Oesophageal cancer

1993-2021

(ICD10 codes: C15)

Northern Ireland Cancer Registry, 2023

An official statistics publication

ABOUT THIS REPORT

Contents

This report includes information on incidence of oesophageal 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 2023. Oesophageal 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

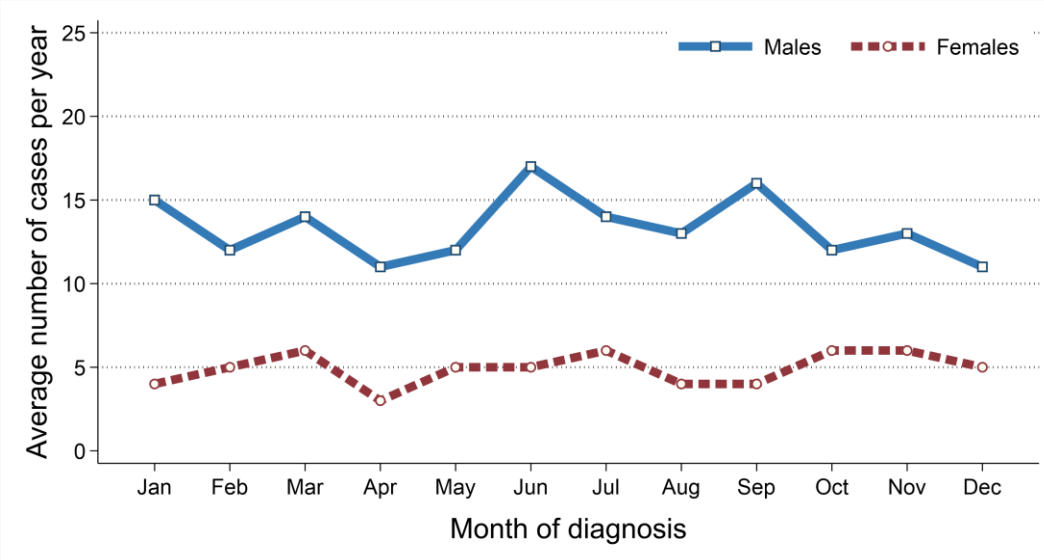
The Northern Ireland Cancer Registry (NICR) uses data provided by patients and collected by the health service as part of their care and support.

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

INCIDENCE

- There were 1,094 cases of oesophageal cancer diagnosed during 2017-2021 in Northern Ireland. On average this was 219 cases per year.
- During this period 27.0% of oesophageal cancer cases were among women (Male cases: 799, Female cases: 295). On average there were 160 male and 59 female cases of oesophageal cancer per year.
- The most common diagnosis month during 2017-2021 was June among males with 17 cases per year and July, November, March and October among females with 6 cases per year.

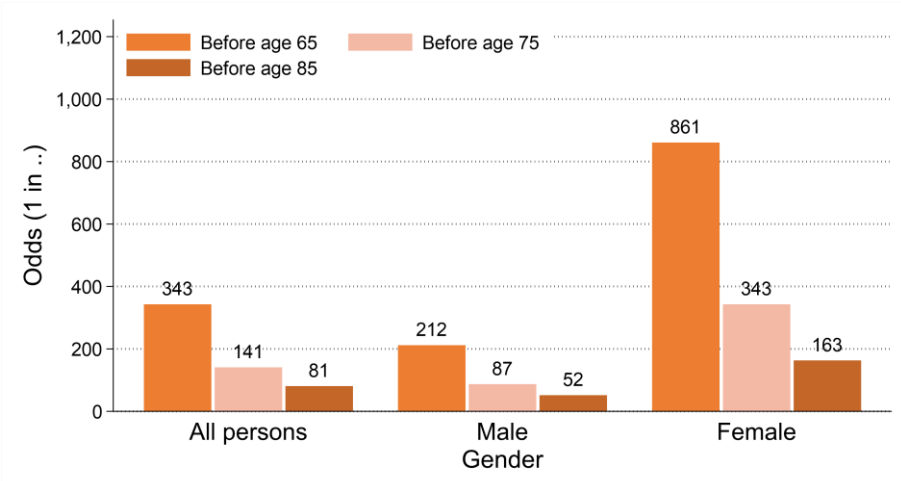
Figure 1: Average number of cases of oesophageal cancer per year in 2017-2021 by month of diagnosis



Month of diagnosis	Average number of cases per year	
	Males	Females
January	15	4
February	12	5
March	14	6
April	11	3
May	12	5
June	17	5
July	14	6
August	13	4
September	16	4
October	12	6
November	13	6
December	11	5

- The oesophageal cancer incidence rates for each gender were 17.2 cases per 100,000 males and 6.2 cases per 100,000 females.
- The odds of developing oesophageal cancer before age 85 was 1 in 52 for men and 1 in 163 for women.

Figure 2: Odds of developing oesophageal cancer in 2017-2021



INCIDENCE BY AGE

- The median age of patients diagnosed with oesophageal cancer during 2017-2021 was 70 years (Males: 69, Females: 75).
- The risk of developing oesophageal cancer varied by age, with 30.8% of men and 50.2% of women diagnosed with oesophageal cancer aged 75 and over at diagnosis.
- In contrast, 9.7% of patients diagnosed with oesophageal cancer were aged 0 to 54 at diagnosis.

