Stomach cancer

1993-2021

(ICD10 codes: C16)

Northern Ireland Cancer Registry, 2023

An official statistics publication

Contents

This report includes information on incidence of stomach 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. Stomach 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

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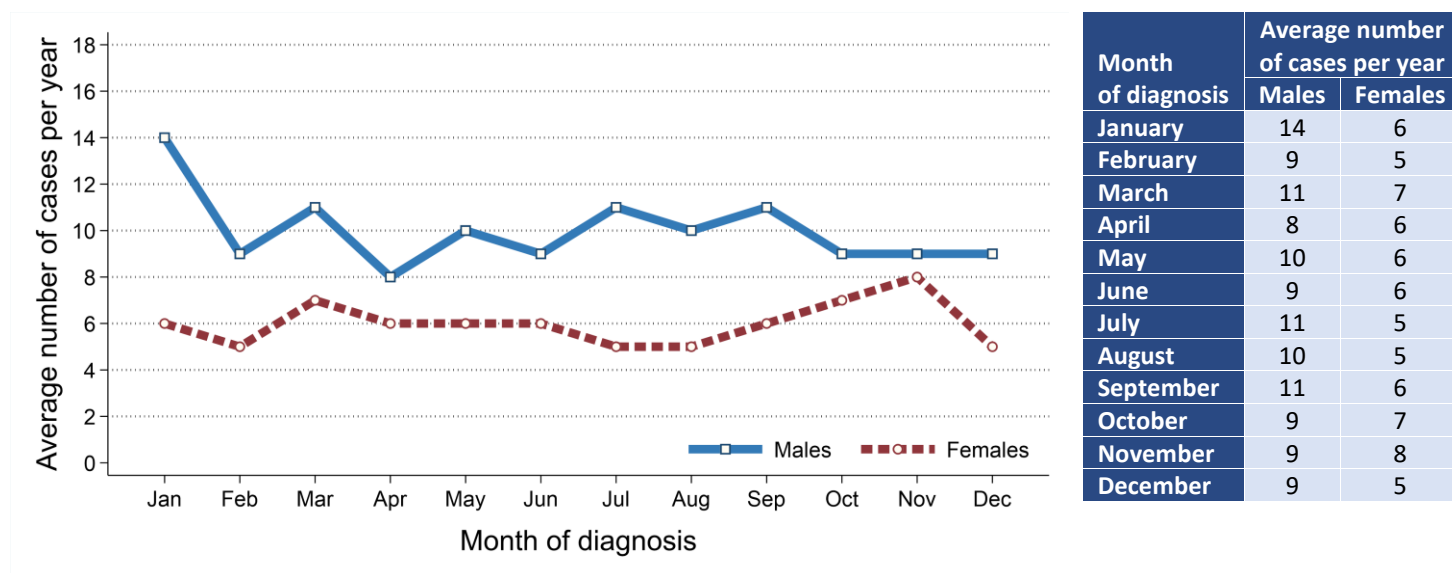
NICR is funded by the Public Health Agency and is based in Queen's University, Belfast.
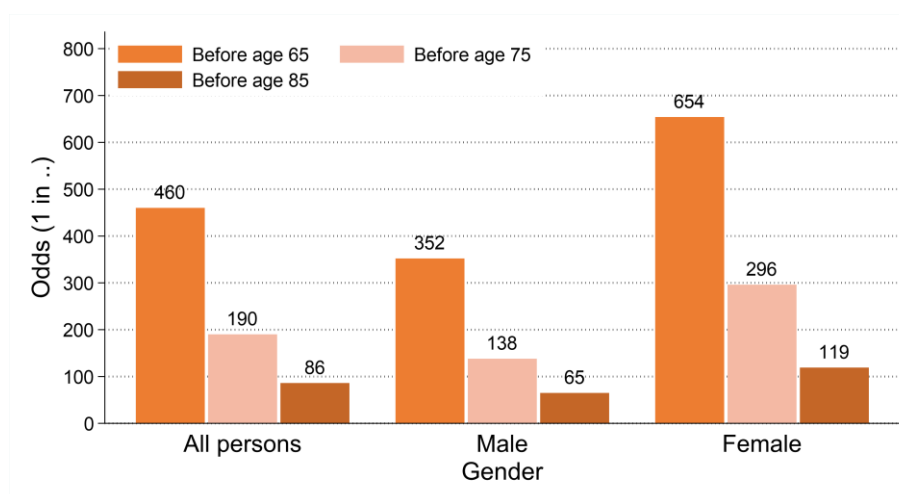
INCIDENCE

- There were 965 cases of stomach cancer diagnosed during 2017-2021 in Northern Ireland. On average this was 193 cases per year.

- During this period 38.1% of stomach cancer cases were among women (Male cases: 597, Female cases: 368). On average there were 119 male and 74 female cases of stomach cancer per year.

- The most common diagnosis month during 2017-2021 was January among males with 14 cases per year and November among females with 8 cases per year.

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

Month of diagnosis	Average number of cases per year	
	Males	Females
January	14	6
February	9	5
March	11	7
April	8	6
May	10	6
June	9	6
July	11	5
August	10	5
September	11	6
October	9	7
November	9	8
December	9	5

- The stomach cancer incidence rates for each gender were 12.8 cases per 100,000 males and 7.7 cases per 100,000 females.

- The odds of developing stomach cancer before age 85 was 1 in 65 for men and 1 in 119 for women.

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

- The median age of patients diagnosed with stomach cancer during 2017-2021 was 73 years (Males: 73, Females: 75).
- The risk of developing stomach cancer varied by age, with 41.9% of men and 52.2% of women diagnosed with stomach cancer aged 75 and over at diagnosis.
- In contrast, 12.2% of patients diagnosed with stomach cancer were aged 0 to 54 at diagnosis.

