
Recent trends in incidence and survival of thyroid 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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INCIDENCE

During the April-December period the number of cases of thyroid cancer diagnosed increased between 2018-2019 and 2021 by 0.9% from 114 cases per year to 115 cases.

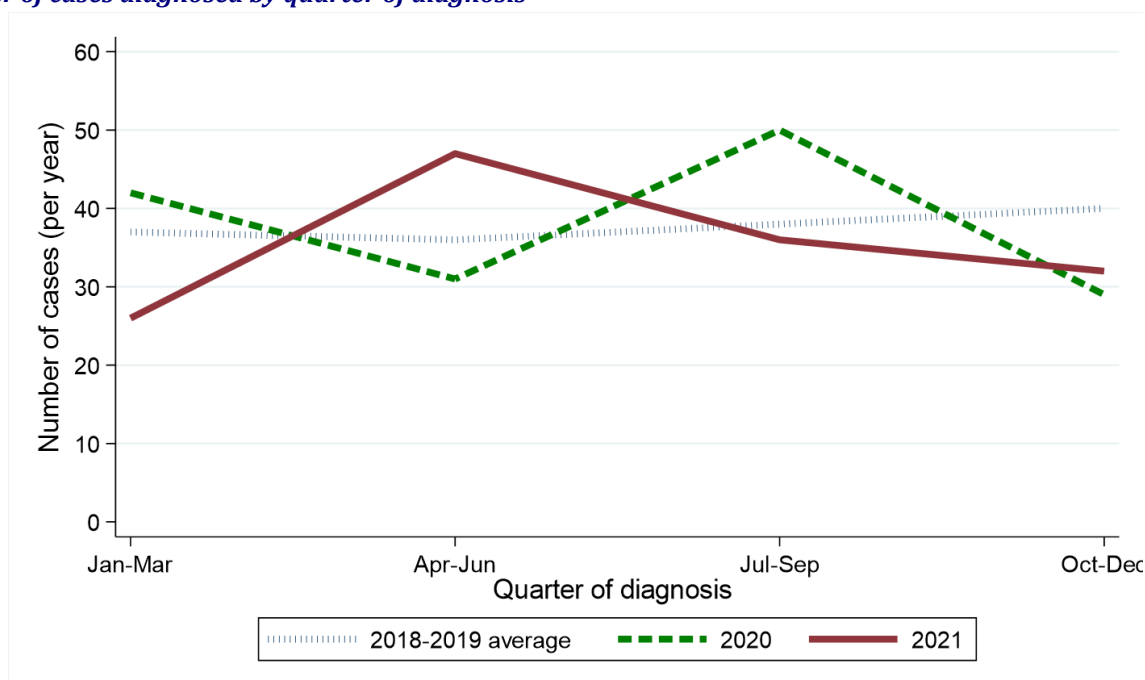
Table 1: Number of thyroid cancer cases diagnosed in 2018-2021 by quarter and year of diagnosis

Period of diagnosis	Annual total	Quarter diagnosed			
		Jan-Mar	Apr-Jun	Jul-Sept	Oct-Dec
2018-2019*	150	37	36	38	40
2020	152	42	31	50	29
2021	141	26	47	36	32

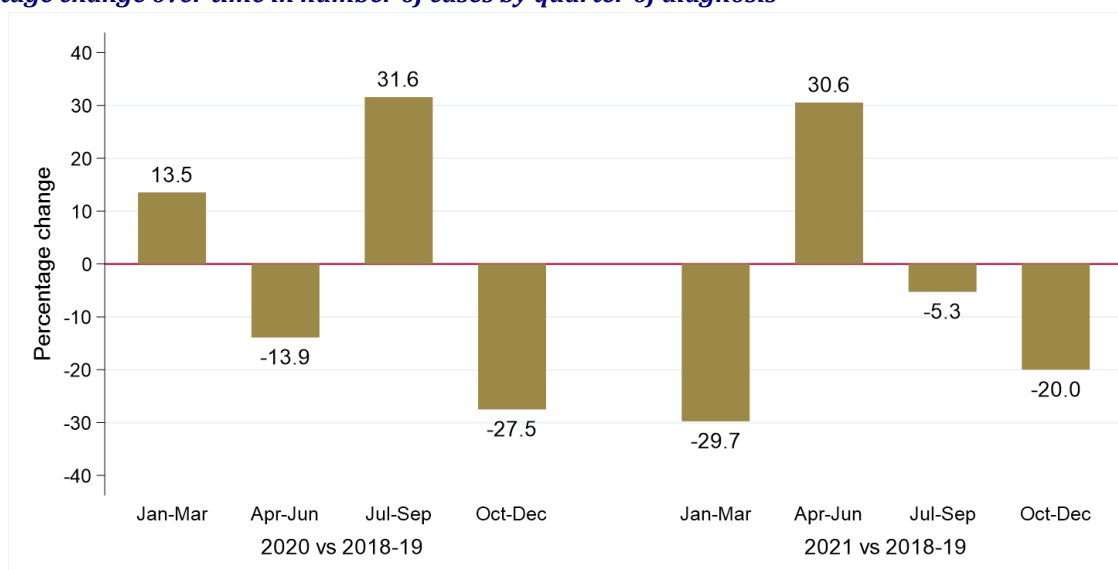
* Average cases per year rounded to the nearest integer. Row sums may thus differ slightly from the total.

