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# Recent trends in incidence, survival and mortality of gallbladder and other biliary cancer in Northern Ireland

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

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## Further information

Further information is available at: [www.qub.ac.uk/research-centres/nicr](http://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 gallbladder and other biliary cancer diagnosed decreased between 2018-2019 and 2021 by 1.3% from 77 cases per year to 76 cases.

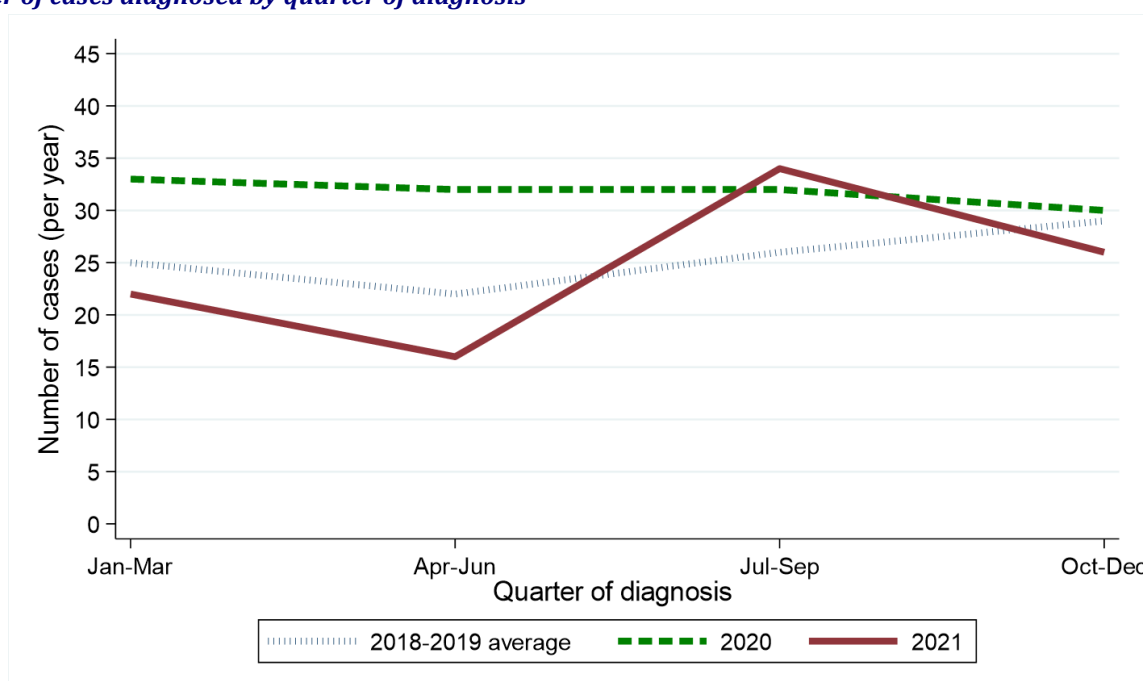
**Table 1: Number of gallbladder and other biliary cancer cases diagnosed in 2018-2021 by quarter and year of diagnosis**

Period of diagnosis	Annual total	Quarter diagnosed			
		Jan-Mar	Apr-Jun	Jul-Sept	Oct-Dec
2018-2019*	102	25	22	26	29
2020	127	33	32	32	30
2021	98	22	16	34	26

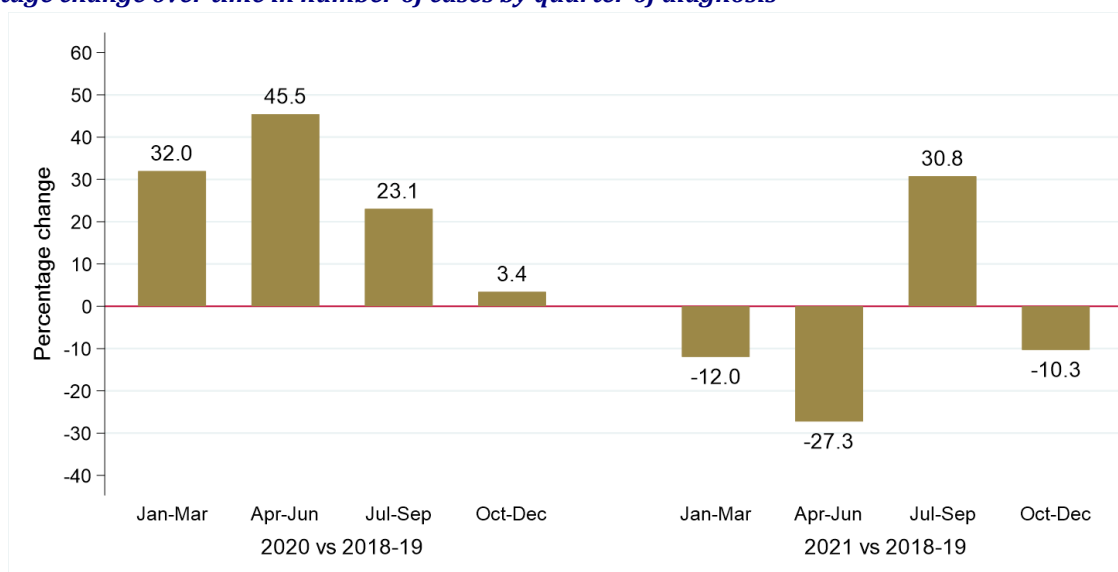
\* Average cases per year rounded to the nearest integer. Row sums may thus differ slightly from the total.

**Figure 1: Number of gallbladder and other biliary 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**



## GENDER

Excluding the first quarter of each year the number of male gallbladder and other biliary cancer cases diagnosed increased by 17.2% from 29 per year in 2018-2019 to 34 in 2021. Between the same two time periods the number of female gallbladder and other biliary cancer cases diagnosed decreased by 12.5% from 48 per year in 2018-2019 to 42 in 2021. The change in case distribution by gender between 2018-2019 and 2021 was not statistically significant.

