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# Impact of Covid-19 on incidence, survival and mortality of pancreatic cancer in Northern Ireland

(A comparison between April-December of 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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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

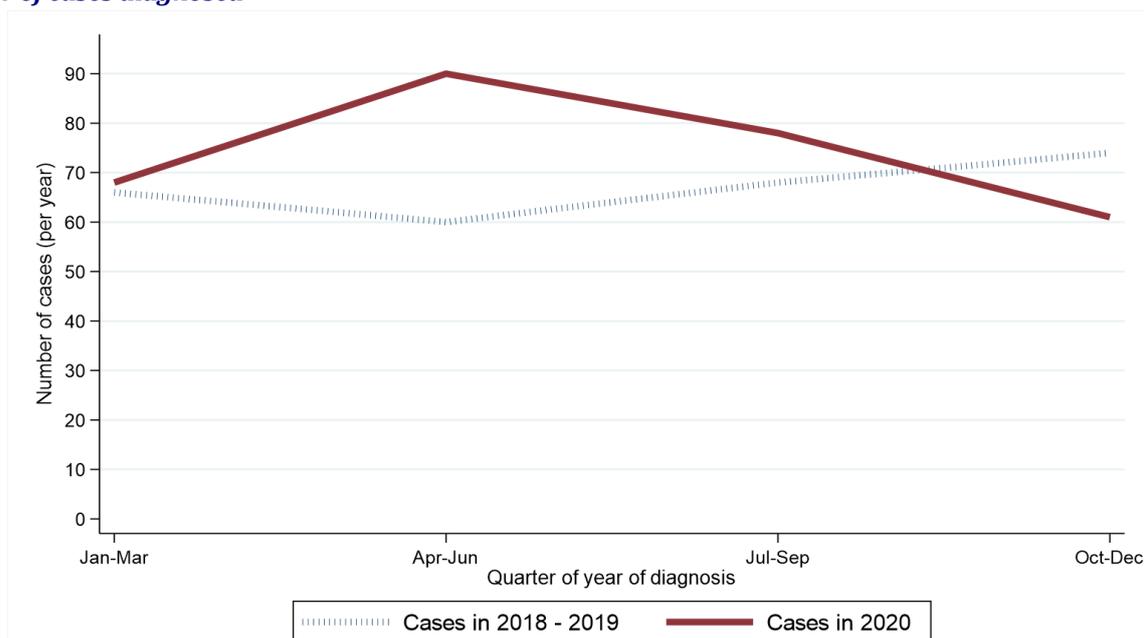
During the April-December period when Covid-19 was present the number of cases of pancreatic cancer diagnosed increased by 13.9% (28 patients) from 201 per year in 2018 - 2019 to 229 in 2020.

**Table 1: Number of pancreatic cancer cases diagnosed in 2018-2020 by quarter and year of diagnosis**

Period of diagnosis	Annual total	Quarter of year diagnosed			
		Jan-Mar	Apr-Jun	Jul-Sept	Oct-Dec
2018-2019*	267	66	60	68	74
2020	297	68	90	78	61

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

**Figure 1: Number of pancreatic cancer cases diagnosed in 2018-2020 by quarter and year of diagnosis**  
**(a) Number of cases diagnosed**



**(b) Percentage change from 2018-2019 to 2020 in number of pancreatic cancer cases by quarter of year of diagnosis**



## GENDER

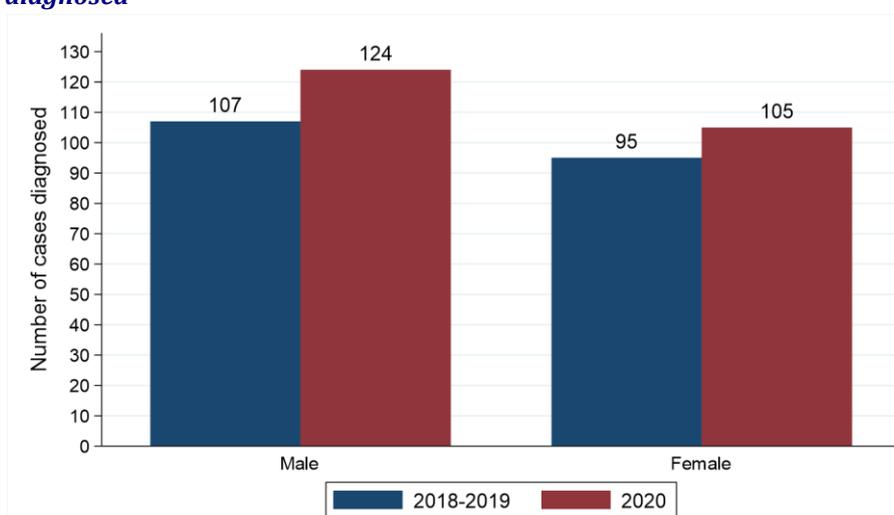
Excluding the first quarter of each year among males the number of cases of pancreatic cancer diagnosed increased by 15.9% from 107 per year in 2018 - 2019 to 124 in 2020. Between the same two time periods the number of cases among females increased by 10.5% from 95 per year to 105. The change in case distribution by gender between 2018 - 2019 and 2020 was not statistically significant.

