Cancer among older people

(excluding non-melanoma skin cancer)

Patients diagnosed 1993-2020
(Ages 75 and over; ICD10: C00-C43, C45-C97)

Further information

Further data is available at: **www.qub.ac.uk/research-centres/nicr**
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Acknowledgements

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

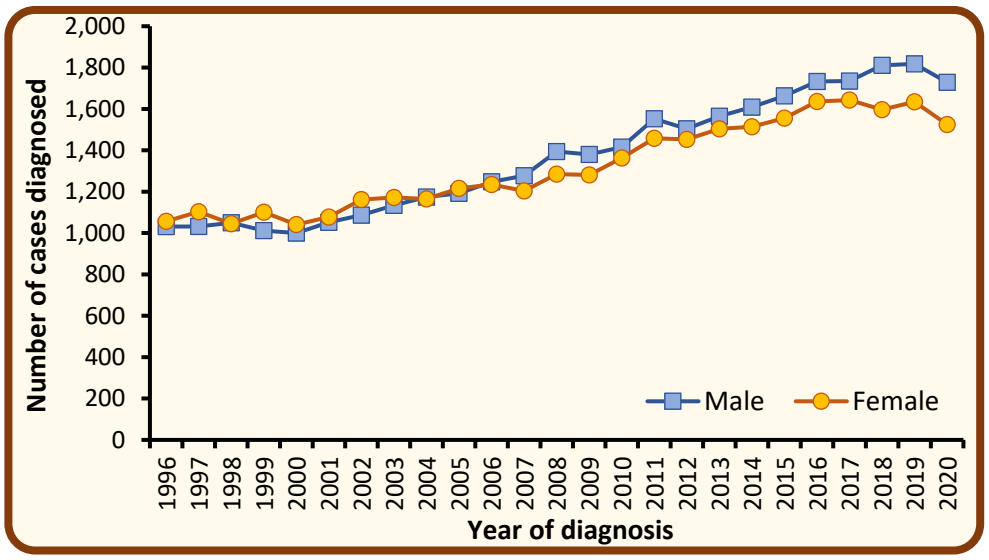
▪ During 2016-2020 there were 1,765 male and 1,607 female cases of cancer (ex NMSC) diagnosed among those aged 75 and over each year.

▪ Cancer (ex NMSC) among those aged 75 and over made up 35.5% of all male, and 33.0% of female cancers (ex NMSC) among all age groups.

Incidence by year of diagnosis - *Cancer among older people, Cases in 2011-2020*

▪ The number of cases of cancer (ex NMSC) increased by 11.8% between 2011-2015 and 2016-2020 among older males aged 75 and over, while among older females the number of cases increased by 7.3%.

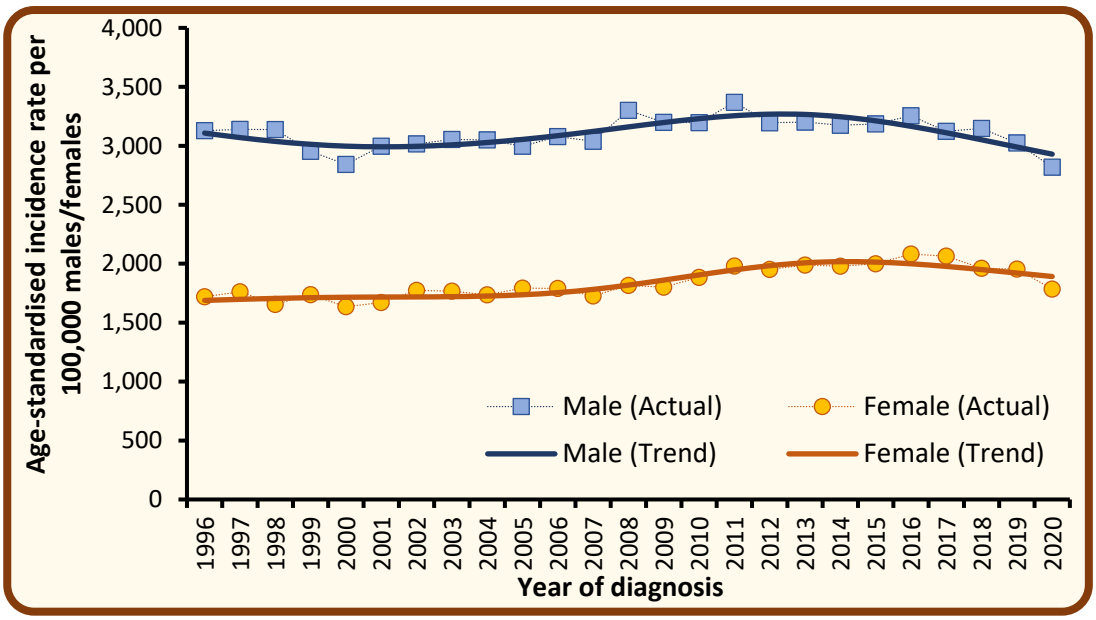
Year of diagnosis	Male	Female	Both sexes
2011	1,553	1,458	3,011
2012	1,504	1,453	2,957
2013	1,565	1,504	3,069
2014	1,609	1,514	3,123
2015	1,663	1,556	3,219
2016	1,733	1,636	3,369
2017	1,735	1,643	3,378
2018	1,811	1,597	3,408
2019	1,818	1,635	3,453
2020	1,729	1,525	3,254



Trends in age-standardised incidence rates - *Cancer among older people, Cases in 1996-2020*

▪ Among older males age-standardised incidence rates of cancer (ex NMSC) decreased by 4.9% from 3,222.3 per 100,000 person years in 2011-2015 to 3,066.0 cases per 100,000 persons years in 2016-2020. This difference was statistically significant.

▪ Among older females age-standardised incidence rates of cancer (ex NMSC) decreased by 0.7% from 1,980.2 per 100,000 person years in 2011-2015 to 1,966.0 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).

