

Colon cancer

Patients diagnosed 1993-2019
(ICD10: C18)

Further information

Further data is available at: 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:

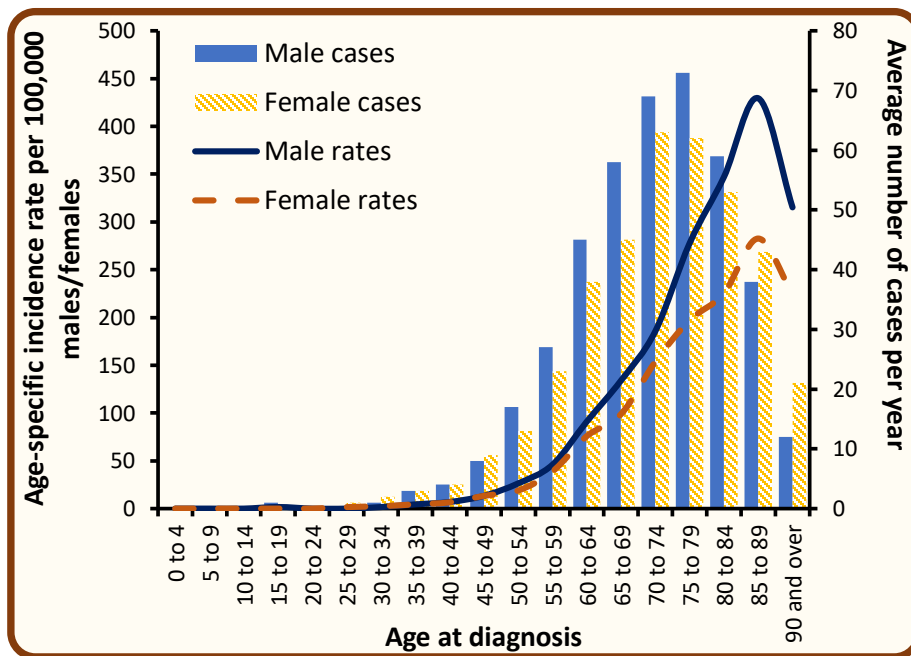
- There were 415 male and 380 female cases of colon cancer diagnosed each year.
- Colon cancer made up 8.4% of all male cancers (ex NMSC), and 7.7% of all female cancers (ex NMSC).
- The risk of colon cancer before the age of 75 was 1 in 39.6 for men and 1 in 48.8 for women, while before the age of 85 the risk was 1 in 18.1 for men and 1 in 24.4 for women.

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

During 2015-2019:

- The median age at diagnosis was 72 for men and 74 for women.
- Cancer risk increased with age, with 43.9% of men and 47.1% of women aged 75 years or more at diagnosis.
- 8.2% of cases were diagnosed among those aged under 55.

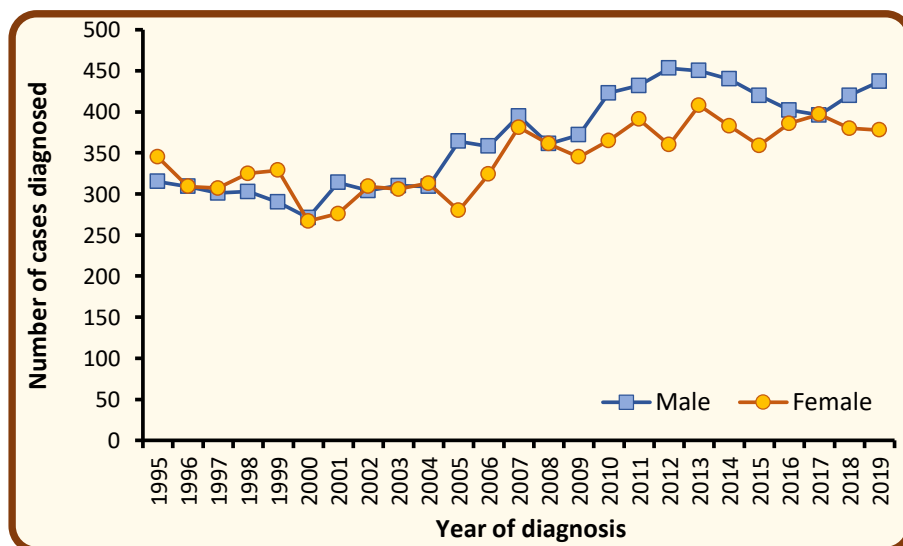
Age at diagnosis	Average cases per year		
	Male	Female	Both sexes
0 - 54	34	32	65
55 - 64	72	61	133
65 - 74	127	108	236
75 +	182	179	362
All ages	415	380	795



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

- Among males the number of cases of colon cancer decreased by 5.7% from an annual average of 440 cases in 2010-2014 to 415 cases in 2015-2019.
- Among females the number of cases of colon cancer decreased by 0.3% from an annual average of 381 cases in 2010-2014 to 380 cases in 2015-2019.