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

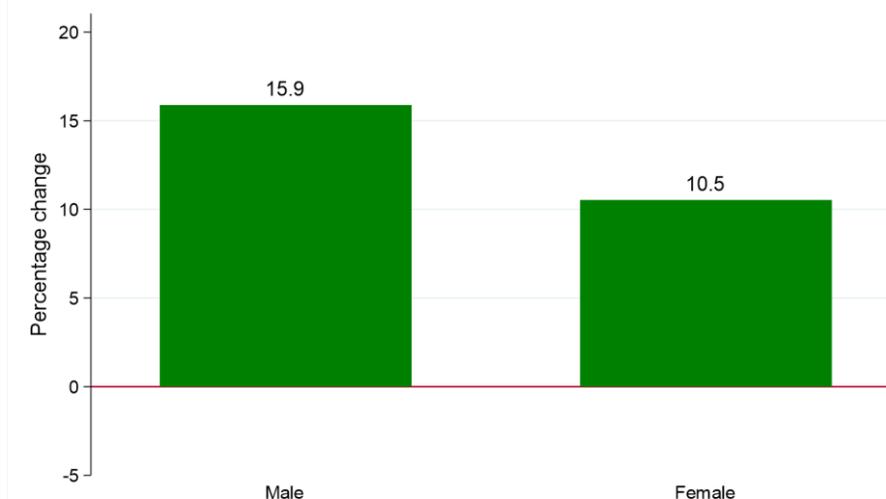
Gender	Period of diagnosis (Apr-Dec)		Percentage change
	2018-2019*	2020	
Male	107 (53.2%)	124 (54.1%)	+15.9% (17 patients)
Female	95 (47.3%)	105 (45.9%)	+10.5% (10 patients)
All persons	201	229	+13.9% (28 patients)

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

**Figure 2: Pancreatic 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 pancreatic cancer cases by gender**



## AGE

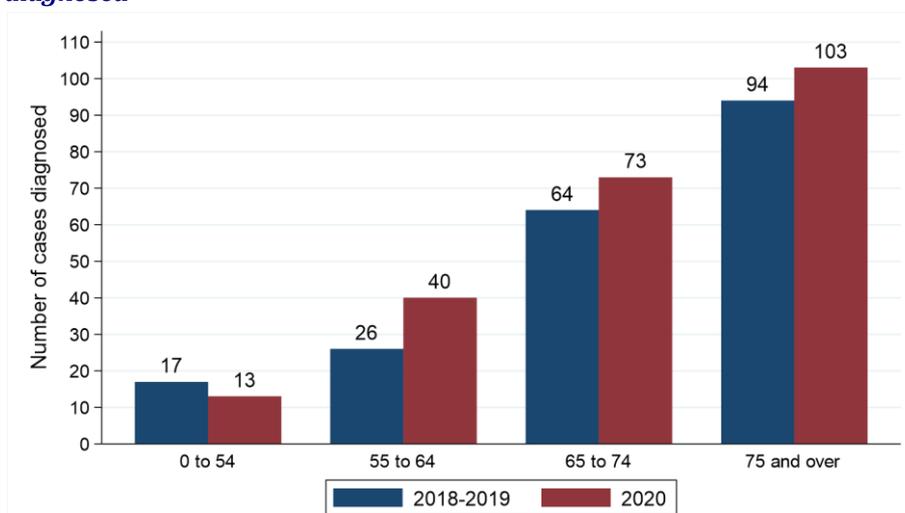
Excluding the first quarter of each year among people aged 0 to 54 the number of cases of pancreatic cancer diagnosed decreased by 23.5% from 17 per year in 2018 - 2019 to 13 in 2020. Between the same two time periods, the number of cases among people aged 55 to 64 increased by 53.8% from 26 per year to 40. The change in case distribution by age between 2018 - 2019 and 2020 was not statistically significant.

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

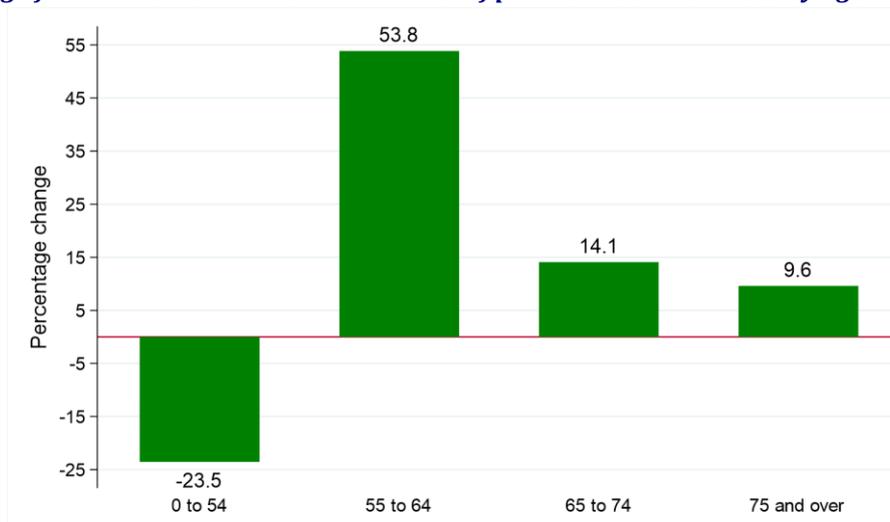
Age group	Period of diagnosis (Apr-Dec)		Percentage change
	2018-2019*	2020	
0 to 54	17 (8.5%)	13 (5.7%)	-23.5% (4 patients)
55 to 64	26 (12.9%)	40 (17.5%)	+53.8% (14 patients)
65 to 74	64 (31.8%)	73 (31.9%)	+14.1% (9 patients)
75 and over	94 (46.8%)	103 (45.0%)	+9.6% (9 patients)
<b>All ages</b>	<b>201</b>	<b>229</b>	<b>+13.9% (28 patients)</b>

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

**Figure 3: Pancreatic 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 pancreatic cancer cases by age at diagnosis



## HEALTH AND SOCIAL CARE TRUST

Excluding the first quarter of each year among residents of South Eastern HSCT the number of cases of pancreatic cancer diagnosed decreased by 33.3% from 51 per year in 2018 - 2019 to 34 in 2020. Between the same two time periods the number of cases among residents of Belfast HSCT increased by 51.7% from 29 per year to 44. The change in case distribution by HSCT between 2018 - 2019 and 2020 was statistically significant ( $p = 0.002$ ).

