

# Cancer of unknown primary

Patients diagnosed 1993-2019  
(ICD10: C77-C80)

## Further information

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Further data is available at: [www.qub.ac.uk/research-centres/nicr](http://www.qub.ac.uk/research-centres/nicr)

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## 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 2015-2019:

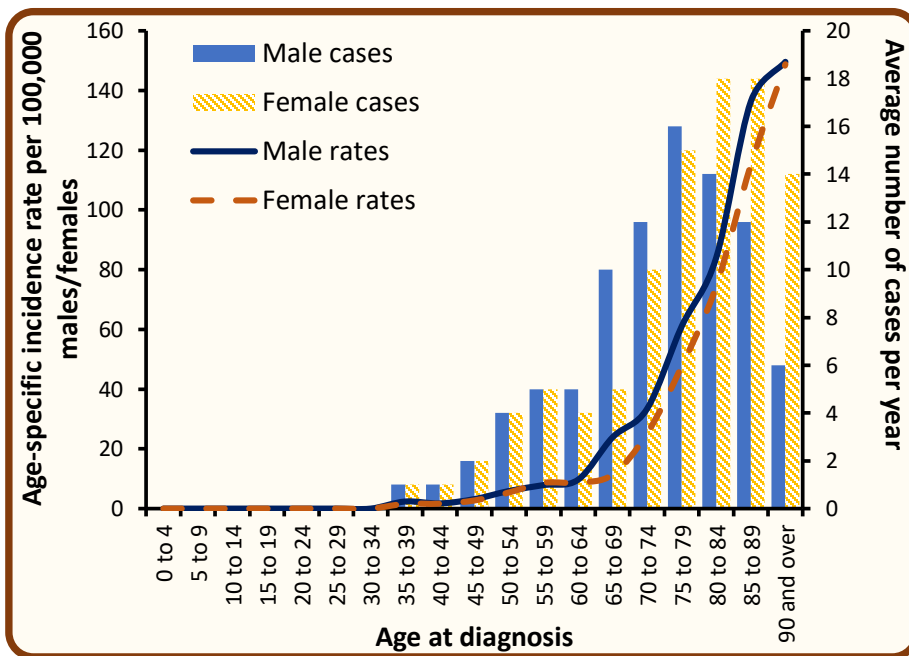
- There were 89 male and 97 female cases of cancer of unknown primary diagnosed each year.
- Cancer of unknown primary made up 1.8% of all male, and 2.0% of all female cancers (ex NMSC).
- The risk of developing cancer of unknown primary before the age of 75 was 1 in 226.8 for men and 1 in 305.1 for women, while before the age of 85 the risk was 1 in 86.1 for men and 1 in 107.0 for women.

## Incidence by age at diagnosis - Cancer of unknown primary, Cases in 2015-2019

During 2015-2019:

- The median age at diagnosis was 75 for men and 80 for women.
- Cancer risk varied by age, with 53.9% of men and 67.0% of women aged 75 years or more at diagnosis.
- 8.1% of cases were diagnosed among those aged under 55.

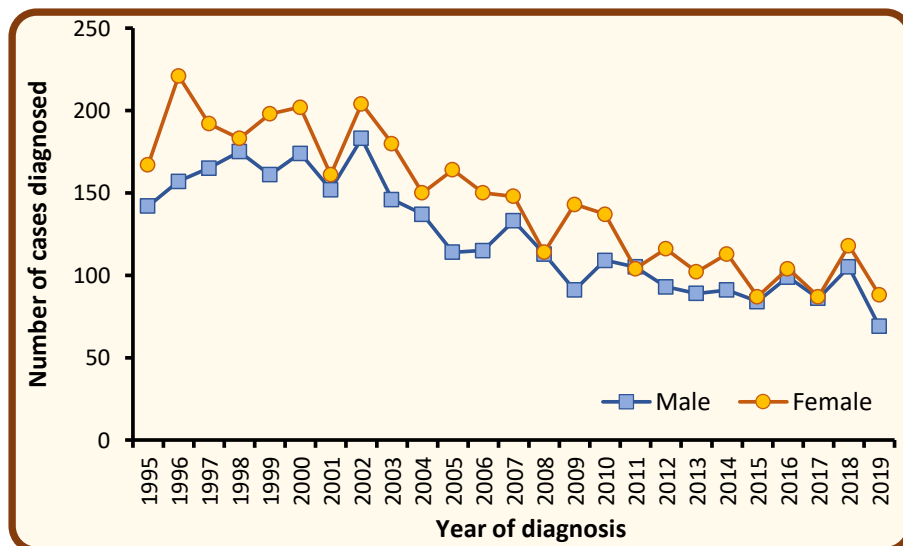
Age at diagnosis	Average cases per year		
	Male	Female	Both sexes
0 - 54	8	8	15
54 - 64	10	9	19
65 - 74	22	15	39
75 +	48	65	112
<b>All ages</b>	<b>89</b>	<b>97</b>	<b>185</b>