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

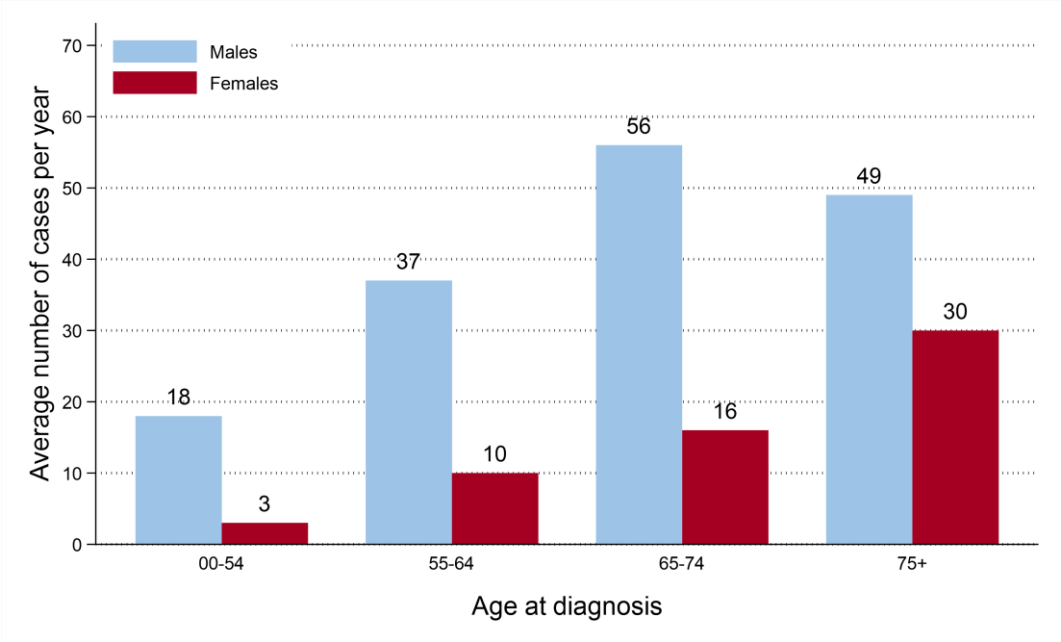
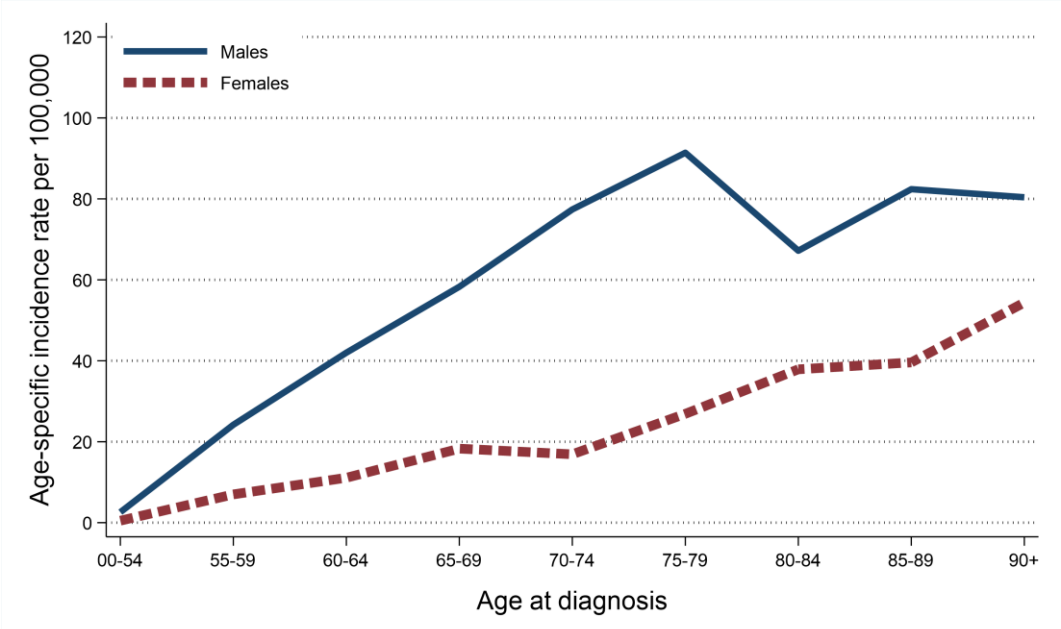


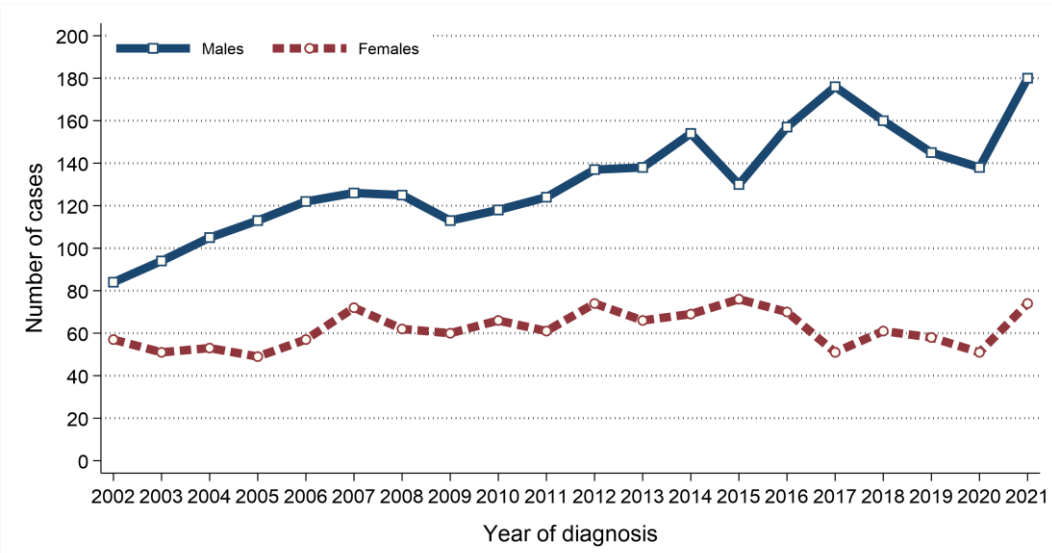
Figure 4: Age-specific incidence rates of oesophageal cancer in 2017-2021



INCIDENCE TRENDS

- The number of cases of oesophageal cancer among males increased between 2012-2016 and 2017-2021 by 11.6% from 716 cases (143 cases per year) to 799 cases (160 cases per year).
- The number of cases of oesophageal cancer among females decreased between 2012-2016 and 2017-2021 by 16.9% from 355 cases (71 cases per year) to 295 cases (59 cases per year).

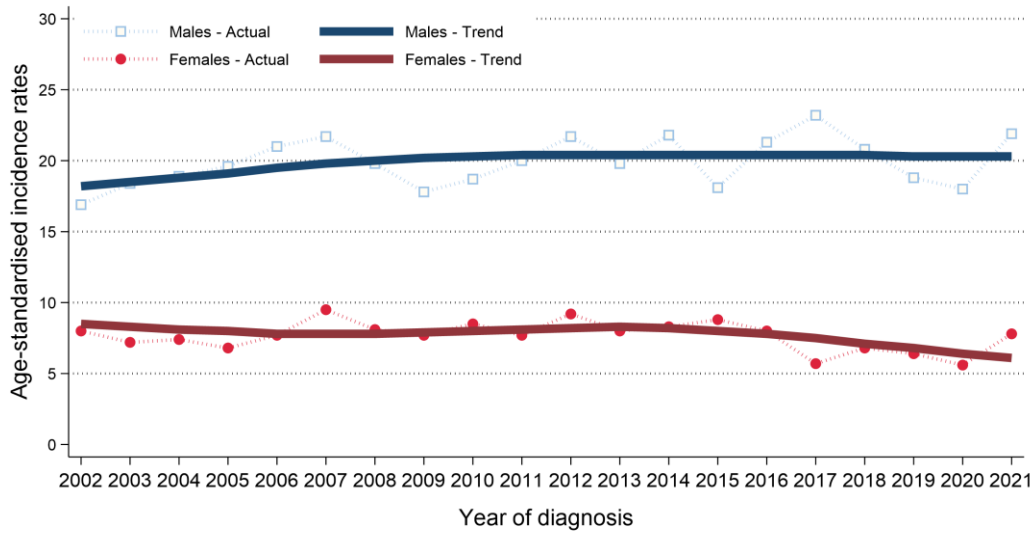
Figure 5: Trends in number of cases of oesophageal cancer diagnosed from 2002 to 2021



