

# Bladder cancer

Patients diagnosed 1993-2019  
(ICD10: C67)

## 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 Northern Ireland Cancer Registry (NICR) is funded by the Public Health Agency and is based in Queen's University, Belfast. NICR uses data provided by patients and collected by the health service as part of their care and support.

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:

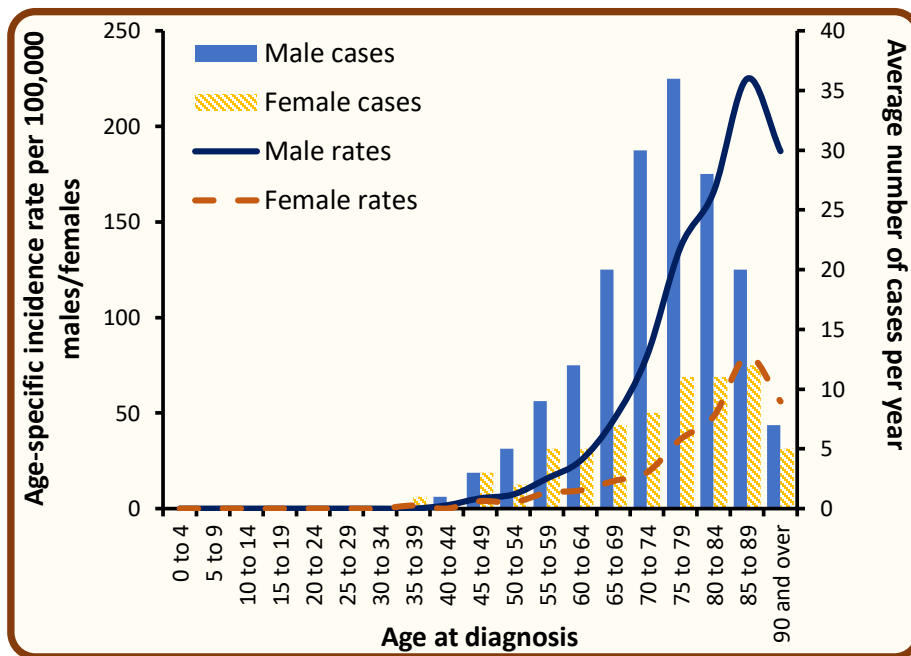
- There were 172 male and 71 female cases of bladder cancer diagnosed each year.
- Bladder cancer made up 3.5% of all male, and 1.4% of all female cancers (ex NMSC).
- The risk of developing bladder cancer before the age of 75 was 1 in 110.5 for men and 1 in 330.3 for women, while before the age of 85 the risk was 1 in 41.8 for men and 1 in 138.3 for women.

## Incidence by age at diagnosis - Bladder cancer, Cases in 2015-2019

During 2015-2019:

- The median age at diagnosis was 75 for men and 77 for women.
- Cancer risk increased with age, with 52.9% of men and 54.9% of women aged 75 years or more at diagnosis.
- 6.2% of cases were diagnosed among those aged under 55.

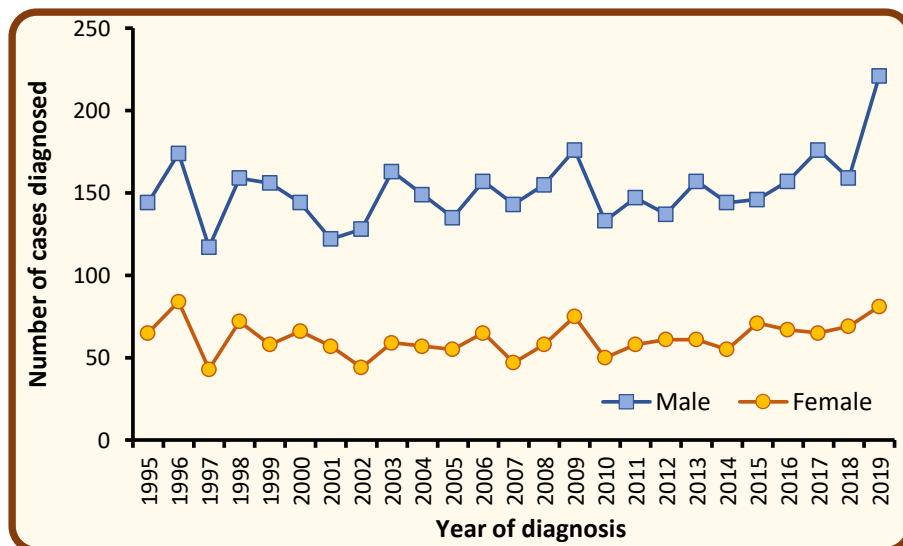
Age at diagnosis	Average cases per year		
	Male	Female	Both sexes
0 - 54	9	6	15
54 - 64	21	10	31
65 - 74	50	15	64
75 +	91	39	131
<b>All ages</b>	<b>172</b>	<b>71</b>	<b>242</b>