Year of diagnosis	Male	Female	Both sexes
2010	423	365	788
2011	432	391	823
2012	453	360	813
2013	450	408	858
2014	440	383	823
2015	420	359	779
2016	402	386	788
2017	396	397	793
2018	420	380	800
2019	437	378	815

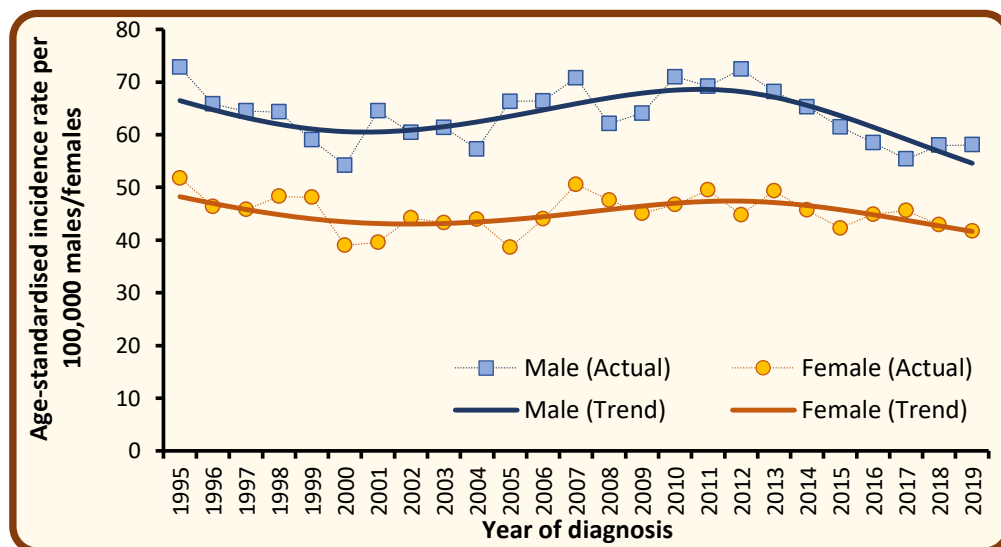


Note: Annual averages have been rounded to the nearest integer. Sums of numbers in table rows or columns may thus differ slightly from the given total.

NMSC: Non-melanoma skin cancer

Trends in age-standardised incidence rates - Colon cancer, Cases in 1995-2019

- Among males age-standardised incidence rates of colon cancer decreased by 15.6% from 69.1 per 100,000 person years in 2010-2014 to 58.3 cases per 100,000 persons years in 2015-2019. This difference was statistically significant.
- Among females age-standardised incidence rates of colon cancer decreased by 7.8% from 47.2 per 100,000 person years in 2010-2014 to 43.5 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).

Trends in age-standardised incidence rates by age - Colon cancer, Cases in 1995-2019

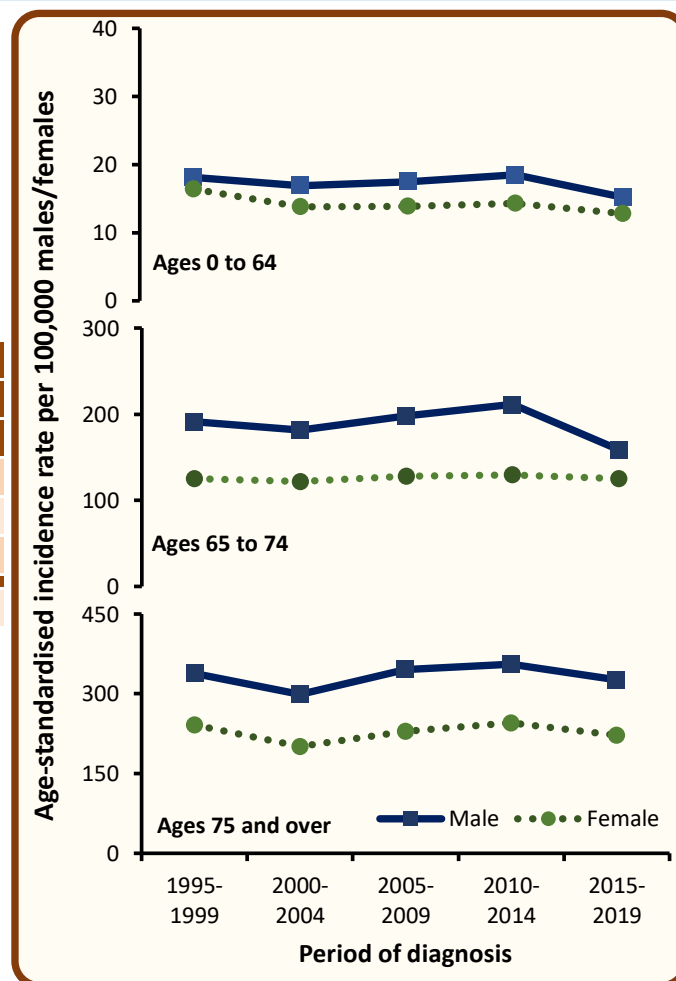
For the annual average number of cases diagnosed, between 2010-2014 and 2015-2019 there was:

- a decrease of 12.4% among males aged 0 to 64, a decrease of 15.3% among males aged 65 to 74 and an increase of 7.7% among males aged 75 and over.
- a decrease of 5.2% among females aged 0 to 64, an increase of 7.9% among females aged 65 to 74 and a decrease of 2.2% among females aged 75 and over.

Age group	Average cases per year			
	2010-2014		2015-2019	
	Male	Female	Male	Female
0 to 64	121	97	106	92
65 to 74	150	101	127	109
75 and over	169	183	182	179
All ages	440	381	415	380

For age-standardised incidence rates, between 2010-2014 and 2015-2019 there was:

- a decrease of 17.8% among males aged 0 to 64, a decrease of 24.9% among males aged 65 to 74 and no significant change among males aged 75 and over.
- no significant change among females aged 0 to 64, no significant change among females aged 65 to 74 and no significant change among females aged 75 and over.