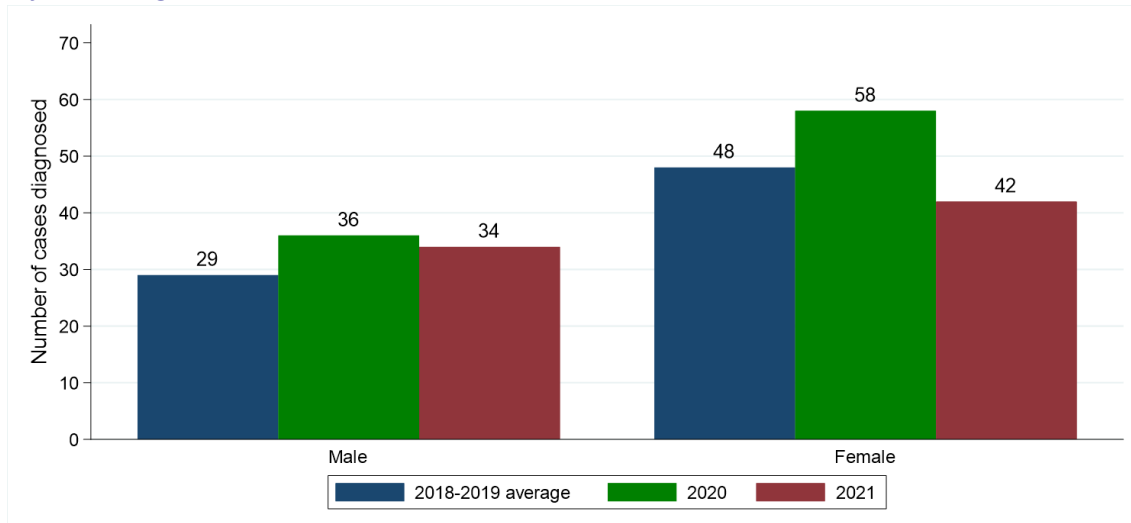
**Table 2: Number and proportion of gallbladder and other biliary cancer cases diagnosed in April-December of 2018-2021 by gender and period of diagnosis**

Gender	Period of diagnosis (Apr-Dec)			Percentage change	
	2018-2019*	2020	2021	2020 vs 2018-2019	2021 vs 2018-2019
<b>All persons</b>	77	94	76	+22.1%	-1.3%
<b>Male</b>	29 (37.7%)	36 (38.3%)	34 (44.7%)	+24.1%	+17.2%
<b>Female</b>	48 (62.3%)	58 (61.7%)	42 (55.3%)	+20.8%	-12.5%

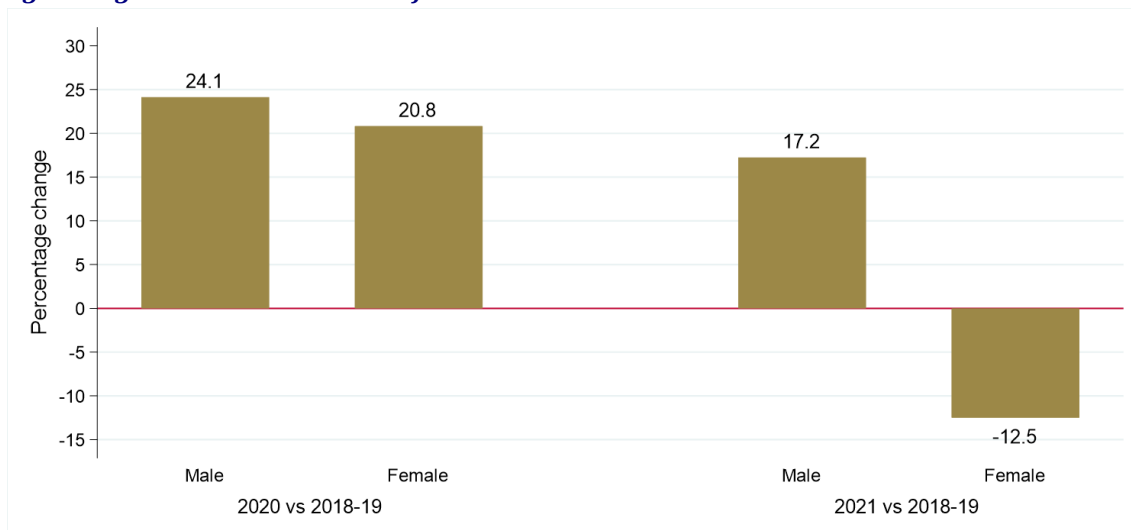
\* Average cases per year rounded to the nearest integer. Column sums may thus differ slightly from the total.

**Figure 2: Number of gallbladder and other biliary 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 gallbladder and other biliary cancer diagnosed among those aged 55 to 64 decreased by 50.0% from 14 per year in 2018-2019 to 7 in 2021. Between the same two time periods the number of cases of gallbladder and other biliary cancer diagnosed among those aged 75 and over increased by 15.4% from 39 per year in 2018-2019 to 45 in 2021. The change in case distribution by age between 2018-2019 and 2021 was not statistically significant.

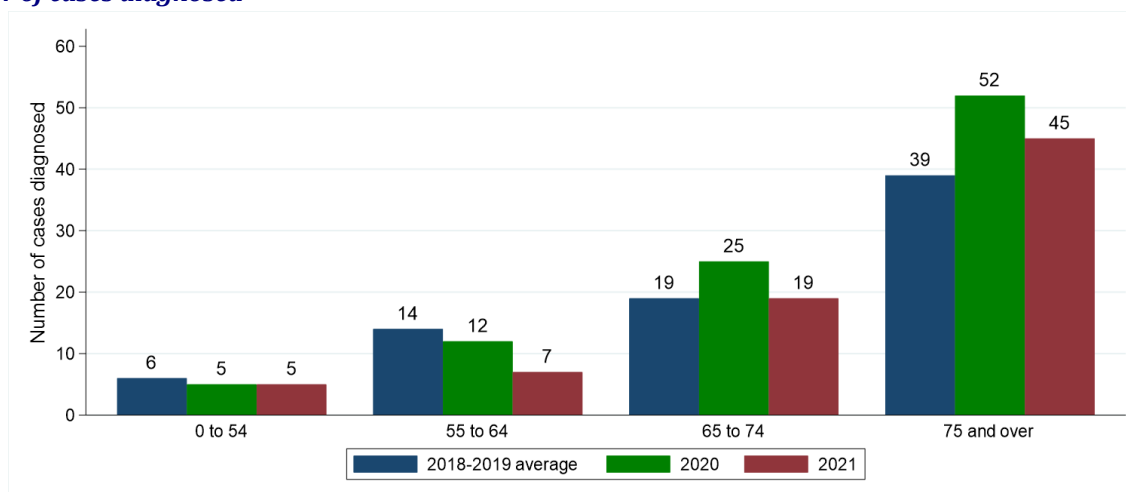
**Table 3: Number and proportion of gallbladder and other biliary cancer cases diagnosed in April-December of 2018-2021 by age and period of diagnosis**