## Incidence by year of diagnosis - Bladder cancer, Cases in 1995-2019

- Among males the number of cases of bladder cancer increased by 19.4% from an annual average of 144 cases in 2010-2014 to 172 cases in 2015-2019.
- Among females the number of cases of bladder cancer increased by 24.6% from an annual average of 57 cases in 2010-2014 to 71 cases in 2015-2019.

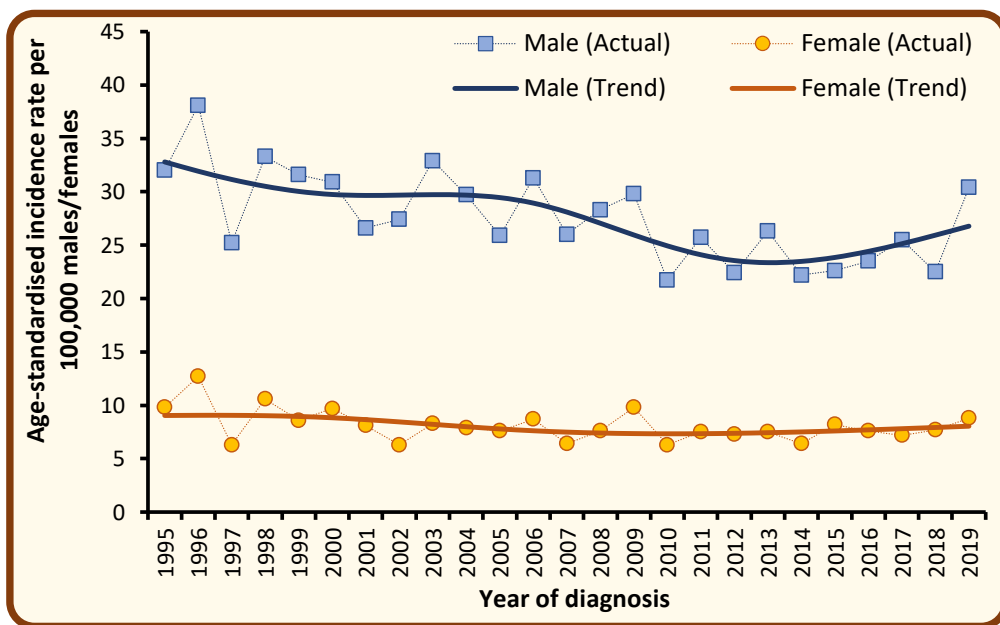
Year of diagnosis	Male	Female	Both sexes
2010	133	50	183
2011	147	58	205
2012	137	61	198
2013	157	61	218
2014	144	55	199
2015	146	71	217
2016	157	67	224
2017	176	65	241
2018	159	69	228
2019	221	81	302



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 - Bladder cancer, Cases in 1995-2019

- Among males age-standardised incidence rates of bladder cancer increased by 5.5% from 23.7 per 100,000 person years in 2010-2014 to 25.0 cases per 100,000 persons years in 2015-2019. This difference was not statistically significant.
- Among females age-standardised incidence rates of bladder cancer increased by 12.9% from 7.0 per 100,000 person years in 2010-2014 to 7.9 cases per 100,000 persons years in 2015-2019. 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 - Bladder cancer, 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:

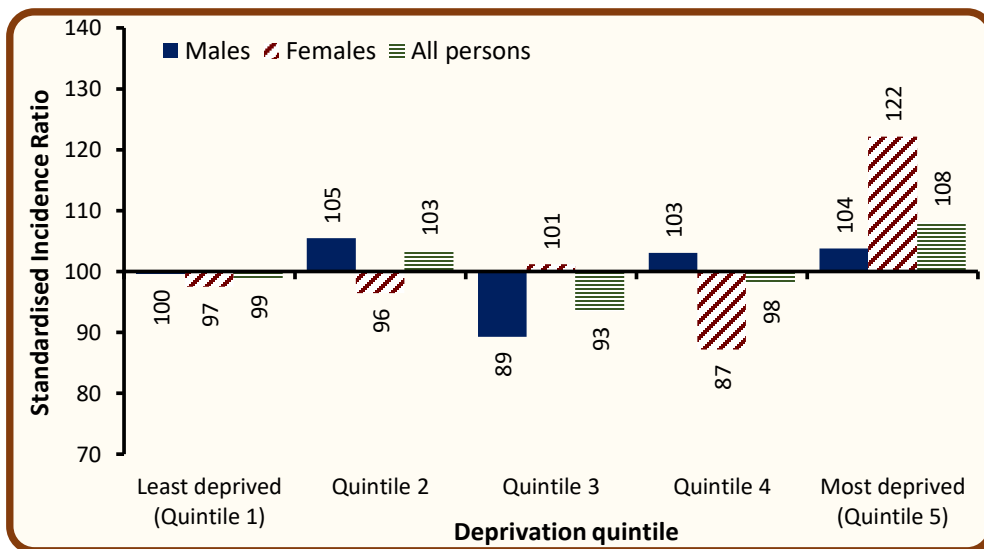
- in the most socio-economically deprived areas did not vary significantly from the NI average.
- in the least socio-economically deprived areas did not vary significantly from the NI average.

Deprivation quintile	Average cases per year		
	Male	Female	Both sexes
Least deprived (Quintile 1)	37	15	52
Quintile 2	39	14	53
Quintile 3	33	15	48
Quintile 4	35	12	48
Most deprived (Quintile 5)	28	14	43
<b>Northern Ireland</b>	<b>172</b>	<b>71</b>	<b>242</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.



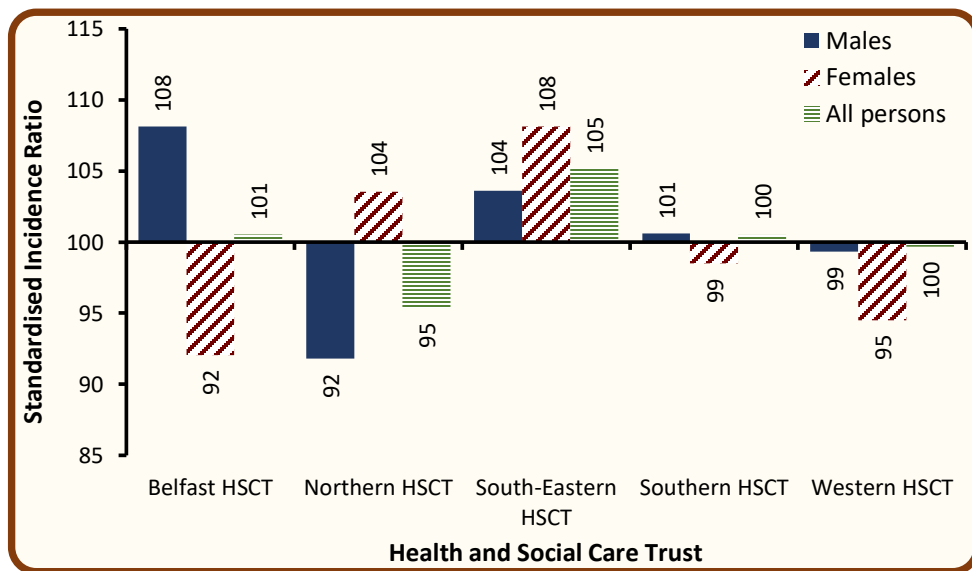
## Incidence by Health and Social Care Trust (HSCT) - Bladder cancer, Cases in 2015-2019

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	33	13	46
Northern HSCT	42	19	62
South-Eastern HSCT	38	16	54
Southern HSCT	32	13	45
Western HSCT	27	10	37
<b>Northern Ireland</b>	<b>172</b>	<b>71</b>	<b>242</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.

