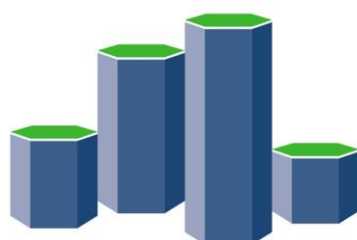

Kidney cancer

1993-2022

(ICD10 codes: C64)



Northern Ireland
Cancer Registry

Northern Ireland Cancer Registry, 2025

An official statistics publication

ABOUT THIS REPORT

Contents

This report includes information on incidence of kidney cancer as recorded by the Northern Ireland Cancer Registry (NICR). Incidence data is available annually from 1993 to 2022, 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, prevalence and survival 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

The information in this report (and any supplementary material) is available for reuse free of charge and without the need to contact NICR. However, we request that NICR is acknowledged as the source of any reused information. The following reference is recommended:

Northern Ireland Cancer Registry 2025. Kidney cancer: 1993-2022. 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.

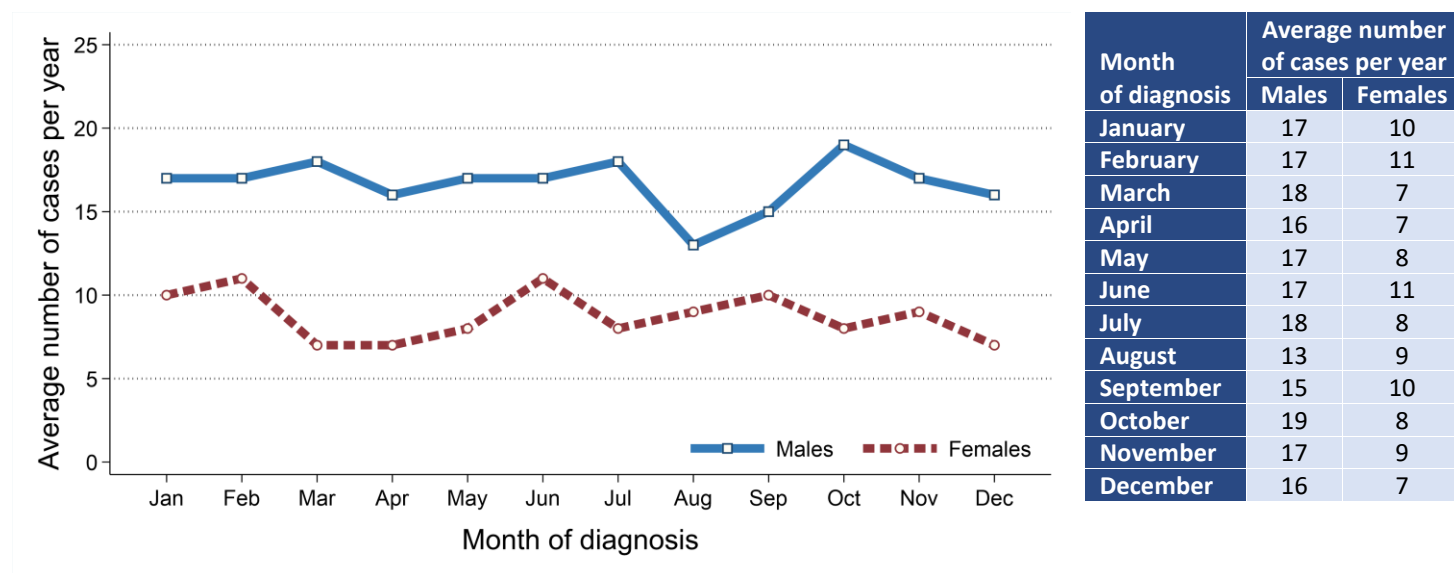
NICR is funded by the Public Health Agency and is based in Queen's University, Belfast.



INCIDENCE

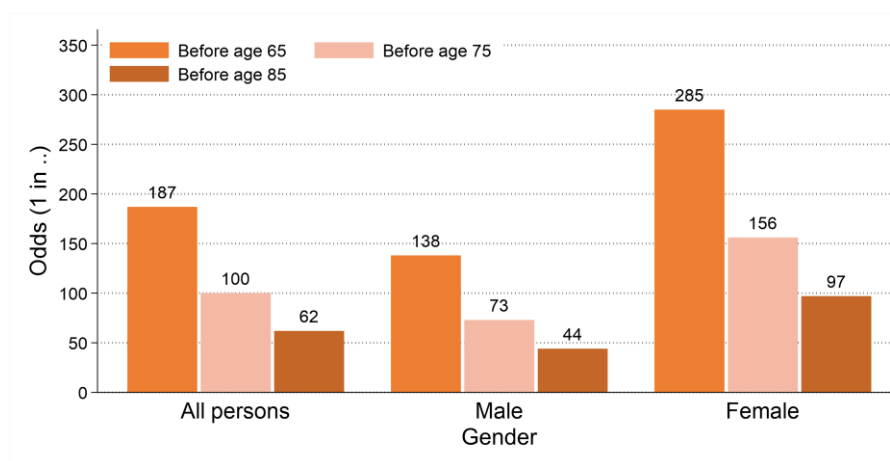
- There were 1,523 cases of kidney cancer diagnosed during 2018-2022 in Northern Ireland. On average this was 305 cases per year.
- During this period 34.5% of kidney cancer cases were among women (Male cases: 997, Female cases: 526). On average there were 199 male and 105 female cases of kidney cancer per year.
- The most common diagnosis month during 2018-2022 was October among males with 19 cases per year and June and February among females with 11 cases per year.

Figure 1: Average number of cases of kidney cancer per year in 2018-2022 by month of diagnosis



- Kidney cancer made up 3.8% of all male and 2.1% of all female cancer cases (excluding non-melanoma skin cancer).
- The kidney cancer incidence rates for each gender were 21.3 cases per 100,000 males and 10.9 cases per 100,000 females.
- The odds of developing kidney cancer before age 85 was 1 in 44 for men and 1 in 97 for women.

Figure 2: Odds of developing kidney cancer in 2018-2022



INCIDENCE BY AGE

- The median age of patients diagnosed with kidney cancer during 2018-2022 was 67 years (Males: 67, Females: 68).
- The risk of developing kidney cancer varied by age, with 28.8% of men and 34.0% of women diagnosed with kidney cancer aged 75 and over at diagnosis.
- In contrast, 18.2% of patients diagnosed with kidney cancer were aged 0 to 54 at diagnosis.

