**Health Committee visit to Queen's University Belfast
Supplementary Information**

Thursday 17 November 2016

For Meeting Health Committee
N. Ireland Cancer Registry
www.qub.ac.uk/nicr

Funded by the Public Health Agency for Northern Ireland. Located in Queen's University Belfast.

WHAT WE DO while maintaining strict patient confidentiality

- Provide official statistics on cancer incidence, survival and number of cases living in the community (prevalence).
- Work with clinicians to audit and monitor care of cancer patients and cancer outcomes.
- Work with researchers including the Northern Ireland Biobank and epidemiologists to improve understanding of cancer causes, cancer prevention, cancer patterns and patient reported outcomes.
- Work with clinical genetics service to enable better advice for patients and relatives.
- Answer almost 300 queries re cancer annually – ranging from alleged cancer clusters to press queries.
- Provide data for evaluation of quality and benefits of breast, cervix and colorectal screening programmes.
- Provide anonymised population based data for international comparisons of incidence and survival.
- Represent Northern Ireland on the International Cancer Benchmarking Partnership, studying reasons for lower cancer survival here when compared internationally.

WHAT WE WOULD LIKE TO DO BETTER

- Provide similar information for other chronic diseases eg stroke, heart disease, chronic lung disease, diabetes as infrastructure already available for cancer.
- Maintain our highly trained staff (requires that funding is allocated for 3-5 years rather than for 1 year at any time).
- Improve the data collected and data timeliness.
- Include Northern Ireland data in UK wide audits (funding required).

ATTACHMENTS

1. Cancer Projections – case numbers predicted to rise 65% in men 63% in women by 2035.
2. A Decade of Change – documenting improvements in cancer services
3. Factsheets on the most common cancers;
    a. All cancers combined
    b. Breast cancer
    c. Lung cancer
    d. Prostate cancer
    e. Colorectal cancer
4. Cancer incidence, deaths and prevalence by electoral constituency

# CANCER INCIDENCE TRENDS 1993-2013 WITH PROJECTIONS TO 2035

Monitoring trends in cancer incidence is essential if high quality cancer services are to be maintained and resourced. Trends for all cancers (excluding non-melanoma skin cancer - NMSC) along with the most common cancers are analysed in detail. Additionally projections of cancer incidence up to the year 2035 are presented for the first time in Northern Ireland.

THE FULL REPORT IS AVAILABLE AT
WWW.QUB.AC.UK/NICR

Methods

Data on all malignant cancers (excluding non-melanoma skin cancer) diagnosed between 1993 and 2013 was extracted from the NI Cancer Registry. Age-specific rates for all cancers combined and 30 common cancers were determined for both sexes by year of diagnosis. The data was fitted separately for ages 0-49, 50-59, 60-69, 70-79 and 80+ using a regression model with five-year age group, five-year birth cohort and year of diagnosis used as predictors of the cancer incidence rate. The resulting model was used to predict rates in future years, which were combined with population projections to provide estimates of the future number of cases.

KEY FACTS
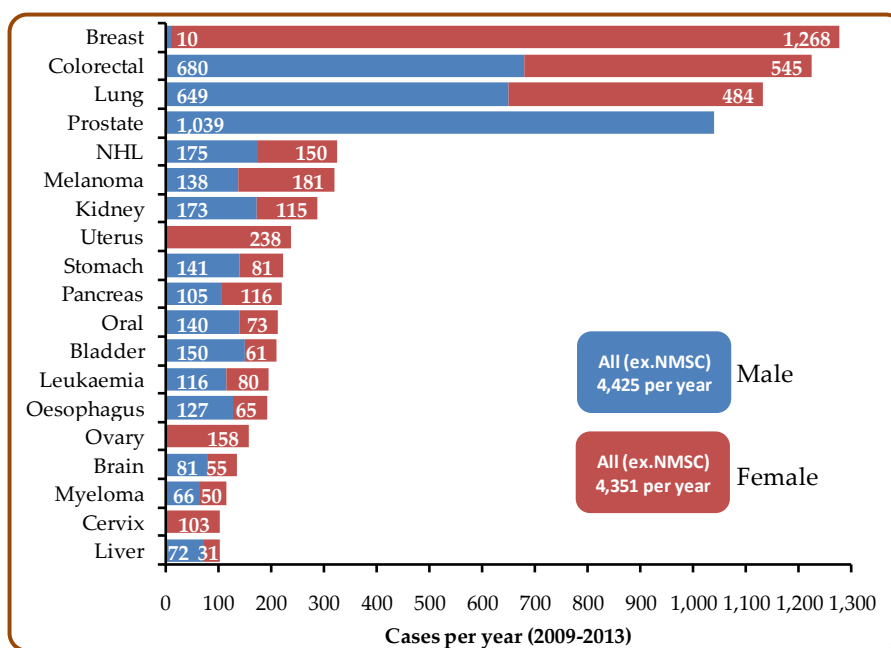
**NUMBER OF CASES DIAGNOSED EACH YEAR BY SEX AND TYPE: 2009-2013**
There were 4,425 male and 4,351 female cases (excluding NMSC) diagnosed each year during 2009-2013.

The most common cancers among men were prostate (23.5%), colorectal (15.4%) and lung (14.7%), while among women they were breast (29.1%), colorectal (12.5%) and lung (11.1%).

NUMBER OF CASES DIAGNOSED EACH YEAR BY SEX AND AGE: 2009-2013
Cancer occurs primarily among older people with a median age at diagnosis of 69 for males and 68 for females.

Incidence rates were greatest among both men and women aged 80 and over.
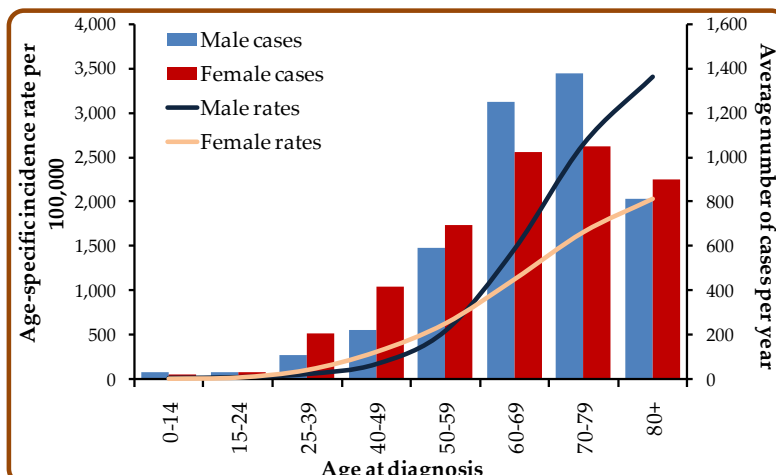
PAST TRENDS IN INCIDENCE RATES

TREND IN INCIDENCE RATES BY SEX: 1993-2013

Cancer incidence rates, adjusted for age and population change, decreased by 1.6% per year among males during 1993-1999, after which rates increased by 1.4% per year until 2008. There was no significant change after 2008.

Among women there was no change in incidence rates during 1993-2001, however after 2001 rates increased by 1.0% per year.
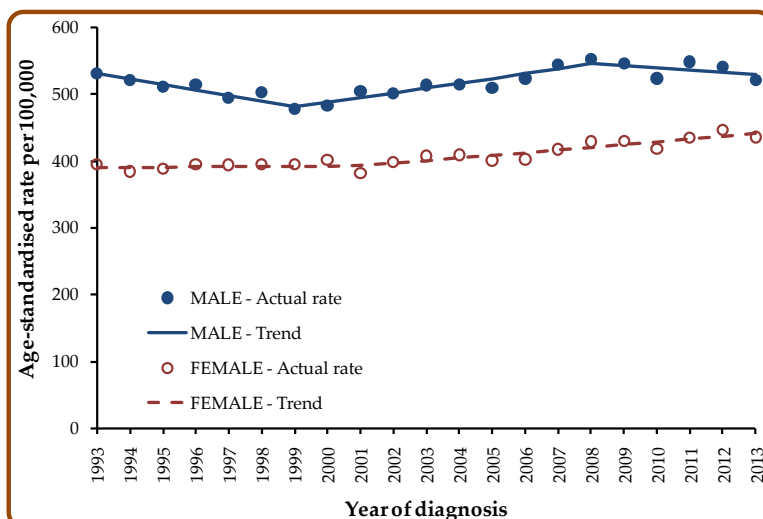
### ANNUAL CHANGE IN INCIDENCE RATES BY SEX AND TYPE

