

Breast cancer

Patients diagnosed 1993-2019
(ICD10: C50)

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:

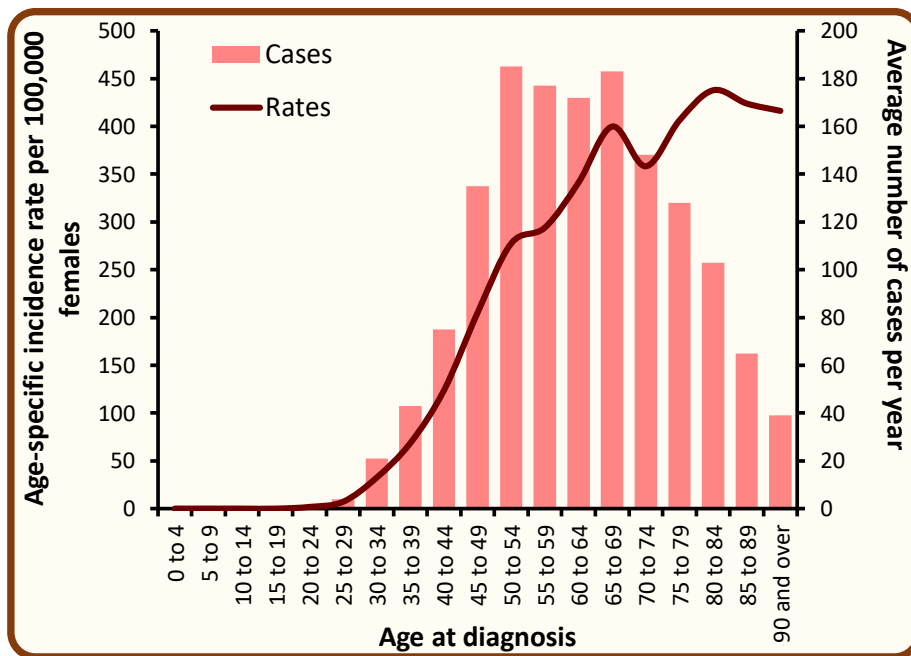
- There were 11 male and 1,479 female cases of breast cancer diagnosed each year.
- Breast cancer made up 0.2% of all male cancers (ex NMSC), and 30.1% of all female cancers (ex NMSC).
- Among women the risk of developing breast cancer before the age of 75 was 1 in 10.0, while before the age of 85 the risk was 1 in 7.3.

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

During 2015-2019:

- The median age at diagnosis among women was 62.
- Cancer risk increased with age, with 22.7% of women aged 75 years or more at diagnosis.
- 31.4% of cases were diagnosed among those aged under 55.

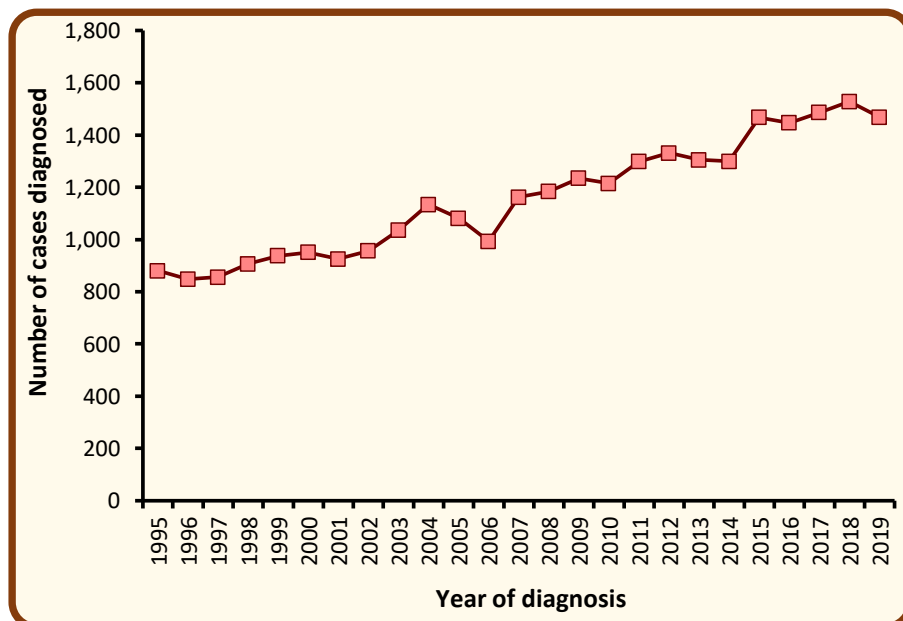
Age at diagnosis	Average cases per year
	Female
0 - 54	464
55 - 64	349
65 - 74	331
75 and over	335
All ages	1,479



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

- Among females the number of cases of breast cancer increased by 14.7% from an annual average of 1,290 cases in 2010-2014 to 1,479 cases in 2015-2019.