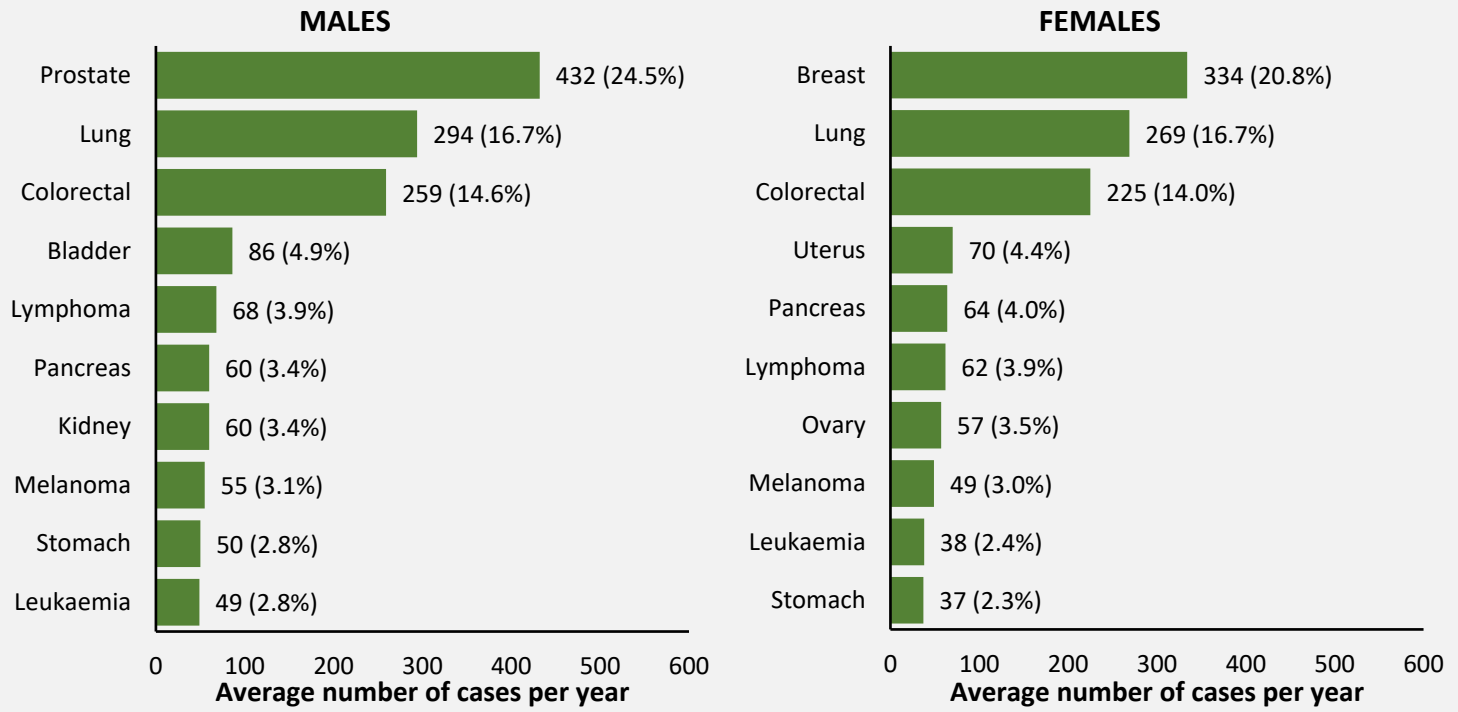
They thus represent changes other than those caused by population growth and/or ageing.

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).

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

Incidence by cancer type - *Cancer among older people, Cases in 2016-2020*

The most common cancer types among older men (excluding NMSC), were prostate cancer (24.5%), lung cancer (16.7%) and colorectal cancer (14.6%), while the most common cancer types among older women (excluding NMSC) were breast cancer (20.8%), lung cancer (16.7%) and colorectal cancer (14.0%).



Incidence by deprivation quintile - *Cancer among older people, 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:

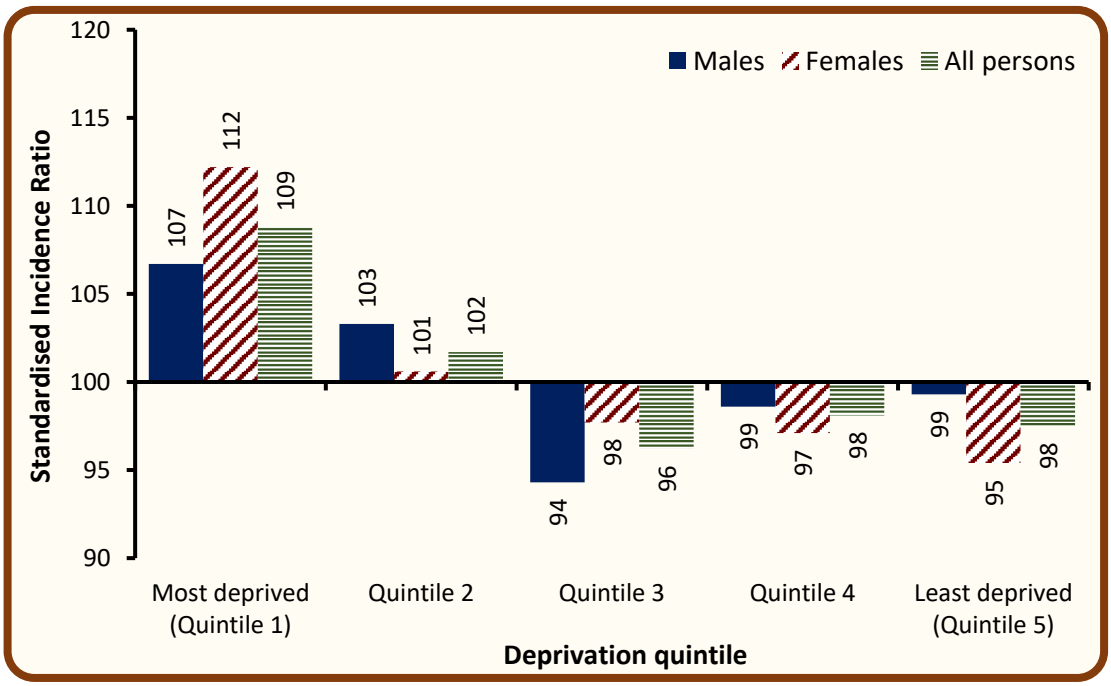
- in the least socio-economically deprived areas did not vary significantly from the NI average.
- in the most socio-economically deprived areas were 8.8% higher than the NI average.

