Testicular cancer

Patients diagnosed 1993-2019

(ICD10: C62)

Incidence

During 2015-2019:

▪ There were 65 cases of testicular cancer diagnosed each year.

▪ Testicular cancer made up 1.3% of all male cancers (ex NMSC).

▪ The risk of testicular cancer before the age of 75 was 1 in 183.7. This did not change between ages 75 and 85.

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

During 2015-2019:

▪ The median age at diagnosis of testicular cancer was 36.

▪ Cancer risk increased with age, with 12.3% of men aged 55 years or more at diagnosis.

▪ 24.6% of cases were diagnosed among those aged under 30.

Age at diagnosis	Average cases per year
	Male
0 - 29	16
30 - 39	26
40 - 54	16
55 and over	8
All ages	65
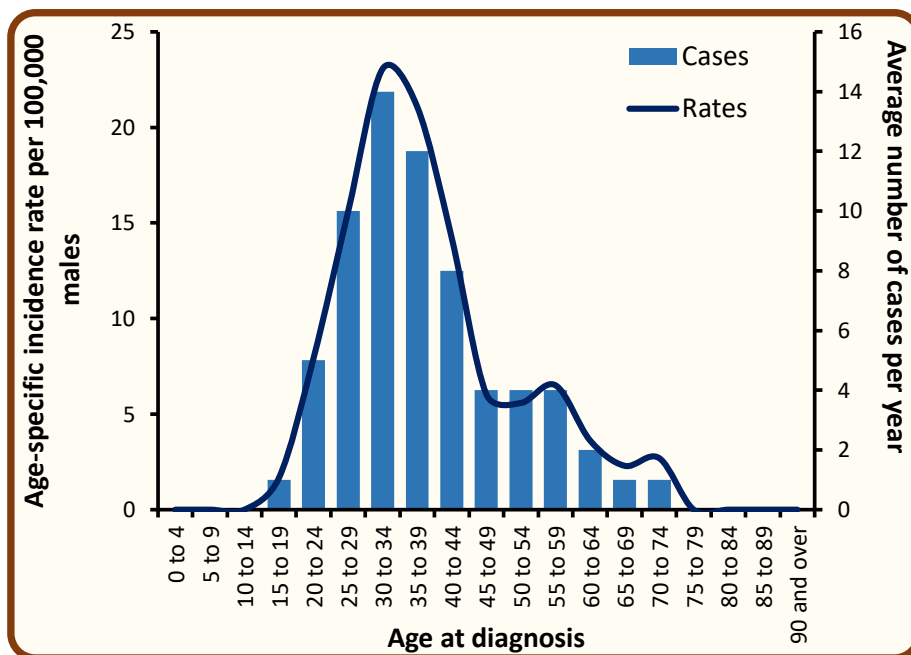
Incidence by year of diagnosis - *Testicular cancer, Cases in 1995-2019*

▪ Among males the number of cases of testicular cancer decreased by 4.4% from an annual average of 68 cases in 2010-2014 to 65 cases in 2015-2019.