Year of diagnosis	Female cases
2010	1,215
2011	1,298
2012	1,331
2013	1,305
2014	1,299
2015	1,467
2016	1,447
2017	1,486
2018	1,528
2019	1,468

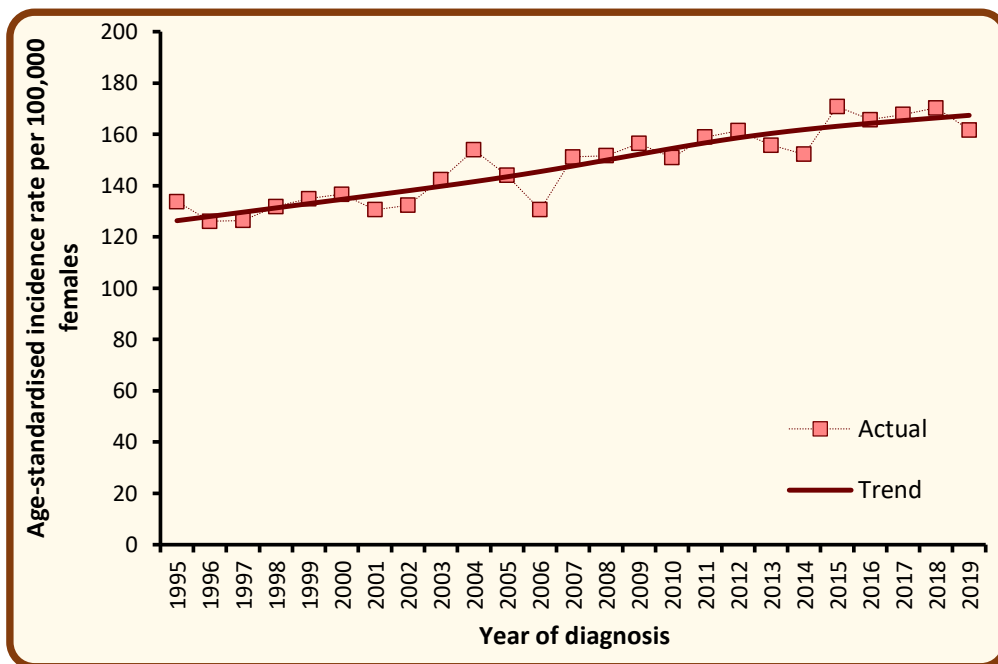


Note: Annual averages have been rounded to the nearest integer. Sums of numbers in table rows or columns may thus differ slightly from the given total.

NMSC: Non-melanoma skin cancer

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

- Among females age-standardised incidence rates of breast cancer increased by 7.3% from 155.8 per 100,000 person years in 2010-2014 to 167.1 cases per 100,000 persons years in 2015-2019. This difference was 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).

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

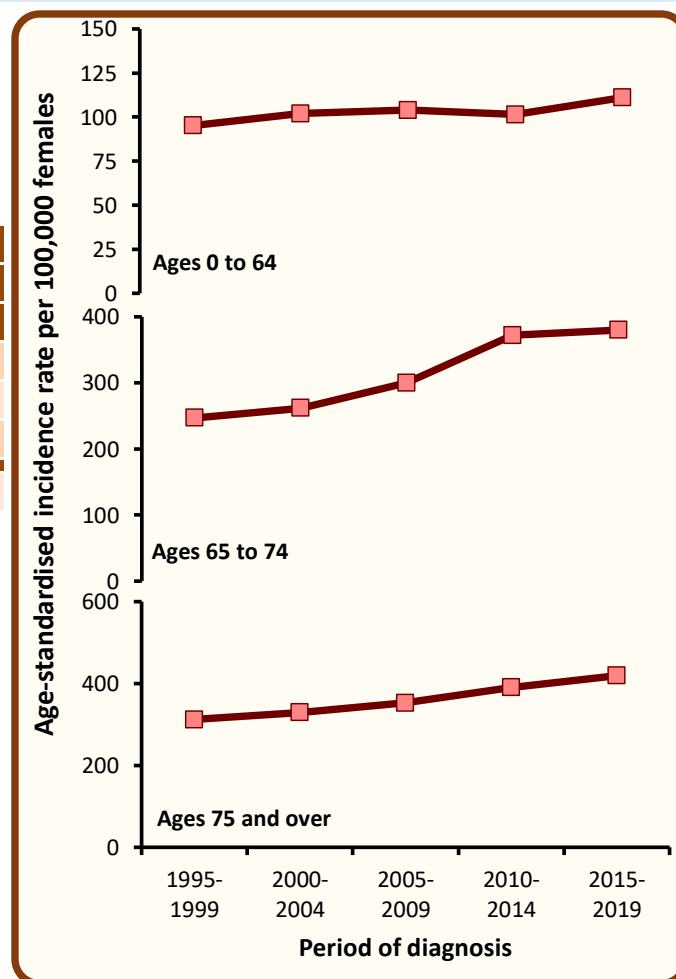
For the total number of cases recorded, between 2010-2014 and 2015-2019 there was:

- an increase of 15.6% among women aged 0 to 64, an increase of 11.8% among women aged 65 to 74 and an increase of 15.5% among women aged 75 and over.

