All cancers

1993-2021

(ICD10 codes: C00-C97)

Northern Ireland Cancer Registry, 2024

An official statistics publication

ABOUT THIS REPORT

Contents

This report includes information on incidence of all cancers as recorded by the Northern Ireland Cancer Registry (NICR). Incidence data is available annually from 1993 to 2021, however in order to provide stable and robust figures the majority of information presented in this report is based upon the average number of cases diagnosed in the last five years.

Methodology

The methodology used in producing the statistics presented in this report, including details of data sources, classifications and coding are available in the accompanying methodology report available at: www.qub.ac.uk/research-centres/nicr/CancerInformation/official-statistics.

Official statistics

The incidence and prevalence statistics in this publication are designated as official statistics signifying that they comply with the Code of Practice for Official Statistics. Further information on this code is available at code.statisticsauthority.gov.uk.

Cancer mortality data

The NI Statistics and Research Agency (NISRA) is the official statistics provider of cancer mortality data in Northern Ireland. However, for completeness, data on cancer mortality is also provided in this report. While analysis is conducted by NICR staff, the original data is provided courtesy of the General Register Office (NI) via the Department of Health.

Reuse of information

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Northern Ireland Cancer Registry 2024. All cancers: 1993-2021. Available at: www.qub.ac.uk/research-centres/nicr

Further information

Further information is available at: www.qub.ac.uk/research-centres/nicr

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Acknowledgements

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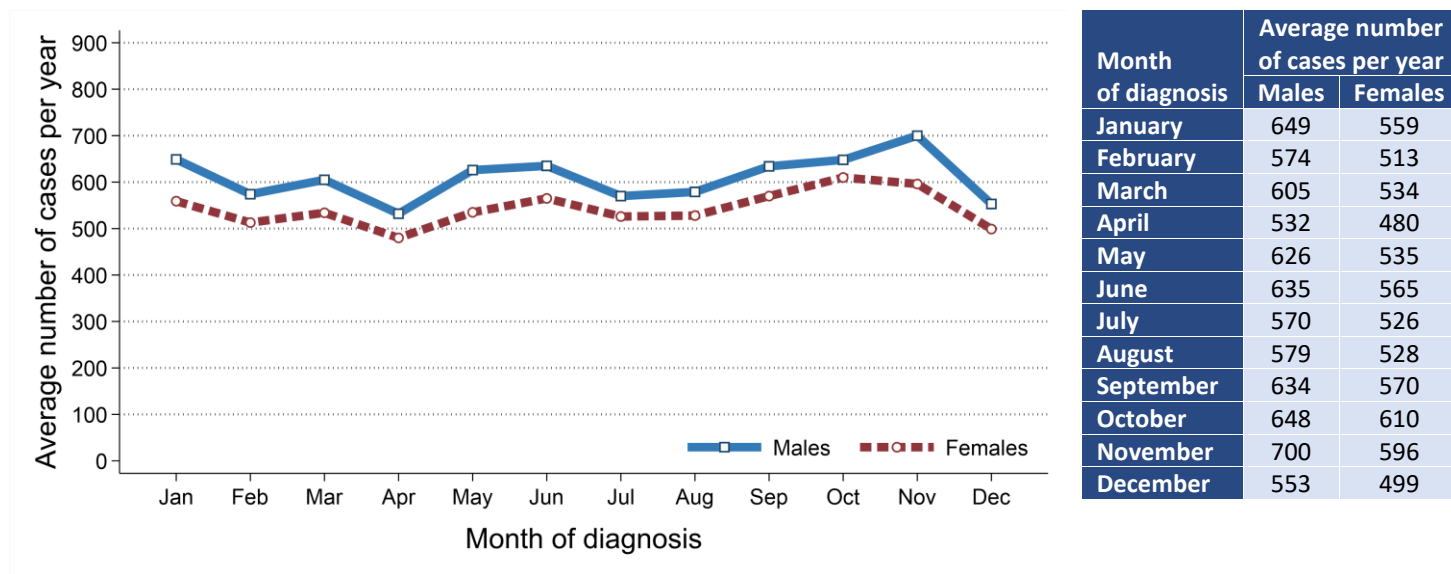
NICR is funded by the Public Health Agency and is based in Queen's University, Belfast.
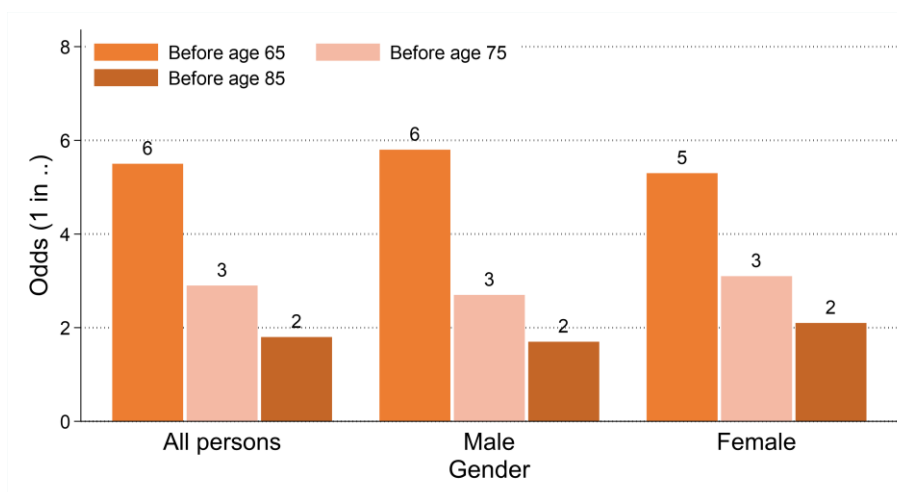
INCIDENCE

- There were 69,103 cases of cancer diagnosed during 2017-2021 in Northern Ireland. On average this was 13,821 cases per year.
- During this period 47.1% of cancer cases were among women (Male cases: 36,524, Female cases: 32,579). On average there were 7,305 male and 6,516 female cases of cancer per year.
- The most common diagnosis month during 2017-2021 was November among males with 700 cases per year and October among females with 610 cases per year.

Figure 1: Average number of cases of cancer per year in 2017-2021 by month of diagnosis

Month of diagnosis	Average number of cases per year	
	Males	Females
January	649	559
February	574	513
March	605	534
April	532	480
May	626	535
June	635	565
July	570	526
August	579	528
September	634	570
October	648	610
November	700	596
December	553	499

- The cancer incidence rates for each gender were 785.4 cases per 100,000 males and 679.3 cases per 100,000 females.
- The odds of developing cancer before age 85 was 1 in 1.7 for men and 1 in 2.1 for women.

Figure 2: Odds of developing cancer in 2017-2021

INCIDENCE BY AGE

- The median age of patients diagnosed with cancer during 2017-2021 was 71 years (Males: 71, Females: 69).
- The risk of developing cancer varied by age, with 38.9% of men and 36.5% of women diagnosed with cancer aged 75 and over at diagnosis.
- In contrast, 15.9% of patients diagnosed with cancer were aged 0 to 54 at diagnosis.