## Incidence by year of diagnosis - Cancer of unknown primary, Cases in 1995-2019

- Among males the number of cases of cancer of unknown primary decreased by 8.2% from an annual average of 97 cases in 2010-2014 to 89 cases in 2015-2019.
- Among females the number of cases of cancer of unknown primary decreased by 14.9% from an annual average of 114 cases in 2010-2014 to 97 cases in 2015-2019.

Year of diagnosis	Male	Female	Both sexes
2010	109	137	246
2011	105	104	209
2012	93	116	209
2013	89	102	191
2014	91	113	204
2015	84	87	171
2016	99	104	203
2017	86	87	173
2018	105	118	223
2019	69	88	157

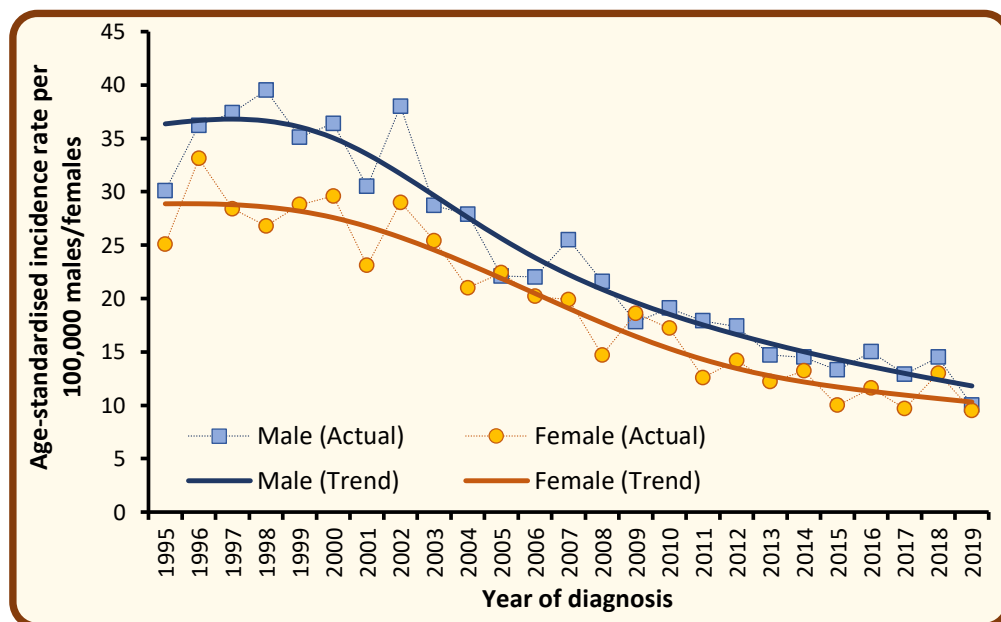


Note: Annual averages have been rounded to the nearest integer. Sums of numbers in table rows or columns may thus differ slightly from the given total.