Age	Period of diagnosis (Apr-Dec)			Percentage change	
	2018-2019*	2020	2021	2020 vs 2018-2019	2021 vs 2018-2019
<b>All ages</b>	77	94	76	+22.1%	-1.3%
<b>0 to 54</b>	6 (7.8%)	5 (5.3%)	5 (6.6%)	-16.7%	-16.7%
<b>55 to 64</b>	14 (18.2%)	12 (12.8%)	7 (9.2%)	-14.3%	-50.0%
<b>65 to 74</b>	19 (24.7%)	25 (26.6%)	19 (25.0%)	+31.6%	0.0%
<b>75 and over</b>	39 (50.6%)	52 (55.3%)	45 (59.2%)	+33.3%	+15.4%

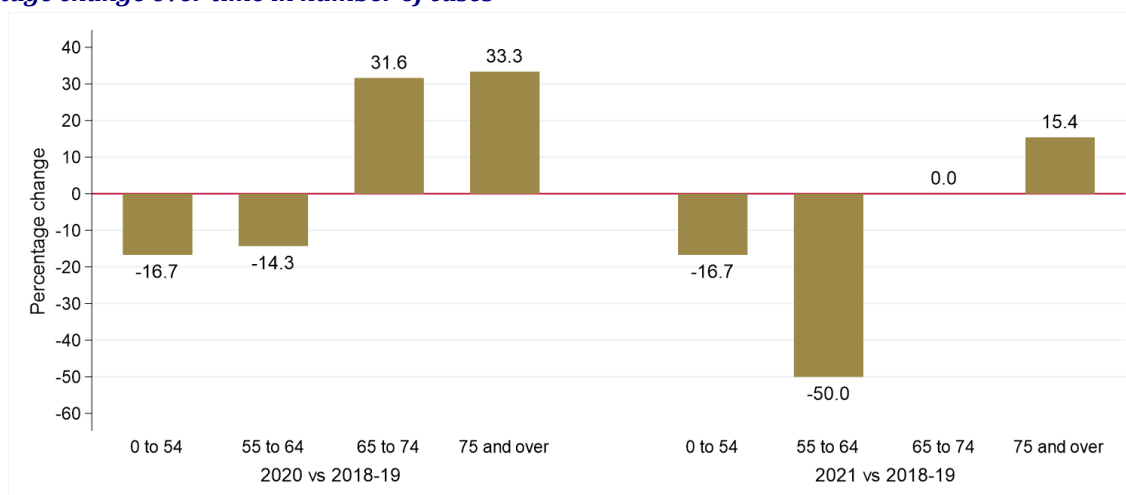
\* Average cases per year rounded to the nearest integer. Column sums may thus differ slightly from the total.

**Figure 3: Number of gallbladder and other biliary 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 gallbladder and other biliary cancer diagnosed among those resident in Southern HSCT decreased by 33.3% from 18 per year in 2018-2019 to 12 in 2021. Between the same two time periods the number of cases of gallbladder and other biliary cancer diagnosed among those resident in South Eastern HSCT increased by 26.7% from 15 per year in 2018-2019 to 19 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 gallbladder and other biliary cancer cases diagnosed in April-December of 2018-2021 by Health and Social Care Trust and period of diagnosis**

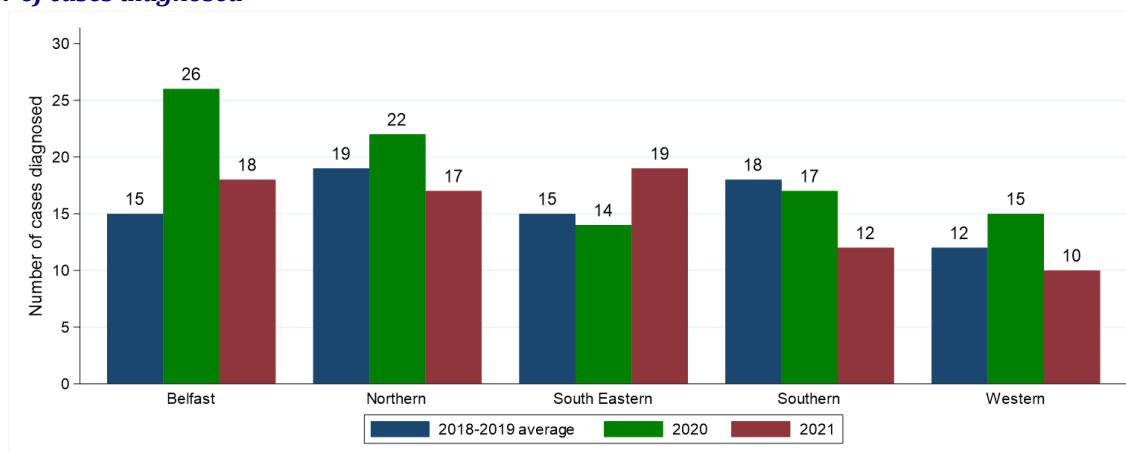
Health and Social Care Trust	Period of diagnosis (Apr-Dec)			Percentage change	
	2018-2019*	2020	2021	2020 vs 2018-2019	2021 vs 2018-2019
<b>Northern Ireland</b>	77	94	76	+22.1%	-1.3%
<b>Belfast</b>	15 (19.5%)	26 (27.7%)	18 (23.7%)	+73.3%	+20.0%
<b>Northern</b>	19 (24.7%)	22 (23.4%)	17 (22.4%)	+15.8%	-10.5%
<b>South Eastern</b>	15 (19.5%)	14 (14.9%)	19 (25.0%)	-6.7%	+26.7%
<b>Southern</b>	18 (23.4%)	17 (18.1%)	12 (15.8%)	-5.6%	-33.3%
<b>Western</b>	12 (15.6%)	15 (16.0%)	10 (13.2%)	+25.0%	-16.7%