Incidence by deprivation quintile - Colon 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:

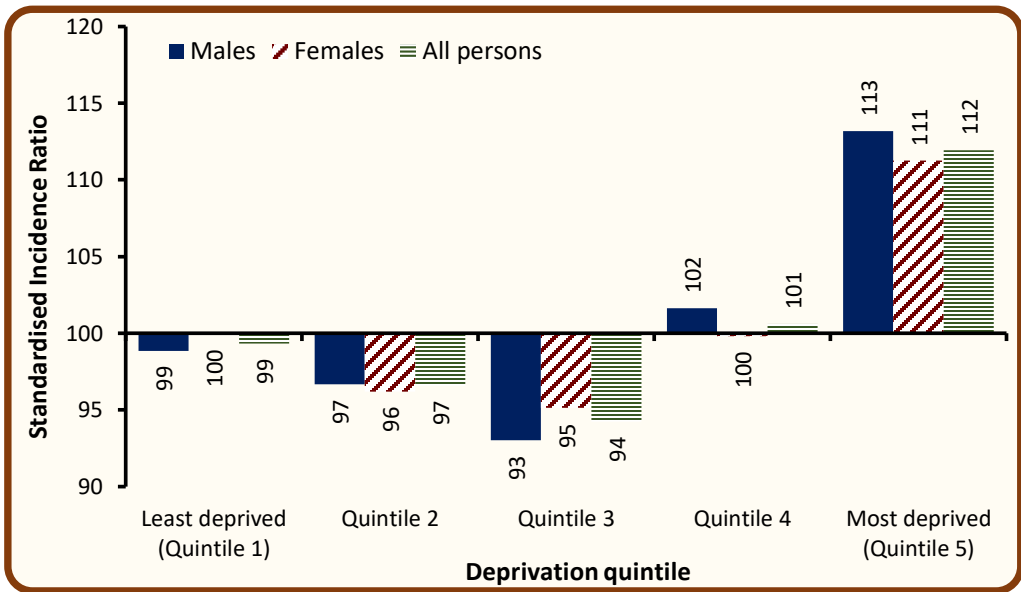
- in the most socio-economically deprived areas were 11.9% higher than the NI average.
- in the least socio-economically deprived areas did not vary significantly from the NI average.

Deprivation quintile	Average cases per year		
	Male	Female	Both sexes
Least deprived (Quintile 1)	87	82	170
Quintile 2	86	76	162
Quintile 3	82	75	157
Quintile 4	84	76	160
Most deprived (Quintile 5)	76	70	146
Northern Ireland	415	380	795

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.



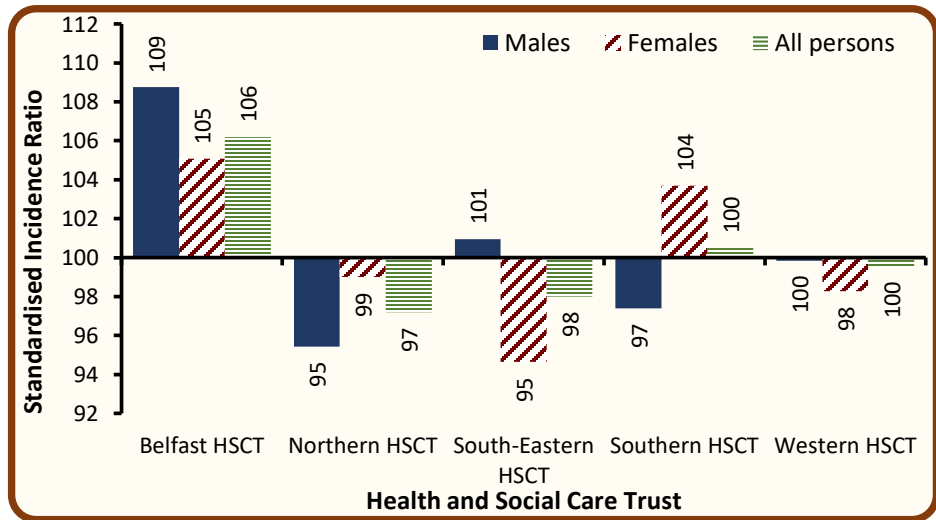
Incidence by Health and Social Care Trust (HSCT) - Colon cancer, Cases in 2015-2019

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	79	77	156
Northern HSCT	106	100	206
South-Eastern HSCT	89	76	164
Southern HSCT	75	72	147
Western HSCT	66	56	121
Northern Ireland	415	380	795



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.

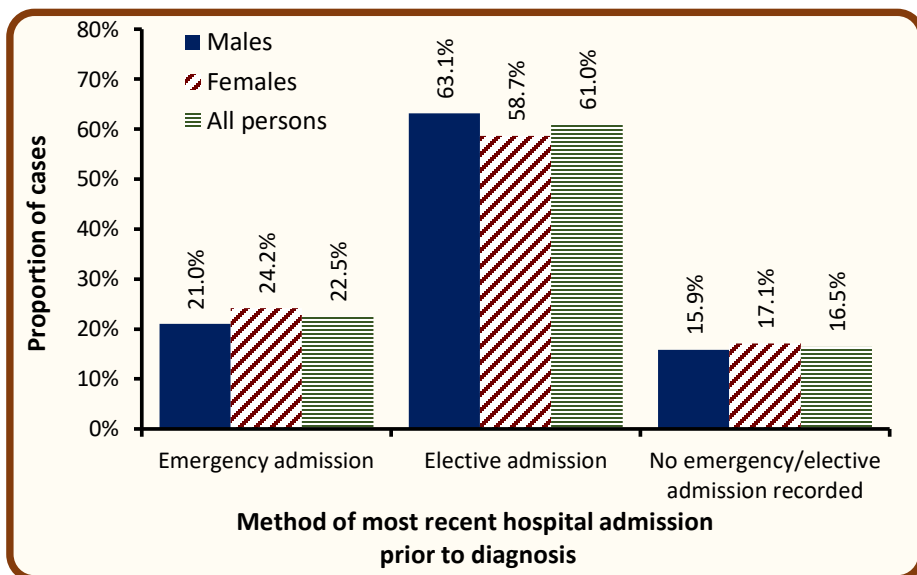
Data for Local Government Districts and Parliamentary Constituencies are available at www.qub.ac.uk/research-centres/nic