NMSC: Non-melanoma skin cancer

## Trends in age-standardised incidence rates - Cancer of unknown primary, Cases in 1995-2019

- Among males age-standardised incidence rates of cancer of unknown primary decreased by 21.6% from 16.7 per 100,000 person years in 2010-2014 to 13.1 cases per 100,000 persons years in 2015-2019. This difference was statistically significant.
- Among females age-standardised incidence rates of cancer of unknown primary decreased by 22.3% from 13.9 per 100,000 person years in 2010-2014 to 10.8 cases per 100,000 persons years in 2015-2019. This difference was 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 2015-2019

The annual number of cases during 2015-2019 varied in each deprivation quintile due to variations in population size and age.

After accounting for these factors, incidence rates:

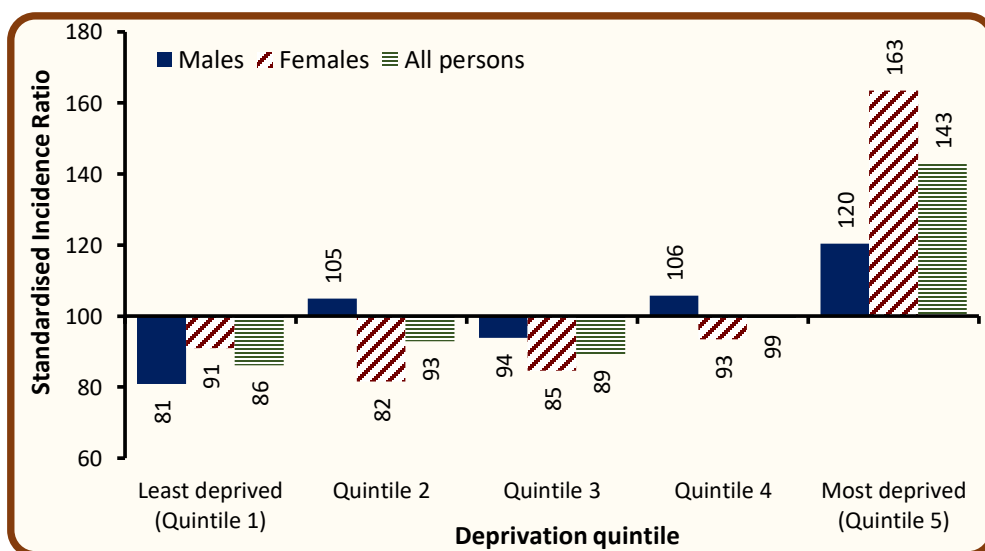
- in the most socio-economically deprived areas were 42.9% higher than the NI average.
- in the least socio-economically deprived areas were 13.9% lower than the NI average.

Deprivation quintile	Average cases per year		
	Male	Female	Both sexes
Least deprived (Quintile 1)	15	19	35
Quintile 2	20	16	36
Quintile 3	18	17	35
Quintile 4	19	18	37
Most deprived (Quintile 5)	17	26	43
<b>Northern Ireland</b>	<b>89</b>	<b>97</b>	<b>185</b>

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.



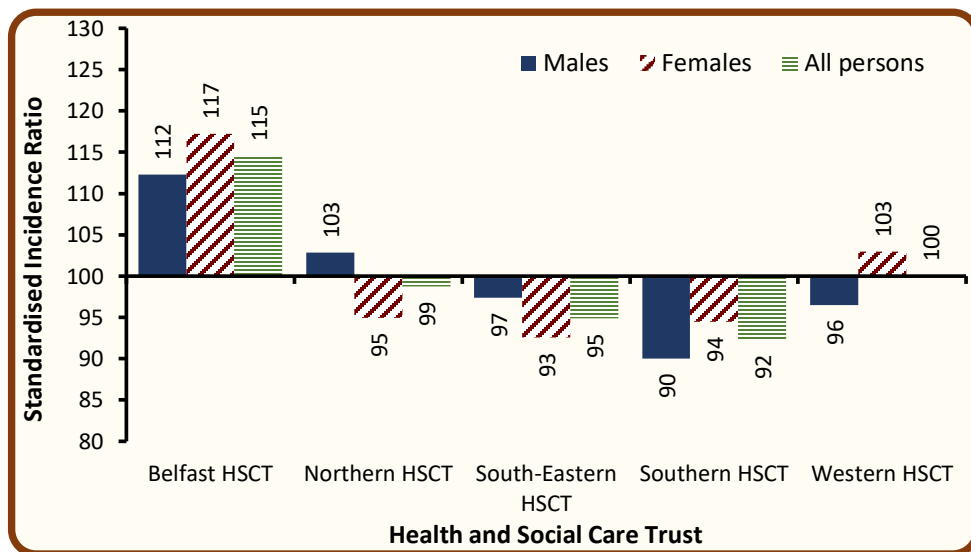
## Incidence by Health and Social Care Trust (HSCT) - Cancer of unknown primary, Cases in 2015-2019