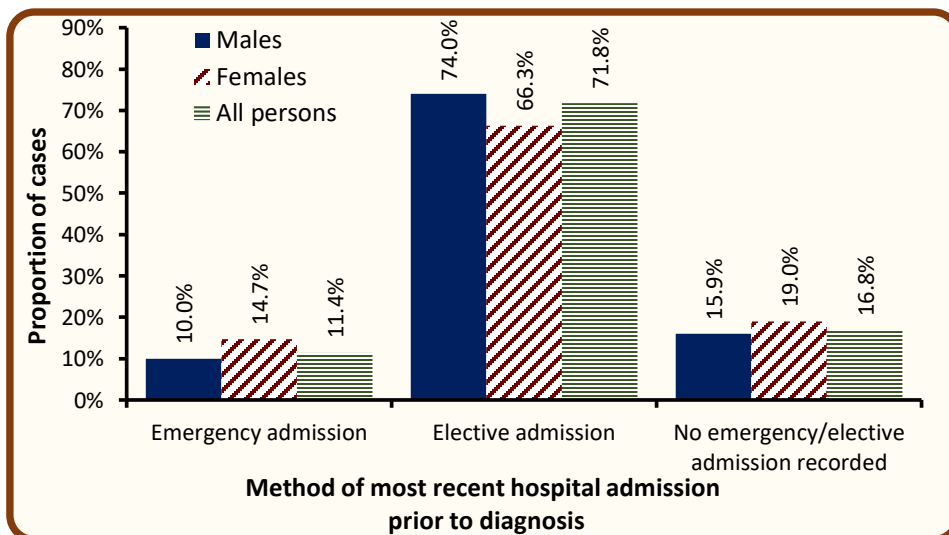
Data for Local Government Districts and Parliamentary Constituencies are available at [www.qub.ac.uk/research-centres/nicr](http://www.qub.ac.uk/research-centres/nicr)

## Incidence by method of most recent admission to hospital - Bladder cancer, Cases in 2015-2019

During 2015-2019:

- 11.4% of cases had an emergency admission to hospital recorded up to 30 days prior to their cancer diagnosis.
- 10.0% of male cases had an emergency admission up to 30 days prior to diagnosis, compared to 14.7% of female cases.
- In 16.8% 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	17	10	28
Elective admission	127	47	174
No emergency/elective admission recorded	27	13	41
<b>Total</b>	<b>172</b>	<b>71</b>	<b>242</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.

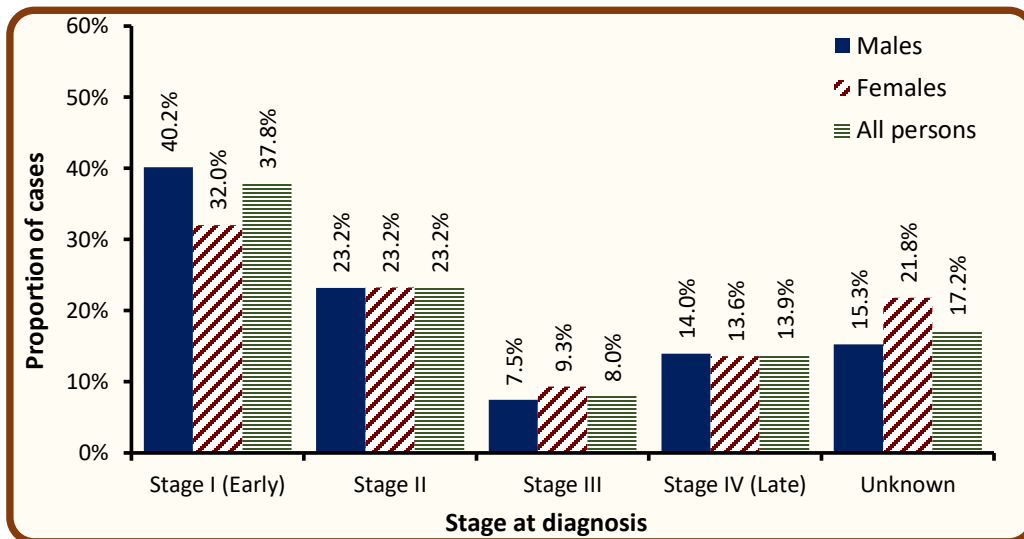
The majority of patients with no inpatient admission recorded prior to diagnosis are likely to have been diagnosed via an outpatient route.