Figure 3: Average number of cases of cancer diagnosed per year in 2017-2021 by age at diagnosis
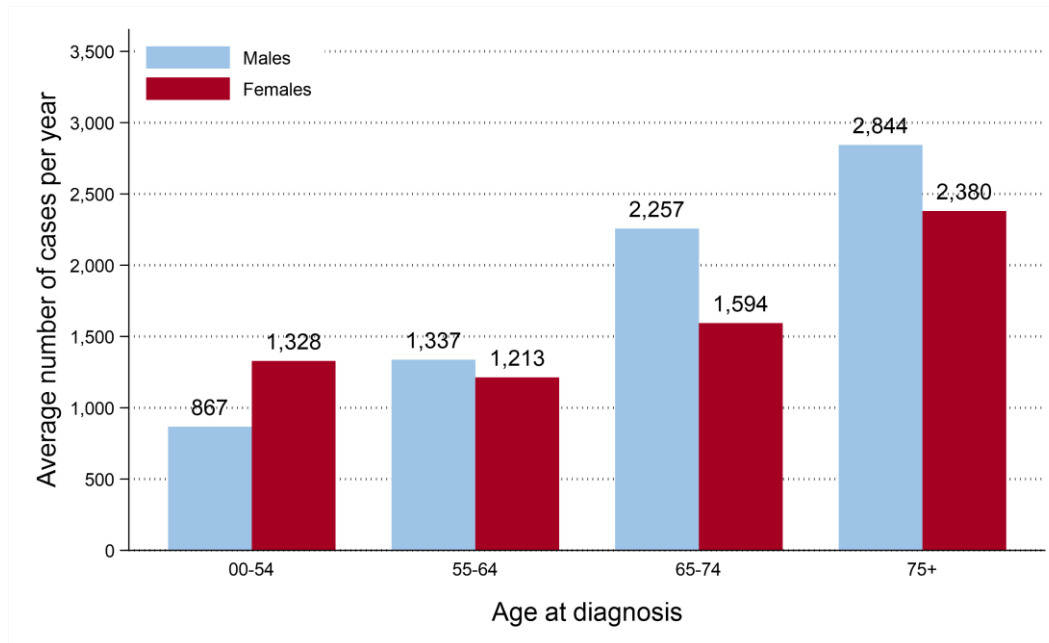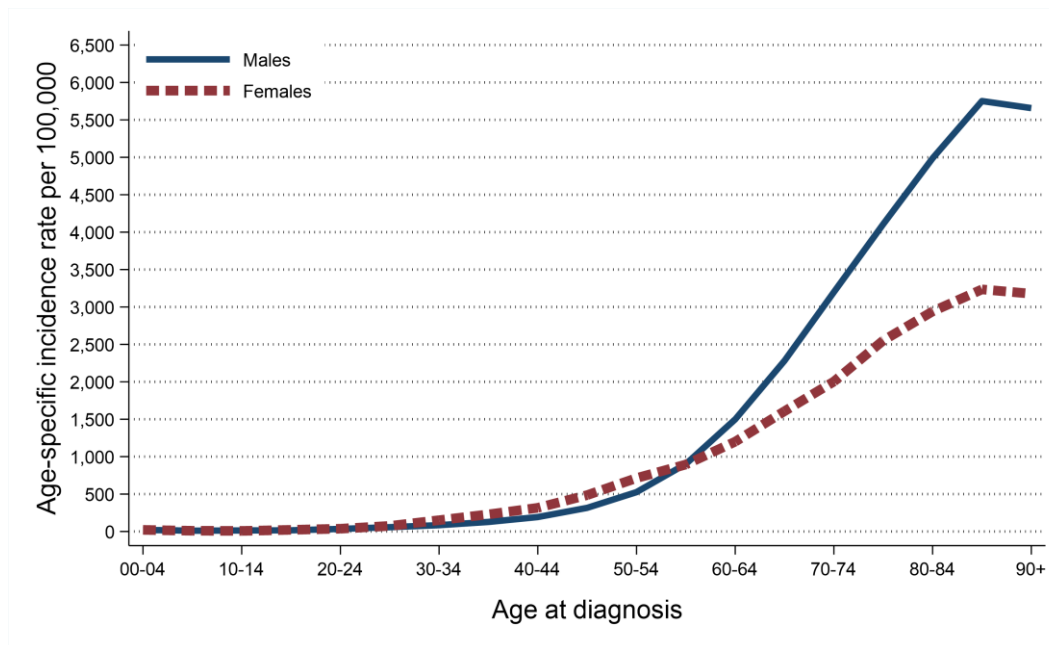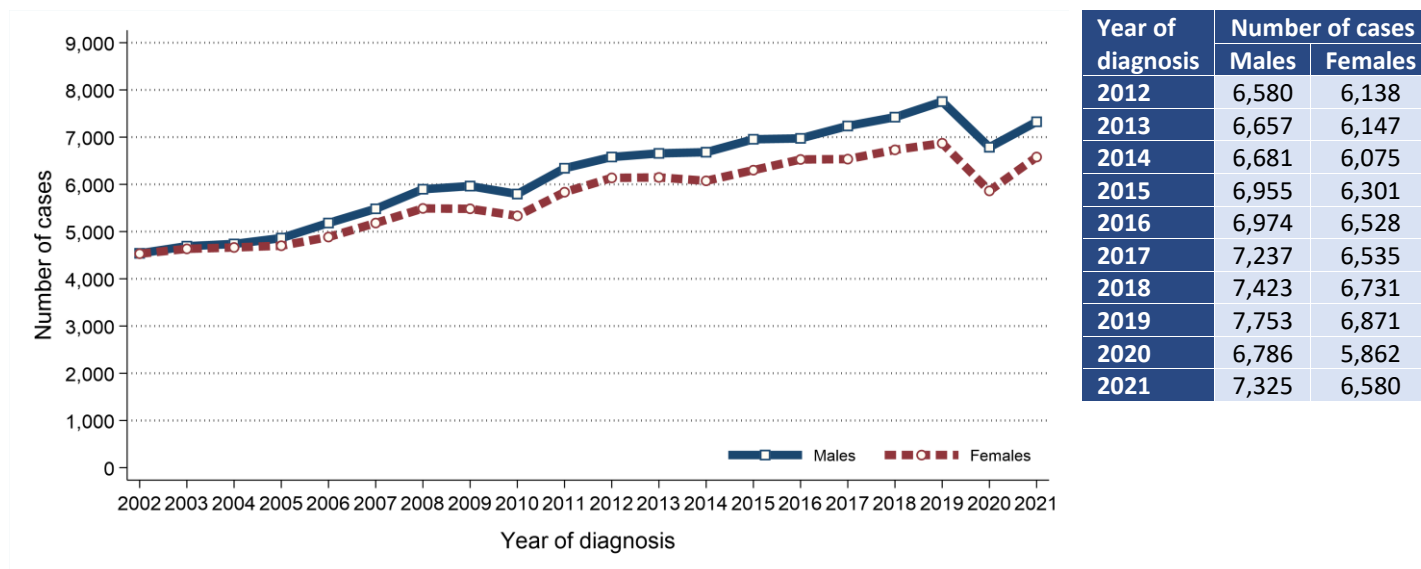

*Figure 4: Age-specific incidence rates of cancer in 2017-2021*

INCIDENCE TRENDS

- The number of cases of cancer among males increased between 2012-2016 and 2017-2021 by 7.9% from 33,847 cases (6,769 cases per year) to 36,524 cases (7,305 cases per year).
- The number of cases of cancer among females increased between 2012-2016 and 2017-2021 by 4.5% from 31,189 cases (6,238 cases per year) to 32,579 cases (6,516 cases per year).

Figure 5: Trends in number of cases of cancer diagnosed from 2002 to 2021

Year of diagnosis	Number of cases	
	Males	Females
2012	6,580	6,138
2013	6,657	6,147
2014	6,681	6,075
2015	6,955	6,301
2016	6,974	6,528
2017	7,237	6,535
2018	7,423	6,731
2019	7,753	6,871
2020	6,786	5,862
2021	7,325	6,580

- Male age-standardised cancer incidence rates decreased between 2012-2016 and 2017-2021 by 4.1% from 1,002.6 to 961.8 cases per 100,000 males. This change was statistically significant.
- Female age-standardised cancer incidence rates decreased between 2012-2016 and 2017-2021 by 3.0% from 738.7 to 716.9 cases per 100,000 females. This change was statistically significant.