The annual number of cases during 2015-2019 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	18	23	41
Northern HSCT	24	24	49
South-Eastern HSCT	18	19	37
Southern HSCT	15	16	31
Western HSCT	13	14	28
<b>Northern Ireland</b>	<b>89</b>	<b>97</b>	<b>185</b>



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.

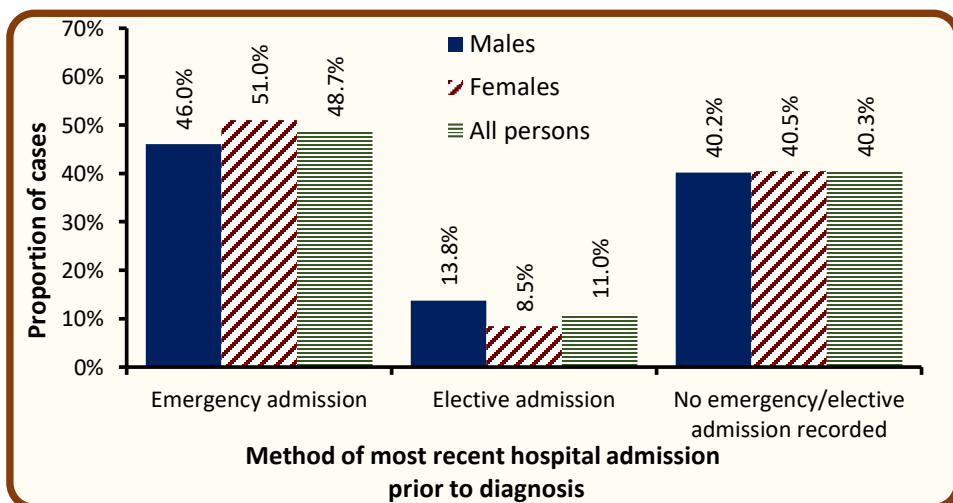
Data for Local Government Districts and Parliamentary Constituencies are available at [www.qub.ac.uk/research-centres/nicr](http://www.qub.ac.uk/research-centres/nicr)

## Incidence by method of most recent admission to hospital - Cancer of unknown primary, Cases in 2015-2019

During 2015-2019:

- 48.7% of cases had an emergency admission to hospital recorded up to 30 days prior to their cancer diagnosis.
- 46.0% of male cases had an emergency admission up to 30 days prior to diagnosis, compared to 51.0% of female cases.
- In 40.3% 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	41	49	90
Elective admission	12	8	20
No emergency/elective admission recorded	36	39	75
<b>Total</b>	<b>89</b>	<b>97</b>	<b>185</b>



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.