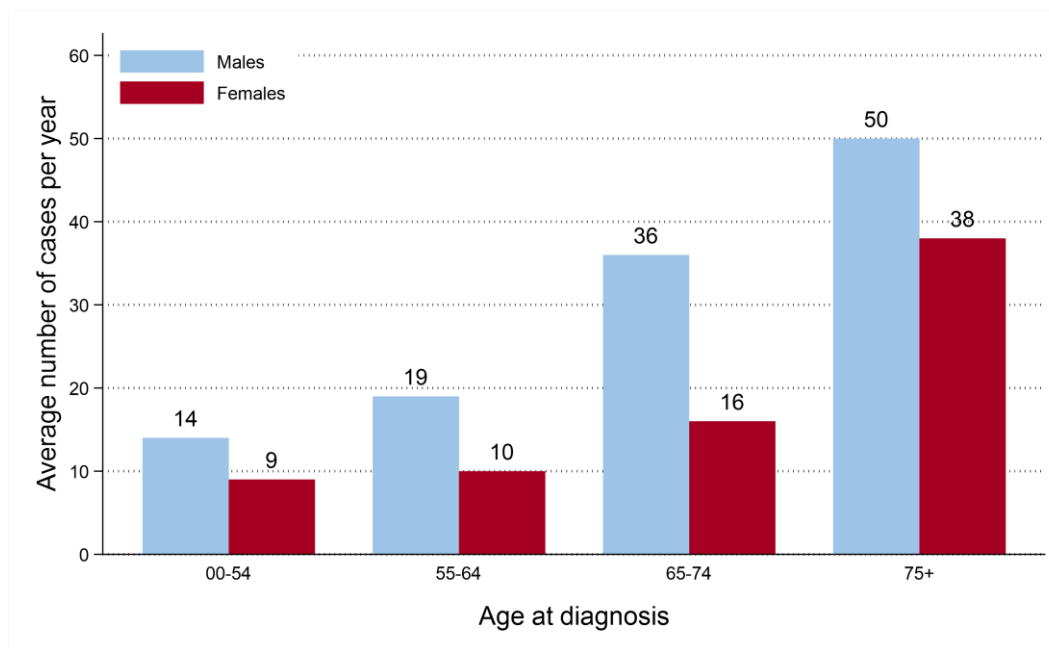*Figure 3: Average number of cases of stomach cancer diagnosed per year in 2017-2021 by age at diagnosis*
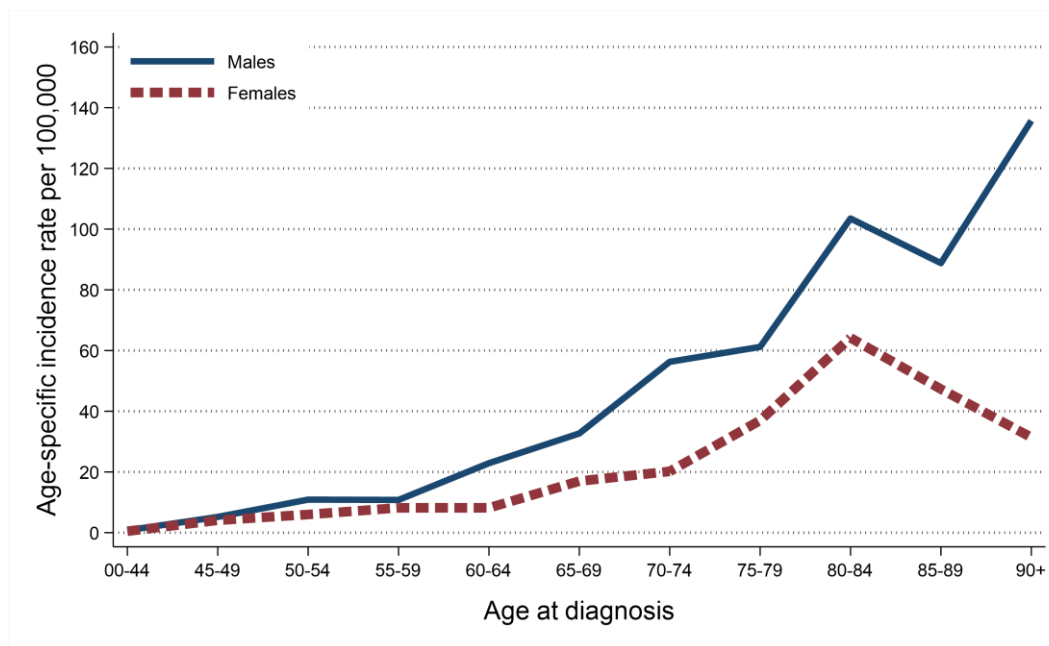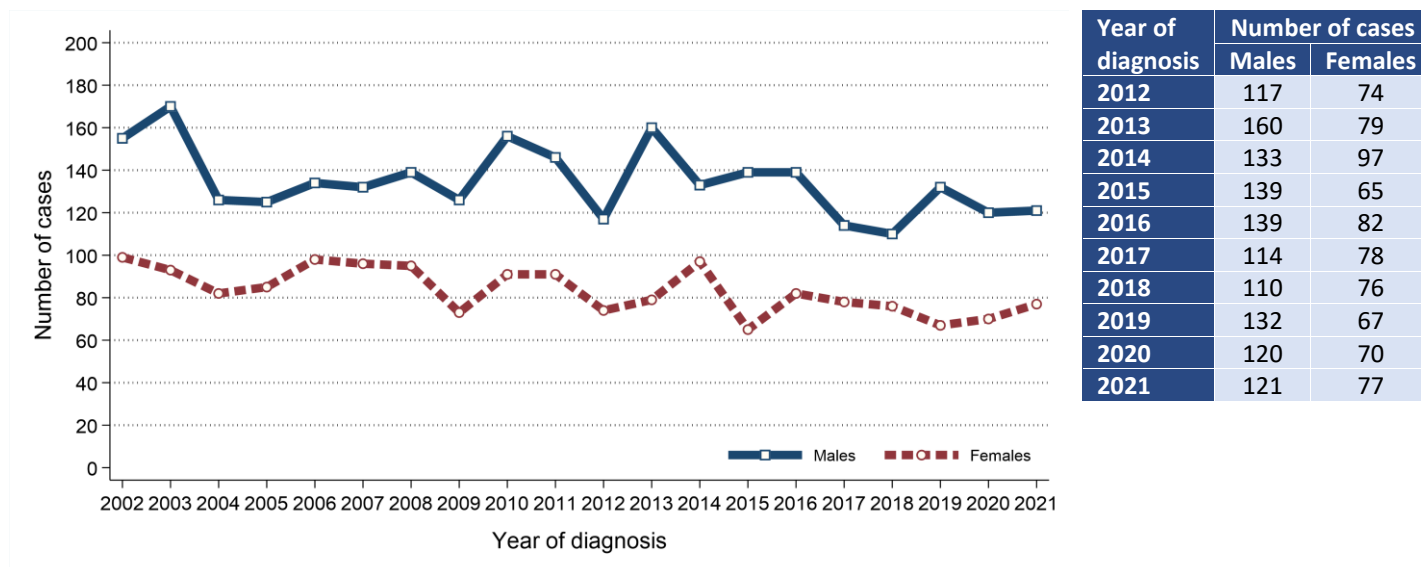

*Figure 4: Age-specific incidence rates of stomach cancer in 2017-2021*

INCIDENCE TRENDS

- The number of cases of stomach cancer among males decreased between 2012-2016 and 2017-2021 by 13.2% from 688 cases (138 cases per year) to 597 cases (119 cases per year).
- The number of cases of stomach cancer among females decreased between 2012-2016 and 2017-2021 by 7.3% from 397 cases (79 cases per year) to 368 cases (74 cases per year).

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

Year of diagnosis	Number of cases	
	Males	Females
2012	117	74
2013	160	79
2014	133	97
2015	139	65
2016	139	82
2017	114	78
2018	110	76
2019	132	67
2020	120	70
2021	121	77

- Male age-standardised stomach cancer incidence rates decreased between 2012-2016 and 2017-2021 by 24.2% from 21.1 to 16.0 cases per 100,000 males. This change was statistically significant.
- Female age-standardised stomach cancer incidence rates decreased between 2012-2016 and 2017-2021 by 13.8% from 9.4 to 8.1 cases per 100,000 females. This change was not statistically significant.