| Year of diagnosis	Male cases
2010	66
2011	75
2012	67
2013	62
2014	68
2015	57
2016	63
2017	60
2018	70
2019	74
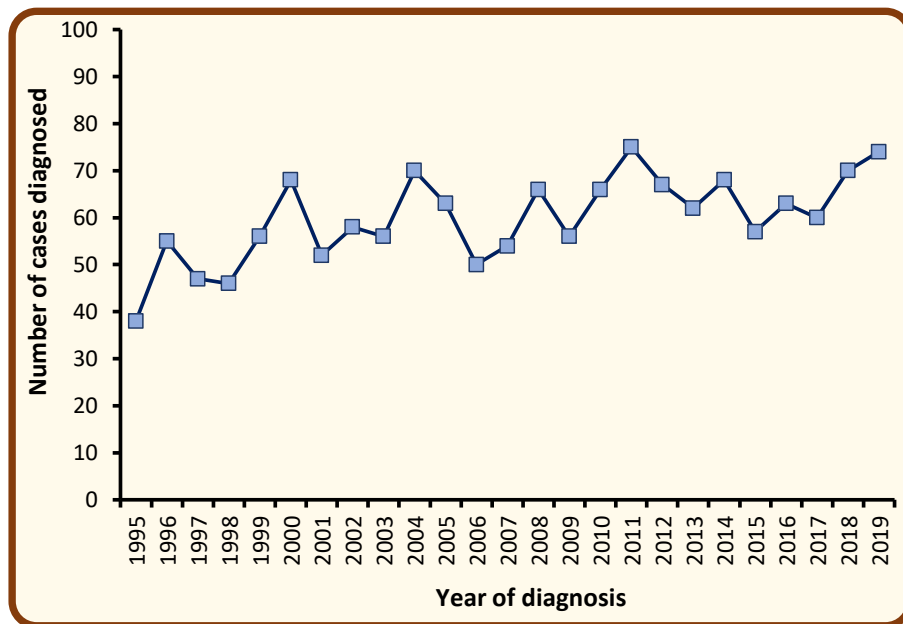
Note: Annual averages based upon several years have been rounded to the nearest integer. Sums of numbers in table rows or columns may thus differ slightly from the given total.
NMSC: Non-melanoma skin cancer

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

▪ Among males age-standardised incidence rates of testicular cancer decreased by 2.7% from 7.3 per 100,000 person years in 2010-2014 to 7.1 cases per 100,000 persons years in 2015-2019. This difference was not statistically significant.
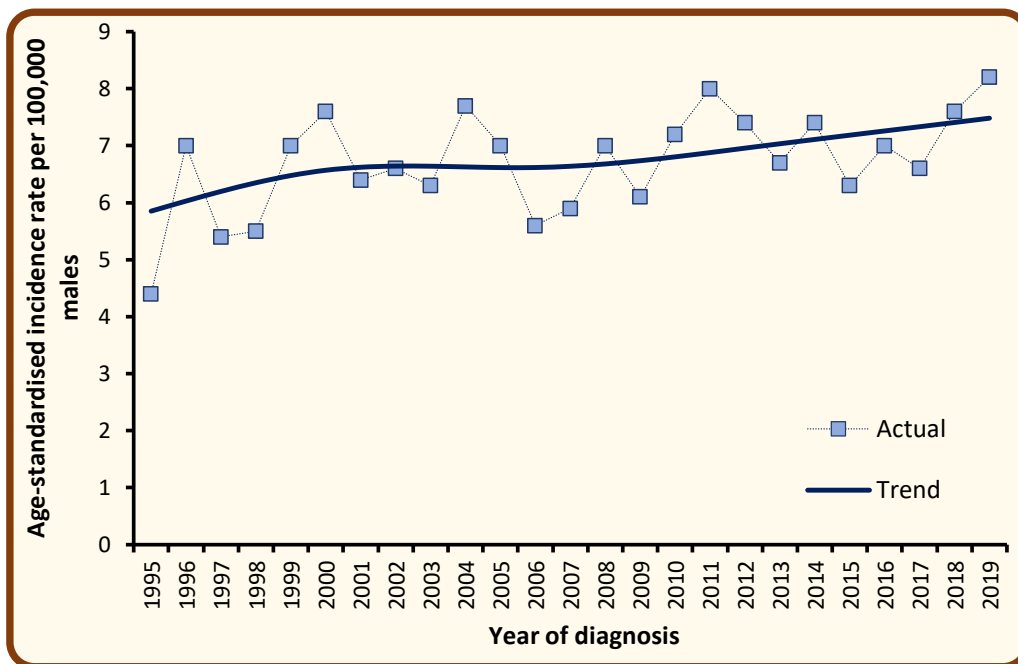
Age-standardised incidence rates illustrate the change in the number of cases within a population of a fixed size and age structure (2013 European Standard).

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 - *Testicular 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.