Figure 6: Trends in incidence rates of cancer from 2002 to 2021
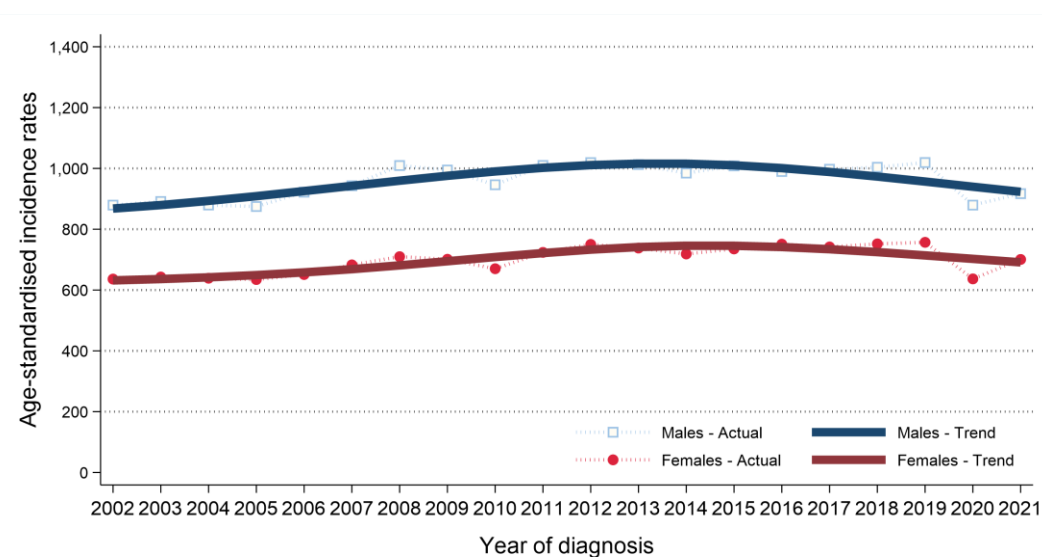
Age-standardised incidence rates illustrate the change in the number of cases within a population of a fixed size and age structure (2013 European Standard).

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 TRENDS BY AGE

- Between 2012-2016 and 2017-2021 the number of cases of cancer among

  - Persons aged 0 to 54 decreased by 0.1% among males and increased by 3.3% among females.

  - Persons aged 55 to 64 increased by 8.1% among males and increased by 10.2% among females.

  - Persons aged 65 to 74 increased by 6.2% among males and increased by 1.9% among females.

  - Persons aged 75 and over increased by 12.0% among males and increased by 4.0% among females.

Table 1: Average number of cases per year of cancer by period of diagnosis in 2012-2021

Age at diagnosis	All persons		Male		Female	
	2012-2016	2017-2021	2012-2016	2017-2021	2012-2016	2017-2021
All ages	13,007	13,821	6,769	7,305	6,238	6,516
	.	.	.	.	.	.
0 to 54	2,154	2,196	869	867	1,286	1,328
55 to 64	2,337	2,550	1,237	1,337	1,101	1,213
65 to 74	3,689	3,851	2,125	2,257	1,564	1,594
75 and over	4,827	5,224	2,539	2,844	2,288	2,380

- Between 2012-2016 and 2017-2021 age-standardised incidence rates of cancer among

  - Persons aged 0 to 54 did not change significantly among males or females.

  - Persons aged 55 to 64 did not change significantly among males or females.

  - Persons aged 65 to 74 decreased by 4.1% among males and decreased by 5.1% among females.

  - Persons aged 75 and over decreased by 5.1% among males and decreased by 4.4% among females.

Figure 7: Trends in incidence rates of cancer from 2002 to 2021 by age group
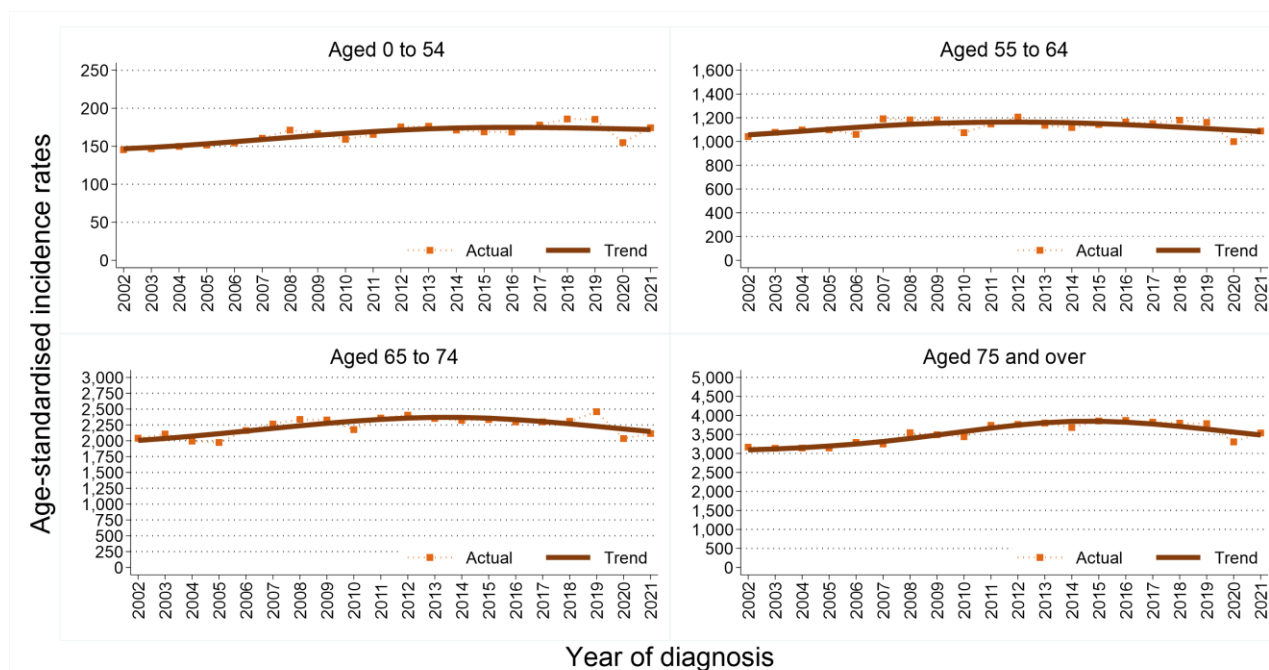
INCIDENCE BY CANCER TYPE

- During 2017-2021 the most common cancer types among males were non-melanoma skin cancer (29.9%), prostate cancer (17.9%) and lung cancer (including trachea) (9.6%). Among females they were non-melanoma skin cancer (24.2%), breast cancer (22.9%) and lung cancer (including trachea) (10.0%).

*Table 2: Number of cases of cancer diagnosed in 2017-2021 by cancer type*

Cancer type	All persons		Male		Female	
	Total cases in period	Average cases per year	Total cases in period	Average cases per year	Total cases in period	Average cases per year
All cancers	**69,103**	**13,821**	**36,524**	**7,305**	**32,579**	**6,516**
	.	.	.	.	.	.
Bladder cancer	1,216	243	871	174	345	69
Bone cancer	75	15	40	8	35	7
Brain cancer (including central nervous system)	809	162	479	96	330	66
Breast cancer	7,504	1,501	53	11	7,451	1,490
Cervical cancer	407	81	.	.	407	81
Colorectal cancer	6,081	1,216	3,409	682	2,672	534
Gallbladder cancer (including other biliary)	515	103	204	41	311	62
Head and neck cancer	1,788	358	1,222	244	566	113
Kidney cancer	1,561	312	1,024	205	537	107
Leukaemia	1,323	265	795	159	528	106
Liver cancer	755	151	516	103	239	48
Lung cancer (including trachea)	6,768	1,354	3,524	705	3,244	649
Lymphoma	2,123	425	1,215	243	908	182
Malignant melanoma	1,954	391	908	182	1,046	209
Mesothelioma	253	51	210	42	43	9
Multiple myeloma (including plasma cell neoplasms)	886	177	533	107	353	71
Non-melanoma skin cancer	18,796	3,759	10,923	2,185	7,873	1,575
Oesophageal cancer	1,094	219	799	160	295	59
Ovarian cancer (including fallopian tube)	1,002	200	.	.	1,002	200
Pancreatic cancer	1,397	279	754	151	643	129
Prostate cancer	6,552	1,310	6,552	1,310	.	.
Stomach cancer	965	193	597	119	368	74
Testicular cancer	326	65	326	65	.	.
Thyroid cancer	743	149	207	41	536	107
Unknown primary cancer	899	180	416	83	483	97
Uterine cancer	1,317	263	.	.	1,317	263
Other cancer	1,994	399	947	189	1,047	209