Figure 6: Trends in incidence rates of stomach cancer from 2002 to 2021
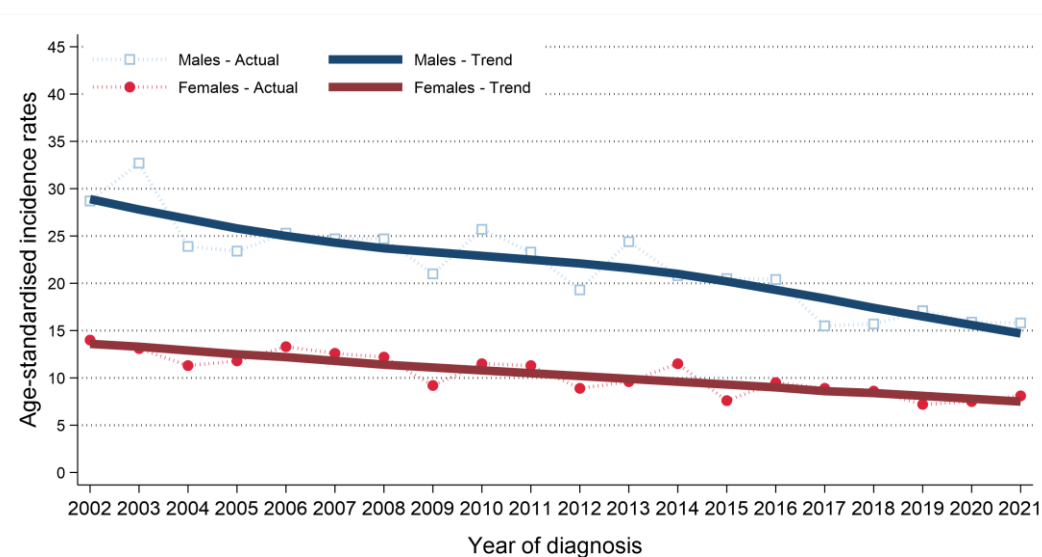
Age-standardised incidence rates illustrate the change in the number of cases within a population of a fixed size and age structure (2013 European Standard).

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).
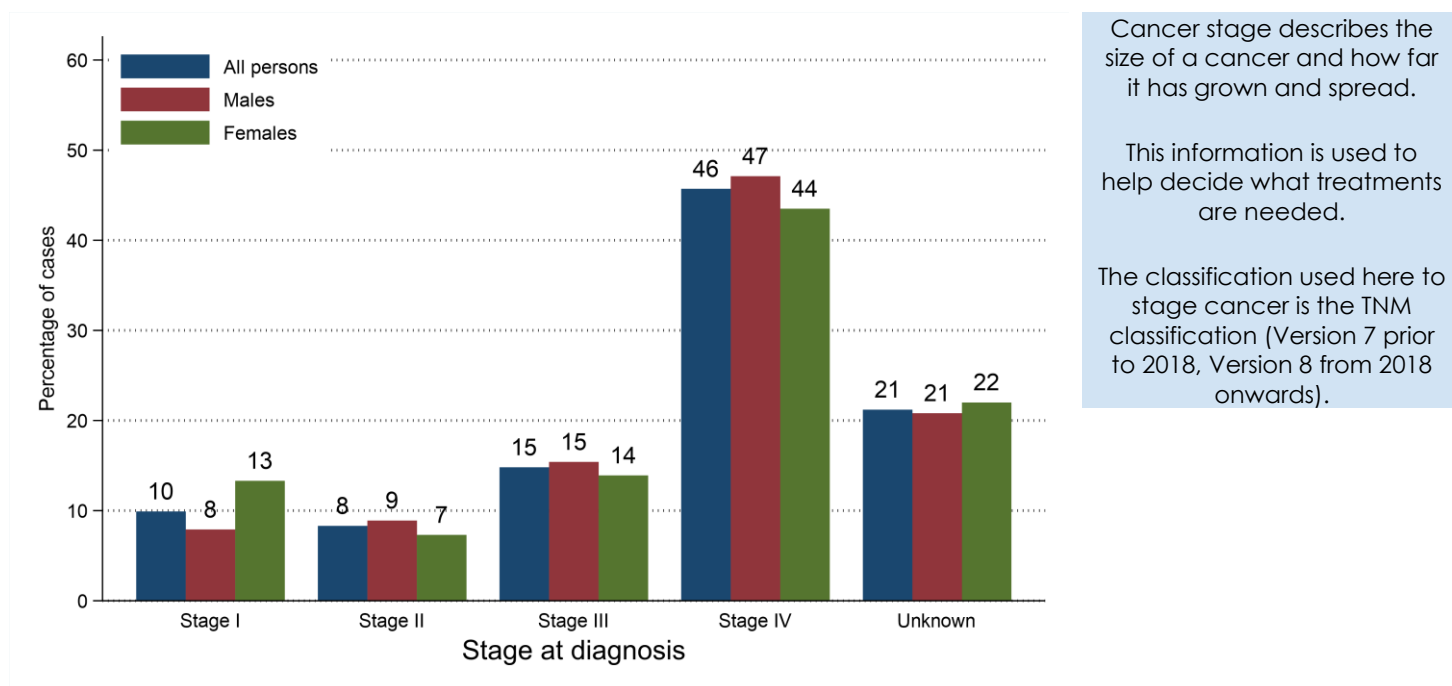
INCIDENCE BY STAGE AT DIAGNOSIS

- During 2017-2021 78.8% of stomach cancer cases had a stage assigned.

- 9.9% of stomach cancer cases were diagnosed at Stage I. (12.6% of staged cases)

- 45.7% of stomach cancer cases were diagnosed at Stage IV. (58.0% of staged cases)

Table 1: Number of cases of stomach 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	**965**	**193**	**597**	**119**	**368**	**74**
	.	.	.	.	.	.
Stage I	96	19	47	9	49	10
Stage II	80	16	53	11	27	5
Stage III	143	29	92	18	51	10
Stage IV	441	88	281	56	160	32
Unknown	205	41	124	25	81	16