Deprivation quintile	Average cases per year		
	Male	Female	Both sexes
Most deprived (Quintile 1)	290	290	580
Quintile 2	360	327	687
Quintile 3	357	327	684
Quintile 4	368	322	690
Least deprived (Quintile 5)	390	341	731
Northern Ireland	1,765	1,607	3,372

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.



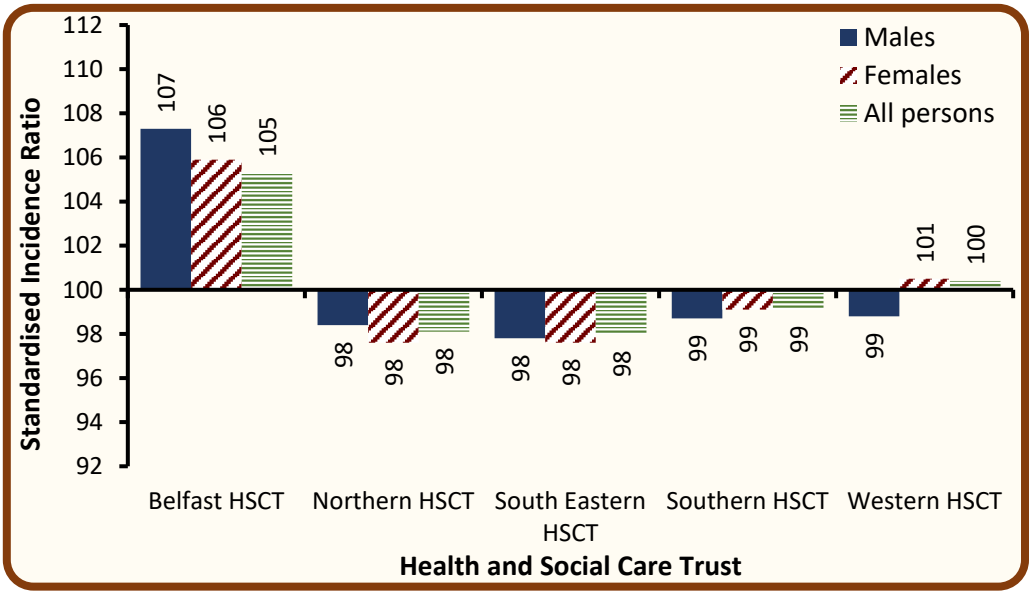
Incidence by Health and Social Care Trust (HSCT) - *Cancer among older people, Cases in 2016-2020*

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 were significantly 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.

Health and Social Care Trust	Average cases per year		
	Male	Female	Both sexes
Belfast HSCT	343	349	691
Northern HSCT	471	422	892
South Eastern HSCT	369	328	697
Southern HSCT	317	283	600
Western HSCT	265	226	491
Northern Ireland	1,765	1,607	3,372



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.

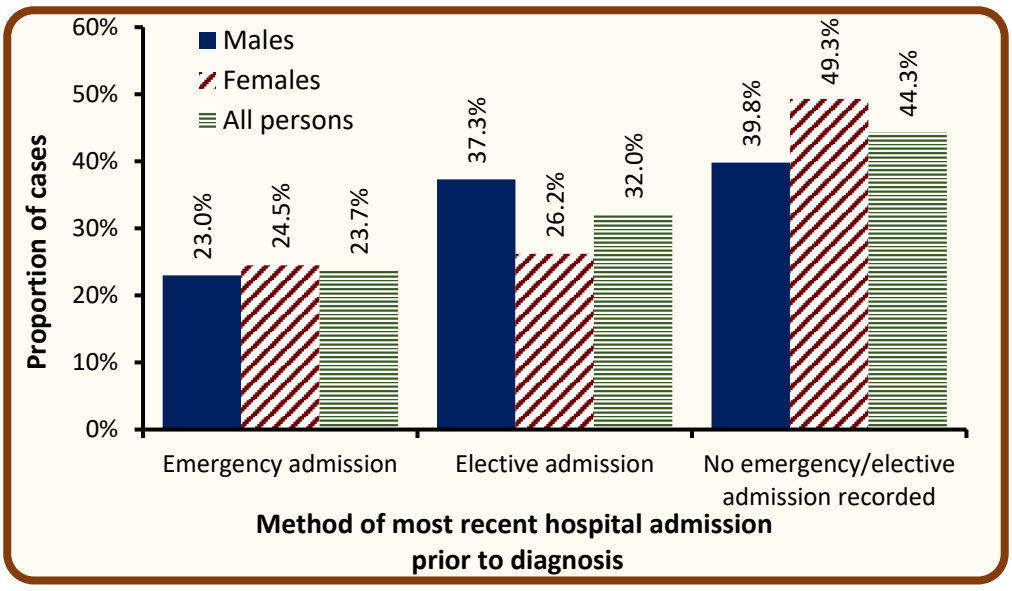
Data for Local Government Districts and Parliamentary Constituencies are available at www.qub.ac.uk/research-centres/nicr

Incidence by method of most recent admission to hospital - *Cancer among older people, Cases in 2016-2020*

During 2016-2020:

- 23.7% of cases had an emergency admission to hospital recorded within 30 days prior to their cancer diagnosis.
- 23.0% of male cases had an emergency admission up to 30 days prior to diagnosis, compared to 24.5% of female cases.
- In 44.3% of diagnosed cases there was no record of a hospital inpatient admission up to 30 days prior to the diagnosis.

Method of admission	Average cases per year		
	Male	Female	Both sexes
Emergency admission	405	394	799
Elective admission	658	421	1,078
No emergency/elective admission recorded	702	793	1,495
Total	1,765	1,607	3,372



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.