Age group	Average cases per year	
	2005-2009	2015-2019
	Female	Female
0 to 64	704	814
65 to 74	296	331
75 and over	290	335
All ages	1,290	1,479

For age-standardised incidence rates, between 2010-2014 and 2015-2019 there was:

- an increase of 9.6% among women aged 0 to 64, no significant change among women aged 65 to 74 and no significant change among women aged 75 and over.



Incidence by deprivation quintile - Breast 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:

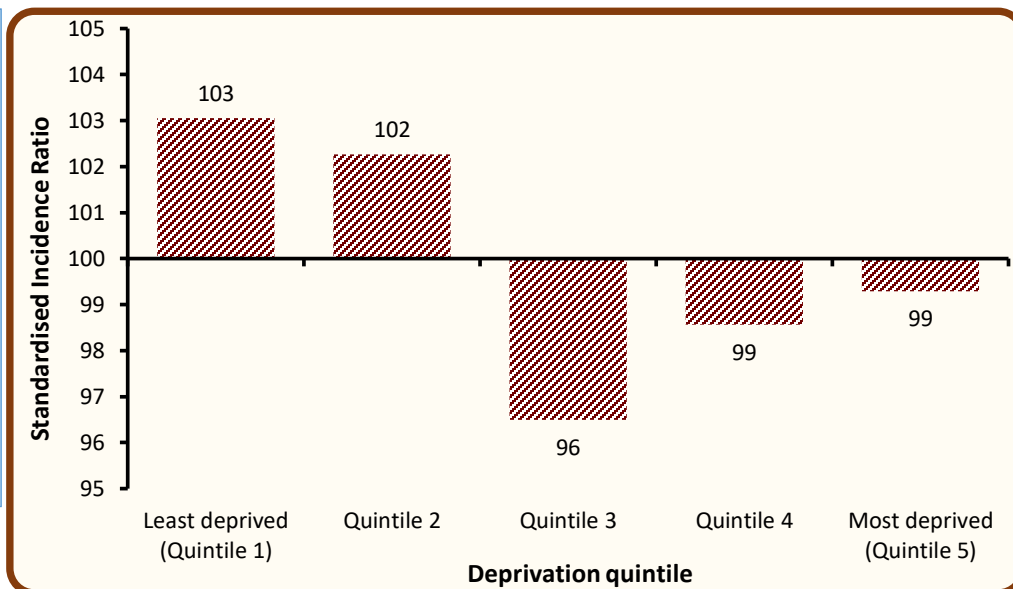
- in the most socio-economically deprived areas did not vary significantly from the NI average.
- in the least socio-economically deprived areas did not vary significantly from the NI average.

Deprivation quintile	Average cases per year
	Female
Least deprived (Quintile 1)	321
Quintile 2	320
Quintile 3	296
Quintile 4	292
Most deprived (Quintile 5)	250
Northern Ireland	1,479

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.



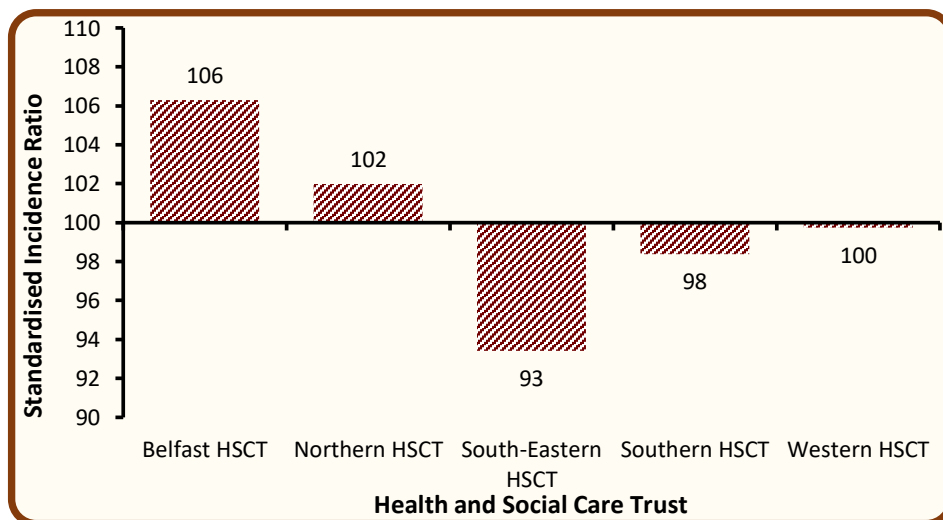
Incidence by Health and Social Care Trust (HSCT) - Breast cancer, Cases in 2015-2019

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 were significantly lower than 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
	Female
Belfast HSCT	294
Northern HSCT	396
South-Eastern HSCT	286
Southern HSCT	274
Western HSCT	229
Northern Ireland	1,479



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.