Figure 7: Proportion of cases of stomach 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).
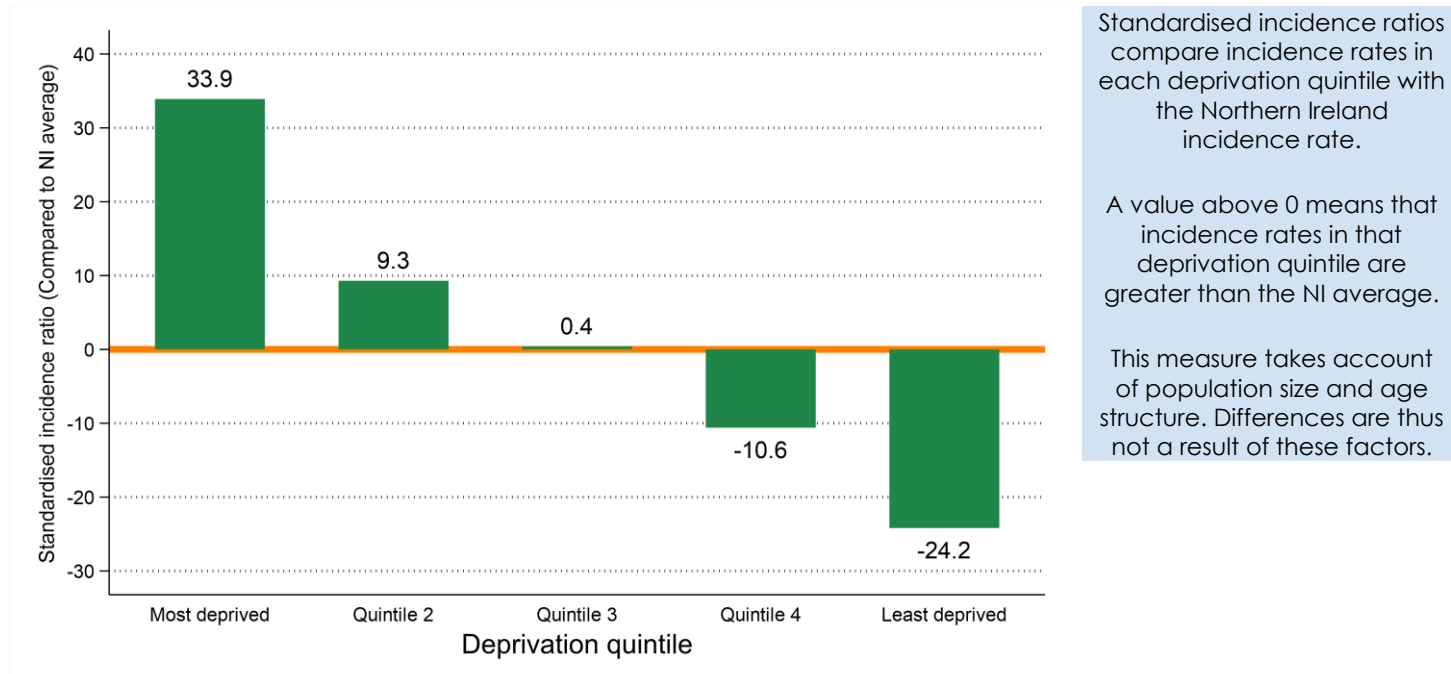
INCIDENCE BY DEPRIVATION

- The number of cases of stomach 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 33.9% higher than the NI average.
  - in the least socio-economically deprived areas were 24.2% lower than the NI average.

Table 2: Number of cases of stomach 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	965	193	597	119	368	74
	.	.	.	.	.	.
Most deprived	210	42	131	26	79	16
Quintile 2	211	42	133	27	78	16
Quintile 3	204	41	122	24	82	16
Quintile 4	183	37	107	21	76	15
Least deprived	157	31	104	21	53	11
Unknown	0	0	0	0	0	0

Figure 8: Standardised incidence ratio comparing deprivation quintile to Northern Ireland for stomach 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 stomach 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 15.8% higher than 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 did not vary significantly from the NI average.

Table 3: Number of cases of stomach 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	**965**	**193**	**597**	**119**	**368**	**74**
	.	.	.	.	.	.
Belfast HSCT	203	41	132	26	71	14
Northern HSCT	230	46	148	30	82	16
South Eastern HSCT	180	36	112	22	68	14
Southern HSCT	180	36	103	21	77	15
Western HSCT	172	34	102	20	70	14
Unknown	0	0	0	0	0	0

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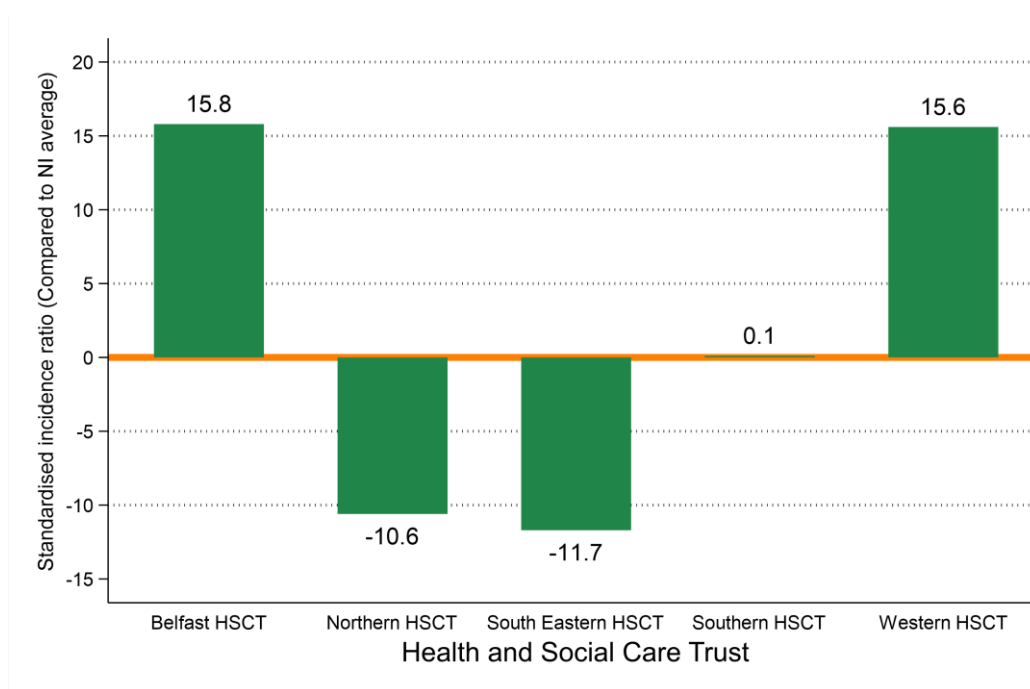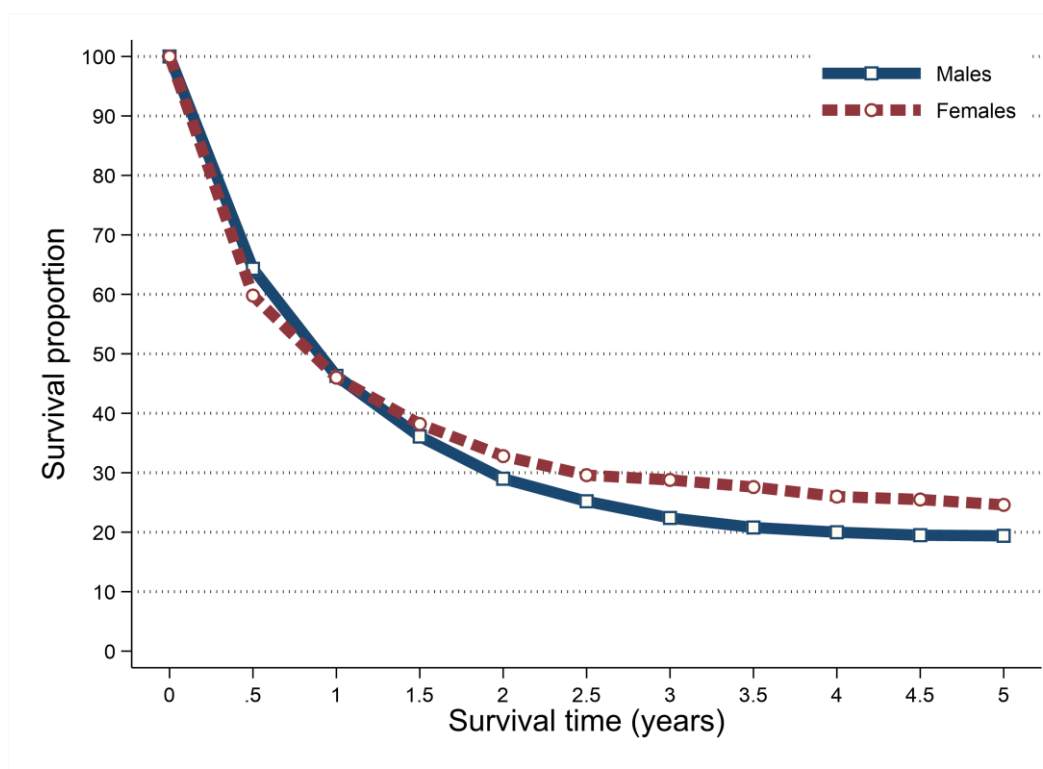
SURVIVAL