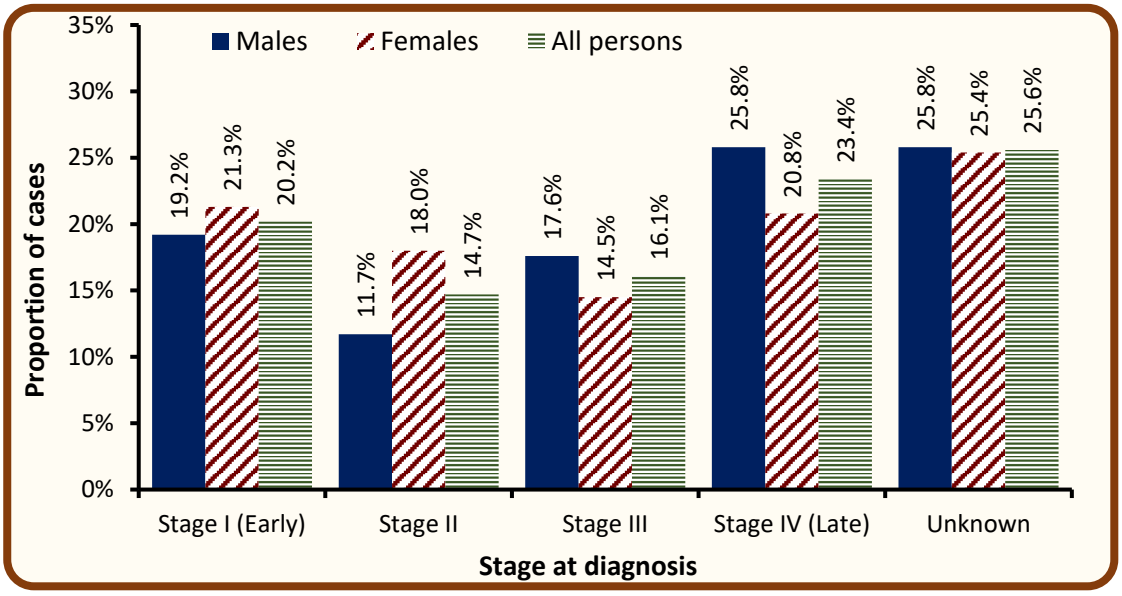
The majority of patients with no inpatient admission recorded prior to diagnosis are likely to have been diagnosed via an outpatient route.

Incidence by stage at diagnosis - *Cancer among older people, Cases in 2016-2020*

During 2016-2020:

- 74.4% of cases diagnosed had a stage assigned.
- 20.2% of cases were diagnosed at stage I. (27.1% of staged cases)
- 23.4% of cases were diagnosed at stage IV. (31.5% of staged cases)
- Among cases which were staged, 34.8% of male cases were diagnosed at stage IV, compared to 27.8% of female cases.

Stage at diagnosis	Average cases per year		
	Male	Female	Both sexes
Stage I (Early)	338	342	681
Stage II	207	290	496
Stage III	310	233	543
Stage IV (Late)	456	334	789
Unknown	455	409	863
All stages	1,765	1,607	3,372



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).

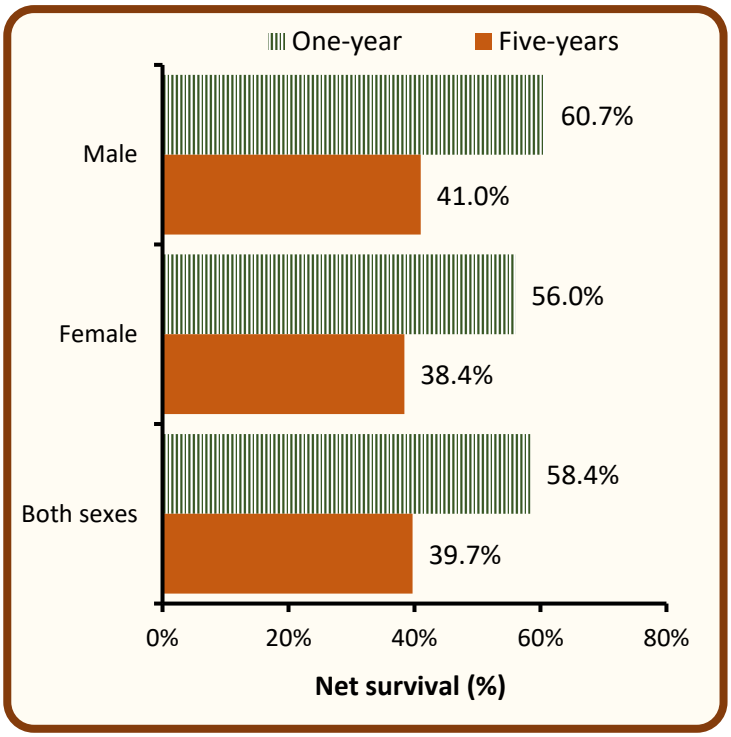
Survival

- 54.4% of older patients were alive one year and 27.0% were alive five years from a cancer (ex NMSC) diagnosis in 2011-2015. (observed survival)
- Net survival, which removes the effect of deaths from causes unrelated to cancer, was 58.4% one year and 39.7% five years from a cancer (ex NMSC) diagnosis among those aged 75 and over in 2011-2015.
- Five-year net survival for older patients diagnosed in 2011-2015 was 41.0% among men and 38.4% among women.

Gender	Observed survival		Net survival	
	One-year	Five-years	One-year	Five-years
Male	56.2%	27.2%	60.7%	41.0%
Female	52.5%	26.7%	56.0%	38.4%
Both sexes	54.4%	27.0%	58.4%	39.7%

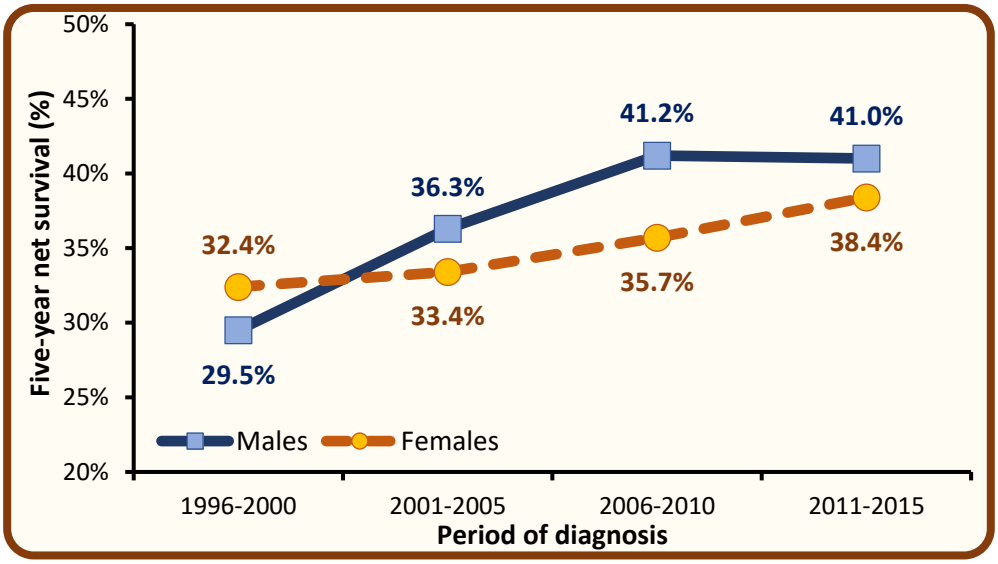
Observed survival is the proportion of patients still alive one/five years after diagnosis. However, in this measure patients may have died from causes unrelated to their cancer.