At the end of 2013 the trend in cancer incidence rates among men was:
- **decreasing** for prostate cancer, stomach cancer and bladder cancer;
- **increasing** for liver cancer, malignant melanoma, non-Hodgkin's lymphoma, oral cancer, kidney cancer and colorectal cancer.
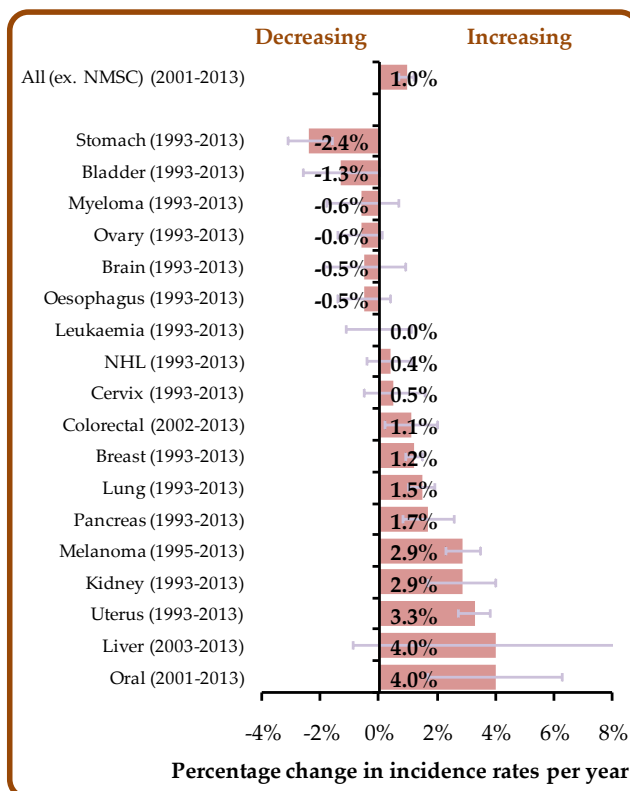
At the end of 2013 the trend in cancer incidence rates among women was:
- **decreasing** for stomach cancer and bladder cancer;
- **increasing** for oral cancer, uterine cancer, kidney cancer, malignant melanoma, pancreatic cancer, lung cancer, breast cancer and colorectal cancer.
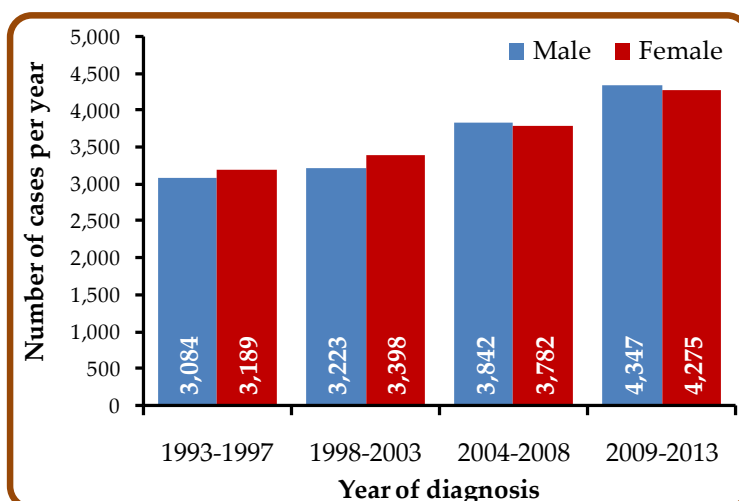
Male
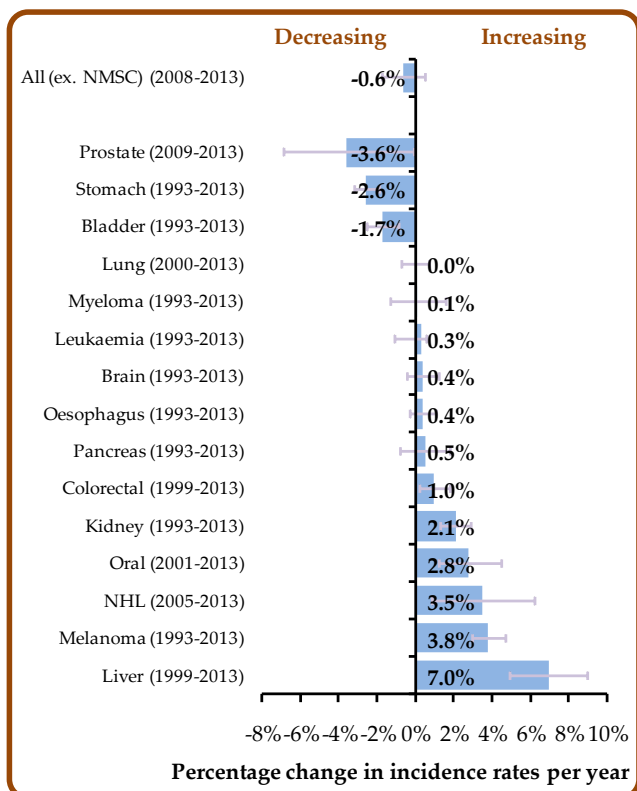
Female

NHL: Non-Hodgkin's lymphoma, NMSC: Non-melanoma skin cancer

PAST TRENDS IN NUMBER OF CASES DIAGNOSED

NUMBER OF CASES DIAGNOSED EACH YEAR BY SEX AND PERIOD OF DIAGNOSIS

In 2009-2013 there were 8,622 cancers (4,347 male, 4,275 female)[1] diagnosed each year compared to 6,273 per year (3,084 male, 3,189 female) in 1993-1997; an increase of 37.4%.

On average the number of cases diagnosed increased by 1.8% per year among men between 2008 and 2013, while among women the number of cases increased between 2001 and 2013 by 2.4% per year.


ANNUAL CHANGE IN NUMBER OF CASES DIAGNOSED BY SEX AND TYPE

Among men cancer incidence was increasing at the end of 2013 for all cancer types, except for prostate and stomach cancer. Among women increases were occurring for all cancer types.

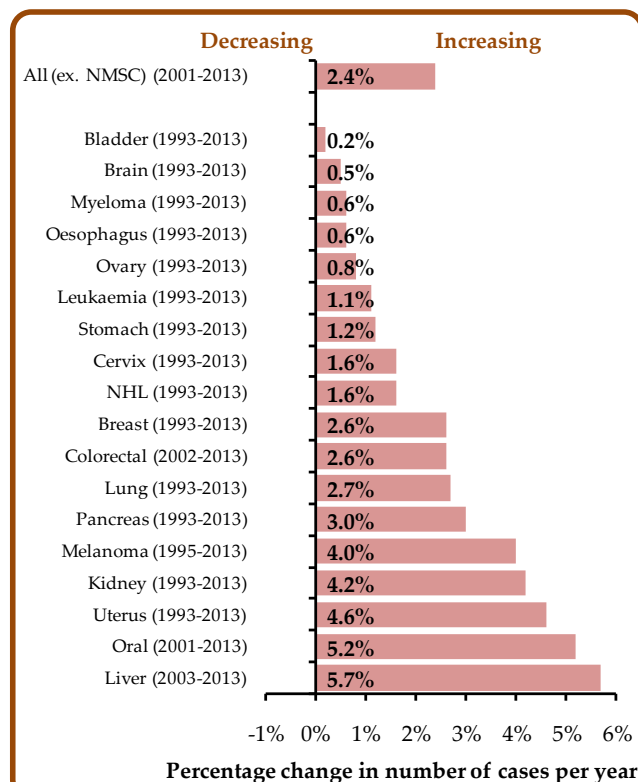Among men the number of cases diagnosed each year was increasing by more than 4% per year for liver cancer, non-Hodgkin's lymphoma, malignant melanoma and oral cancer.

Among women the number of cases diagnosed each year was increasing by more than 4% per year for liver cancer, oral cancer, uterine cancer, kidney cancer and malignant melanoma.
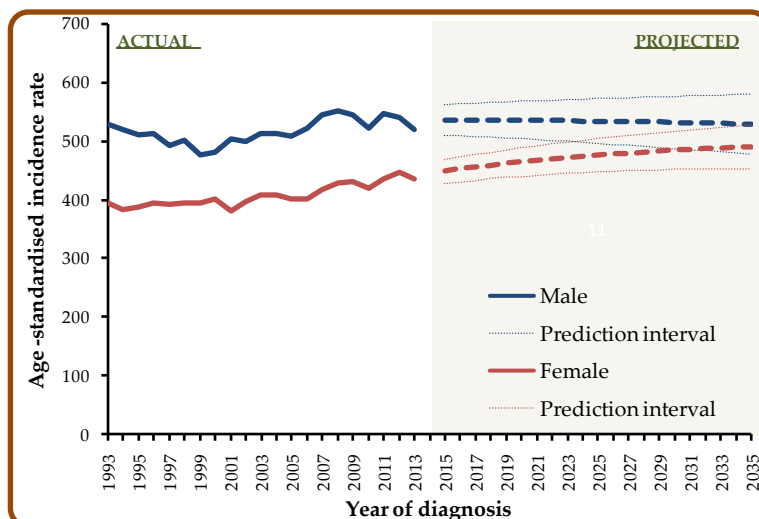
Male
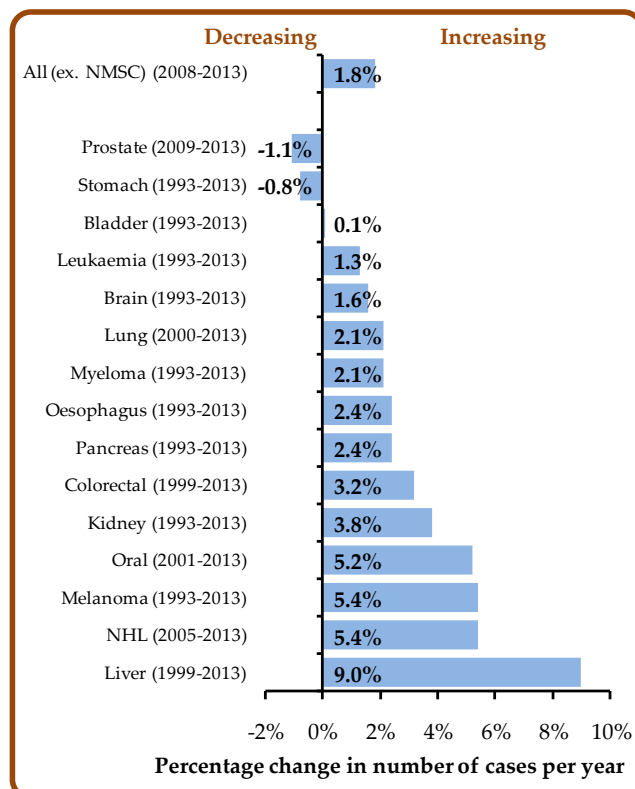
Female

NHL: Non-Hodgkin's lymphoma, NMSC: Non-melanoma skin cancer

PROJECTED INCIDENCE RATES

PROJECTED INCIDENCE RATES FROM 2015 TO 2035

Incidence rates of cancer among men are projected to remain fairly steady in forthcoming years with no change by 2020 compared to rates in 2009-2013, while by 2035 a slight drop of 1% is expected.

