

Liver cancer

Patients diagnosed 1993-2019
(ICD10: C22)

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:

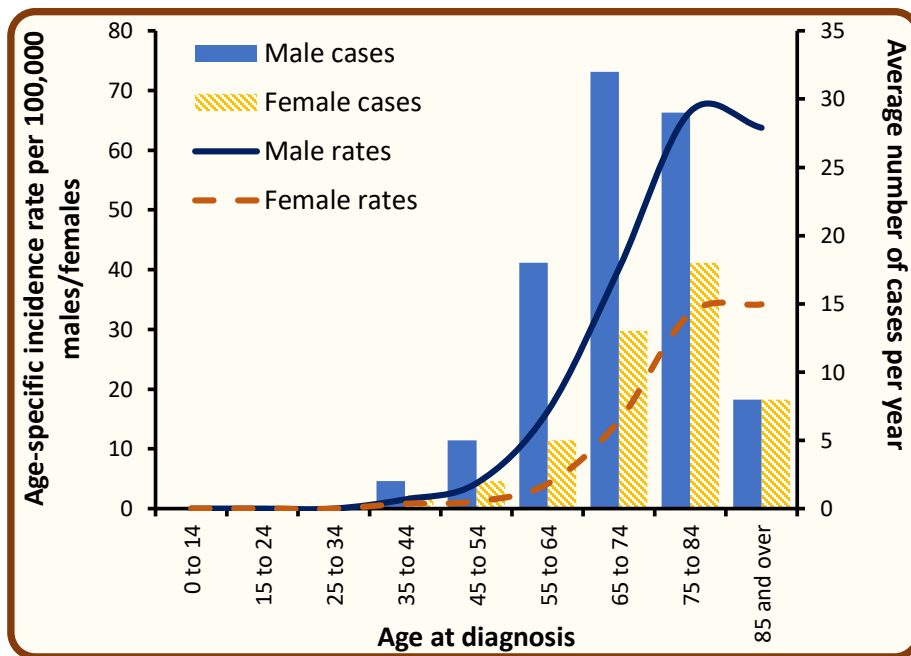
- There were 95 male and 47 female cases of liver cancer diagnosed each year.
- Liver cancer made up 1.9% of all male, and 1.0% of all female cancers (ex NMSC).
- The risk of developing liver cancer before the age of 75 was 1 in 157.8 for men and 1 in 472.5 for women, while before the age of 85 the risk was 1 in 77.4 for men and 1 in 186.4 for women.

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

During 2015-2019:

- The median age at diagnosis was 72 for men and 76 for women.
- Cancer risk increased with age, with 38.9% of men and 55.3% of women aged 75 years or more at diagnosis.
- 7.7% of cases were diagnosed among those aged under 55.

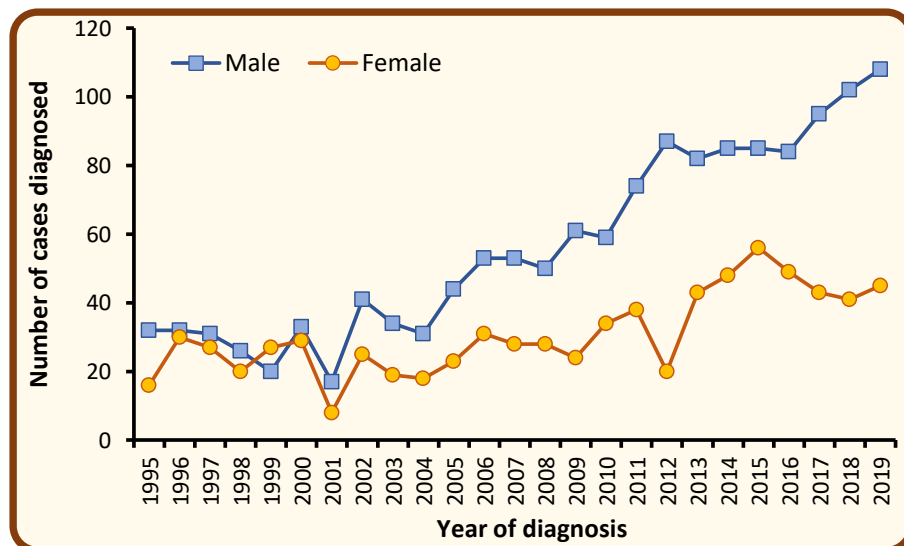
Age at diagnosis	Average cases per year		
	Male	Female	Both sexes
0 - 54	7	3	11
54 - 64	18	5	22
65 - 74	32	13	45
75 +	37	26	63
All ages	95	47	142



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

- Among males the number of cases of liver cancer increased by 23.4% from an annual average of 77 cases in 2010-2014 to 95 cases in 2015-2019.
- Among females the number of cases of liver cancer increased by 27.0% from an annual average of 37 cases in 2010-2014 to 47 cases in 2015-2019.