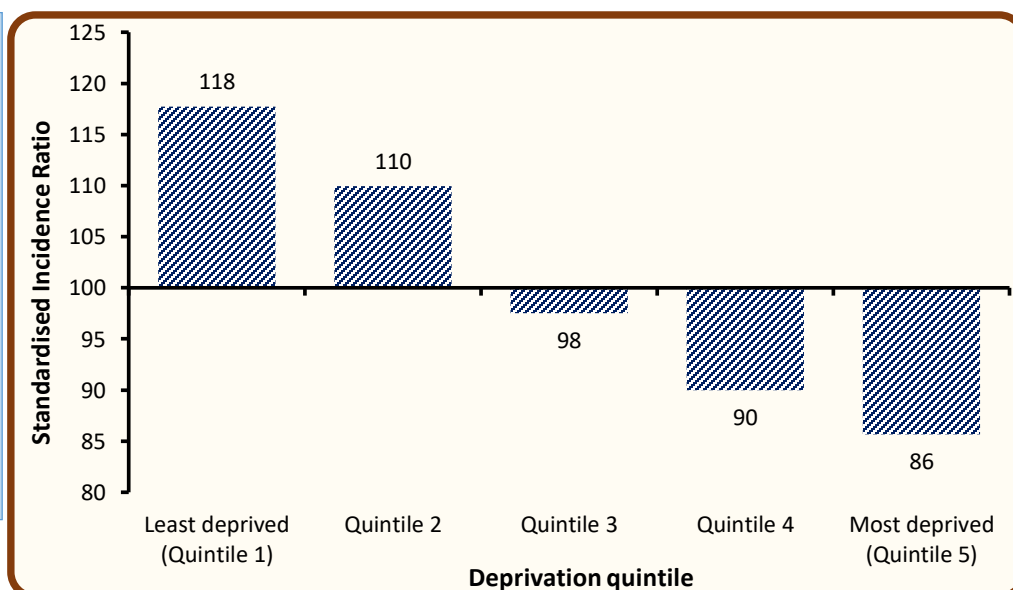After accounting for these factors, incidence rates:

▪ in the most socio-economically deprived areas did not vary significantly from 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
Least deprived (Quintile 1)	14
Quintile 2	15
Quintile 3	13
Quintile 4	12
Most deprived (Quintile 5)	11
Northern Ireland	65

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) - *Testicular 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
Belfast HSCT	11
Northern HSCT	16
South-Eastern HSCT	14
Southern HSCT	12
Western HSCT	12
Northern Ireland	65
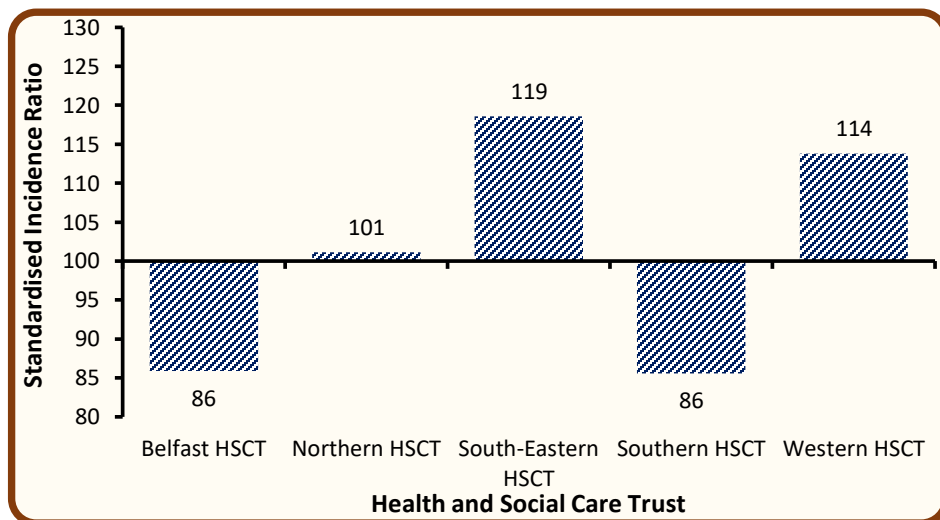
Standardised incidence ratios compare incidence rates in each HSC Trust with the Northern Ireland incidence rate. A value above 100 means that incidence rates in that HSC Trust are greater than the NI average.

