Testicular cancer

1993-2021

(ICD10 codes: C62)

Northern Ireland Cancer Registry, 2024

An official statistics publication

ABOUT THIS REPORT

Contents

This report includes information on incidence of testicular cancer 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, 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 2024. Testicular cancer: 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

Phone: +44 (0)28 9097 6028 **e-mail:** nicr@qub.ac.uk

Acknowledgements

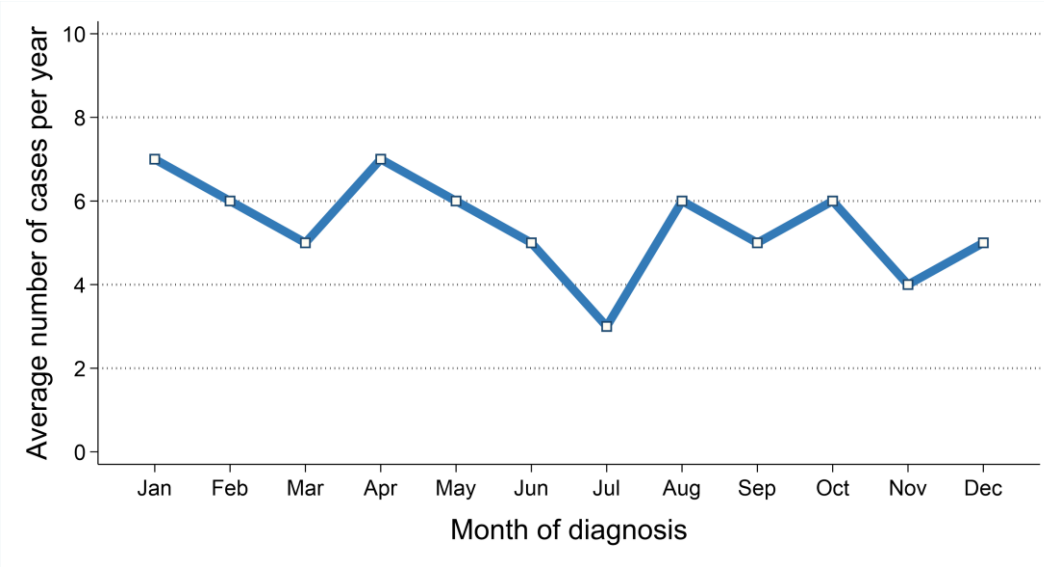
The Northern Ireland Cancer Registry (NICR) uses data provided by patients and collected by the health service as part of their care and support.

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

INCIDENCE

- There were 326 cases of testicular cancer diagnosed during 2017-2021 in Northern Ireland. On average this was 65 cases per year.
- The most common diagnosis month during 2017-2021 was April and January with 7 cases per year.

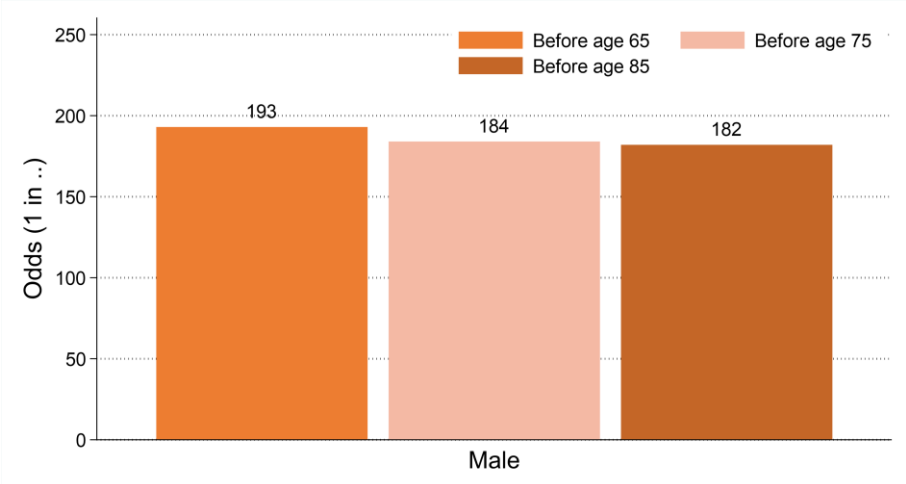
Figure 1: Average number of cases of testicular cancer per year in 2017-2021 by month of diagnosis



Month of diagnosis	Average number of cases per year
	Males
January	7
February	6
March	5
April	7
May	6
June	5
July	3
August	6
September	5
October	6
November	4
December	5

- Testicular cancer made up 1.3% of all male cancer cases (excluding non-melanoma skin cancer).
- The testicular cancer incidence rate was 7.0 cases per 100,000 males.
- The odds of developing testicular cancer before age 85 was 1 in 182.

Figure 2: Odds of developing testicular cancer in 2017-2021



INCIDENCE BY AGE

- The median age of males diagnosed with testicular cancer during 2017-2021 was 36 years.
- The risk of being diagnosed with testicular cancer varied by age, with 10.1% of men diagnosed with testicular cancer aged 55 and over at diagnosis.
- In contrast, 45.7% of men diagnosed with testicular cancer were aged 0 to 34 at diagnosis.