Among women incidence rates are projected to continue to increase, with a 7% rise by 2020 and a 13% rise by 2035 expected.

PROJECTED CHANGE IN INCIDENCE RATES BY SEX AND TYPE

Compared to the 2009-2013 average male incidence rates are projected to:
- **decrease** by more than 10% by 2020 and by more than 20% by 2035 for stomach, bladder and prostate cancers,
- **increase** by more than 10% by 2020 and by more than 20% by 2035 for malignant melanoma, oral, liver and kidney cancers.

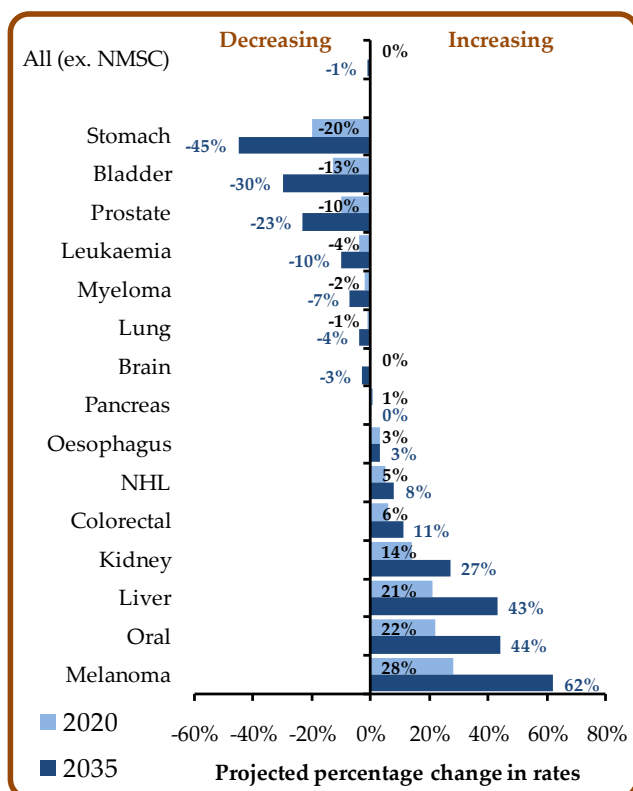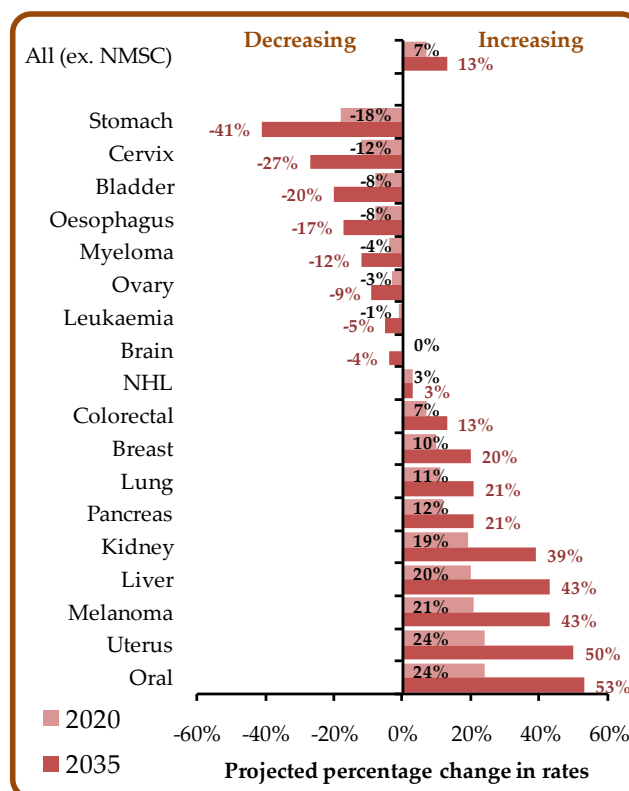Also compared to the 2009-2013 average female incidence rates are projected to:
- **decrease** by more than 10% by 2020 and by more than 20% by 2035 for stomach and cervical cancers;
- **increase** by more than 10% by 2020 and by more than 20% by 2035 for malignant melanoma, oral, uterine, liver, kidney, pancreatic, lung and breast cancer.

Male

Female

*NHL: Non-Hodgkin's lymphoma, NMSC: Non-melanoma skin cancer*

PROJECTED NUMBER OF CASES DIAGNOSED

PROJECTED NUMBER OF CASES DIAGNOSED FROM 2015 TO 2035

In 2009-2013 there were 4,347 male and 4,275 female cases of cancer (ex. NMSC) diagnosed each year[1].

By 2020 this is expected to rise by 25% for men and by 24% for women to 5,443 and 5,285 cases per year respectively.

By 2035 the number of cases per year is projected to be 7,181 male and 6,967 females cases, a 65% rise among men and a 63% rise among women.
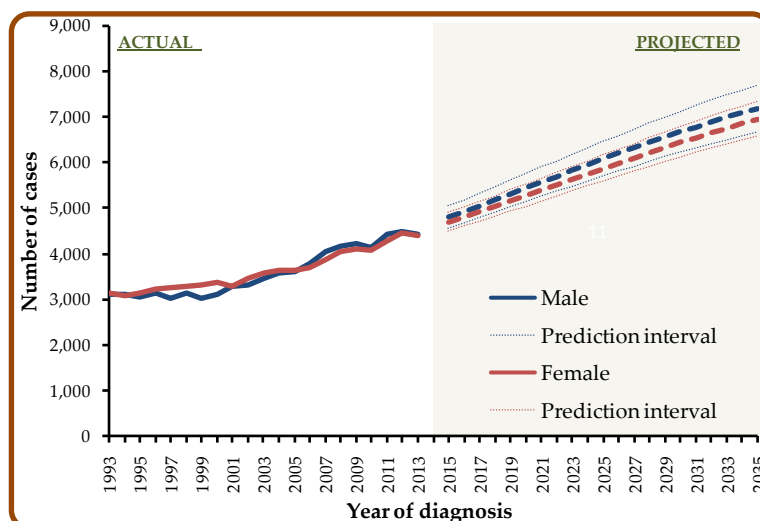
PROJECTED NUMBER OF CASES DIAGNOSED BY SEX AND TYPE IN 2020 AND 2035

By 2035 the most common cancers are expected to remain breast, colorectal, lung and prostate cancer, with the number of breast cancers expected to reach 2,000 cases per year and the number of male lung and colorectal cancers expected to exceed 1,000 cases per year.

CANCER TYPE	Male					Female				
	2009-13 cases per year	2020		2035		2009-13 cases per year	2020		2035	
		Cases per year (prediction interval)		Cases per year (prediction interval)			Cases per year (prediction interval)		Cases per year (prediction interval)	
All (ex. NMSC)[1]	4,425	5,443	(5,140, 5,746)	7,181	(6,675, 7,687)	4,351	5,285	(5,050, 5,520)	6,967	(6,590, 7,344)
Bladder	150	169	(128, 210)	205	(162, 248)	61	67	(47, 87)	83	(62, 104)
Brain	81	94	(67, 121)	110	(76, 144)	55	63	(42, 84)	75	(49, 101)
Breast						1,268	1,589	(1,464, 1,714)	2,077	(1,888, 2,266)
Cervix						103	93	(56, 130)	74	(26, 122)
Colorectal	680	909	(807, 1,011)	1,292	(1,143, 1,441)	545	688	(605, 771)	946	(818, 1,074)
Kidney	173	244	(195, 293)	368	(294, 442)	115	161	(124, 198)	246	(189, 303)
Leukaemia	116	137	(101, 173)	170	(128, 212)	80	91	(66, 116)	116	(88, 144)
Liver	72	110	(77, 143)	179	(125, 233)	31	43	(24, 62)	67	(33, 101)
Lung	649	816	(717, 915)	1,128	(991, 1,265)	484	641	(570, 712)	923	(821, 1,025)
Melanoma	138	215	(168, 262)	370	(288, 452)	181	239	(193, 285)	317	(244, 390)
Myeloma	66	82	(54, 110)	104	(70, 138)	50	57	(38, 76)	74	(54, 94)
NHL	175	226	(182, 270)	316	(257, 375)	150	180	(146, 214)	232	(191, 273)
Oesophagus	127	163	(124, 202)	215	(165, 265)	65	72	(52, 92)	86	(63, 109)
Oral	140	204	(157, 251)	288	(204, 372)	73	103	(73, 133)	146	(96, 196)
Ovary[2]						158	178	(143, 213)	223	(183, 263)
Pancreas	105	135	(98, 172)	185	(139, 231)	116	156	(125, 187)	241	(198, 284)
Prostate	1,039	1,183	(1,040, 1,326)	1,294	(1,082, 1,506)					
Stomach	141	143	(107, 179)	140	(106, 174)	81	78	(56, 100)	76	(56, 96)
Uterus						238	343	(286, 400)	506	(411, 601)

NHL: Non-Hodgkin's lymphoma, NMSC: Non-melanoma skin cancer

[1] Excludes myelodysplastic syndromes and myeloproliferative disorders to maintain consistency in trends over time. Totals thus differ slightly from those on page I.