Year of diagnosis	Male	Female	Both sexes
2010	59	34	93
2011	74	38	112
2012	87	20	107
2013	82	43	125
2014	85	48	133
2015	85	56	141
2016	84	49	133
2017	95	43	138
2018	102	41	143
2019	108	45	153

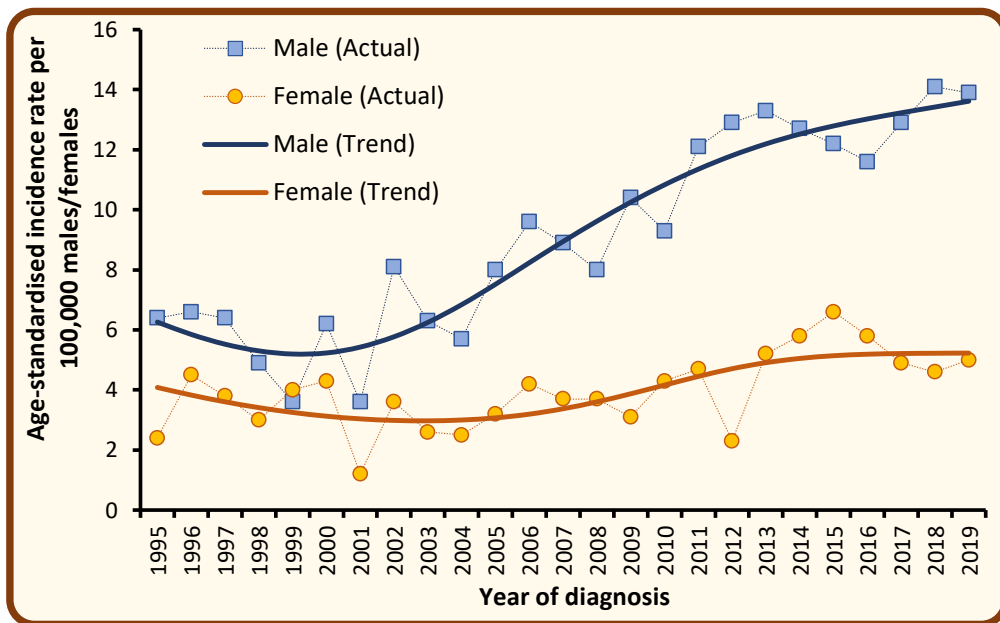


Note: Annual averages have been rounded to the nearest integer. Sums of numbers in table rows or columns may thus differ slightly from the given total.

NMSC: Non-melanoma skin cancer

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

- Among males age-standardised incidence rates of liver cancer increased by 7.4% from 12.1 per 100,000 person years in 2010-2014 to 13.0 cases per 100,000 persons years in 2015-2019. This difference was not statistically significant.
- Among females age-standardised incidence rates of liver cancer increased by 20.0% from 4.5 per 100,000 person years in 2010-2014 to 5.4 cases per 100,000 persons years in 2015-2019. This difference was not statistically significant.



Age-standardised incidence rates illustrate the change in the number of cases within a population of a fixed size and age structure (2013 European Standard).

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

Trends can also be influenced by changes in how cancer is classified and coded. (e.g. the move from ICD-0-2 to ICD-0-3 in 2019).

Incidence by deprivation quintile - Liver 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:

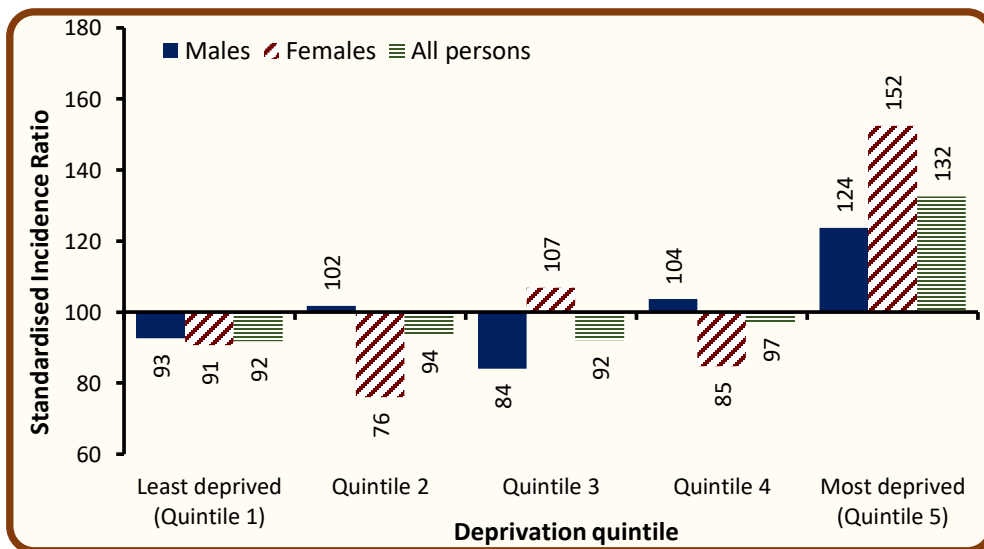
- in the most socio-economically deprived areas were 32.5% higher than the NI average.
- in the least socio-economically deprived areas did not vary significantly from the NI average.

Deprivation quintile	Average cases per year		
	Male	Female	Both sexes
Least deprived (Quintile 1)	19	9	28
Quintile 2	21	7	28
Quintile 3	17	10	27
Quintile 4	20	8	28
Most deprived (Quintile 5)	19	12	31
Northern Ireland	95	47	142

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.



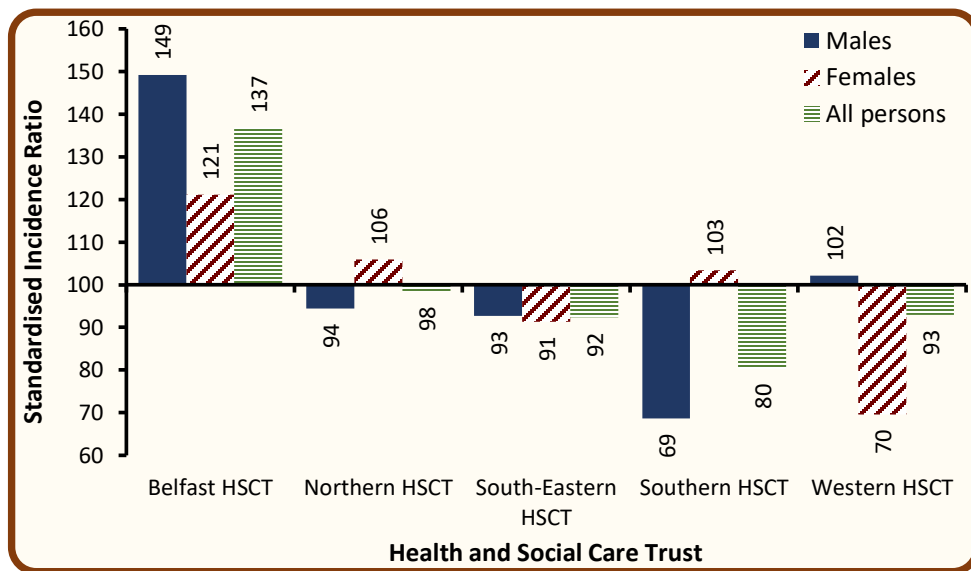
Incidence by Health and Social Care Trust (HSCT) - Liver cancer, Cases in 2015-2019

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 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 were significantly lower than 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	25	11	36
Northern HSCT	24	13	37
South-Eastern HSCT	19	9	28
Southern HSCT	12	9	21
Western HSCT	15	5	20
Northern Ireland	95	47	142



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.