Year of diagnosis	Number of cases	
	Males	Females
2012	137	74
2013	138	66
2014	154	69
2015	130	76
2016	157	70
2017	176	51
2018	160	61
2019	145	58
2020	138	51
2021	180	74

- Male age-standardised oesophageal cancer incidence rates did not change between 2012-2016 and 2017-2021 with 20.5 cases per 100,000 males in each period of time.
- Female age-standardised oesophageal cancer incidence rates decreased between 2012-2016 and 2017-2021 by 23.5% from 8.5 to 6.5 cases per 100,000 females. This change was statistically significant.

Figure 6: Trends in incidence rates of oesophageal 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).

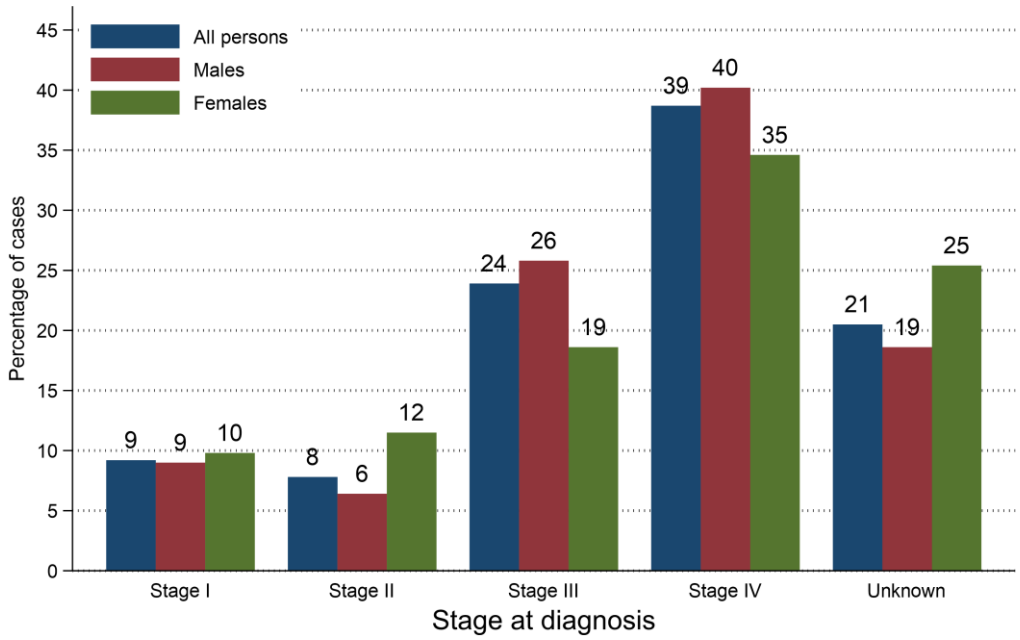
INCIDENCE BY STAGE AT DIAGNOSIS

- During 2017-2021 79.5% of oesophageal cancer cases had a stage assigned.
- 9.2% of oesophageal cancer cases were diagnosed at Stage I. (11.6% of staged cases)
- 38.7% of oesophageal cancer cases were diagnosed at Stage IV. (48.6% of staged cases)

Table 1: Number of cases of oesophageal 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	**1,094**	**219**	**799**	**160**	**295**	**59**
	.	.	.	.	.	.
Stage I	101	20	72	14	29	6
Stage II	85	17	51	10	34	7
Stage III	261	52	206	41	55	11
Stage IV	423	85	321	64	102	20
Unknown	224	45	149	30	75	15

Figure 7: Proportion of cases of oesophageal cancer diagnosed in 2017-2021 by stage at diagnosis



Cancer stage describes the size of a cancer and how far it has grown and spread.

This information is used to help decide what treatments are needed.

The classification used here to stage cancer is the TNM classification (Version 7 prior to 2018, Version 8 from 2018 onwards).

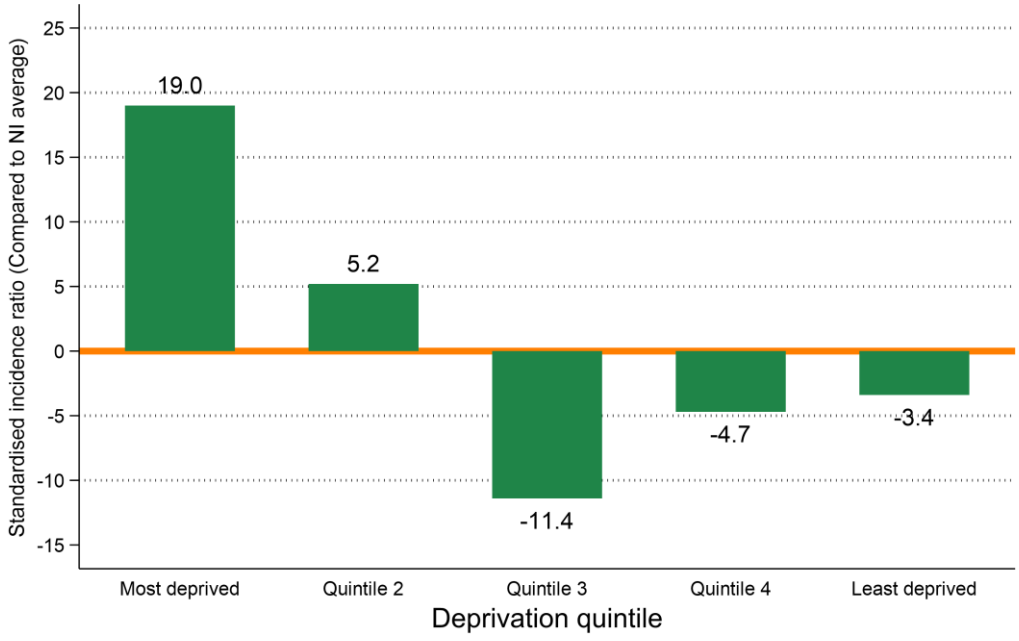
INCIDENCE BY DEPRIVATION

- The number of cases of oesophageal 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 19.0% higher than the NI average.
  - in the least socio-economically deprived areas did not vary significantly from the NI average.