Figure 3: Average number of cases of kidney cancer diagnosed per year in 2018-2022 by age at diagnosis

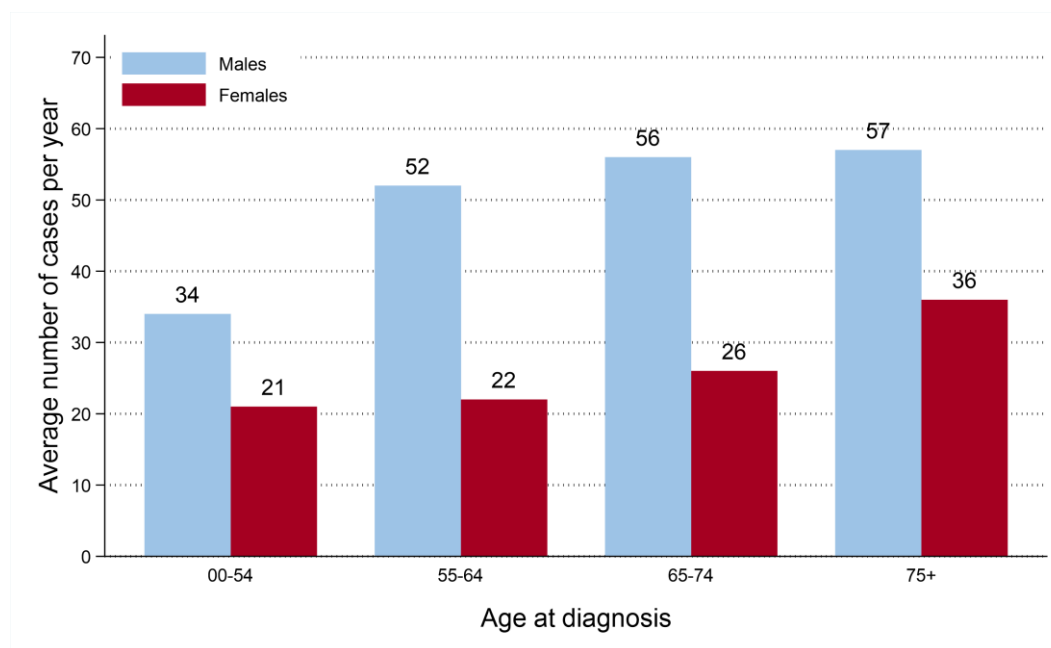
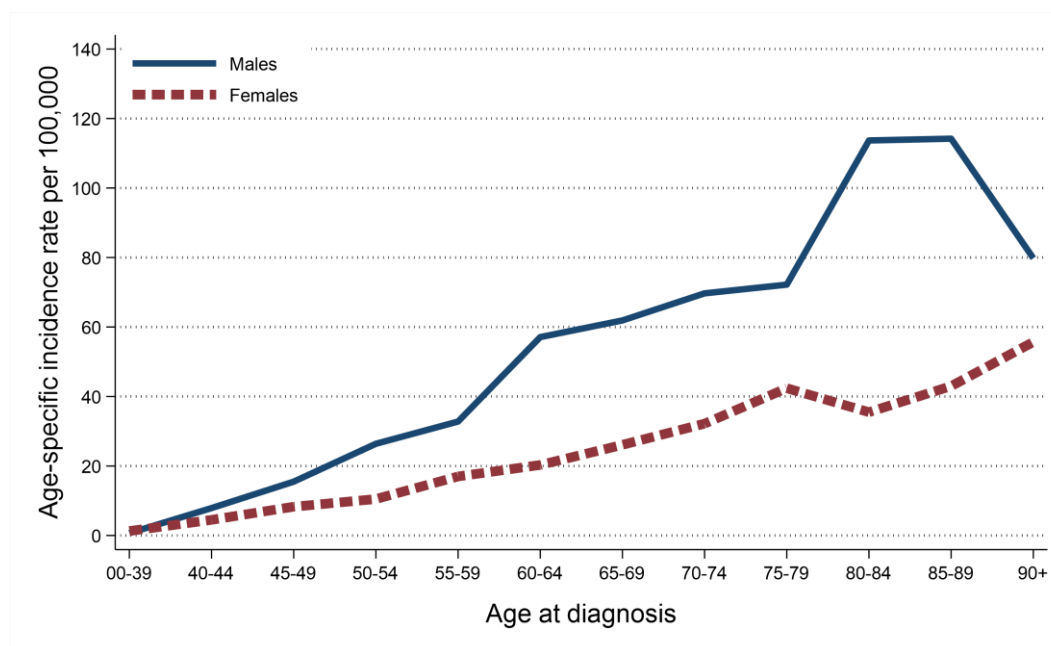


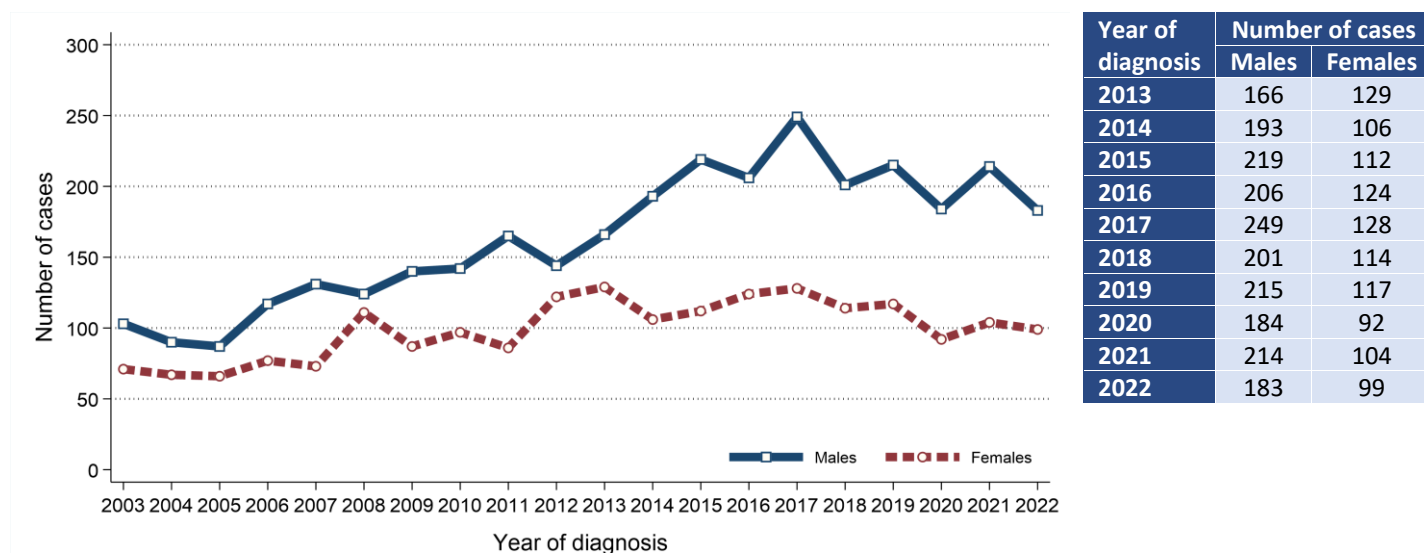
Figure 4: Age-specific incidence rates of kidney cancer in 2018-2022



