Cancer of unknown primary

Patients diagnosed 1993-2020
(ICD10: C77-C80)

Further information

Further data is available at: **www.qub.ac.uk/research-centres/nicr**
Phone: +44 (0)28 9097 6028
e-mail: nicr@qub.ac.uk

Acknowledgements

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The incidence, prevalence and survival statistics in this publication are designated as official statistics signifying that they comply with the Code of Practice for Official Statistics.

Incidence

During 2016-2020:

▪ There were 88 male and 98 female cases of cancer of unknown primary diagnosed each year.

▪ The risk of developing cancer of unknown primary before the age of 75 was 1 in 232 for men and 1 in 311 for women, while before the age of 85 the risk was 1 in 90 for men and 1 in 104 for women.

Incidence by age at diagnosis - *Cancer of unknown primary, Cases in 2016-2020*

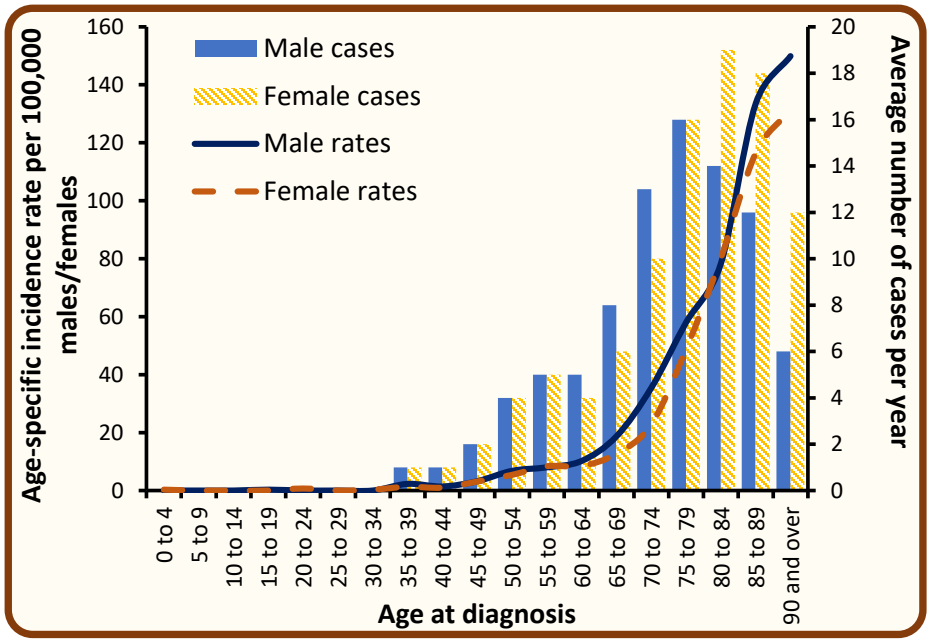
During 2016-2020:

▪ The median age at diagnosis was 75 for men and 80 for women.

▪ Cancer risk varied by age, with 54.5% of men and 66.3% of women aged 75 years or more at diagnosis.

▪ 8.1% of cases were diagnosed among those aged under 55.

Age at diagnosis	Average cases per year		
	Male	Female	Both sexes
0 - 54	8	8	15
54 - 64	10	9	20
65 - 74	21	16	37
75 +	48	65	113
All ages	88	98	186