Table 2: Number of cases of oesophageal 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	**1,094**	**219**	**799**	**160**	**295**	**59**
	.	.	.	.	.	.
Most deprived	212	42	160	32	52	10
Quintile 2	230	46	170	34	60	12
Quintile 3	204	41	149	30	55	11
Quintile 4	222	44	162	32	60	12
Least deprived	226	45	158	32	68	14
Unknown	0	0	0	0	0	0

Figure 8: Standardised incidence ratio comparing deprivation quintile to Northern Ireland for oesophageal cancer diagnosed in 2017-2021



Standardised incidence ratios compare incidence rates in each deprivation quintile with the Northern Ireland incidence rate.

A value above 0 means that incidence rates in that deprivation quintile are greater than the NI average.

This measure takes account of population size and age structure. Differences are thus not a result of these factors.

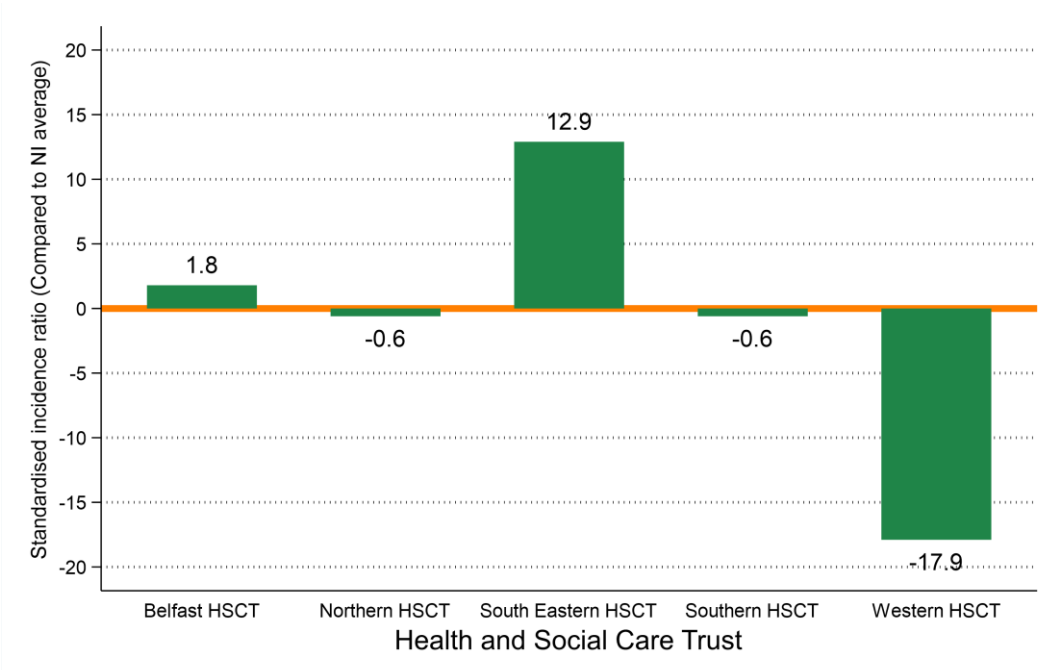
INCIDENCE BY HEALTH AND SOCIAL CARE TRUST

- The number of cases of oesophageal 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 did not vary significantly from the NI average.
  - in Northern HSCT did not vary significantly from 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 were 17.9% lower than the NI average.

Table 3: Number of cases of oesophageal 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	**1,094**	**219**	**799**	**160**	**295**	**59**
	.	.	.	.	.	.
Belfast HSCT	199	40	140	28	59	12
Northern HSCT	290	58	213	43	77	15
South Eastern HSCT	262	52	196	39	66	13
Southern HSCT	203	41	144	29	59	12
Western HSCT	140	28	106	21	34	7
Unknown	0	0	0	0	0	0

Figure 9: Standardised incidence ratio comparing Health and Social Care Trust to Northern Ireland for oesophageal cancer diagnosed in 2017-2021



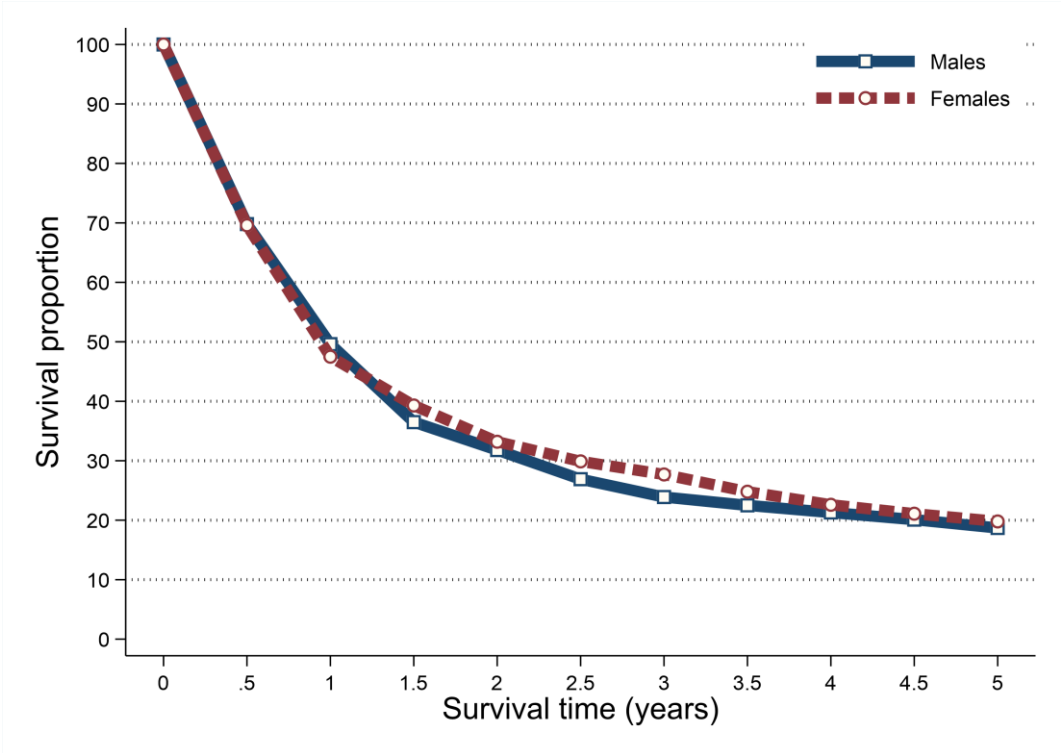
SURVIVAL

- 46.2% of patients were alive one year and 16.5% were alive five years from an oesophageal cancer diagnosis in 2012-2016. (observed survival)
- Age-standardised net survival (ASNS), which removes the effect of deaths from causes unrelated to cancer, was 48.8% one year and 18.8% five years from an oesophageal cancer diagnosis in 2012-2016.
- Five-year survival (ASNS) for oesophageal cancer patients diagnosed in 2012-2016 was 18.7% among men and 19.8% among women.