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

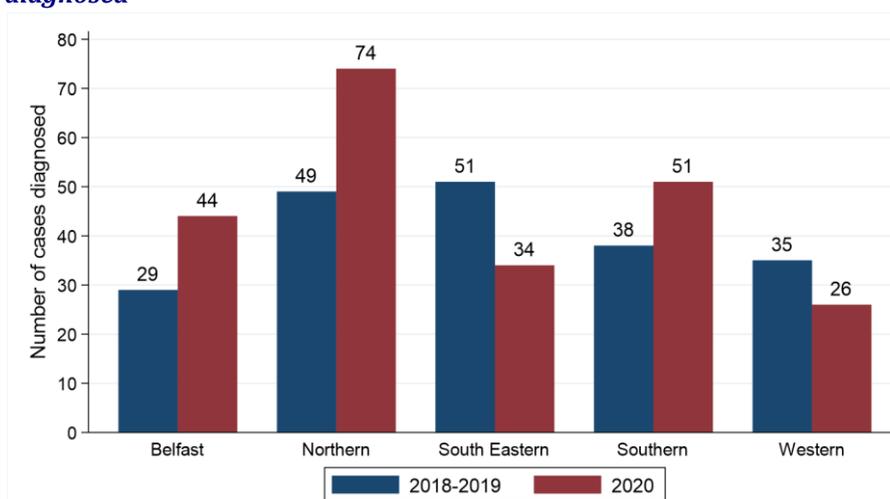
Health and Social Care Trust	Period of diagnosis (Apr-Dec)		Percentage change
	2018-2019*	2020	
Belfast HSCT	29 (14.4%)	44 (19.2%)	+51.7% (15 patients)
Northern HSCT	49 (24.4%)	74 (32.3%)	+51.0% (25 patients)
South Eastern HSCT	51 (25.4%)	34 (14.8%)	-33.3% (17 patients)
Southern HSCT	38 (18.9%)	51 (22.3%)	+34.2% (13 patients)
Western HSCT	35 (17.4%)	26 (11.4%)	-25.7% (9 patients)
Northern Ireland	201	229	+13.9% (28 patients)

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

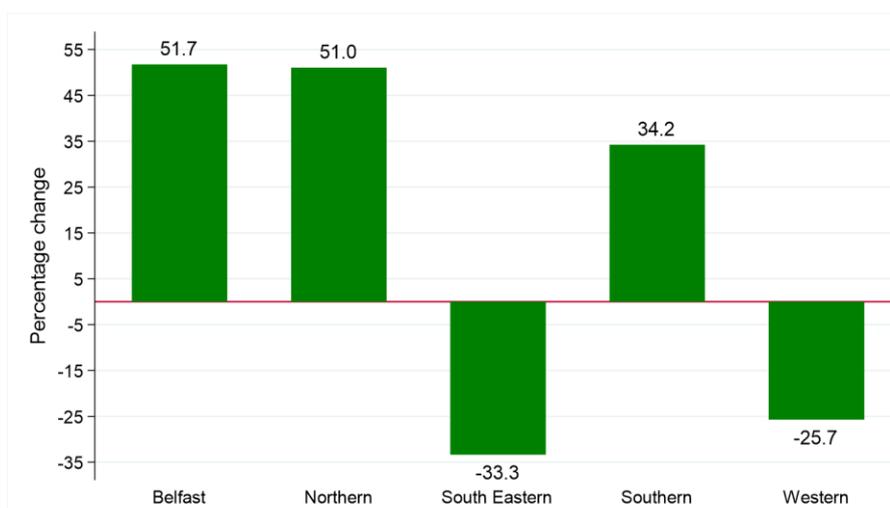
Note: Cases with unknown Health and Social Care Trust are included in totals

**Figure 4: Pancreatic 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 pancreatic 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 pancreatic cancer diagnosed decreased by 7.9% from 38 per year in 2018 - 2019 to 35 in 2020. Between the same two time periods the number of cases among residents of the least deprived areas increased by 26.8% from 41 per year to 52. The change in case distribution by deprivation quintile between 2018 - 2019 and 2020 was not statistically significant.

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

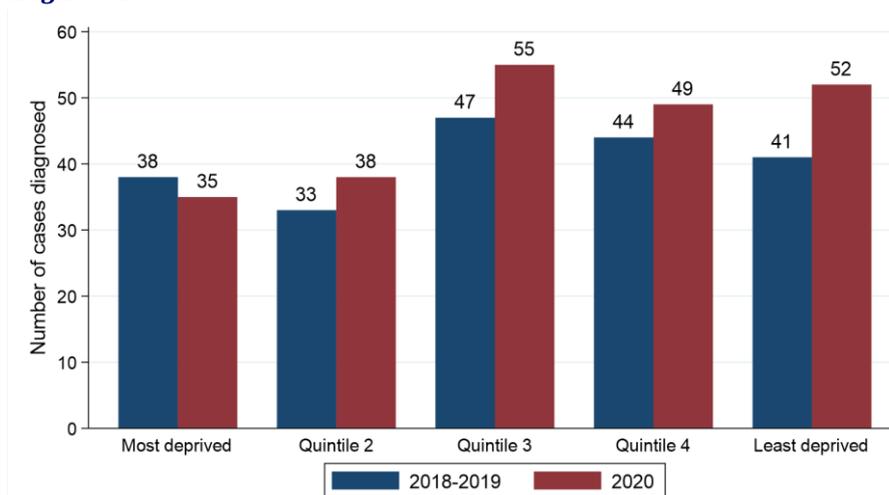
Deprivation quintile	Period of diagnosis (Apr-Dec)		Percentage change
	2018-2019*	2020	
Most deprived	38 (18.9%)	35 (15.3%)	-7.9% (3 patients)
Quintile 2	33 (16.4%)	38 (16.6%)	+15.2% (5 patients)
Quintile 3	47 (23.4%)	55 (24.0%)	+17.0% (8 patients)
Quintile 4	44 (21.9%)	49 (21.4%)	+11.4% (5 patients)
Least deprived	41 (20.4%)	52 (22.7%)	+26.8% (11 patients)
Northern Ireland	201	229	+13.9% (28 patients)

