
Head and neck cancer

1993-2021

(ICD10 codes: C00-C14, C30-C32)



Northern Ireland Cancer Registry, 2024

An official statistics publication

ABOUT THIS REPORT

Contents

This report includes information on incidence of head and neck cancer as recorded by the Northern Ireland Cancer Registry (NICR). Incidence data is available annually from 1993 to 2021, however in order to provide stable and robust figures the majority of information presented in this report is based upon the average number of cases diagnosed in the last five years.

Methodology

The methodology used in producing the statistics presented in this report, including details of data sources, classifications and coding are available in the accompanying methodology report available at: www.qub.ac.uk/research-centres/nicr/CancerInformation/official-statistics.

Official statistics

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. Further information on this code is available at code.statisticsauthority.gov.uk.

Cancer mortality data

The NI Statistics and Research Agency (NISRA) is the official statistics provider of cancer mortality data in Northern Ireland. However, for completeness, data on cancer mortality is also provided in this report. While analysis is conducted by NICR staff, the original data is provided courtesy of the General Register Office (NI) via the Department of Health.

Reuse of information

The information in this report (and any supplementary material) is available for reuse free of charge and without the need to contact NICR. However, we request that NICR is acknowledged as the source of any reused information. The following reference is recommended:

Northern Ireland Cancer Registry 2024. Head and neck cancer: 1993-2021. Available at:
www.qub.ac.uk/research-centres/nicr

Further information

Further information is available at: www.qub.ac.uk/research-centres/nicr

Phone: +44 (0)28 9097 6028 **e-mail:** nicr@qub.ac.uk

Acknowledgements

The Northern Ireland Cancer Registry (NICR) uses data provided by patients and collected by the health service as part of their care and support.

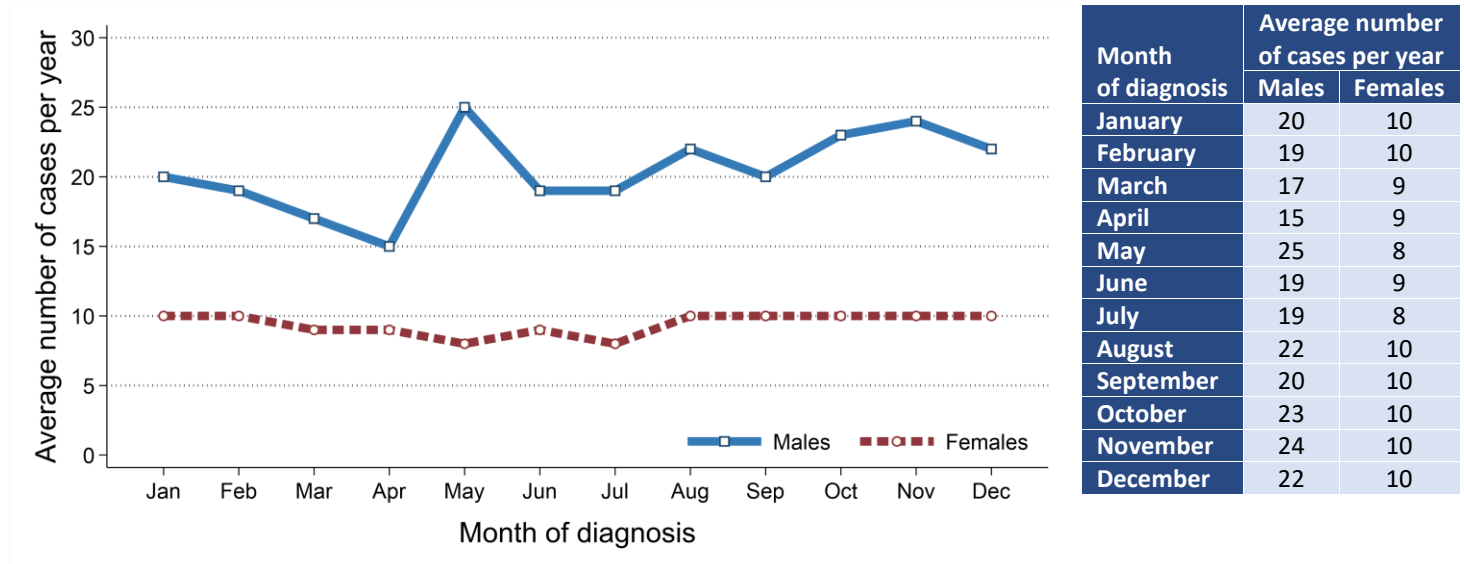
NICR is funded by the Public Health Agency and is based in Queen's University, Belfast.



INCIDENCE

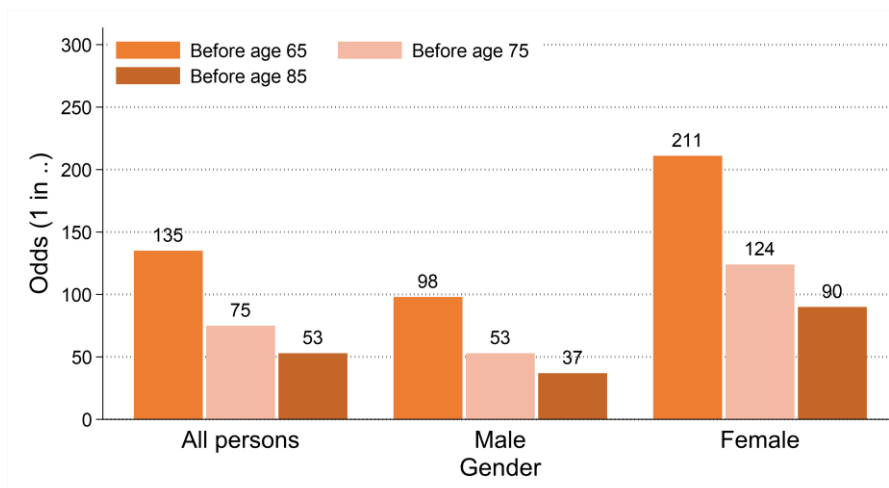
- There were 1,788 cases of head and neck cancer diagnosed during 2017-2021 in Northern Ireland. On average this was 358 cases per year.
- During this period 31.7% of head and neck cancer cases were among women (Male cases: 1,222, Female cases: 566). On average there were 244 male and 113 female cases of head and neck cancer per year.

Figure 1: Average number of cases of head and neck cancer per year in 2017-2021 by month of diagnosis



- Head and neck cancer made up 4.8% of all male and 2.3% of all female cancer cases (excluding non-melanoma skin cancer).
- The head and neck cancer incidence rates for each gender were 26.3 cases per 100,000 males and 11.8 cases per 100,000 females.
- The odds of developing head and neck cancer before age 85 was 1 in 37 for men and 1 in 90 for women.

Figure 2: Odds of developing head and neck cancer in 2017-2021



INCIDENCE BY AGE

- The median age of patients diagnosed with head and neck cancer during 2017-2021 was 65 years (Males: 65, Females: 64).
- The risk of developing head and neck cancer varied by age, with 20.9% of men and 23.7% of women diagnosed with head and neck cancer aged 75 and over at diagnosis.
- In contrast, 19.2% of patients diagnosed with head and neck cancer were aged 0 to 54 at diagnosis.

Figure 3: Average number of cases of head and neck cancer diagnosed per year in 2017-2021 by age at diagnosis