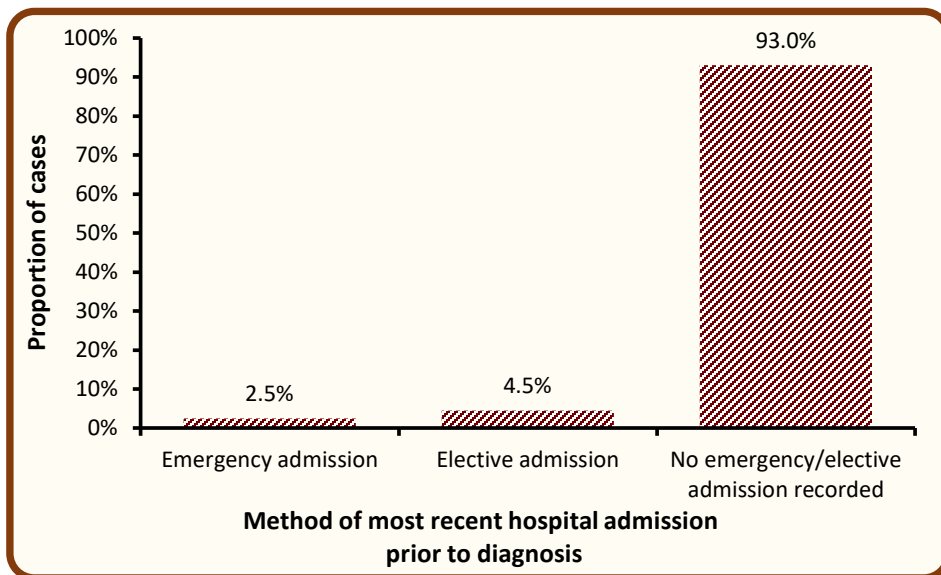
Data for Local Government Districts and Parliamentary Constituencies are available at www.qub.ac.uk/research-centres/nicr

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

During 2015-2019:

- 2.5% of cases had an emergency admission to hospital recorded up to 30 days prior to diagnosis.
- In 93.0% 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
	Female
Emergency admission	37
Elective admission	66
No emergency/elective admission recorded	1,376
Total	1,479



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.

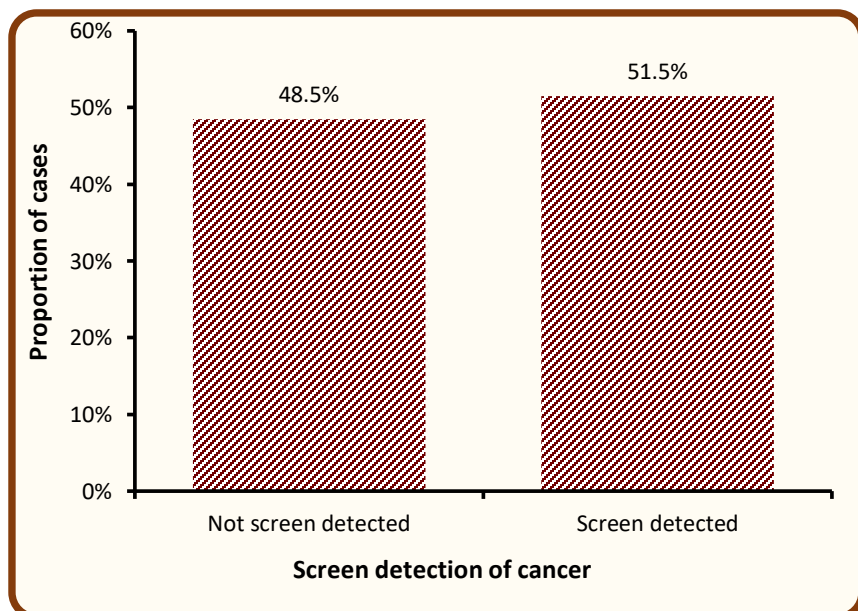
The majority of patients with no inpatient admission recorded prior to diagnosis are likely to have been diagnosed via an outpatient route.

Incidence by screen detection of cancer - Breast cancer, Ages 50 to 70, Cases in 2015-2019

During 2015-2019:

- 51.5% of cases diagnosed among those aged 50 to 70 were detected via screening for breast cancer.

Screen detected	Average cases per year
	Female
Not screen detected	365
Screen detected	388
Total	754



Breast cancer screening is currently offered every three years to all women aged 50 to 70 and resident in Northern Ireland.

This simple test checks for signs of breast cancer. In particular it can identify people who have no noticeable cancer symptoms. Screening can thus help detect cancer at an early stage when treatment is more effective.

The presented figures are for people with breast cancer who were initially identified via screening. It does not include those identified with insitu breast tumours or who had a negative screening result.