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

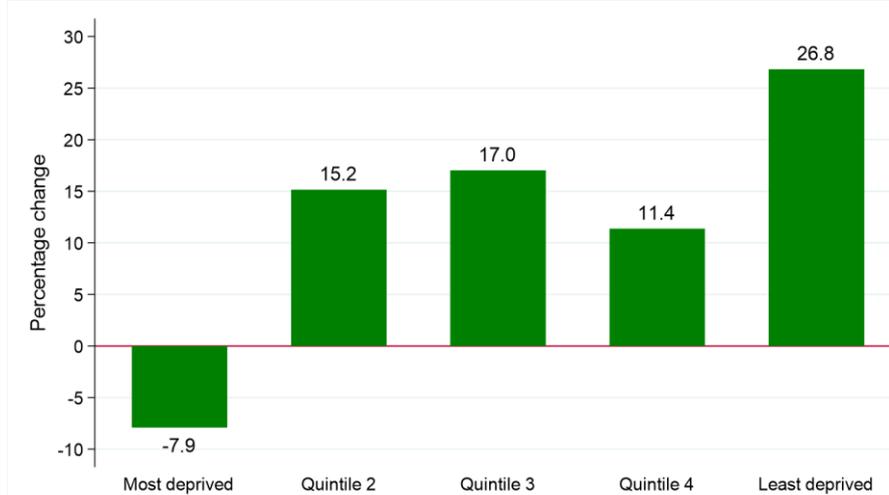
Note: Cases with unknown deprivation quintile are included in totals

**Figure 5: Pancreatic 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 pancreatic cancer cases by deprivation quintile**



## **BASIS OF DIAGNOSIS**

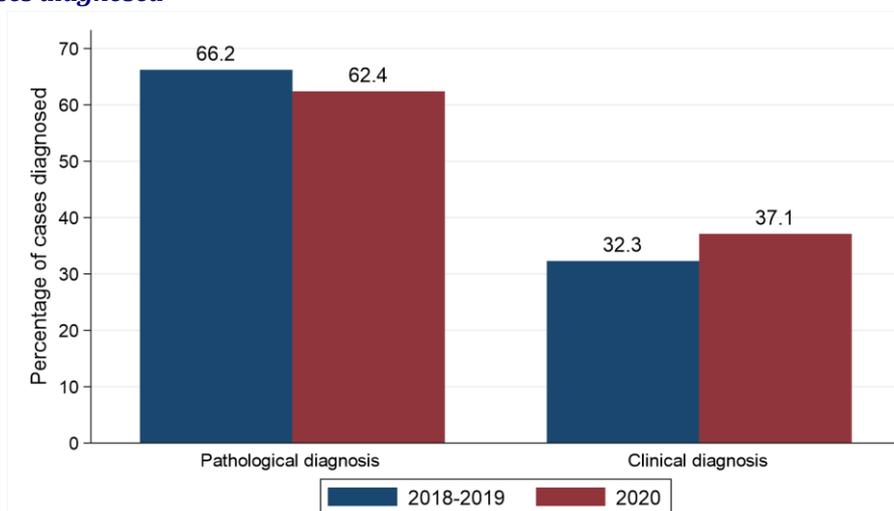
Excluding the first quarter of each year the number of pancreatic cancer cases diagnosed pathologically increased by 7.5% from 133 per year in 2018 - 2019 to 143 in 2020, while the number of cases diagnosed clinically increased by 30.8% from 65 per year to 85. The change in case distribution by basis of diagnosis between 2018 - 2019 and 2020 was not statistically significant.

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

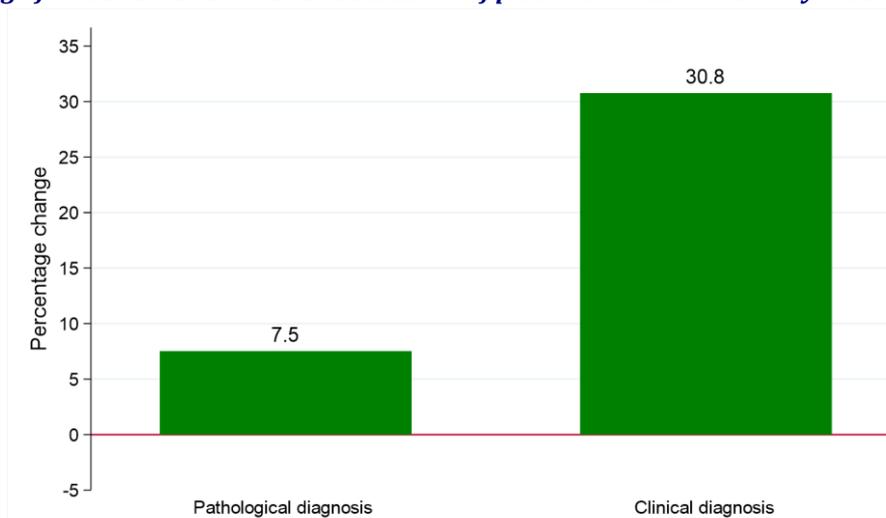
Basis of diagnosis	Period of diagnosis (Apr-Dec)		Percentage change
	2018-2019*	2020	
<b>Pathological diagnosis</b>	133 (66.2%)	143 (62.4%)	+7.5% (10 patients)
<b>Clinical diagnosis</b>	65 (32.3%)	85 (37.1%)	+30.8% (20 patients)
<b>Death certificate only</b>	4 (2.0%)	1 (0.4%)	-75.0% (3 patients)
<b>All groups</b>	201	229	+13.9% (28 patients)

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

**Figure 6: Pancreatic 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 pancreatic cancer cases by basis of diagnosis**