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

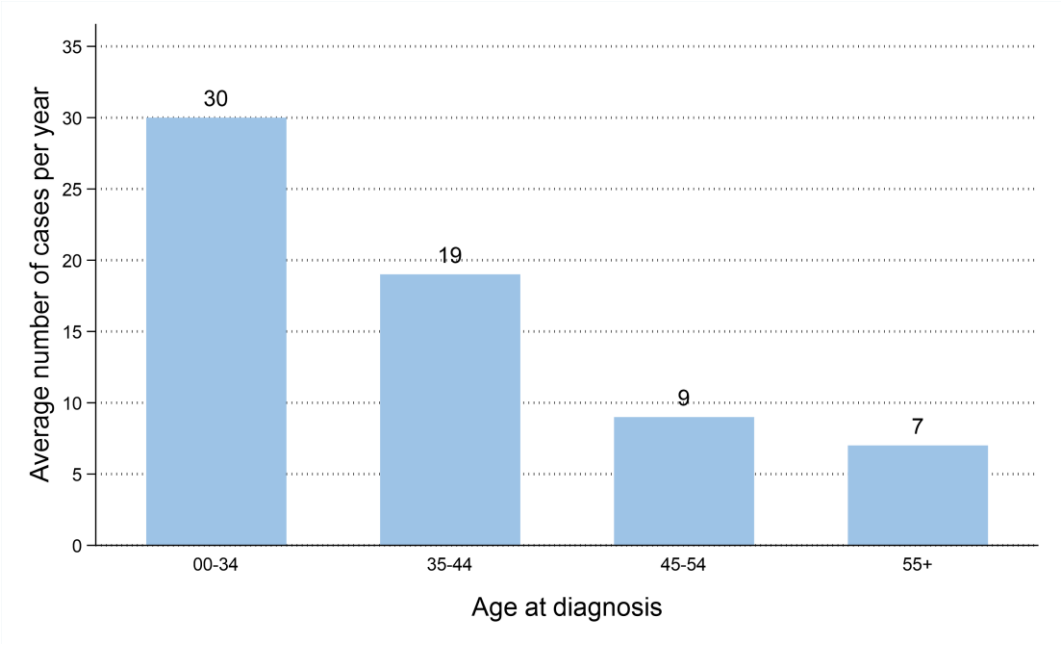
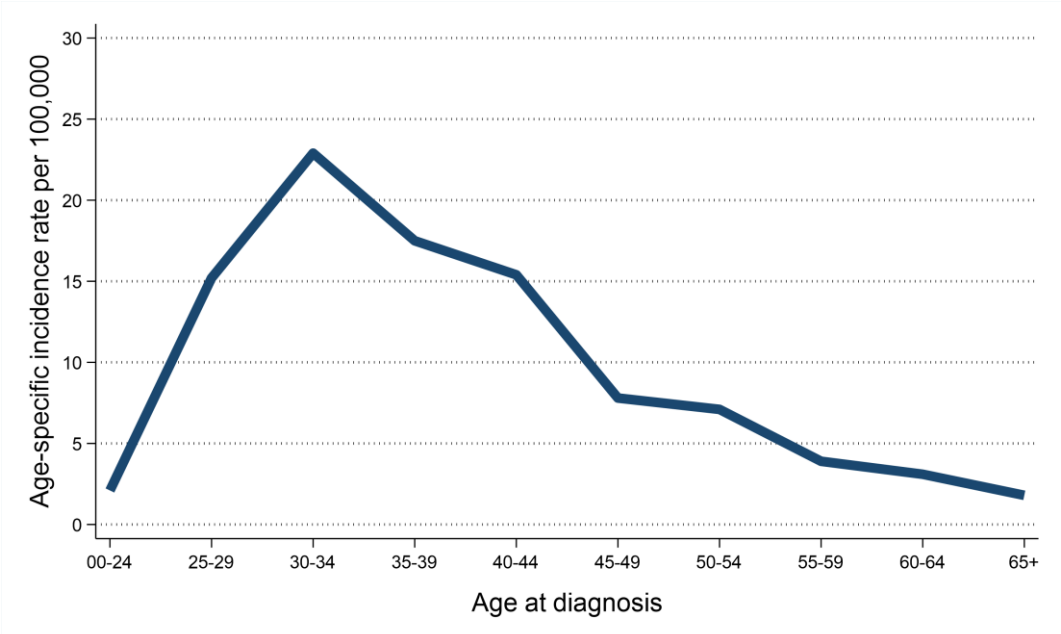


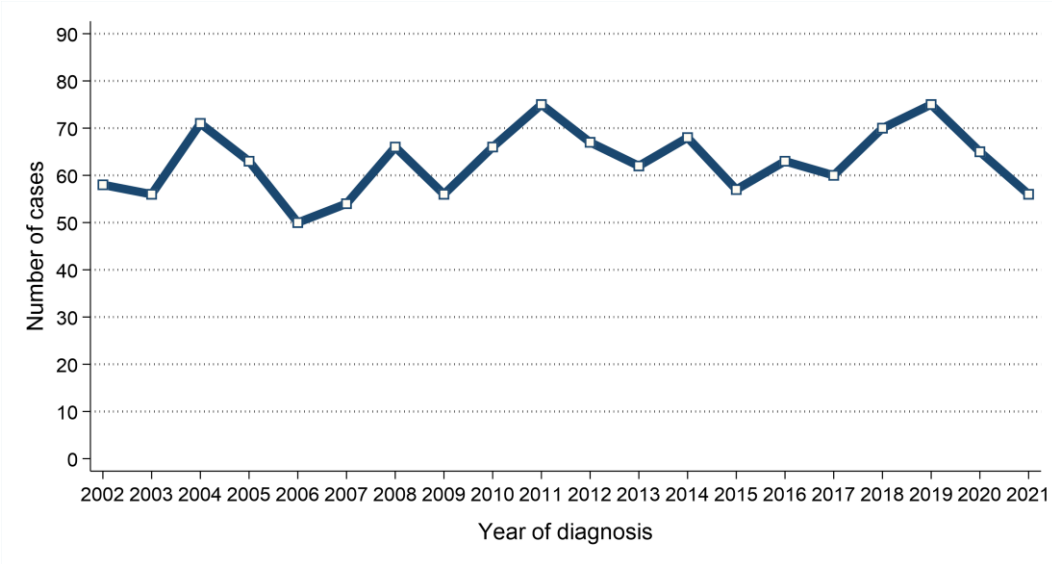
Figure 4: Age-specific incidence rates of testicular cancer in 2017-2021



INCIDENCE TRENDS

- The number of cases of testicular cancer among males increased between 2012-2016 and 2017-2021 by 2.8% from 317 cases (63 cases per year) to 326 cases (65 cases per year).