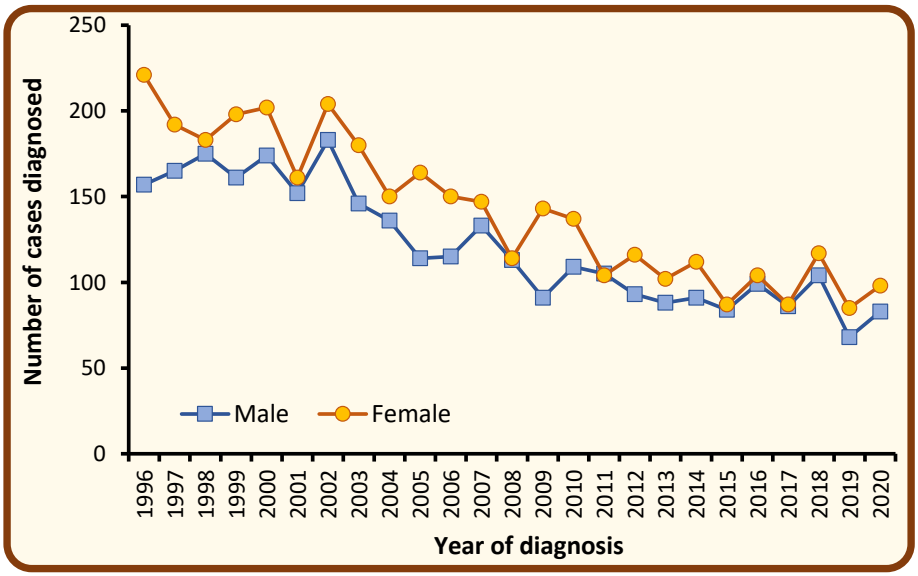


Incidence by year of diagnosis - *Cancer of unknown primary, Cases in 1996-2020*

▪ Among males the number of cases of cancer of unknown primary decreased by 4.3% from an annual average of 92 cases in 2011-2015 to 88 cases in 2016-2020.

▪ Among females the number of cases of cancer of unknown primary decreased by 5.8% from an annual average of 104 cases in 2011-2015 to 98 cases in 2016-2020.

Year of diagnosis	Male	Female	Both sexes
2011	105	104	209
2012	93	116	209
2013	88	102	190
2014	91	112	203
2015	84	87	171
2016	99	104	203
2017	86	87	173
2018	104	117	221
2019	68	85	153
2020	83	98	181

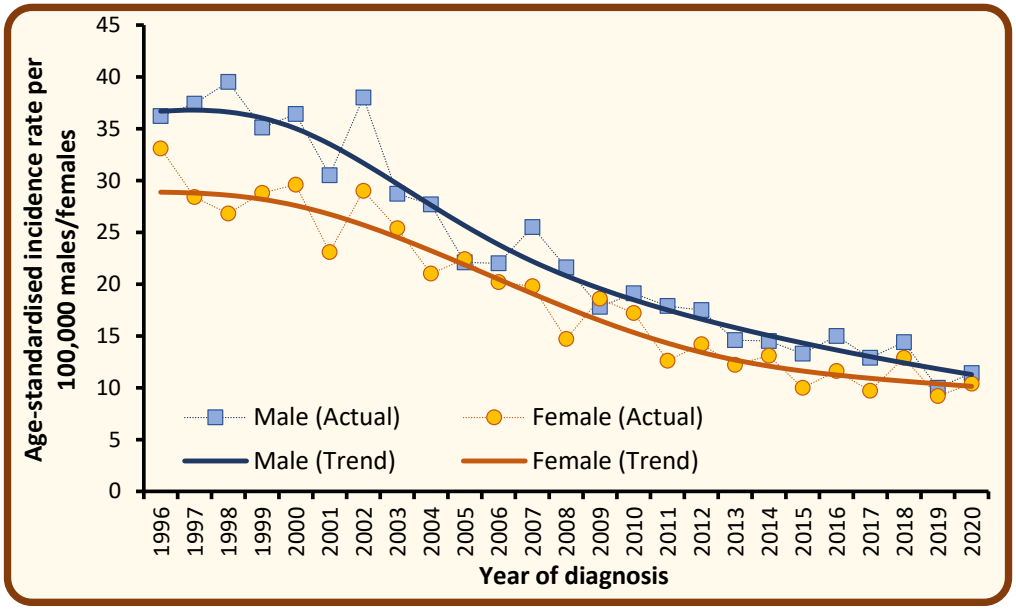


Note: Annual averages have been rounded to the nearest integer. Sums of numbers in table rows or columns may thus differ slightly from the given total.
NMSC: Non-melanoma skin cancer

Trends in age-standardised incidence rates - *Cancer of unknown primary, Cases in 1996-2020*

▪ Among males age-standardised incidence rates of cancer of unknown primary decreased by 18.1% from 15.5 per 100,000 person years in 2011-2015 to 12.7 cases per 100,000 persons years in 2016-2020. This difference was statistically significant.