INCIDENCE TRENDS

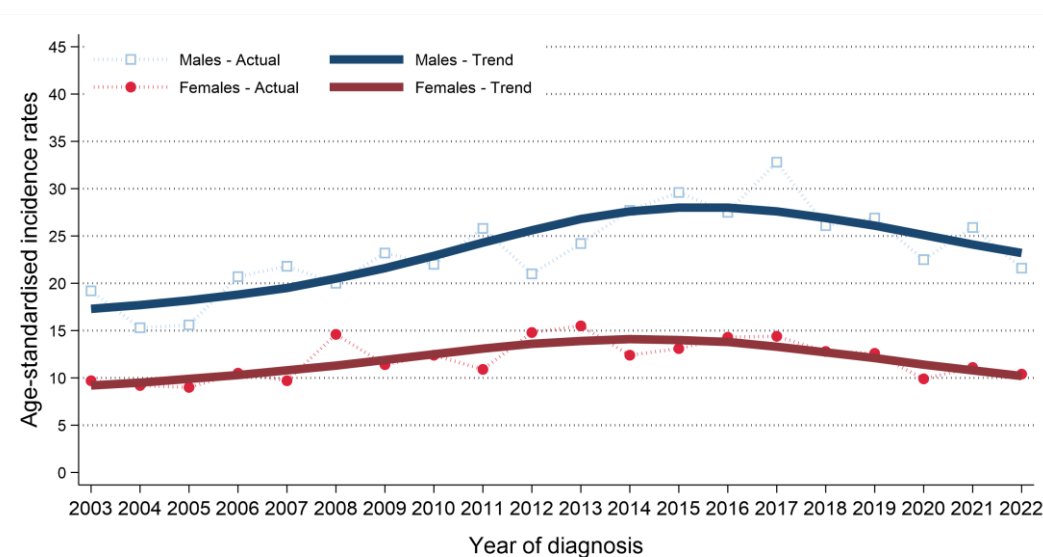
- The number of cases of kidney cancer among males decreased between 2013-2017 and 2018-2022 by 3.5% from 1,033 cases (207 cases per year) to 997 cases (199 cases per year).
- The number of cases of kidney cancer among females decreased between 2013-2017 and 2018-2022 by 12.2% from 599 cases (120 cases per year) to 526 cases (105 cases per year).

Figure 5: Trends in number of cases of kidney cancer diagnosed from 2003 to 2022



- Male age-standardised kidney cancer incidence rates decreased between 2013-2017 and 2018-2022 by 13.7% from 28.4 to 24.5 cases per 100,000 males. This change was statistically significant.
- Female age-standardised kidney cancer incidence rates decreased between 2013-2017 and 2018-2022 by 18.6% from 14.0 to 11.4 cases per 100,000 females. This change was statistically significant.

Figure 6: Trends in incidence rates of kidney cancer from 2003 to 2022



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).

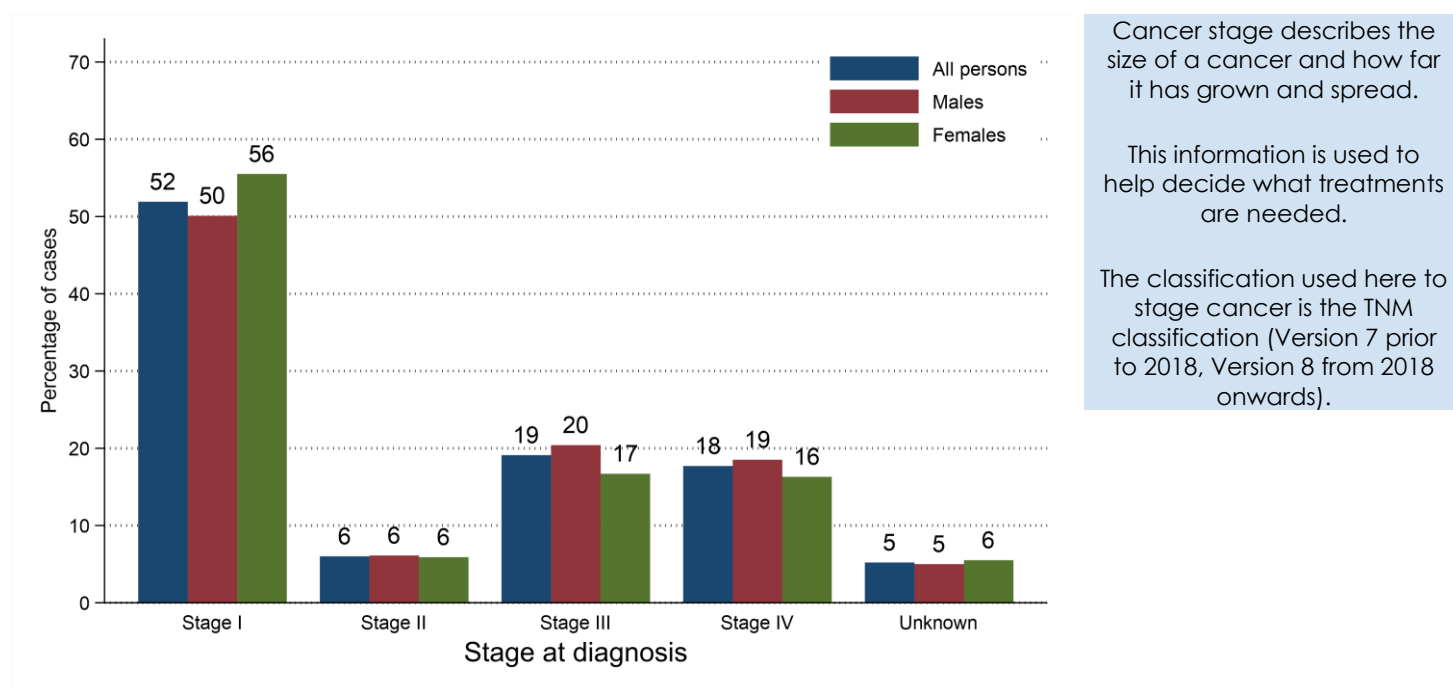
INCIDENCE BY STAGE AT DIAGNOSIS

- During 2018-2022 94.8% of kidney cancer cases had a stage assigned.
- 51.9% of kidney cancer cases were diagnosed at Stage I. (54.8% of staged cases)
- 17.7% of kidney cancer cases were diagnosed at Stage IV. (18.7% of staged cases)

Table 1: Number of cases of kidney cancer diagnosed in 2018-2022 by stage at diagnosis

Stage at diagnosis	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 stages	1,523	305	997	199	526	105
Stage I	791	158	499	100	292	58
Stage II	92	18	61	12	31	6
Stage III	291	58	203	41	88	18
Stage IV	270	54	184	37	86	17
Unknown	79	16	50	10	29	6

Figure 7: Proportion of cases of kidney cancer diagnosed in 2018-2022 by stage at diagnosis