Figure 8: Proportion of cases of cancer in 2017-2021 by cancer type
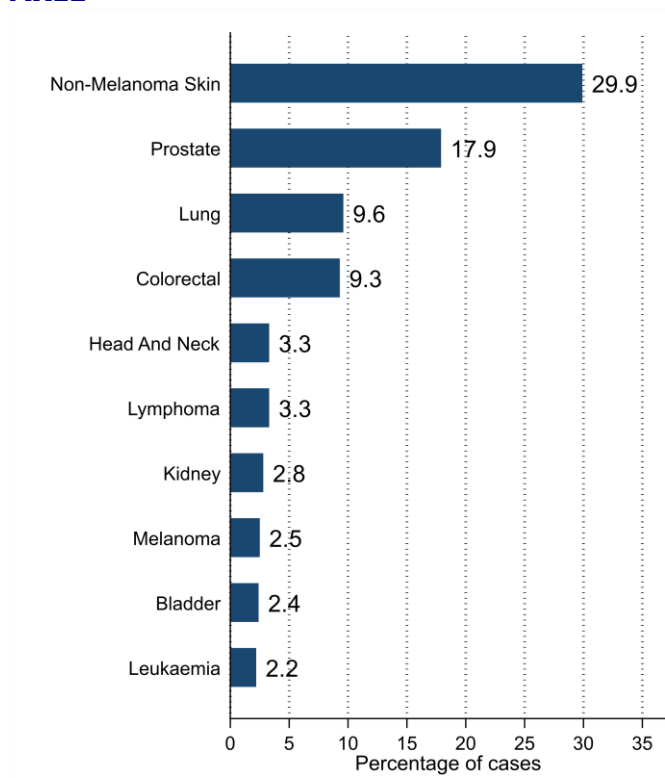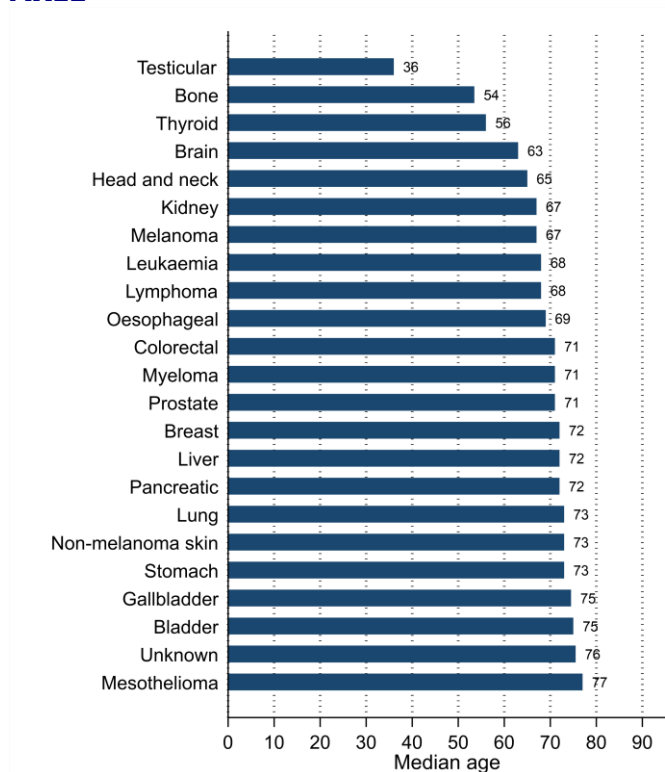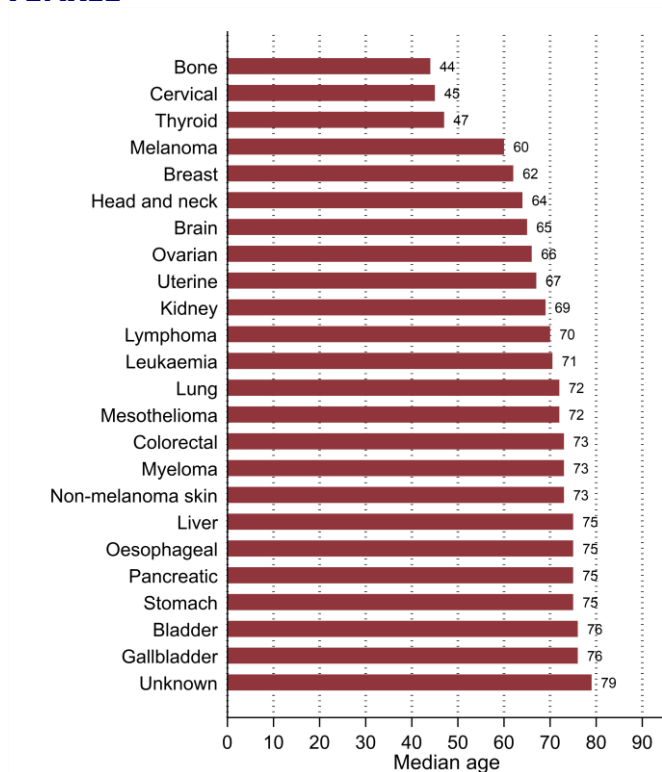
MALE

FEMALE
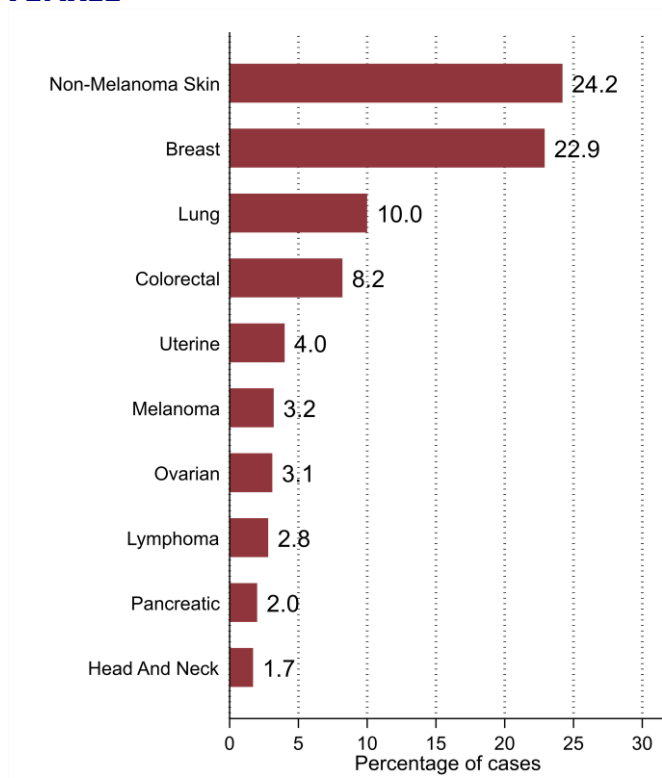
- The median age at diagnosis for most types of cancer during 2017-2021 was 60 years or more.
- Exceptions include testicular cancer (36), bone cancer (54) and thyroid cancer (56) among males and bone cancer (44), cervical cancer (45) and thyroid cancer (47) among females.