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.



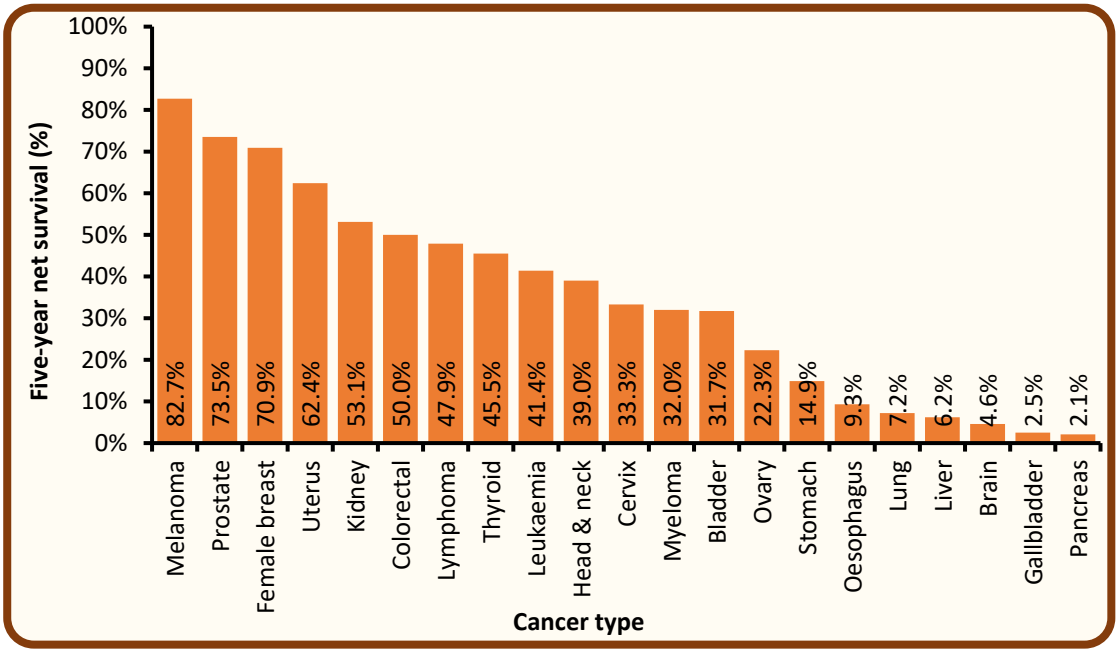
Trends in survival - *Cancer among older people, Patients diagnosed in 1996-2015*

- Among men five-year survival from cancer (ex NMSC) among those aged 75 and over decreased from 41.2% in 2006-2010 to 41.0% in 2011-2015. This difference was not statistically significant.
- Among women five-year survival from cancer (ex NMSC) among those aged 75 and over increased from 35.7% in 2006-2010 to 38.4% in 2011-2015. This difference was not statistically significant.



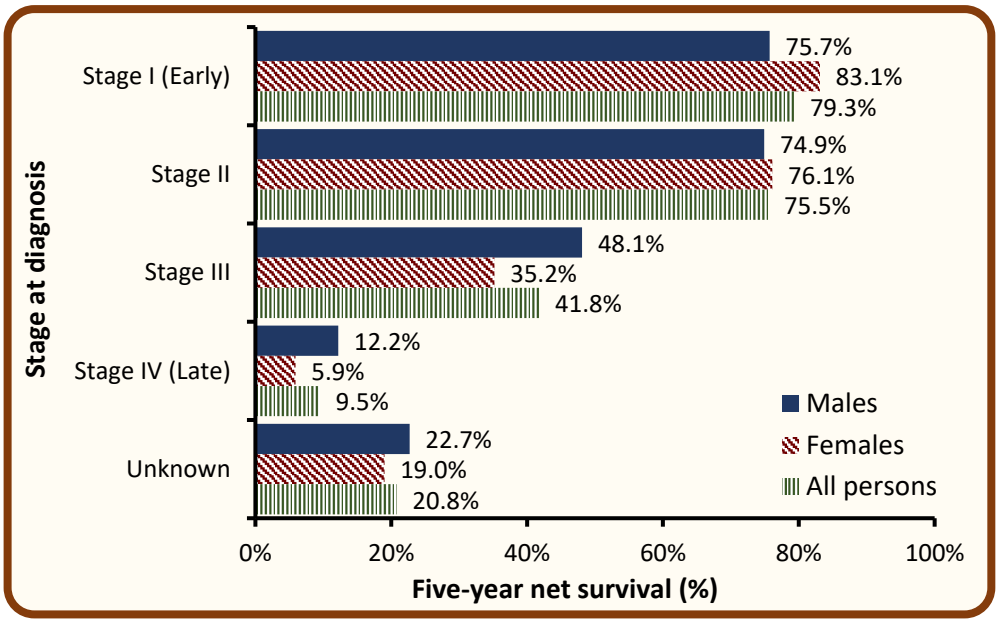
Survival by cancer type - *Cancer among older people, Patients diagnosed in 2011-2015*

- Five-year survival for older patients diagnosed in 2011-2015 ranged from 82.7% for melanoma to 2.1% for pancreatic cancer.
- In particular five-year survival for the most common cancer types among older people was 70.9% for female breast cancer, 50.0% for colorectal cancer, 7.2% for lung cancer and 73.5% for prostate cancer.