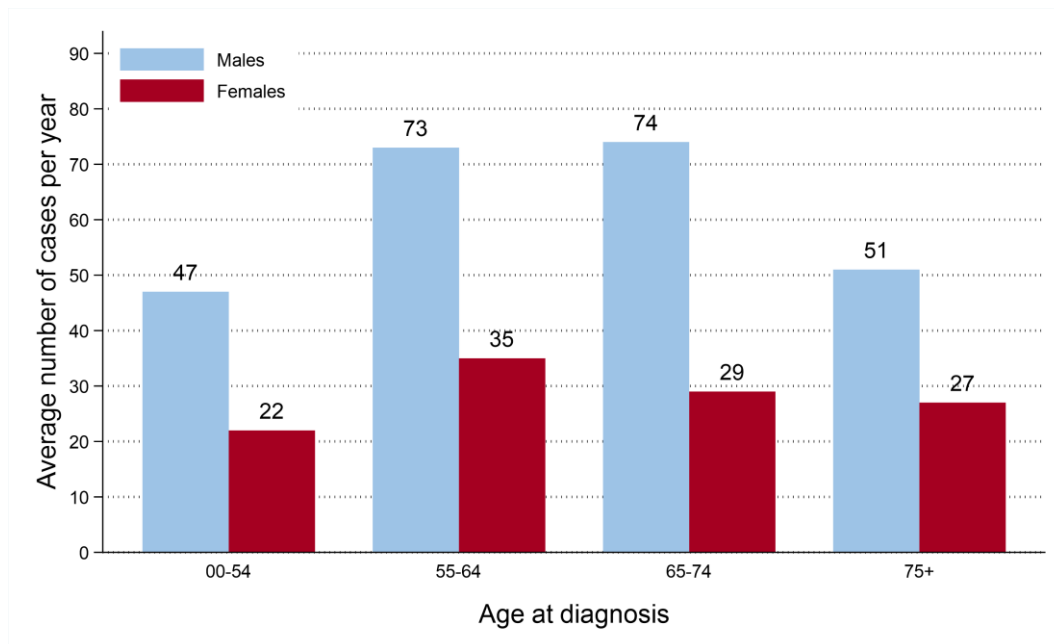
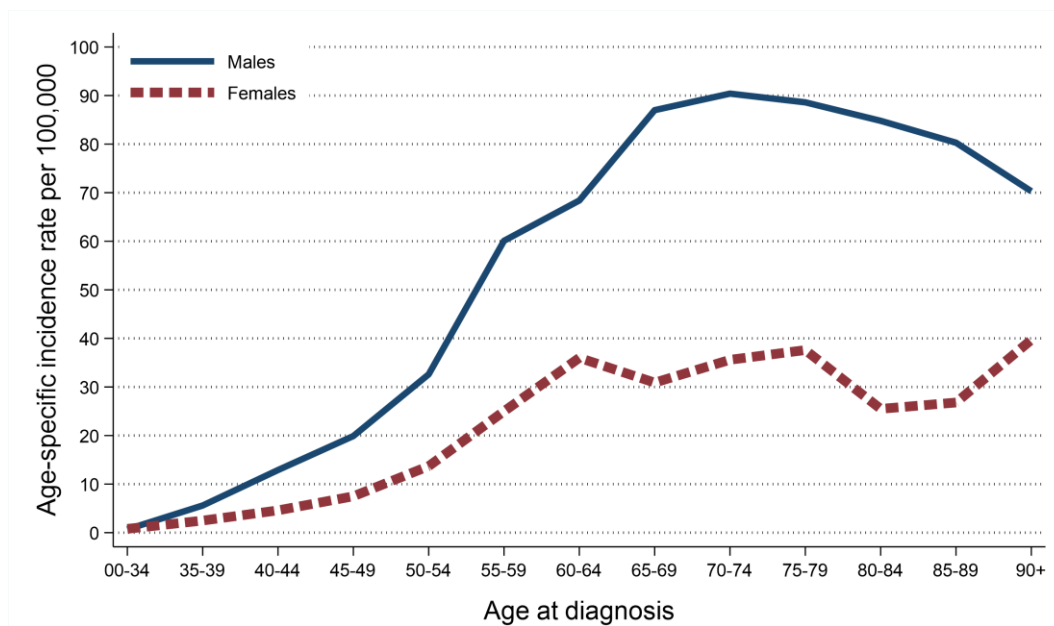


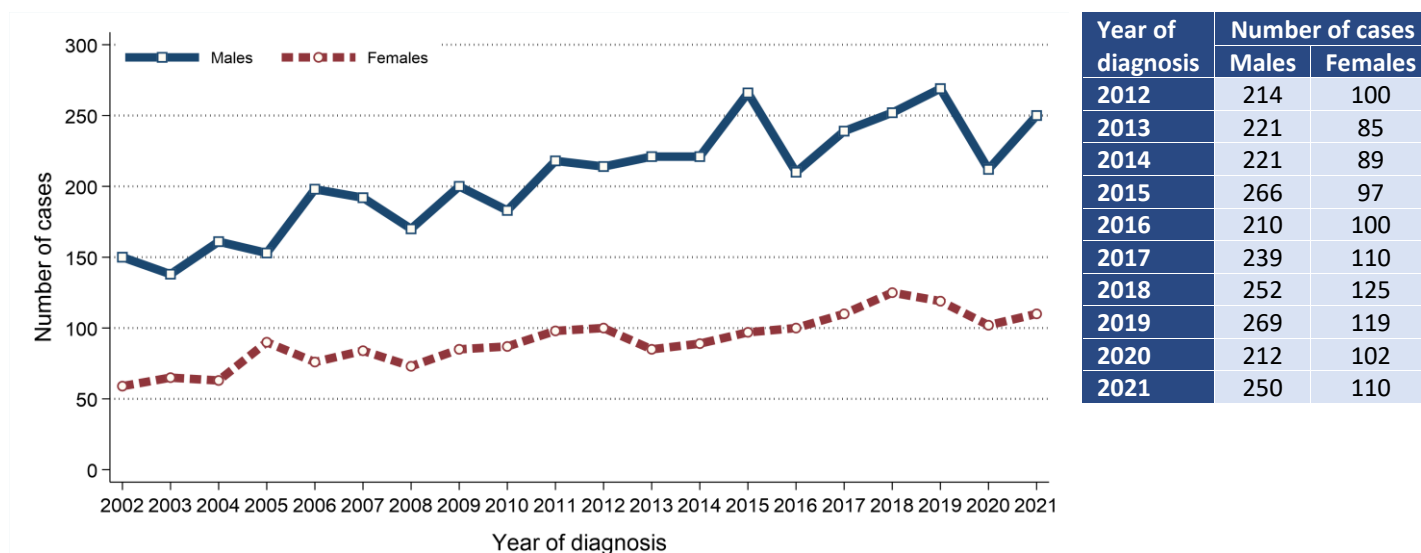
Figure 4: Age-specific incidence rates of head and neck cancer in 2017-2021



INCIDENCE TRENDS

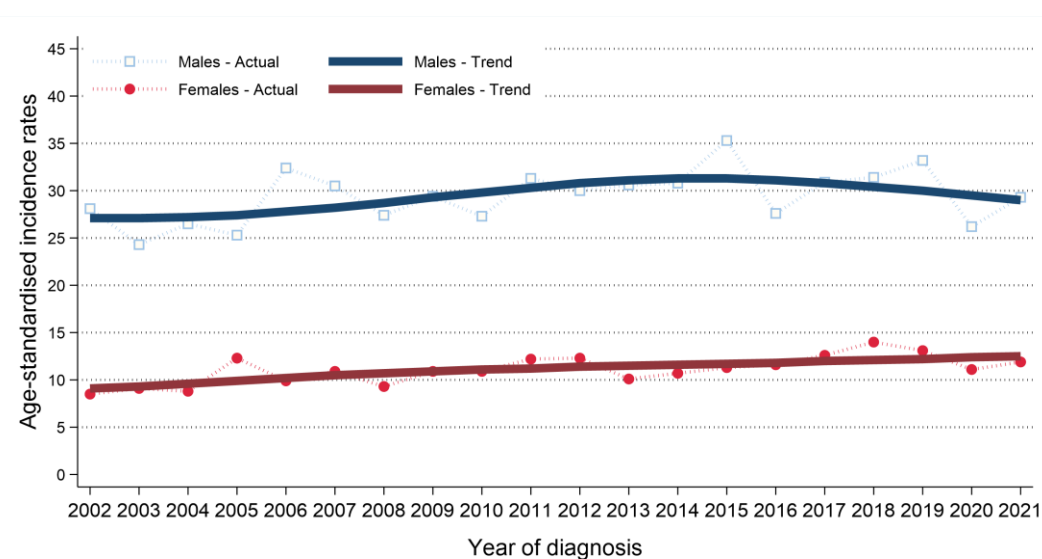
- The number of cases of head and neck cancer among males increased between 2012-2016 and 2017-2021 by 8.0% from 1,132 cases (226 cases per year) to 1,222 cases (244 cases per year).
- The number of cases of head and neck cancer among females increased between 2012-2016 and 2017-2021 by 20.2% from 471 cases (94 cases per year) to 566 cases (113 cases per year).

Figure 5: Trends in number of cases of head and neck cancer diagnosed from 2002 to 2021



- Male age-standardised head and neck cancer incidence rates decreased between 2012-2016 and 2017-2021 by 2.3% from 30.9 to 30.2 cases per 100,000 males. This change was not statistically significant.
- Female age-standardised head and neck cancer incidence rates increased between 2012-2016 and 2017-2021 by 11.6% from 11.2 to 12.5 cases per 100,000 females. This change was not statistically significant.

Figure 6: Trends in incidence rates of head and neck cancer from 2002 to 2021



Age-standardised incidence rates illustrate the change in the number of cases within a population of a fixed size and age structure (2013 European Standard).

They thus represent changes other than those caused by population growth and/or ageing.

Trends can also be influenced by changes in how cancer is classified and coded. (e.g. the move from ICD-0-2 to ICD-0-3 in 2019).