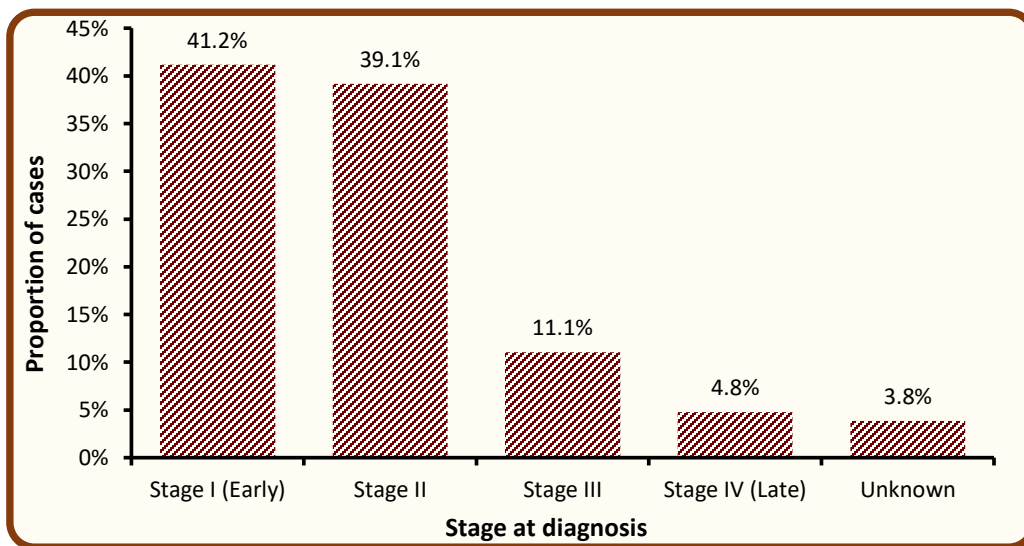
Figures may include some opportunistic screening in addition to that from the breast screening programme.

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

During 2015-2019:

- 96.2% of cases diagnosed had a stage assigned.
- 41.2% of cases were diagnosed at stage I. (42.8% of staged cases)
- 4.8% of cases were diagnosed at stage IV. (5.0% of staged cases)

Stage at diagnosis	Average cases per year	
	Female	
Stage I (Early)	609	
Stage II	579	
Stage III	164	
Stage IV (Late)	71	
Unknown	57	
All stages	1,479	



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.

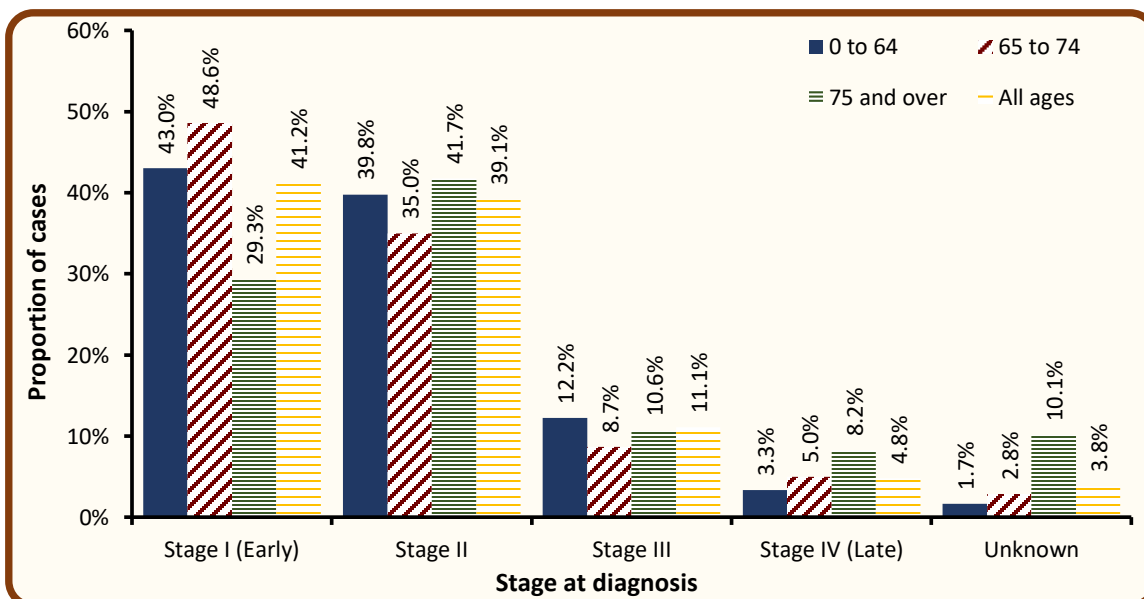
The classification used here to stage cancer is the TNM classification (Version 7 prior to 2018, Version 8 from 2018 onwards).

Incidence by age and stage at diagnosis - Breast cancer, Cases in 2015-2019

During 2015-2019:

- 10.1% of cases among those aged 75 and over did not have a stage assigned at diagnosis, compared to 1.7% of cases among those aged 0 to 64.
- Among cases which were staged, 9.2% of cases among those aged 75 and over were diagnosed at stage IV, compared to 3.4% of cases among those aged 0 to 64.