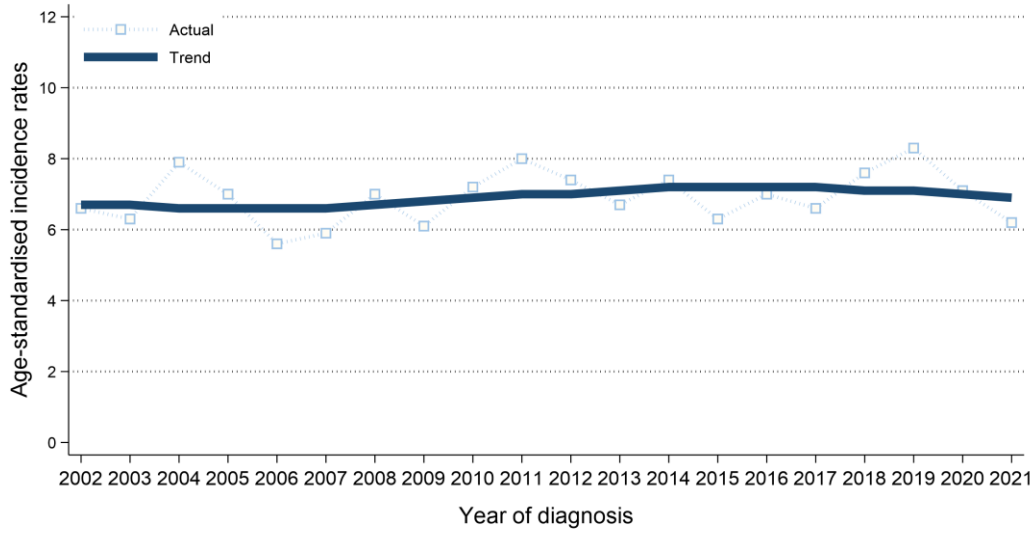
Figure 5: Trends in number of cases of testicular cancer diagnosed from 2002 to 2021



Year of diagnosis	Number of cases Males
2012	67
2013	62
2014	68
2015	57
2016	63
2017	60
2018	70
2019	75
2020	65
2021	56

- Male age-standardised testicular cancer incidence rates increased between 2012-2016 and 2017-2021 by 2.9% from 7.0 to 7.2 cases per 100,000 males. This change was not statistically significant.

Figure 6: Trends in incidence rates of testicular 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).

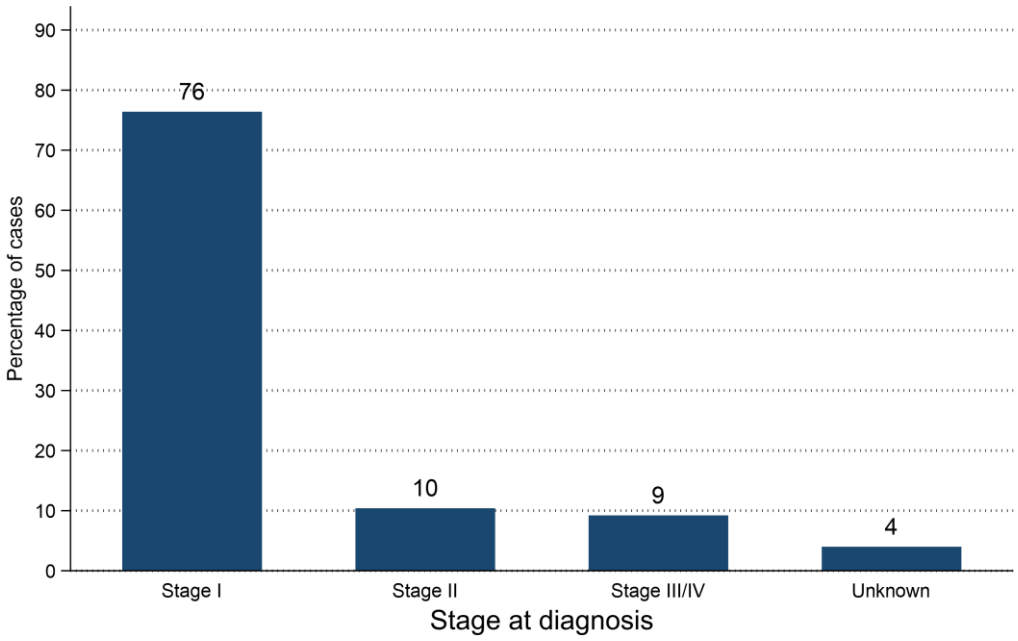
INCIDENCE BY STAGE AT DIAGNOSIS

- During 2017-2021 96.0% of testicular cancer cases had a stage assigned.
- 76.4% of testicular cancer cases were diagnosed at Stage I. (79.6% of staged cases)
- 9.2% of testicular cancer cases were diagnosed at Stage III/IV. (9.6% of staged cases)

Table 1: Number of cases of testicular cancer diagnosed in 2017-2021 by stage at diagnosis

Stage at diagnosis	Male	
	Total cases in period	Average cases per year
All stages	**326**	**65**
	.	.
Stage I	249	50
Stage II	34	7
Stage III/IV	30	6
Unknown	13	3

Figure 7: Proportion of cases of testicular cancer diagnosed in 2017-2021 by stage at diagnosis



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).