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

During 2015-2019:

- 22.5% of cases had an emergency admission to hospital recorded up to 30 days prior to cancer diagnosis.
- 21.0% of male cases had an emergency admission up to 30 days prior to diagnosis, compared to 24.2% of female cases.
- In 16.5% 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	87	92	179
Elective admission	262	223	485
No emergency/elective admission recorded	66	65	131
Total	415	380	795



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.

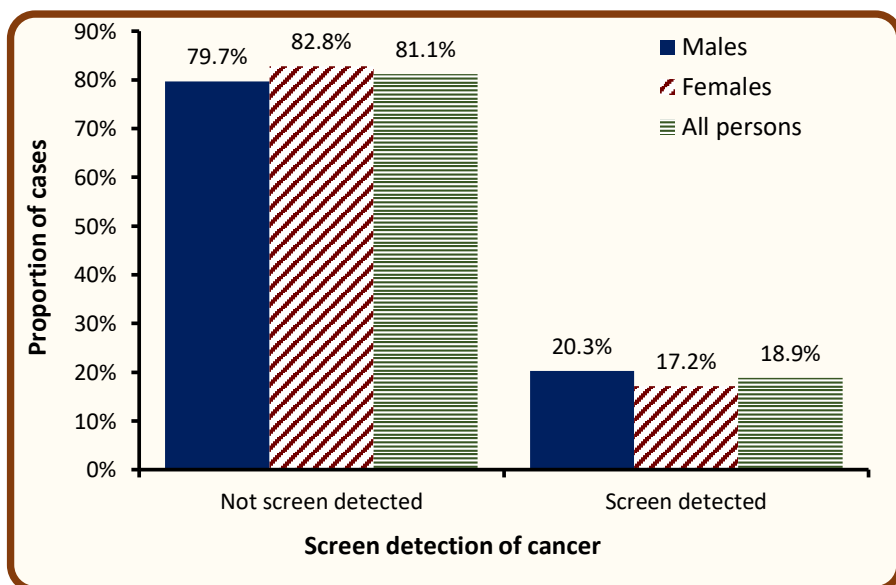
The majority of patients with no inpatient admission recorded prior to diagnosis are likely to have been diagnosed via an outpatient route.

Incidence by screen detection of cancer - Colon cancer, Ages 60 to 74, Cases in 2015-2019

During 2015-2019:

- 18.9% of cases diagnosed among those aged 60 to 74 were detected by bowel cancer screening.
- 20.3% of cases among males aged 60 to 74 were screen detected, compared to 17.2% of cases among females in the same age group.

Screen detected	Average cases per year		
	Male	Female	Both sexes
Not screen detected	137	122	259
Screen detected	35	25	60
Total	172	147	319



Bowel cancer screening is currently offered to all Northern Ireland residents aged 60 to 74 every two years.

This simple test checks for signs of colorectal cancer. In particular it can identify people who have no noticeable cancer symptoms. Screening can thus help detect cancer at an early stage when treatment is more effective.

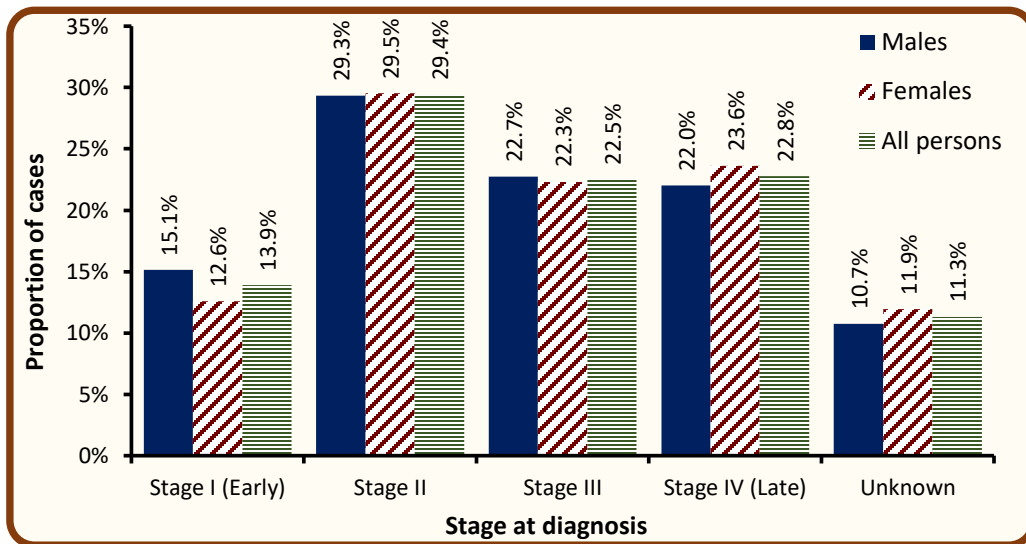
The presented figures are for people with colon cancer who were initially identified via screening. It does not include those identified with polyps or who had a negative test.

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

During 2015-2019:

- 88.7% of cases diagnosed had a stage assigned.
- 13.9% of cases were diagnosed at stage I. (15.7% of staged cases)
- 22.8% of cases were diagnosed at stage IV. (25.7% of staged cases)
- Among cases which were staged, 24.7% of male cases were diagnosed at stage IV, compared to 26.8% of female cases.