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

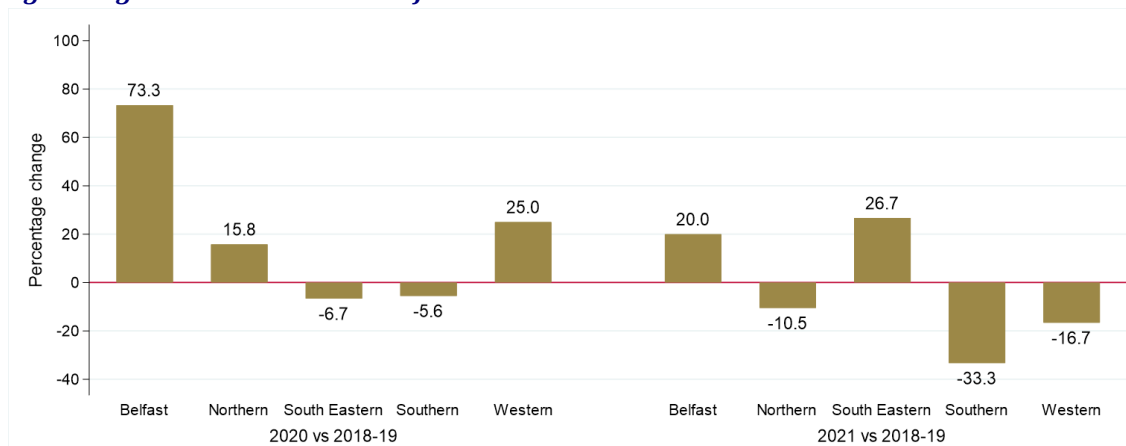
Note: Cases with unknown Health and Social Care Trust are included in totals.

**Figure 4: Number of gallbladder and other biliary 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 gallbladder and other biliary cancer diagnosed among those resident in the most deprived quintile decreased by 38.9% from 18 per year in 2018-2019 to 11 in 2021. Between the same two time periods the number of cases of gallbladder and other biliary cancer diagnosed among those resident in the least deprived quintile increased by 28.6% from 14 per year in 2018-2019 to 18 in 2021. The change in case distribution by deprivation quintile between 2018-2019 and 2021 was not statistically significant.

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

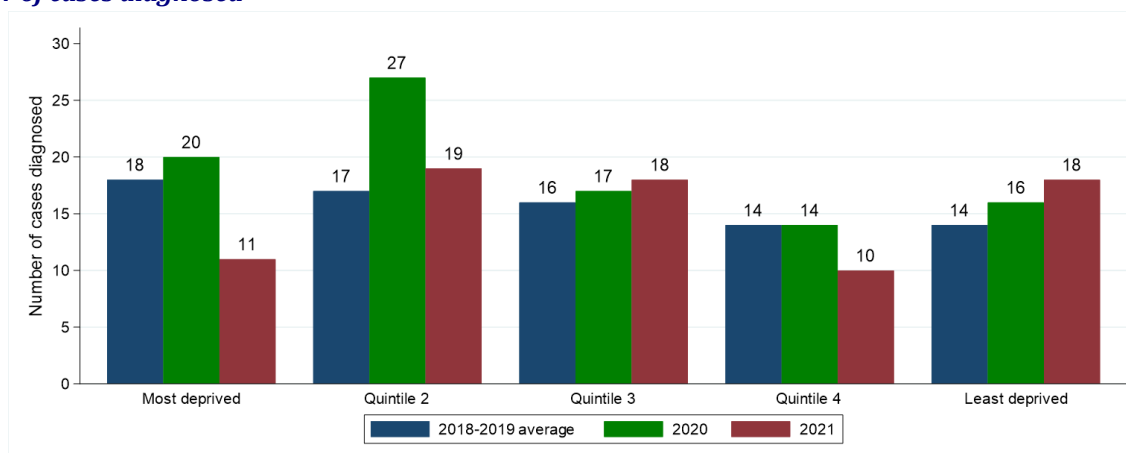
Deprivation quintile	Period of diagnosis (Apr-Dec)			Percentage change	
	2018-2019*	2020	2021	2020 vs 2018-2019	2021 vs 2018-2019
<b>Northern Ireland</b>	77	94	76	+22.1%	-1.3%
<b>Most deprived</b>	18 (23.4%)	20 (21.3%)	11 (14.5%)	+11.1%	-38.9%
<b>Quintile 2</b>	17 (22.1%)	27 (28.7%)	19 (25.0%)	+58.8%	+11.8%
<b>Quintile 3</b>	16 (20.8%)	17 (18.1%)	18 (23.7%)	+6.3%	+12.5%
<b>Quintile 4</b>	14 (18.2%)	14 (14.9%)	10 (13.2%)	0.0%	-28.6%
<b>Least deprived</b>	14 (18.2%)	16 (17.0%)	18 (23.7%)	+14.3%	+28.6%

\* 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 gallbladder and other biliary 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 gallbladder and other biliary cancer diagnosed via histology/cytology decreased by 1.9% from 53 per year in 2018-2019 to 52 in 2021. As a proportion of all cases, histology/cytology diagnosis decreased from 68.8% in 2018-2019 to 68.4% in 2021. The change in case distribution by basis of diagnosis between 2018-2019 and 2021 was not statistically significant.