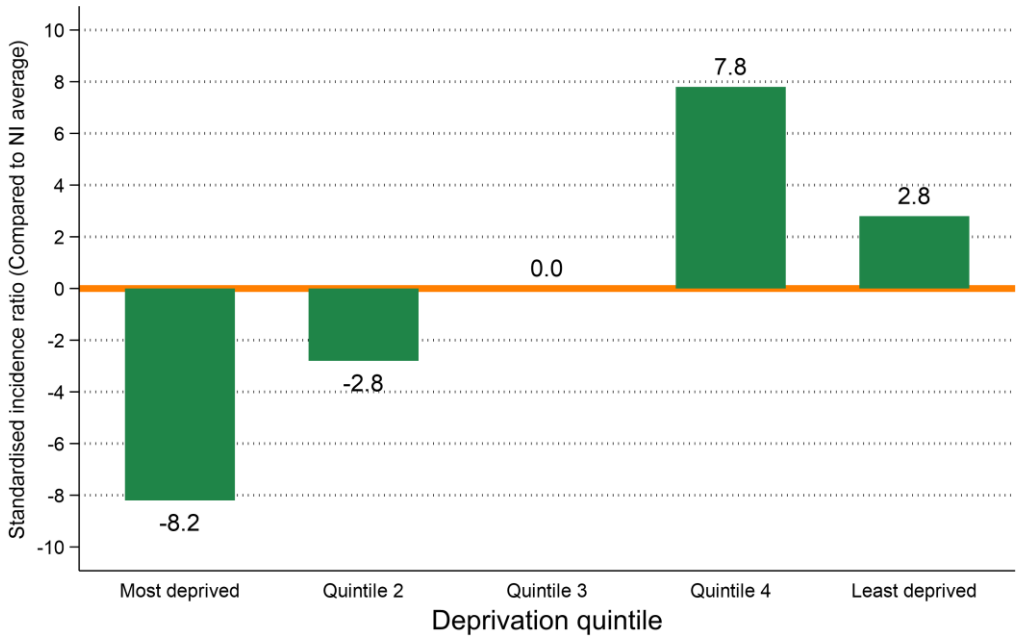
INCIDENCE BY DEPRIVATION

- The number of cases of testicular 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 did not vary significantly from the NI average.
  - in the least socio-economically deprived areas did not vary significantly from the NI average.

Table 2: Number of cases of testicular cancer diagnosed in 2017-2021 by deprivation quintile

Deprivation quintile	Male	
	Total cases in period	Average cases per year
Northern Ireland	**326**	**65**
	.	.
Most deprived	57	11
Quintile 2	65	13
Quintile 3	69	14
Quintile 4	73	15
Least deprived	62	12
Unknown	0	0

Figure 8: Standardised incidence ratio comparing deprivation quintile to Northern Ireland for testicular 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.

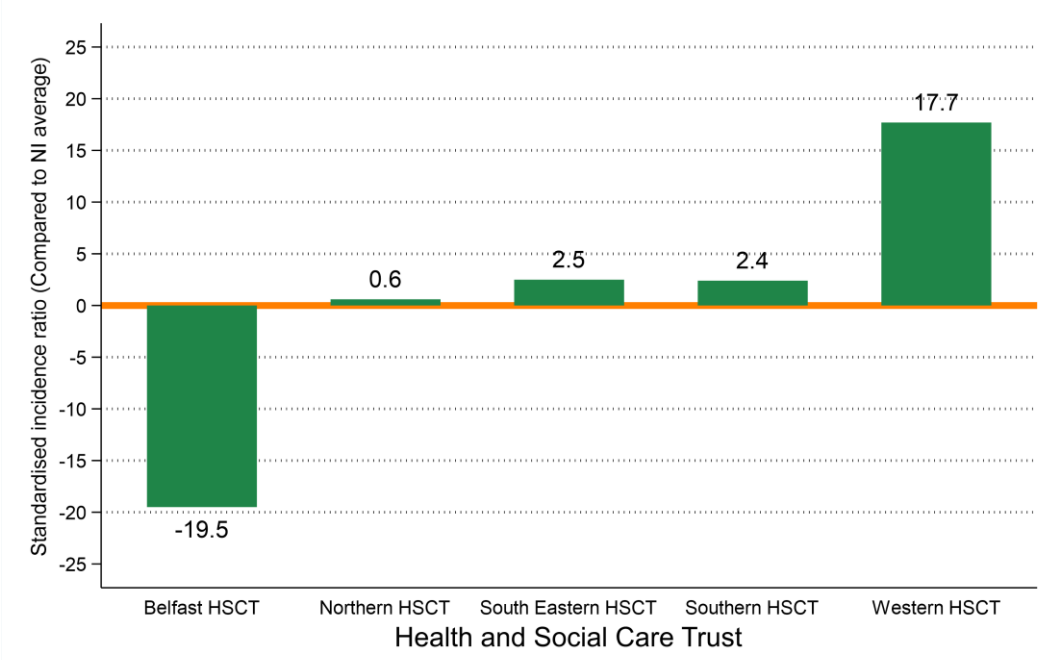
INCIDENCE BY HEALTH AND SOCIAL CARE TRUST

- The number of cases of testicular 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 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.