- 42.6% of patients were alive one year and 16.8% were alive five years from a stomach cancer diagnosis in 2012-2016. (observed survival)
- Age-standardised net survival (ASNS), which removes the effect of deaths from causes unrelated to cancer, was 45.8% one year and 21.0% five years from a stomach cancer diagnosis in 2012-2016.
- Five-year survival (ASNS) for stomach cancer patients diagnosed in 2012-2016 was 19.4% among men and 24.6% among women.

Table 4: Survival from stomach 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	59.1%	62.4%	62.1%	64.3%	54.0%	59.8%
One year	42.6%	45.8%	44.2%	46.3%	39.6%	46.0%
Two years	26.9%	30.0%	27.0%	29.0%	26.6%	32.8%
Five years	16.8%	21.0%	16.1%	19.4%	18.0%	24.6%

Figure 10: Age-standardised net survival from stomach 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.
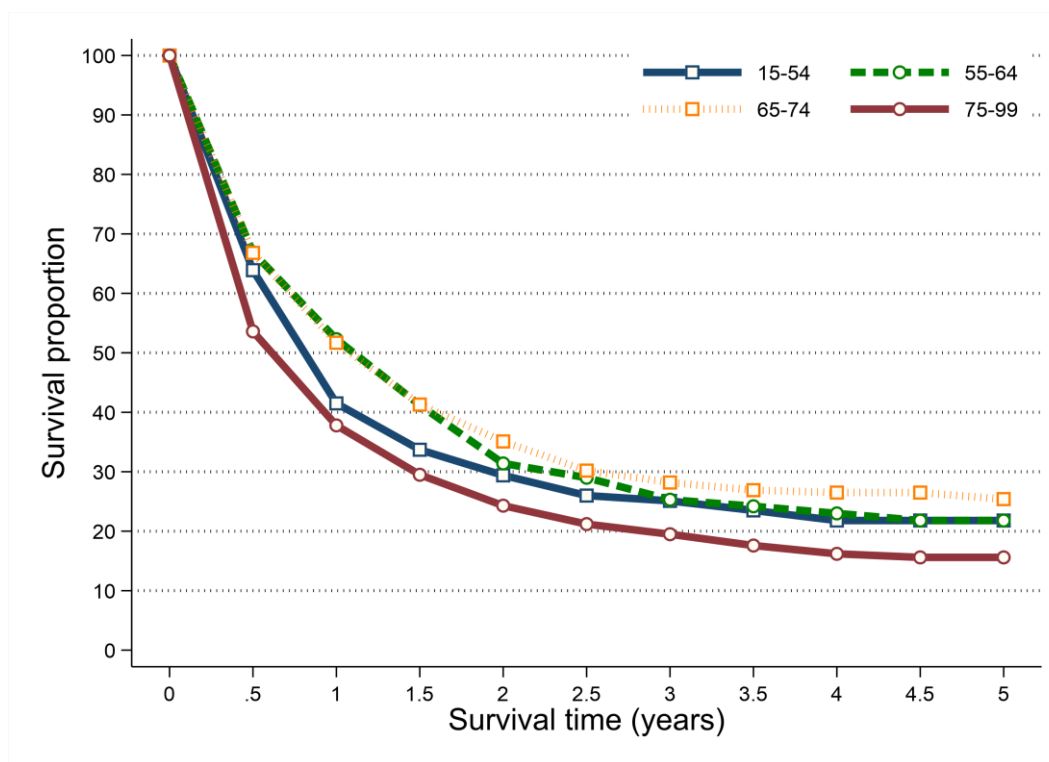
SURVIVAL BY AGE

- Survival from stomach 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 25.4% among patients aged 65 to 74 at diagnosis to 15.6% among those aged 75 to 99.

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

Age group	All persons	
	One-year	Five-years
15 to 54	41.5%	21.8%
55 to 64	52.3%	21.8%
65 to 74	51.7%	25.4%
75 to 99	37.8%	15.6%

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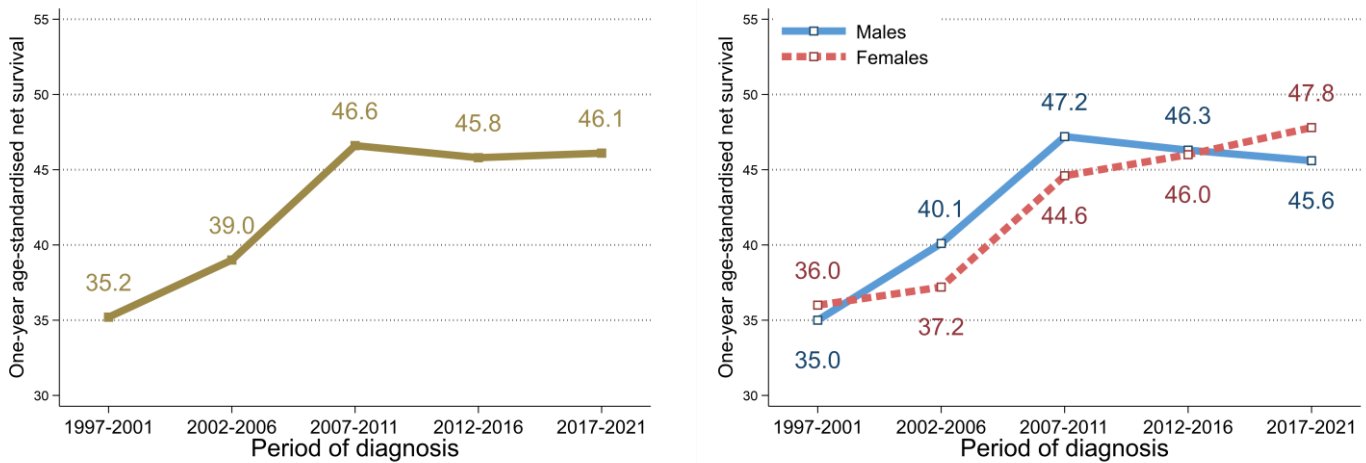
SURVIVAL TRENDS

ONE-YEAR NET SURVIVAL

- Between 2012-2016 and 2017-2021 there was no significant change in one-year survival (ASNS) from stomach cancer.