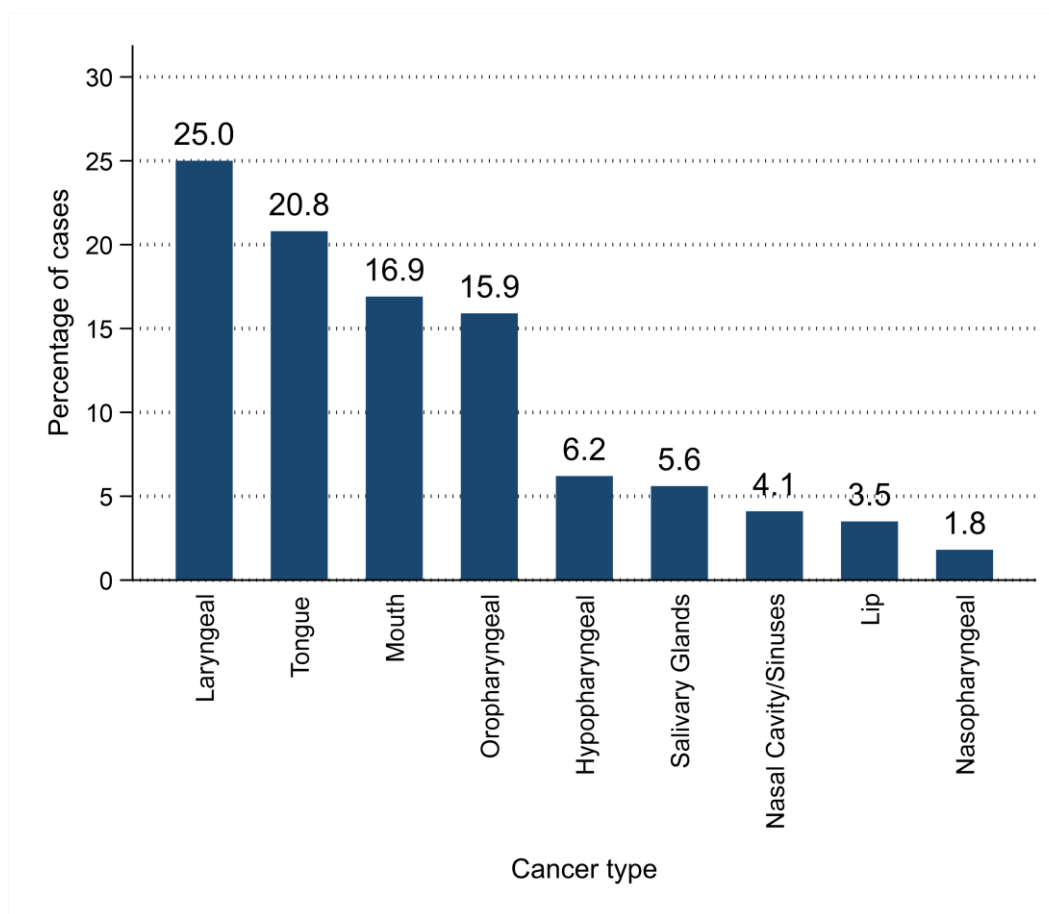
INCIDENCE BY CANCER TYPE

- During 2017-2021 the most common head and neck cancer types were laryngeal cancer (25.0%), tongue cancer (20.8%) and mouth cancer (16.9%).

Table 1: Number of cases of head and neck cancer diagnosed in 2017-2021 by cancer type

Cancer type	All persons	
	Total cases in period	Average cases per year
Head and neck cancer	1,788	358
	.	.
Cancer of the nasal cavity or sinuses	73	15
Cancer of the salivary glands	101	20
Hypopharyngeal cancer	111	22
Laryngeal cancer	447	89
Lip cancer	62	12
Mouth cancer	302	60
Nasopharyngeal cancer	33	7
Oropharyngeal cancer	284	57
Tongue cancer	372	74
Other head and neck cancer	3	1

Figure 7: Proportion of cases of head and neck cancer in 2017-2021 by cancer type



Note: ICD10 codes for head and neck cancer types are as follows: C00: Lip, C01-C02: Tongue, C03-C06: Mouth, C07-C08: Salivary Glands, C09-C10: Oropharynx, C11: Nasopharynx, C12-C13: Hypopharynx, C14: Other mouth/pharynx, C32: Laryngeal cancer, C30-C31: Nasal cavity and sinus cancer

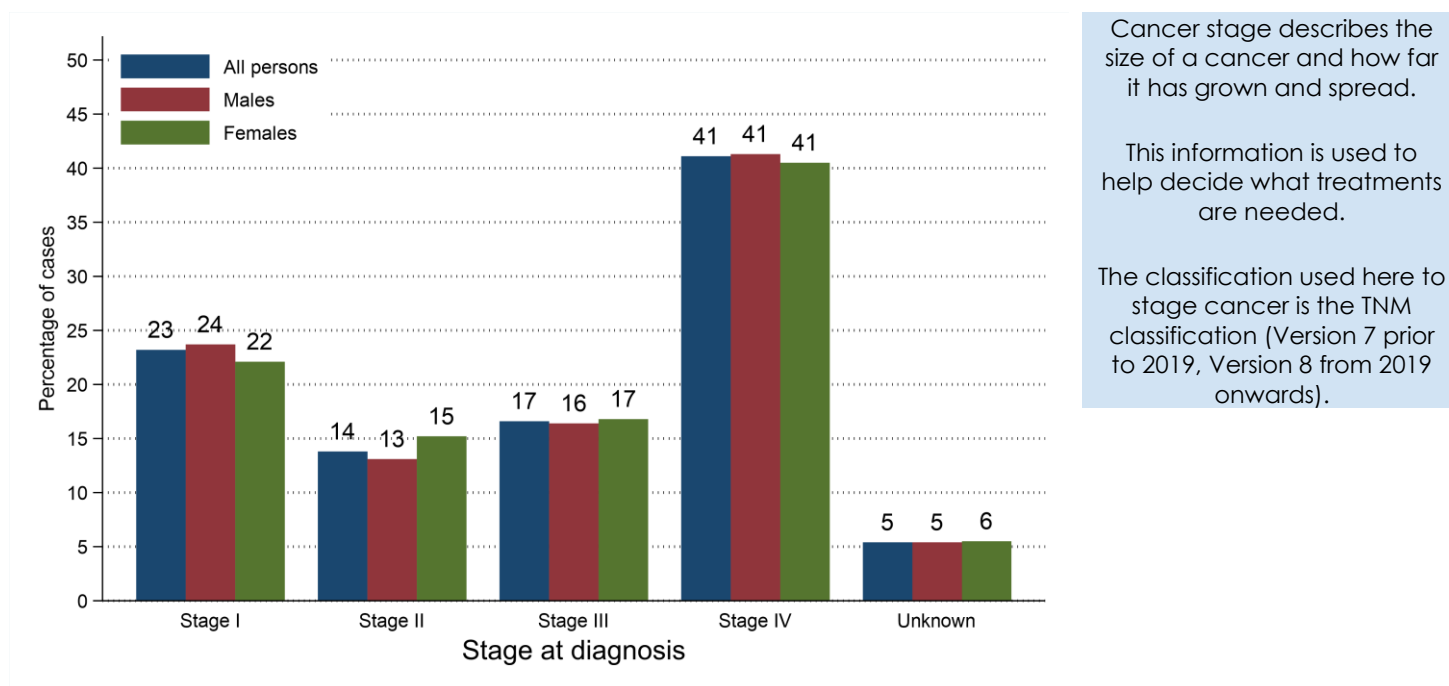
INCIDENCE BY STAGE AT DIAGNOSIS

- During 2017-2021 94.6% of head and neck cancer cases had a stage assigned.
- 23.2% of head and neck cancer cases were diagnosed at Stage I. (24.5% of staged cases)
- 41.1% of head and neck cancer cases were diagnosed at Stage IV. (43.4% of staged cases)

Table 2: Number of cases of head and neck cancer diagnosed in 2017-2021 by stage at diagnosis

Stage at diagnosis	All persons		Male		Female	
	Total cases in period	Average cases per year	Total cases in period	Average cases per year	Total cases in period	Average cases per year
All stages	1,788	358	1,222	244	566	113
Stage I	415	83	290	58	125	25
Stage II	246	49	160	32	86	17
Stage III	296	59	201	40	95	19
Stage IV	734	147	505	101	229	46
Unknown	97	19	66	13	31	6

Figure 8: Proportion of cases of head and neck cancer diagnosed in 2017-2021 by stage at diagnosis



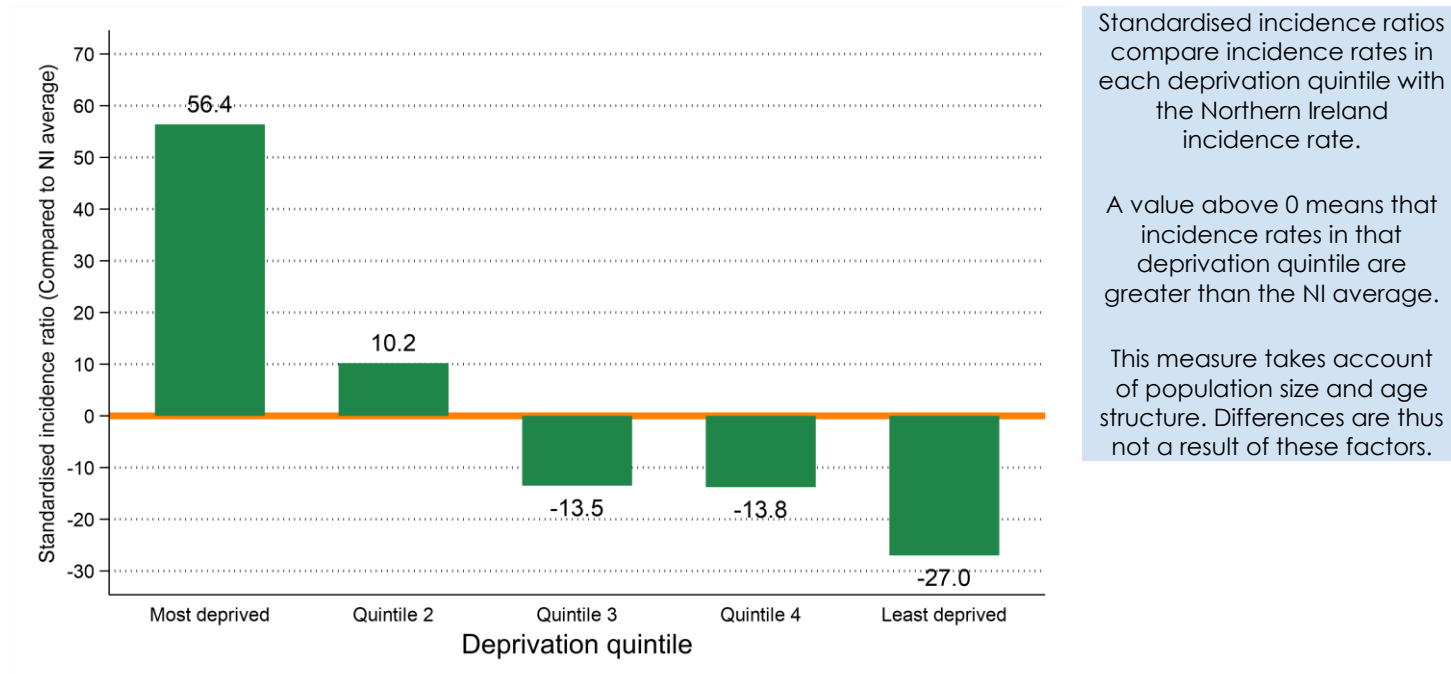
INCIDENCE BY DEPRIVATION

- The number of cases of head and neck cancer diagnosed during 2017-2021 varied in each deprivation quintile due to variations in population size and age.
- After accounting for these factors, incidence rates:
 - in the most socio-economically deprived areas were 56.4% higher than the NI average.
 - in the least socio-economically deprived areas were 27.0% lower than the NI average.