Stage at diagnosis	Average cases per year			
	0 to 64	65 to 74	75 and over	All ages
Stage I (Early)	350	161	98	609
Stage II	324	116	140	579
Stage III	99	29	36	164
Stage IV (Late)	27	16	28	71
Unknown	14	9	34	57
All stages	814	331	335	1,479



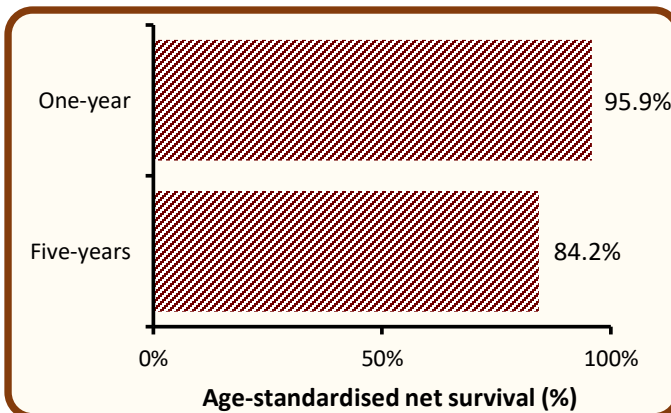
Survival

- 94.6% of patients were alive one year and 77.2% were alive five years from a breast cancer diagnosis in 2010-2014. (observed survival)
- Age-standardised net survival (ASNS), which removes the effect of deaths from causes unrelated to cancer, was 95.9% one year and 84.2% five years from a breast cancer diagnosis in 2010-2014.

Survival time	Observed survival	Age-standardised net survival
One-year	94.6%	95.9%
Five-years	77.2%	84.2%

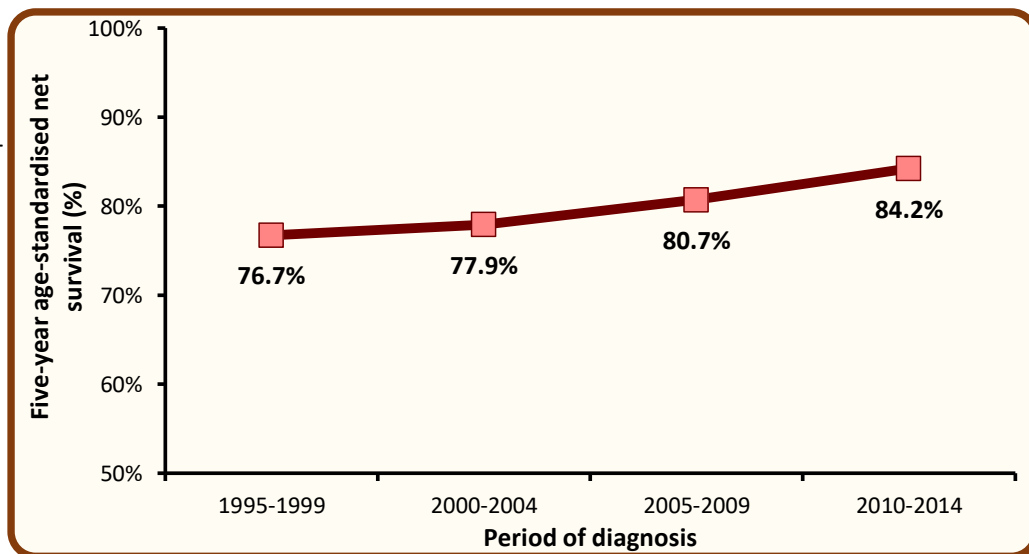
Observed survival is the proportion of patients still alive one/five years after diagnosis. However, in this measure patients may have died from causes unrelated to their cancer.

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.



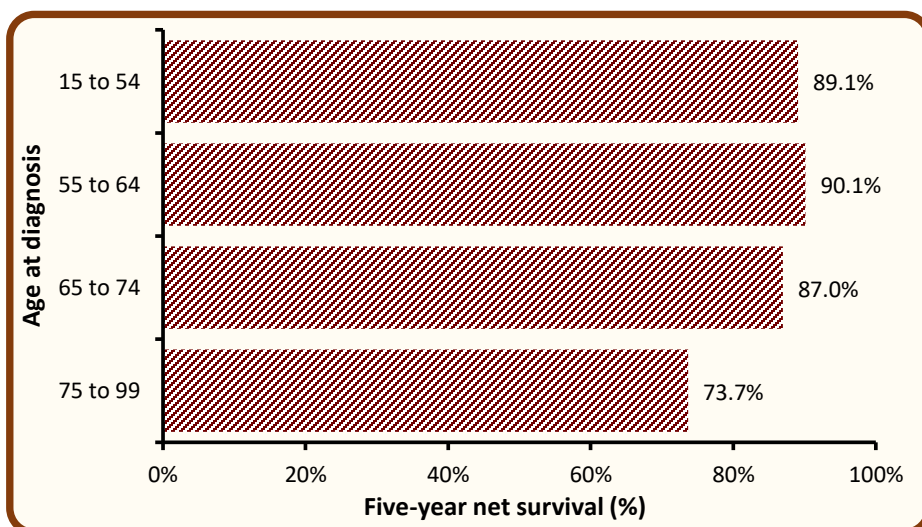
Trends in survival - Breast cancer, Patients diagnosed in 1995-2014

- Five-year survival (ASNS) from breast cancer increased from 80.7% in 2005-2009 to 84.2% in 2010-2014. This difference was not statistically significant.