- Compared to 1997-2001 one-year survival (ASNS) from stomach cancer in 2017-2021 increased significantly from 35.2% to 46.1%. This increase was significant for males (35.0% to 45.6%) and females (36.0% to 47.8%).

Figure 12: Trends in one-year age-standardised net survival from stomach 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 stomach cancer.

- Compared to 1997-2001 five-year survival (ASNS) from stomach cancer in 2012-2016 increased significantly from 14.2% to 21.0%. This increase was significant for males (12.9% to 19.4%) but not females.

Figure 13: Trends in five-year age-standardised net survival from stomach cancer in 1997-2016
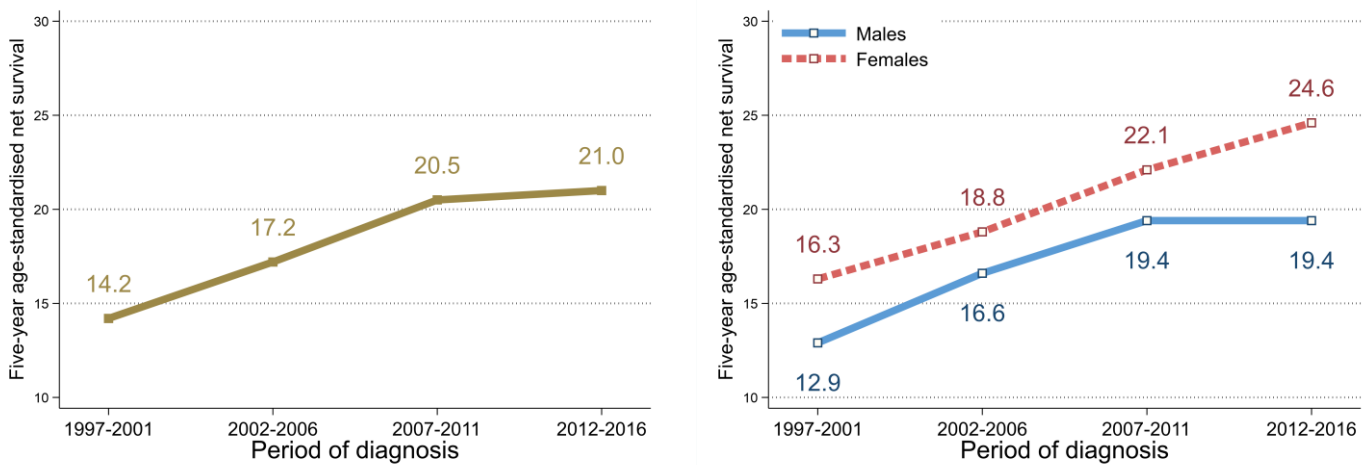
SURVIVAL BY STAGE

- Survival from stomach 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 79.0% among patients diagnosed at Stage I to 1.1% among those diagnosed at Stage IV.

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

Stage at diagnosis	All persons	
	One-year	Five-years
Stage I	92.6%	79.0%
Stage II	84.2%	57.1%
Stage III	74.5%	27.2%
Stage IV	18.7%	1.1%
Unknown	52.5%	22.3%

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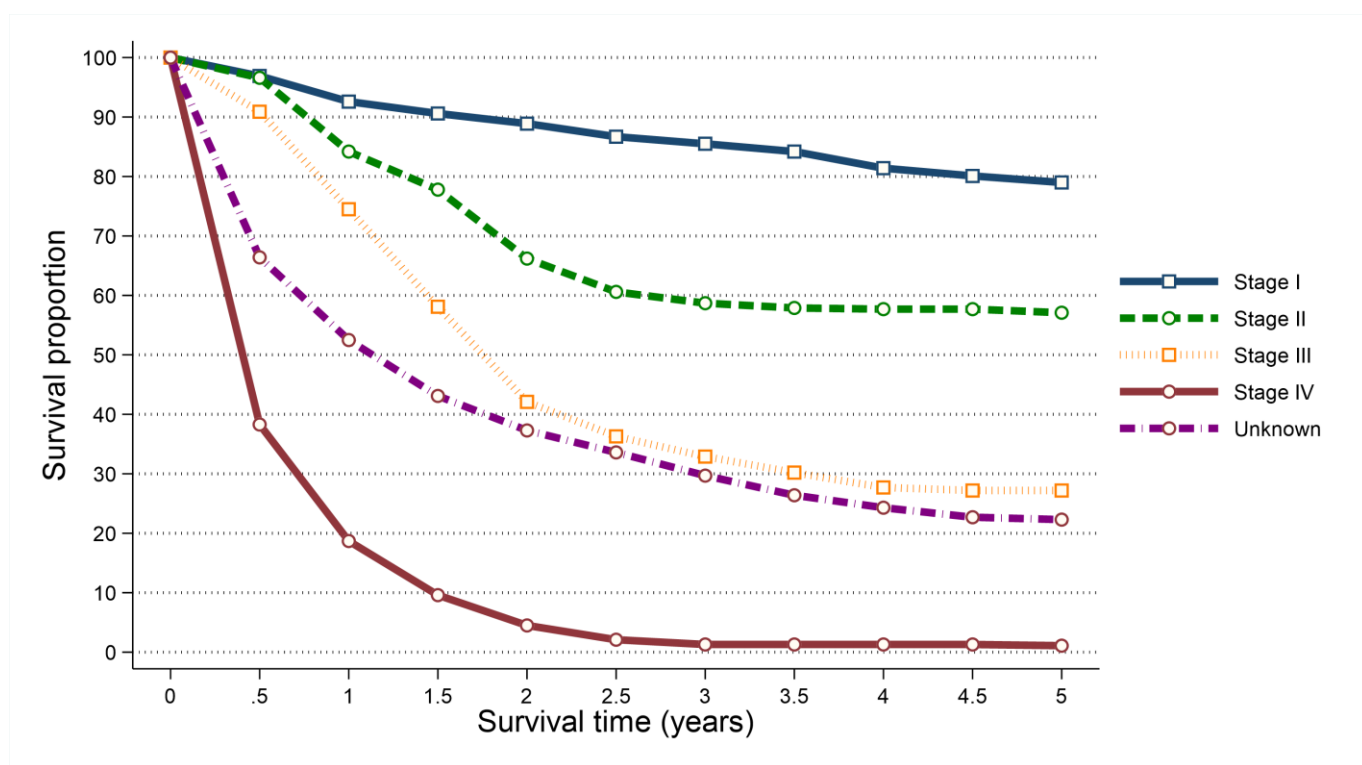
PREVALENCE