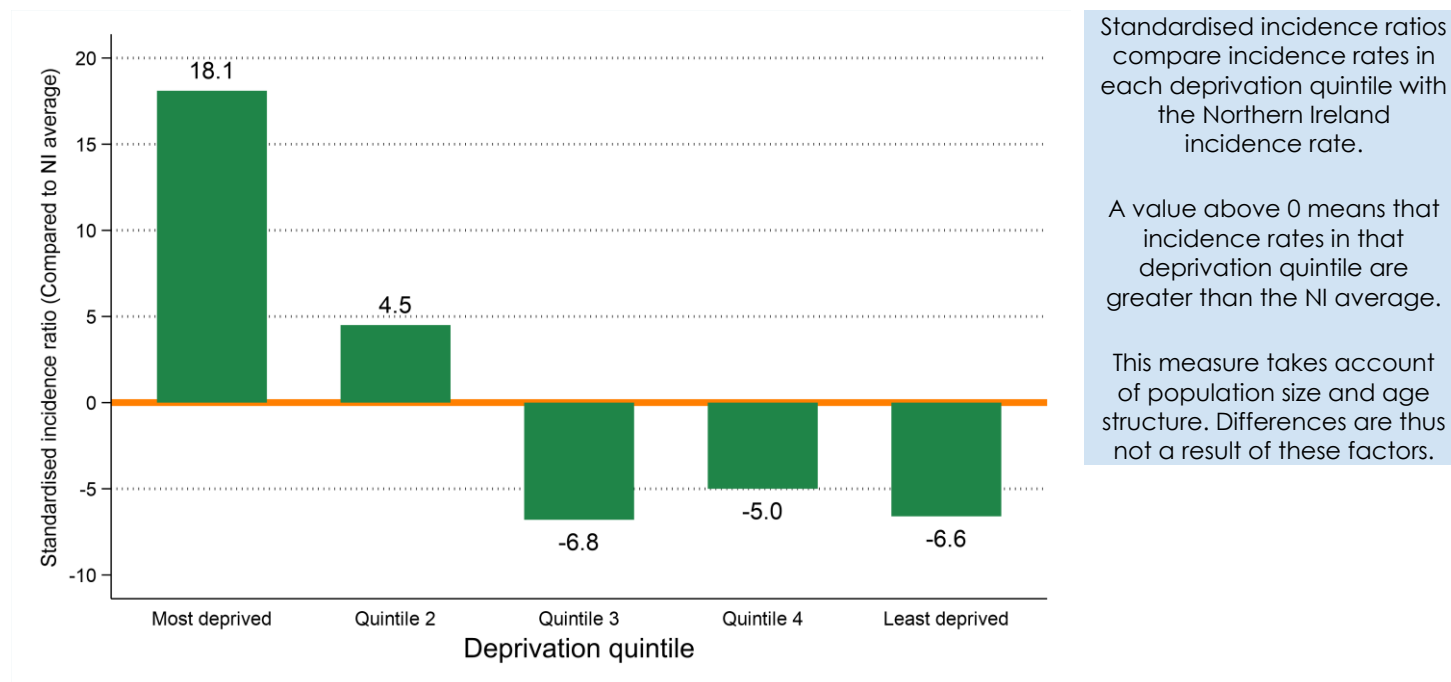
INCIDENCE BY DEPRIVATION

- The number of cases of kidney cancer diagnosed during 2018-2022 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 18.1% higher than the NI average.
 - in the least socio-economically deprived areas did not vary significantly from the NI average.

Table 2: Number of cases of kidney cancer diagnosed in 2018-2022 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	1,523	305	997	199	526	105
Most deprived
Quintile 2	296	59	192	38	104	21
Quintile 3	318	64	212	42	106	21
Quintile 4	299	60	186	37	113	23
Least deprived	309	62	208	42	101	20
Unknown	301	60	199	40	102	20
Unknown	0	0	0	0	0	0

Figure 8: Standardised incidence ratio comparing deprivation quintile to Northern Ireland for kidney cancer diagnosed in 2018-2022



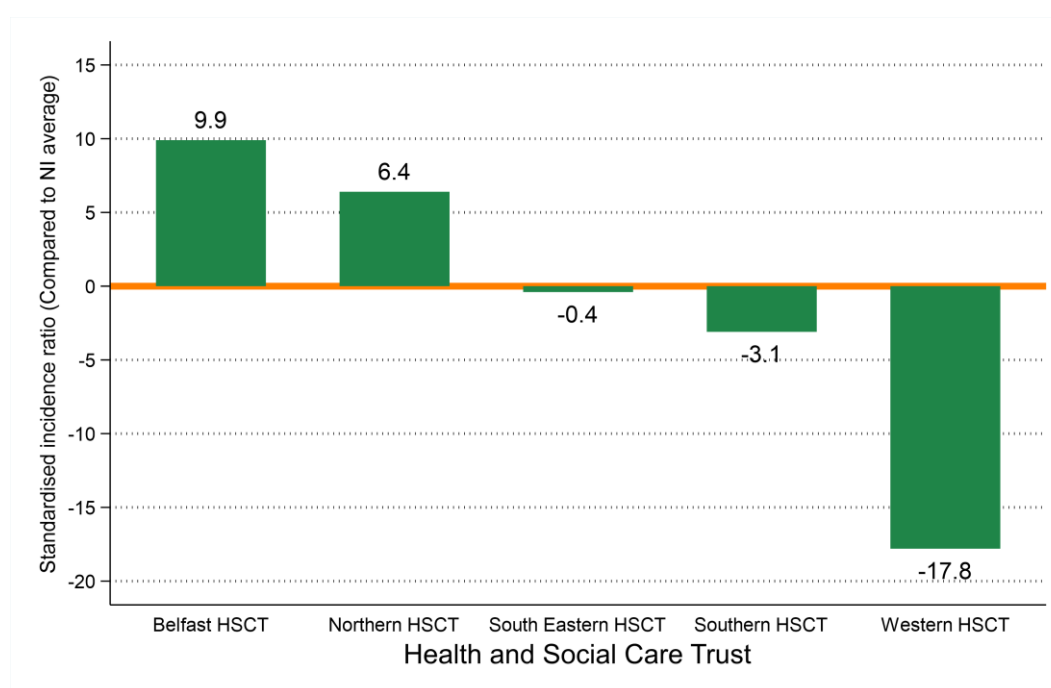
INCIDENCE BY HEALTH AND SOCIAL CARE TRUST

- The number of cases of kidney cancer diagnosed during 2018-2022 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 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 were 17.8% lower than the NI average.

Table 3: Number of cases of kidney cancer diagnosed in 2018-2022 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	1,523	305	997	199	526	105
Belfast HSCT	298	60	193	39	105	21
Northern HSCT	429	86	273	55	156	31
South Eastern HSCT	318	64	209	42	109	22
Southern HSCT	281	56	190	38	91	18
Western HSCT	197	39	132	26	65	13
Unknown	0	0	0	0	0	0

Figure 9: Standardised incidence ratio comparing Health and Social Care Trust to Northern Ireland for kidney cancer diagnosed in 2018-2022