[2] Excludes borderline ovarian tumours to maintain consistency in trends over time.

## PROJECTED ANNUAL CHANGE IN NUMBER OF CASES DIAGNOSED BY SEX AND TYPE

By 2035 the number of cases diagnosed each year among men is projected to increase for all cancer types compared to 2009-2013, except for stomach cancer, while among women increases are expected for all cancer types except cervical and stomach cancer.

The number of cases diagnosed each year is expected to increase among males by more than 100% for malignant melanoma, liver, kidney and oral cancers, and among females by more than 100% for liver, kidney, uterine, pancreatic and oral cancers.

Male
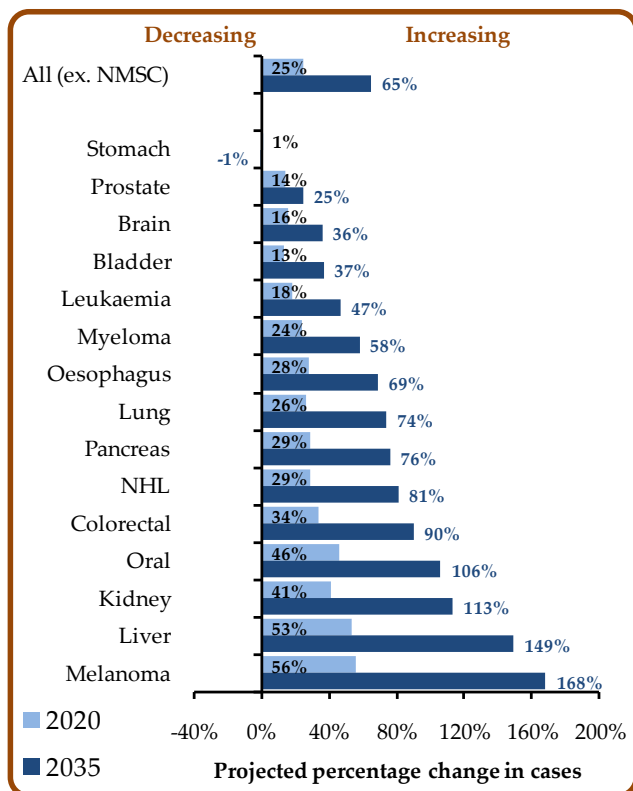
Female
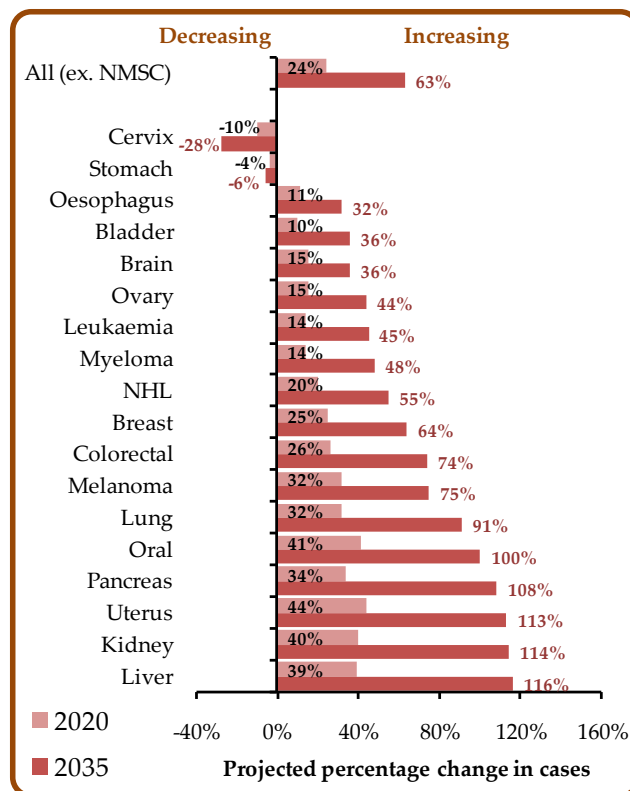
NHL: Non-Hodgkin's lymphoma, NMSC: Non-melanoma skin cancer

FACTORS THAT CAN INFLUENCE CANCER INCIDENCE PROJECTIONS
(SEE SECTION 24 FOR FURTHER DISCUSSION)

- **Changes to risk factor exposure within the general population.**
  The risk factors likely to have the greatest impact on future projections are:
    o Tobacco use;
    o Excessive alcohol consumption;
    o Obesity, lack of physical activity and/or lack of a balanced diet;
    o Ultraviolet radiation from sunshine or sun beds.
  The potential exists to alter cancer incidence projections through control of these risk factors.

- **Introduction of health service initiatives that aim to either prevent or diagnose cancer early**.
  These include vaccinations (e.g. the HPV vaccination), screening (e.g. the breast, cervical and colorectal screening programmes) and diagnostic tests (e.g. PSA testing for prostate cancer).

- **Changes to the way in which cancer is classified and/or revisions to population projections.**

Cancer care in Northern Ireland:
A decade of change

Cancer services in Northern Ireland have changed considerably over the last decade. This is a summary of a series of reports on this change, which have been produced by the NI Cancer Registry over recent years.

CHANGING SERVICES

1993 – Breast screening established throughout Northern Ireland
1994 – Northern Ireland Cancer Registry (NICR) established
1995 – Calman Hine Report (UK)
1996 – Campbell Report (NI)
1999 – First cancer incidence data for Northern Ireland covering 1993-1996
2004 – NI Cancer Network (NICaN) established
2006 – Cancer Centre Opened
2008 – Waiting times initiative
2009 – Development of Cancer Patient Pathway System (CaPPS)
2011 – Cancer framework launched

CAMPBELL REPORT

The Campbell Report (1996) resulted from the work of many clinicians, service planners and patients who worked together with the aim of improving cancer services.

Key report recommendations
- Patients be managed by multidisciplinary teams;
- Appropriate training for staff;
- Establishment of a single Cancer Centre and 4 other Cancer Units (one in each Health Board);
- Radiotherapy services to be moved to the Cancer Centre and chemotherapy to be available in each Cancer Unit;
- Review of palliative services;
- Additional investment in oncology services.

NICR AUDITS

NICR have conducted a series of audits to document changes in cancer services between 1996 and 2006. They are conducted at five-yearly intervals by reviewing clinical notes of patients registered with NICR at the time the audits were conducted.

The results are available in reports on the NICR web site:
www.qub.ac.uk/nicr

See page 6 for methods

CANCER TRENDS

In 2009 there were 4,260 male and 4,209 female cancer cases diagnosed (ex. non-melanoma skin cancer (NMSC)), and 1,955 male and 1,832 female cancer deaths.
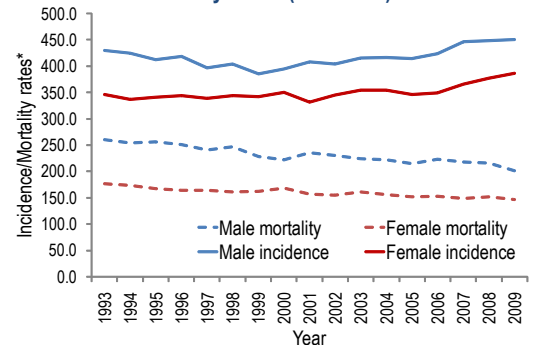
The number of cancer cases (excluding (NMSC)) increased by 74 male and 60 female cases per year since 1993. Male and female deaths each increased by 9 deaths per year in the same period of time.

Cases and Deaths (ex. NMSC)
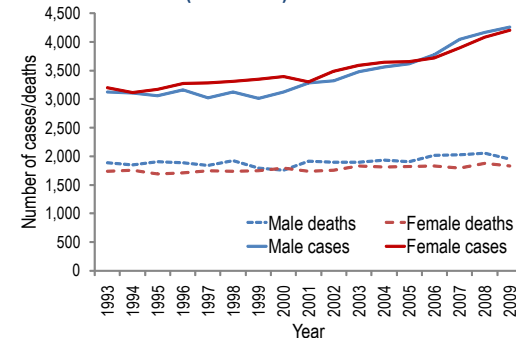
NMSC: Non-melanoma skin cancer

Incidence and Mortality Rates (ex. NMSC)

* European age-standardised rate per 100,000 males/females

A significant proportion of the change is due to an increasing and ageing population. Age-standardised incidence rates, which exclude these factors, decreased among males between 1993 and 1999 by 1.7% per year, but increased by 1.5% per year in 1999-2009. Female incidence rates increased by 0.6% per year between 1993 and 2009. Despite the rising incidence rates, mortality rates decreased by 1.3% for males and 0.9% for females between 1993 and 2009.