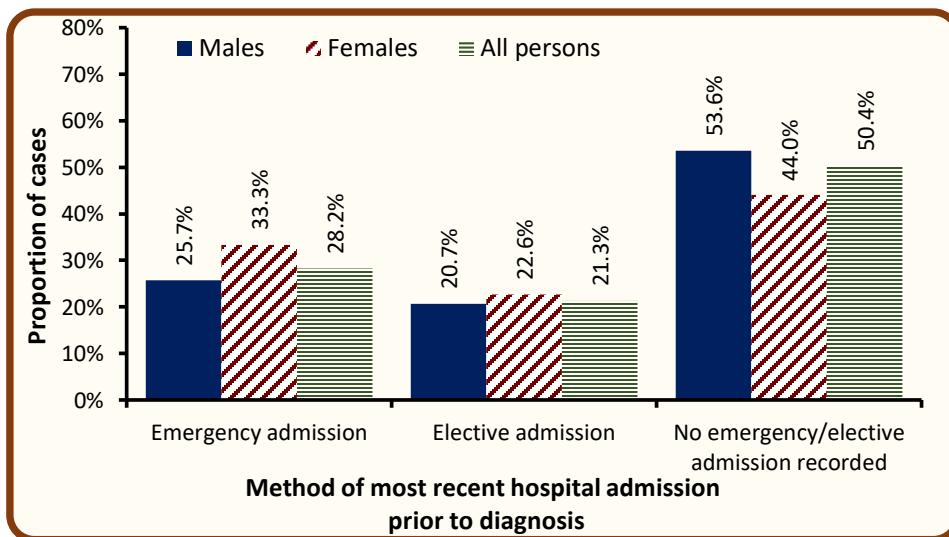
Data for Local Government Districts and Parliamentary Constituencies are available at www.qub.ac.uk/research-centres/nicr

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

During 2015-2019:

- 28.2% of cases had an emergency admission to hospital recorded up to 30 days prior to their cancer diagnosis.
- 25.7% of male cases had an emergency admission up to 30 days prior to diagnosis, compared to 33.3% of female cases.
- In 50.4% of diagnosed cases there was no record of a hospital inpatient admission up to 30 days prior to diagnosis.

Method of admission	Average cases per year		
	Male	Female	Both sexes
Emergency admission	24	16	40
Elective admission	20	11	30
No emergency/elective admission recorded	51	21	71
Total	95	47	142



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.

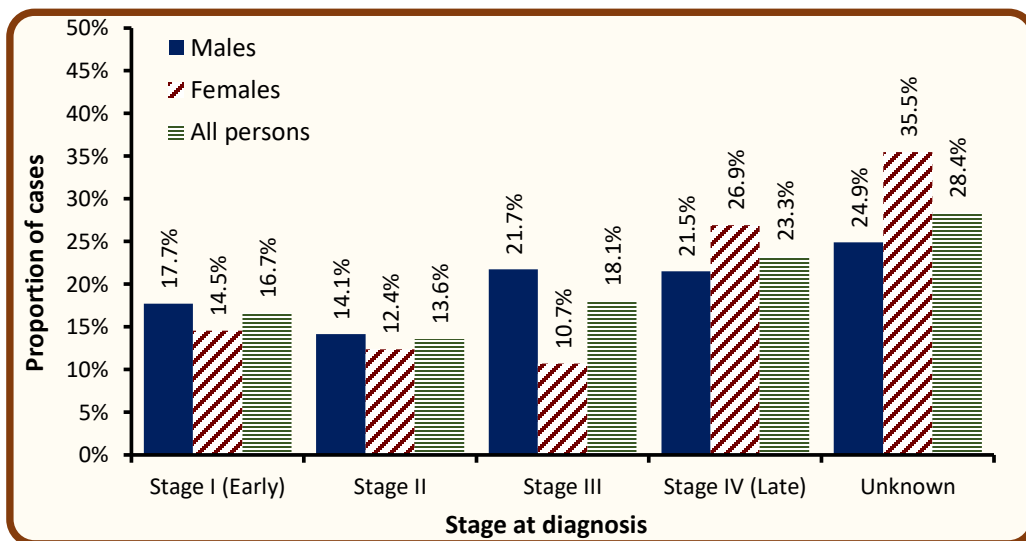
The majority of patients with no inpatient admission recorded prior to diagnosis are likely to have been diagnosed via an outpatient route.

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

During 2015-2019:

- 71.6% of cases diagnosed had a stage assigned.
- 16.7% of cases were diagnosed at stage I. (23.3% of staged cases)
- 23.3% of cases were diagnosed at stage IV. (32.5% of staged cases)
- Among cases which were staged, 28.7% of male cases were diagnosed at stage IV, compared to 41.7% of female cases.

Stage at diagnosis	Average cases per year		
	Male	Female	Both sexes
Stage I (Early)	17	7	24
Stage II	13	6	19
Stage III	21	5	26
Stage IV (Late)	20	13	33
Unknown	24	17	40
All stages	95	47	142



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).

