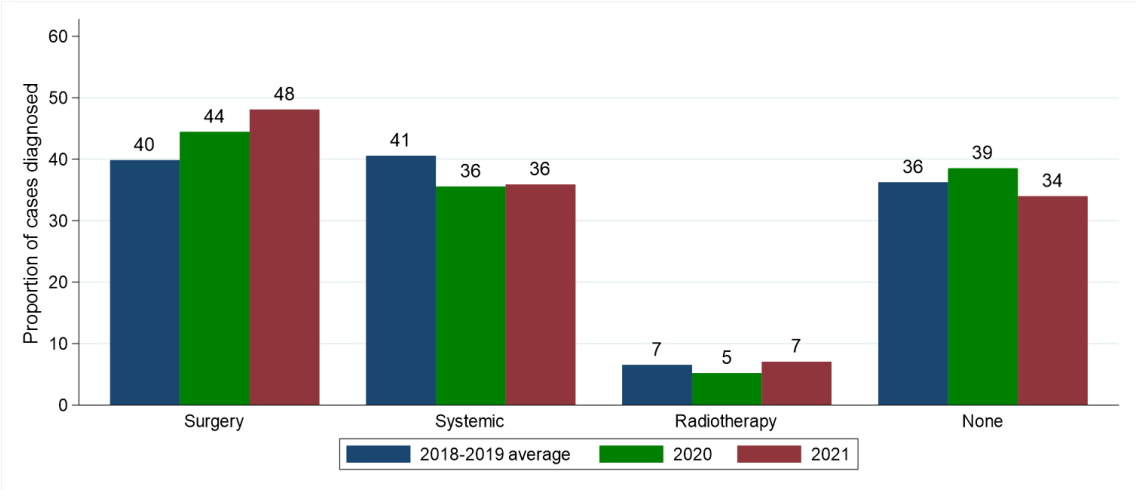
Excluding the first quarter of each year the number of stomach cancer cases receiving none of these treatments within six months of diagnosis increased by 6.0% from 50 per year in 2018-2019 to 53 in 2021. The resulting decrease in the proportion receiving none of these treatments from 36.2% in 2018-2019 to 34.0% in 2021 was not statistically significant.

Table 8: Number and proportion of stomach cancer cases diagnosed in April-December of 2018-2021 by treatment type (within six months of diagnosis) and period of diagnosis

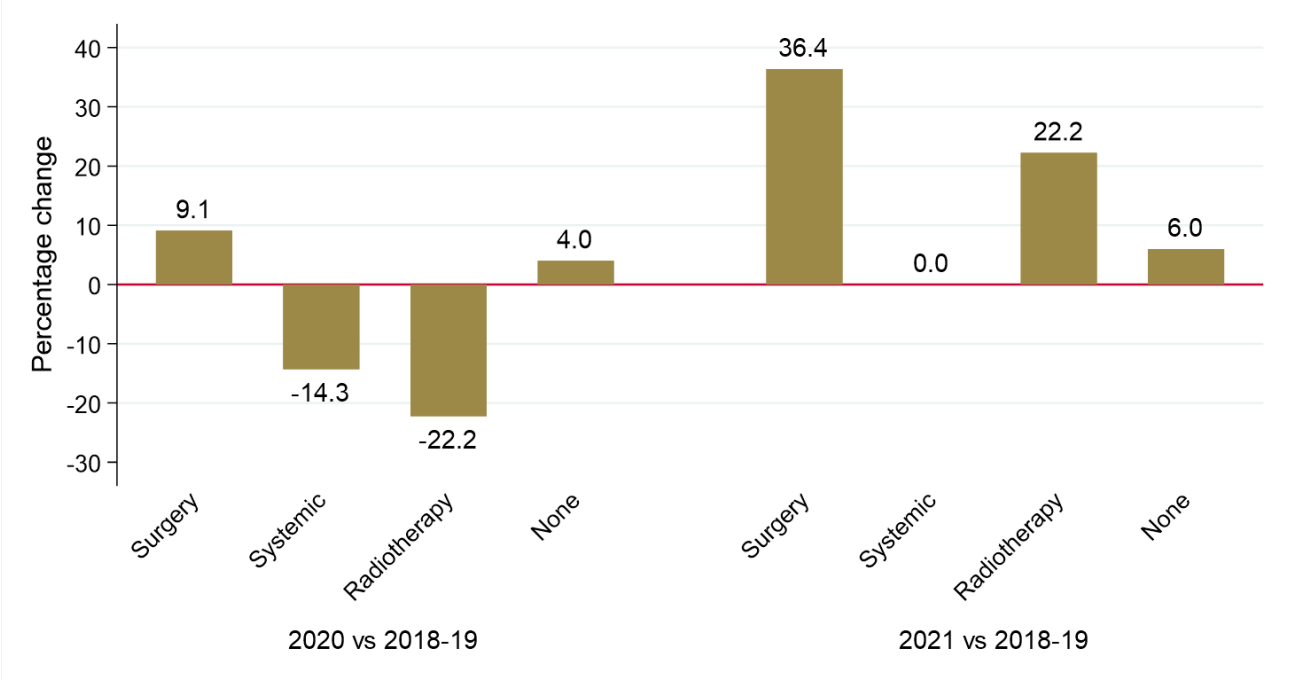
Treatment type	Period of diagnosis (Apr-Dec)			Percentage change	
	2018-2019*	2020	2021	2020 vs 2018-2019	2021 vs 2018-2019
Surgery	55 (39.9%)	60 (44.4%)	75 (48.1%)	+9.1%	+36.4%
Systemic therapy	56 (40.6%)	48 (35.6%)	56 (35.9%)	-14.3%	0.0%
Radiotherapy	9 (6.5%)	7 (5.2%)	11 (7.1%)	-22.2%	+22.2%
None of these treatments	50 (36.2%)	52 (38.5%)	53 (34.0%)	+4.0%	+6.0%