BREAST SCREENING

In 2006 54% of breast cancer patients of screening age (aged 50-65) were referred by GPs with 39% detected by the Breast Screening Programme (BSP). This compared with 44% detected by the BSP in 2001 and 35% in 1996. 88% of patients in 2006 aged 0-49 and 81% of patients aged 66 and over were referred by a GP.

60% of asymptomatic breast cancer patients in 2006 were referred by the BSP, a reduction from the 81% in 2001. The majority of the rest were from "other" sources such as breast clinics

Source of referral for breast cancer patients by age
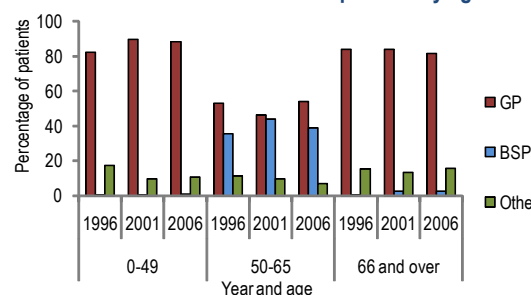
Source of referral in 2006 for breast cancer patients with no symptoms

GP 14.7%
Other 25.7%
BSP 59.6%
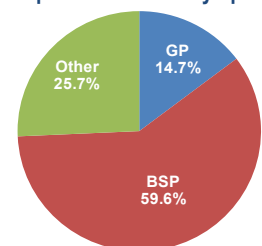
BSP : Breast Screening Programme

STAGING

Legend: ■ 1996 ■ 2001 ■ 2006

Y-axis: Percentage of patients (0% to 100%)

Categories: Breast, Lung, Colon, Rectum, Prostate, Oesophagus, Stomach

The proportion of patients having a TNM stage recorded in medical notes was above 80% for breast and colorectal patients in all three years. Lung cancer patients saw an increase in this percentage between 2001 and 2006 from 65% to 82%, while there was a year on year increase in the proportion of prostate and upper GI patients that had a stage recorded.

DIAGNOSIS DISCUSSED WITH PATIENT

Legend: ■ 1996 ■ 2001 ■ 2006

Y-axis: Percentage of patients (0% to 100%)

Categories: Breast, Lung, Colorectal, Prostate, Oesophagus, Stomach
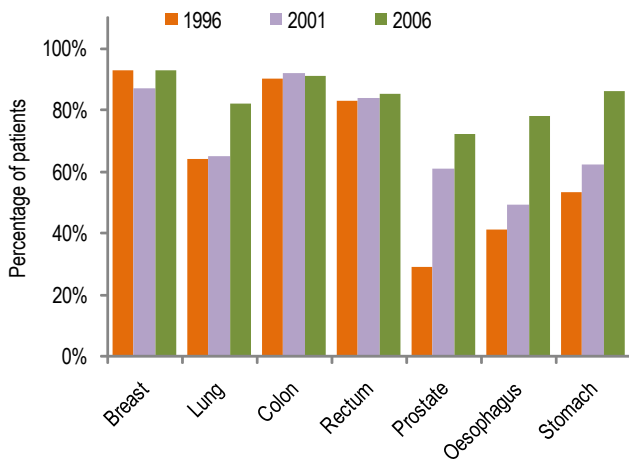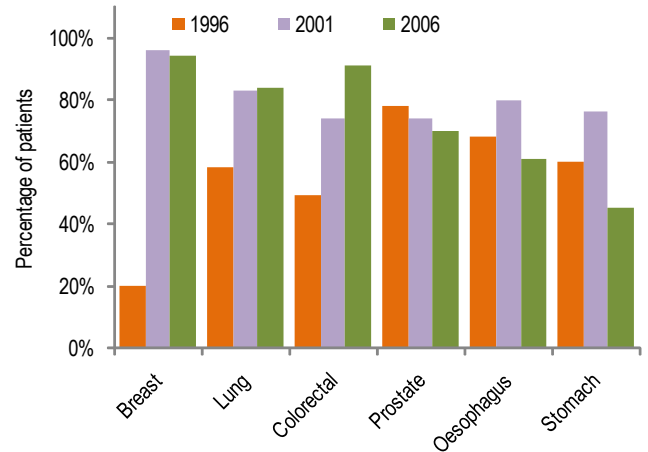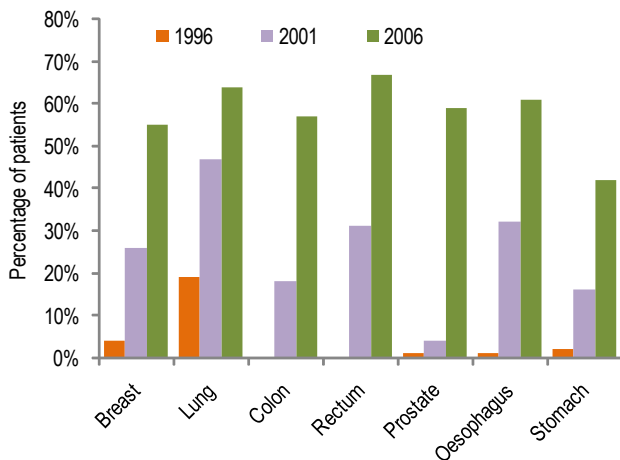
Information provided to patients on their diagnosis was very poor among breast cancer patients in 1996, but considerable improvements were made by 2001. Lung and colorectal cancer patients also saw an increase in this proportion over the ten year period, while prostate cancer patients saw a decrease. Despite improvements between 1996 and 2001 for upper GI patients, the proportion of patients provided information on their diagnosis was lower in 2006 than in 1996. These patterns may be a reflection on how this information is recorded.
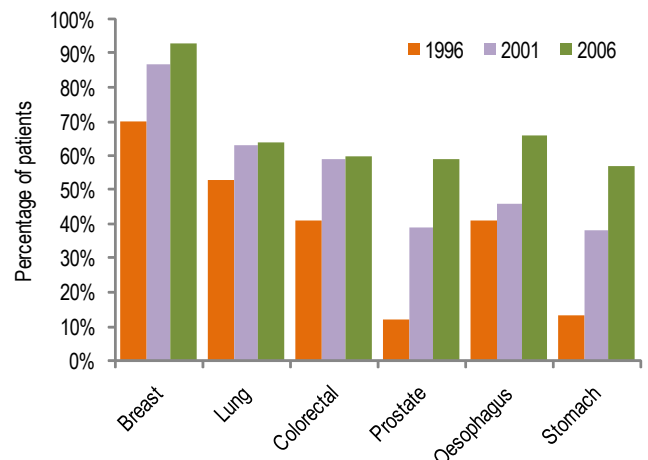
MULTIDISCIPINARY TEAM (MDT) MEETINGS

The proportion of patients recorded as having had a MDT meeting increased year on year between 1996 and 2006, however with a maximum of 67% recorded as having had a MDT meeting (for rectal cancer patients), the situation in 2006 was still considerably lower than the ideal of 100% of patients having a MDT meeting. It is expected that the use of the CaPPS system will improve recording of MDT meetings further.

Legend: ■ 1996 ■ 2001 ■ 2006

Y-axis: Percentage of patients (0% to 80%)

Categories: Breast, Lung, Colon, Rectum, Prostate, Oesophagus, Stomach
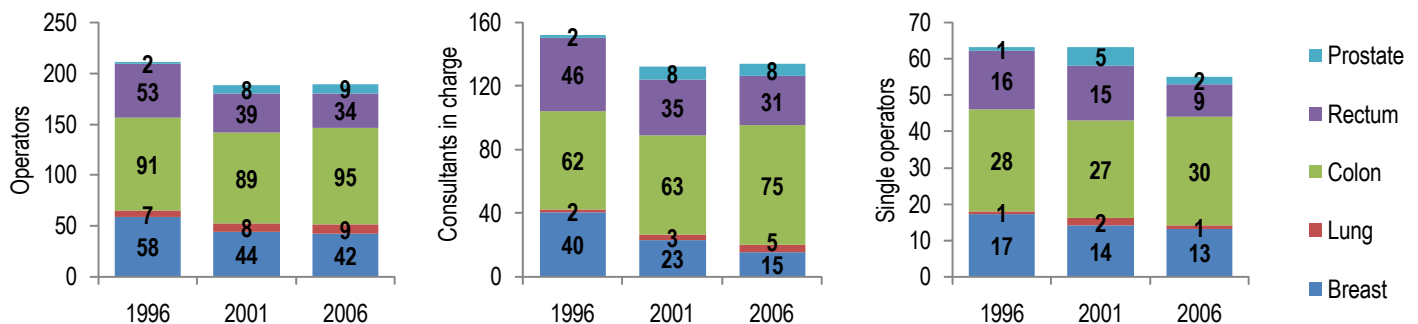
REFERRAL TO ONCOLOGY

The proportion of patients referred to oncology increased for all cancer types between 1996 and 2001. A further increase was recorded between 2001 and 2006 for breast cancer, prostate cancer and cancers of the oesophagus and stomach. 2001 levels were maintained for lung and colorectal cancers.