Table 4: Survival from oesophageal 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	67.2%	69.4%	68.3%	69.8%	64.8%	69.6%
One year	46.2%	48.8%	47.6%	49.6%	43.2%	47.5%
Two years	29.4%	32.0%	30.1%	31.8%	27.8%	33.2%
Five years	16.5%	18.8%	16.9%	18.7%	15.6%	19.8%

Figure 10: Age-standardised net survival from oesophageal 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.

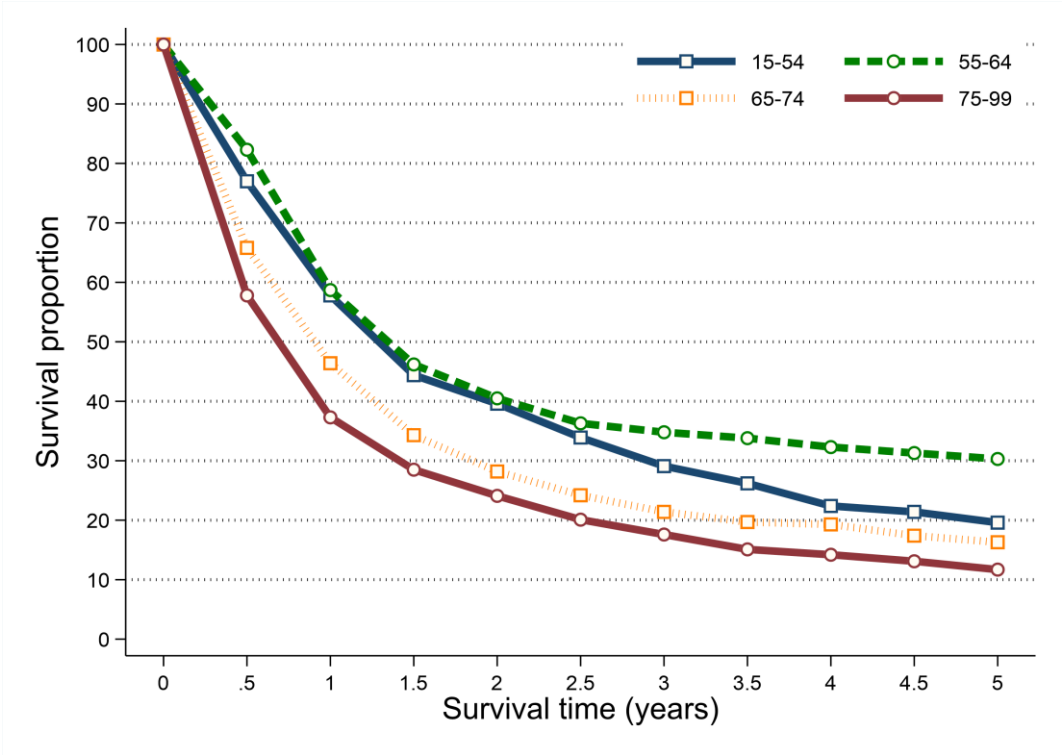
SURVIVAL BY AGE

- Survival from oesophageal 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 30.3% among patients aged 55 to 64 at diagnosis to 11.7% among those aged 75 to 99.

Table 5: Net survival from oesophageal cancer for patients diagnosed in 2012-2016 by age at diagnosis

Age group	All persons	
	One-year	Five-years
15 to 54	57.8%	19.6%
55 to 64	58.7%	30.3%
65 to 74	46.4%	16.3%
75 to 99	37.3%	11.7%

Figure 11: Net survival from oesophageal cancer for patients diagnosed in 2012-2016 by age at diagnosis

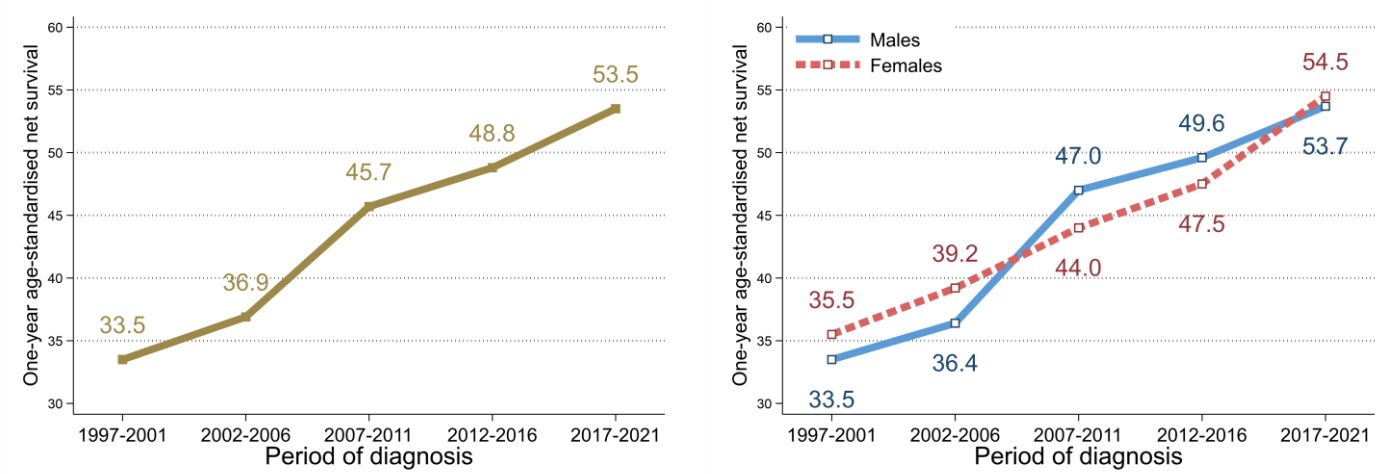


SURVIVAL TRENDS

ONE-YEAR NET SURVIVAL

- Between 2012-2016 and 2017-2021 there was no significant change in one-year survival (ASNS) from oesophageal cancer.
- Compared to 1997-2001 one-year survival (ASNS) from oesophageal cancer in 2017-2021 increased significantly from 33.5% to 53.5%. This increase was significant for males (33.5% to 53.7%) and females (35.5% to 54.5%).