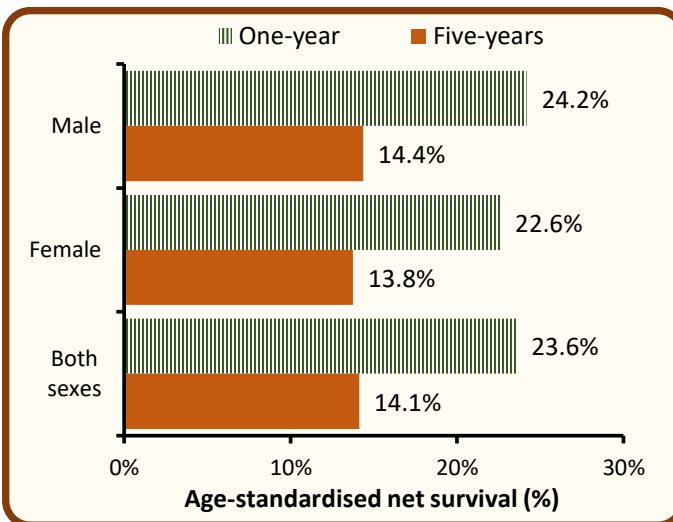
## Survival

- 16.4% of patients were alive one year and 8.4% were alive five years from a cancer of unknown primary diagnosis in 2010-2014. (observed survival)
- Age-standardised net survival (ASNS), which removes the effect of deaths from causes unrelated to cancer, was 23.6% one year and 14.1% five years from a cancer of unknown primary diagnosis in 2010-2014.
- Five-year survival (ASNS) for cancer of unknown primary patients diagnosed in 2010-2014 was 14.4% among men and 13.8% among women.

Gender	Observed survival		Age-standardised net survival	
	One-year	Five-years	One-year	Five-years
Male	17.7%	9.8%	24.2%	14.4%
Female	15.3%	7.2%	22.6%	13.8%
Both sexes	16.4%	8.4%	23.6%	14.1%

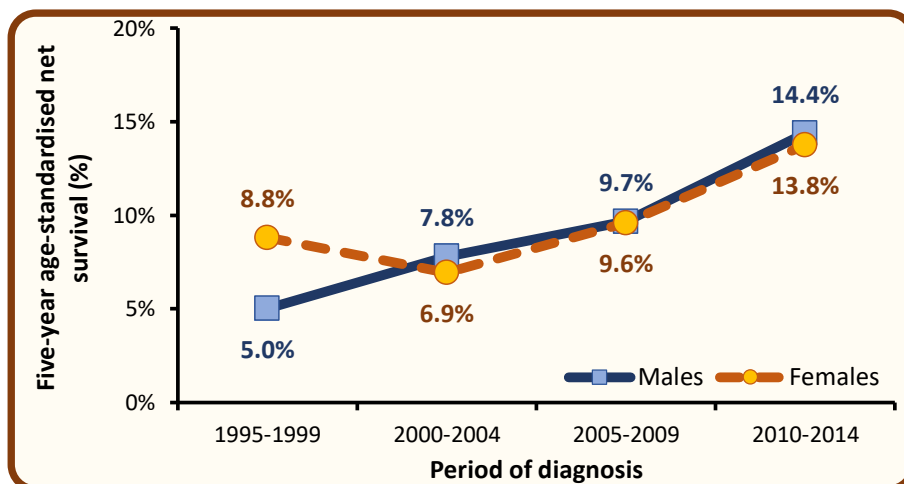
Observed survival is the proportion of patients still alive one/five years after diagnosis. However, in this measure patients may have died from causes unrelated to their cancer.

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.



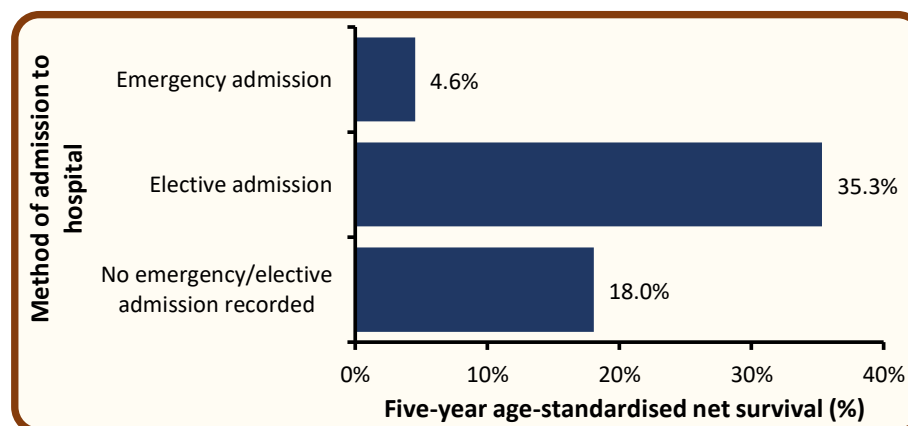
### Trends in survival - Cancer of unknown primary, Patients diagnosed in 1995-2014

- Among men five-year survival (ASNS) from cancer of unknown primary increased from 9.7% in 2005-2009 to 14.4% in 2010-2014. This difference was not statistically significant.
- Among women five-year survival (ASNS) from cancer of unknown primary increased from 9.6% in 2005-2009 to 13.8% in 2010-2014. This difference was not statistically significant.