Figure 1: Number of thyroid 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 thyroid cancer cases diagnosed decreased by 11.8% from 34 per year in 2018-2019 to 30 in 2021. Between the same two time periods the number of female thyroid cancer cases diagnosed increased by 6.3% from 80 per year in 2018-2019 to 85 in 2021. The change in case distribution by gender between 2018-2019 and 2021 was not statistically significant.

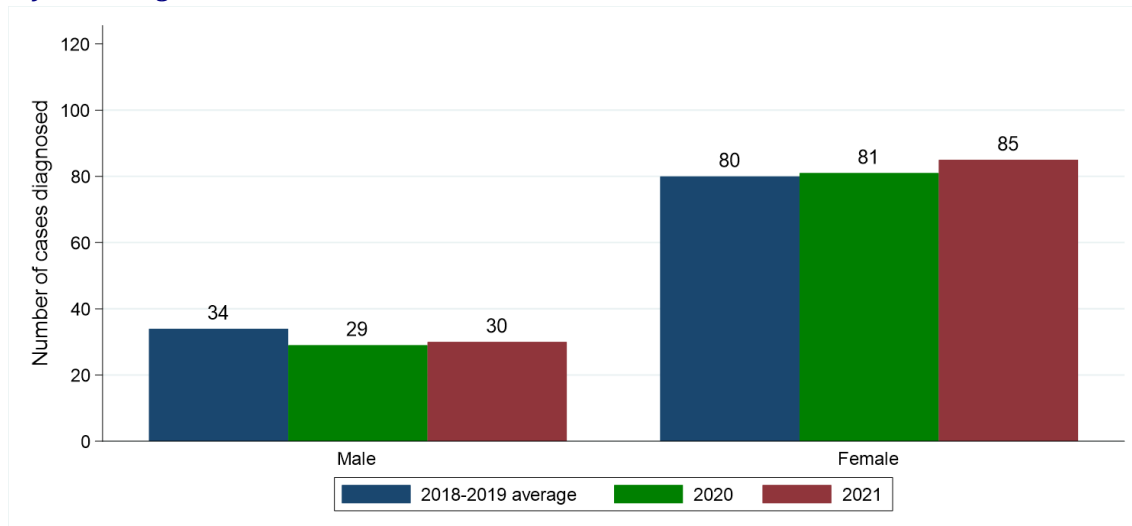
Table 2: Number and proportion of thyroid cancer cases diagnosed in April-December of 2018-2021 by gender and period of diagnosis

Gender	Period of diagnosis (Apr-Dec)			Percentage change	
	2018-2019*	2020	2021	2020 vs 2018-2019	2021 vs 2018-2019
All persons	114	110	115	-3.5%	+0.9%
Male	34 (29.8%)	29 (26.4%)	30 (26.1%)	-14.7%	-11.8%
Female	80 (70.2%)	81 (73.6%)	85 (73.9%)	+1.3%	+6.3%