Figure 9: Median age of cancer in 2017-2021 by cancer type
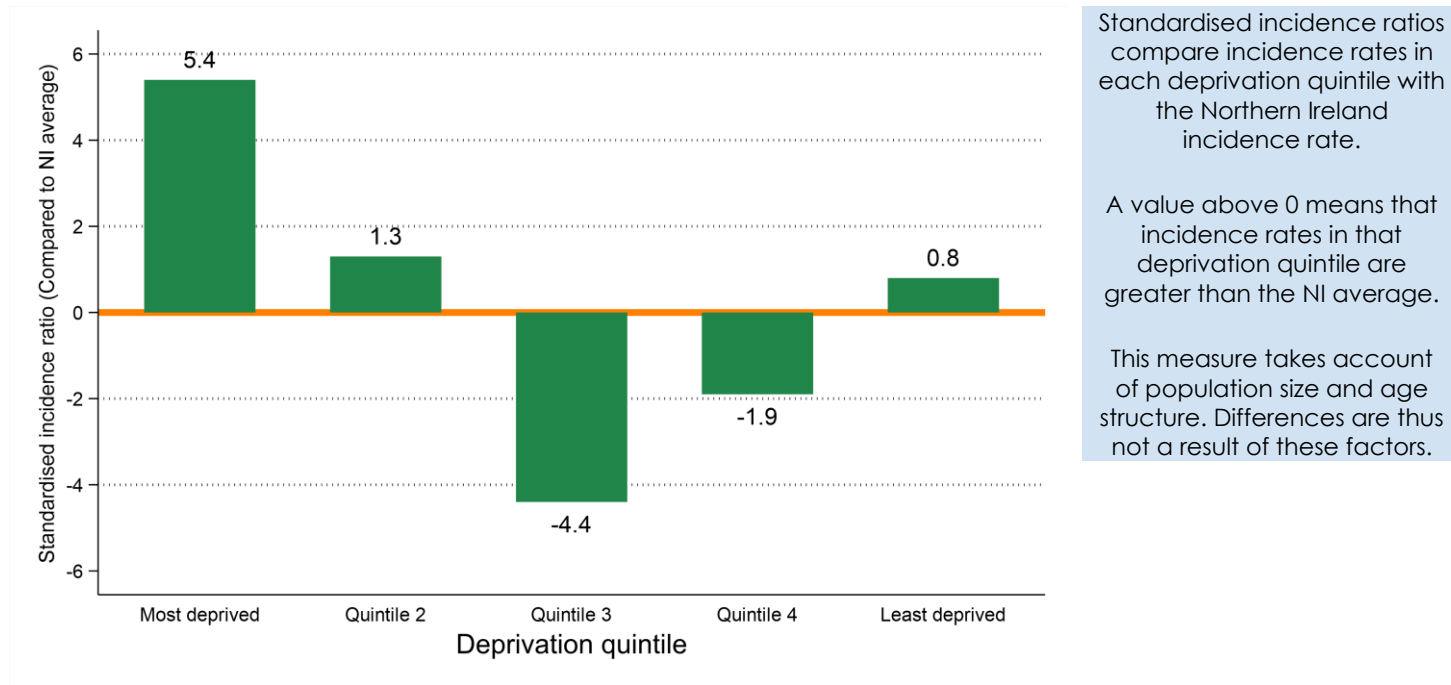
MALE

FEMALE

INCIDENCE BY DEPRIVATION

- The number of cases of cancer diagnosed during 2017-2021 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 5.4% higher than the NI average.
  - in the least socio-economically deprived areas did not vary significantly from the NI average.

Table 3: Number of cases of cancer diagnosed in 2017-2021 by deprivation quintile

Deprivation quintile	All persons		Male		Female	
	Total cases in period	Average cases per year	Total cases in period	Average cases per year	Total cases in period	Average cases per year
Northern Ireland	**69,103**	**13,821**	**36,524**	**7,305**	**32,579**	**6,516**
	.	.	.	.	.	.
Most deprived	11,972	2,394	6,143	1,229	5,829	1,166
Quintile 2	14,009	2,802	7,469	1,494	6,540	1,308
Quintile 3	13,907	2,781	7,381	1,476	6,526	1,305
Quintile 4	14,402	2,880	7,624	1,525	6,778	1,356
Least deprived	14,801	2,960	7,900	1,580	6,901	1,380
Unknown	12	2	7	1	5	1

Figure 10: Standardised incidence ratio comparing deprivation quintile to Northern Ireland for cancer diagnosed in 2017-2021

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

A value above 0 means that incidence rates in that deprivation quintile 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.

INCIDENCE BY DEPRIVATION AND CANCER TYPE

- While cancer incidence is higher in the most deprived communities overall, the relationship between cancer and socio-economic deprivation varies by cancer type.

- During 2017-2021 incidence of cervical cancer, gallbladder cancer (including other biliary), head and neck cancer, liver cancer, lung cancer (including trachea), oesophageal cancer, stomach cancer and unknown primary cancer was higher in the most deprived areas than the NI average.

- During 2017-2021 incidence of malignant melanoma, non-melanoma skin cancer and prostate cancer was higher in the least deprived areas than the NI average.

Table 4: Incidence and deprivation by cancer type in 2017-2021

| Higher in most deprived areas	Higher in least deprived areas	Not higher in either
Cervical cancer	Malignant melanoma	Bladder cancer
Gallbladder cancer (including other biliary)	Non-melanoma skin cancer	Bone cancer
Head and neck cancer	Prostate cancer	Brain cancer (including central nervous system)
Liver cancer		Breast cancer
Lung cancer (including trachea)		Colorectal cancer
Oesophageal cancer		Kidney cancer
Stomach cancer		Leukaemia
Unknown primary cancer		Lymphoma
		Mesothelioma
		Multiple myeloma (including plasma cell neoplasms)
		Ovarian cancer (including fallopian tube)
		Pancreatic cancer
		Testicular cancer
		Thyroid cancer
		Uterine cancer

INCIDENCE BY HEALTH AND SOCIAL CARE TRUST

- The number of cases of cancer diagnosed during 2017-2021 varied in each Health and Social Care Trust due to variations in population size and age.
- After accounting for these factors, incidence rates:
  - in Belfast HSCT were 4.6% higher than the NI average.
  - in Northern HSCT were 2.3% lower than 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.

Table 5: Number of cases of cancer diagnosed in 2017-2021 by Health and Social Care Trust

Health and Social Care Trust	All persons		Male		Female	
	Total cases in period	Average cases per year	Total cases in period	Average cases per year	Total cases in period	Average cases per year
Northern Ireland	**69,103**	**13,821**	**36,524**	**7,305**	**32,579**	**6,516**
	.	.	.	.	.	.
Belfast HSCT	13,095	2,619	6,693	1,339	6,402	1,280
Northern HSCT	17,922	3,584	9,541	1,908	8,381	1,676
South Eastern HSCT	14,607	2,921	7,792	1,558	6,815	1,363
Southern HSCT	12,846	2,569	6,773	1,355	6,073	1,215
Western HSCT	10,621	2,124	5,718	1,144	4,903	981
Unknown	12	2	7	1	5	1

Figure 11: Standardised incidence ratio comparing Health and Social Care Trust to Northern Ireland for cancer diagnosed in 2017-2021
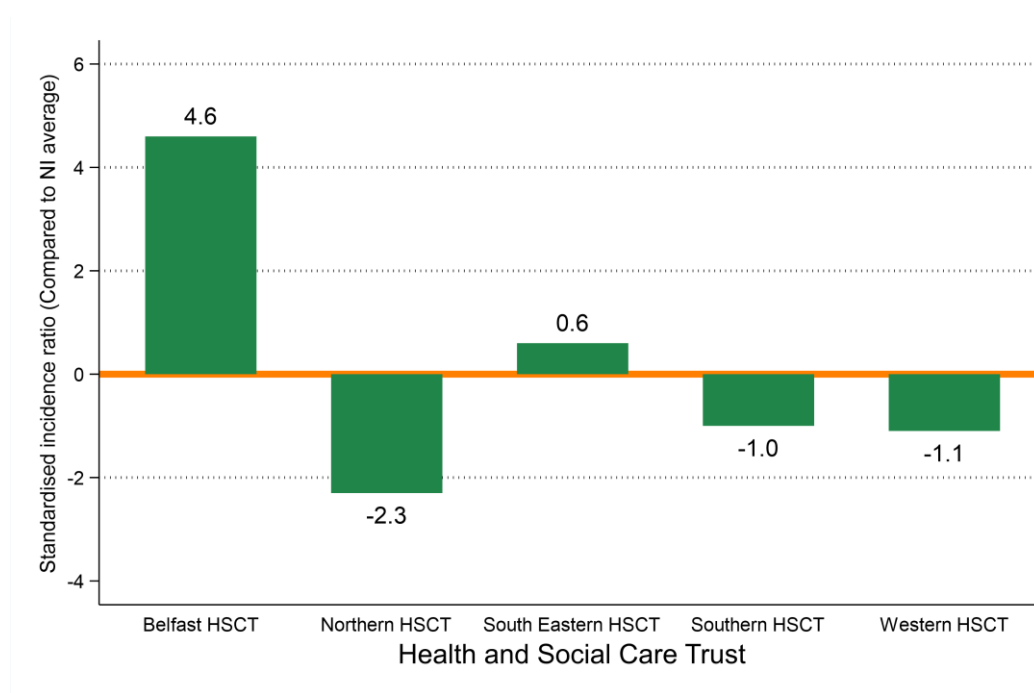
PREVALENCE