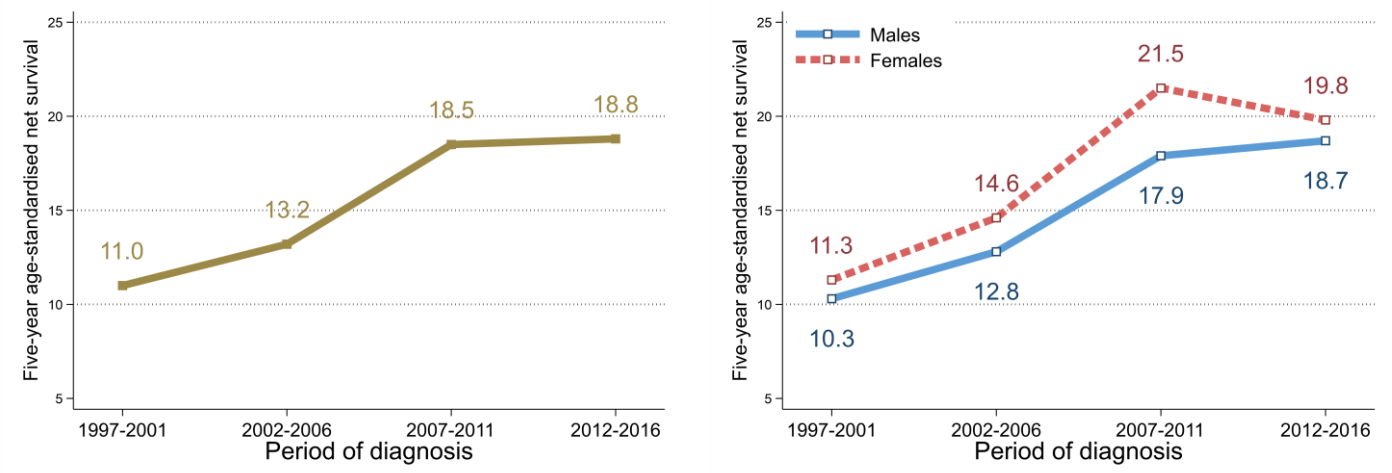
Figure 12: Trends in one-year age-standardised net survival from oesophageal cancer in 1997-2021



FIVE-YEAR NET SURVIVAL

- Between 2007-2011 and 2012-2016 there was no significant change in five-year survival (ASNS) from oesophageal cancer.
- Compared to 1997-2001 five-year survival (ASNS) from oesophageal cancer in 2012-2016 increased significantly from 11.0% to 18.8%. This increase was significant for males (10.3% to 18.7%) but not females.

Figure 13: Trends in five-year age-standardised net survival from oesophageal cancer in 1997-2016



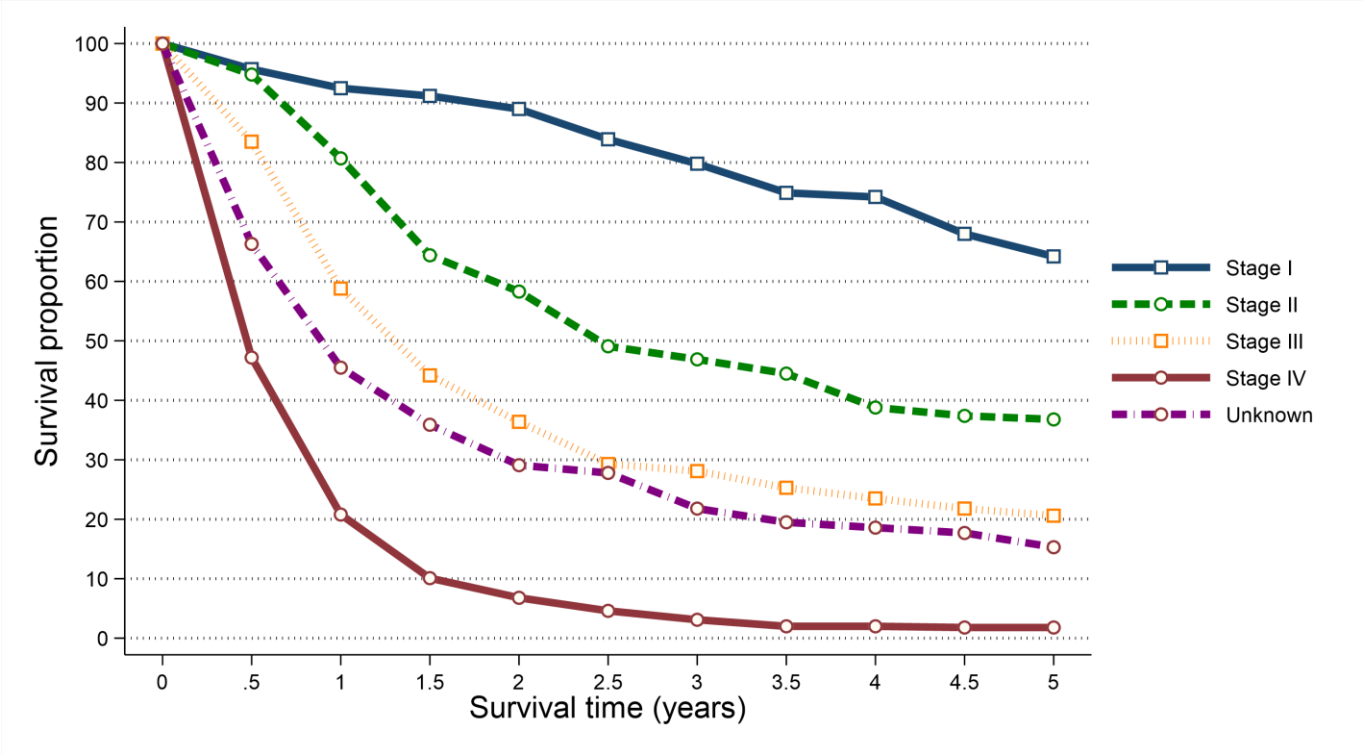
SURVIVAL BY STAGE

- Survival from oesophageal 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 64.2% among patients diagnosed at Stage I to 1.8% among those diagnosed at Stage IV.