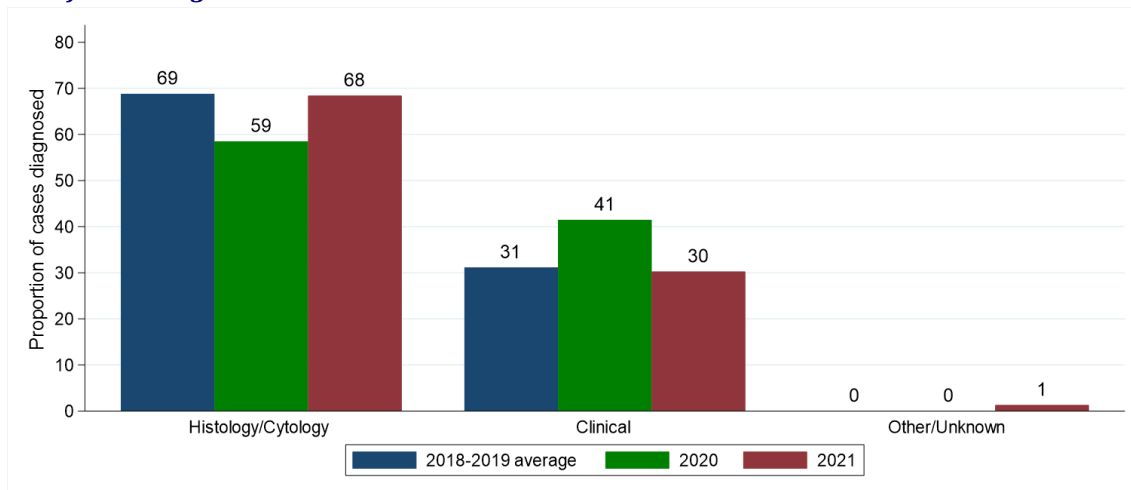
**Table 6: Number and proportion of gallbladder and other biliary cancer cases diagnosed in April-December of 2018-2021 by basis and period of diagnosis**

Basis of diagnosis	Period of diagnosis (Apr-Dec)			Percentage change	
	2018-2019*	2020	2021	2020 vs 2018-2019	2021 vs 2018-2019
<b>All types</b>	77	94	76	+22.1%	-1.3%
<b>Histology/Cytology</b>	53 (68.8%)	55 (58.5%)	52 (68.4%)	+3.8%	-1.9%
<b>Clinical</b>	24 (31.2%)	39 (41.5%)	23 (30.3%)	+62.5%	-4.2%
<b>Other/Unknown</b>	0 (0.0%)	0 (0.0%)	1 (1.3%)	-	-

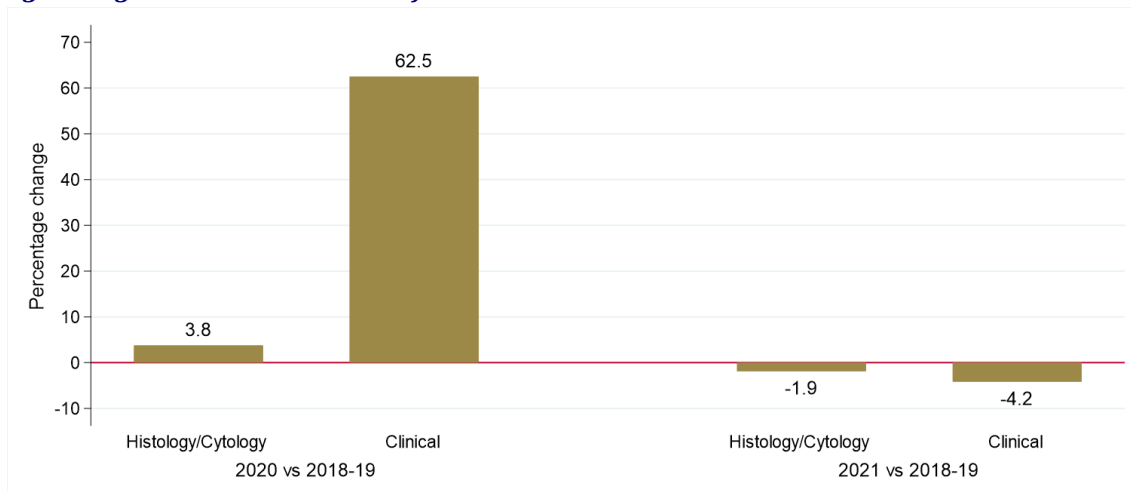
\* Average cases per year rounded to the nearest integer. Column sums may thus differ slightly from the total.

**Figure 6: Proportion of gallbladder and other biliary 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 gallbladder and other biliary cancer cases diagnosed at stage I/II in April to December of each year decreased by 14.3% from 7 per year in 2018-2019 to 6 in 2021. In addition the number of gallbladder and other biliary cancer cases diagnosed at stage IV decreased by 18.8% from 32 per year in 2018-2019 to 26 in 2021. As a proportion of all cases, stage IV diagnosis decreased from 41.6% in 2018-2019 to 34.2% in 2021. The change in stage distribution between 2018-2019 and 2021 was not statistically significant.

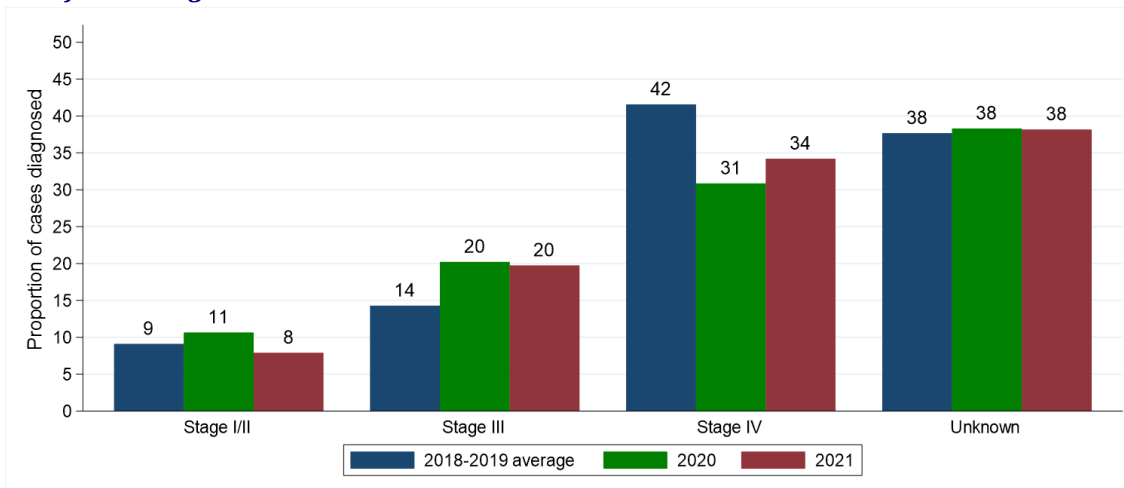
**Table 7: Number and proportion of gallbladder and other biliary cancer cases diagnosed in April-December of 2018-2021 by stage and period of diagnosis**