## Incidence by stage at diagnosis - Bladder cancer, Cases in 2015-2019

During 2015-2019:

- 82.8% of cases diagnosed had a stage assigned.
- 37.8% of cases were diagnosed at stage I. (45.6% of staged cases)
- 13.9% of cases were diagnosed at stage IV. (16.7% of staged cases)
- Among cases which were staged, 16.5% of male cases were diagnosed at stage IV, compared to 17.4% of female cases.

Stage at diagnosis	Average cases per year		
	Male	Female	Both sexes
Stage I (Early)	69	23	92
Stage II	40	16	56
Stage III	13	7	19
Stage IV (Late)	24	10	34
Unknown	26	15	42
<b>All stages</b>	<b>172</b>	<b>71</b>	<b>242</b>



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).

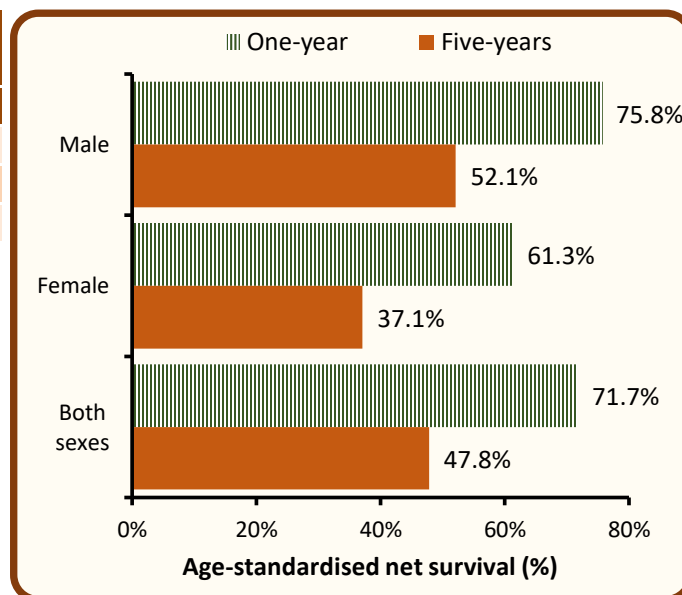
## Survival

- 65.0% of patients were alive one year and 35.0% were alive five years from a bladder cancer diagnosis in 2010-2014. (observed survival)
- Age-standardised net survival (ASNS), which removes the effect of deaths from causes unrelated to cancer, was 71.7% one year and 47.8% five years from a bladder cancer diagnosis in 2010-2014.
- Five-year survival (ASNS) for bladder cancer patients diagnosed in 2010-2014 was 52.1% among men and 37.1% among women.

Gender	Observed survival		Age-standardised net survival	
	One-year	Five-years	One-year	Five-years
Male	69.1%	37.7%	75.8%	52.1%
Female	54.6%	28.0%	61.3%	37.1%
Both sexes	65.0%	35.0%	71.7%	47.8%

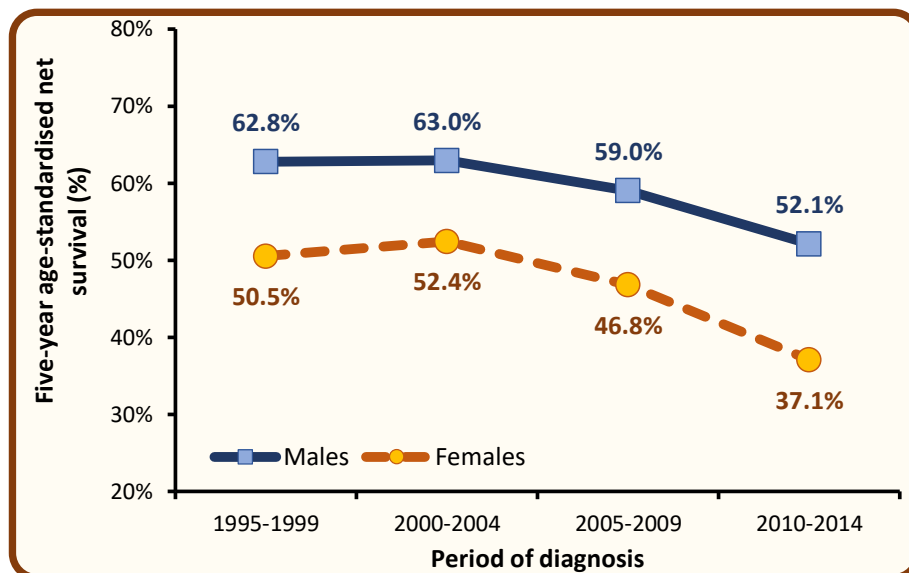
Observed survival is the proportion of patients still alive one/five years after diagnosis. However, in this measure patients may have died from causes unrelated to their cancer.