Table 6: Age-standardised net survival from oesophageal cancer for patients diagnosed in 2012-2016 by stage at diagnosis

Stage at diagnosis	All persons	
	One-year	Five-years
Stage I	92.5%	64.2%
Stage II	80.7%	36.8%
Stage III	58.8%	20.6%
Stage IV	20.8%	1.8%
Unknown	45.5%	15.3%

Figure 14: Age-standardised net survival from oesophageal cancer for patients diagnosed in 2012-2016 by stage at diagnosis



PREVALENCE

- At the end of 2021, there were 699 people (Males: 497; Females: 202) living with oesophageal cancer who had been diagnosed with the disease during 1997-2021.
- Of these 24.6% had been diagnosed in the previous year (one-year prevalence) and 79.4% in the previous 10 years (ten-year prevalence).
- 37.6% of oesophageal cancer survivors were aged 75 and over at the end of 2021.

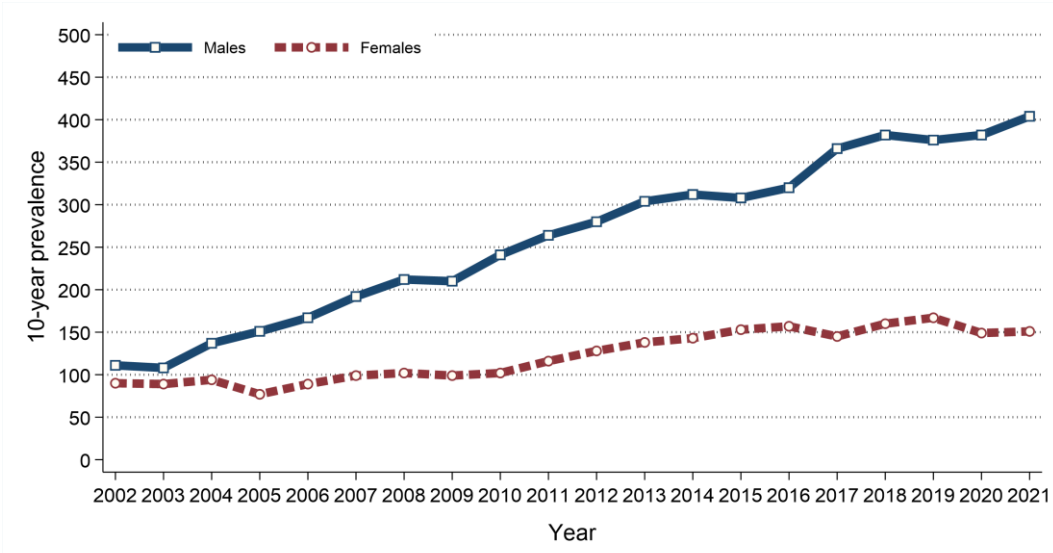
Table 7: 25-year prevalence of oesophageal cancer by age at end of 2021

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	699	172	241	142	144
	0 to 74	436	119	161	95	61
	75 and over	263	53	80	47	83
Male	All ages	497	127	178	99	93
	0 to 74	332	97	127	66	42
	75 and over	165	30	51	33	51
Female	All ages	202	45	63	43	51
	0 to 74	104	22	34	29	19
	75 and over	98	23	29	14	32

PREVALENCE TRENDS

- 10-year prevalence of oesophageal cancer among males increased between 2016 and 2021 by 26.2% from 320 survivors to 404 survivors.
- 10-year prevalence of oesophageal cancer among females decreased between 2016 and 2021 by 3.8% from 157 survivors to 151 survivors.

Figure 15: Trends in 10-year prevalence of oesophageal cancer in 2002-2021



Year	10-year prevalence	
	Males	Females
2012	280	128
2013	304	138
2014	312	143
2015	308	153
2016	320	157
2017	366	145
2018	382	160
2019	376	167
2020	382	149
2021	404	151

MORTALITY

- There were 964 deaths from oesophageal cancer during 2017-2021 in Northern Ireland. On average this was 193 deaths per year.
- During this period 27.3% of oesophageal cancer deaths were among women (Male deaths: 701, Female deaths: 263). On average there were 140 male and 53 female deaths from oesophageal cancer per year.
- Oesophageal cancer deaths made up 5.9% of all male cancer deaths and 2.5% of all female cancer deaths.
- The median age of patients who died from oesophageal cancer during 2017-2021 was 73 years (Males: 71, Females: 77).
- The risk of dying from oesophageal cancer varied by age, with 37.1% of men and 57.8% of women who died from oesophageal cancer aged 75 and over at death.
- In contrast, 9.0% of patients who died from oesophageal cancer were aged 0 to 54 at death.

Figure 16: Average number of deaths from oesophageal cancer per year in 2017-2021 by age at death

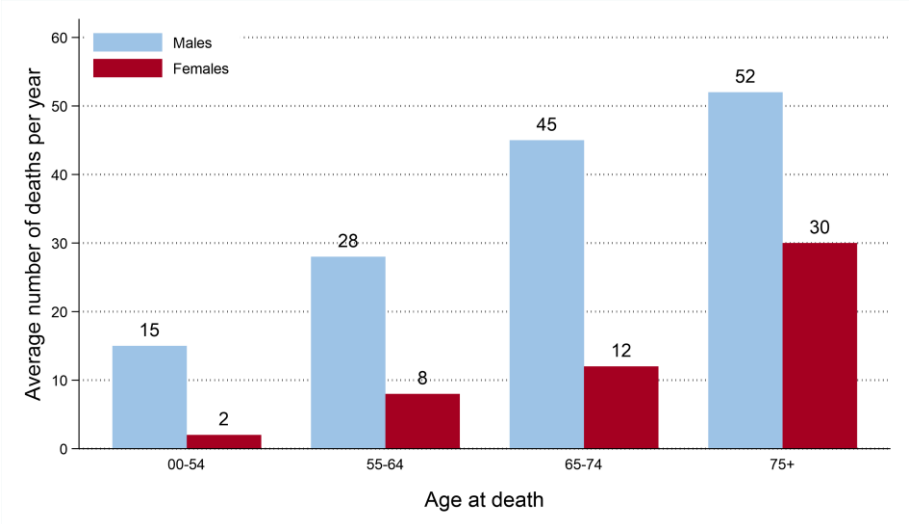
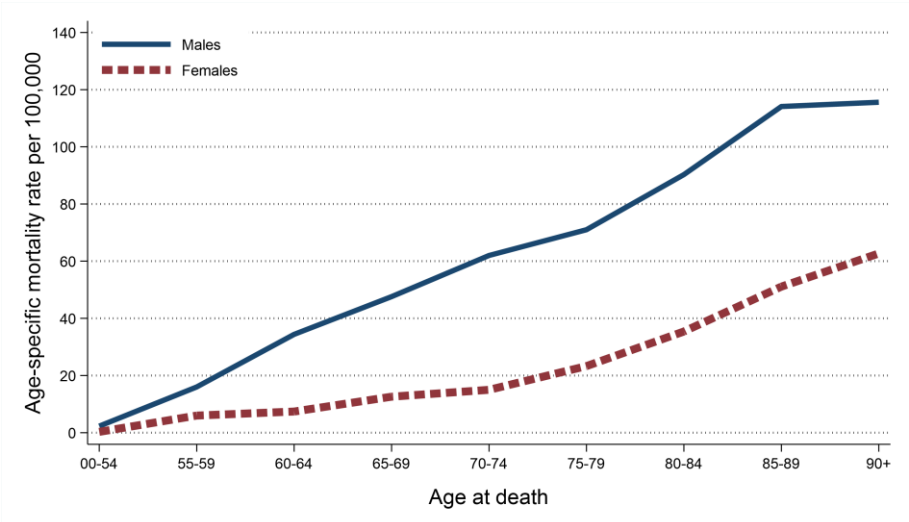