No statistically significant change compared to 2018-2019

Figure 8: Proportion of stomach 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

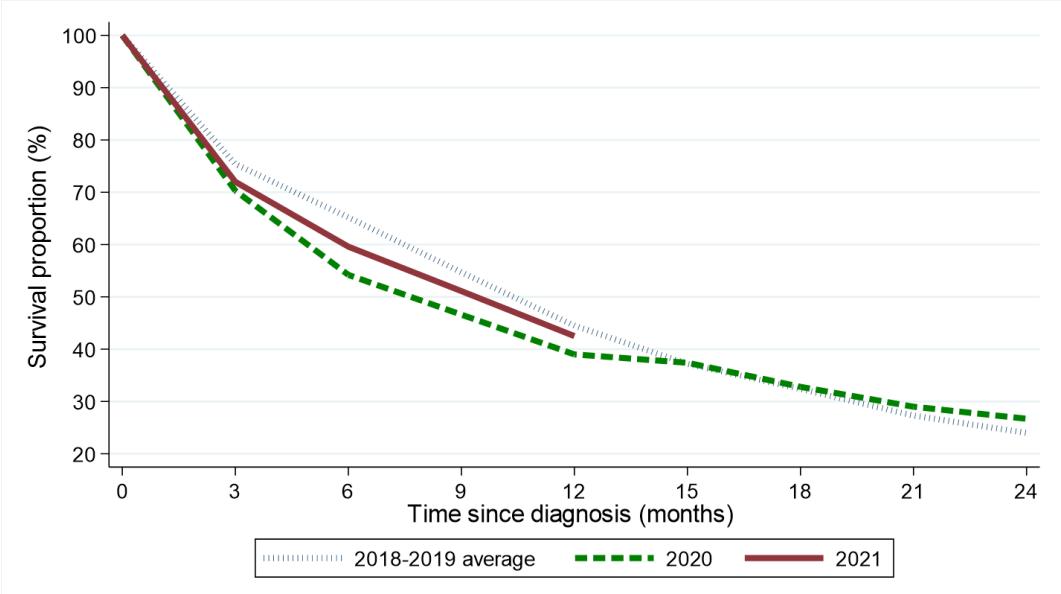
Survival among stomach cancer patients six months after diagnosis decreased from 65.2% among those diagnosed in April-December of 2018-2019 to 59.6% among those diagnosed in April-December of 2021. This change was not statistically significant. Between the same two diagnosis periods, one-year survival decreased from 44.5% to 42.5%. 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=0.938).

Table 9: Observed survival for patients with stomach 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	75.4% (69.8% - 80.0%)	70.3% (61.6% - 77.3%)	72.0% (64.2% - 78.4%)
Six months	65.2% (59.3% - 70.5%)	54.2% (45.3% - 62.3%)	59.6% (51.3% - 66.8%)
One year	44.5% (38.5% - 50.2%)	39.0% (30.6% - 47.2%)	42.5% (34.6% - 50.2%)
Two years	24.0% (19.2% - 29.2%)	26.7% (19.5% - 34.5%)	-

No statistically significant reductions compared to 2018-2019

Figure 9: Observed survival for patients with stomach cancer diagnosed in April-December of 2018-2021 by period of diagnosis



DEATHS FROM COVID-19

During 2021 there were a total of 2 deaths from Covid-19 among stomach cancer patients diagnosed at any point since 1993.