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 - *Testicular cancer, Cases in 2015-2019*

During 2015-2019:
- 9.0% of cases had an emergency admission to hospital recorded within 30 days prior to their cancer diagnosis.
- In 14.2% 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
Emergency admission	6
Elective admission	50
No emergency/elective admission recorded	9
Total	65
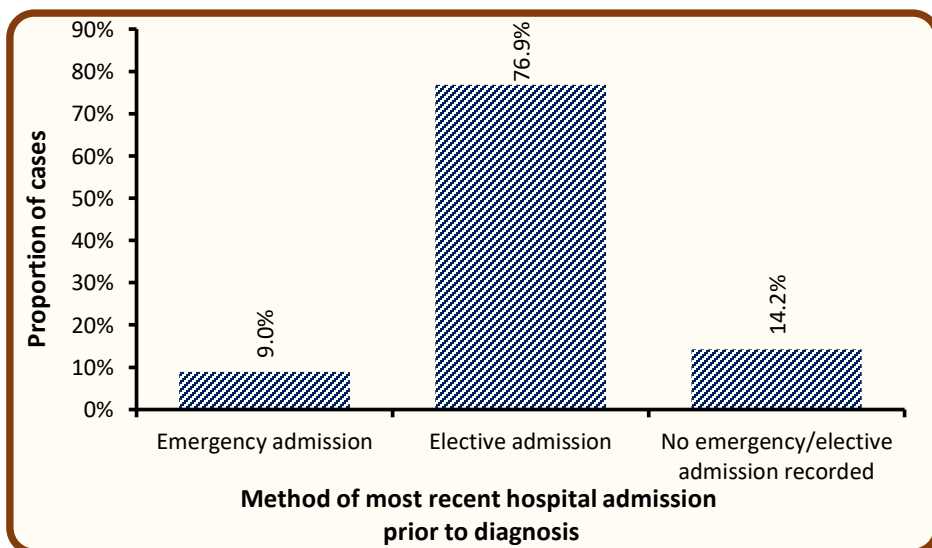
Admission method refers to the most recent hospital inpatient admission that a patient had prior to cancer diagnosis, regardless of reason for the admission.

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.

During 2015-2019:

▪ 96.6% of cases diagnosed had a stage assigned.

▪ 76.5% of cases were diagnosed at stage I. (79.2% of staged cases)

▪ 6.8% of cases were diagnosed at stage III/IV. (7.0% of staged cases)