▪ Among females age-standardised incidence rates of cancer of unknown primary decreased by 13.7% from 12.4 per 100,000 person years in 2011-2015 to 10.7 cases per 100,000 persons years in 2016-2020. This difference was not statistically significant.



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 deprivation quintile - *Cancer of unknown primary, Cases in 2016-2020*

The annual number of cases during 2016-2020 varied in each deprivation quintile due to variations in population size and age.

After accounting for these factors, incidence rates:

▪ in the least socio-economically deprived areas were 18.8% lower than the NI average.

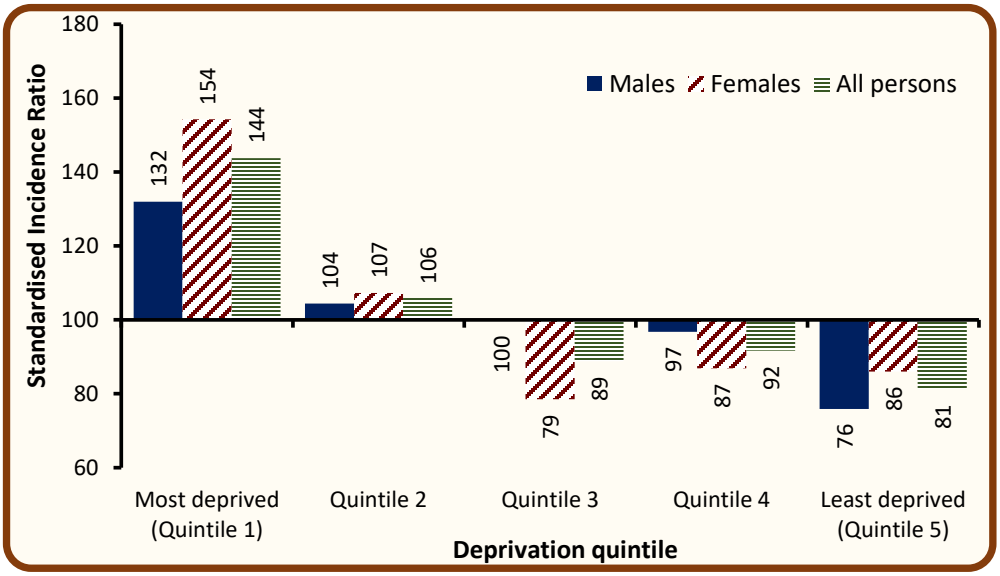
▪ in the most socio-economically deprived areas were 43.8% higher than the NI average.

Deprivation quintile	Average cases per year		
	Male	Female	Both sexes
Most deprived (Quintile 1)	18	25	43
Quintile 2	18	21	39
Quintile 3	19	16	35
Quintile 4	18	18	36
Least deprived (Quintile 5)	14	19	33
Northern Ireland	88	98	186

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

A value above 100 means that incidence rates in that deprivation quintile are greater than the Northern Ireland average.