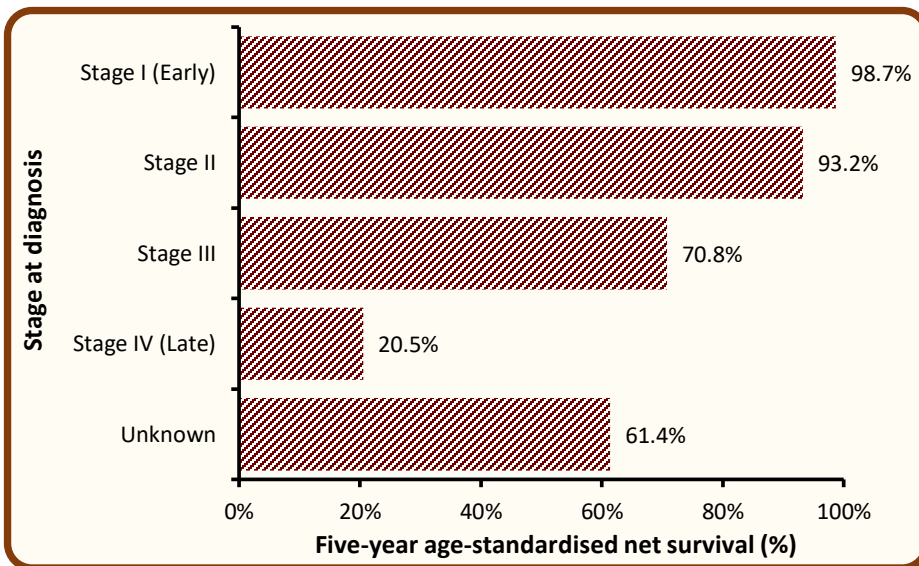
Survival by age at diagnosis - Breast cancer, Patients diagnosed in 2010-2014

- Survival from breast cancer among patients diagnosed in 2010-2014 was related to age with better five-year survival among younger age groups.
- Five-year net survival ranged from 90.1% among patients aged 55 to 64 at diagnosis to 73.7% among those aged 75 and over.



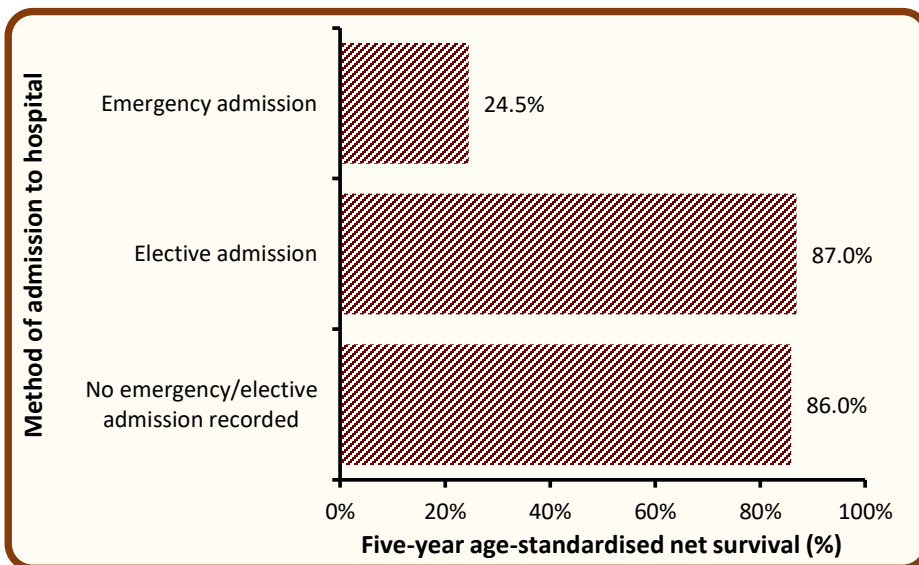
Survival by stage at diagnosis - Breast cancer, Patients diagnosed in 2010-2014

- Stage at diagnosis is one of the most important factors in breast cancer survival with five-year survival decreasing as stage increases.
- Five-year survival (ASNS) ranged from 98.7% for early stage (stage I) disease to 20.5% for late stage (stage IV) disease.
- Five-year survival (ASNS) for unstaged cancer was 61.4%.