Table 3: Number of cases of head and neck cancer diagnosed in 2017-2021 by deprivation quintile

Deprivation quintile	All persons		Male		Female	
	Total cases in period	Average cases per year	Total cases in period	Average cases per year	Total cases in period	Average cases per year
Northern Ireland	1,788	358	1,222	244	566	113
Most deprived	466	93	331	66	135	27
Quintile 2	394	79	267	53	127	25
Quintile 3	325	65	211	42	114	23
Quintile 4	329	66	225	45	104	21
Least deprived	274	55	188	38	86	17
Unknown	0	0	0	0	0	0

Figure 9: Standardised incidence ratio comparing deprivation quintile to Northern Ireland for head and neck cancer diagnosed in 2017-2021



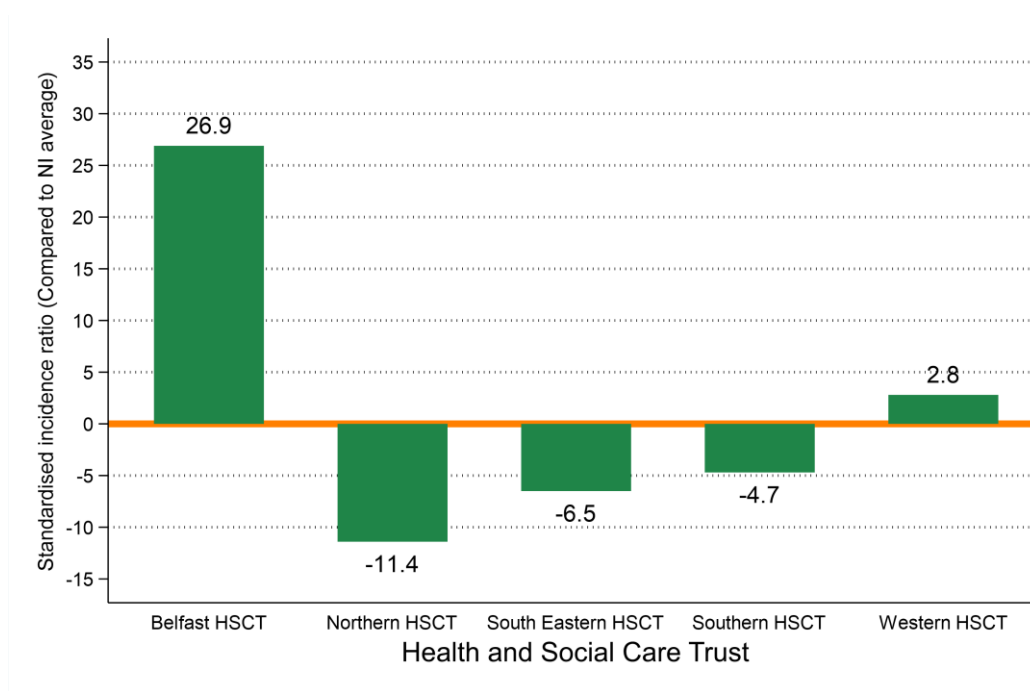
INCIDENCE BY HEALTH AND SOCIAL CARE TRUST

- The number of cases of head and neck cancer diagnosed during 2017-2021 varied in each Health and Social Care Trust due to variations in population size and age.
- After accounting for these factors, incidence rates:
 - in Belfast HSCT were 26.9% higher than the NI average.
 - in Northern HSCT were 11.4% lower than the NI average.
 - in South Eastern HSCT did not vary significantly from the NI average.
 - in Southern HSCT did not vary significantly from the NI average.
 - in Western HSCT did not vary significantly from the NI average.

Table 4: Number of cases of head and neck cancer diagnosed in 2017-2021 by Health and Social Care Trust

Health and Social Care Trust	All persons		Male		Female	
	Total cases in period	Average cases per year	Total cases in period	Average cases per year	Total cases in period	Average cases per year
Northern Ireland	1,788	358	1,222	244	566	113
Belfast HSCT	405	81	285	57	120	24
Northern HSCT	419	84	288	58	131	26
South Eastern HSCT	349	70	215	43	134	27
Southern HSCT	324	65	230	46	94	19
Western HSCT	291	58	204	41	87	17
Unknown	0	0	0	0	0	0

Figure 10: Standardised incidence ratio comparing Health and Social Care Trust to Northern Ireland for head and neck cancer diagnosed in 2017-2021



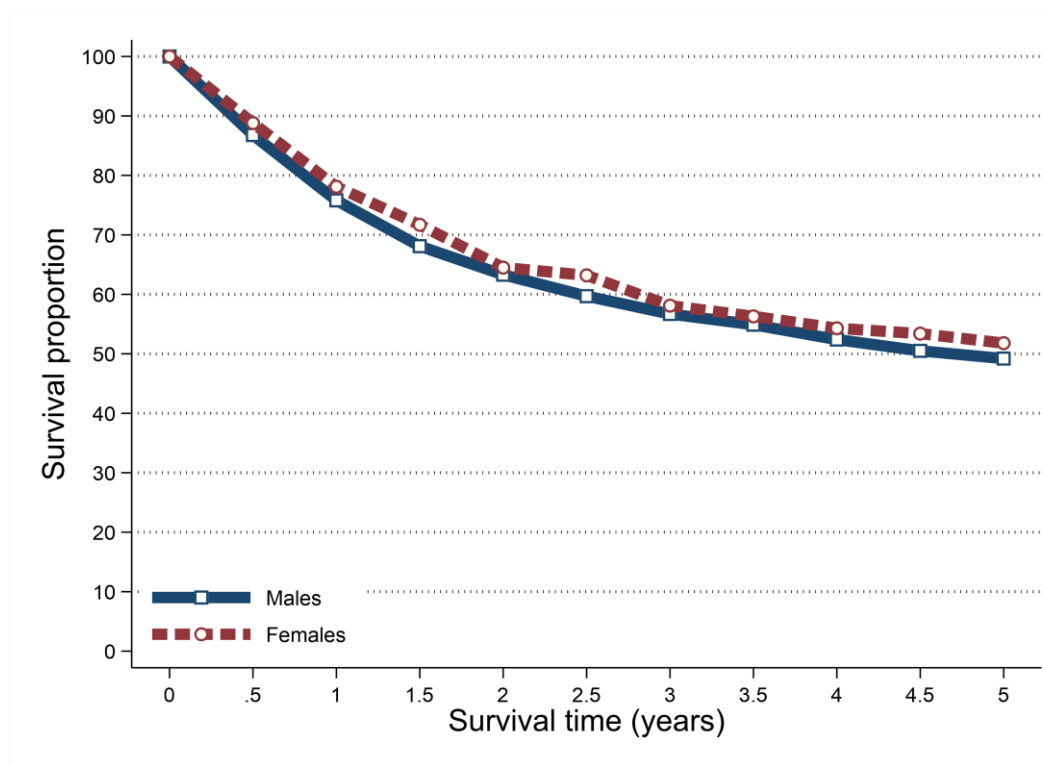
SURVIVAL

- 76.5% of patients were alive one year and 47.3% were alive five years from a head and neck cancer diagnosis in 2012-2016. (observed survival)
- Age-standardised net survival (ASNS), which removes the effect of deaths from causes unrelated to cancer, was 76.3% one year and 49.8% five years from a head and neck cancer diagnosis in 2012-2016.
- Five-year survival (ASNS) for head and neck cancer patients diagnosed in 2012-2016 was 49.2% among men and 51.8% among women.

Table 5: Survival from head and neck cancer for patients diagnosed in 2012-2016

Time since diagnosis	All persons		Male		Female	
	Observed survival	Age-standardised net survival	Observed survival	Age-standardised net survival	Observed survival	Age-standardised net survival
6 months	87.5%	87.3%	87.0%	86.8%	88.9%	88.8%
One year	76.5%	76.3%	75.9%	75.8%	77.8%	78.1%
Two years	62.8%	63.4%	62.4%	63.3%	63.7%	64.5%
Five years	47.3%	49.8%	46.4%	49.2%	49.6%	51.8%

Figure 11: Age-standardised net survival from head and neck cancer for patients diagnosed in 2012-2016



Observed survival examines the time between diagnosis and death from any cause, however, due to the inclusion of non-cancer deaths it may not fully reflect how changes in cancer care impact survival from cancer.