- At the end of 2021, there were 637 people (Males: 378; Females: 259) living with stomach cancer who had been diagnosed with the disease during 1997-2021.
- Of these 18.8% had been diagnosed in the previous year (one-year prevalence) and 69.7% in the previous 10 years (ten-year prevalence).
- 53.4% of stomach cancer survivors were aged 75 and over at the end of 2021.
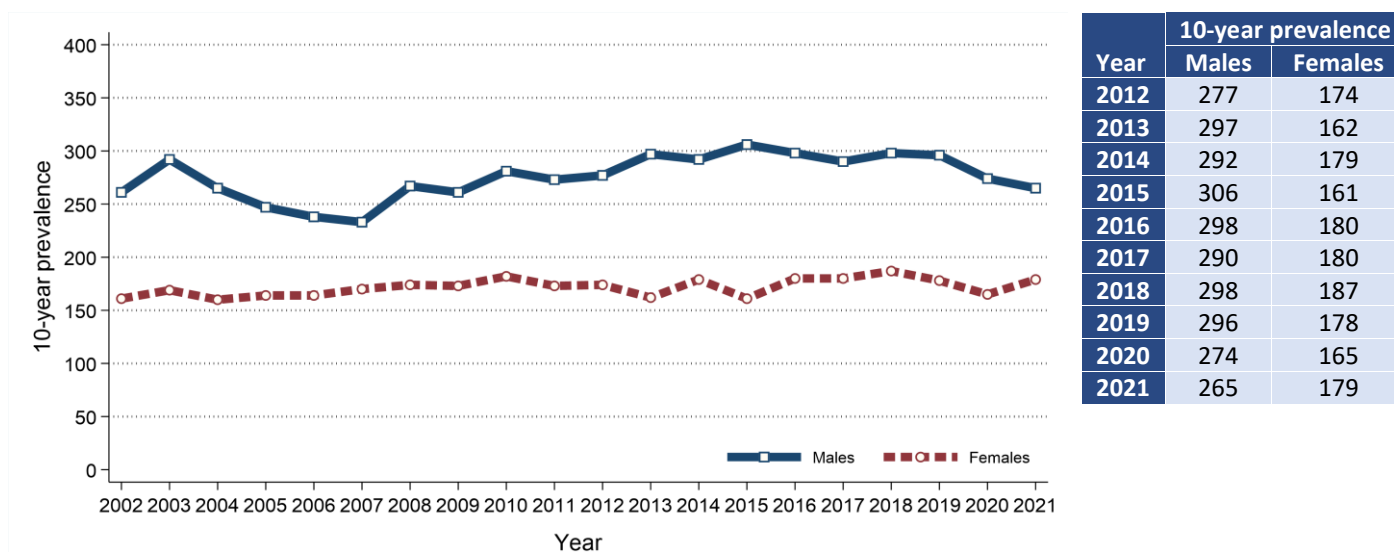
Table 7: 25-year prevalence of stomach cancer by age at end of 2021

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	637	120	177	147	193
	0 to 74	297	59	101	66	71
	75 and over	340	61	76	81	122
Male	All ages	378	68	106	91	113
	0 to 74	172	33	59	39	41
	75 and over	206	35	47	52	72
Female	All ages	259	52	71	56	80
	0 to 74	125	26	42	27	30
	75 and over	134	26	29	29	50

PREVALENCE TRENDS

- 10-year prevalence of stomach cancer among males decreased between 2016 and 2021 by 11.1% from 298 survivors to 265 survivors.
- 10-year prevalence of stomach cancer among females decreased between 2016 and 2021 by 0.6% from 180 survivors to 179 survivors.

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

Year	10-year prevalence	
	Males	Females
2012	277	174
2013	297	162
2014	292	179
2015	306	161
2016	298	180
2017	290	180
2018	298	187
2019	296	178
2020	274	165
2021	265	179

MORTALITY

- There were 588 deaths from stomach cancer during 2017-2021 in Northern Ireland. On average this was 118 deaths per year.
- During this period 41.2% of stomach cancer deaths were among women (Male deaths: 346, Female deaths: 242). On average there were 69 male and 48 female deaths from stomach cancer per year.
- Stomach cancer deaths made up 2.9% of all male cancer deaths and 2.3% of all female cancer deaths.
- The median age of patients who died from stomach cancer during 2017-2021 was 76 years (Males: 74, Females: 78).
- The risk of dying from stomach cancer varied by age, with 48.0% of men and 57.9% of women who died from stomach cancer aged 75 and over at death.
- In contrast, 10.2% of patients who died from stomach cancer were aged 0 to 54 at death.