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.



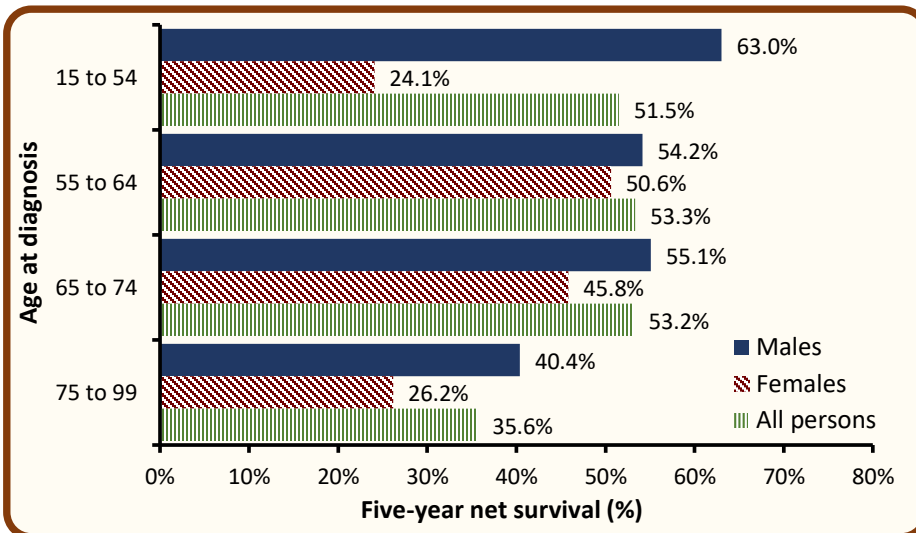
## Trends in survival - Bladder cancer, Patients diagnosed in 1995-2014

- Among men five-year survival (ASNS) from bladder cancer decreased from 59.0% in 2005-2009 to 52.1% in 2010-2014. This difference was not statistically significant.
- Among women five-year survival (ASNS) from bladder cancer decreased from 46.8% in 2005-2009 to 37.1% in 2010-2014. This difference was not statistically significant.
- Decreases over time are likely to be related to how bladder cancer is classified and diagnosed.



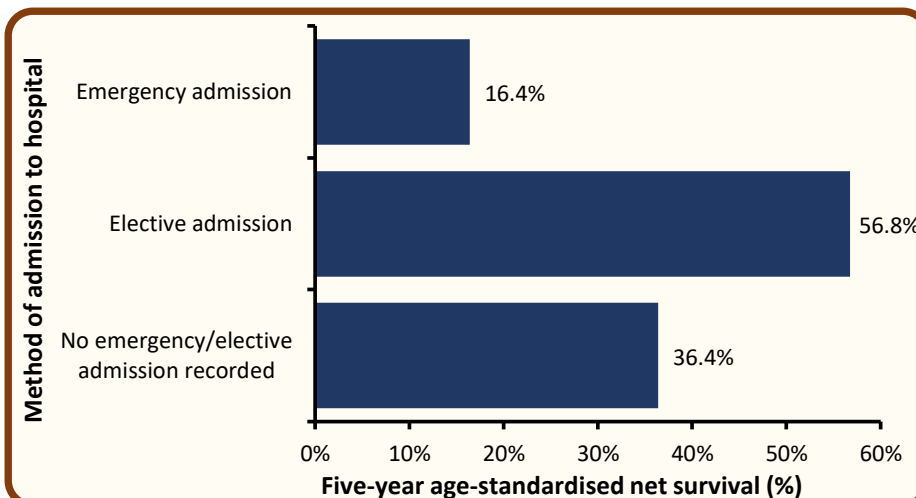
## Survival by age at diagnosis - Bladder cancer, Patients diagnosed in 2010-2014

- Survival from bladder cancer among patients diagnosed in 2010-2014 varied by age with five-year survival poorer among older people (aged 75 and over). In particular:
  - Five-year net survival ranged from 53.3% among patients aged 55 to 64 at diagnosis to 35.6% among those aged 75 and over.
  - Five-year net survival among patients aged 75 and over was 40.4% for men and 26.2% for women.