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

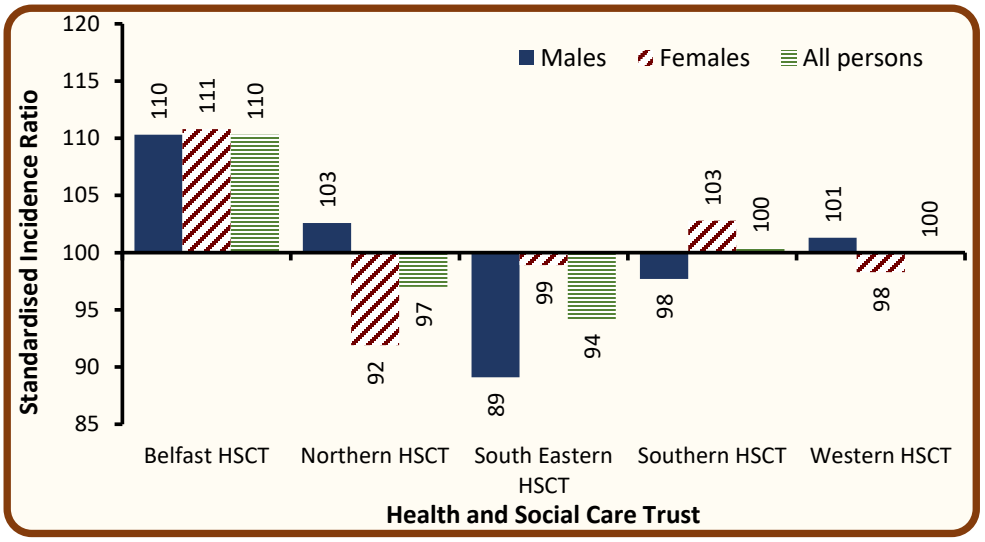


Incidence by Health and Social Care Trust (HSCT) - *Cancer of unknown primary, Cases in 2016-2020*

The annual number of cases during 2016-2020 varied in each HSCT 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 did not vary significantly from the NI average.

Health and Social Care Trust	Average cases per year		
	Male	Female	Both sexes
Belfast HSCT	17	22	39
Northern HSCT	24	24	48
South Eastern HSCT	17	20	37
Southern HSCT	16	18	34
Western HSCT	14	14	28
Northern Ireland	88	98	186



Standardised incidence ratios compare incidence rates in each HSC Trust with the Northern Ireland incidence rate. A value above 100 means that incidence rates in that HSC Trust 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.

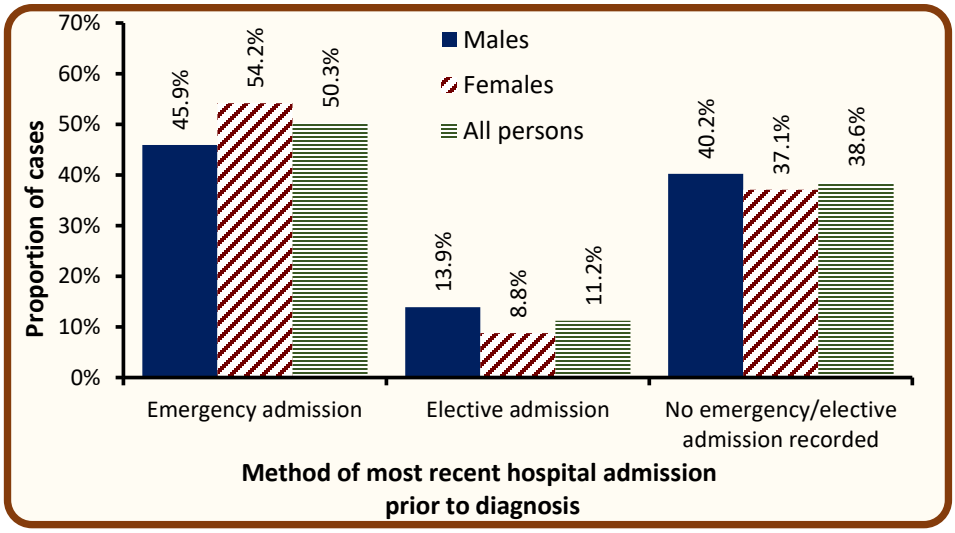
Data for Local Government Districts and Parliamentary Constituencies are available at www.qub.ac.uk/research-centres/nicr

Incidence by method of most recent admission to hospital - *Cancer of unknown primary, Cases in 2016-2020*

During 2016-2020:

- 50.3% of cases had an emergency admission to hospital recorded up to 30 days prior to their cancer diagnosis.
- 45.9% of male cases had an emergency admission up to 30 days prior to diagnosis, compared to 54.2% of female cases.
- In 38.6% of diagnosed cases there was no record of a hospital inpatient admission up to 30 days prior to diagnosis.