Stage at diagnosis	Average cases per year		
	Male	Female	Both sexes
Stage I (Early)	63	48	111
Stage II	122	112	234
Stage III	94	85	179
Stage IV (Late)	91	90	181
Unknown	45	45	90
All stages	415	380	795



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.

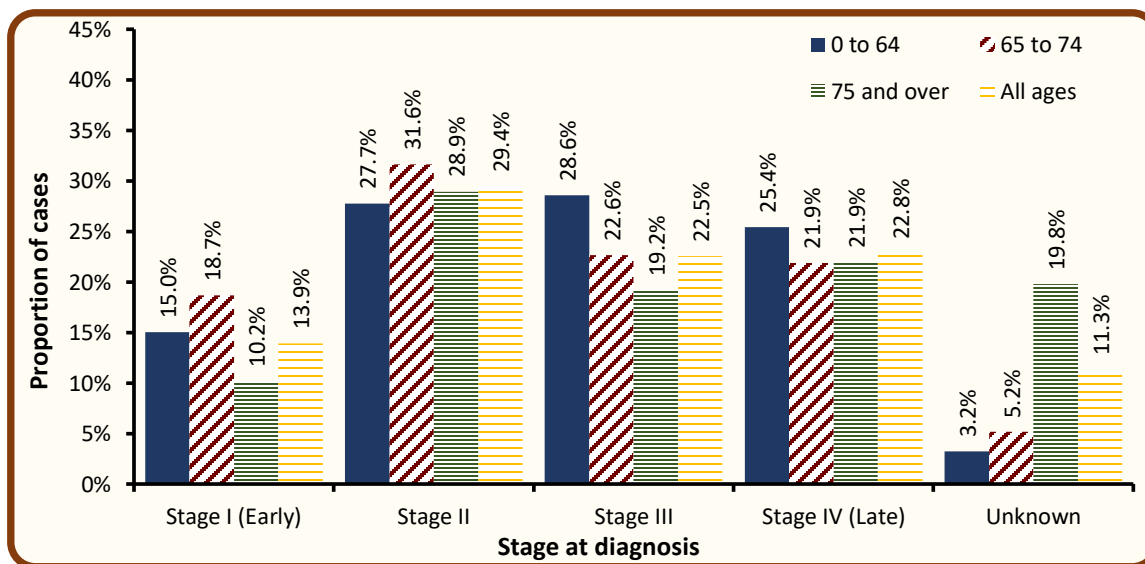
The classification used here to stage cancer is the TNM classification (Version 7 prior to 2018, Version 8 from 2018 onwards).

Incidence by age and stage at diagnosis - Colon cancer, Cases in 2015-2019

During 2015-2019:

- 19.8% of cases among those aged 75 and over did not have a stage assigned at diagnosis, compared to 3.2% of cases among those aged 0 to 64.
- Among cases which were staged, 27.3% of cases among those aged 75 and over were diagnosed at stage IV, compared to 26.3% of cases among those aged 0 to 64.

Stage at diagnosis	Average cases per year			
	0 to 64	65 to 74	75 and over	All ages
Stage I (Early)	30	44	37	111
Stage II	55	75	104	234
Stage III	57	53	69	179
Stage IV (Late)	50	52	79	181
Unknown	6	12	71	90
All stages	198	236	361	795



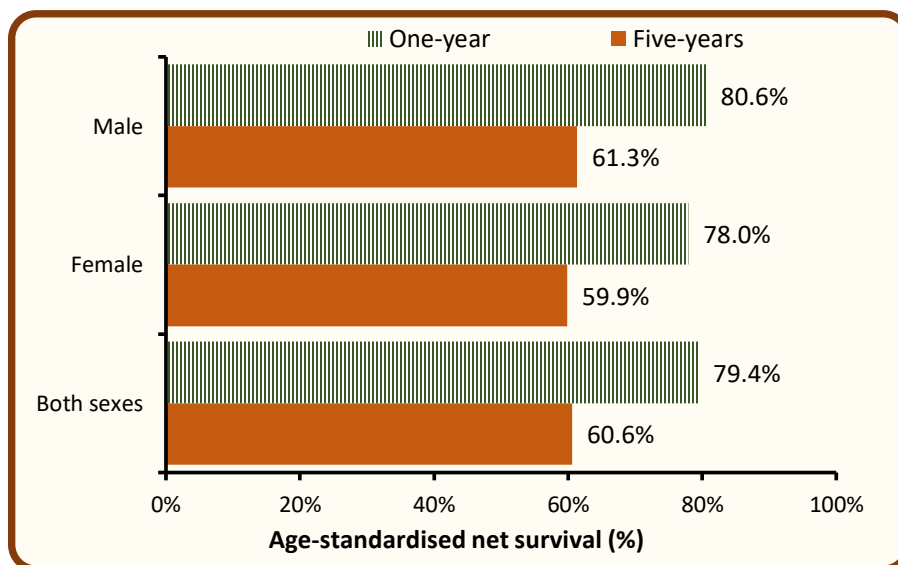
Survival

- 74.4% of patients were alive one year and 48.8% were alive five years from a colon cancer diagnosis in 2010-2014. (observed survival)
- Age-standardised net survival (ASNS), which removes the effect of deaths from causes unrelated to cancer, was 79.4% one year and 60.6% five years from a colon cancer diagnosis in 2010-2014.
- Five-year survival (ASNS) for colon cancer patients diagnosed in 2010-2014 was 61.3% among men and 59.9% among women.