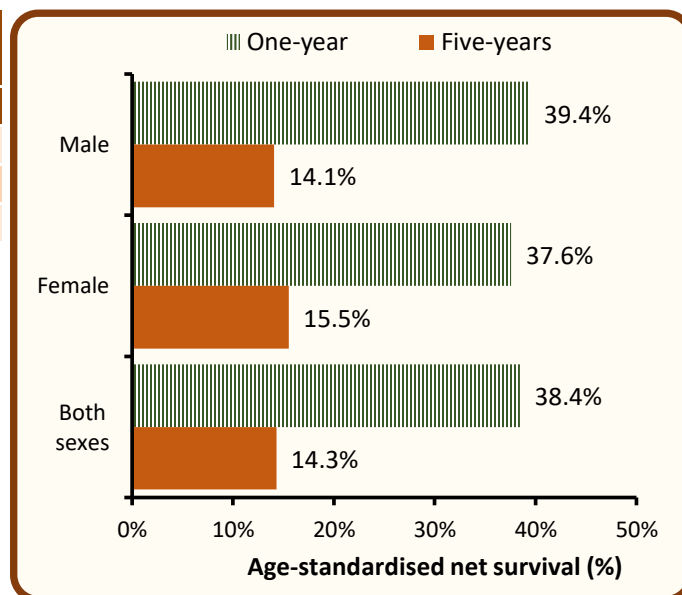
Survival

- 34.4% of patients were alive one year and 11.0% were alive five years from a liver cancer diagnosis in 2010-2014. (observed survival)
- Age-standardised net survival (ASNS), which removes the effect of deaths from causes unrelated to cancer, was 38.4% one year and 14.3% five years from a liver cancer diagnosis in 2010-2014.
- Five-year survival (ASNS) for liver cancer patients diagnosed in 2010-2014 was 14.1% among men and 15.5% among women.

Gender	Observed survival		Age-standardised net survival	
	One-year	Five-years	One-year	Five-years
Male	36.6%	11.0%	39.4%	14.1%
Female	29.7%	10.9%	37.6%	15.5%
Both sexes	34.4%	11.0%	38.4%	14.3%

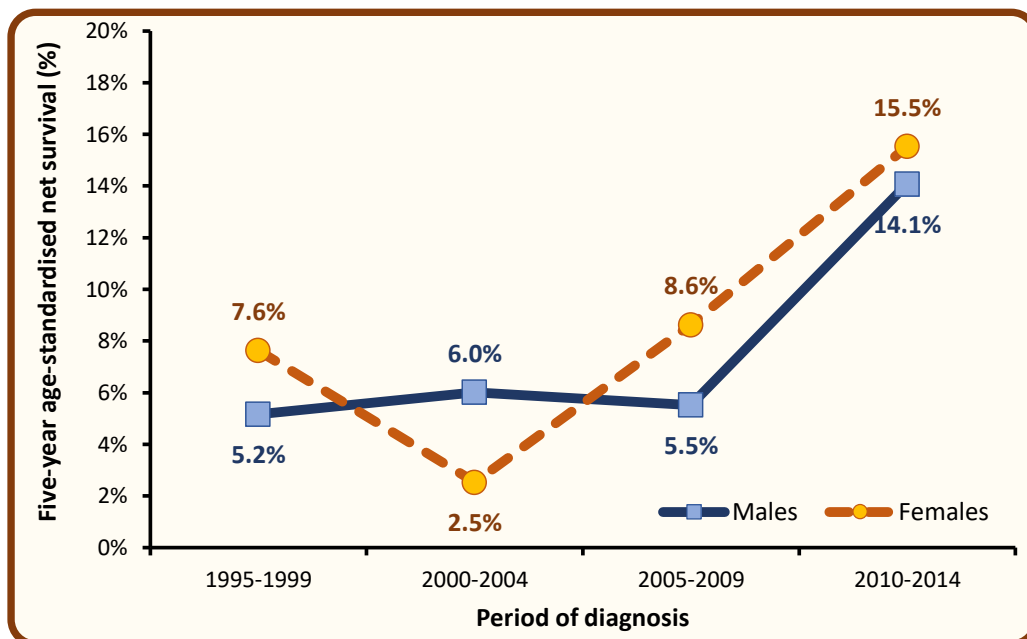
Observed survival is the proportion of patients still alive one/five years after diagnosis. However, in this measure patients may have died from causes unrelated to their cancer.

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.