## STAGE

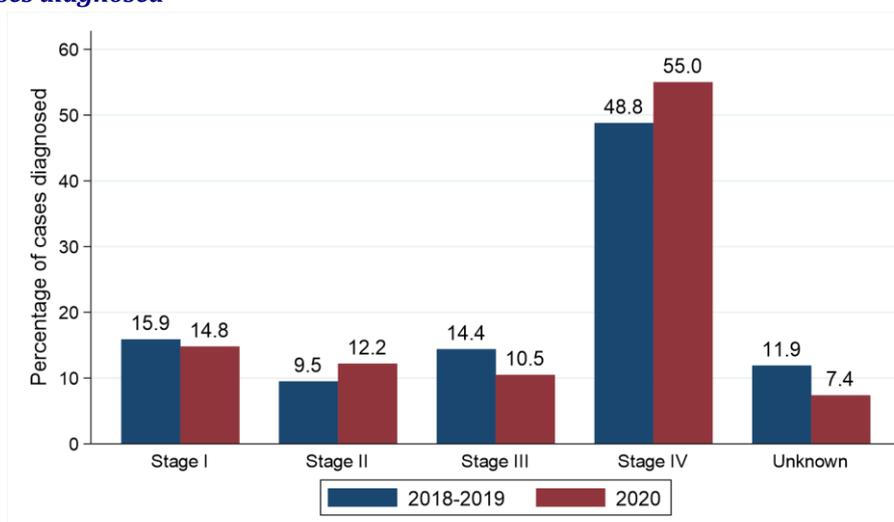
Excluding the first quarter of each year the number of pancreatic cancer cases diagnosed at Stage I increased by 6.3% from 32 per year in 2018 - 2019 to 34 in 2020. Between the same two time periods the number of cases diagnosed at Stage IV increased by 28.6% from 98 per year to 126. The change in case distribution by stage at diagnosis between 2018 - 2019 and 2020 was not statistically significant.

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

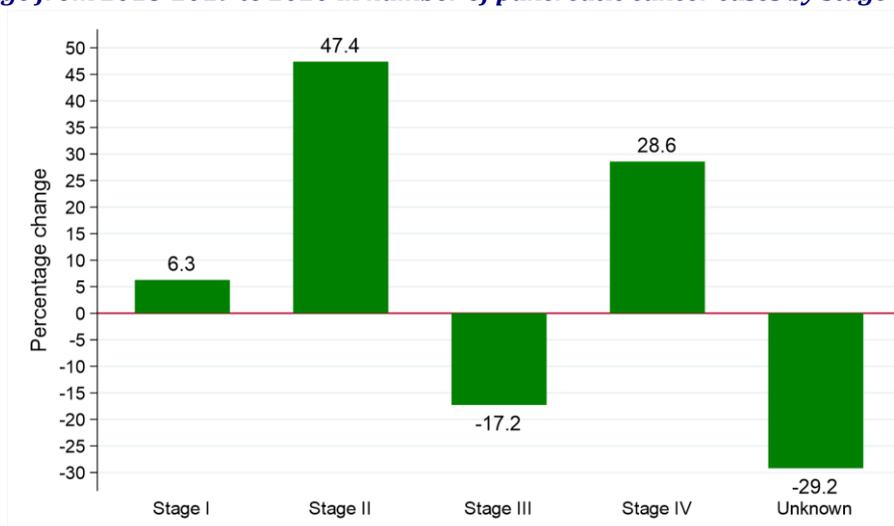
Stage at diagnosis	Period of diagnosis (Apr-Dec)		Percentage change
	2018-2019*	2020	
Stage I	32 (15.9%)	34 (14.8%)	+6.3% (2 patients)
Stage II	19 (9.5%)	28 (12.2%)	+47.4% (9 patients)
Stage III	29 (14.4%)	24 (10.5%)	-17.2% (5 patients)
Stage IV	98 (48.8%)	126 (55.0%)	+28.6% (28 patients)
Unknown	24 (11.9%)	17 (7.4%)	-29.2% (7 patients)
All stages	201	229	+13.9% (28 patients)

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

**Figure 7: Pancreatic 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 pancreatic cancer cases by stage at diagnosis



## METHOD OF HOSPITAL ADMISSION

Excluding the first quarter of each year the number of cases of pancreatic 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 20.5% from 73 per year in 2018 - 2019 to 88 in 2020. The change in case distribution by hospital admission type between 2018 - 2019 and 2020 was not statistically significant.

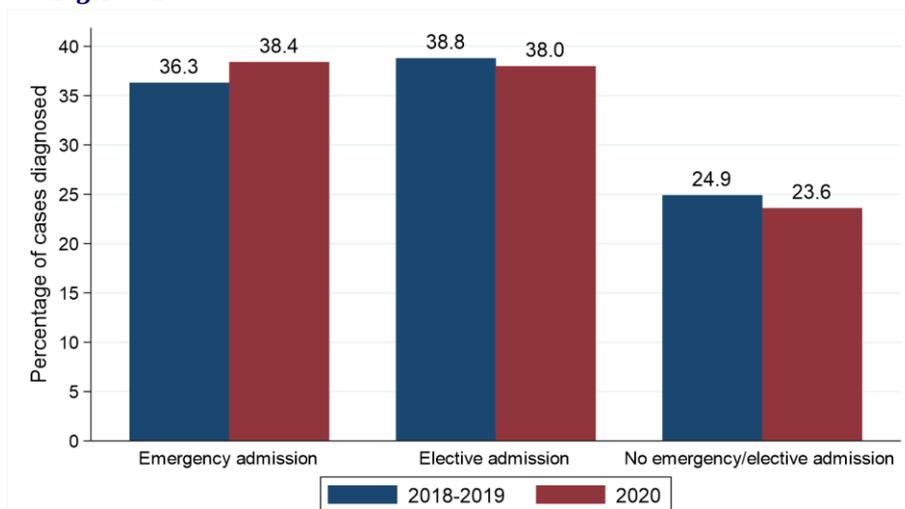
**Table 8: Number and proportion of pancreatic cancer cases diagnosed in April-December of 2018-2020 by method of admission to hospital and period of diagnosis**

Method of admission to hospital	Period of diagnosis (Apr-Dec)		Percentage change
	2018-2019*	2020	
Emergency admission	73 (36.3%)	88 (38.4%)	+20.5% (15 patients)
Elective admission	78 (38.8%)	87 (38.0%)	+11.5% (9 patients)
No emergency/elective admission recorded	50 (24.9%)	54 (23.6%)	+8.0% (4 patients)
All persons	201	229	+13.9% (28 patients)