Stage at diagnosis	Average cases per year
	Male
Stage I (Early)	50
Stage II	9
Stage III/IV (Late)	4
Unknown	2
All stages	65
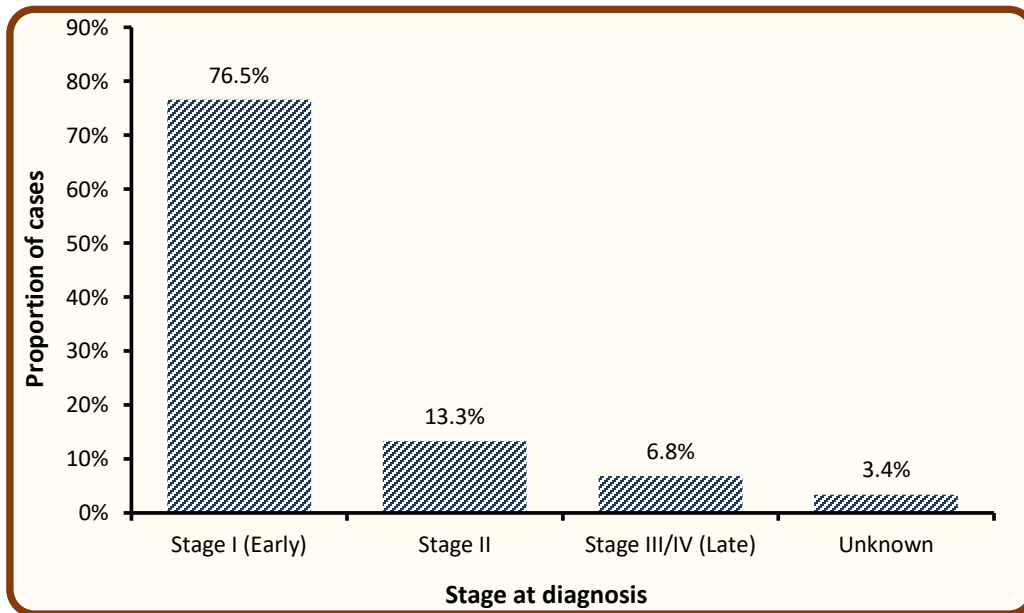
Cancer stage describes the size of a cancer and how far it has grown and spread.

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).
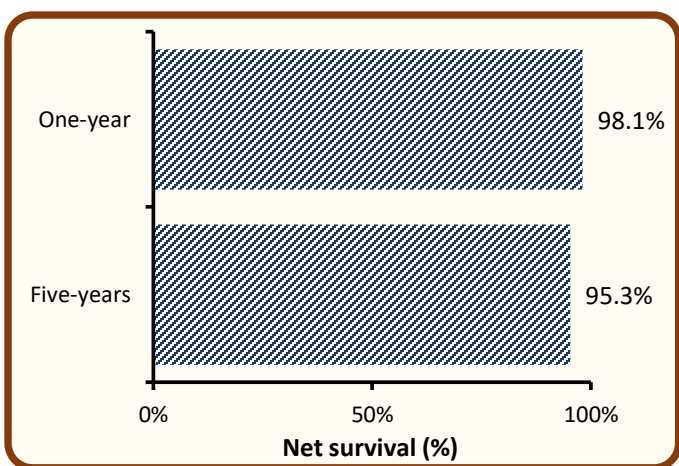
Survival

▪ 97.9% of patients were alive one year and 94.6% were alive five years from a testicular cancer diagnosis in 2010-2014. (observed survival)

▪ Net survival, which removes the effect of deaths from causes unrelated to cancer, was 98.1% one year and 95.3% five years from a testicular cancer diagnosis in 2010-2014.

Survival time	Observed survival	Net survival
One-year	97.9%	98.1%
Five-years	94.6%	95.3%

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.

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. Net survival is not age-standardised for testicular cancer due to the small number of older patients with this cancer.