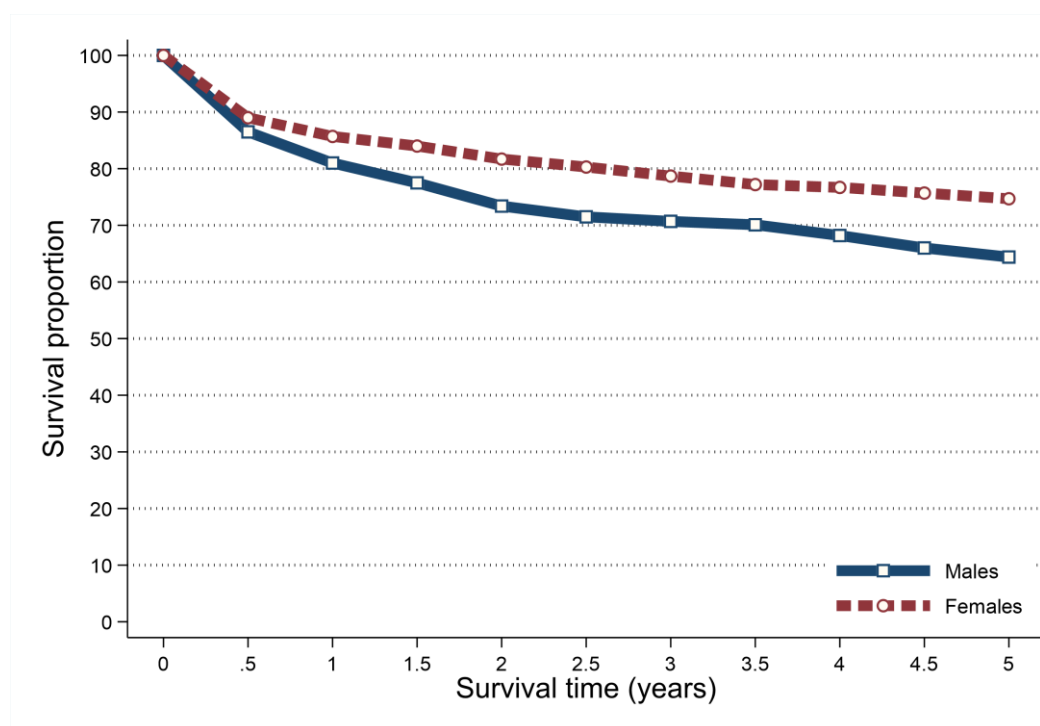
SURVIVAL

- 80.4% of patients were alive one year and 59.6% were alive five years from a kidney cancer diagnosis in 2013-2017. (observed survival)
- Age-standardised net survival (ASNS), which removes the effect of deaths from causes unrelated to cancer, was 82.7% one year and 68.1% five years from a kidney cancer diagnosis in 2013-2017.
- Five-year survival (ASNS) for kidney cancer patients diagnosed in 2013-2017 was 64.4% among men and 74.7% among women.

Table 4: Survival from kidney cancer for patients diagnosed in 2013-2017

Time since diagnosis	All persons		Male		Female	
	Observed survival	Age-standardised net survival	Observed survival	Age-standardised net survival	Observed survival	Age-standardised net survival
6 months	86.0%	87.4%	85.3%	86.5%	87.2%	89.0%
One year	80.4%	82.7%	78.9%	81.0%	83.0%	85.7%
Two years	72.6%	76.5%	70.0%	73.4%	77.1%	81.7%
Five years	59.6%	68.1%	56.5%	64.4%	64.9%	74.7%

Figure 10: Age-standardised net survival from kidney cancer for patients diagnosed in 2013-2017



Observed survival examines the time between diagnosis and death from any cause, however, due to the inclusion of non-cancer deaths it may not fully reflect how changes in cancer care impact survival from cancer.

Age-standardised net survival provides an estimate of patient survival which has been adjusted to take account of deaths unrelated to cancer. It is more widely used to assess the impact of changes in cancer care on patient survival.

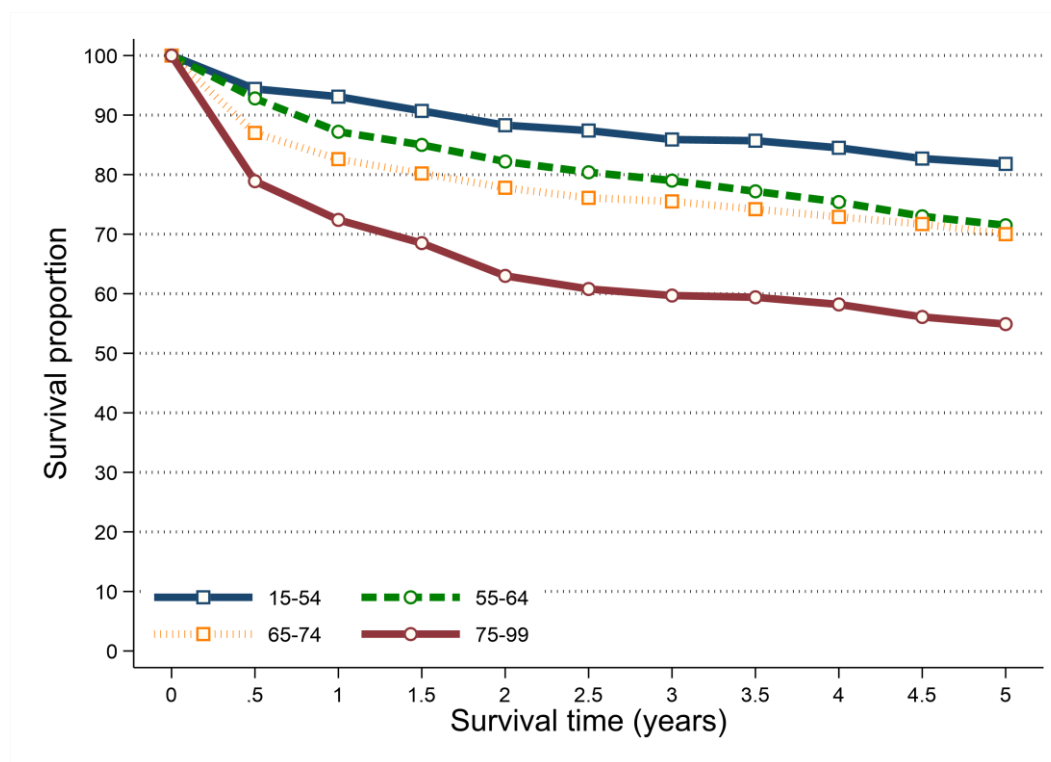
SURVIVAL BY AGE

- Survival from kidney cancer among patients diagnosed during 2013-2017 was related to age with better five-year survival among younger age groups.
- Five-year net survival ranged from 81.8% among patients aged 15 to 54 at diagnosis to 54.9% among those aged 75 to 99.

Table 5: Net survival from kidney cancer for patients diagnosed in 2013-2017 by age at diagnosis

Age group	All persons	
	One-year	Five-years
15 to 54	93.1%	81.8%
55 to 64	87.2%	71.5%
65 to 74	82.6%	70.0%
75 to 99	72.4%	54.9%

Figure 11: Net survival from kidney cancer for patients diagnosed in 2013-2017 by age at diagnosis

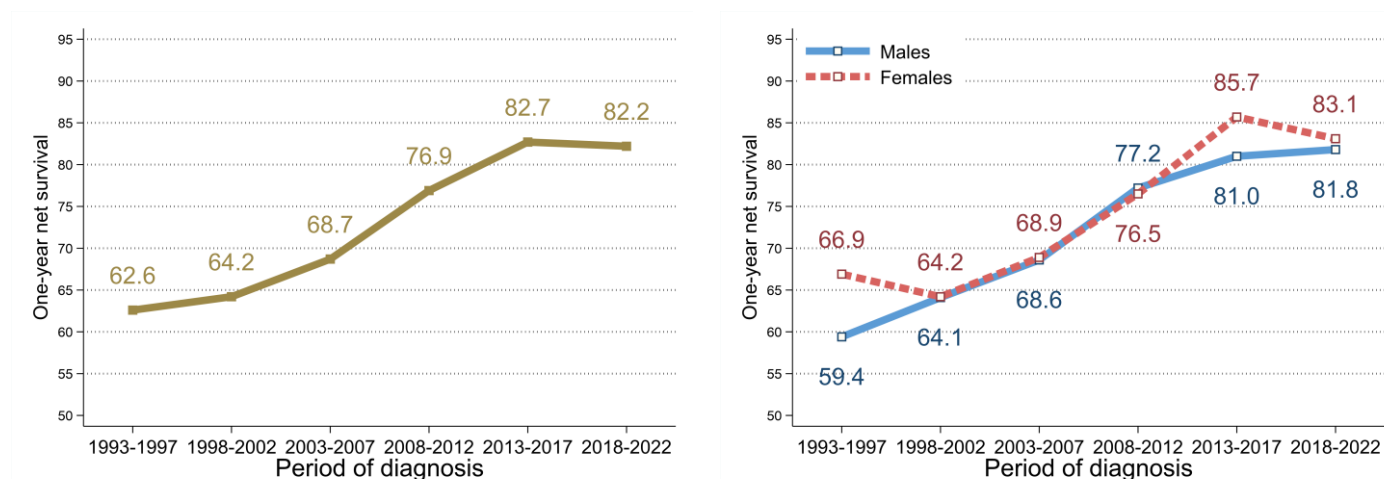


SURVIVAL TRENDS

ONE-YEAR NET SURVIVAL

- Between 2013-2017 and 2018-2022 there was no significant change in one-year survival (ASNS) from kidney cancer.
- Compared to 1993-1997 one-year survival (ASNS) from kidney cancer in 2018-2022 increased significantly from 62.6% to 82.2%. This increase was significant for males (59.4% to 81.8%) and females (66.9% to 83.1%).