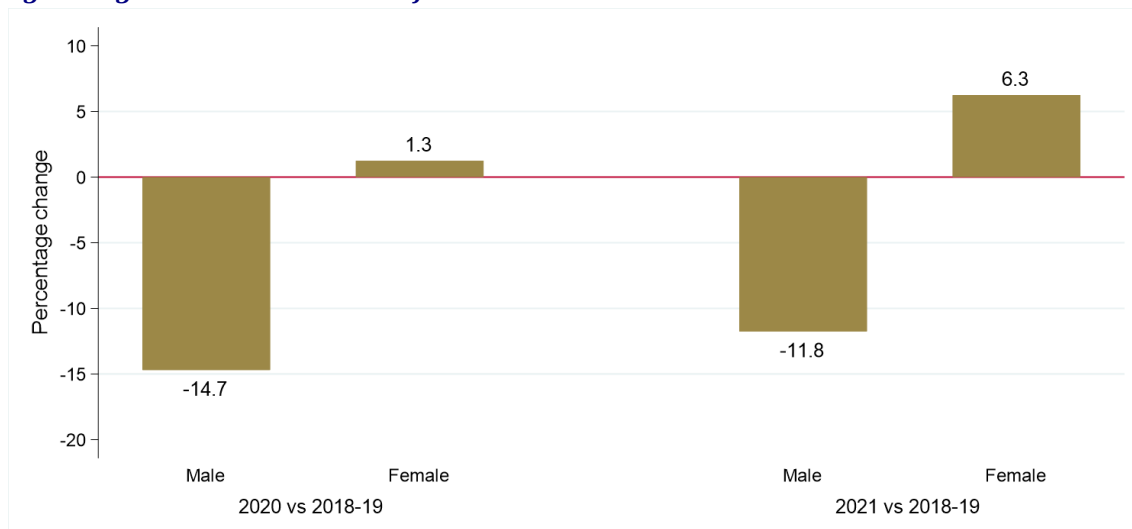
* Average cases per year rounded to the nearest integer. Column sums may thus differ slightly from the total.

Figure 2: Number of thyroid 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

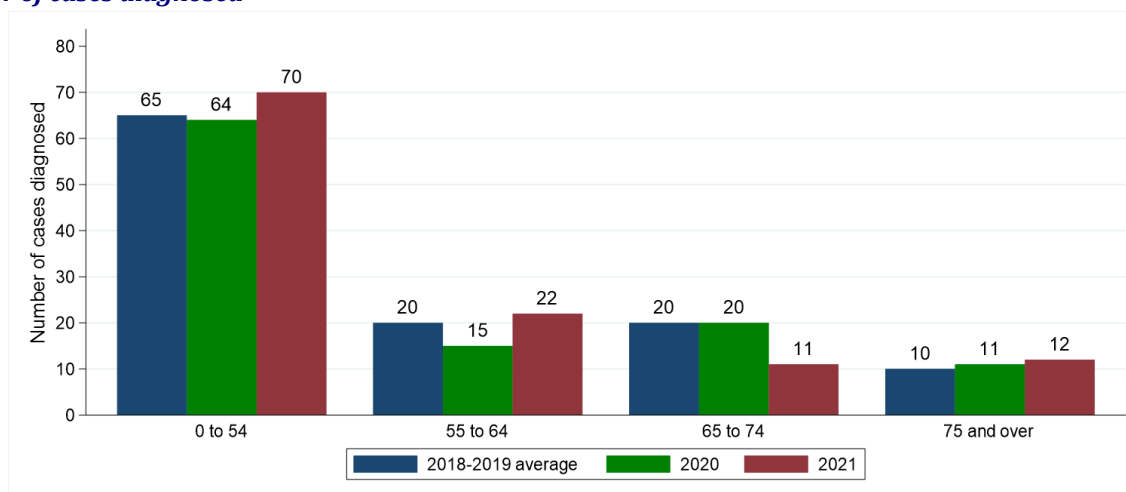
Excluding the first quarter of each year the number of cases of thyroid cancer diagnosed among those aged 65 to 74 decreased by 45.0% from 20 per year in 2018-2019 to 11 in 2021. Between the same two time periods the number of cases of thyroid cancer diagnosed among those aged 75 and over increased by 20.0% from 10 per year in 2018-2019 to 12 in 2021. The change in case distribution by age between 2018-2019 and 2021 was not statistically significant.