Stage at diagnosis	Period of diagnosis (Apr-Dec)			Percentage change	
	2018-2019*	2020	2021	2020 vs 2018-2019	2021 vs 2018-2019
All stages	77	94	76	+22.1%	-1.3%
Stage I/II	7 (9.1%)	10 (10.6%)	6 (7.9%)	+42.9%	-14.3%
Stage III	11 (14.3%)	19 (20.2%)	15 (19.7%)	+72.7%	+36.4%
Stage IV	32 (41.6%)	29 (30.9%)	26 (34.2%)	-9.4%	-18.8%
Unknown	29 (37.7%)	36 (38.3%)	29 (38.2%)	+24.1%	0.0%

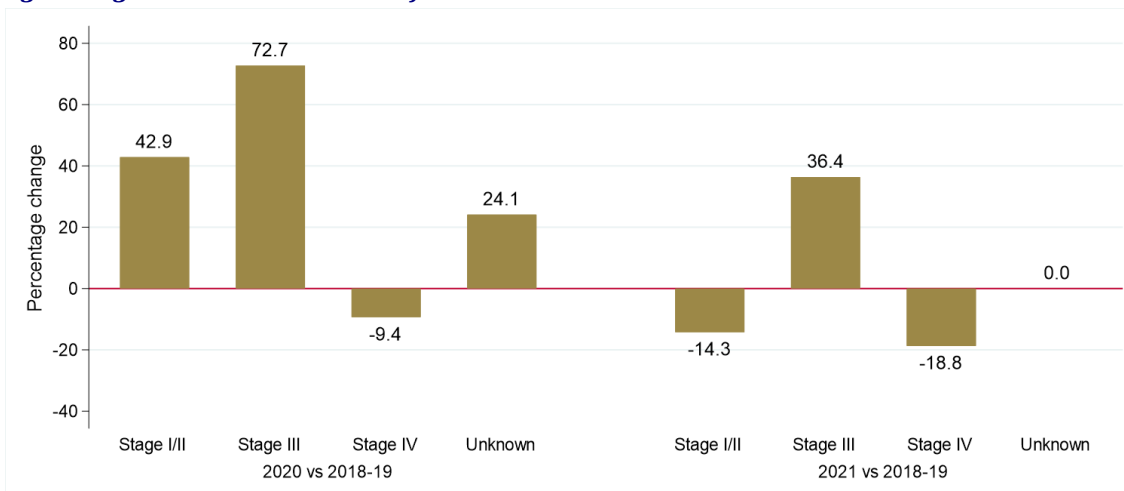
\* Average cases per year rounded to the nearest integer. Column sums may thus differ slightly from the total.

**Figure 7: Proportion of gallbladder and other biliary 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 gallbladder and other biliary cancer cases resulting in treatment by surgery within six months decreased by 10.5% from 38 per year in 2018-2019 to 34 in 2021. The resulting decrease in the proportion receiving surgery from 49.4% in 2018-2019 to 44.7% in 2021 was not statistically significant.

Between the same two time periods the number of gallbladder and other biliary cancer cases resulting in treatment by systemic therapy decreased by 10.0% from 20 per year in 2018-2019 to 18 in 2021. The resulting decrease in the proportion receiving systemic therapy from 26.0% in 2018-2019 to 23.7% in 2021 was not statistically significant.

Excluding the first quarter of each year the number of gallbladder and other biliary cancer cases receiving none of these treatments within six months of diagnosis increased by 5.9% from 34 per year in 2018-2019 to 36 in 2021. The resulting increase in the proportion receiving none of these treatments from 44.2% in 2018-2019 to 47.4% in 2021 was not statistically significant.

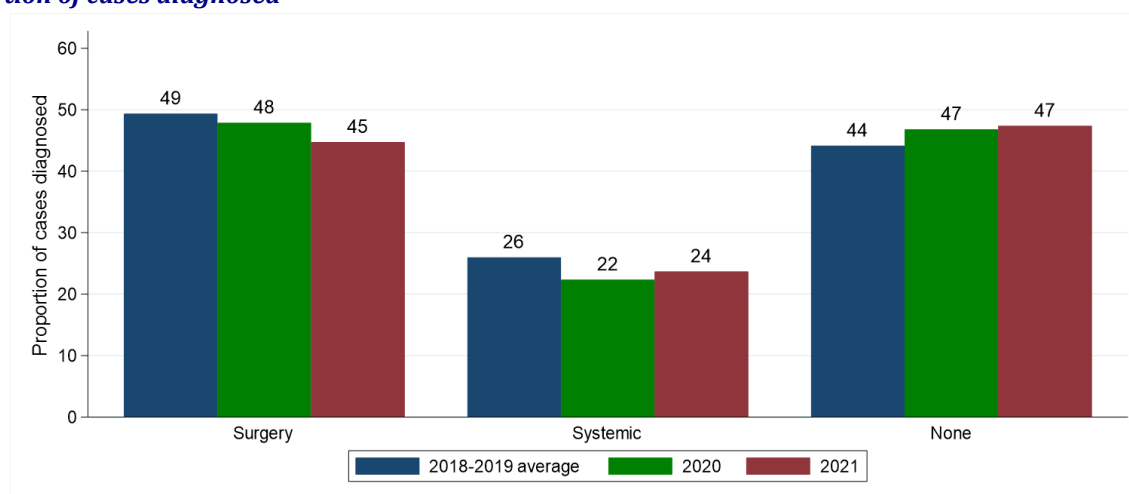
**Table 8: Number and proportion of gallbladder and other biliary cancer cases diagnosed in April-December of 2018-2021 by treatment type (within six months of diagnosis) and period of diagnosis**

Treatment type	Period of diagnosis (Apr-Dec)			Percentage change	
	2018-2019*	2020	2021	2020 vs 2018-2019	2021 vs 2018-2019
<b>Surgery</b>	38 (49.4%)	45 (47.9%)	34 (44.7%)	+18.4%	-10.5%
<b>Systemic therapy</b>	20 (26.0%)	21 (22.3%)	18 (23.7%)	+5.0%	-10.0%
<b>None of these treatments</b>	34 (44.2%)	44 (46.8%)	36 (47.4%)	+29.4%	+5.9%