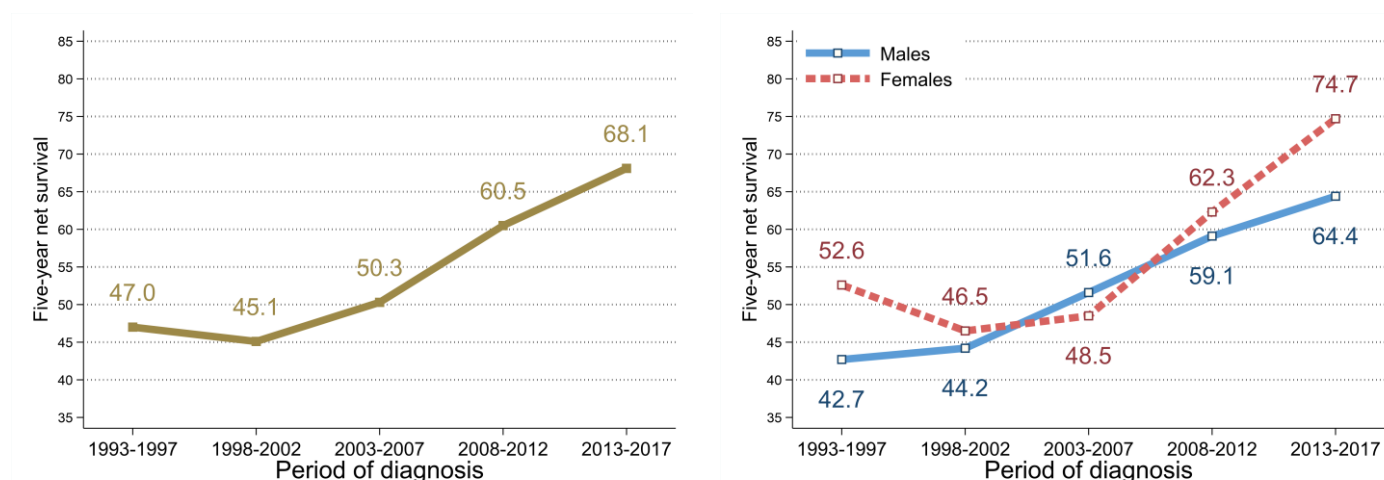
Figure 12: Trends in one-year age-standardised net survival from kidney cancer in 1993-2022



FIVE-YEAR NET SURVIVAL

- Between 2008-2012 and 2013-2017 there was a significant increase from 60.5% to 68.1% in five-year survival (ASNS) from kidney cancer. This increase was significant for females (62.3% to 74.7%) but not males.
- Compared to 1993-1997 five-year survival (ASNS) from kidney cancer in 2013-2017 increased significantly from 47.0% to 68.1%. This increase was significant for males (42.7% to 64.4%) and females (52.6% to 74.7%).

Figure 13: Trends in five-year age-standardised net survival from kidney cancer in 1993-2017



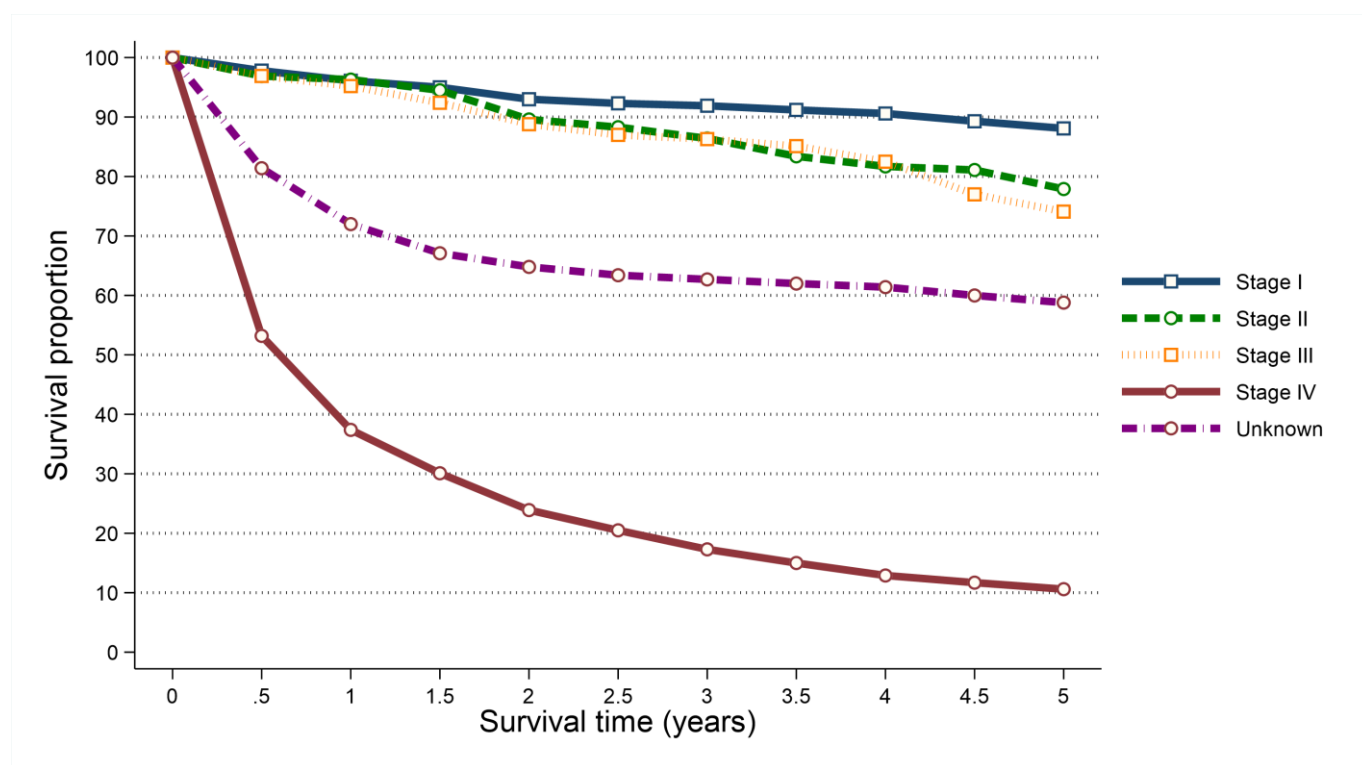
SURVIVAL BY STAGE

- Survival from kidney cancer among patients diagnosed during 2013-2017 was strongly related to stage with better five-year survival among those diagnosed at earlier stages.
- Five-year survival (ASNS) ranged from 88.1% among patients diagnosed at Stage I to 10.6% among those diagnosed at Stage IV.