Gender	Observed survival		Age-standardised net survival	
	One-year	Five-years	One-year	Five-years
Male	76.3%	49.5%	80.6%	61.3%
Female	72.1%	47.9%	78.0%	59.9%
Both sexes	74.4%	48.8%	79.4%	60.6%

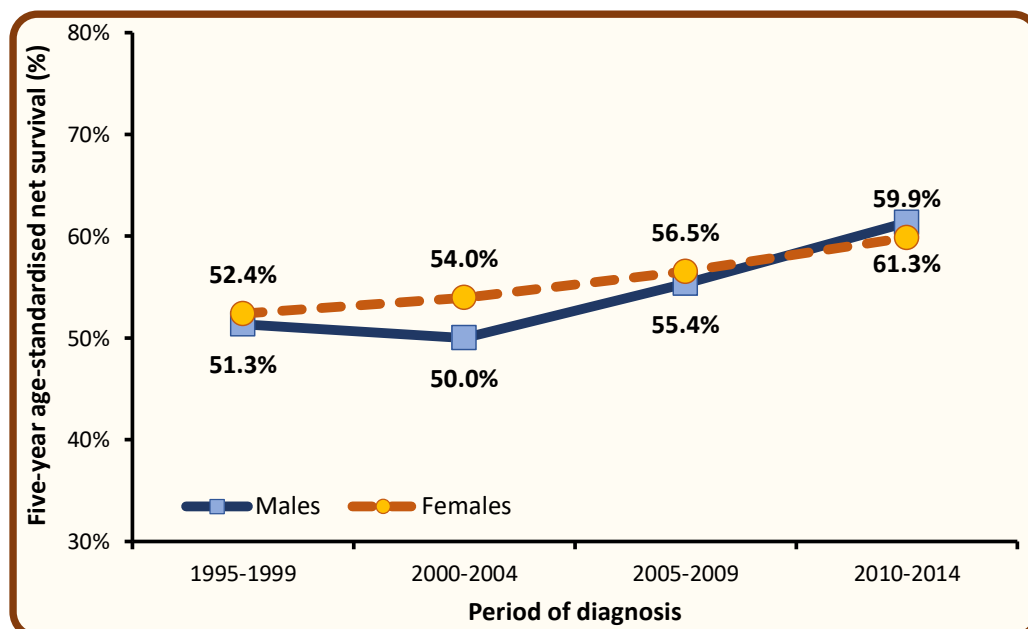
Observed survival is the proportion of patients still alive one/five years after diagnosis. However, in this measure patients may have died from causes unrelated to their cancer.

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.



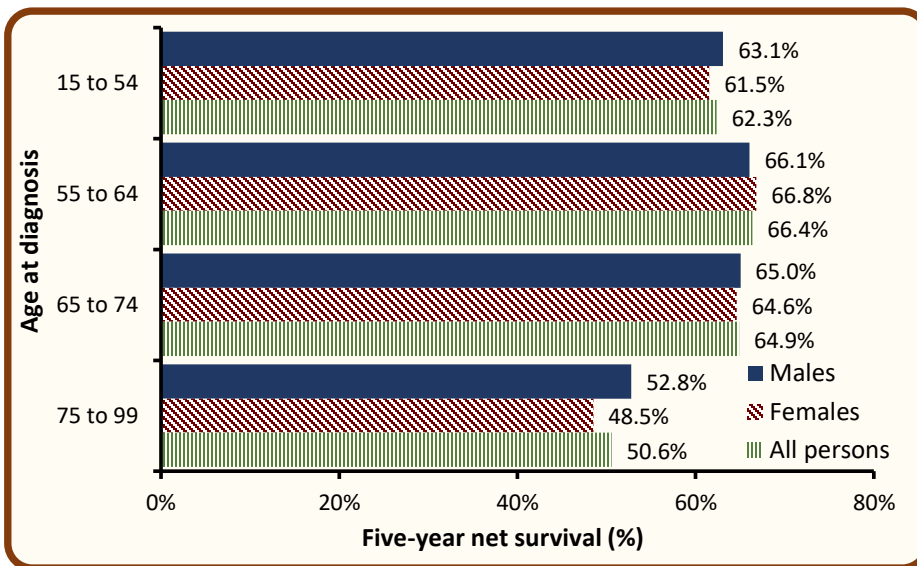
Trends in survival - Colon cancer, Patients diagnosed in 1995-2014

- Among men five-year survival (ASNS) from colon cancer increased from 55.4% in 2005-2009 to 61.3% in 2010-2014. This difference was statistically significant.
- Among women five-year survival (ASNS) from colon cancer increased from 56.5% in 2005-2009 to 59.9% in 2010-2014. This difference was not statistically significant.



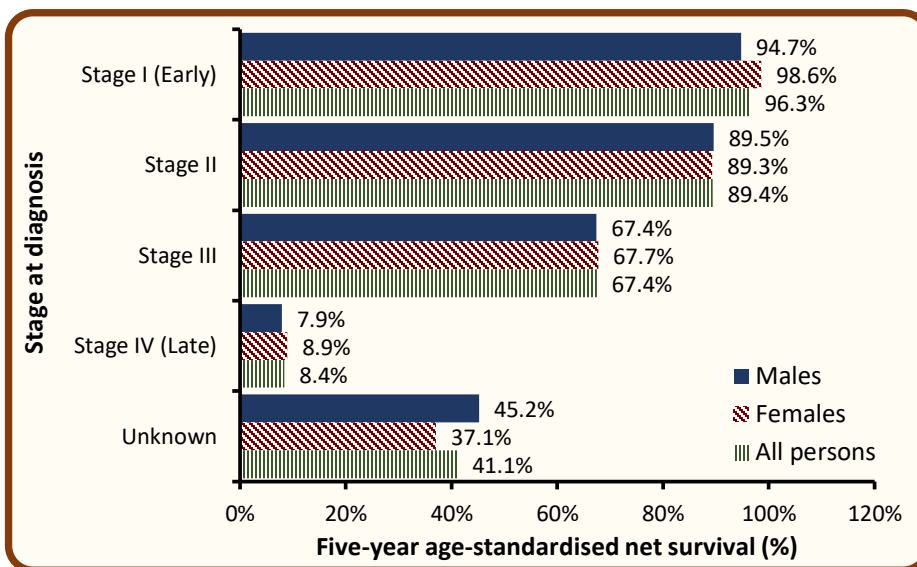
Survival by age at diagnosis - Colon cancer, Patients diagnosed in 2010-2014