Table 3: Number of cases of testicular cancer diagnosed in 2017-2021 by Health and Social Care Trust

Health and Social Care Trust	Male	
	Total cases in period	Average cases per year
Northern Ireland	**326**	**65**
	.	.
Belfast HSCT	53	11
Northern HSCT	81	16
South Eastern HSCT	61	12
Southern HSCT	70	14
Western HSCT	61	12
Unknown	0	0

Figure 9: Standardised incidence ratio comparing Health and Social Care Trust to Northern Ireland for testicular cancer diagnosed in 2017-2021



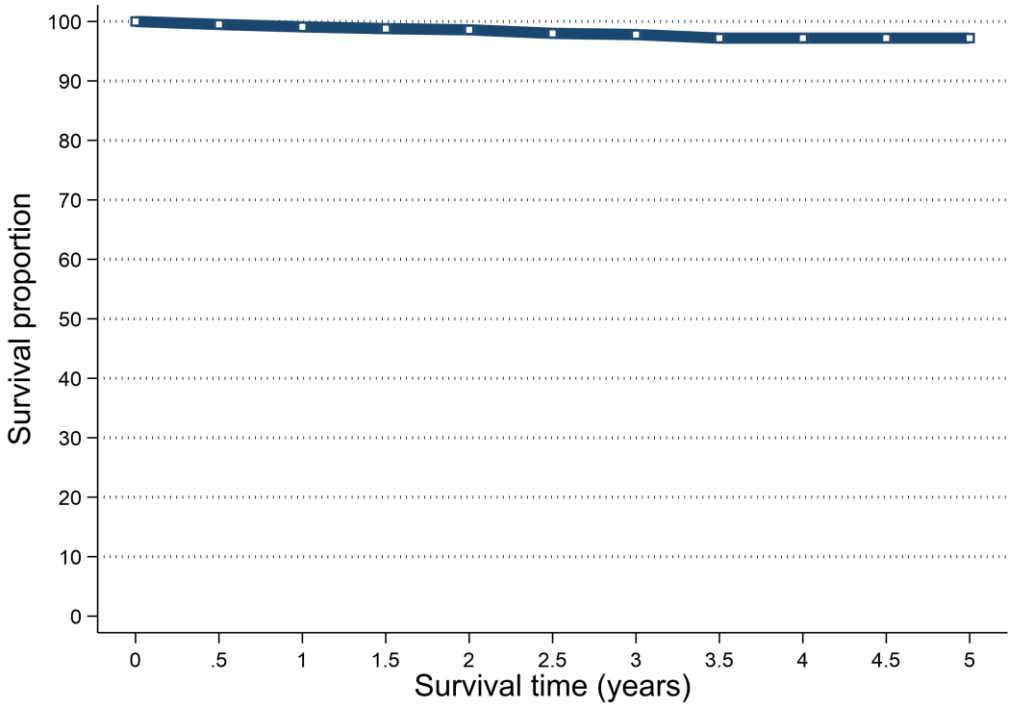
SURVIVAL

- 98.7% of patients were alive one year and 96.1% were alive five years from a testicular cancer diagnosis in 2012-2016. (observed survival)
- Age-standardised net survival (ASNS), which removes the effect of deaths from causes unrelated to cancer, was 99.1% one year and 97.2% five years from a testicular cancer diagnosis in 2012-2016.

Table 4: Survival from testicular cancer for patients diagnosed in 2012-2016

Time since diagnosis	Male	
	Observed survival	Age-standardised net survival
6 months	99.4%	99.5%
One year	98.7%	99.1%
Two years	98.1%	98.6%
Five years	96.1%	97.2%

Figure 10: Age-standardised net survival from testicular cancer for patients diagnosed in 2012-2016



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.