Trends in survival *- Testicular cancer, Patients diagnosed in 1995-2014*
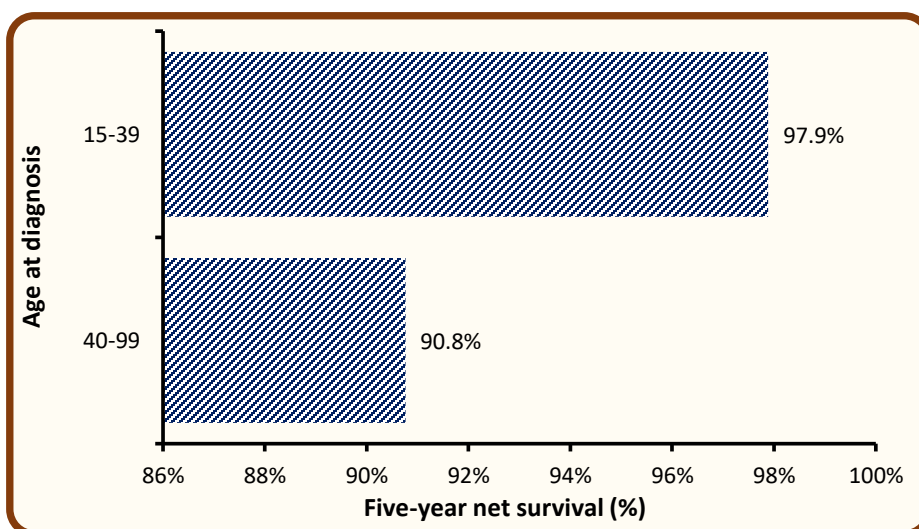
▪ Five-year survival from testicular cancer decreased from 98.4% in 2005-2009 to 95.3% in 2010-2014. This difference was not statistically significant.
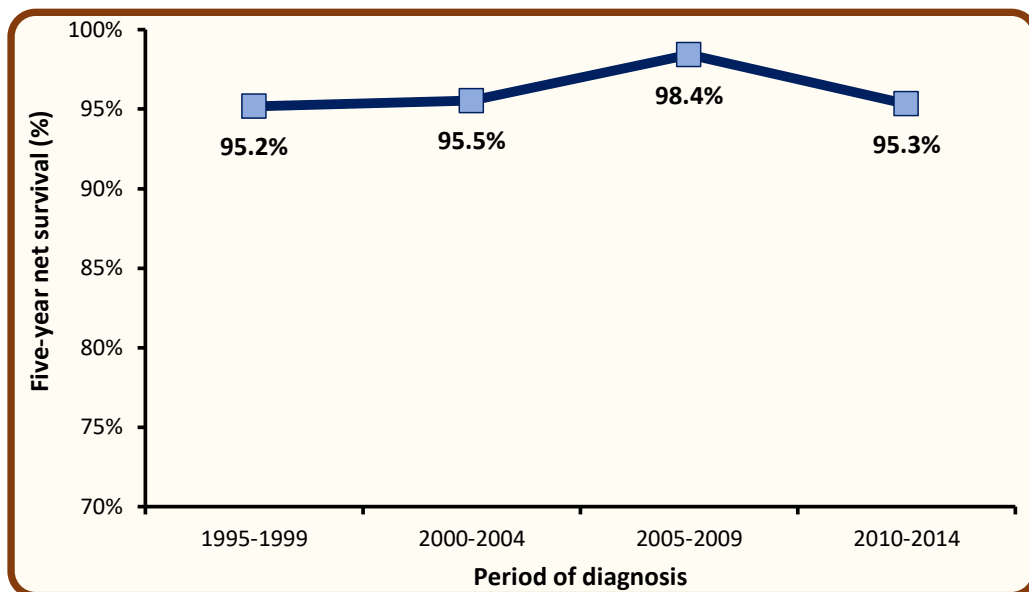
Survival by age at diagnosis *- Testicular cancer, Patients diagnosed in 2010-2014*

▪ Survival from testicular cancer among patients diagnosed in 2010-2014 was strongly related to age with five-year survival decreasing as age increases.

▪ Five-year net survival ranged from 97.9% among patients aged 15-39 at diagnosis to 90.8% among those aged 40 and over.