Legend: ■ 1996 ■ 2001 ■ 2006

Y-axis: Percentage of patients (0% to 100%)

Categories: Breast, Lung, Colorectal, Prostate, Oesophagus, Stomach

NUMBER OF OPERATORS AND CONSULTANTS IN CHARGE OF SURGERY

Operators:
	1996	2001	2006
Rectum	53	39	34
Prostate	2	8	9
Colon	91	89	95
Lung	7	8	9
Breast	58	44	42

Consultants in charge:
	1996	2001	2006
Prostate	2	8	8
Rectum	46	35	31
Colon	62	63	75
Lung	2	3	5
Breast	40	23	15

Single operators:
	1996	2001	2006
Prostate	1	5	2
Rectum	16	15	9
Colon	28	27	30
Lung	1	2	1
Breast	17	14	13

Legend: ■ Prostate ■ Rectum ■ Colon ■ Lung ■ Breast

Note: Top four cancers only (breast, lung, colorectal and prostate)

The total number of operators and consultants in charge of surgery decreased for the top four cancers combined between 1996 and 2001. A decrease in the number of breast cancer consultants in charge was observed between 2001 and 2006, as was an increase in consultants in charge for colon cancer. Overall the combined total remained steady between 2001 and 2006. The number of surgeons performing a single operation for a particular cancer in a calendar year decreased slightly between 1996 and 2006, driven by reductions in single operators for breast and rectal cancer.

Surgery

Breast **89%-91%-91%**
Lung **16%-12%-12%**
Colon **89%-91%-82%**
Rectum **89%-84%-76%**
Prostate* **1%-10%-8%**
Oesophagus **48%-35%-36%**
Stomach **56%-56%-45%**

Percentage of patients
■ 1996 ■ 2001 ■ 2006
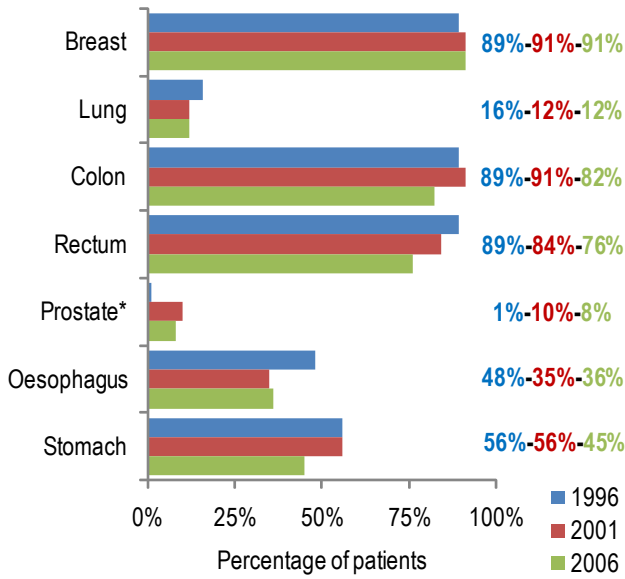
Radical prostatectomy only

Radiotherapy

Breast **56%-74%-67%**
Lung **43%-46%-42%**
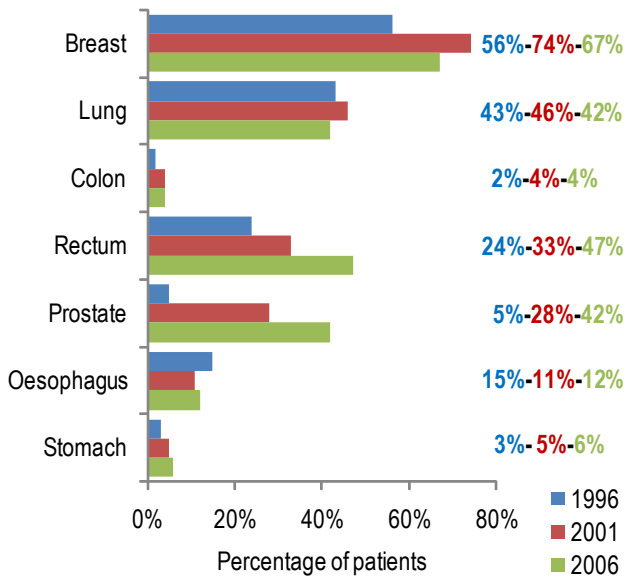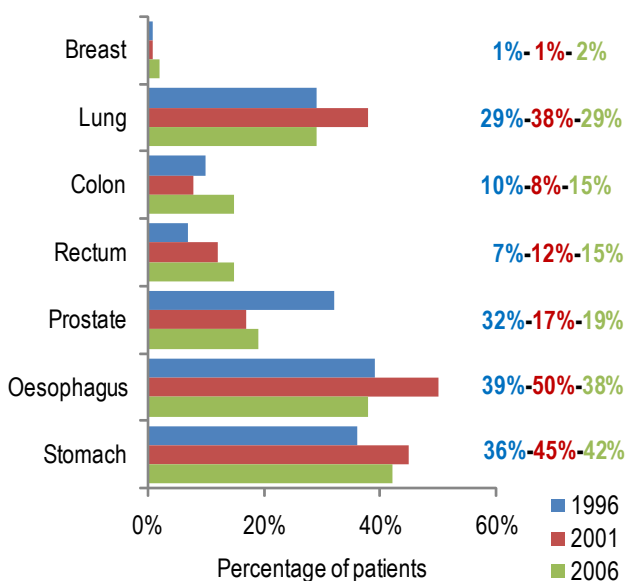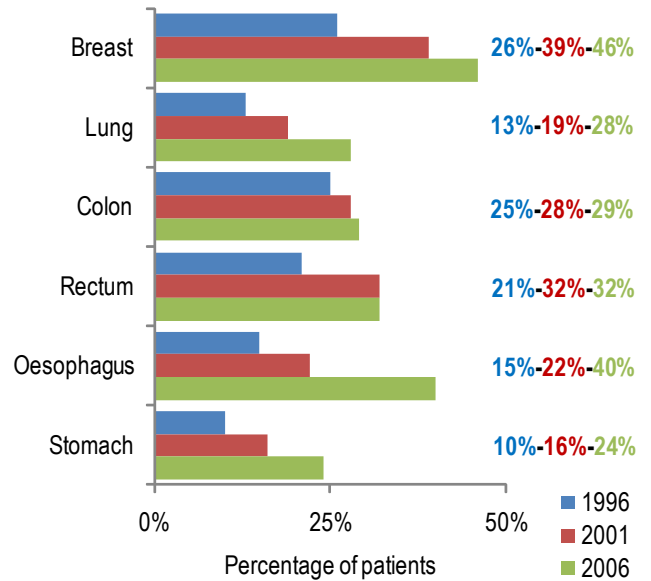Colon **2%-4%-4%**
Rectum **24%-33%-47%**
Prostate **5%-28%-42%**
Oesophagus **15%-11%-12%**
Stomach **3%-5%-6%**

Percentage of patients
■ 1996 ■ 2001 ■ 2006

No tumour directed treatment

Breast **1%-1%-2%**
Lung **29%-38%-29%**
Colon **10%-8%-15%**
Rectum **7%-12%-15%**
Prostate **32%-17%-19%**
Oesophagus **39%-50%-38%**
Stomach **36%-45%-42%**

Percentage of patients
■ 1996 ■ 2001 ■ 2006

Chemotherapy

Breast **26%-39%-46%**
Lung **13%-19%-28%**
Colon **25%-28%-29%**
Rectum **21%-32%-32%**
Oesophagus **15%-22%-40%**
Stomach **10%-16%-24%**

Percentage of patients
■ 1996 ■ 2001 ■ 2006

Prostate cancer excluded as these patients rarely receive chemotherapy

Hormone therapy

Breast **94%-80%-78%**
Prostate **64%-72%-74%**

Percentage of patients
■ 1996 ■ 2001 ■ 2006
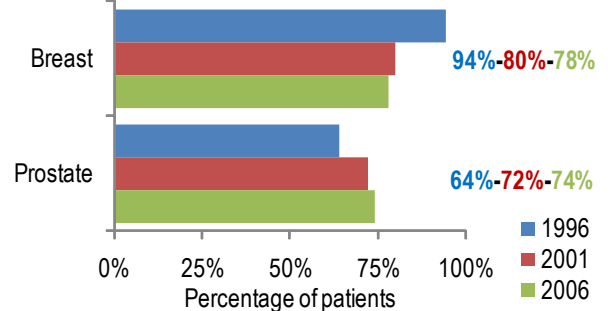
Hormone therapy given to breast and prostate cancer patients only

The proportion of cancer patients receiving tumour directed surgery over the decade saw some notable changes:

- Lung cancer surgery decreased between 1996 and 2001
- There was an increase in radical prostatectomy from 1% of prostate cancer patients in 1996 to 8% in 2006.
- The proportion of colorectal and upper GI cancer patients receiving surgery decreased between 1996 and 2006.