- At the end of 2021, there were 104,458 people (Males: 49,704; Females: 54,754) living with cancer who had been diagnosed with the disease during 1997-2021.
- Of these 10.9% had been diagnosed in the previous year (one-year prevalence) and 69.4% in the previous 10 years (ten-year prevalence).
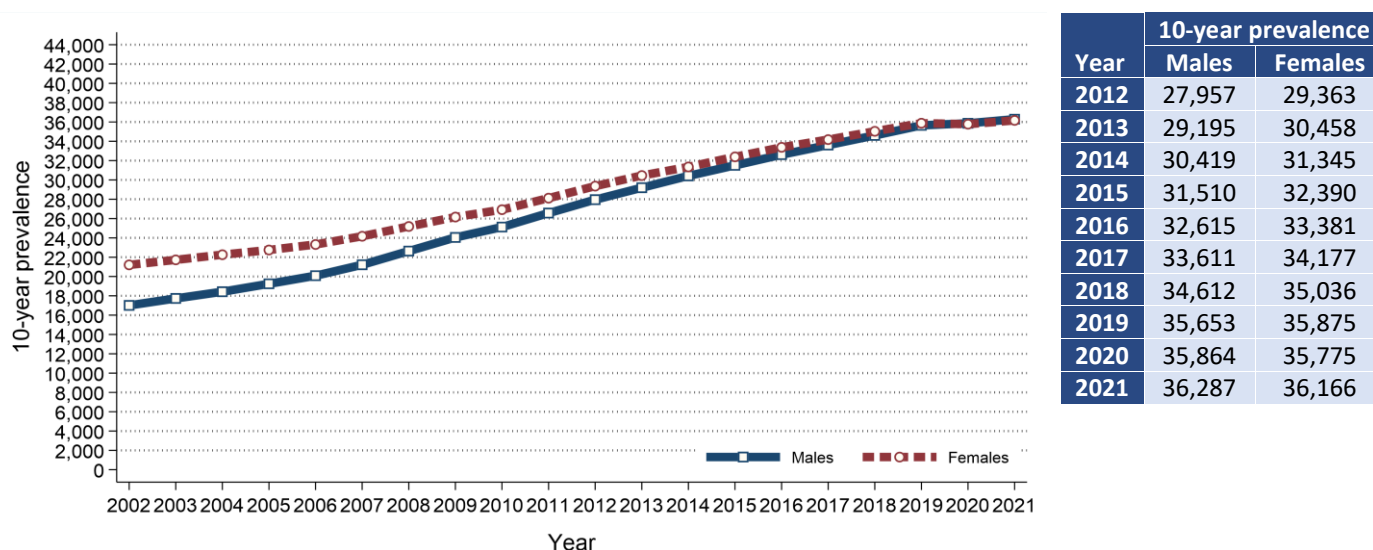- 39.3% of cancer survivors were aged 75 and over at the end of 2021.

Table 6: 25-year prevalence of cancer by age at end of 2021

Gender	Age at end of 2021	25-year prevalence	Time since diagnosis			
			0 to 1 year	1 to 5 years	5 to 10 years	10 to 25 years
All persons	All ages	104,458	11,336	33,504	27,613	32,005
	0 to 74	63,405	7,285	21,309	16,683	18,128
	75 and over	41,053	4,051	12,195	10,930	13,877
Male	All ages	49,704	5,976	17,022	13,289	13,417
	0 to 74	28,816	3,688	10,386	7,624	7,118
	75 and over	20,888	2,288	6,636	5,665	6,299
Female	All ages	54,754	5,360	16,482	14,324	18,588
	0 to 74	34,589	3,597	10,923	9,059	11,010
	75 and over	20,165	1,763	5,559	5,265	7,578

PREVALENCE TRENDS

- 10-year prevalence of cancer among males increased between 2016 and 2021 by 11.3% from 32,615 survivors to 36,287 survivors.
- 10-year prevalence of cancer among females increased between 2016 and 2021 by 8.3% from 33,381 survivors to 36,166 survivors.

Figure 12: Trends in 10-year prevalence of cancer in 2002-2021

Year	10-year prevalence	
	Males	Females
2012	27,957	29,363
2013	29,195	30,458
2014	30,419	31,345
2015	31,510	32,390
2016	32,615	33,381
2017	33,611	34,177
2018	34,612	35,036
2019	35,653	35,875
2020	35,864	35,775
2021	36,287	36,166

PREVALENCE BY CANCER TYPE

- At the end of 2021 the most prevalent cancer types among males were non-melanoma skin cancer (21,445), prostate cancer (12,654) and colorectal cancer (5,076). Among females they were non-melanoma skin cancer (18,015), breast cancer (17,663) and colorectal cancer (4,158).

Figure 13: 25-year prevalence of cancer at the end of 2021 by cancer type

MALE   *FEMALE*
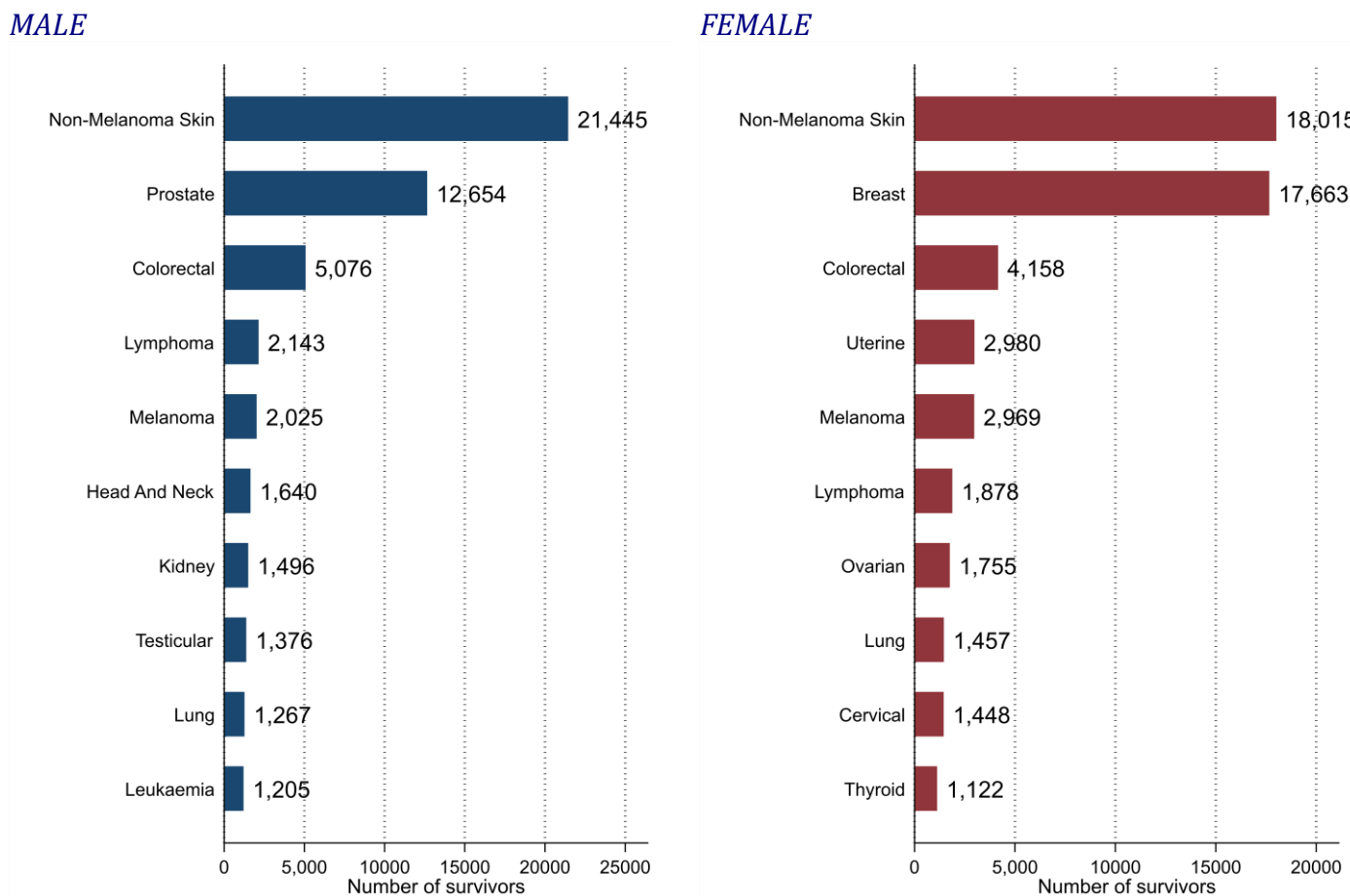
MORTALITY

- There were 22,600 deaths from cancer during 2017-2021 in Northern Ireland. On average this was 4,520 deaths per year.
- During this period 47.5% of cancer deaths were among women (Male deaths: 11,874, Female deaths: 10,726). On average there were 2,375 male and 2,145 female deaths from cancer per year.
- The median age of patients who died from cancer during 2017-2021 was 75 years (Males: 75, Females: 76).
- The risk of dying from cancer varied by age, with 52.0% of men and 53.3% of women who died from cancer aged 75 and over at death.
- In contrast, 7.4% of patients who died from cancer were aged 0 to 54 at death.