Age-standardised net survival provides an estimate of patient survival which has been adjusted to take account of deaths unrelated to cancer. It is more widely used to assess the impact of changes in cancer care on patient survival.

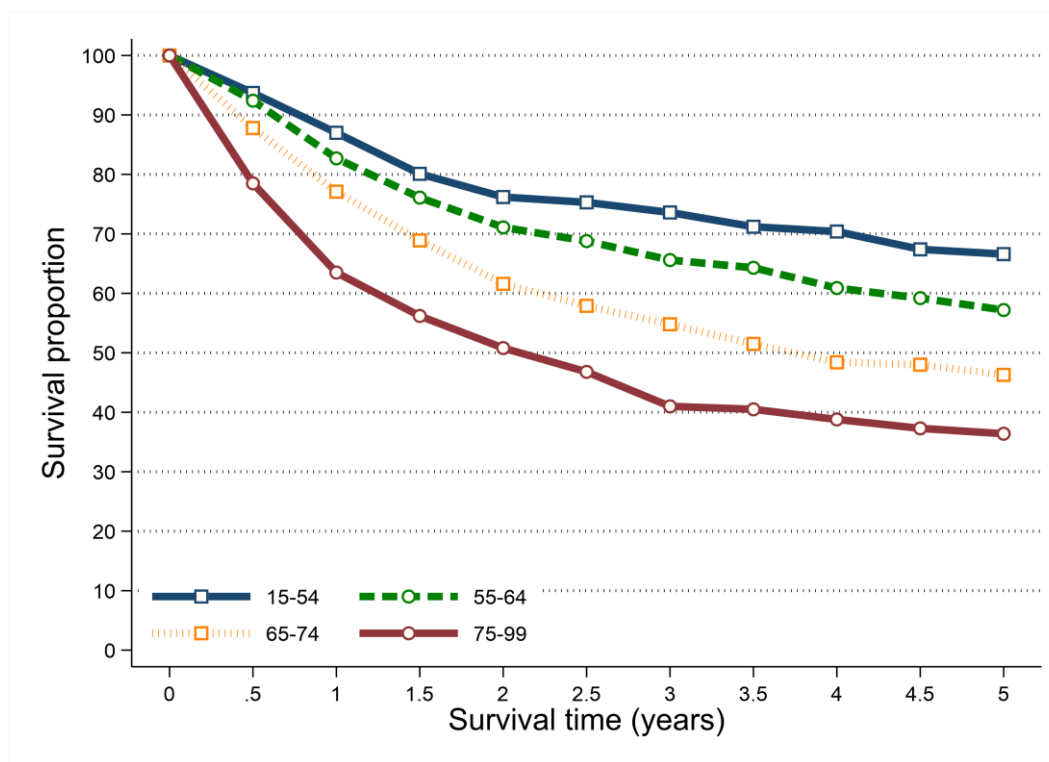
SURVIVAL BY AGE

- Survival from head and neck cancer among patients diagnosed during 2012-2016 was related to age with better five-year survival among younger age groups.
- Five-year net survival ranged from 66.6% among patients aged 15 to 54 at diagnosis to 36.4% among those aged 75 to 99.

Table 6: Net survival from head and neck cancer for patients diagnosed in 2012-2016 by age at diagnosis

Age group	All persons	
	One-year	Five-years
15 to 54	87.0%	66.6%
55 to 64	82.7%	57.2%
65 to 74	77.1%	46.3%
75 to 99	63.5%	36.4%

Figure 12: Net survival from head and neck cancer for patients diagnosed in 2012-2016 by age at diagnosis

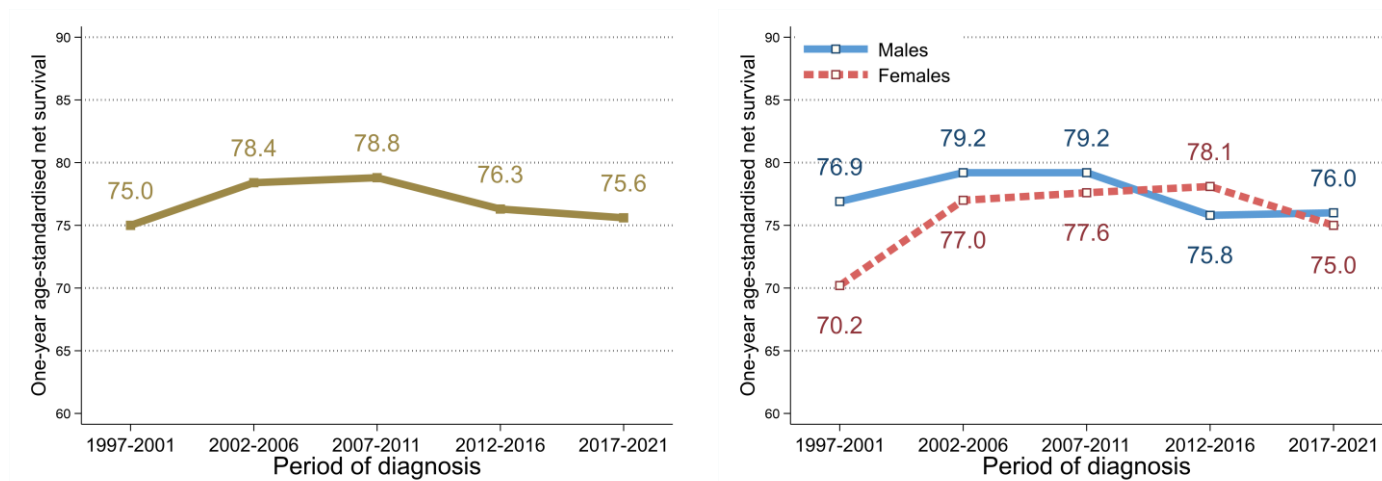


SURVIVAL TRENDS

ONE-YEAR NET SURVIVAL

- Between 2012-2016 and 2017-2021 there was no significant change in one-year survival (ASNS) from head and neck cancer.
- Compared to 1997-2001 one-year survival (ASNS) from head and neck cancer in 2017-2021 did not change significantly.

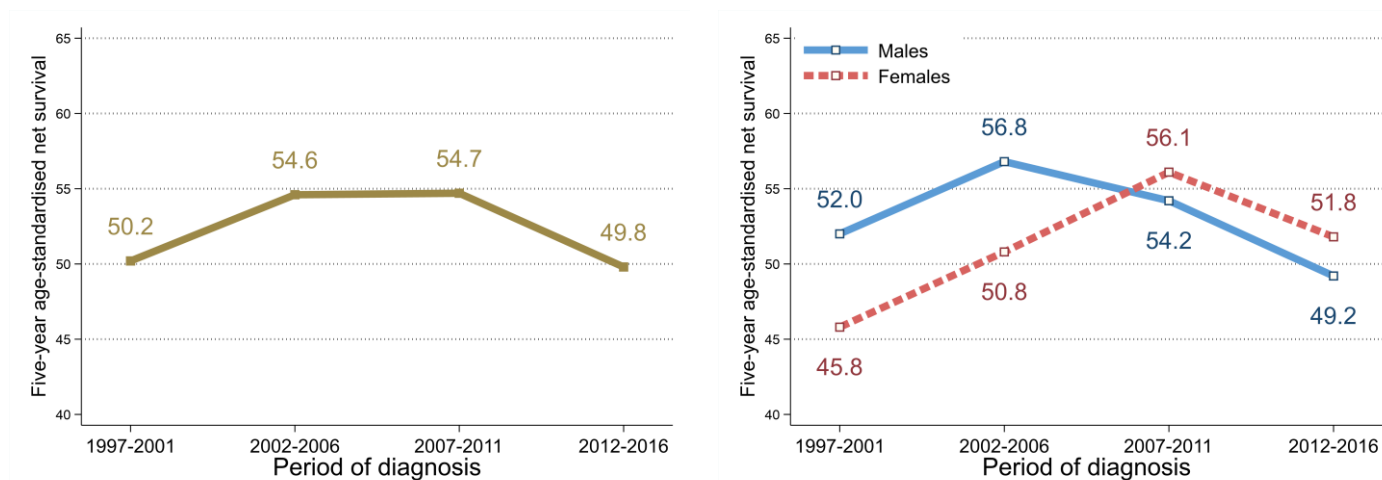
Figure 13: Trends in one-year age-standardised net survival from head and neck cancer in 1997-2021



FIVE-YEAR NET SURVIVAL

- Between 2007-2011 and 2012-2016 there was no significant change in five-year survival (ASNS) from head and neck cancer.
- Compared to 1997-2001 five-year survival (ASNS) from head and neck cancer in 2012-2016 did not change significantly.