Reductions in lung and upper GI cancer operations likely reflect better patient selection.

Chemotherapy use increased for all cancer sites between 1996 and 2006, except prostate cancer for which this treatment is rarely used. The increase was greatest for breast cancer (26% to 46%), lung cancer (13% to 28%), oesophageal cancer (15% to 40%) and stomach cancer (10% to 24%).

Radiotherapy levels changed little over time for lung, colon and upper GI patients. However there was a marked increase in the proportion of prostate cancer patients receiving radiotherapy (5% in 1996 compared to 42% in 2006). The proportion of rectal cancer patients receiving radiotherapy also increased between 1996 (24%) and 2001 (33%), with another increase in 2006 (47%). Radiotherapy use also increased among breast cancer patients between 1996 and 2001; although a small decrease occurred in 2006.

There was an increase from 64% to 74% in the proportion of prostate cancer patients receiving hormone therapy over the decade. Among breast cancer patients hormone therapy use in 1996 was already very high (94%), but decreased to 80% in 2001, a level maintained in 2006.

Decreases in the proportion of prostate cancer patients who had no tumour directed treatment recorded occurred between 1996 and 2001, with this reduction maintained in 2006. There was little change between 1996 and 2006 in this proportion for both lung and breast cancer patients, despite an increase in 2001 for lung cancer. However over the decade colorectal and upper GI cancer saw an increase in the proportion of patients who had no treatment recorded in their hospital notes.
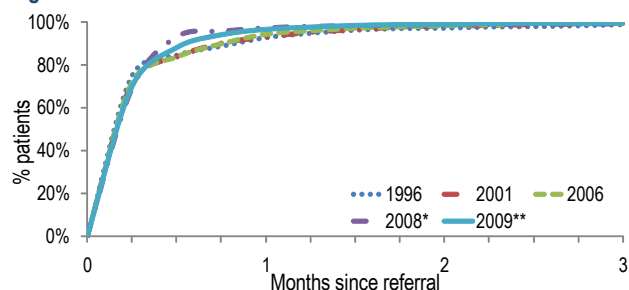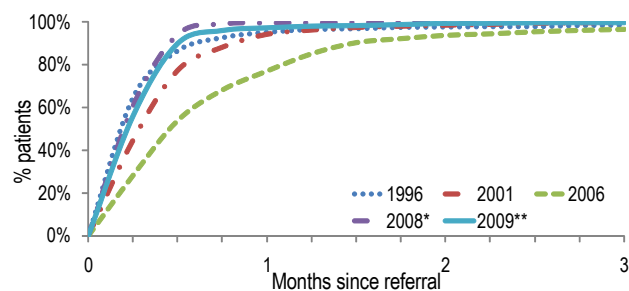
3

TIMELINES – REFERRAL TO FIRST SEEN

Colorectal
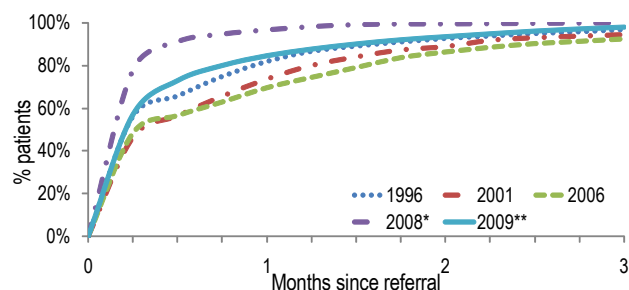
	1996	2001	2006	2008*	2009**
32 days	82%	73%	69%	96%	84%
64 days	93%	89%	86%	99%	93%

Lung

	1996	2001	2006	2008*	2009**
32 days	93%	93%	95%	97%	97%
64 days	97%	98%	99%	99%	99%

Breast

	1996	2001	2006	2008*	2009**
32 days	95%	94%	77%	99%	97%
64 days	98%	98%	94%	100%	99%

Prostate
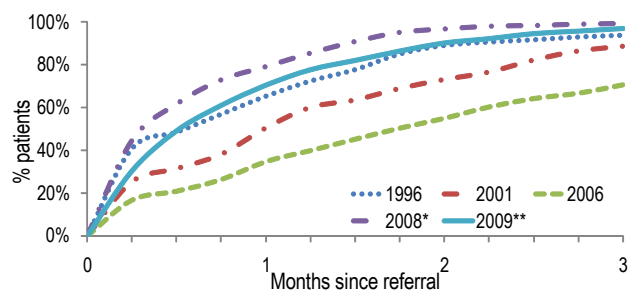
	1996	2001	2006	2008*	2009**
32 days	65%	50%	35%	79%	70%
64 days	89%	73%	55%	97%	90%

All but a handful of lung cancer patients were first seen within 64 days of referral during 1996-2009. However for colorectal, breast and prostate cancer patients time between referral and first being seen increased between 1996 and 2006. After this point waiting time targets were introduced and the average time between referral and first being seen decreased in 2008. However a slight increase occurred in 2009 for colorectal and prostate cancer patients.

TIMELINES – REFERRAL TO FIRST TREATMENT

Colorectal
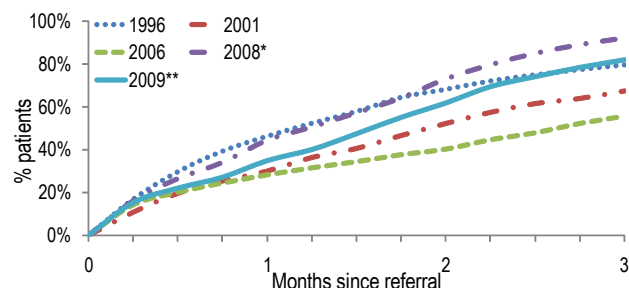
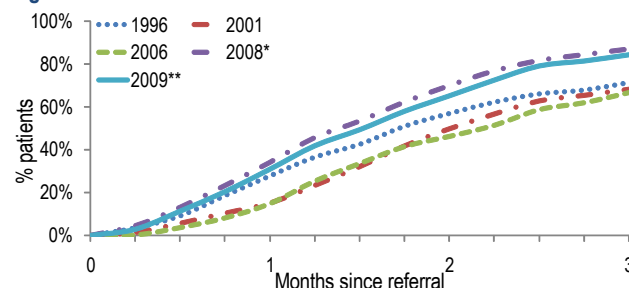|	1996	2001	2006	2008*	2009**
32 days	46%	30%	28%	44%	35%
64 days	68%	52%	40%	73%	62%

Lung

	1996	2001	2006	2008*	2009**
32 days	28%	15%	15%	34%	31%
64 days	57%	50%	46%	70%	65%

Breast
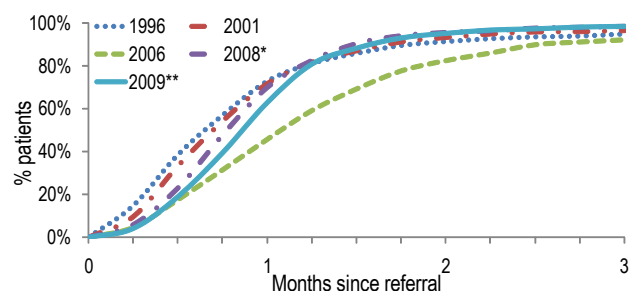
	1996	2001	2006	2008*	2009**
32 days	73%	72%	46%	70%	63%
64 days	92%	93%	82%	96%	95%

Prostate
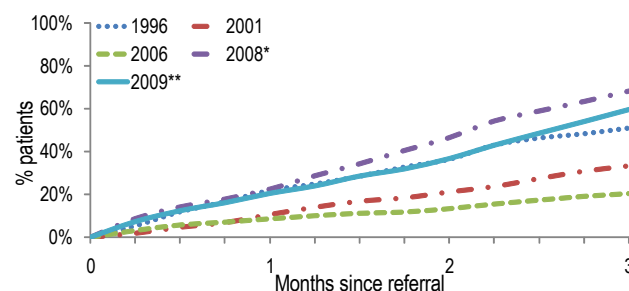
	1996	2001	2006	2008*	2009**
32 days	22%	11%	9%	22%	20%
64 days	36%	21%	13%	47%	37%

Time between referral and first treatment increased for all four of the most common cancers between 1996 and 2006. A considerable improvement then occurred between 2006 and 2008; however this improvement was not maintained in 2009, with time between referral and first treatment increasing marginally for all four cancers. Despite this increase the situation in 2009 was still considerably better than that in 2006.