NET SURVIVAL

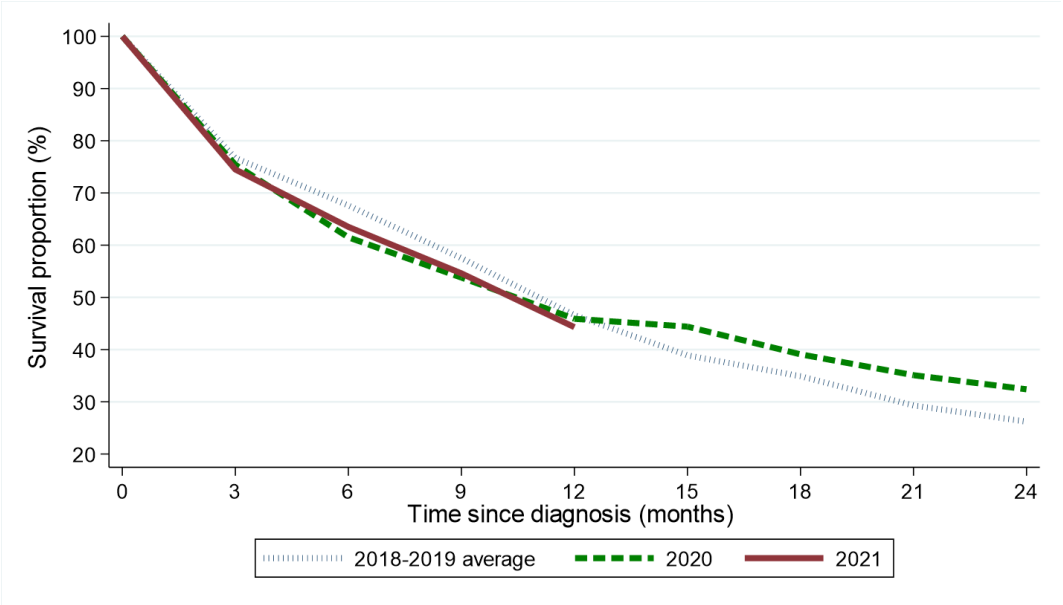
Net survival among stomach cancer patients six months after diagnosis decreased from 67.6% among those diagnosed in April-December of 2018-2019 to 63.5% among those diagnosed in April-December of 2021. This change was not statistically significant. Between the same two diagnosis periods, one-year net survival decreased from 46.6% to 44.3%. This change was not statistically significant.

Table 10: Age-standardised net survival for patients with stomach 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	76.7% (71.5% - 82.3%)	75.4% (68.4% - 83.2%)	74.5% (67.3% - 82.5%)
Six months	67.6% (61.8% - 74.0%)	61.5% (53.2% - 71.1%)	63.5% (55.5% - 72.7%)
One year	46.6% (40.7% - 53.3%)	45.9% (37.3% - 56.5%)	44.3% (35.8% - 54.9%)
Two years	26.2% (21.2% - 32.4%)	32.4% (24.6% - 42.6%)	-

No statistically significant reductions compared to 2018-2019

Figure 10: Age-standardised net survival for patients with stomach 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 stomach cancer decreased between 2018-2019 and 2021 by 21.1% from 90 deaths per year to 71 deaths.

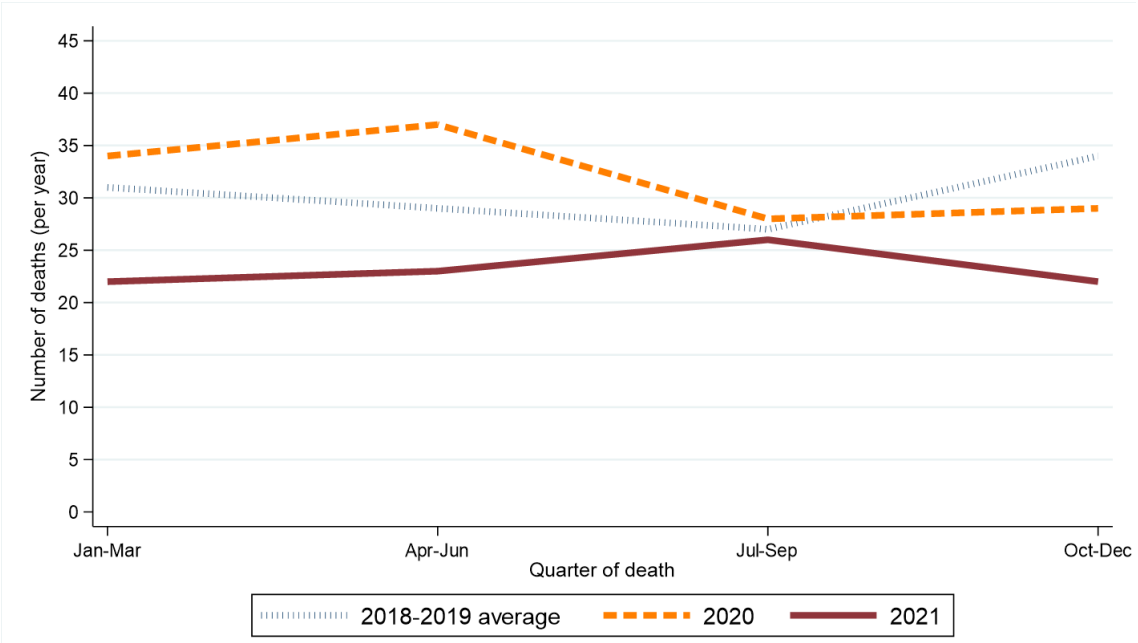
Table 11: Number of stomach cancer deaths in 2018-2021 by quarter and year of death

Period of death	Annual total	Quarter of death			
		Jan-Mar	Apr-Jun	Jul-Sept	Oct-Dec
2018-2019*	120	31	29	27	34
2020	128	34	37	28	29
2021	93	22	23	26	22

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

Figure 11: Number of stomach 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