### Survival by method of most recent admission to hospital - Cancer of unknown primary, Patients diagnosed in 2010-2014

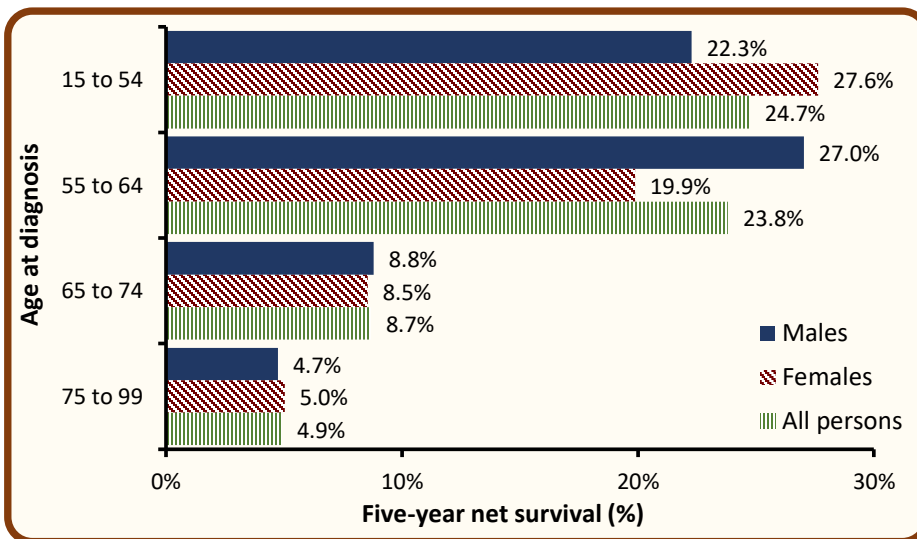
- Five-year survival (ASNS) among cancer of unknown primary patients who had an emergency admission to hospital up to 30 days prior to their cancer diagnosis was 4.6% compared to 35.3% among those with elective admissions and 18.0% among those who had no hospital admissions recorded up to 30 days prior to diagnosis.



**Survival by age at diagnosis - Cancer of unknown primary, Patients diagnosed in 2010-2014**

Survival from cancer of unknown primary among patients diagnosed in 2010-2014 was strongly related to age with better five-year survival among younger age groups. In particular:

- Five-year net survival was 24.7% among patients aged 15 to 54 at diagnosis, compared to 4.9% among those aged 75 and over.
- Five-year net survival among patients aged 75 and over was 4.7% for men and 5.0% for women.



**Prevalence**

- At the end of 2019, there were 315 people (Males: 172; Females: 143) living with cancer of unknown primary who had been diagnosed with the disease during 1995-2019.
- Of these, 54.6% were male, 40.6% were aged 75 and over, and 15.6% had been diagnosed in the previous year.

25-year prevalence refers to the number of cancer survivors who were alive at the end of 2019, and had been diagnosed with their cancer in the previous 25 years (i.e. 1995-2019).

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	18	14	32	10	7	17	28	21	49
1-5 years	28	20	48	15	8	23	43	28	71
5-10 years	29	22	51	10	14	24	39	36	75
10-25 years	28	28	56	34	30	64	62	58	120
0-25 years	103	84	187	69	59	128	172	143	315

**Trends in 10-year prevalence - Cancer of unknown primary, Patients alive at end of each year from 2010-2019**

- Among males the number of survivors from cancer of unknown primary who had been diagnosed within the previous ten years increased by 12.2% from 98 survivors in 2014 to 110 survivors in 2019.
- Among females the number of survivors from cancer of unknown primary who had been diagnosed within the previous ten years decreased by 19.0% from 105 survivors in 2014 to 85 survivors in 2019.