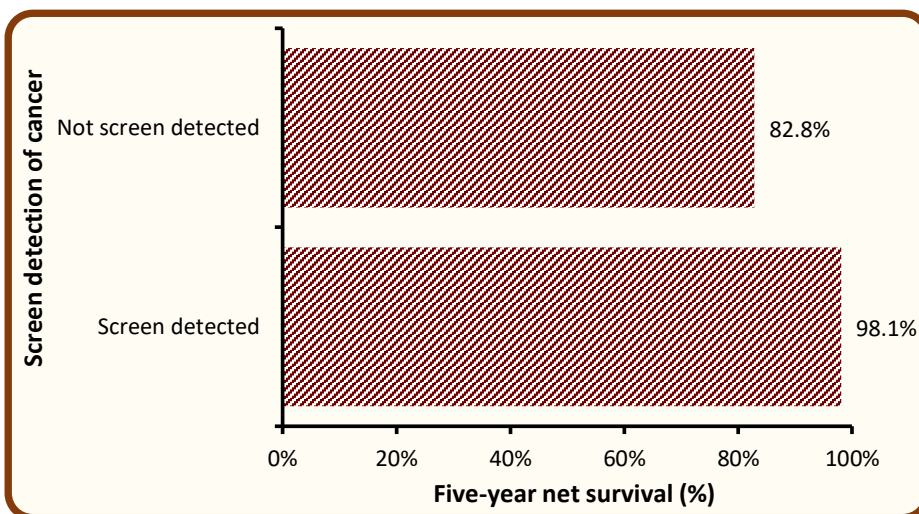
Survival by method of most recent admission to hospital - Breast cancer, Patients diagnosed in 2010-2014

- Five-year survival (ASNS) among patients who had an emergency admission to hospital up to 30 days prior to their cancer diagnosis was 24.5% compared to 87.0% among those with elective admissions and 86.0% among those who had no hospital admissions recorded up to 30 days prior to diagnosis.



Survival by screen detection of cancer - Breast cancer, Ages 50 to 70, Patients diagnosed in 2010-2014

- Five-year survival among female breast cancer patients aged 50 to 70 whose cancer was detected via screening was 98.1% compared to 82.8% among those who were not screen detected.



Prevalence

- At the end of 2019, there were 16,931 women living with breast cancer who had been diagnosed in the previous 25 years.
- Of these, 28.3% were aged 75 and over, and 8.1% 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
0-1 year	1,067	303	1,370
1-5 years	3,805	1,042	4,847
5-10 years	3,111	1,165	4,276
10-25 years	4,161	2,277	6,438
0-25 years	12,144	4,787	16,931

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

- Among women the number of survivors from breast cancer who had been diagnosed within the previous ten years increased by 14.7% from 9,148 survivors in 2014 to 10,493 survivors in 2019.

	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Female	8,242	8,508	8,805	9,020	9,148	9,524	9,876	10,102	10,344	10,493

Mortality

- During 2015-2019 there were 2 male and 310 female deaths from breast cancer each year. Breast cancer made up 14.8% of all female cancer deaths (ex NMSC).
- Risk of death from breast cancer was strongly related to age, with 46.9% of women aged 75 years or more at time of death, while 16.5% of breast cancer deaths occurred among those aged under 55. The median age at death was 73.

Age at death	Average deaths per year
0 - 54	51
55 - 64	49
65 - 74	64
75 +	145

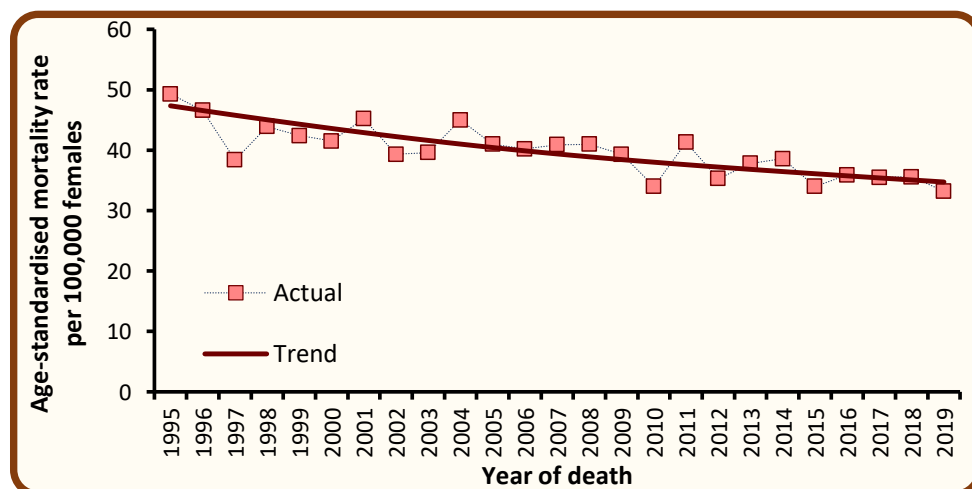
Deaths by year of death - Breast cancer, Deaths in 2010-2019

- Among women the number of deaths from breast cancer increased by 1.0% from an annual average of 307 deaths in 2010-2014 to 310 deaths in 2015-2019.

	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Female	268	336	290	314	326	292	316	317	320	307

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

- Among females age-standardised mortality rates from breast cancer decreased by 6.7% between 2010-2014 and 2015-2019 from 37.4 to 34.9 deaths per 100,000 persons years. This difference was not 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. breast 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.