Method of admission	Average cases per year		
	Male	Female	Both sexes
Emergency admission	40	53	94
Elective admission	12	9	21
No emergency/elective admission recorded	35	36	72
Total	88	98	186



Admission method refers to the most recent hospital inpatient admission that a patient had prior to cancer diagnosis, regardless of reason for the admission.

Admissions are considered up to a maximum of 30 days prior to diagnosis. Admissions up to two days post diagnosis are also considered to allow for a reasonable margin or error in data recording.

The majority of patients with no inpatient admission recorded prior to diagnosis are likely to have been diagnosed via an outpatient route.

Survival

▪ 17.3% of patients were alive one year and 8.5% were alive five years from a cancer of unknown primary diagnosis in 2011-2015. (observed survival)

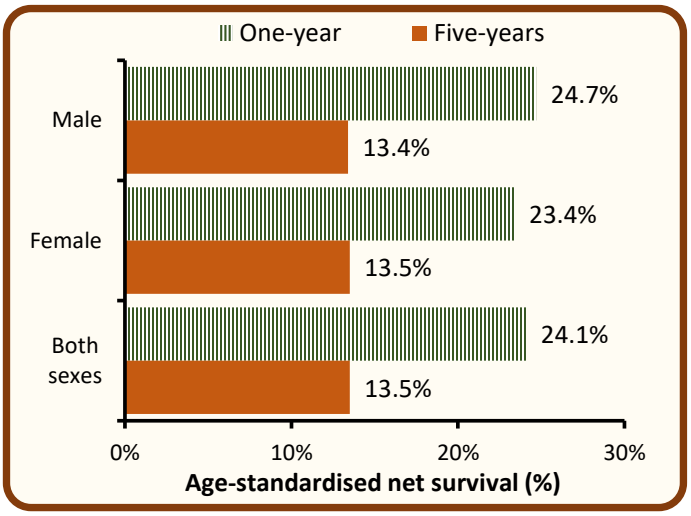
▪ Age-standardised net survival (ASNS), which removes the effect of deaths from causes unrelated to cancer, was 24.1% one year and 13.5% five years from a cancer of unknown primary diagnosis in 2011-2015.

▪ Five-year survival (ASNS) for cancer of unknown primary patients diagnosed in 2011-2015 was 13.4% among men and 13.5% among women.

Gender	Observed survival		Age-standardised net survival	
	One-year	Five-years	One-year	Five-years
Male	17.7%	9.1%	24.7%	13.4%
Female	16.9%	7.9%	23.4%	13.5%
Both sexes	17.3%	8.5%	24.1%	13.5%

Observed survival is the proportion of patients still alive one/five years after diagnosis. However, in this measure patients may have died from causes unrelated to their cancer.

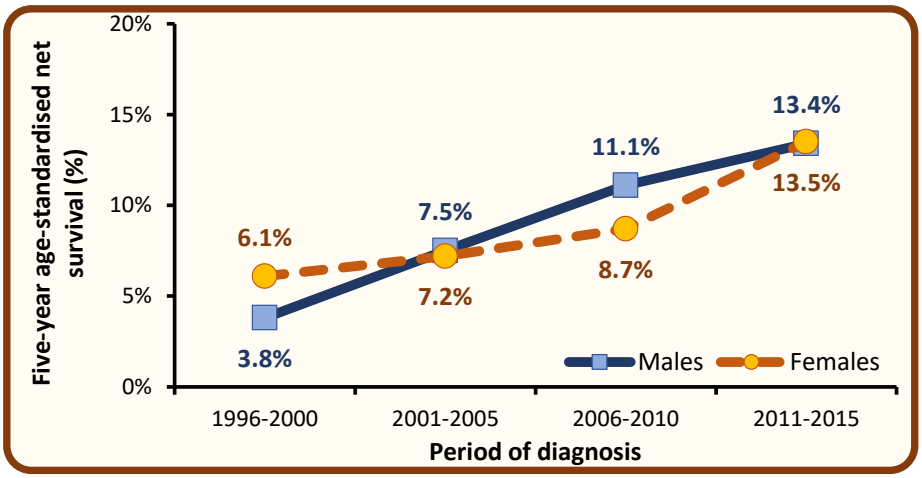
Age-standardised net survival is the proportion of patients who would survive if the patient could not die from causes unrelated to their cancer. This measure is more typically used in studies of cancer survival.