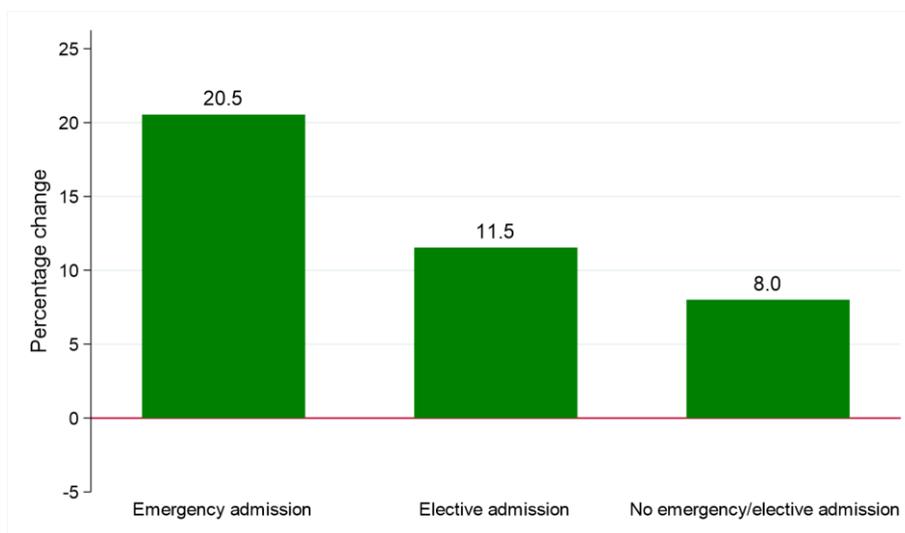
\* Average cases per year rounded to the nearest integer. Column sums may thus differ slightly from the total.

**Figure 8: Pancreatic 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 pancreatic cancer cases by method of admission to hospital**



## TREATMENT

Excluding the first quarter of each year the number of pancreatic cancer cases where the patient was treated with surgery (within six months of diagnosis) increased by 8.5% from 59 per year for those diagnosed in 2018 - 2019 to 64 for those diagnosed in 2020. The resulting change in the proportion receiving surgery from 29.4% in 2018 - 2019 to 27.9% 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 16.4% from 61 per year to 71. The resulting change in the proportion receiving chemotherapy from 30.3% in 2018 - 2019 to 31.0% in 2020 was not statistically significant.

The number of pancreatic cancer cases where the patient was treated with radiotherapy (within six months of diagnosis) increased by 33.3% from 3 per year for those diagnosed in April-December of 2018 - 2019 to 4 for those diagnosed in April-December of 2020. The resulting change in the proportion receiving radiotherapy from 1.5% in 2018 - 2019 to 1.7% in 2020 was not statistically significant.

Between the same two time periods the number of cases where the patient was treated with hormone therapy (within six months) decreased by 16.7% from 6 per year to 5. The resulting change in the proportion receiving hormone therapy from 3.0% in 2018 - 2019 to 2.2% 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 53.7%. This compared to 51.7% of those diagnosed in 2018 - 2019. This change was not statistically significant.

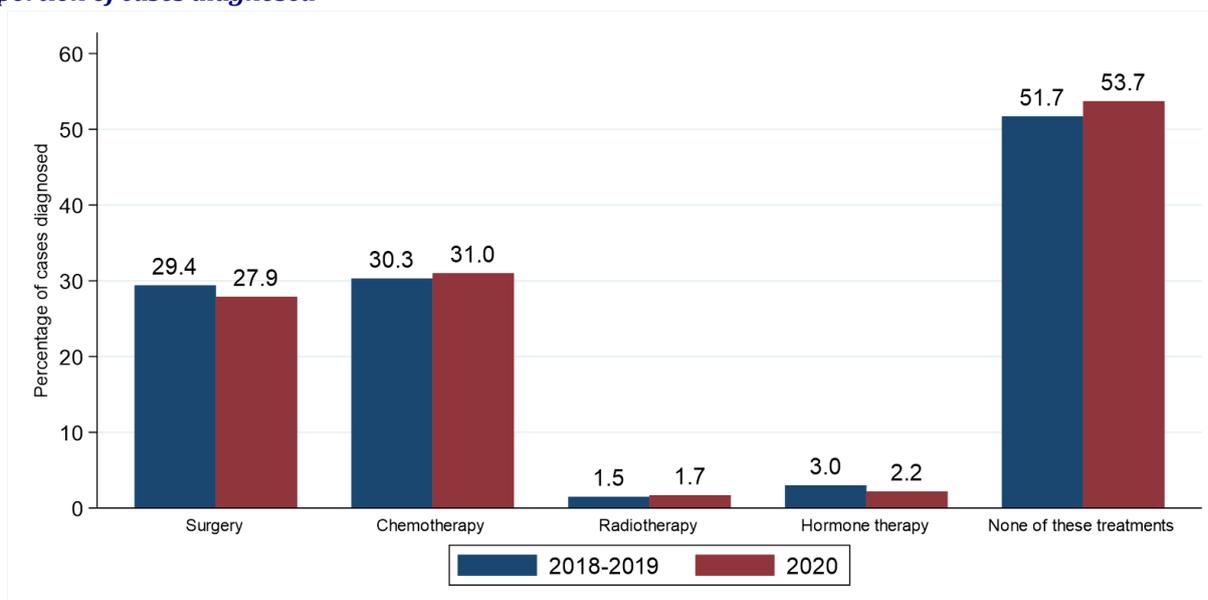
**Table 9: Number and proportion of pancreatic cancer cases diagnosed in April-December of 2018-2020 by treatment type and period of diagnosis**

Treatment type	Period of diagnosis (Apr-Dec)		Percentage change
	2018-2019 average	2020	
<b>Surgery</b>	59 (29.4%)	64 (27.9%)	+8.5% (5 patients)
<b>Chemotherapy</b>	61 (30.3%)	71 (31.0%)	+16.4% (10 patients)
<b>Radiotherapy</b>	3 (1.5%)	4 (1.7%)	+33.3% (1 patients)
<b>Hormone therapy</b>	6 (3.0%)	5 (2.2%)	-16.7% (1 patients)
<b>None of these treatments</b>	104 (51.7%)	123 (53.7%)	+18.3% (19 patients)