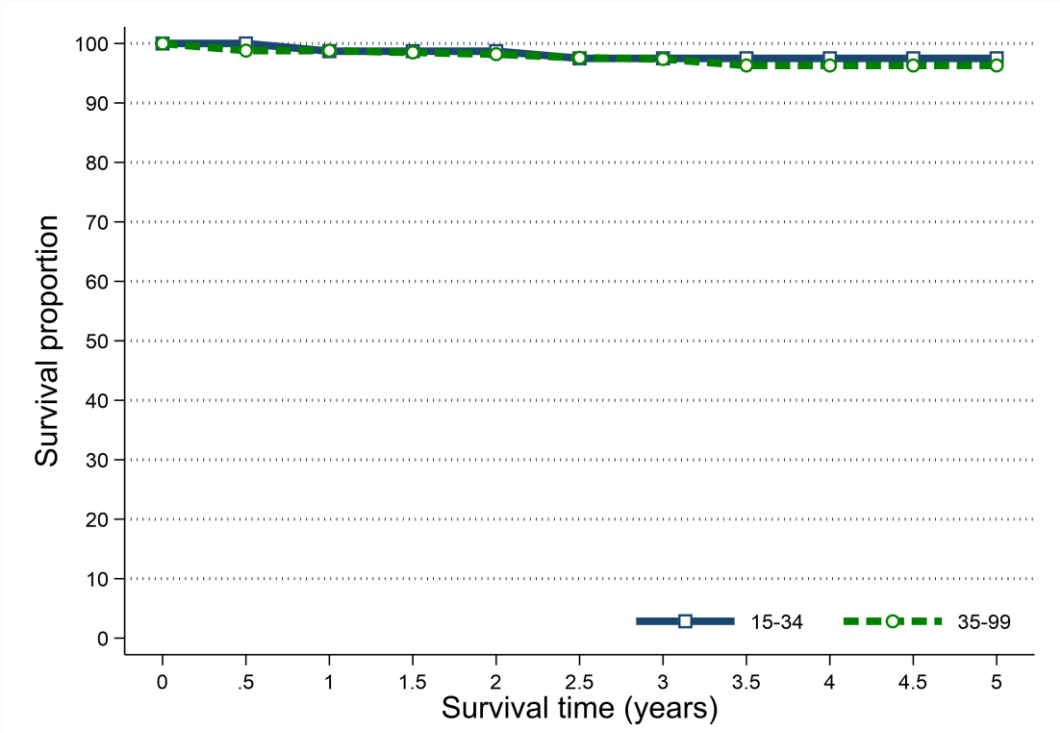
SURVIVAL BY AGE

- Survival from testicular cancer among patients diagnosed during 2012-2016 was related to age with better five-year survival among younger age groups.
- Five-year net survival ranged from 97.5% among patients aged 15 to 34 at diagnosis to 96.3% among those aged 35 to 99.

Table 5: Net survival from testicular cancer for patients diagnosed in 2012-2016 by age at diagnosis

Age group	Male	
	One-year	Five-years
15 to 34	98.7%	97.5%
35 to 99	98.8%	96.3%

Figure 11: Net survival from testicular cancer for patients diagnosed in 2012-2016 by age at diagnosis

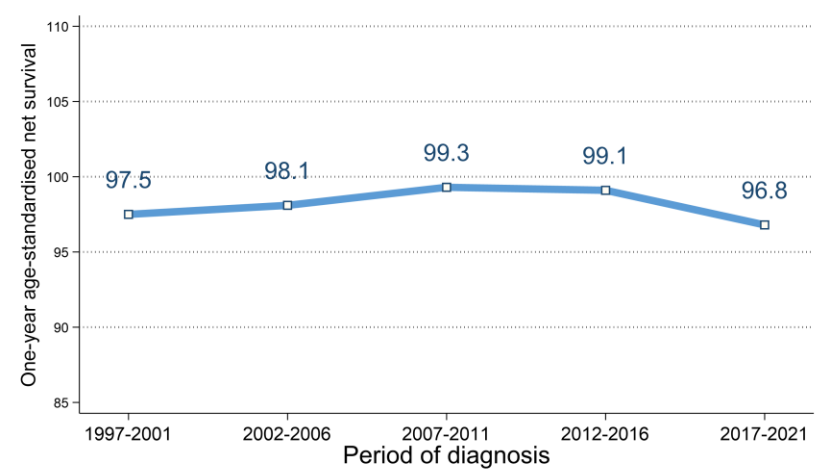


SURVIVAL TRENDS

ONE-YEAR NET SURVIVAL

- Between 2012-2016 and 2017-2021 there was no significant change in one-year survival (ASNS) from testicular cancer among males.
- Compared to 1997-2001 one-year survival (ASNS) from testicular cancer among males in 2017-2021 did not change significantly.

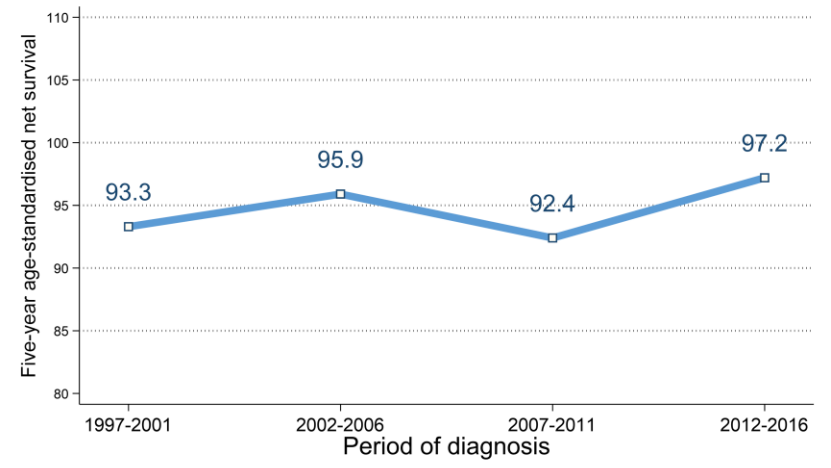
Figure 12: Trends in one-year age-standardised net survival from testicular cancer in 1997-2021



FIVE-YEAR NET SURVIVAL

- Between 2007-2011 and 2012-2016 there was no significant change in five-year survival (ASNS) from testicular cancer among males.
- Compared to 1997-2001 five-year survival (ASNS) from testicular cancer among males in 2012-2016 did not change significantly.