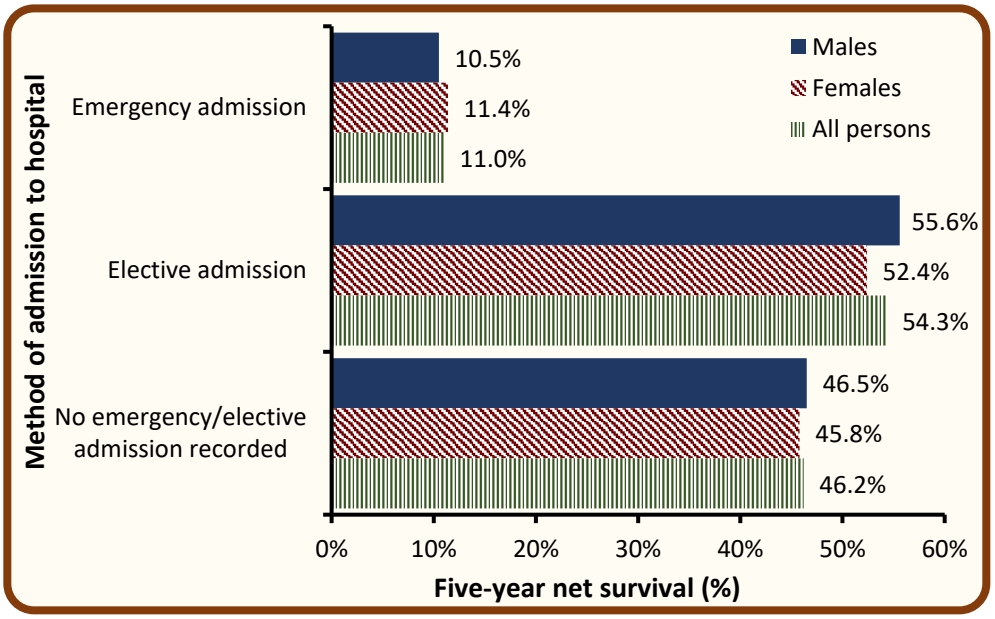
Survival by stage at diagnosis - *Cancer among older people, Patients diagnosed in 2011-2015*

- Stage at diagnosis is one of the most important factors in cancer (ex NMSC) survival among older people.
- Five-year survival ranged from 79.3% for early stage (stage I) disease to 9.5% for late stage (stage IV) disease.
- Five-year survival (ASNS) for unstaged cancer was 20.8%.
- Five-year survival (ASNS) among older people for stage IV cancer was 12.2% for men, compared to 5.9% for women.



Survival by method of most recent admission to hospital - *Cancer among older people, Patients diagnosed in 2011-2015*

- Five-year survival among older patients who had an emergency admission to hospital up to 30 days prior to their cancer diagnosis was 11.0% compared to 54.3% among those with elective admissions and 46.2% among those who had neither type of hospital admission recorded up to 30 days prior to diagnosis.
- Five-year survival (ASNS) among older patients who had an emergency admission to hospital within 30 days prior to their cancer diagnosis was 10.5% for men, compared to 11.4% for women.



Prevalence

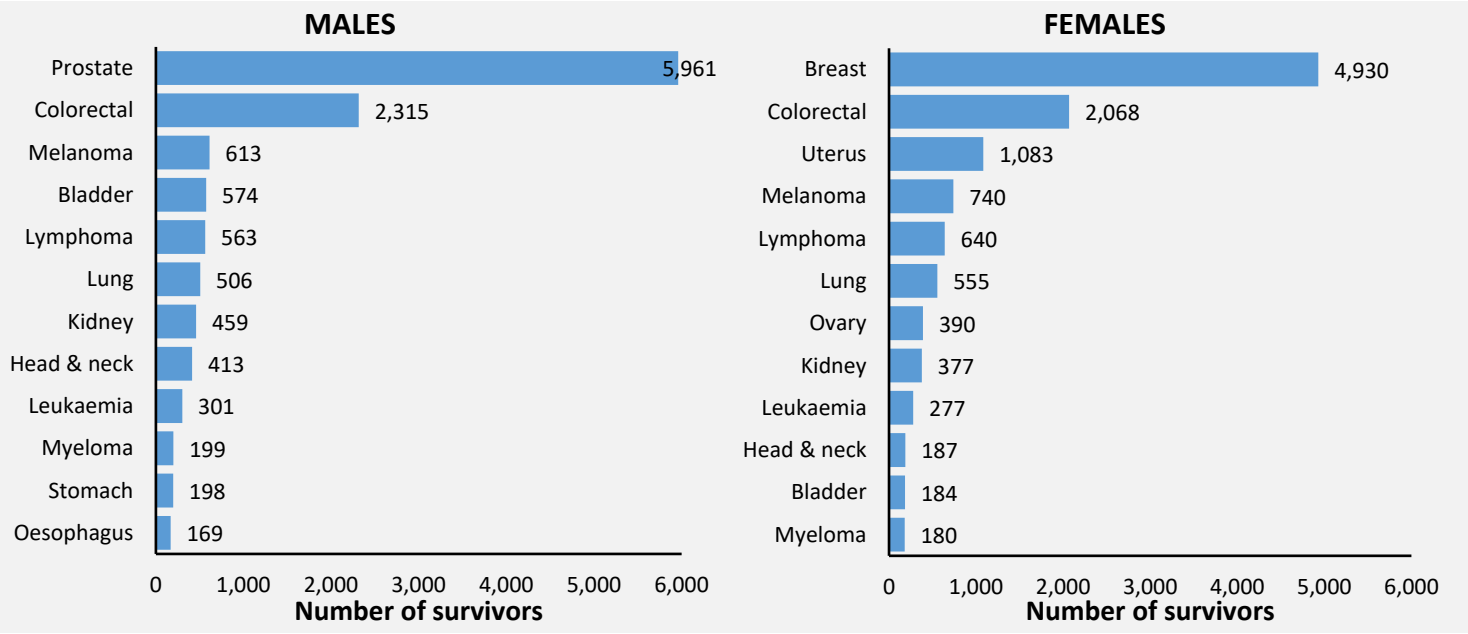
- At the end of 2020, there were 23,517 people aged 75 and over (Males: 11,790; Females: 11,727) living with cancer (ex NMSC) who had been diagnosed with the disease during 1996-2020.
- Of these, 50.1% were male, and 9.1% had been diagnosed in the previous year.