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

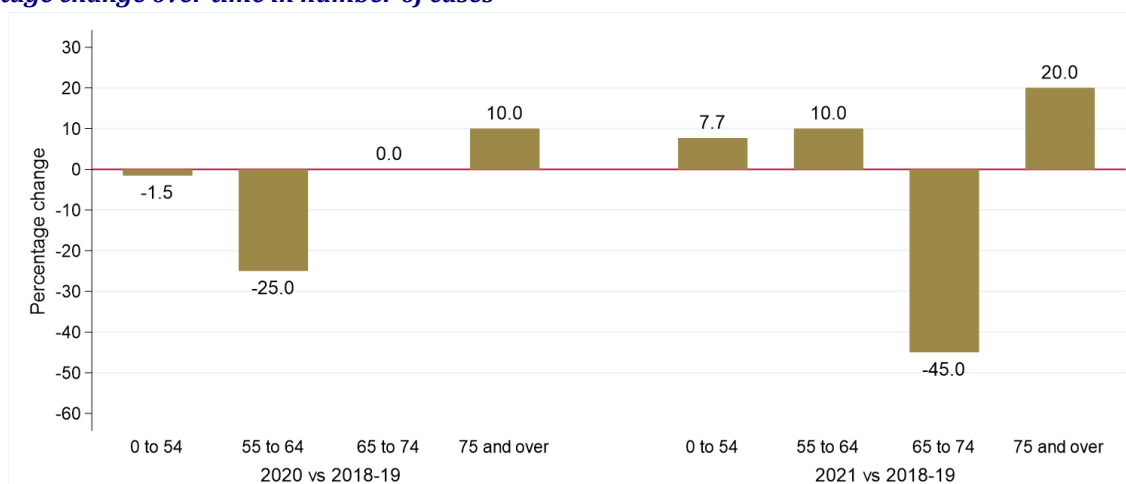
Age	Period of diagnosis (Apr-Dec)			Percentage change	
	2018-2019*	2020	2021	2020 vs 2018-2019	2021 vs 2018-2019
All ages	114	110	115	-3.5%	+0.9%
0 to 54	65 (57.0%)	64 (58.2%)	70 (60.9%)	-1.5%	+7.7%
55 to 64	20 (17.5%)	15 (13.6%)	22 (19.1%)	-25.0%	+10.0%
65 to 74	20 (17.5%)	20 (18.2%)	11 (9.6%)	0.0%	-45.0%
75 and over	10 (8.8%)	11 (10.0%)	12 (10.4%)	+10.0%	+20.0%

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

Figure 3: Number of thyroid 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 thyroid cancer diagnosed among those resident in South Eastern HSCT decreased by 25.9% from 27 per year in 2018-2019 to 20 in 2021. Between the same two time periods the number of cases of thyroid cancer diagnosed among those resident in Southern HSCT increased by 19.0% from 21 per year in 2018-2019 to 25 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 thyroid cancer cases diagnosed in April-December of 2018-2021 by Health and Social Care Trust and period of diagnosis

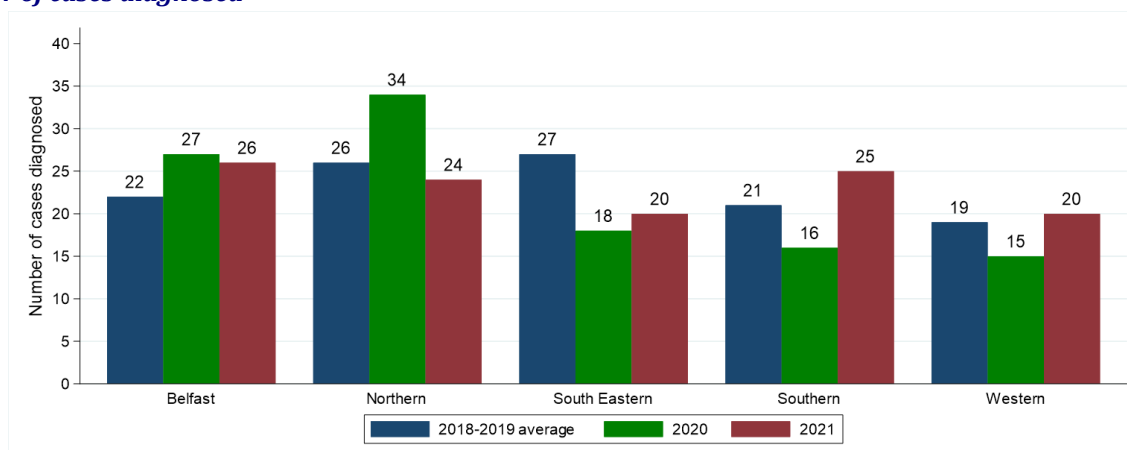
Health and Social Care Trust	Period of diagnosis (Apr-Dec)			Percentage change	
	2018-2019*	2020	2021	2020 vs 2018-2019	2021 vs 2018-2019
Northern Ireland	114	110	115	-3.5%	+0.9%
Belfast	22 (19.3%)	27 (24.5%)	26 (22.6%)	+22.7%	+18.2%
Northern	26 (22.8%)	34 (30.9%)	24 (20.9%)	+30.8%	-7.7%
South Eastern	27 (23.7%)	18 (16.4%)	20 (17.4%)	-33.3%	-25.9%
Southern	21 (18.4%)	16 (14.5%)	25 (21.7%)	-23.8%	+19.0%
Western	19 (16.7%)	15 (13.6%)	20 (17.4%)	-21.1%	+5.3%