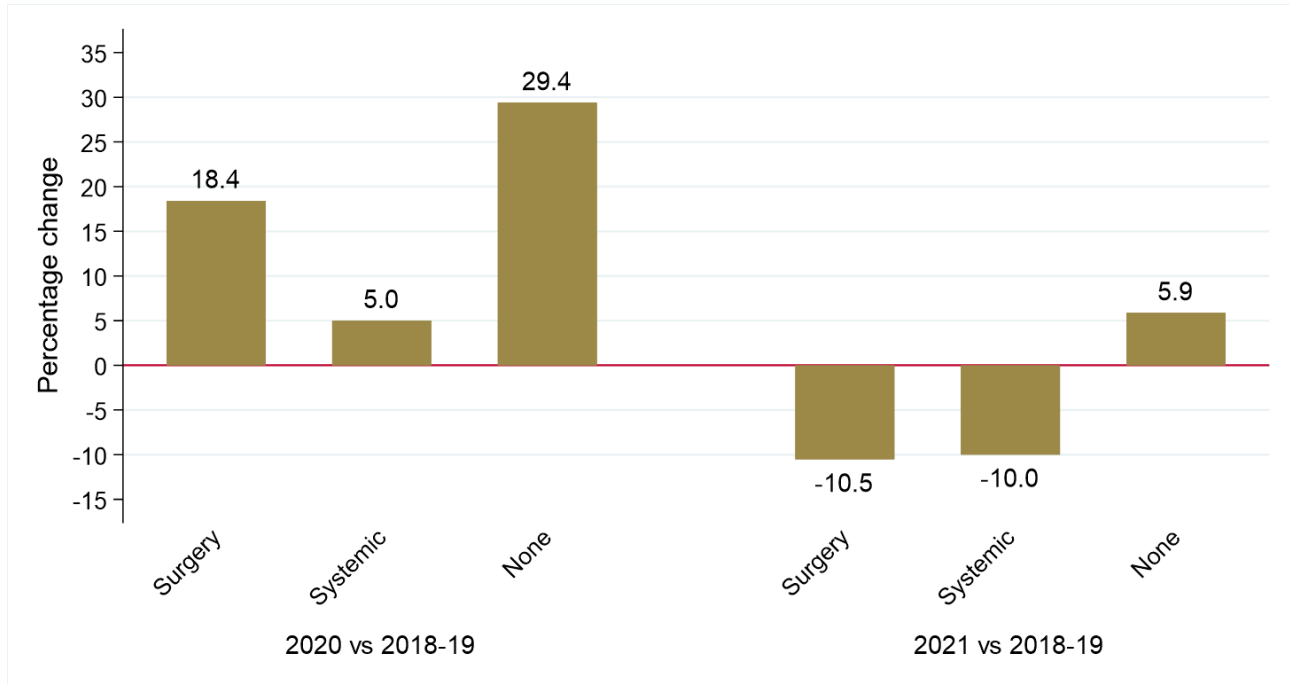
*No statistically significant change compared to 2018-2019*

**Figure 8: Proportion of gallbladder and other biliary 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

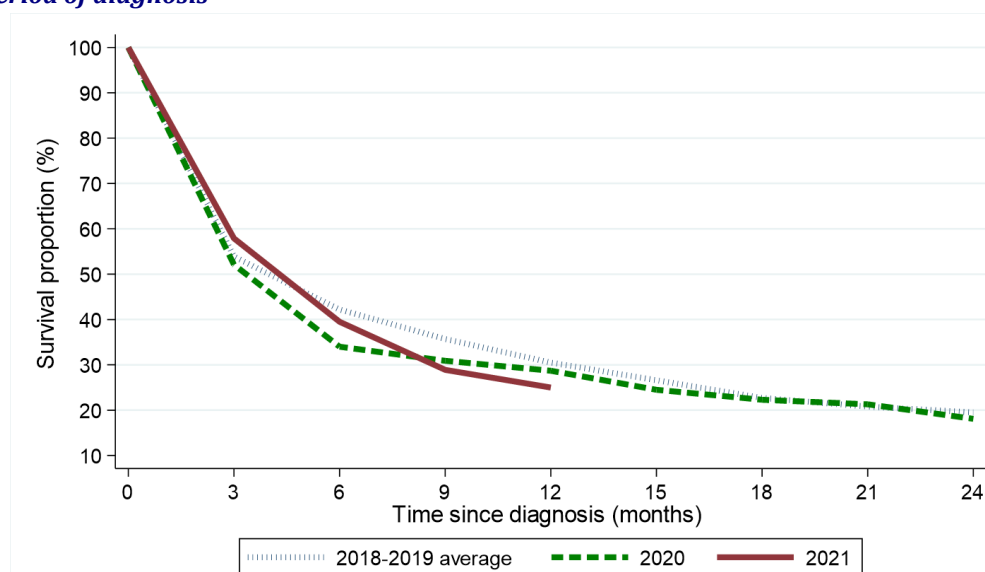
Survival among gallbladder and other biliary cancer patients six months after diagnosis decreased from 42.2% among those diagnosed in April-December of 2018-2019 to 39.5% among those diagnosed in April-December of 2021. This change was not statistically significant. Between the same two diagnosis periods, one-year survival decreased from 30.5% to 25.0%. 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 ( $p=0.433$ ).

**Table 9: Observed survival for patients with gallbladder and other biliary cancer diagnosed in April-December of 2018-2021 by period of diagnosis**

Survival time	Period of diagnosis (Apr-Dec)		
	2018-2019	2020	2021
<b>Three months</b>	53.9% (45.7% - 61.4%)	52.1% (41.6% - 61.6%)	57.9% (46.0% - 68.1%)
<b>Six months</b>	42.2% (34.3% - 49.8%)	34.0% (24.7% - 43.6%)	39.5% (28.5% - 50.2%)
<b>One year</b>	30.5% (23.4% - 37.9%)	28.7% (20.0% - 38.0%)	25.0% (15.9% - 35.1%)
<b>Two years</b>	19.5% (13.7% - 26.1%)	18.1% (11.1% - 26.5%)	-

*No statistically significant reductions compared to 2018-2019*

**Figure 9: Observed survival for patients with gallbladder and other biliary cancer diagnosed in April-December of 2018-2021 by period of diagnosis**



## DEATHS FROM COVID-19

During 2021 there were a total of 3 deaths from Covid-19 among gallbladder and other biliary cancer patients diagnosed at any point since 1993.