Trends in survival - *Cancer of unknown primary, Patients diagnosed in 1996-2015*

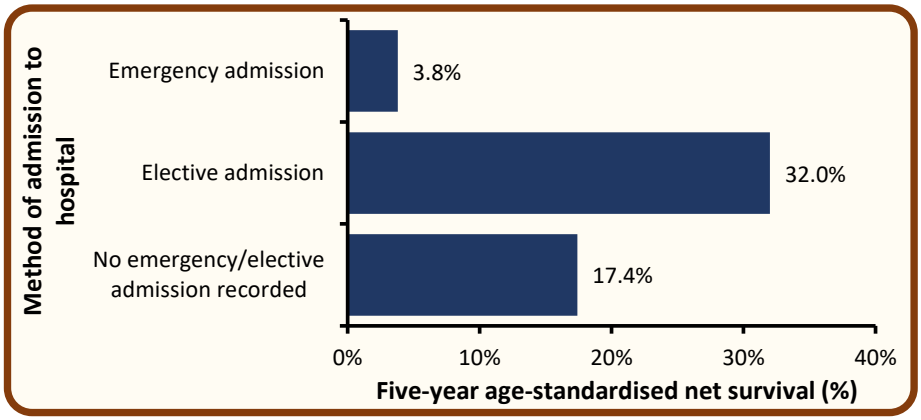
▪ Among men five-year survival (ASNS) from cancer of unknown primary increased from 11.1% in 2006-2010 to 13.4% in 2011-2015. This difference was not statistically significant.

▪ Among women five-year survival (ASNS) from cancer of unknown primary increased from 8.7% in 2006-2010 to 13.5% in 2011-2015. This difference was not statistically significant.



Survival by method of most recent admission to hospital - *Cancer of unknown primary, Patients diagnosed in 2011-2015*

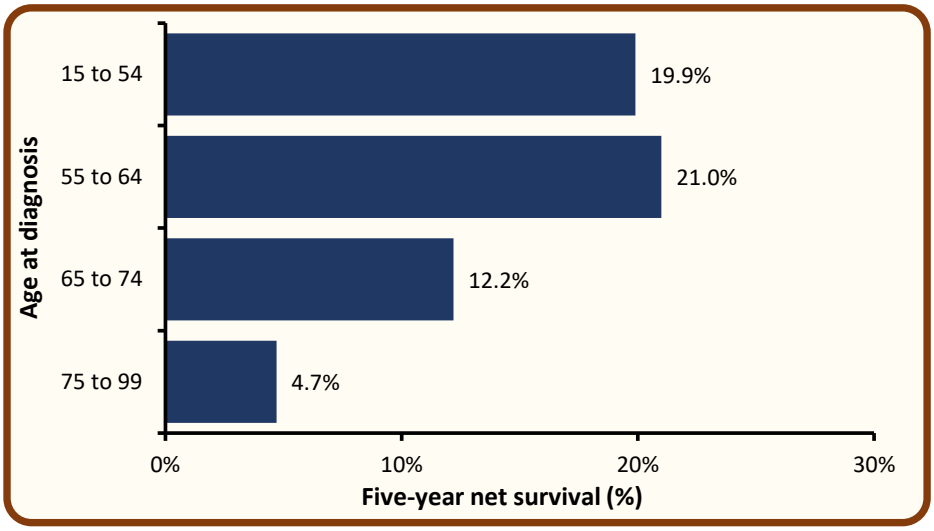
▪ Five-year survival (ASNS) among cancer of unknown primary patients who had an emergency admission to hospital up to 30 days prior to their cancer diagnosis was 3.8% compared to 32.0% among those with elective admissions and 17.4% among those who had no hospital admissions recorded up to 30 days prior to diagnosis.