Figure 13: Trends in five-year age-standardised net survival from testicular cancer in 1997-2016



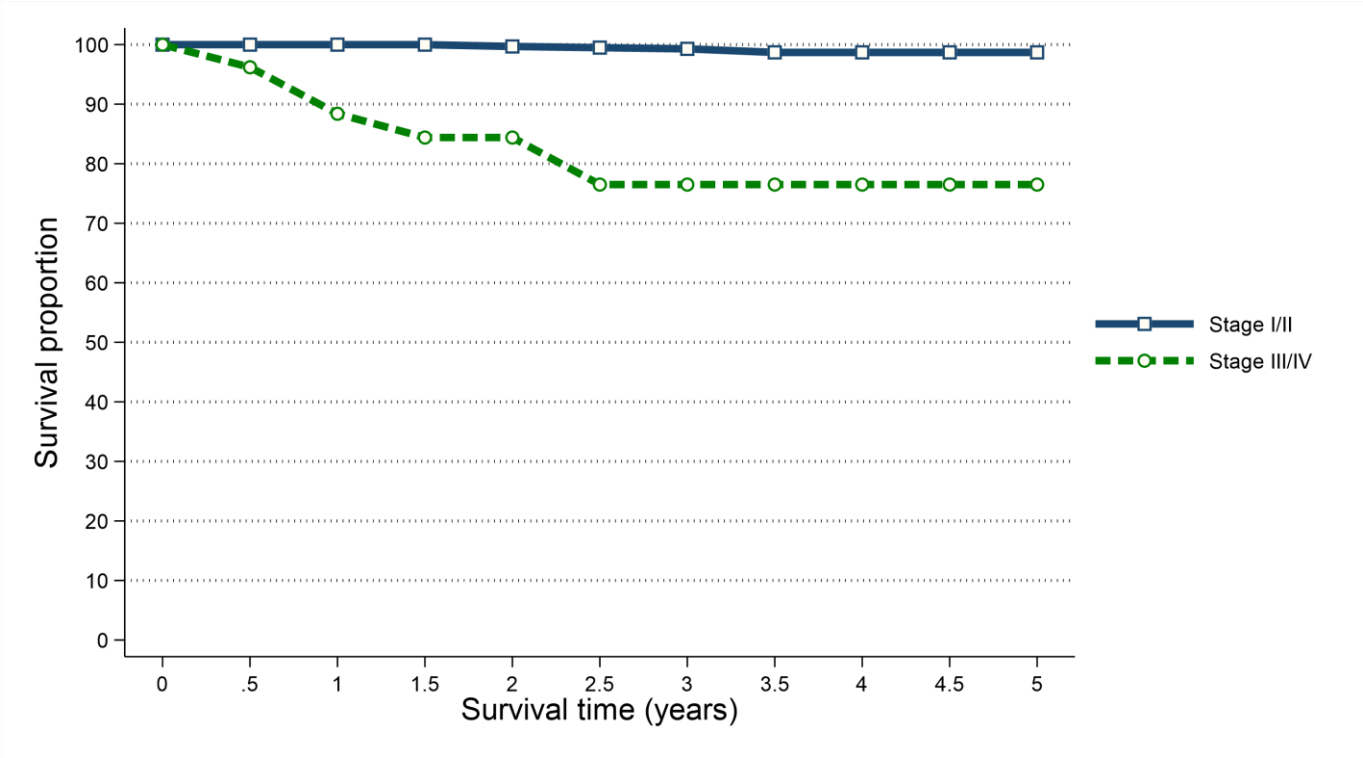
SURVIVAL BY STAGE

- Survival from testicular cancer among patients diagnosed during 2012-2016 was strongly related to stage with better five-year survival among those diagnosed at earlier stages.
- Five-year survival (ASNS) ranged from 98.7% among patients diagnosed at Stage I/II to 76.5% among those diagnosed at Stage III/IV.

Table 6: Age-standardised net survival from testicular cancer for patients diagnosed in 2012-2016 by stage at diagnosis

Stage at diagnosis	Male	
	One-year	Five-years
Stage I/II	100.0%	98.7%
Stage III/IV	88.4%	76.5%

Figure 14: Age-standardised net survival from testicular cancer for patients diagnosed in 2012-2016 by stage at diagnosis



PREVALENCE

- At the end of 2021, there were 1,376 males living with testicular cancer who had been diagnosed with the disease during 1997-2021.
- Of these 4.0% had been diagnosed in the previous year (one-year prevalence) and 44.3% in the previous 10 years (ten-year prevalence).
- 29.3% of testicular cancer survivors were aged 55 and over at the end of 2021.

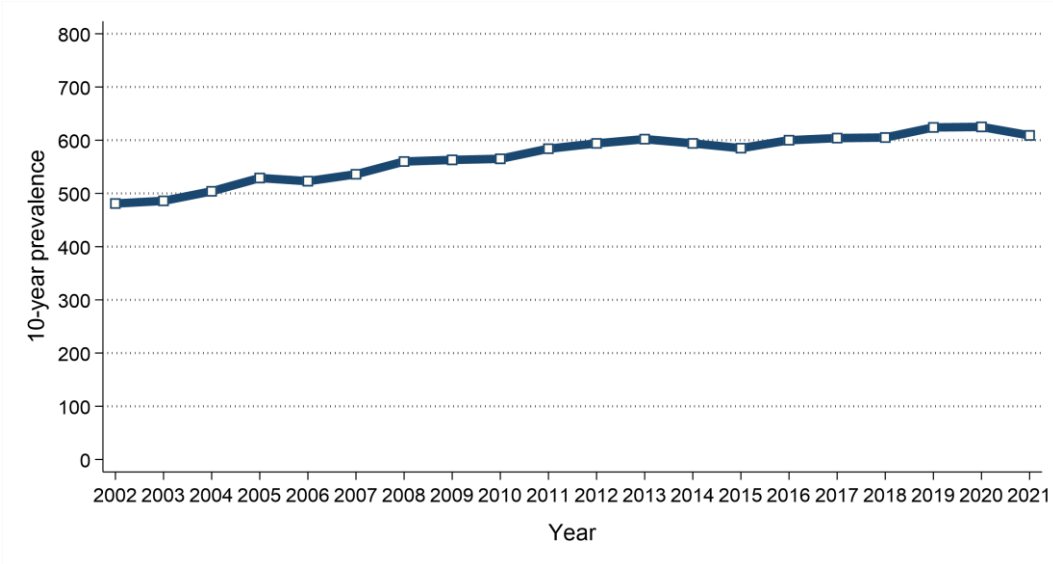
Table 7: 25-year prevalence of testicular cancer by age at end of 2021

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 ages	1,376	55	259	295	767
0 to 54	973	52	223	240	458
55 and over	403	3	36	55	309

PREVALENCE TRENDS

- 10-year prevalence of testicular cancer among males increased between 2016 and 2021 by 1.5% from 600 survivors to 609 survivors.