* 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 4: Number of thyroid 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 thyroid cancer diagnosed among those resident in the least deprived quintile decreased by 3.7% from 27 per year in 2018-2019 to 26 in 2021. Between the same two time periods the number of cases of thyroid cancer diagnosed among those resident in the most deprived quintile increased by 5.6% from 18 per year in 2018-2019 to 19 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 thyroid cancer cases diagnosed in April-December of 2018-2021 by deprivation quintile and period of diagnosis

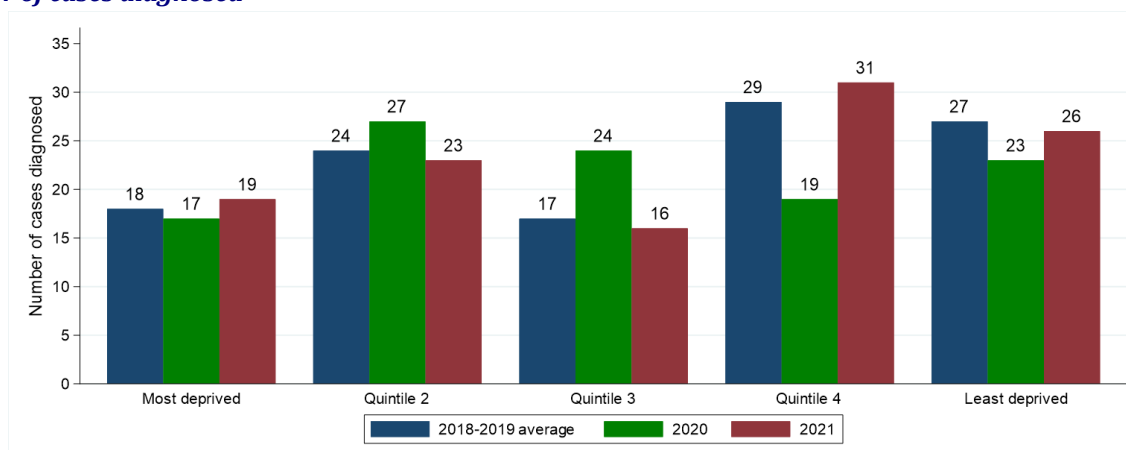
Deprivation quintile	Period of diagnosis (Apr-Dec)			Percentage change	
	2018-2019*	2020	2021	2020 vs 2018-2019	2021 vs 2018-2019
Northern Ireland	114	110	115	-3.5%	+0.9%
Most deprived	18 (15.8%)	17 (15.5%)	19 (16.5%)	-5.6%	+5.6%
Quintile 2	24 (21.1%)	27 (24.5%)	23 (20.0%)	+12.5%	-4.2%
Quintile 3	17 (14.9%)	24 (21.8%)	16 (13.9%)	+41.2%	-5.9%
Quintile 4	29 (25.4%)	19 (17.3%)	31 (27.0%)	-34.5%	+6.9%
Least deprived	27 (23.7%)	23 (20.9%)	26 (22.6%)	-14.8%	-3.7%

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

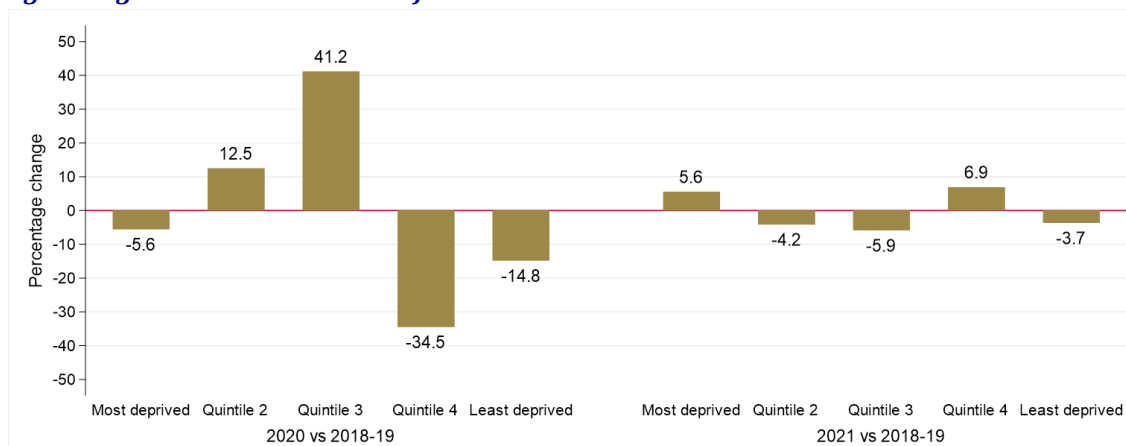
Note: Cases with unknown deprivation quintile are included in totals.