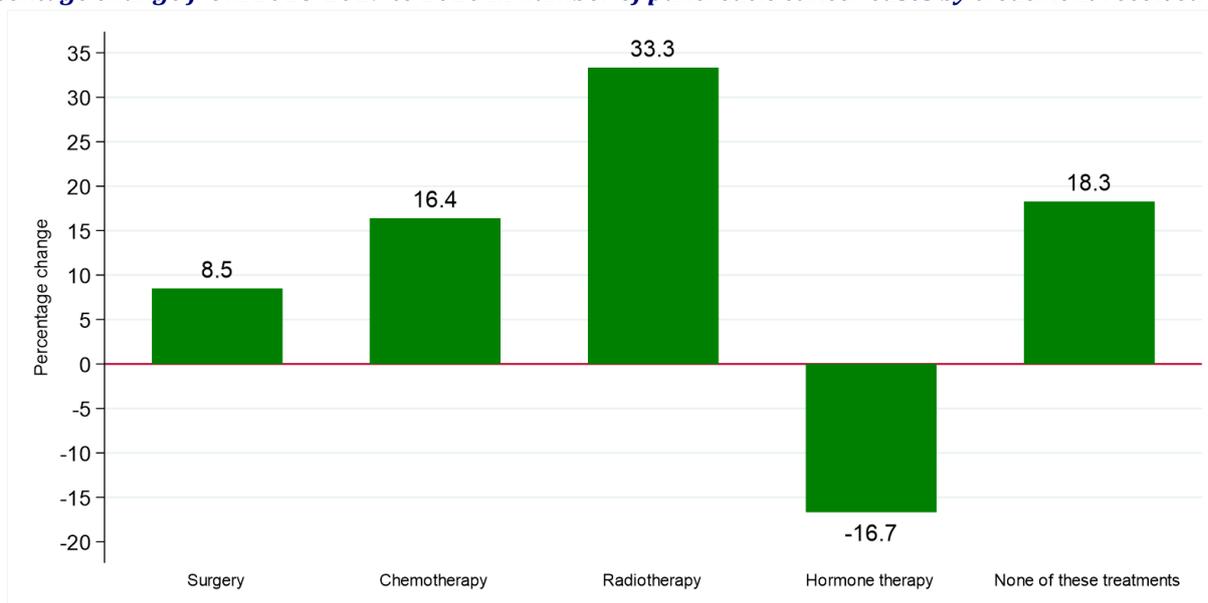
*No statistically significant changes*

**Figure 9: Pancreatic 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 pancreatic 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

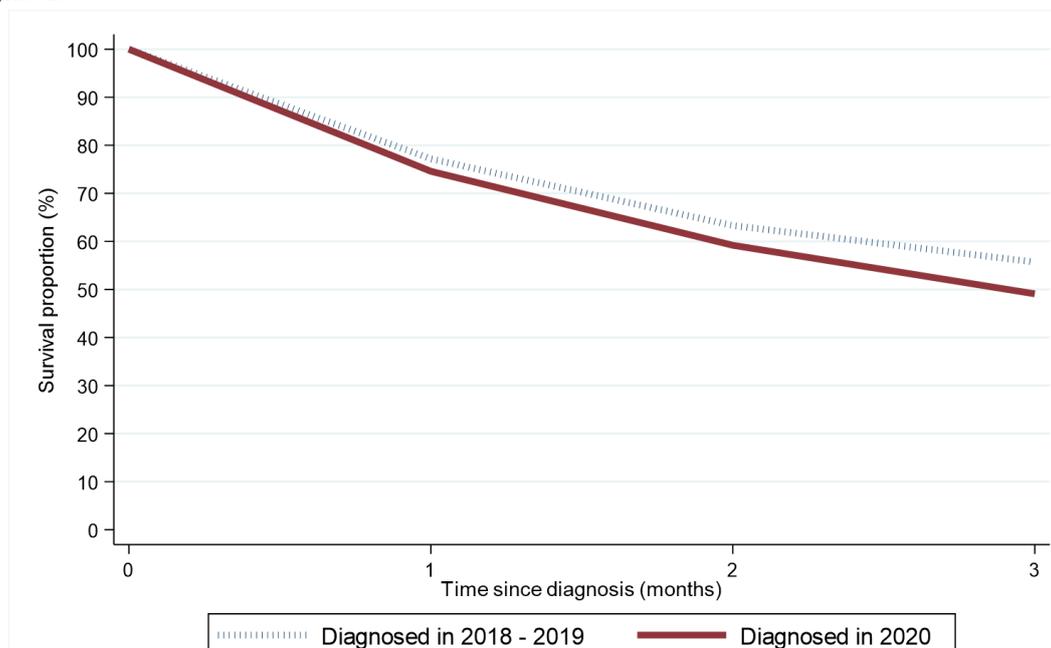
Survival among pancreatic cancer patients one month after diagnosis decreased from 77.2% among those diagnosed in April-December of 2018 - 2019 to 74.6% among those diagnosed in April-December of 2020. This change was not statistically significant. Between the same two diagnosis periods, three-month survival decreased from 55.7% to 49.1%. This change was not statistically significant.

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

Survival time	Period of diagnosis (Apr-Dec)	
	2018-2019	2020
<b>1 month</b>	77.2% (72.8% - 81.0%)	74.6% (68.4% - 79.7%)
<b>2 months</b>	63.3% (58.3% - 67.8%)	59.2% (52.5% - 65.3%)
<b>3 months</b>	55.7% (50.7% - 60.4%)	49.1% (42.5% - 55.4%)

*No statistically significant reductions*

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



## DEATHS FROM COVID-19

During 2020 there were a total of 2 deaths from Covid-19 among pancreatic cancer patients diagnosed at any point since 1993.