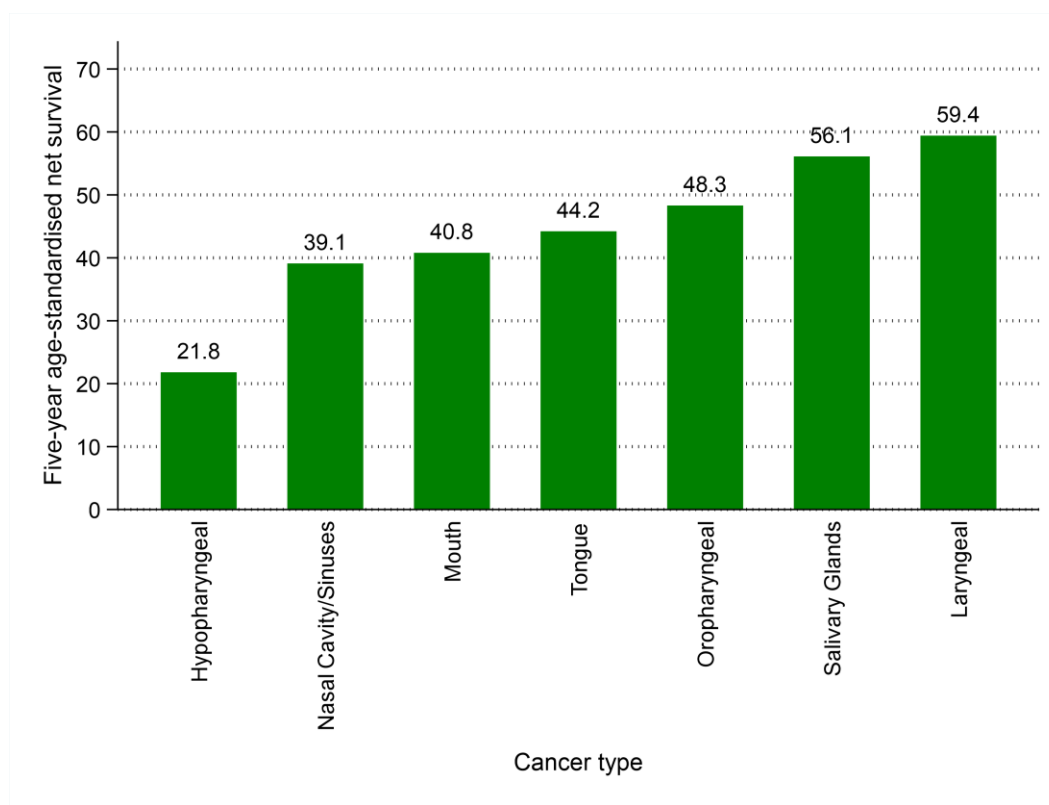
Figure 14: Trends in five-year age-standardised net survival from head and neck cancer in 1997-2016



SURVIVAL BY CANCER TYPE

- Five-year survival (ASNS) for head and neck cancer patients diagnosed in 2012-2016 ranged from 59.4% for laryngeal cancer to 21.8% for hypopharyngeal cancer.
- In particular five-year survival (ASNS) for the most common head and neck cancer types was 59.4% for laryngeal cancer, 44.2% for tongue cancer, 40.8% for mouth cancer and 48.3% for oropharyngeal cancer.

Figure 15: Five-year age-standardised net survival from head and neck cancer for patients diagnosed in 2012-2016 by cancer type



- Five-year survival (ASNS) did not change significantly for any head and neck cancer type between 2007-2011 and 2012-2016.

Table 7: Trends in five-year age-standardised net survival from head and neck cancer for patients diagnosed in 2007-2016

Cancer type	All persons	
	2007-2011	2012-2016
Cancer of the nasal cavity or sinuses	55.8%	39.1%
Cancer of the salivary glands	56.7%	56.1%
Hypopharyngeal cancer	27.7%	21.8%
Laryngeal cancer	62.5%	59.4%
Mouth cancer	47.8%	40.8%
Oropharyngeal cancer	41.2%	48.3%
Tongue cancer	47.9%	44.2%

Note: ICD10 codes for head and neck cancer types are as follows: C00: Lip, C01-C02: Tongue, C03-C06: Mouth, C07-C08: Salivary Glands, C09-C10: Oropharynx, C11: Nasopharynx, C12-C13: Hypopharynx, C14: Other mouth/pharynx, C32: Laryngeal cancer, C30-C31: Nasal cavity and sinus cancer

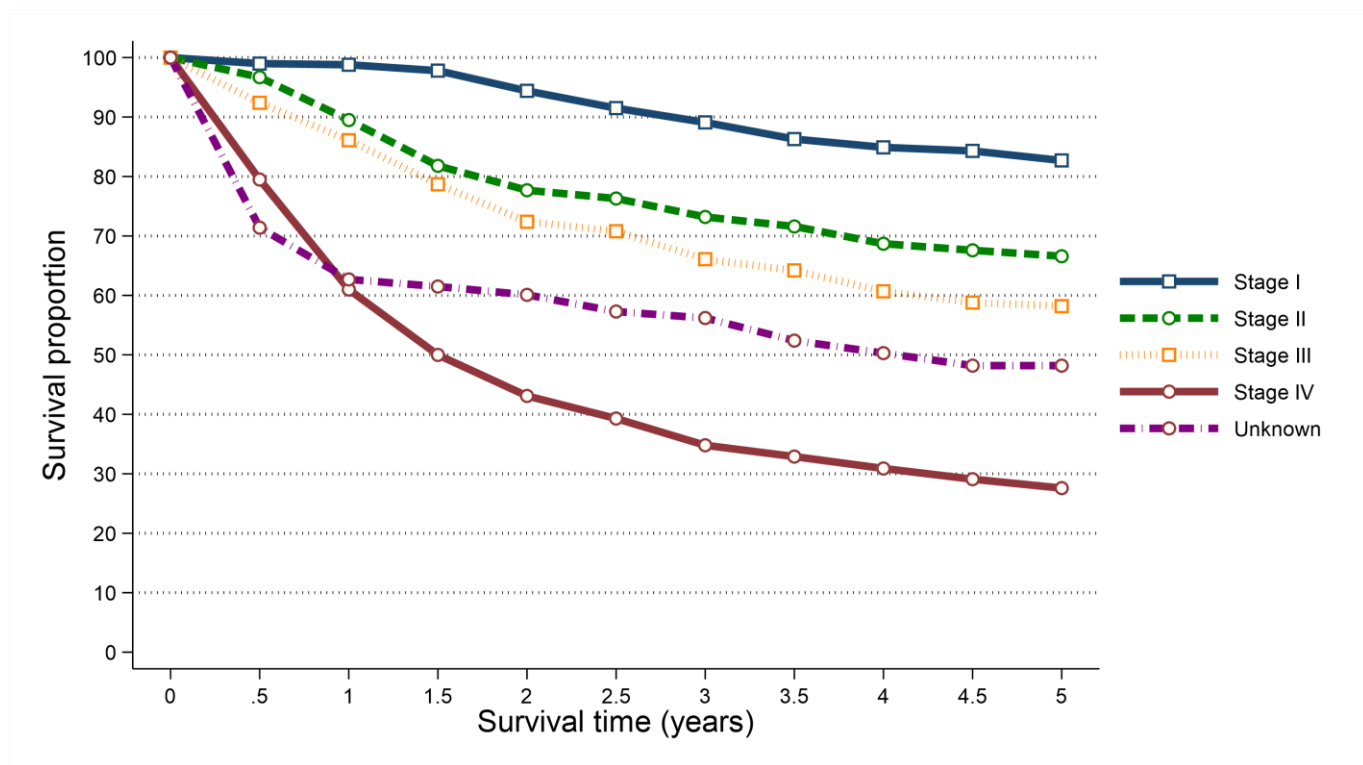
SURVIVAL BY STAGE

- Survival from head and neck cancer among patients diagnosed during 2012-2016 was strongly related to stage with better five-year survival among those diagnosed at earlier stages.
- Five-year survival (ASNS) ranged from 82.7% among patients diagnosed at Stage I to 27.6% among those diagnosed at Stage IV.

Table 8: Age-standardised net survival from head and neck cancer for patients diagnosed in 2012-2016 by stage at diagnosis

Stage at diagnosis	All persons	
	One-year	Five-years
Stage I	98.8%	82.7%
Stage II	89.5%	66.6%
Stage III	86.1%	58.2%
Stage IV	61.0%	27.6%
Unknown	62.7%	48.2%

Figure 16: Age-standardised net survival from head and neck cancer for patients diagnosed in 2012-2016 by stage at diagnosis



PREVALENCE

- At the end of 2021, there were 2,426 people (Males: 1,640; Females: 786) living with head and neck cancer who had been diagnosed with the disease during 1997-2021.
- Of these 12.4% had been diagnosed in the previous year (one-year prevalence) and 70.7% in the previous 10 years (ten-year prevalence).
- 25.6% of head and neck cancer survivors were aged 75 and over at the end of 2021.