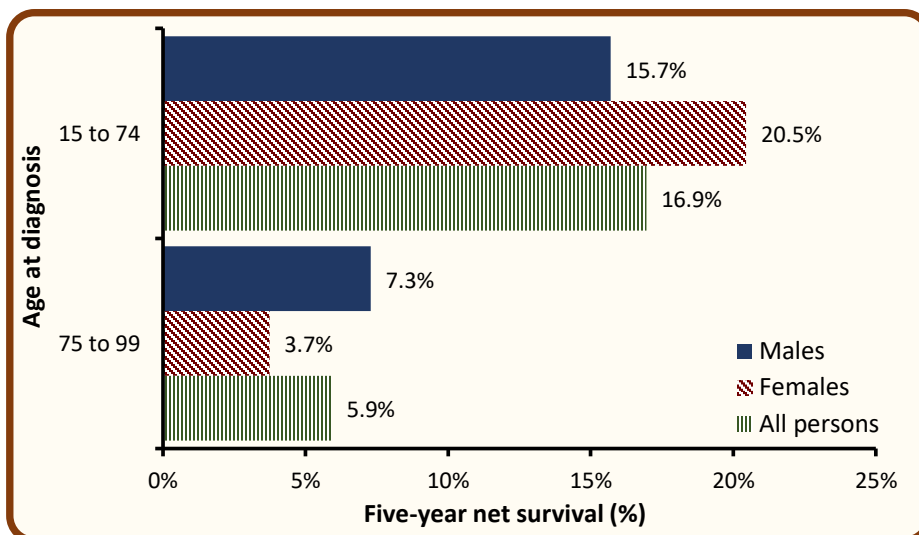
Trends in survival - Liver cancer, Patients diagnosed in 1995-2014

- Among men five-year survival (ASNS) from liver cancer increased from 5.5% in 2005-2009 to 14.1% in 2010-2014. This difference was not statistically significant.
- Among women five-year survival (ASNS) from liver cancer increased from 8.6% in 2005-2009 to 15.5% in 2010-2014. This difference was not statistically significant.



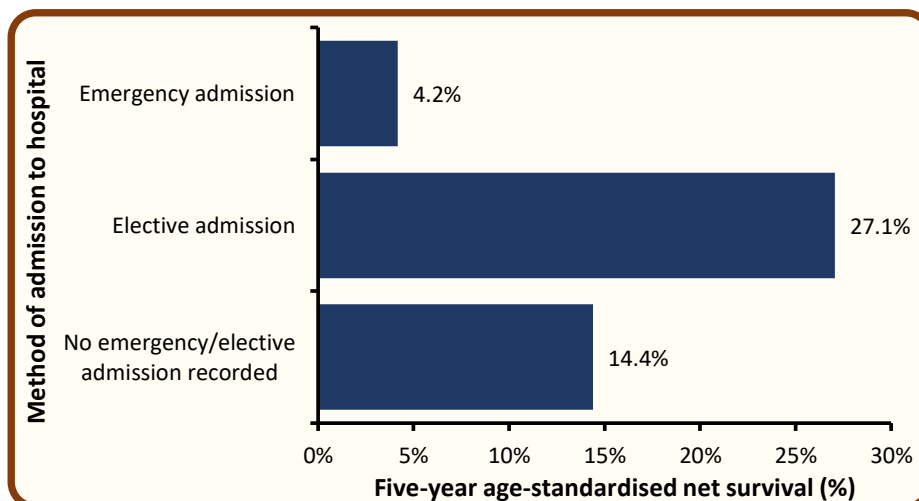
Survival by age at diagnosis - Liver cancer, Patients diagnosed in 2010-2014

- Survival from liver cancer among patients diagnosed in 2010-2014 was related to patient age with five-year survival higher among younger age groups. In particular:
 - Five-year net survival ranged from 16.9% among patients aged 15 to 74 at diagnosis to 5.9% among those aged 75 and over.
 - Five-year net survival among patients aged 75 and over was 7.3% for men and 3.7% for women.