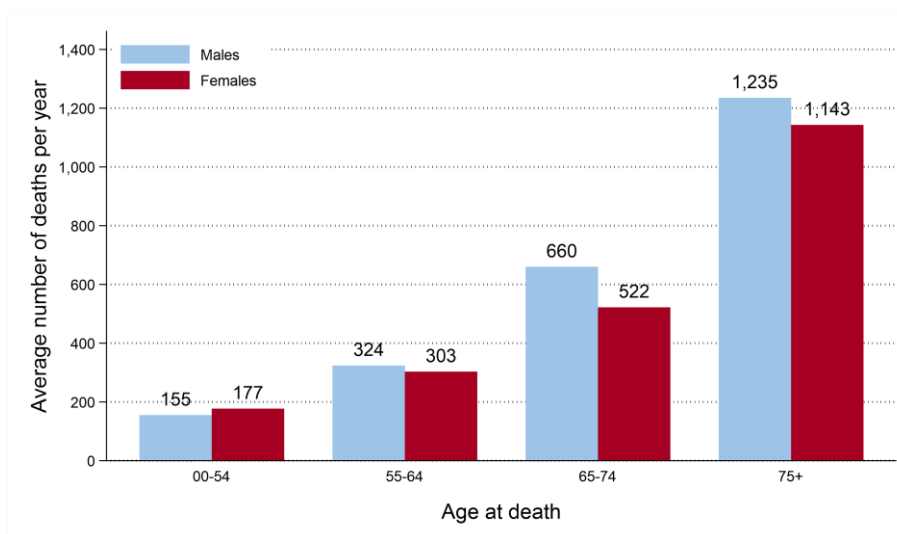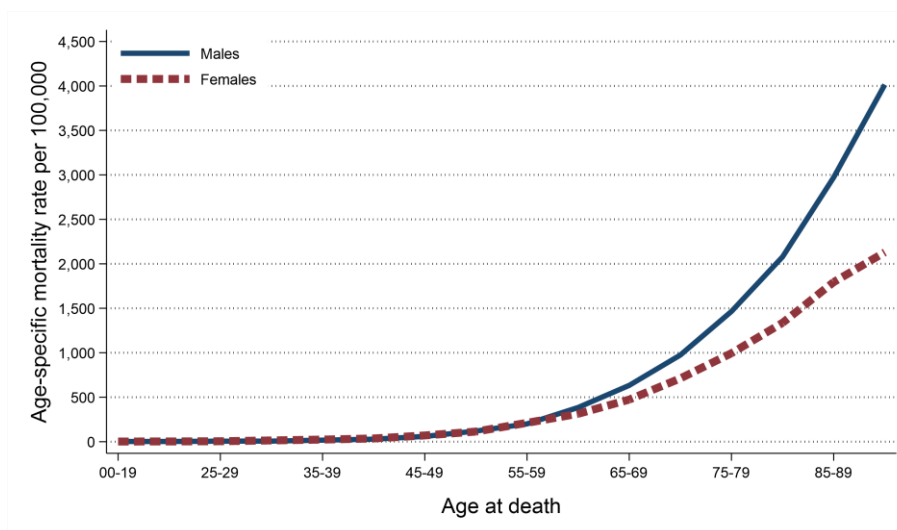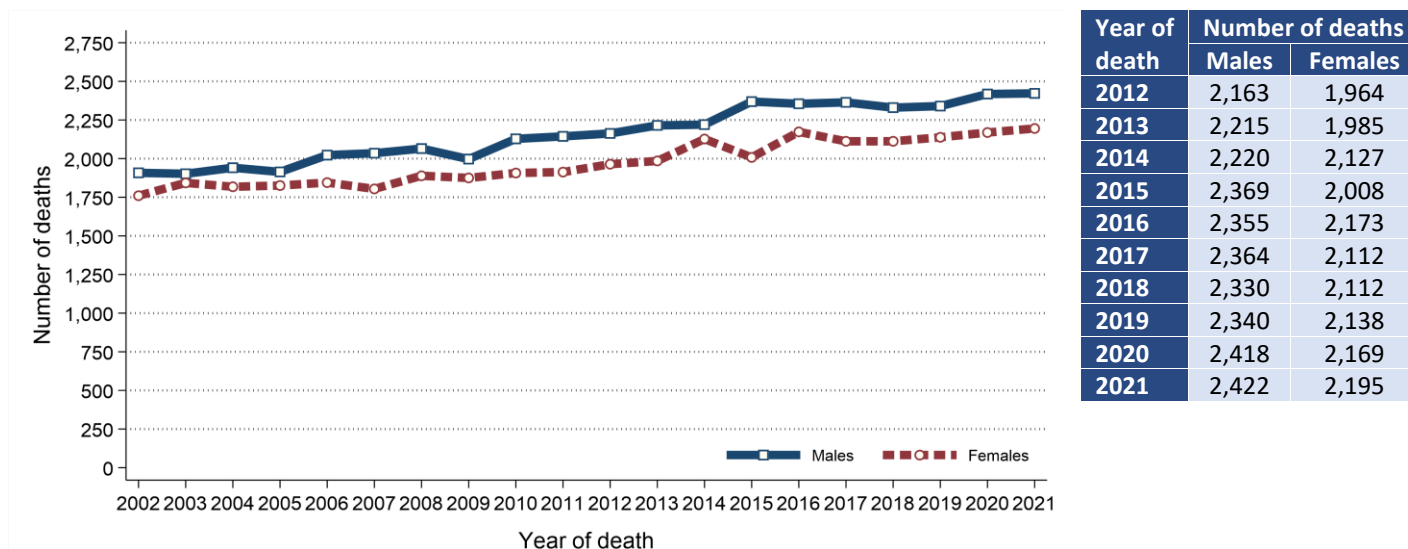*Figure 14: Average number of deaths from cancer per year in 2017-2021 by age at death*

*Figure 15: Age-specific mortality rates of cancer in 2017-2021*

MORTALITY TRENDS

- The number of deaths from cancer among males increased between 2012-2016 and 2017-2021 by 4.9% from 11,322 deaths (2,264 deaths per year) to 11,874 deaths (2,375 deaths per year).
- The number of deaths from cancer among females increased between 2012-2016 and 2017-2021 by 4.6% from 10,257 deaths (2,051 deaths per year) to 10,726 deaths (2,145 deaths per year).

Figure 16: Trends in the number of deaths from cancer from 2002 to 2021

Year of death	Number of deaths	
	Males	Females
2012	2,163	1,964
2013	2,215	1,985
2014	2,220	2,127
2015	2,369	2,008
2016	2,355	2,173
2017	2,364	2,112
2018	2,330	2,112
2019	2,340	2,138
2020	2,418	2,169
2021	2,422	2,195

- Male age-standardised cancer mortality rates decreased between 2012-2016 and 2017-2021 by 7.0% from 357.3 to 332.2 deaths per 100,000 males. This change was statistically significant.
- Female age-standardised cancer mortality rates decreased between 2012-2016 and 2017-2021 by 3.9% from 244.2 to 234.7 deaths per 100,000 females. This change was statistically significant.