	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Male	101	107	106	103	98	99	95	94	103	110
Female	108	94	99	105	105	103	106	99	94	85
Both sexes	209	201	205	208	203	202	201	193	197	195

## Mortality

- During 2015-2019 there were 110 male and 117 female deaths from cancer of unknown primary each year.
- Cancer of unknown primary made up 4.7% of all male, and 5.6% of all female cancer deaths (ex NMSC).

### Deaths by age at death - Cancer of unknown primary, Deaths in 2015-2019

- The median age at death during 2015-2019 was 76 for men and 79 for women.
- Risk of death from cancer of unknown primary was strongly related to patient age, with 54.5% of men and 61.5% of women aged 75 years or more at time of death.
- 6.6% 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	9	6	15
55 - 64	14	14	28
65 - 74	26	24	50
75 +	60	72	132
<b>All ages</b>	<b>110</b>	<b>117</b>	<b>226</b>

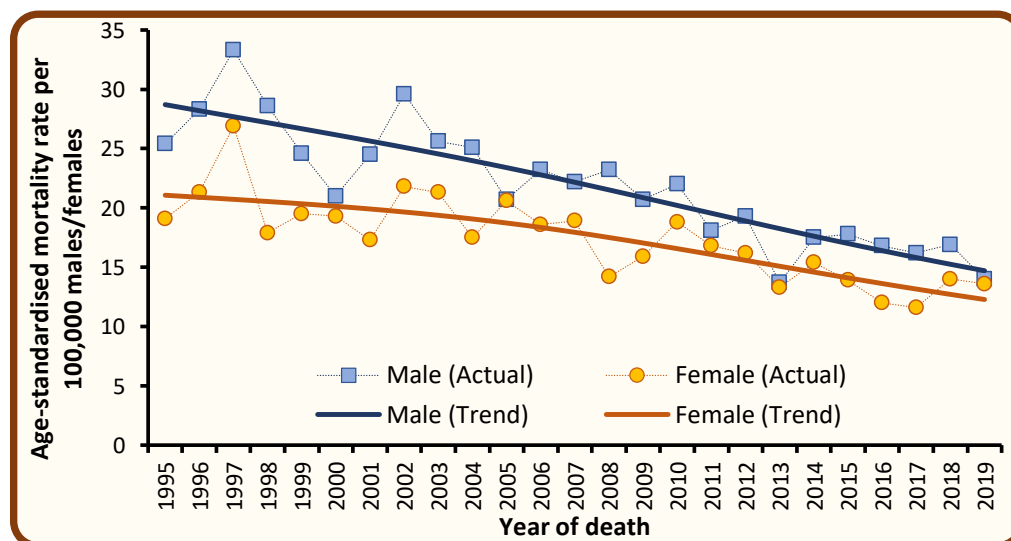
### Deaths by year of death - Cancer of unknown primary, Deaths in 2010-2019

- Among males the number of deaths from cancer of unknown primary increased by 3.8% from an annual average of 106 deaths in 2010-2014 to 110 deaths in 2015-2019.
- Among females the number of deaths from cancer of unknown primary decreased by 11.4% from an annual average of 132 deaths in 2010-2014 to 117 deaths in 2015-2019.

	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
<b>Male</b>	126	102	111	82	107	113	108	108	119	100
<b>Female</b>	148	136	134	110	130	121	107	104	127	125
<b>Both sexes</b>	274	238	245	192	237	234	215	212	246	225

### Trends in age-standardised mortality rates - Cancer of unknown primary, Deaths in 1995-2019

- Among males age-standardised mortality rates from cancer of unknown primary decreased by 9.9% between 2010-2014 and 2015-2019 from 18.1 to 16.3 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 19.3% between 2010-2014 and 2015-2019 from 16.1 to 13.0 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](http://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](http://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](http://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 2019 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.