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

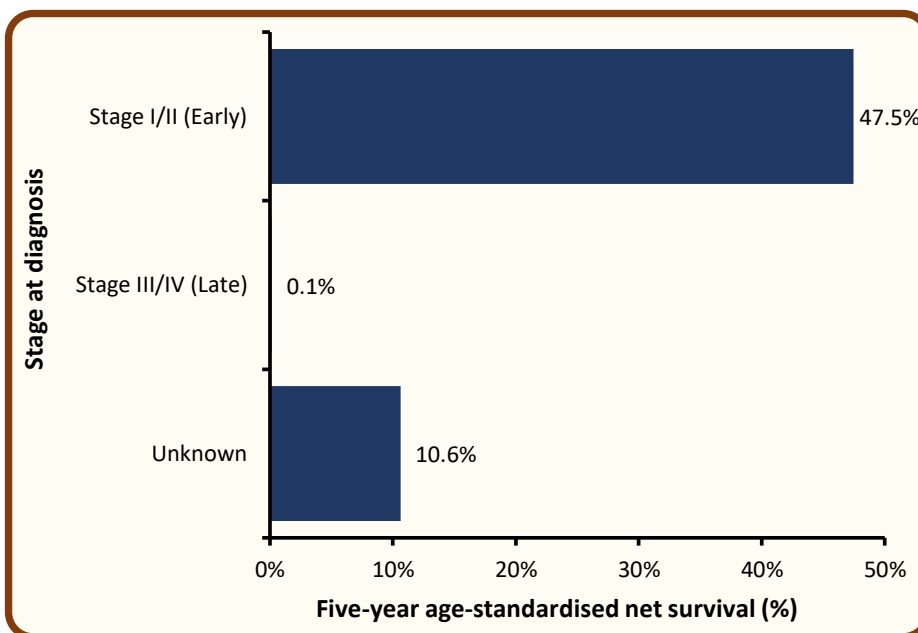
- Five-year survival (ASNS) among liver cancer patients who had an emergency admission to hospital up to 30 days prior to their cancer diagnosis was 4.2% compared to 27.1% among those with elective admissions and 14.4% among those who had no hospital admissions recorded up to 30 days prior to diagnosis.



Survival by stage at diagnosis - Liver cancer, Patients diagnosed in 2012-2014

- Stage at diagnosis is one of the most important factors in liver cancer survival with five-year survival decreasing as stage increases.
- Five-year survival (ASNS) ranged from 47.5% for early stage (stage I/II) disease to 0.1% for late stage (stage III/IV) disease.
- Five-year survival (ASNS) for unstaged cancer was 10.6%.

Note: Staging information for liver cancer is only available from 2012 onwards



Prevalence

- At the end of 2019, there were 271 people (Males: 203; Females: 68) living with liver cancer who had been diagnosed with the disease during 1995-2019.
- Of these, 74.9% were male, 33.2% were aged 75 and over, and 28.8% 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	36	13	49	22	7	29	58	20	78
1-5 years	62	9	71	31	9	40	93	18	111
5-25 years	40	21	61	12	9	21	52	30	82
0-25 years	138	43	181	65	25	90	203	68	271

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

- Among males the number of survivors from liver cancer who had been diagnosed within the previous ten years increased by 51.2% from 123 survivors in 2014 to 186 survivors in 2019.
- Among females the number of survivors from liver cancer who had been diagnosed within the previous ten years decreased by 3.3% from 61 survivors in 2014 to 59 survivors in 2019.

	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Male	60	76	105	108	123	123	127	149	166	186
Female	29	44	39	49	61	72	62	70	62	59
Both sexes	89	120	144	157	184	195	189	219	228	245

Mortality

- During 2015-2019 there were 89 male and 65 female deaths from liver cancer each year.
- Liver cancer made up 3.8% of all male, and 3.1% of all female cancer deaths (ex NMSC).

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

- The median age at death during 2015-2019 was 75 for men and 77 for women.
- Risk of death from liver cancer was strongly related to patient age, with 50.6% of men and 63.1% of women aged 75 years or more at time of death.
- 5.8% of liver cancer deaths occurred among those aged under 55.

Age at death	Average deaths per year		
	Male	Female	Both sexes
0 - 54	5	4	9
55 - 64	13	7	20
65 - 74	26	14	41
75 +	45	41	85
All ages	89	65	154