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	Male	Female	Both sexes
0-1 year	1,162	968	2,130
1-5 years	3,602	3,010	6,612
5-10 years	3,161	2,936	6,097
10-25 years	3,865	4,813	8,678
0-25 years	11,790	11,727	23,517

25-year prevalence by cancer type - *Cancer among older people, Patients alive at end of 2020*

The most prevalent cancer types among male survivors aged 75 and over at the end of 2020 (ex NMSC), were prostate cancer (5,961 survivors) and colorectal cancer (2,315 survivors), while the most prevalent cancer types among female survivors aged 75 and over were breast cancer (4,930 survivors) and colorectal cancer (2,068 survivors).



Trends in 10-year prevalence - *Cancer among older people, Patients alive at end of each year from 2011-2020*

▪ Among older males the number of survivors from cancer (ex NMSC) who had been diagnosed within the previous ten years increased by 17.8% from 6,730 survivors in 2015 to 7,925 survivors in 2020.

▪ Among older females the number of survivors from cancer (ex NMSC) who had been diagnosed within the previous ten years increased by 16.8% from 5,917 survivors in 2015 to 6,914 survivors in 2020.

	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Male	5,655	5,943	6,284	6,563	6,730	6,949	7,165	7,587	7,834	7,925
Female	5,044	5,243	5,434	5,614	5,917	6,184	6,452	6,683	6,894	6,914
Both sexes	10,699	11,186	11,718	12,177	12,647	13,133	13,617	14,270	14,728	14,839

Mortality

During 2016-2020 there were 1,191 male and 1,118 female deaths among older people (aged 75 and over) from cancer (ex NMSC) each year.

Deaths by year of death - *Cancer among older people, Deaths in 2011-2020*

▪ Among males the number of deaths from cancer (ex NMSC) increased by 12.4% from an annual average of 1,060 deaths in 2011-2015 to 1,191 deaths in 2016-2020.

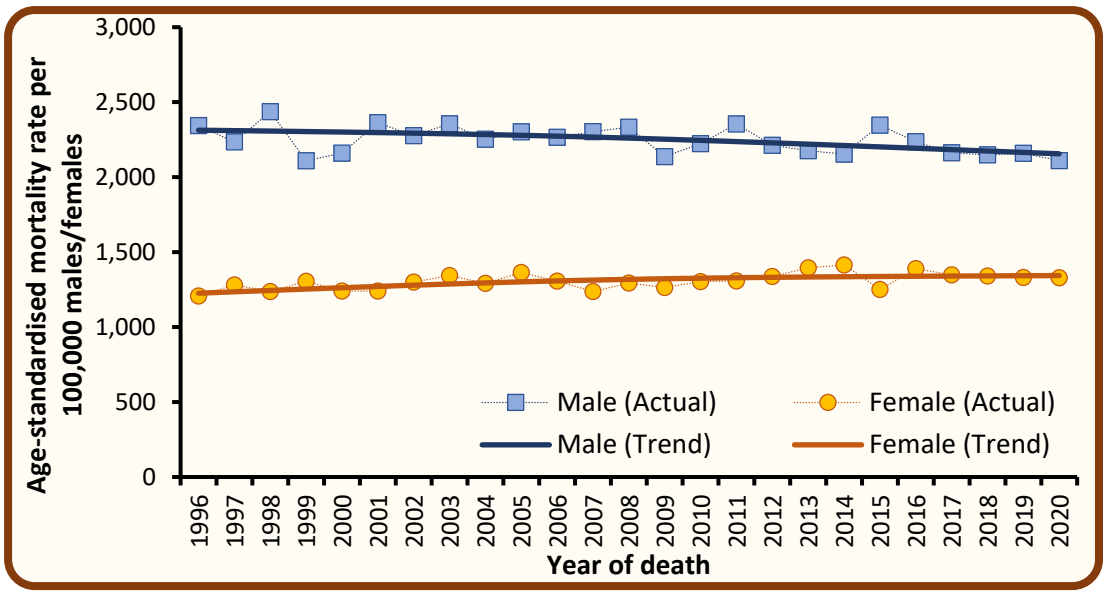
▪ Among females the number of deaths from cancer (ex NMSC) increased by 9.2% from an annual average of 1,024 deaths in 2011-2015 to 1,118 deaths in 2016-2020.

	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Male	1,048	1,007	1,032	1,046	1,169	1,142	1,152	1,173	1,237	1,249
Female	969	1,011	1,058	1,093	988	1,109	1,097	1,106	1,129	1,148
Both sexes	2,017	2,018	2,090	2,139	2,157	2,251	2,249	2,279	2,366	2,397

Trends in age-standardised mortality rates - *All cancers (ex NMSC), Deaths in 1996-2020*

▪ Among males aged 75 and over age-standardised mortality rates from cancer (ex NMSC) decreased by 4.0% between 2011-2015 and 2016-2020 from 2,249.8 to 2,160.8 deaths per 100,000 persons years. This difference was not statistically significant.

▪ Among females aged 75 and over age-standardised mortality rates from cancer (ex NMSC) increased by 0.4% between 2011-2015 and 2016-2020 from 1,341.2 to 1,347.2 deaths per 100,000 persons years. This difference was not statistically significant.