Figure 15: Trends in 10-year prevalence of testicular cancer in 2002-2021

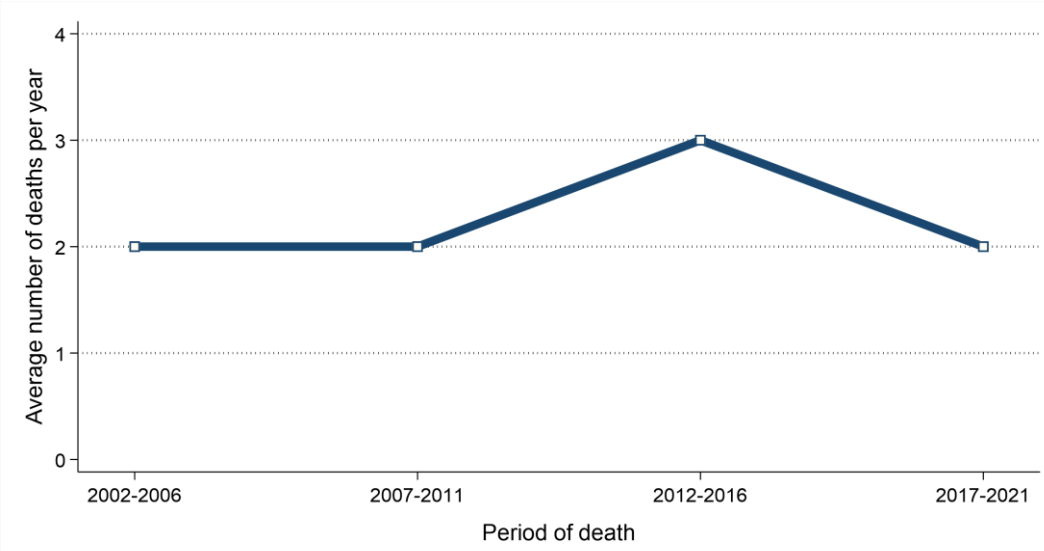


Year	10-year prevalence Males
2012	594
2013	602
2014	594
2015	585
2016	600
2017	604
2018	605
2019	624
2020	625
2021	609

MORTALITY

- There were 9 deaths from testicular cancer during 2017-2021 in Northern Ireland. On average this was 2 deaths per year.
- Testicular cancer deaths made up 0.1% of all male cancer deaths.
- The number of deaths from testicular cancer among males decreased between 2012-2016 and 2017-2021 by 35.7% from 14 deaths (3 deaths per year) to 9 deaths (2 deaths per year).

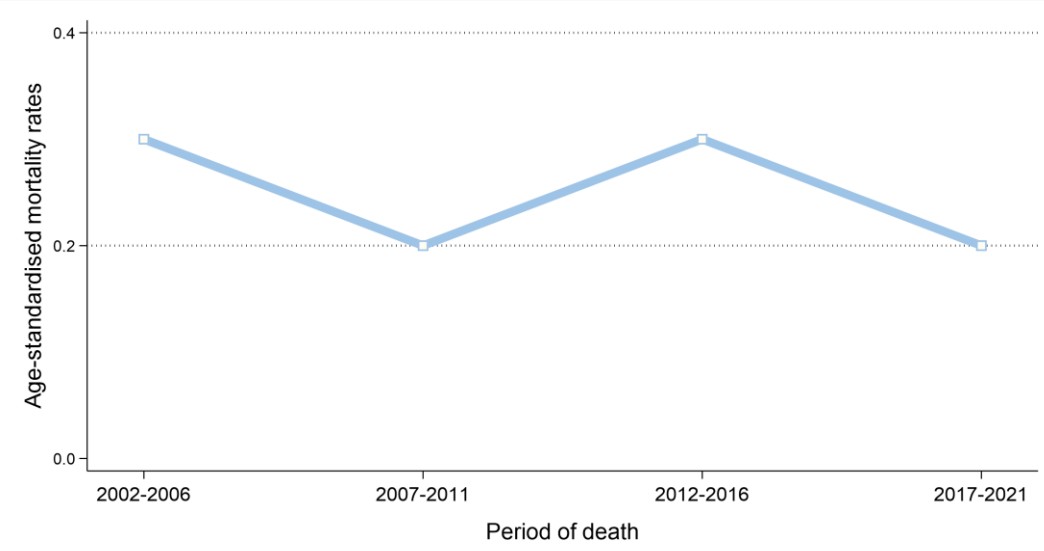
Figure 16: Trends in average number of deaths per year from testicular cancer from 2002 to 2021



Period of death	Average number of deaths per year
	Males
2002-2006	2
2007-2011	2
2012-2016	3
2017-2021	2

- Male age-standardised testicular cancer mortality rates decreased between 2012-2016 and 2017-2021 by 33.3% from 0.3 to 0.2 deaths per 100,000 males. This change was not statistically significant.

Figure 17: Trends in mortality rates of testicular 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.

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. 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. testicular 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.

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.