- Survival from colon cancer among patients diagnosed in 2010-2014 was related to age with better five-year survival among younger age groups.
- Five-year net survival ranged from 66.4% among patients aged 55-64 at diagnosis to 50.6% among those aged 75 and over.
- Five-year net survival among patients aged 75 and over was 52.8% for men and 48.5% for women.



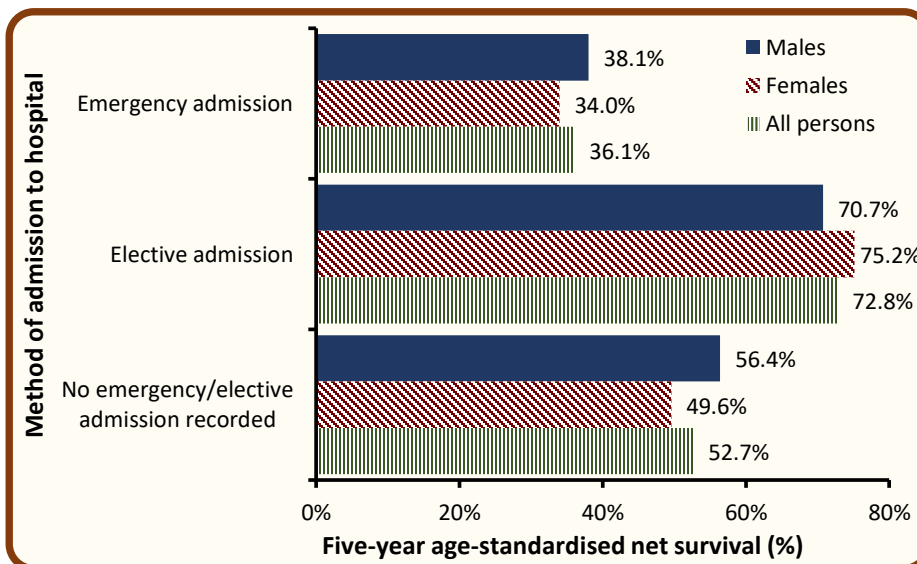
Survival by stage at diagnosis - Colon cancer, Patients diagnosed in 2010-2014

- Stage at diagnosis is one of the most important factors in colon cancer survival with five-year survival decreasing as stage increases.
- Five-year survival (ASNS) from colon cancer ranged from 96.3% for early stage (stage I) disease to 8.4% for late stage (stage IV) disease.
- Five-year survival (ASNS) for unstaged cancer was 41.1%.
- Five-year survival (ASNS) for stage IV cancer was 7.9% for men, compared to 8.9% for women.



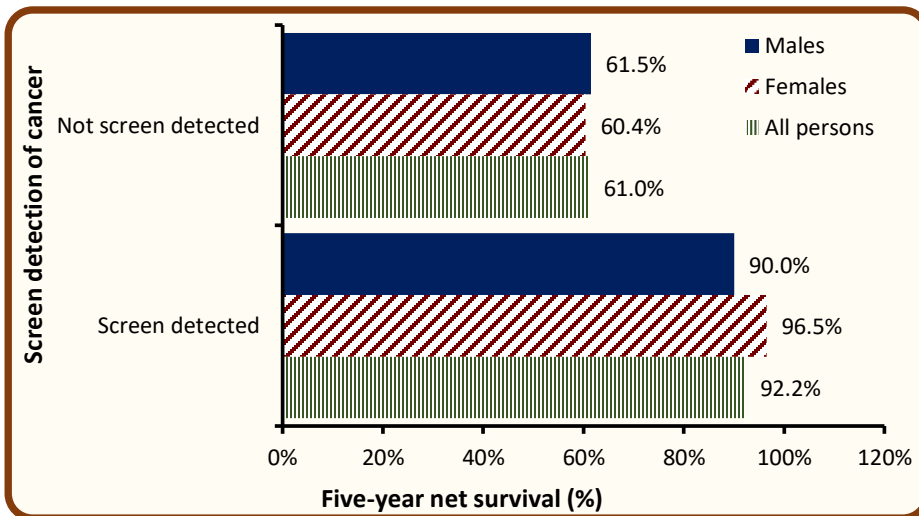
Survival by method of most recent admission to hospital - Colon cancer, Patients diagnosed in 2010-2014

- Five-year survival (ASNS) among patients who had an emergency admission to hospital within 30 days prior to their cancer diagnosis was 36.1% compared to 72.8% among those with elective admissions and 52.7% among those who had no hospital admissions recorded within 30 days prior to diagnosis.
- Five-year survival (ASNS) among patients who had an emergency admission to hospital within 30 days prior to their cancer diagnosis was 38.1% for men, compared to 34.0% for women.