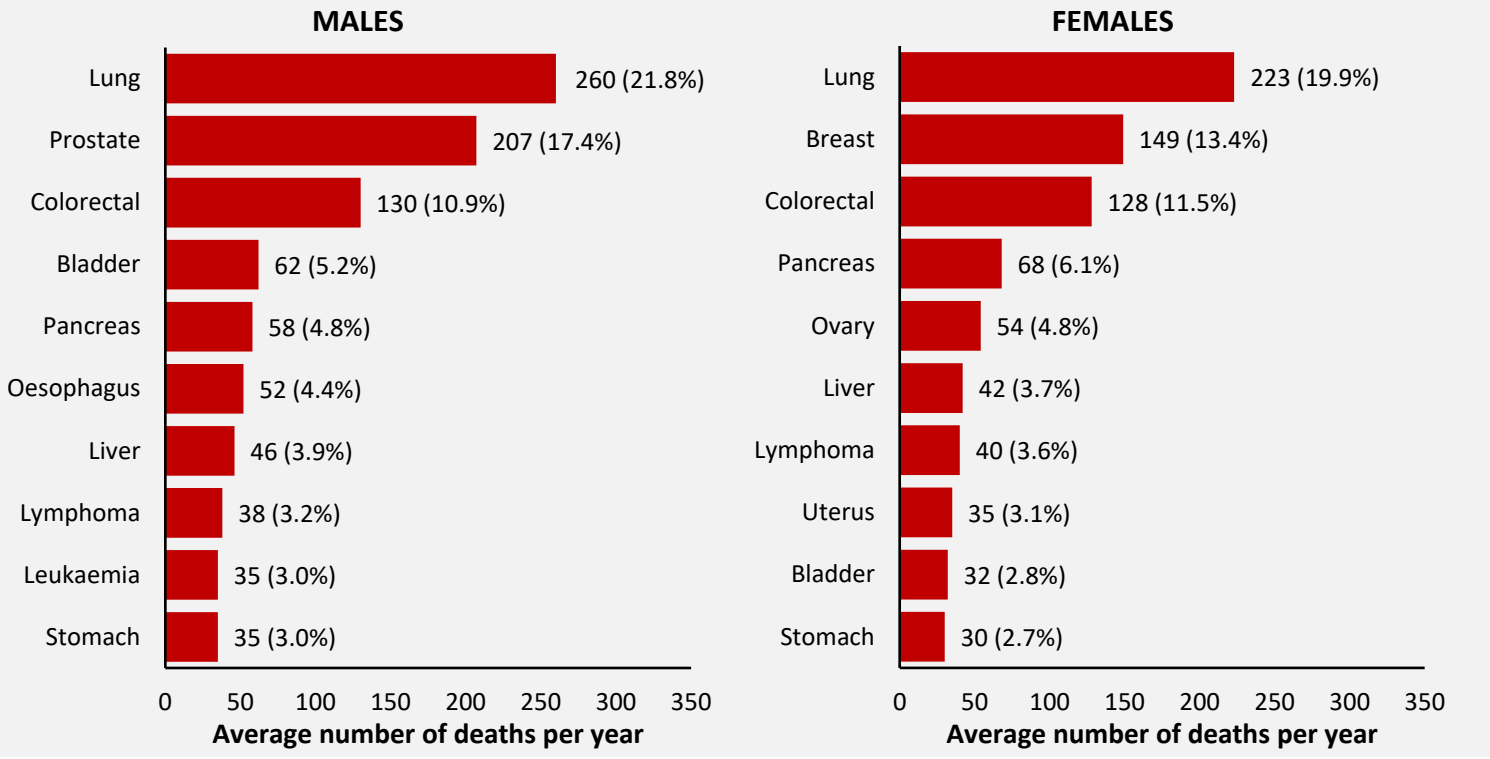
Mortality data are provided by the Northern Ireland General Registrar Office via the Department of Health.

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.

Deaths by cancer type - *Cancer among older people, Deaths in 2016-2020*

The most common causes of cancer death (ex NMSC) among men, were lung cancer (21.8%), prostate cancer (17.4%) and colorectal cancer (10.9%), while the most common cause of cancer death (ex NMSC) among women were lung cancer (19.9%), breast cancer (13.4%) and colorectal cancer (11.5%).



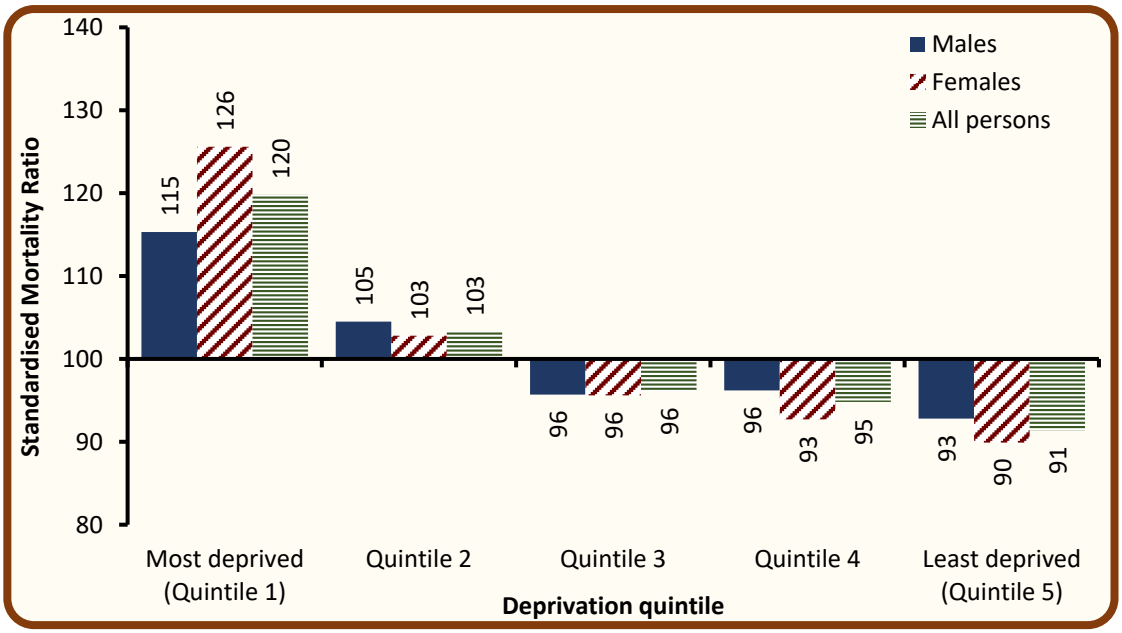
Deaths by deprivation quintile - *Cancer among older people, Deaths in 2016-2020*

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

After accounting for these factors, mortality rates:

- in the least socio-economically deprived areas were 8.6% lower than the NI average.
- in the most socio-economically deprived areas were 19.8% higher than the NI average.

Deprivation quintile	Average deaths per year		
	Male	Female	Both sexes
Most deprived (Quintile 1)	210	224	433
Quintile 2	244	232	476
Quintile 3	245	222	468
Quintile 4	242	214	456
Least deprived (Quintile 5)	248	225	473
Northern Ireland	1,191	1,118	2,308



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

A value above 100 means that mortality 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.

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.