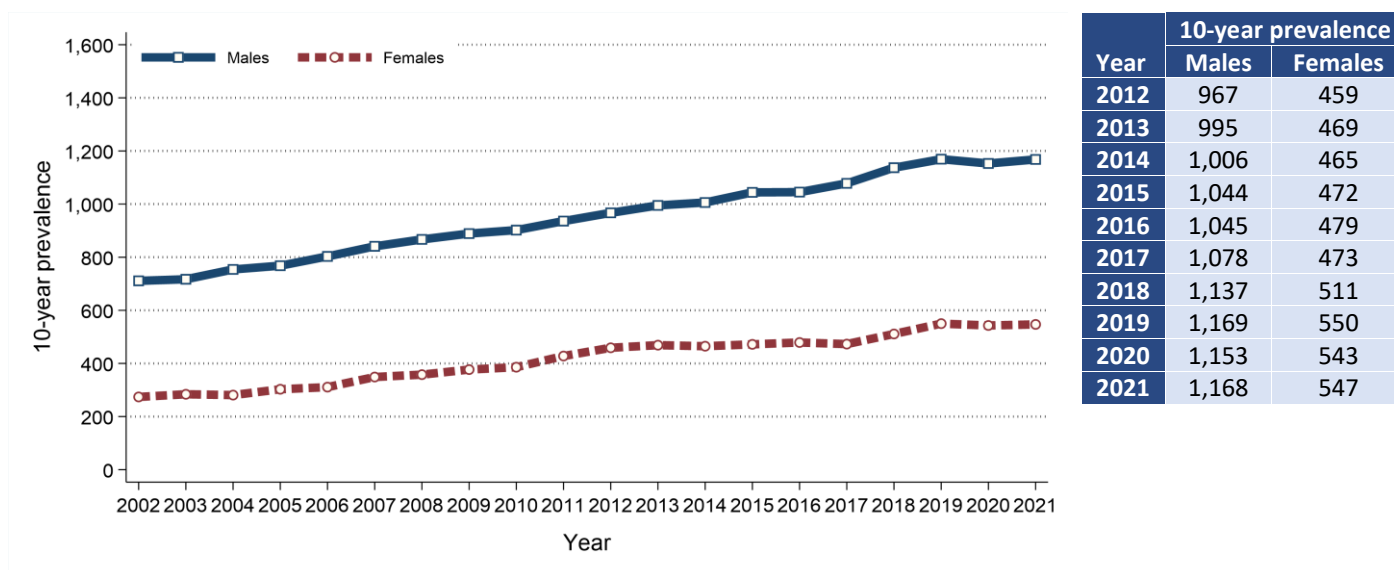
Table 9: 25-year prevalence of head and neck cancer by age at end of 2021

Gender	Age at end of 2021	25-year prevalence	Time since diagnosis			
			0 to 1 year	1 to 5 years	5 to 10 years	10 to 25 years
All persons	All ages	2,426	301	806	608	711
	0 to 74	1,805	237	650	462	456
	75 and over	621	64	156	146	255
Male	All ages	1,640	206	536	426	472
	0 to 74	1,210	163	430	317	300
	75 and over	430	43	106	109	172
Female	All ages	786	95	270	182	239
	0 to 74	595	74	220	145	156
	75 and over	191	21	50	37	83

PREVALENCE TRENDS

- 10-year prevalence of head and neck cancer among males increased between 2016 and 2021 by 11.8% from 1,045 survivors to 1,168 survivors.
- 10-year prevalence of head and neck cancer among females increased between 2016 and 2021 by 14.2% from 479 survivors to 547 survivors.

Figure 17: Trends in 10-year prevalence of head and neck cancer in 2002-2021



MORTALITY

- There were 702 deaths from head and neck cancer during 2017-2021 in Northern Ireland. On average this was 140 deaths per year.
- During this period 29.3% of head and neck cancer deaths were among women (Male deaths: 496, Female deaths: 206). On average there were 99 male and 41 female deaths from head and neck cancer per year.
- Head and neck cancer deaths made up 4.2% of all male cancer deaths and 1.9% of all female cancer deaths.
- The median age of patients who died from head and neck cancer during 2017-2021 was 70 years (Males: 70, Females: 71).
- The risk of dying from head and neck cancer varied by age, with 34.9% of men and 38.3% of women who died from head and neck cancer aged 75 and over at death.
- In contrast, 9.7% of patients who died from head and neck cancer were aged 0 to 54 at death.

Figure 18: Average number of deaths from head and neck cancer per year in 2017-2021 by age at death

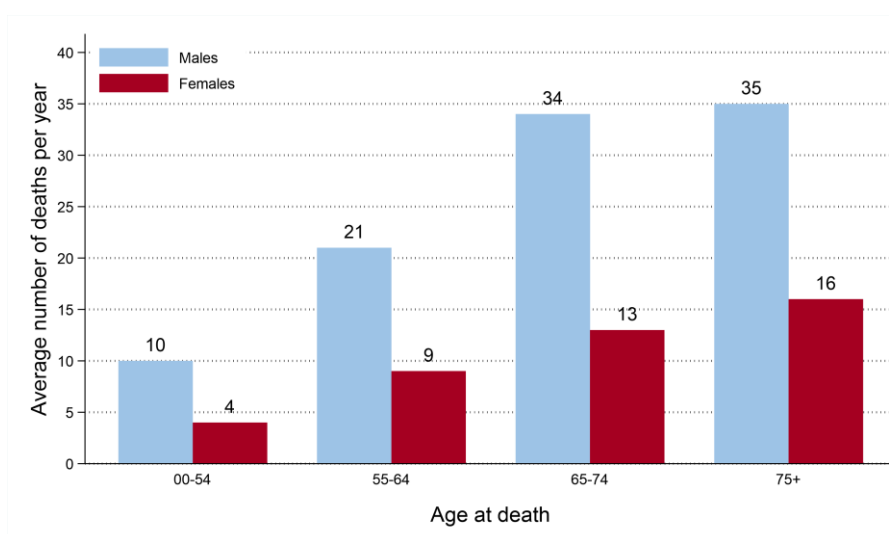
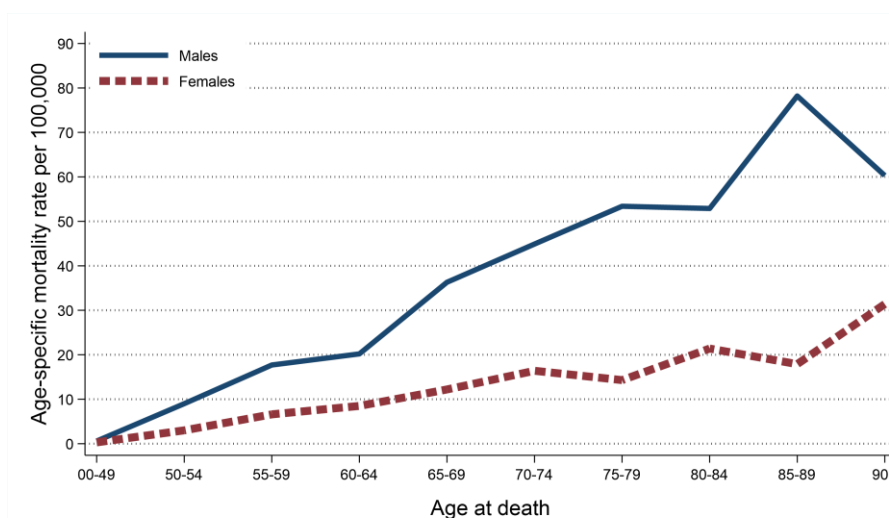


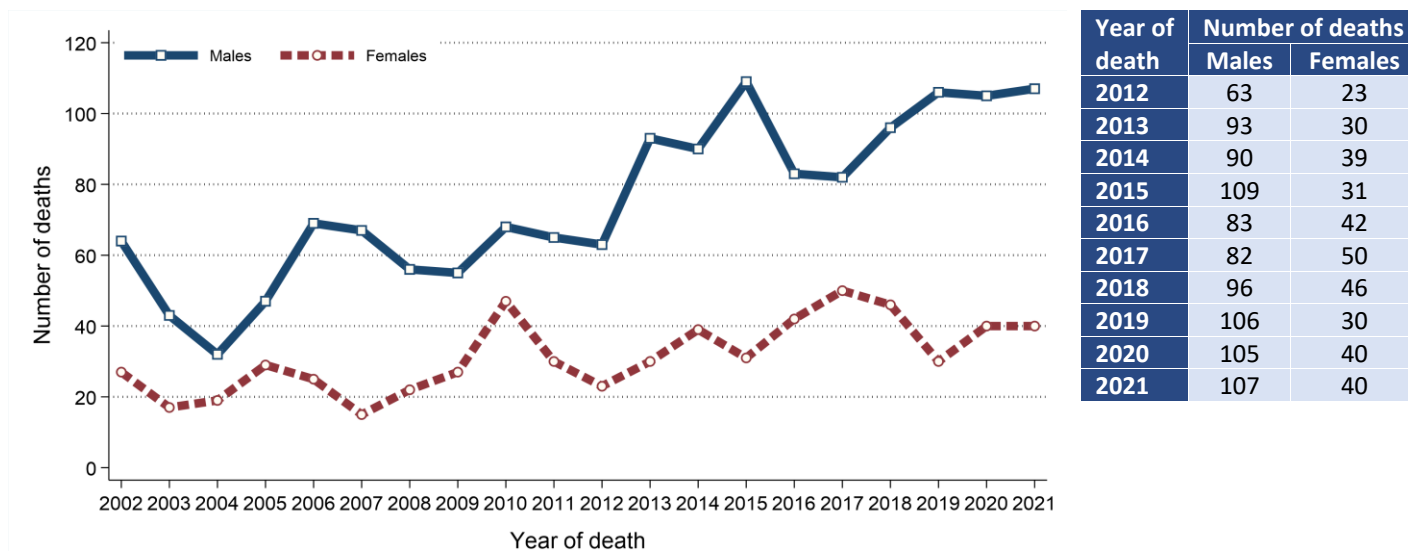
Figure 19: Age-specific mortality rates of head and neck cancer in 2017-2021