Survival by screen detection of cancer - Colon cancer, Ages 60-74, Patients diagnosed in 2010-2014

- Five-year survival among patients aged 60 to 74 whose colon cancer was detected by screening was 92.2% compared to 61.0% among colon cancer patients who were not detected via screening.
- Five-year survival among patients aged 60 to 74 whose colon cancer was detected via screening was 90.0% for men, compared to 96.5% for women.



Prevalence

- At the end of 2019, there were 5,857 people (Males: 2,998; Females: 2,859) living with colon cancer who had been diagnosed with the disease during 1995-2019.
- Of these, 51.2% were male, 53.3% were aged 75 and over, and 10.9% 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	207	174	381	123	137	260	330	311	641
1-5 years	510	439	949	431	407	838	941	846	1,787
5-10 years	433	346	779	458	424	882	891	770	1,661
10-25 years	310	315	625	526	617	1,143	836	932	1,768
0-25 years	1,460	1,274	2,734	1,538	1,585	3,123	2,998	2,859	5,857

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

- Among males the number of survivors from colon cancer who had been diagnosed within the previous ten years (10-year prevalence) increased by 5.0% from 2,059 survivors in 2014 to 2,162 survivors in 2019.
- Among females the number of survivors from colon cancer who had been diagnosed within the previous ten years (10-year prevalence) increased by 9.6% from 1,759 survivors in 2014 to 1,927 survivors in 2019.

Year	10-year prevalence		
	Male	Female	Both sexes
2010	1,642	1,542	3,184
2011	1,752	1,624	3,376
2012	1,850	1,640	3,490
2013	1,965	1,709	3,674
2014	2,059	1,759	3,818
2015	2,114	1,817	3,931
2016	2,140	1,871	4,011
2017	2,115	1,870	3,985
2018	2,129	1,906	4,035
2019	2,162	1,927	4,089

Mortality

- During 2015-2019 there were 118 male and 118 female deaths from colon cancer each year.
- Colon cancer made up 5.1% of all male, and 5.6% of all female cancer deaths (ex NMSC).

Deaths by age at death - Colon cancer, Deaths in 2015-2019

- The median age at death during 2015-2019 was 77 for men and 80 for women.
- Risk of death from colon cancer was strongly related to age, with 56.8% of men and 64.4% of women aged 75 years or more at time of death from this cancer.
- 5.1% of colon cancer deaths occurred among those aged under 55.

Age at death	Average deaths per year		
	Male	Female	Both sexes
0 - 54	6	5	12
54 - 64	14	13	27
65 - 74	30	24	54
75 +	67	76	142
All ages	118	118	236

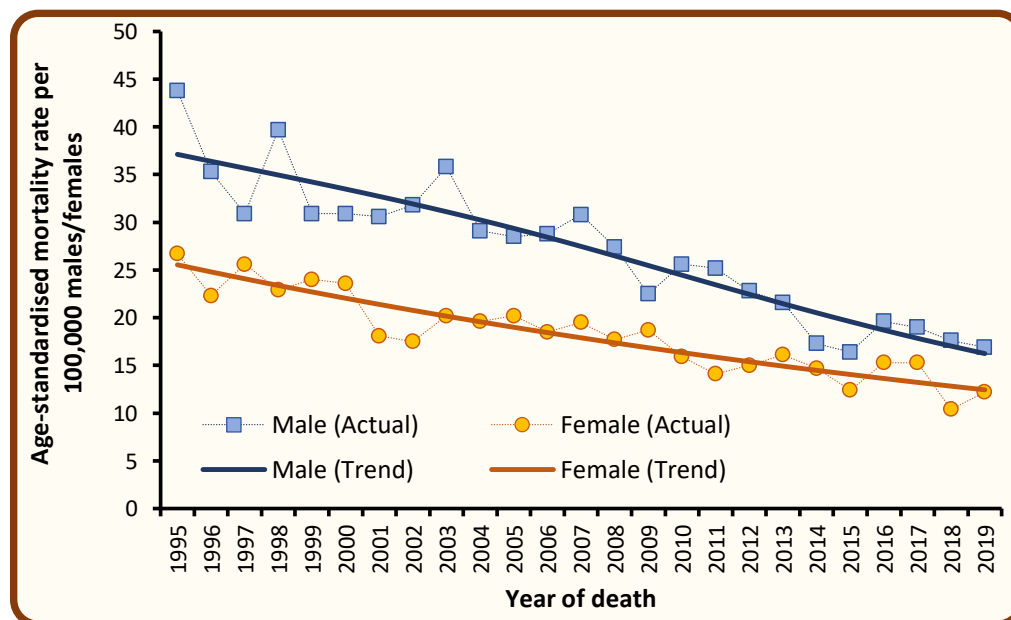
Deaths by year of death - Colon cancer, Deaths in 2010-2019

- Among males the number of deaths from colon cancer decreased by 10.6% from an annual average of 132 deaths in 2010-2014 to 118 deaths in 2015-2019.
- Among females the number of deaths from colon cancer decreased by 5.6% from an annual average of 125 deaths in 2010-2014 to 118 deaths in 2015-2019.

	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Male	144	141	135	130	111	103	126	127	120	116
Female	126	114	123	134	126	108	135	137	95	114
Both sexes	270	255	258	264	237	211	261	264	215	230

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

- Among males age-standardised mortality rates from colon cancer decreased by 19.7% between 2010-2014 and 2015-2019 from 22.3 to 17.9 deaths per 100,000 persons years. This difference was statistically significant.
- Among females age-standardised mortality rates from colon cancer decreased by 13.8% between 2010-2014 and 2015-2019 from 15.2 to 13.1 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.

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. colon 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.