## NET SURVIVAL

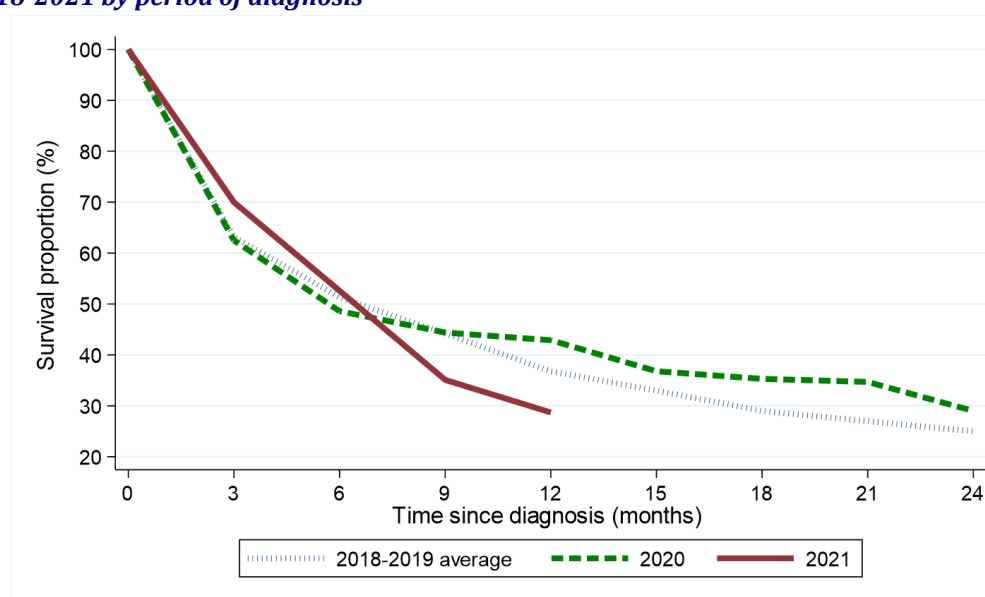
Net survival among gallbladder and other biliary cancer patients six months after diagnosis increased from 51.3% among those diagnosed in April-December of 2018-2019 to 52.6% among those diagnosed in April-December of 2021. This change was not statistically significant. Between the same two diagnosis periods, one-year net survival decreased from 36.8% to 28.7%. This change was not statistically significant.

**Table 10: Age-standardised net survival for patients with gallbladder and other biliary cancer diagnosed in April-December of 2018-2021 by period of diagnosis**

Survival time	Period of diagnosis (Apr-Dec)		
	2018-2019	2020	2021
<b>Three months</b>	63.2% (55.7% - 71.6%)	62.5% (52.7% - 74.1%)	70.0% (60.3% - 81.2%)
<b>Six months</b>	51.3% (43.3% - 60.7%)	48.6% (38.2% - 61.8%)	52.6% (42.0% - 65.9%)
<b>One year</b>	36.8% (29.4% - 46.1%)	42.9% (32.4% - 56.9%)	28.7% (20.0% - 41.2%)
<b>Two years</b>	25.0% (18.5% - 33.9%)	29.0% (19.1% - 44.0%)	-

*No statistically significant reductions compared to 2018-2019*

**Figure 10: Age-standardised net survival for patients with gallbladder and other biliary 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 gallbladder and other biliary cancer decreased between 2018-2019 and 2021 by 4.0% from 25 deaths per year to 24 deaths.

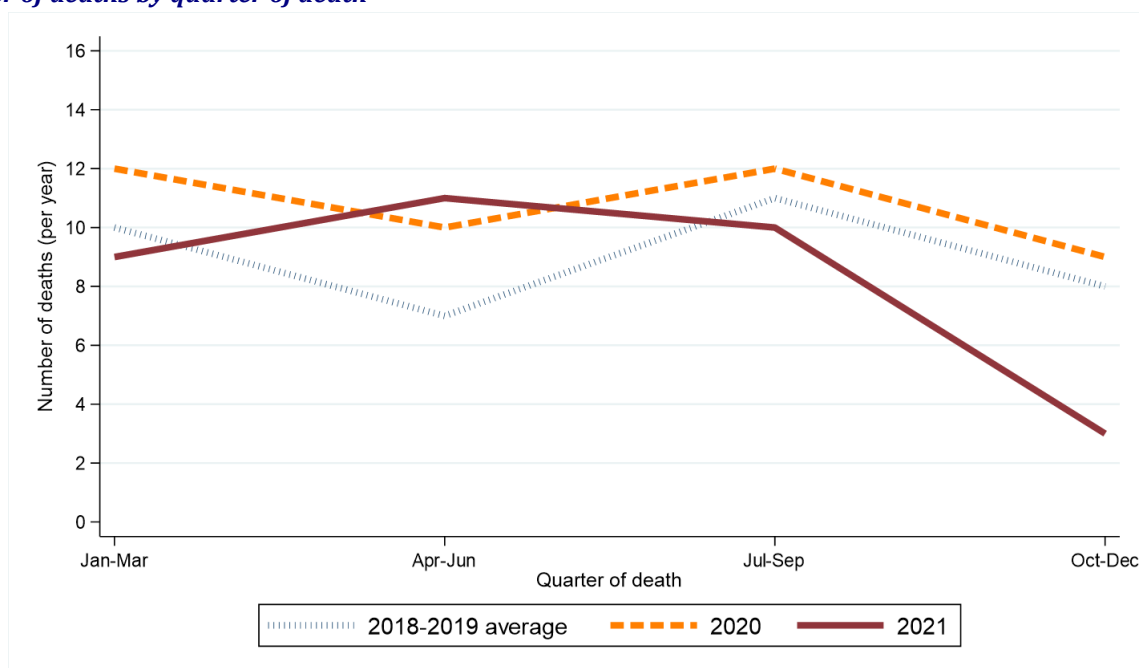
**Table 11: Number of gallbladder and other biliary cancer deaths in 2018-2021 by quarter and year of death**

Period of death	Annual total	Quarter of death			
		Jan-Mar	Apr-Jun	Jul-Sept	Oct-Dec
<b>2018-2019*</b>	35	10	7	11	8
<b>2020</b>	43	12	10	12	9
<b>2021</b>	33	9	11	10	3

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

**Figure 11: Number of gallbladder and other biliary 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**