Figure 5: Number of thyroid 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



TREATMENT

Excluding the first quarter of each year the number of thyroid cancer cases resulting in treatment by surgery within six months increased by 4.3% from 94 per year in 2018-2019 to 98 in 2021. The resulting increase in the proportion receiving surgery from 82.5% in 2018-2019 to 85.2% in 2021 was not statistically significant.

Between the same two time periods the number of thyroid cancer cases resulting in treatment by radiotherapy increased by 6.7% from 30 per year in 2018-2019 to 32 in 2021. The resulting increase in the proportion receiving radiotherapy from 26.3% in 2018-2019 to 27.8% in 2021 was not statistically significant.

Excluding the first quarter of each year the number of thyroid cancer cases receiving none of these treatments within six months of diagnosis decreased by 25.0% from 16 per year in 2018-2019 to 12 in 2021. The resulting decrease in the proportion receiving none of these treatments from 14.0% in 2018-2019 to 10.4% in 2021 was not statistically significant.

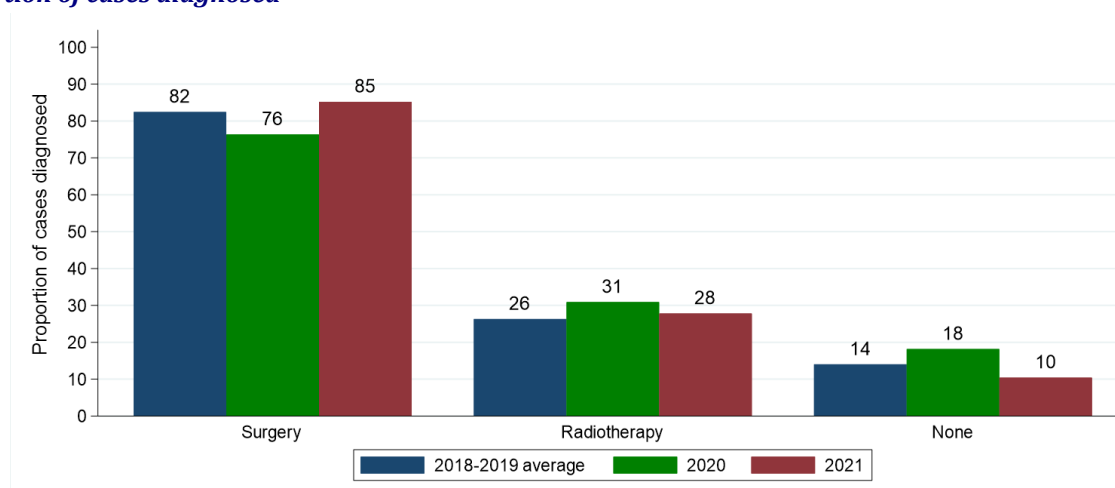
Table 7: Number and proportion of thyroid cancer cases diagnosed in April-December of 2018-2021 by treatment type (within six months of diagnosis) and period of diagnosis

Treatment type	Period of diagnosis (Apr-Dec)			Percentage change	
	2018-2019*	2020	2021	2020 vs 2018-2019	2021 vs 2018-2019
Surgery	94 (82.5%)	84 (76.4%)	98 (85.2%)	-10.6%	+4.3%
Radiotherapy	30 (26.3%)	34 (30.9%)	32 (27.8%)	+13.3%	+6.7%
None of these treatments	16 (14.0%)	20 (18.2%)	12 (10.4%)	+25.0%	-25.0%