Figure 17: Trends in mortality rates of cancer from 2002 to 2021
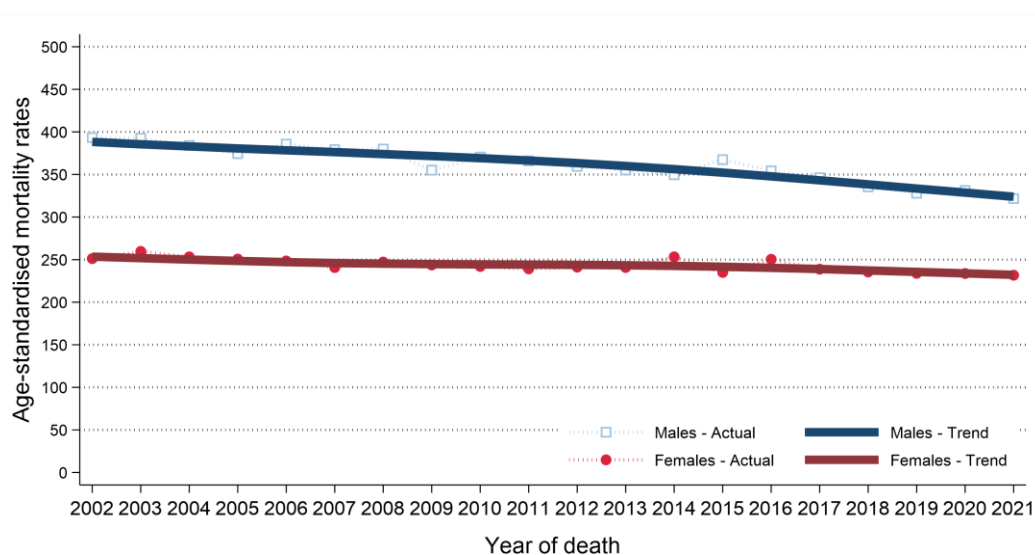
Age-standardised mortality rates illustrate the change in the number of deaths within a population of a fixed size and age structure (2013 European Standard).

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.

MORTALITY BY CANCER TYPE

- During 2017-2021 the most common causes of cancer death among males were lung cancer (including trachea) (23.2%), prostate cancer (12.2%) and colorectal cancer (10.5%). Among females they were lung cancer (including trachea) (22.5%), breast cancer (14.6%) and colorectal cancer (9.6%).

Table 7: Number of deaths from cancer in 2017-2021 by cancer type

Cancer type	All persons		Male		Female	
	Total deaths in period	Average deaths per year	Total deaths in period	Average deaths per year	Total deaths in period	Average deaths per year
All cancers	**22,600**	**4,520**	**11,874**	**2,375**	**10,726**	**2,145**
	.	.	.	.	.	.
Bladder cancer	677	135	445	89	232	46
Bone cancer	40	8	12	2	28	6
Brain cancer (including central nervous system)	641	128	374	75	267	53
Breast cancer	1,579	316	18	4	1,561	312
Cervical cancer	101	20	.	.	101	20
Colorectal cancer	2,273	455	1,241	248	1,032	206
Gallbladder cancer (including other biliary)	173	35	50	10	123	25
Head and neck cancer	702	140	496	99	206	41
Kidney cancer	565	113	382	76	183	37
Leukaemia	555	111	315	63	240	48
Liver cancer	800	160	483	97	317	63
Lung cancer (including trachea)	5,167	1,033	2,755	551	2,412	482
Lymphoma	683	137	371	74	312	62
Malignant melanoma	300	60	165	33	135	27
Mesothelioma	235	47	187	37	48	10
Multiple myeloma (including plasma cell neoplasms)	421	84	232	46	189	38
Non-melanoma skin cancer	186	37	121	24	65	13
Oesophageal cancer	964	193	701	140	263	53
Ovarian cancer (including fallopian tube)	609	122	.	.	609	122
Pancreatic cancer	1,267	253	651	130	616	123
Prostate cancer	1,443	289	1,443	289	.	.
Stomach cancer	588	118	346	69	242	48
Thyroid cancer	56	11	29	6	27	5
Unknown primary cancer	1,157	231	560	112	597	119
Uterine cancer	367	73	.	.	367	73
Other cancer	1,051	210	497	99	554	111

Figure 18: Proportion of deaths from cancer in 2017-2021 by cancer type
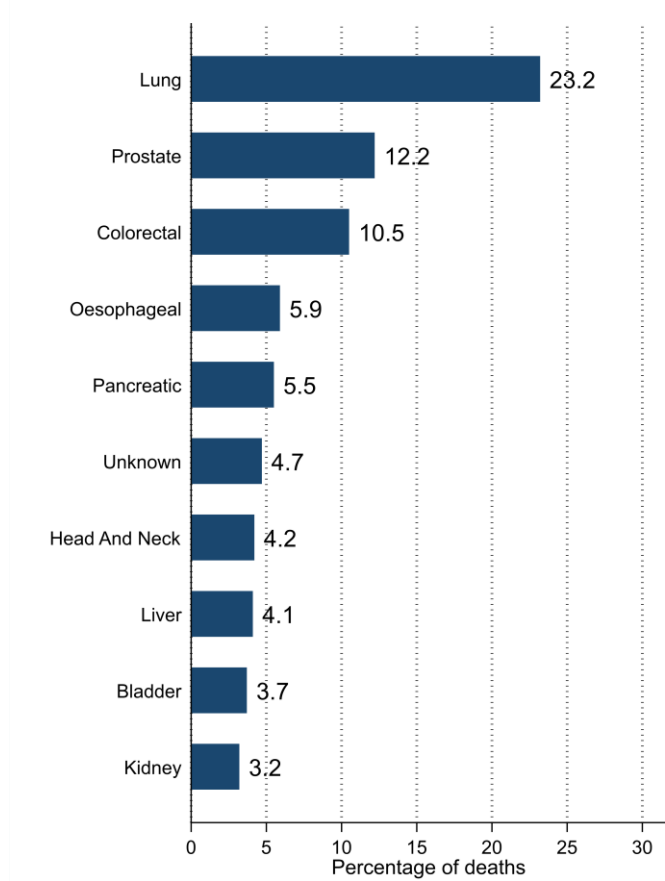
MALE

FEMALE
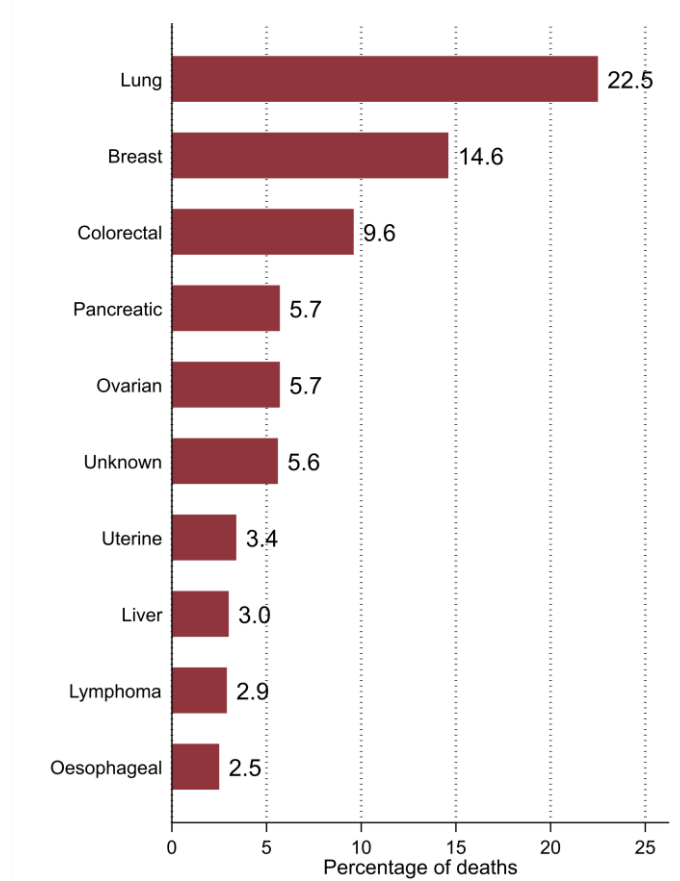
BACKGROUND NOTES

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: 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: Geographic areas are assigned based on a patient's postcode of usual residence at diagnosis using the Jan 2023 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).

Crude incidence/mortality rate: 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.

Age-standardised incidence/mortality rates per 100,000 person years are estimates 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.

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 measure the precision of a statistic (e.g. 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. 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 2021 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.