Survival by age at diagnosis - *Cancer of unknown primary, Patients diagnosed in 2011-2015*

▪ Survival from cancer of unknown primary among patients diagnosed in 2011-2015 was strongly related to age with better five-year survival among younger age groups. In particular:

▪ Five-year net survival was 21.0% among patients aged 55 to 64 at diagnosis, compared to to 4.7% among those aged 75 and over.



Prevalence

▪ At the end of 2020, there were 296 people (Males: 163; Females: 133) living with cancer of unknown primary who had been diagnosed with the disease during 1996-2020.

▪ Of these, 55.1% were male, 37.8% were aged 75 and over, and 22.0% had been diagnosed in the previous year.

25-year prevalence refers to the number of cancer survivors who were alive at the end of 2020, and had been diagnosed with their cancer in the previous 25 years (i.e. 1996-2020).

Time since diagnosis	25-year prevalence								
	Aged 0-74			Aged 75+			All ages		
	Male	Female	Both sexes	Male	Female	Both sexes	Male	Female	Both sexes
0-1 year	22	19	41	12	12	24	34	31	65
1-5 years	30	18	48	12	10	22	42	28	70
5-10 years	23	18	41	11	18	29	34	36	70
10-25 years	32	22	54	21	16	37	53	38	91
0-25 years	107	77	184	56	56	112	163	133	296

Trends in 10-year prevalence - *Cancer of unknown primary, Patients alive at end of each year from 2011-2020*

▪ Among males the number of survivors from cancer of unknown primary who had been diagnosed within the previous ten years increased by 14.6% from 96 survivors in 2015 to 110 survivors in 2020.

▪ Among females the number of survivors from cancer of unknown primary who had been diagnosed within the previous ten years decreased by 2.1% from 97 survivors in 2015 to 95 survivors in 2020.

	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Male	101	101	99	94	96	92	91	99	104	110
Female	86	92	99	99	97	102	95	91	79	95
Both sexes	187	193	198	193	193	194	186	190	183	205

Mortality

- During 2016-2020 there were 108 male and 116 female deaths from cancer of unknown primary each year.
- Cancer of unknown primary made up 4.6% of all male, and 5.4% of all female cancer deaths (ex NMSC).

Deaths by age at death - *Cancer of unknown primary, Deaths in 2016-2020*

- The median age at death during 2016-2020 was 76 for men and 78 for women.
- Risk of death from cancer of unknown primary was strongly related to patient age, with 52.8% of men and 62.1% of women aged 75 years or more at time of death.
- 6.7% of cancer of unknown primary deaths occurred among those aged under 55.

Age at death	Average deaths per year		
	Male	Female	Both sexes
0 - 54	10	6	15
55 - 64	14	14	28
65 - 74	27	23	50
75 +	57	72	131
All ages	108	116	223