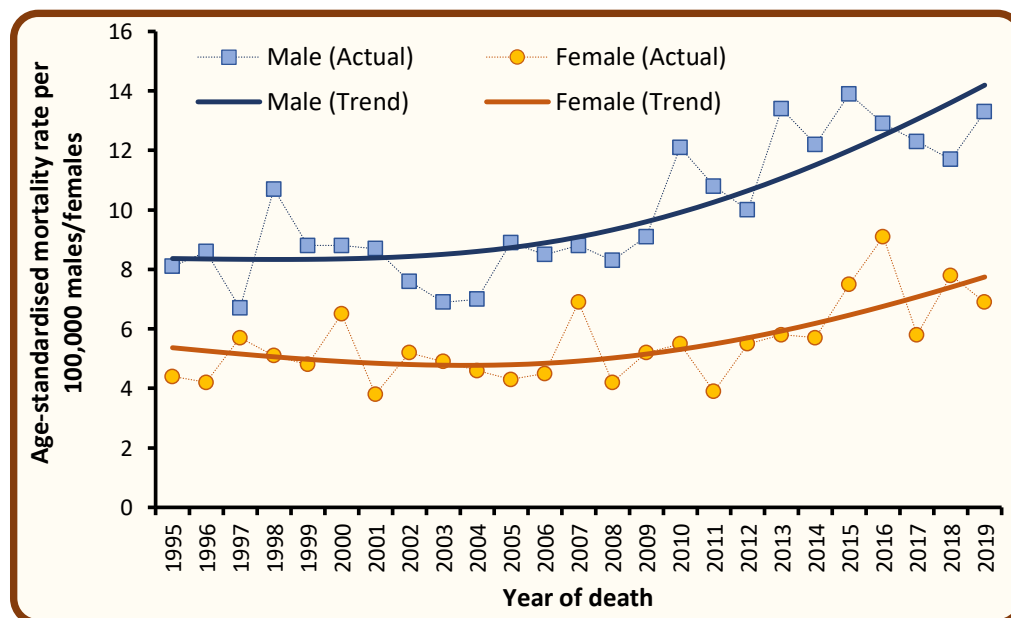
Deaths by year of death - Liver cancer, Deaths in 2010-2019

- Among males the number of deaths from liver cancer increased by 23.6% from an annual average of 72 deaths in 2010-2014 to 89 deaths in 2015-2019.
- Among females the number of deaths from liver cancer increased by 51.2% from an annual average of 43 deaths in 2010-2014 to 65 deaths in 2015-2019.

	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Male	65	66	65	83	79	93	87	85	85	97
Female	43	32	45	49	47	63	79	50	70	63
Both sexes	108	98	110	132	126	156	166	135	155	160

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

- Among males age-standardised mortality rates from liver cancer increased by 9.4% between 2010-2014 and 2015-2019 from 11.7 to 12.8 deaths per 100,000 persons years. This difference was not statistically significant.
- Among females age-standardised mortality rates from liver cancer increased by 39.6% between 2010-2014 and 2015-2019 from 5.3 to 7.4 deaths per 100,000 persons years. This difference was 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. colorectal cancer incidence rate). Typically, when numbers are low, precision is poorer and confidence intervals will be wider. As a general rule, when comparing statistics (e.g. cervical cancer incidence rate in year 2012 vs year 2013), if the confidence interval around one statistic overlaps with the interval around another, it is unlikely that there is any real difference between the two. If there is no overlap, the difference is considered to be **statistically significant**.

Lifetime risk is estimated as the cumulative risk of getting cancer up to age 75/85, calculated directly from the age-specific incidence rates. The odds of developing the disease before age 75/85 is the inverse of the cumulative risk.

Prevalence is the number of cancer patients who are alive in the population on a specific date (31st December 2019 in this report). Since data from the NI Cancer Registry are only available since 1993, prevalence only refers to a fixed term (10 and 25 years in this report). There may be members of the population living with a diagnosis of cancer for more than 25 years.

Observed survival refers to the proportion of patients who survive a specified amount of time from their date of diagnosis. Observed survival considers death from any cause and is not adjusted for the age of the patient. Cause of death may be unrelated to the cancer the patient has been diagnosed with.

Net Survival is an estimate of survival where the effect on survival of background population mortality rates has been removed. It represents the [theoretical] survival of cancer patients if they could only die from cancer-related causes. Age-standardised net survival estimates are the estimates that would occur if that population of cancer patients had a standard population age structure. The age groups and weights used here are those used by international studies such as EUROCARE, an international study group that compares cancer survival among European countries. However, due to the small number of patients in NI, the first two age categories in the standard population are combined.

Mortality: Information relating to cancer mortality is sourced from the General Registrar Office (GRONI) via the Department of Health (NI). Results are based upon the date on which death occurs, and may thus differ slightly than those produced by the Northern Ireland Statistics and Research Agency (NISRA), which produces deaths data based upon the date on which the death is registered with GRONI.