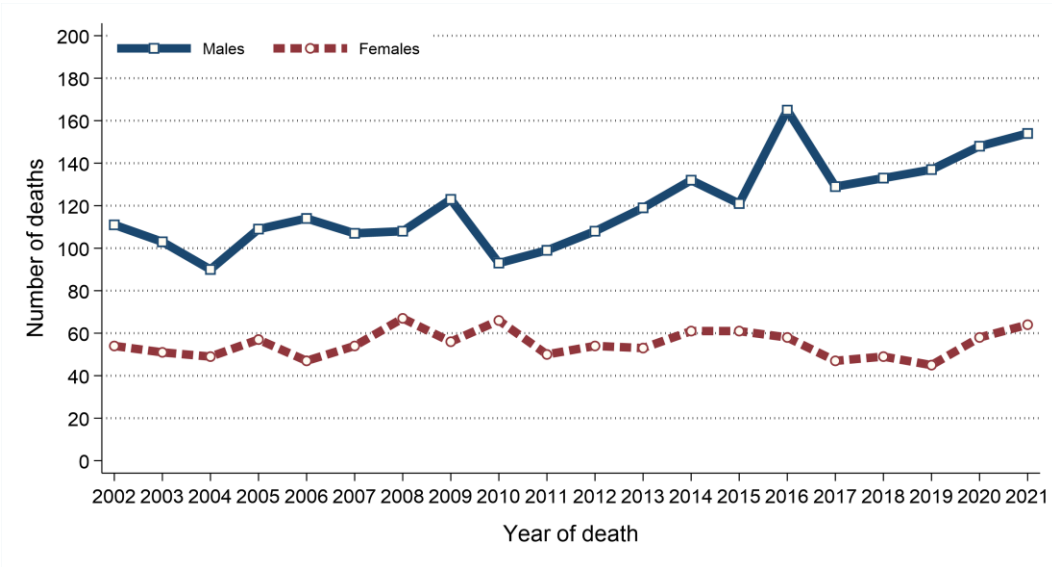
Figure 17: Age-specific mortality rates of oesophageal cancer in 2017-2021



MORTALITY TRENDS

- The number of deaths from oesophageal cancer among males increased between 2012-2016 and 2017-2021 by 8.7% from 645 deaths (129 deaths per year) to 701 deaths (140 deaths per year).
- The number of deaths from oesophageal cancer among females decreased between 2012-2016 and 2017-2021 by 8.4% from 287 deaths (57 deaths per year) to 263 deaths (53 deaths per year).

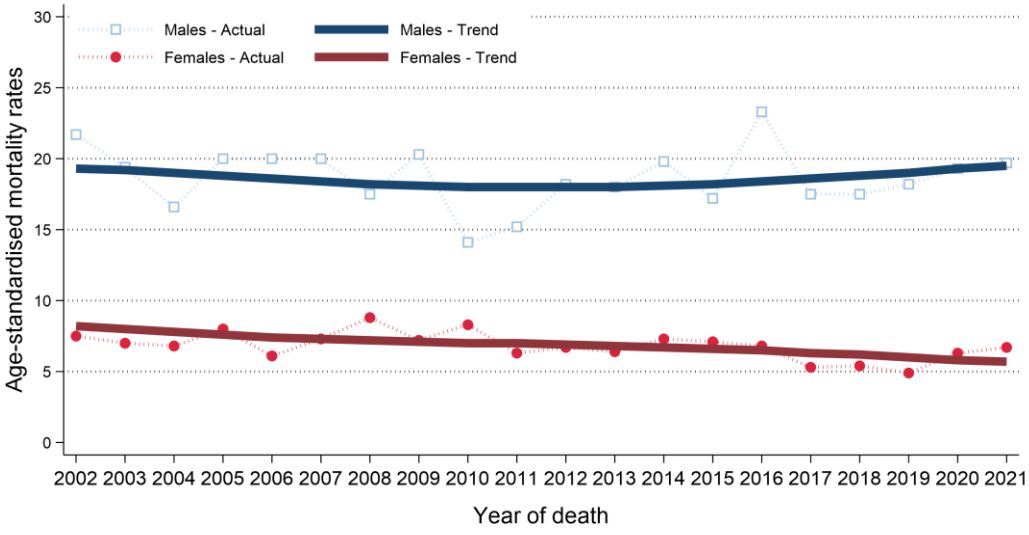
Figure 18: Trends in the number of deaths from oesophageal cancer from 2002 to 2021



Year of death	Number of deaths	
	Males	Females
2012	108	54
2013	119	53
2014	132	61
2015	121	61
2016	165	58
2017	129	47
2018	133	49
2019	137	45
2020	148	58
2021	154	64

- Male age-standardised oesophageal cancer mortality rates decreased between 2012-2016 and 2017-2021 by 4.1% from 19.3 to 18.5 deaths per 100,000 males. This change was not statistically significant.
- Female age-standardised oesophageal cancer mortality rates decreased between 2012-2016 and 2017-2021 by 17.4% from 6.9 to 5.7 deaths per 100,000 females. This change was not statistically significant.

Figure 19: Trends in mortality rates of oesophageal 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.

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. oesophageal 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. oesophageal 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.