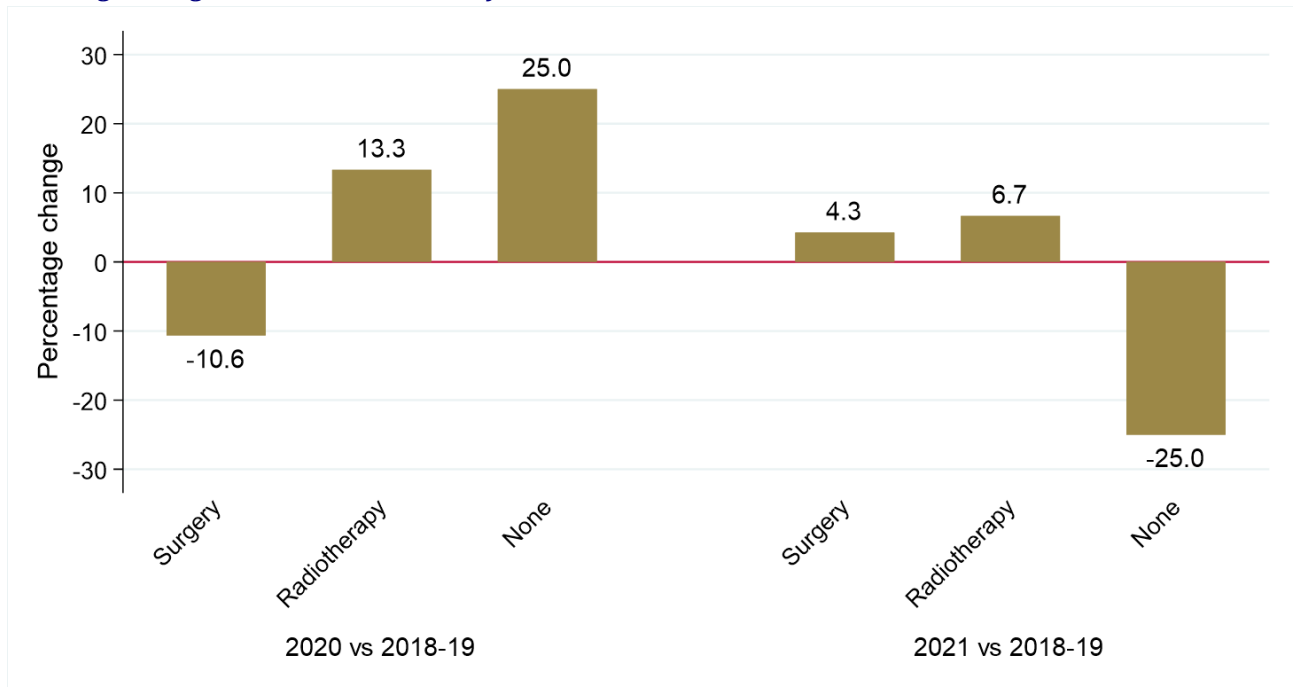
No statistically significant change compared to 2018-2019

Figure 7: Proportion of thyroid 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

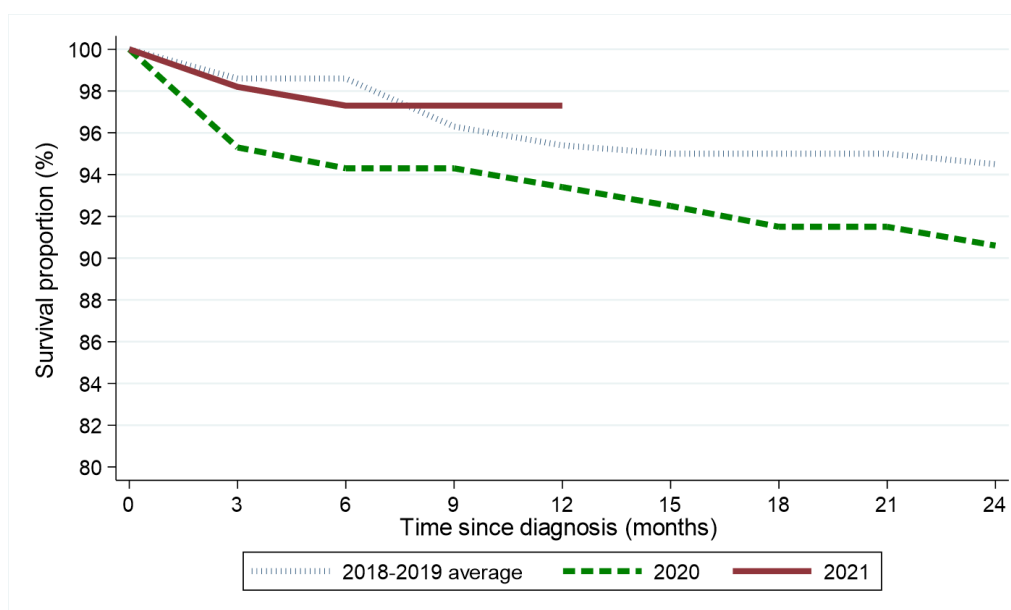
Survival among thyroid cancer patients six months after diagnosis decreased from 98.6% among those diagnosed in April-December of 2018-2019 to 97.3% among those diagnosed in April-December of 2021. This change was not statistically significant. Between the same two diagnosis periods, one-year survival increased from 95.4% to 97.3%. 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 ($p=0.774$).