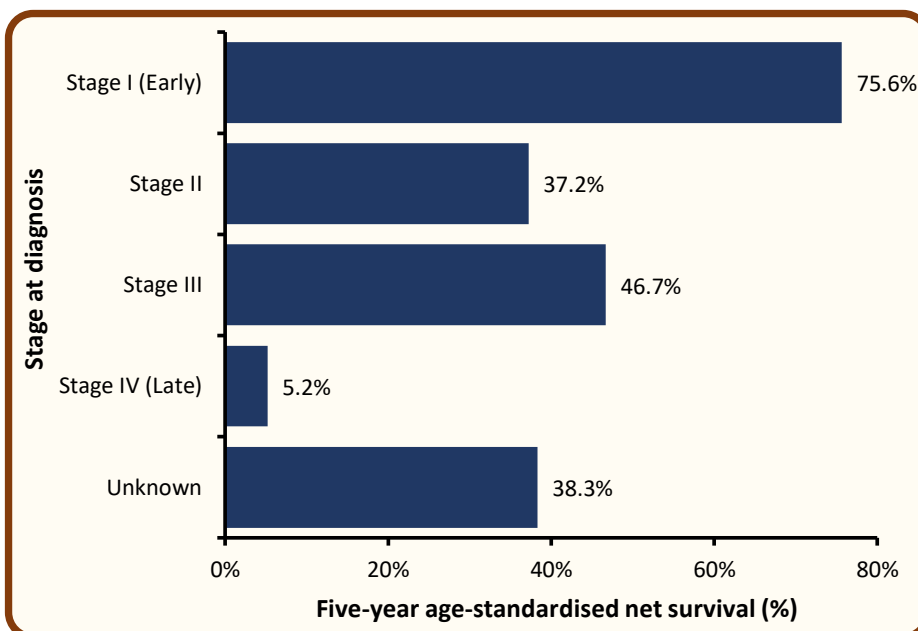
## Survival by method of most recent admission to hospital - Bladder cancer, Patients diagnosed in 2010-2014

- Five-year survival (ASNS) among bladder cancer patients who had an emergency admission to hospital up to 30 days prior to their cancer diagnosis was 16.4% compared to 56.8% among those with elective admissions and 36.4% among those who had no hospital admissions recorded up to 30 days prior to diagnosis.



## Survival by stage at diagnosis - Bladder cancer, Patients diagnosed in 2010-2014

- Stage at diagnosis is one of the most important factors in bladder cancer survival with five-year survival decreasing as stage increases.
- Five-year survival (ASNS) ranged from 75.6% for early stage (stage I) disease to 5.2% for late stage (stage IV) disease.
- Five-year survival (ASNS) for unstaged cancer was 38.3%.



## Prevalence

- At the end of 2019, there were 1,470 people (Males: 1,104; Females: 366) living with bladder cancer who had been diagnosed with the disease during 1995-2019.
- Of these, 75.1% were male, 55.3% were aged 75 and over, and 17.6% 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	87	37	124	107	28	135	194	65	259
1-5 years	156	52	208	162	57	219	318	109	427
5-10 years	99	25	124	116	43	159	215	68	283
10-25 years	156	45	201	221	79	300	377	124	501
0-25 years	498	159	657	606	207	813	1,104	366	1,470

## Trends in 10-year prevalence - Bladder cancer, Patients alive at end of each year from 2010-2019

- Among males the number of survivors from bladder cancer who had been diagnosed within the previous ten years increased by 4.3% from 697 survivors in 2014 to 727 survivors in 2019.
- Among females the number of survivors from bladder cancer who had been diagnosed within the previous ten years increased by 19.8% from 202 survivors in 2014 to 242 survivors in 2019.