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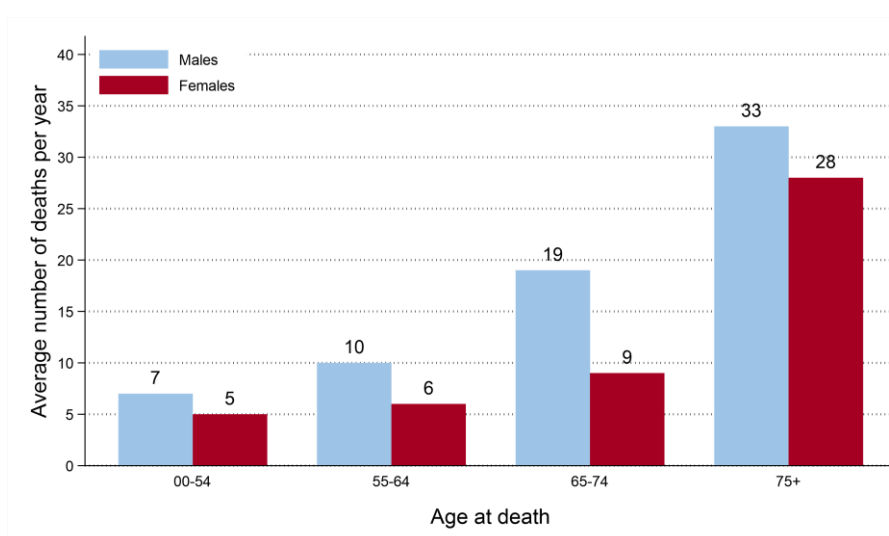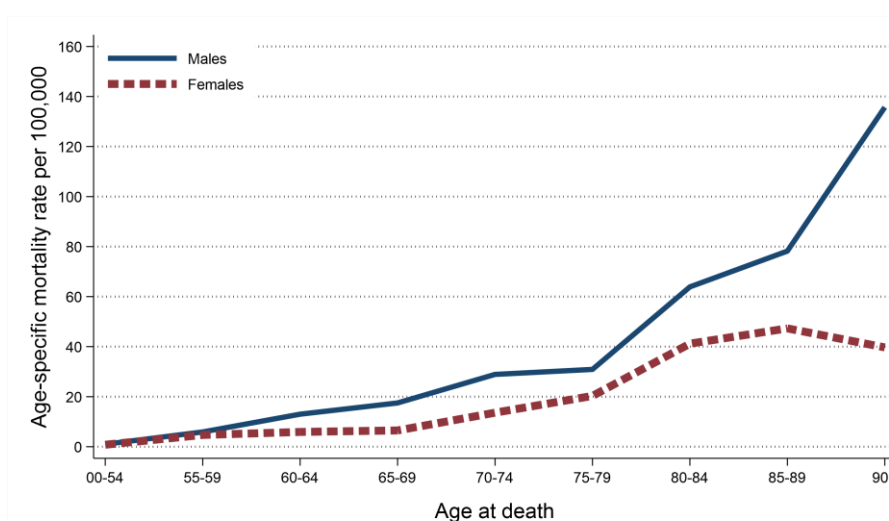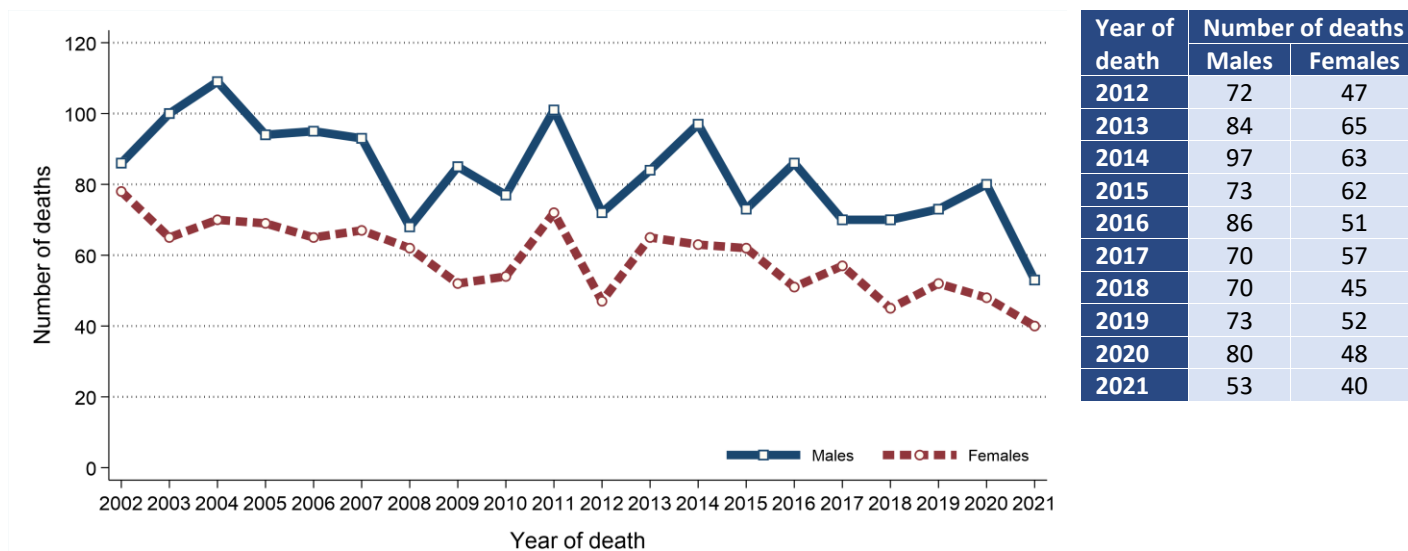

*Figure 17: Age-specific mortality rates of stomach cancer in 2017-2021*

MORTALITY TRENDS

- The number of deaths from stomach cancer among males decreased between 2012-2016 and 2017-2021 by 16.0% from 412 deaths (82 deaths per year) to 346 deaths (69 deaths per year).
- The number of deaths from stomach cancer among females decreased between 2012-2016 and 2017-2021 by 16.0% from 288 deaths (58 deaths per year) to 242 deaths (48 deaths per year).

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

Year of death	Number of deaths	
	Males	Females
2012	72	47
2013	84	65
2014	97	63
2015	73	62
2016	86	51
2017	70	57
2018	70	45
2019	73	52
2020	80	48
2021	53	40

- Male age-standardised stomach cancer mortality rates decreased between 2012-2016 and 2017-2021 by 24.2% from 12.8 to 9.7 deaths per 100,000 males. This change was statistically significant.
- Female age-standardised stomach cancer mortality rates decreased between 2012-2016 and 2017-2021 by 22.4% from 6.7 to 5.2 deaths per 100,000 females. This change was statistically significant.

Figure 19: Trends in mortality rates of stomach cancer from 2002 to 2021
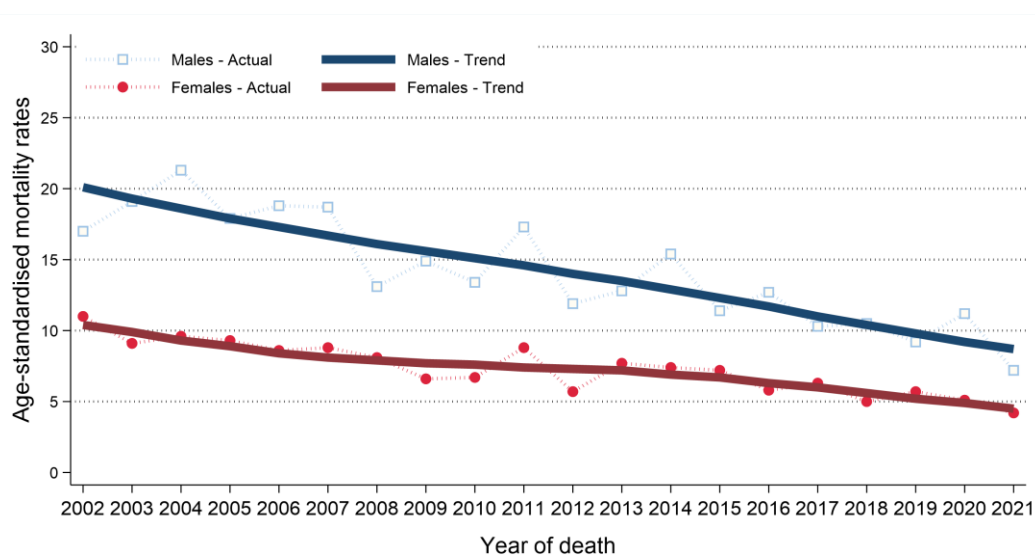
Age-standardised mortality rates illustrate the change in the number of deaths within a population of a fixed size and age structure (2013 European Standard).

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. stomach 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. stomach 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.