MORTALITY TRENDS

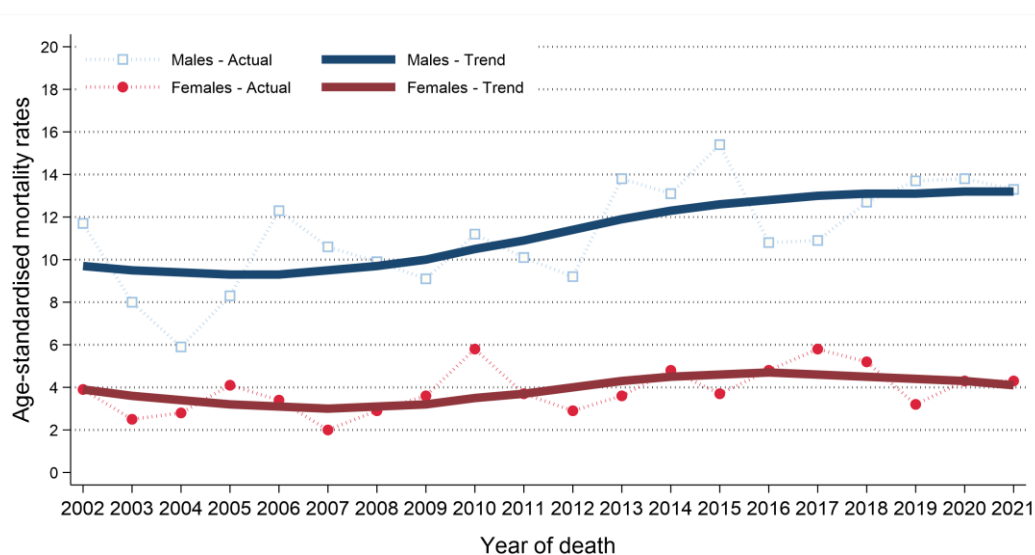
- The number of deaths from head and neck cancer among males increased between 2012-2016 and 2017-2021 by 13.2% from 438 deaths (88 deaths per year) to 496 deaths (99 deaths per year).
- The number of deaths from head and neck cancer among females increased between 2012-2016 and 2017-2021 by 24.8% from 165 deaths (33 deaths per year) to 206 deaths (41 deaths per year).

Figure 20: Trends in the number of deaths from head and neck cancer from 2002 to 2021



- Male age-standardised head and neck cancer mortality rates increased between 2012-2016 and 2017-2021 by 3.2% from 12.5 to 12.9 deaths per 100,000 males. This change was not statistically significant.
- Female age-standardised head and neck cancer mortality rates increased between 2012-2016 and 2017-2021 by 15.0% from 4.0 to 4.6 deaths per 100,000 females. This change was not statistically significant.

Figure 21: Trends in mortality rates of head and neck cancer from 2002 to 2021



Age-standardised mortality rates illustrate the change in the number of deaths within a population of a fixed size and age structure (2013 European Standard).

They thus represent changes other than those caused by population growth and/or ageing.

Trends can also be influenced by changes in how cancer is classified and coded.

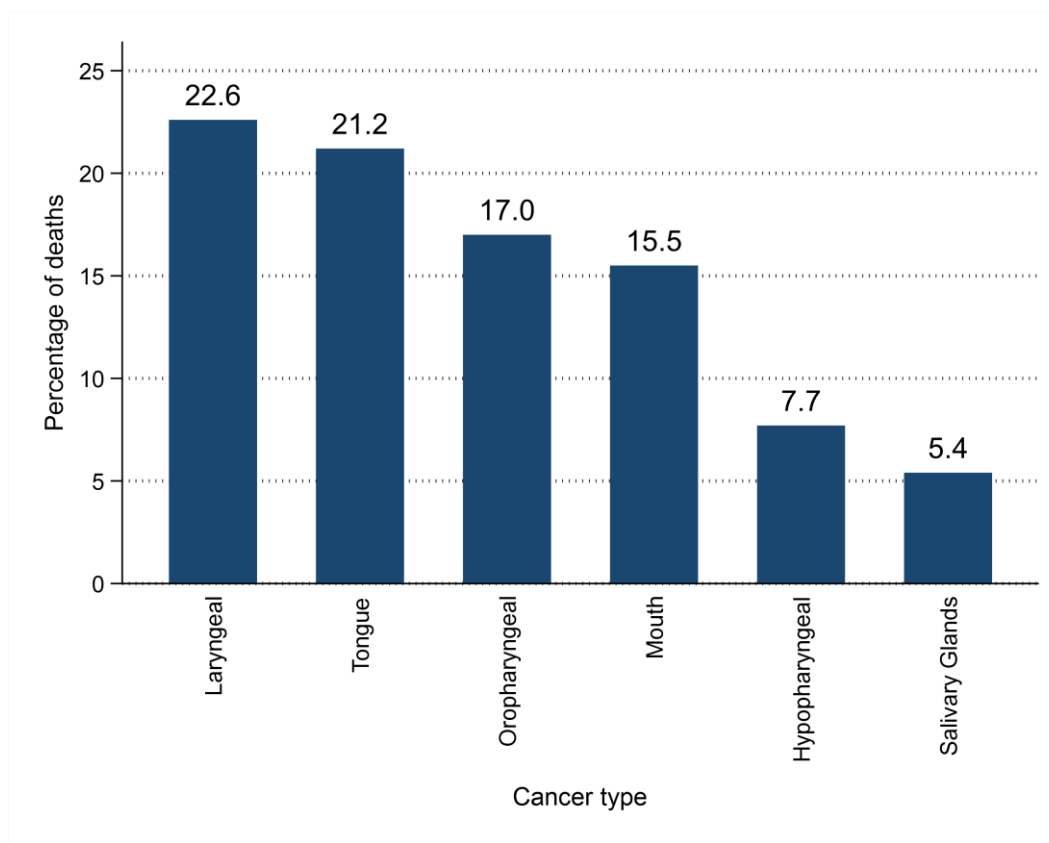
MORTALITY BY CANCER TYPE

- During 2017-2021 the most common causes of head and neck cancer death were laryngeal cancer (22.6%), tongue cancer (21.2%) and oropharyngeal cancer (17.0%).

Table 10: Number of deaths from head and neck cancer in 2017-2021 by cancer type

Cancer type	All persons	
	Total deaths in period	Average deaths per year
Head and neck cancer	702	140
	.	.
Cancer of the salivary glands	38	8
Hypopharyngeal cancer	54	11
Laryngeal cancer	159	32
Mouth cancer	109	22
Oropharyngeal cancer	119	24
Tongue cancer	149	30
Other head and neck cancer	74	15

Figure 22: Proportion of deaths from head and neck cancer in 2017-2021 by cancer type



Note: ICD10 codes for head and neck cancer types are as follows: C00: Lip, C01-C02: Tongue, C03-C06: Mouth, C07-C08: Salivary Glands, C09-C10: Oropharynx, C11: Nasopharynx, C12-C13: Hypopharynx, C14: Other mouth/pharynx, C32: Laryngeal cancer, C30-C31: Nasal cavity and sinus cancer

BACKGROUND NOTES

Cancer classification: Classification of tumour sites is carried out using ICD10 codes. For a listing and explanation of ICD10 codes see: World Health Organisation at <http://apps.who.int/classifications/icd10/browse/2010/en#/II>

Population data: Population data for Northern Ireland, and smaller geographic areas, are extracted from the NI mid-year population estimates available from the NI Statistics and Research Agency (available at www.nisra.gov.uk).

Geographic areas: Geographic areas are assigned based on a patient's postcode of usual residence at diagnosis using the Jan 2023 Central Postcode Directory (CPD) produced by the NI Statistics and Research Agency (available at www.nisra.gov.uk).

Deprivation quintiles: Super output areas (SOA) are assigned to each patient based on their postcode of usual residence at diagnosis. Using the SOA each patient is assigned a socio-economic deprivation quintile based on the 2017 Multiple Deprivation Measure. The 2017 Multiple Deprivation Measure is available from the NI Statistics and Research Agency (available at www.nisra.gov.uk).

Crude incidence/mortality rate: The number of cases/deaths per 100,000 person years in the population. Person years are the sum of the population over the number of years included.

Age-standardised incidence/mortality rates per 100,000 person years are estimates of the incidence/mortality rate if that population had a standard age structure. Throughout this report the 2013 European Standard Population has been used. Standardising to a common Standard Population allows comparisons of incidence/mortality rates to be made between different time periods and geographic areas while removing the effects of population change and ageing.

Standardised Incidence/Mortality Ratio (SIR/SMR) is the ratio of the number of cases/deaths observed in a population to the expected number of cases/deaths, based upon the age-specific rates in a reference population. This statistic is often used to compare incidence/mortality rates for geographic areas (e.g. Trusts) to the national incidence/mortality rates (i.e. Northern Ireland). An SIR/SMR of 100 indicates there is no difference between the geographic area and the national average.

Confidence intervals measure the precision of a statistic (e.g. head and neck cancer incidence rate). Typically, when numbers are low, precision is poorer and confidence intervals will be wider. As a general rule, when comparing statistics (e.g. head and neck cancer incidence rate in year 2012 vs year 2013), if the confidence interval around one statistic overlaps with the interval around another, it is unlikely that there is any real difference between the two. If there is no overlap, the difference is considered to be statistically significant.

Lifetime risk is estimated as the cumulative risk of getting cancer up to age 75/85, calculated directly from the age-specific incidence rates. The odds of developing the disease before age 75/85 is the inverse of the cumulative risk.

Prevalence is the number of cancer patients who are alive in the population on a specific date (31st December 2021 in this report). Since data from the NI Cancer Registry are only available since 1993, prevalence only refers to a fixed term (10 and 25 years in this report). There may be members of the population living with a diagnosis of cancer for more than 25 years.

Patient survival is 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 age-standardised net survival is 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.