	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Male	720	717	713	690	697	688	669	688	679	727
Female	226	230	225	224	202	214	221	226	225	242
Both sexes	946	947	938	914	899	902	890	914	904	969

# Mortality

- During 2015-2019 there were 90 male and 41 female deaths from bladder cancer each year.
- Bladder cancer made up 3.9% of all male, and 1.9% of all female cancer deaths (ex NMSC).

## Deaths by age at death - Bladder cancer, Deaths in 2015-2019

- The median age at death during 2015-2019 was 80 for men and 83 for women.
- Risk of death from bladder cancer was strongly related to age, with 68.9% of men and 73.2% of women aged 75 years or more at time of death.
- 4.6% of bladder cancer deaths occurred among those aged under 55.

Age at death	Average deaths per year		
	Male	Female	Both sexes
0 - 54	4	2	6
55 - 64	8	3	10
65 - 74	17	5	23
75 +	62	30	92
<b>All ages</b>	<b>90</b>	<b>41</b>	<b>131</b>

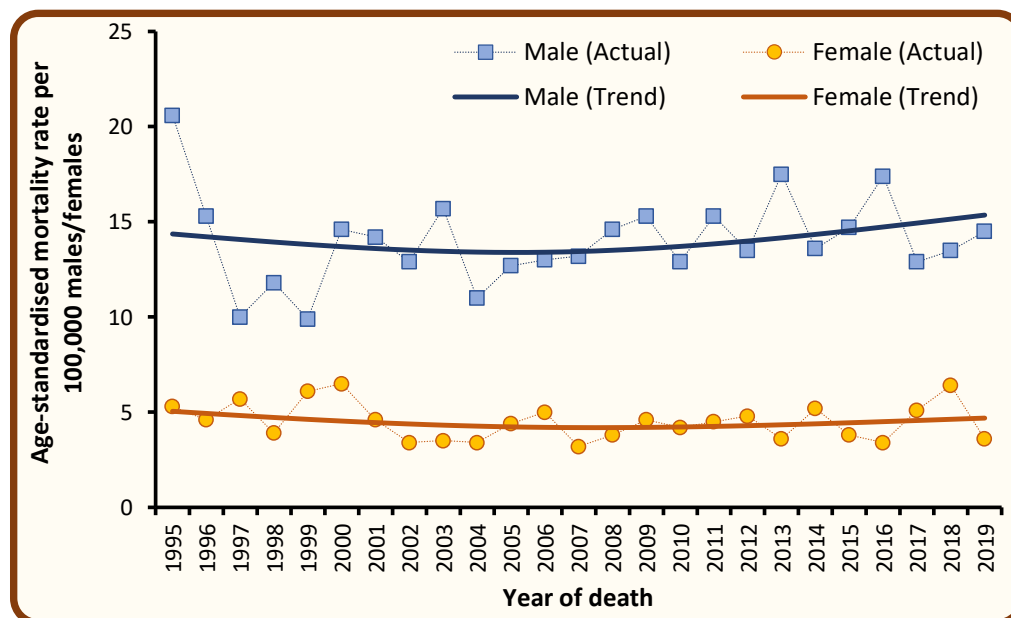
## Deaths by year of death - Bladder cancer, Deaths in 2010-2019

- Among males the number of deaths from bladder cancer increased by 12.5% from an annual average of 80 deaths in 2010-2014 to 90 deaths in 2015-2019.
- Among females the number of deaths from bladder cancer increased by 10.8% from an annual average of 37 deaths in 2010-2014 to 41 deaths in 2015-2019.

	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
<b>Male</b>	71	78	77	99	76	86	103	84	86	93
<b>Female</b>	34	35	40	31	45	34	30	47	58	35
<b>Both sexes</b>	105	113	117	130	121	120	133	131	144	128

## Trends in age-standardised mortality rates - Bladder cancer, Deaths in 1995-2019

- Among males age-standardised mortality rates from bladder cancer did not change between 2010-2014 and 2015-2019 with 14.6 deaths per 100,000 persons years in both five-year periods.
- Among females age-standardised mortality rates from bladder cancer did not change between 2010-2014 and 2015-2019 with 4.5 deaths per 100,000 persons years in both five-year periods.



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.