Table 8: Observed survival for patients with thyroid 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	98.6% (95.8% - 99.6%)	95.3% (89.0% - 98.0%)	98.2% (93.0% - 99.5%)
Six months	98.6% (95.8% - 99.6%)	94.3% (87.8% - 97.4%)	97.3% (91.9% - 99.1%)
One year	95.4% (91.7% - 97.5%)	93.4% (86.6% - 96.8%)	97.3% (91.9% - 99.1%)
Two years	94.5% (90.5% - 96.8%)	90.6% (83.2% - 94.8%)	-

No statistically significant reductions compared to 2018-2019

Figure 8: Observed survival for patients with thyroid 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 thyroid cancer patients diagnosed at any point since 1993.

NET SURVIVAL

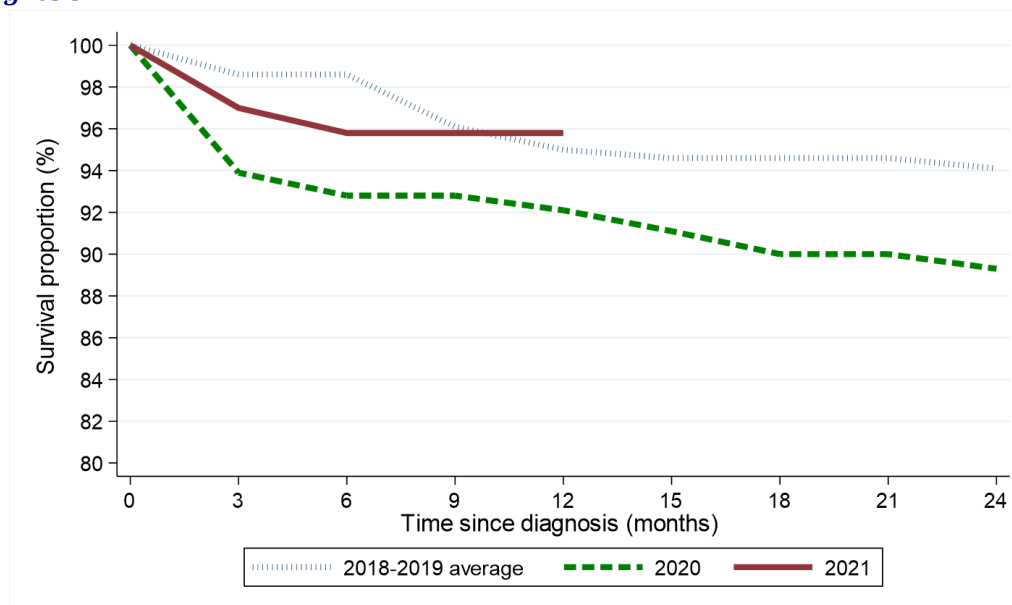
Net survival among thyroid cancer patients six months after diagnosis decreased from 98.6% among those diagnosed in April-December of 2018-2019 to 95.8% among those diagnosed in April-December of 2021. This change was not statistically significant. Between the same two diagnosis periods, one-year net survival increased from 95.0% to 95.8%. This change was not statistically significant.

Table 9: Age-standardised net survival for patients with thyroid 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	98.6% (96.9% - 100.0%)	93.9% (88.7% - 99.4%)	97.0% (92.9% - 100.0%)
Six months	98.6% (96.9% - 100.0%)	92.8% (87.2% - 98.8%)	95.8% (90.7% - 100.0%)
One year	95.0% (91.5% - 98.6%)	92.1% (86.2% - 98.4%)	95.8% (90.7% - 100.0%)
Two years	94.1% (90.3% - 98.1%)	89.3% (82.4% - 96.8%)	-

No statistically significant reductions compared to 2018-2019

Figure 9: Age-standardised net survival for patients with thyroid 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.