Table 6: Age-standardised net survival from kidney cancer for patients diagnosed in 2013-2017 by stage at diagnosis

Stage at diagnosis	All persons	
	One-year	Five-years
Stage I	96.1%	88.1%
Stage II	96.3%	77.9%
Stage III	95.2%	74.1%
Stage IV	37.4%	10.6%
Unknown	72.0%	58.8%

Figure 14: Age-standardised net survival from kidney cancer for patients diagnosed in 2013-2017 by stage at diagnosis



PREVALENCE

- At the end of 2022, there were 2,576 people (Males: 1,574; Females: 1,002) living with kidney cancer who had been diagnosed with the disease during 1998-2022.
- Of these 9.2% had been diagnosed in the previous year (one-year prevalence) and 73.5% in the previous 10 years (ten-year prevalence).
- 34.5% of kidney cancer survivors were aged 75 and over at the end of 2022.

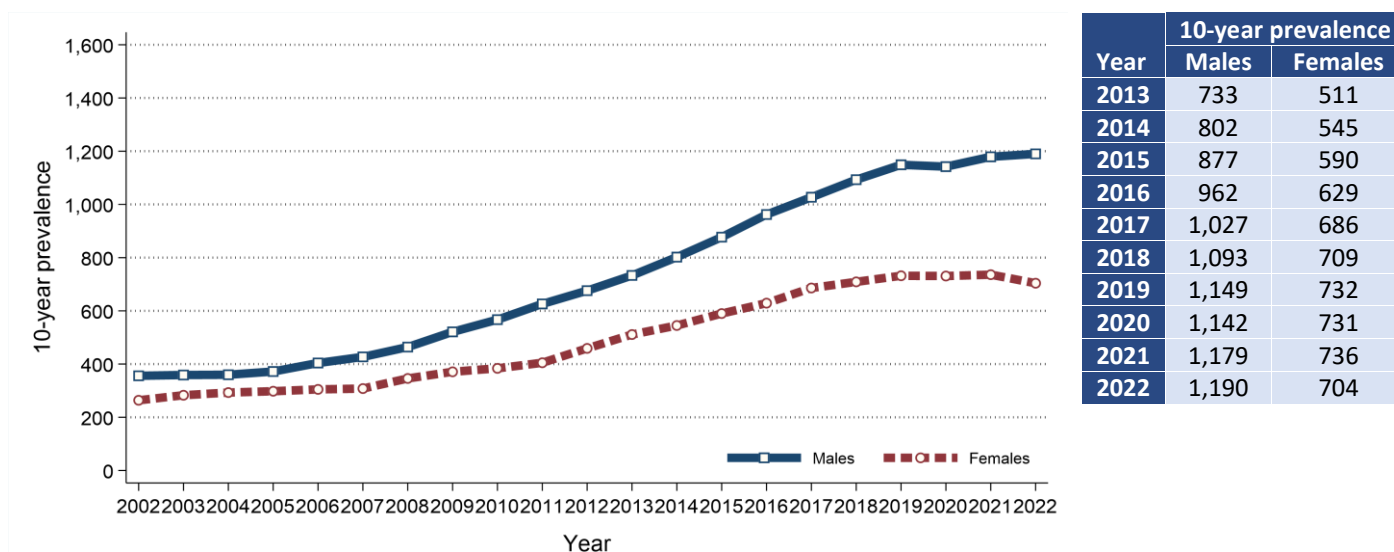
Table 7: 25-year prevalence of kidney cancer by age at end of 2022

Gender	Age at end of 2022	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	2,576	238	838	818	682
	0 to 74	1,688	178	583	549	378
	75 and over	888	60	255	269	304
Male	All ages	1,574	152	544	494	384
	0 to 74	1,070	117	391	348	214
	75 and over	504	35	153	146	170
Female	All ages	1,002	86	294	324	298
	0 to 74	618	61	192	201	164
	75 and over	384	25	102	123	134

PREVALENCE TRENDS

- 10-year prevalence of kidney cancer among males increased between 2017 and 2022 by 15.9% from 1,027 survivors to 1,190 survivors.
- 10-year prevalence of kidney cancer among females increased between 2017 and 2022 by 2.6% from 686 survivors to 704 survivors.

Figure 15: Trends in 10-year prevalence of kidney cancer in 2002-2022



MORTALITY

- There were 567 deaths from kidney cancer during 2018-2022 in Northern Ireland. On average this was 113 deaths per year.
- During this period 35.4% of kidney cancer deaths were among women (Male deaths: 366, Female deaths: 201). On average there were 73 male and 40 female deaths from kidney cancer per year.
- Kidney cancer deaths made up 3.1% of all male and 1.9% of all female cancer deaths.
- The median age of patients who died from kidney cancer during 2018-2022 was 75 years (Males: 74, Females: 76).
- The risk of dying from kidney cancer varied by age, with 48.1% of men and 54.7% of women who died from kidney cancer aged 75 and over at death.
- In contrast, 8.5% of patients who died from kidney cancer were aged 0 to 54 at death.

Figure 16: Average number of deaths from kidney cancer per year in 2018-2022 by age at death

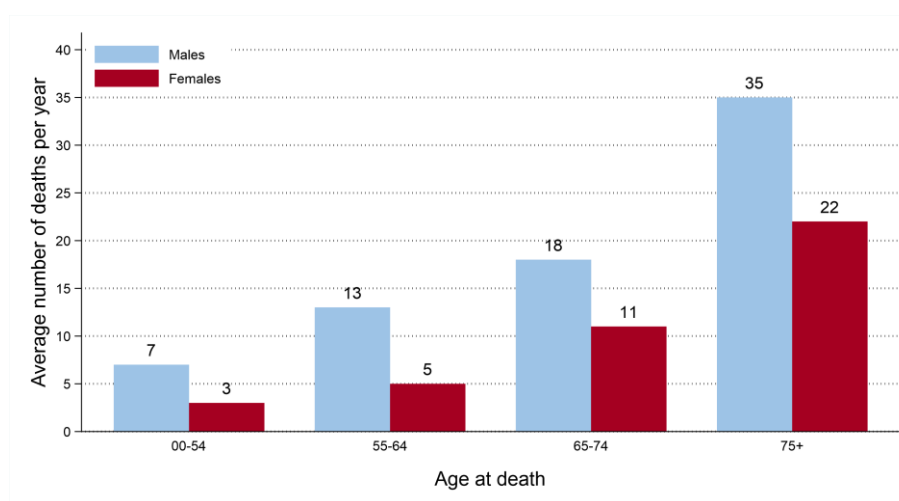
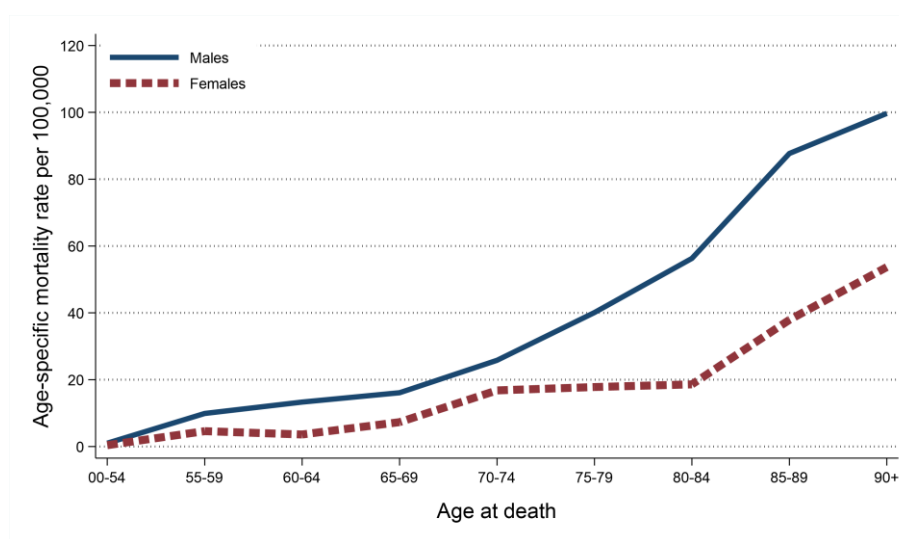