## NET SURVIVAL

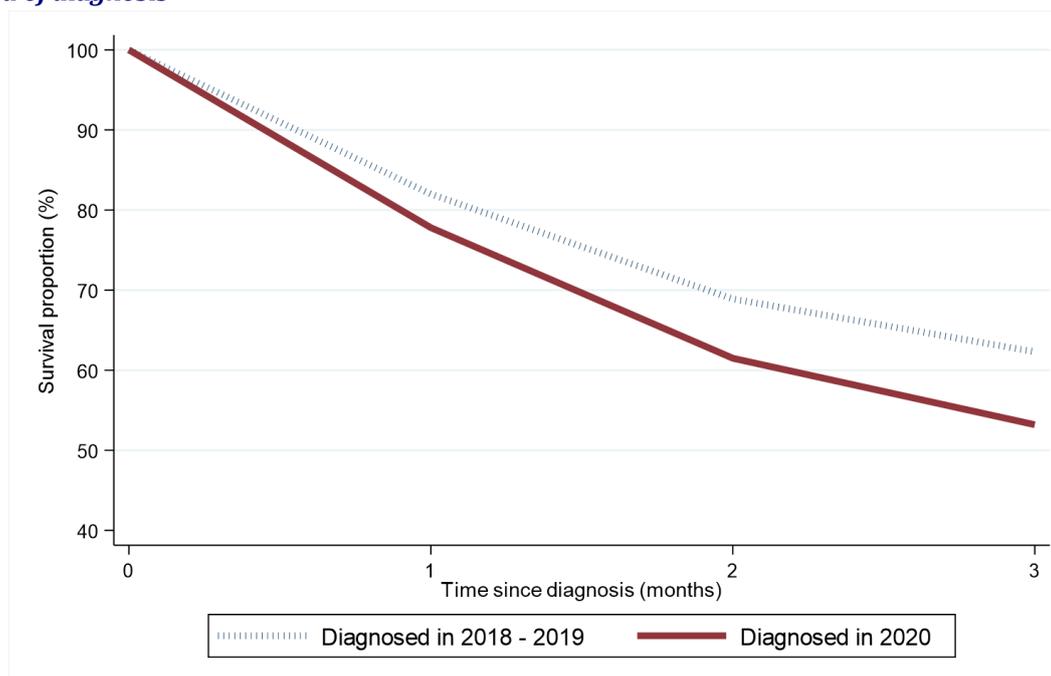
Age-standardised net survival (which takes account of deaths from other causes such as Covid-19) among pancreatic cancer patients one month after diagnosis decreased from 82.0% among those diagnosed in April-December of 2018 - 2019 to 77.8% among those diagnosed in April-December of 2020. This change was not statistically significant. Between the same two time periods, three-month age-standardised net survival decreased from 62.3% to 53.2%. This change was not statistically significant.

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

Survival time	Period of diagnosis (Apr-Dec)	
	2018-2019	2020
<b>1 month</b>	82.0% (78.2% - 85.9%)	77.8% (72.1% - 84.0%)
<b>2 months</b>	68.9% (64.3% - 73.8%)	61.5% (54.5% - 69.4%)
<b>3 months</b>	62.3% (57.5% - 67.5%)	53.2% (46.4% - 61.0%)

*No statistically significant reductions*

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



# CANCER MORTALITY

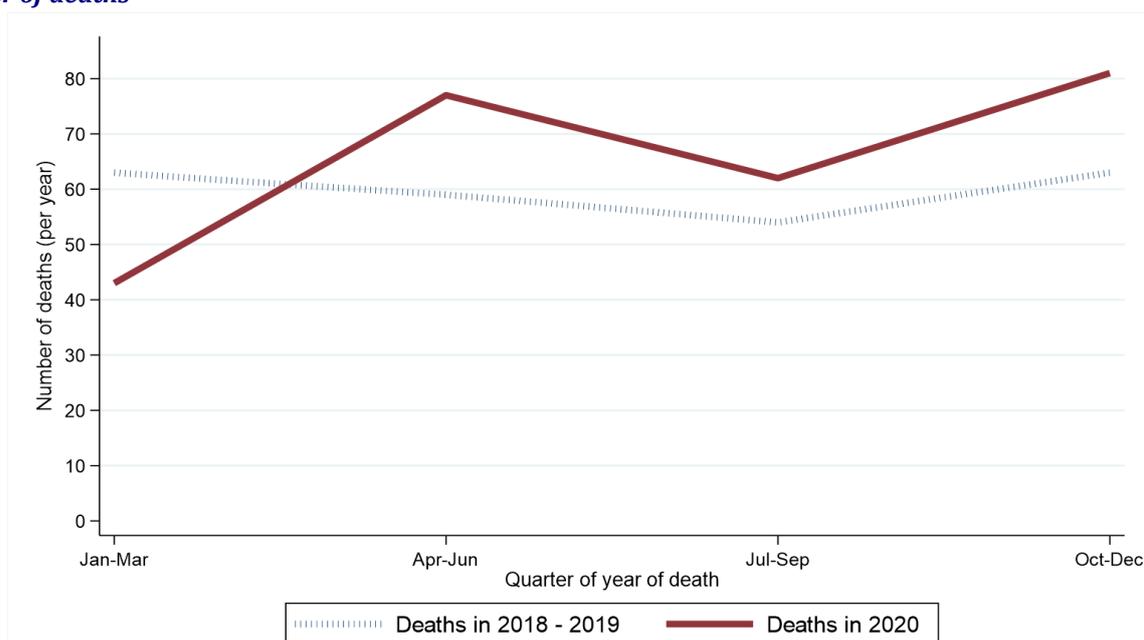
During the April-December period when Covid-19 was present the number of deaths from pancreatic cancer increased by 25.7% from 175 per year in 2018 - 2019 to 220 in 2020.

**Table 12: Number of pancreatic cancer deaths in 2018-2020 by quarter and year of death**

Period of death	Annual total	Quarter of year death occurred			
		Jan-Mar	Apr-Jun	Jul-Sept	Oct-Dec
2018-2019*	238	63	59	54	63
2020	263	43	77	62	81

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

**Figure 12: Number of pancreatic cancer deaths in 2018-2020 by quarter and year of death**  
(a) Number of deaths



(b) Percentage change from 2018-2019 to 2020 in number of pancreatic cancer deaths by quarter of year of death