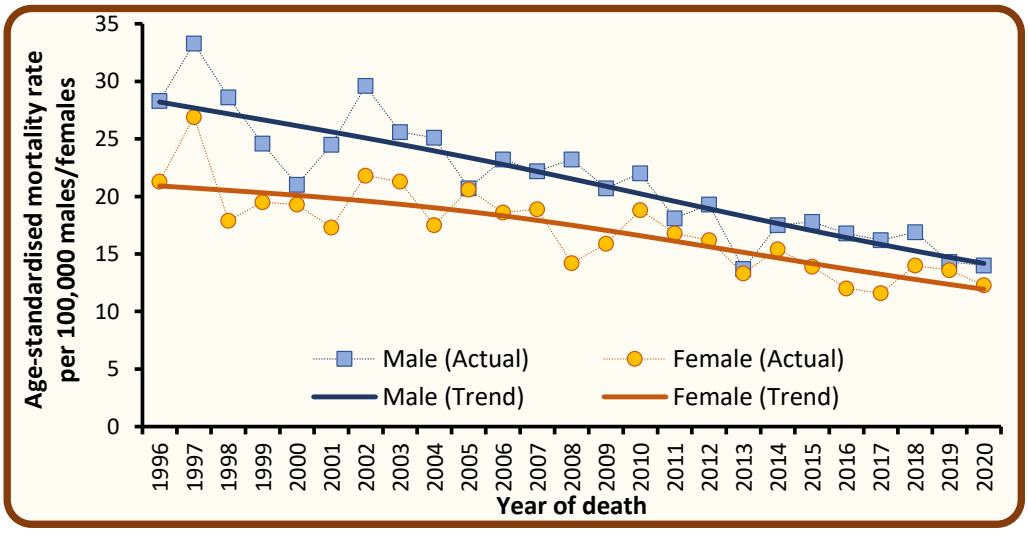
Deaths by year of death - *Cancer of unknown primary, Deaths in 2011-2020*

- Among males the number of deaths from cancer of unknown primary increased by 4.9% from an annual average of 103 deaths in 2011-2015 to 108 deaths in 2016-2020.
- Among females the number of deaths from cancer of unknown primary decreased by 7.9% from an annual average of 126 deaths in 2011-2015 to 116 deaths in 2016-2020.

	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Male	102	111	82	107	113	108	108	119	102	102
Female	136	134	110	130	121	107	104	127	125	115
Both sexes	238	245	192	237	234	215	212	246	227	217

Trends in age-standardised mortality rates - *Cancer of unknown primary, Deaths in 1996-2020*

- Among males age-standardised mortality rates from cancer of unknown primary decreased by 9.8% between 2011-2015 and 2016-2020 from 17.3 to 15.6 deaths per 100,000 persons years. This difference was not statistically significant.
- Among females age-standardised mortality rates from cancer of unknown primary decreased by 15.9% between 2011-2015 and 2016-2020 from 15.1 to 12.7 deaths per 100,000 persons years. This difference was statistically significant.



Mortality data are provided by the Northern Ireland General Registrar Office via the Department of Health.

Counts of the number of deaths are based upon the year that death occurred, and upon the primary cause of death only.

Age-standardised mortality rates remove changes over time caused by population growth and/or ageing.

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 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 are assigned based on a patient's postcode of usual residence at diagnosis using the Jan 2021 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).

A **crude incidence/mortality rate** is 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.

An **age-standardised incidence/mortality rate** per 100,000 person years is an estimate 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.

A **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 are a measure of the precision of a statistic (e.g. colorectal 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. cervical 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 2020 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.

Observed survival refers to the proportion of patients who survive a specified amount of time from their date of diagnosis. Observed survival considers death from any cause and is not adjusted for the age of the patient. Cause of death may be unrelated to the cancer the patient has been diagnosed with.

Net Survival is an estimate of survival where the effect on survival of background population mortality rates has been removed. It represents the [theoretical] survival of cancer patients if they could only die from cancer-related causes. Age-standardised net survival estimates are the estimates that would occur if that population of cancer patients had a standard population age structure. The age groups and weights used here are those used by international studies such as EUROCARE, an international study group that compares cancer survival among European countries. However, due to the small number of patients in NI, the first two age categories in the standard population are combined.

Mortality: Information relating to cancer mortality is sourced from the General Registrar Office (GRONI) via the Department of Health (NI). Results are based upon the date on which death occurs, and may thus differ slightly than those produced by the Northern Ireland Statistics and Research Agency (NISRA), which produces deaths data based upon the date on which the death is registered with GRONI.