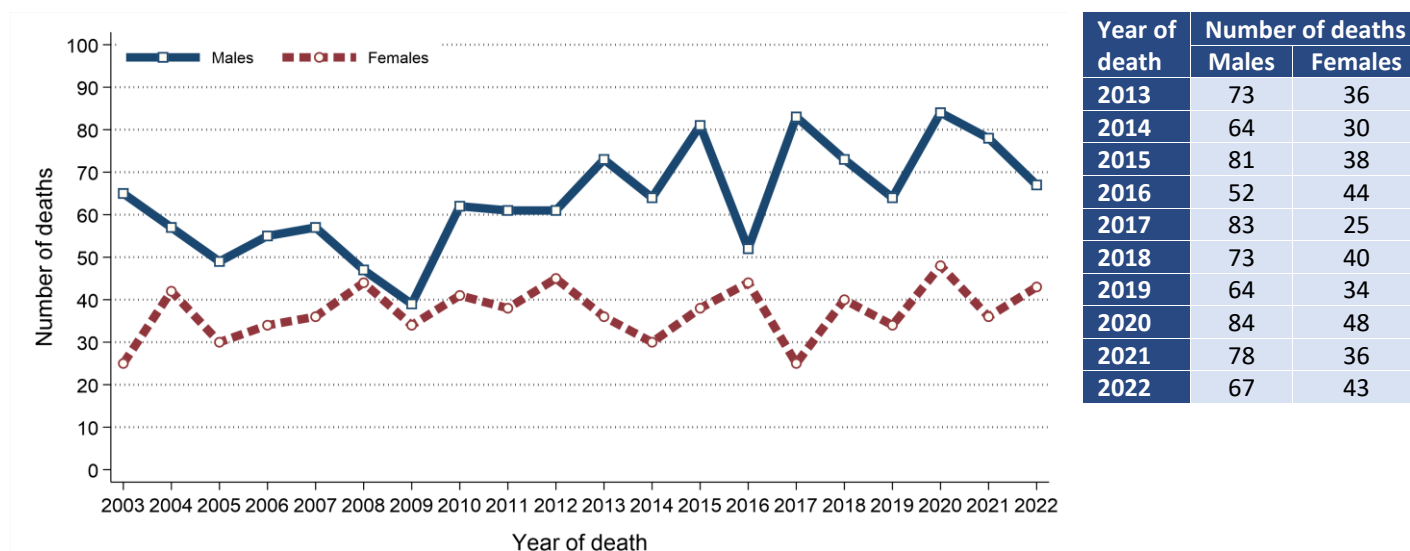
Figure 17: Age-specific mortality rates of kidney cancer in 2018-2022



MORTALITY TRENDS

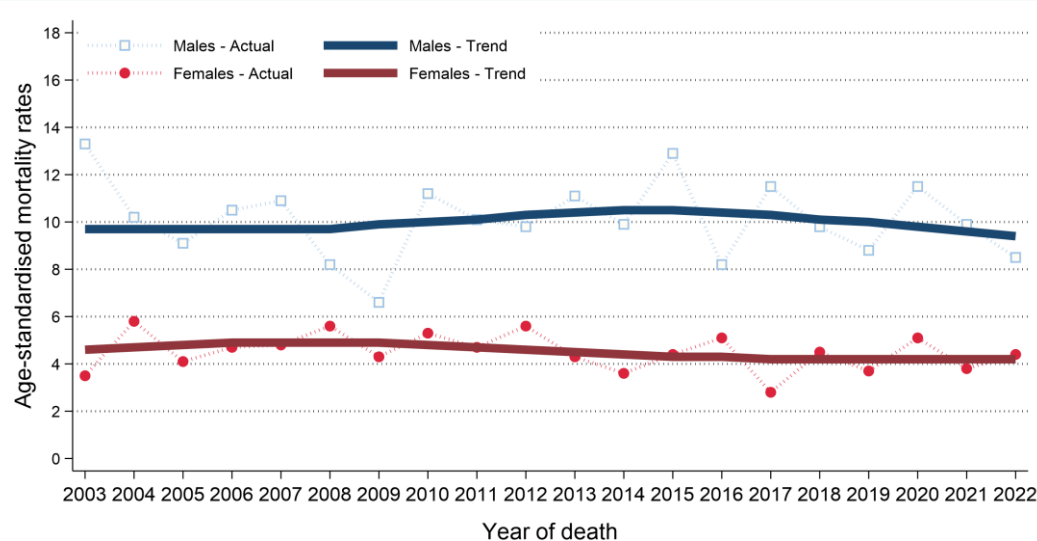
- The number of deaths from kidney cancer among males increased between 2013-2017 and 2018-2022 by 3.7% from 353 deaths (71 deaths per year) to 366 deaths (73 deaths per year).
- The number of deaths from kidney cancer among females increased between 2013-2017 and 2018-2022 by 16.2% from 173 deaths (35 deaths per year) to 201 deaths (40 deaths per year).

Figure 18: Trends in the number of deaths from kidney cancer from 2003 to 2022



- Male age-standardised kidney cancer mortality rates decreased between 2013-2017 and 2018-2022 by 9.3% from 10.7 to 9.7 deaths per 100,000 males. This change was not statistically significant.
- Female age-standardised kidney cancer mortality rates increased between 2013-2017 and 2018-2022 by 7.5% from 4.0 to 4.3 deaths per 100,000 females. This change was not statistically significant.

Figure 19: Trends in mortality rates of kidney cancer from 2003 to 2022



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.

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#/I>

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 Jul 2024 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. kidney 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. kidney 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 2022 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.

Patient survival is evaluated using two measures. Observed survival examines the time between diagnosis and death from any cause. It thus represents what cancer patients experience, however, due to the inclusion of non-cancer deaths (e.g. heart disease), it may not reflect how changes in cancer care impact survival from cancer. Thus age-standardised net survival is also examined. This measure provides an estimate of patient survival which has been adjusted to take account of deaths unrelated to cancer. It also assumes a standard age distribution thereby removing the impact of changes in the age distribution of cancer patients on changes in survival over time. While this measure is hypothetical, as it assumes patients can only die from cancer related factors, it is a better indicator of the impact of changes in cancer care on patient survival.