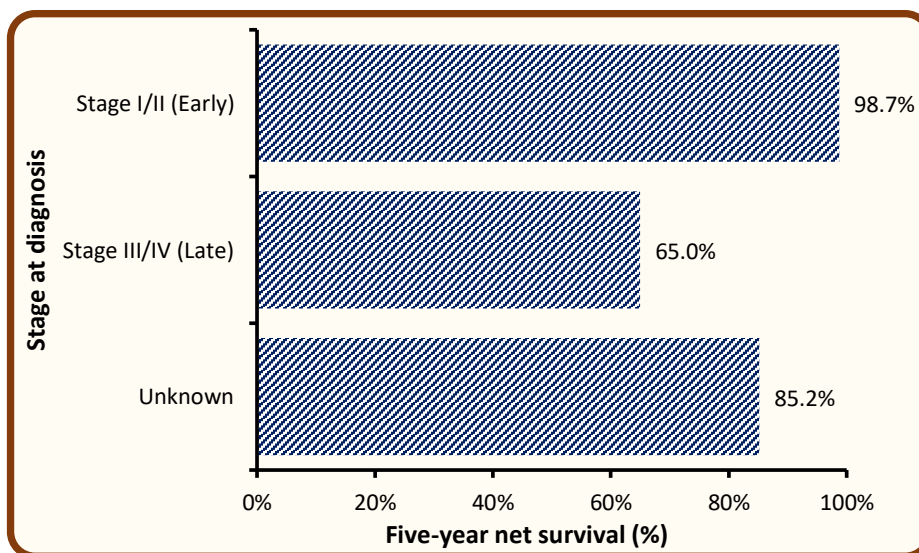## Survival by stage at diagnosis *- Testicular cancer, Patients diagnosed in 2010-2014*

▪ Stage at diagnosis is one of the most important factors in testicular cancer survival with five-year survival decreasing as stage increases.

▪ Five-year survival ranged from 98.7% for early stage (stage I/II) disease to 65.0% for late stage (stage III/IV) disease.

▪ Five-year survival for unstaged cancer was 85.2%.

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

▪ Five-year survival among patients who had an emergency admission to hospital up to 30 days prior to their cancer diagnosis was 91.4% compared to 96.8% among those with elective admissions and 92.5% among those who had no hospital admissions recorded up to 30 days prior to diagnosis.
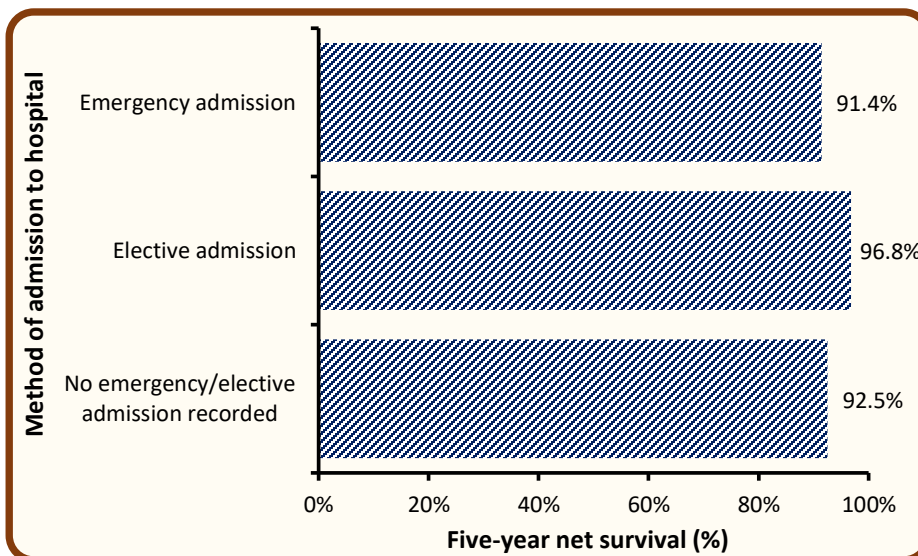
Prevalence

▪ At the end of 2019, there were 1,345 men living with testicular cancer who had been diagnosed in the previous 25 years.

▪ Of these, 70.2% were aged 40 and over, and 5.4% 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 0-39	Aged 40+	All ages
0-1 year	42	30	72
1-5 years	132	112	244
5-10 years	125	184	309
10-25 years	102	618	720
0-25 years	401	944	1,345

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

▪ Among men the number of survivors from testicular cancer who had been diagnosed within the previous ten years increased by 4.5% from 598 survivors in 2014 to 625 survivors in 2019.

	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Male	567	587	598	606	598	588	602	607	608	625

Mortality

▪ During 2015-2019 there were 2 deaths from testicular cancer each year. It made up 0.1% of all male cancer deaths (ex NMSC).

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. testicular 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 last 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.