* 2008 data extracted from Cancer Waiting Times dataset; ** 2009 data extracted from Cancer Patient Pathway System (CaPPS)
Note: Analysis excludes patients with unknown timelines and does not adjust for patients cancelling appointments

PATIENT SURVIVAL

|	1 month			3 months			6 months		
	1996	2001	2006	1996	2001	2006	1996	2001	2006
Oesophagus	91%	90%	92%	68%	70%	78%	51%	49%	56%
Stomach	77%	76%	82%	58%	57%	66%	48%	44%	51%
Colon	90%	91%	92%	85%	84%	80%	78%	78%	74%
Rectum	95%	96%	95%	89%	88%	90%	83%	82%	85%
Lung	80%	77%	80%	61%	57%	58%	41%	40%	43%
Breast	98%	99%	99%	97%	98%	98%	94%	96%	97%
Prostate	96%	99%	99%	92%	97%	97%	88%	94%	96%

	1 year			2 years			3 years		
	1996	2001	2006	1996	2001	2006	1996	2001	2006
Oesophagus	32%	32%	39%	22%	18%	24%	14%	14%	17%
Stomach	33%	32%	29%	21%	26%	21%	16%	20%	16%
Colon	69%	72%	66%	57%	61%	56%	50%	53%	49%
Rectum	71%	75%	77%	58%	61%	67%	49%	50%	57%
Lung	23%	22%	27%	10%	11%	16%	7%	9%	12%
Breast	91%	93%	94%	84%	88%	89%	79%	82%	84%
Prostate	80%	89%	93%	66%	81%	89%	54%	73%	85%

Note: This table gives observed survival, thus patients may have died from causes unrelated to their cancer
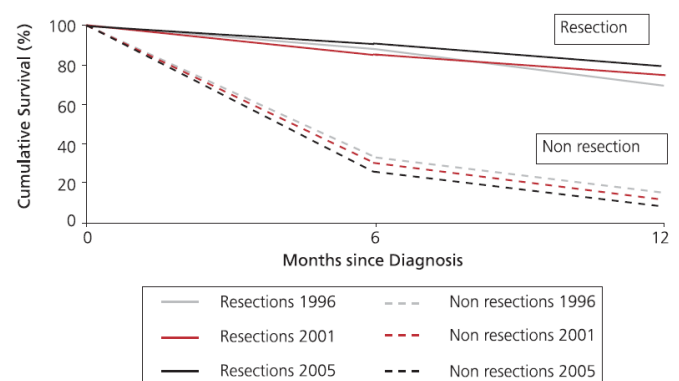
One-year
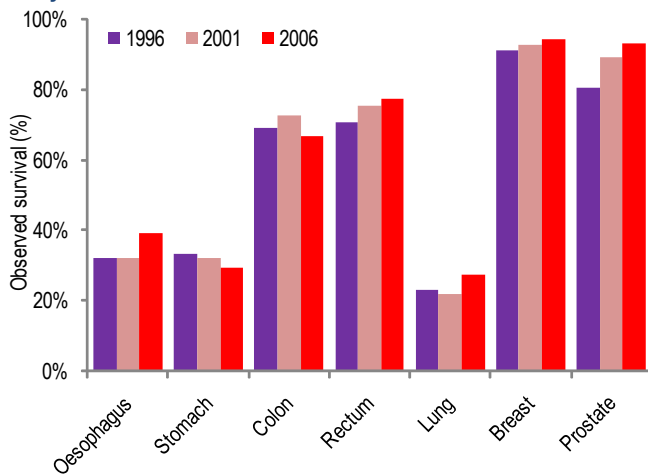
Three-year
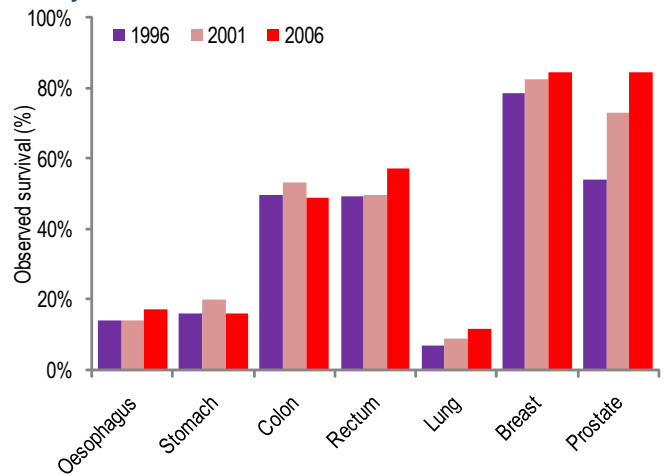
Between 2001 and 2006 survival from oesophageal cancer improved significantly, in particular one-year survival increased from 32% to 39%. Survival from cancer of the rectum also improved over the 1996 to 2006 period, although the improvements between 2001 and 2006 were not significant due to little change in survival up to one-year. Lung cancer survival was similar for patients diagnosed in 1996 and 2001, however patients diagnosed in 2006 had slightly better survival prospects with one year survival of 27% and three-year survival of 12% compared to 23% and 7% respectively in 1996. Breast cancer exhibited continuous improvement over the decade, as did prostate cancer. The latter however is mostly due to the increase in number and type of prostate cancers diagnosed as a result of the increase in use of PSA testing, which can identify non aggressive tumours earlier, increasing survival times, but having a minimal impact on mortality. Both stomach and colon cancers showed no significant improvements in survival over the decade.

SURVIVAL OF LUNG CANCER SURGERY PATIENTS

SURVIVAL OF OESOPHAGEAL RESECTION PATIENTS
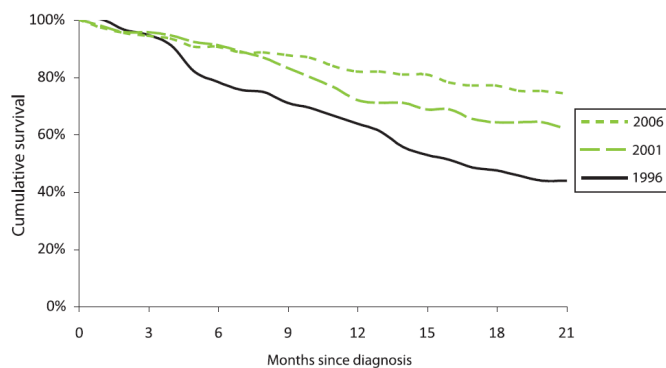
For those lung cancer patients who had surgery, survival was significantly different between years; the 21-month observed survival was 44% in 1996, 64% in 2001, and 74% in 2006. This likely reflects better patient selection for this treatment type.

Survival for oesophageal resection patients was significantly better than non surgery patients, with a significant improvement in observed survival for resection patients over the decade. In particular one-year survival increased from 69% to 79% between 1996 and 2005, while five-year survival increased from 10% in 1996 to 23% in 2001. There was no significant difference in survival of resection patients between 2001 and 2005.

REFERRAL TO PALLIATIVE CARE SPECIALIST

The proportion of patients referred to a palliative care specialist after their treatment has ended increased between 1996 and 2001 for lung, colorectal and upper GI cancer patients. Between 2001 and 2006 there were further increases for upper GI patients, however a decrease was recorded for colorectal cancer patients. The proportion of breast and prostate cancer patients referred to a palliative care specialist within a year of diagnosis remained low for all three years.
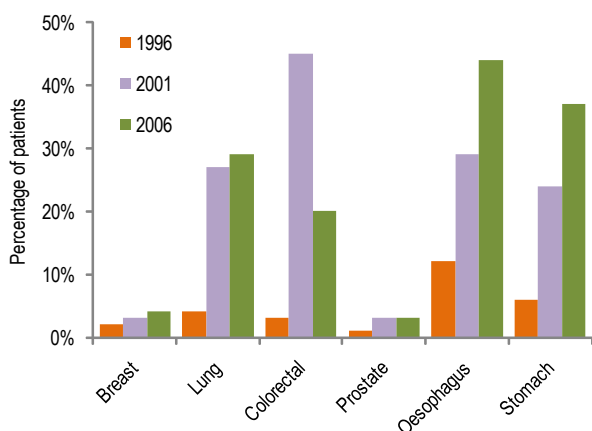
REFERRAL TO MACMILLAN/MARIE CURIE NURSE

Referrals to a Macmillan/Marie Curie nurse within one year of diagnosis occurred for less than 20% of lung and upper GI cancer patients and for less than 10% of breast, colorectal and prostate cancer patients in 1996. By 2001 there had been significant increases in the proportion of lung and upper GI patients referred, while by 2006 there were also increases among colorectal cancer patients.
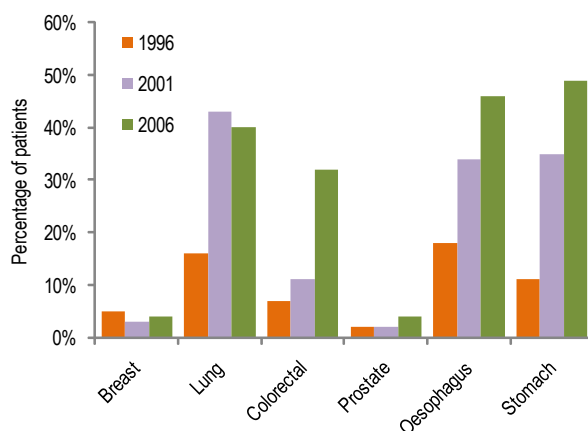
METHODS

Study aim
The various cancer audits, upon which this report is based, aimed to document the presentation, treatment, care and outcomes of lung, colorectal, prostate and female breast cancers diagnosed in Northern Ireland in 2006 and compare the result with similar data from 1996 and 2001. An earlier, similar exercise was conducted for upper GI cancers, with data collected for patients diagnosed in 2005 and compared with similar data from 1996 and 2001. In this report any reference for upper GI cancers to 2006 actually refers to 2005.

Data collection
In each audit Registry Tumour Verification Officers (TVO's) collected data by reviewing clinical notes of patients with a new primary cancer already registered with the Northern Ireland Cancer Registry. Data was then entered into an electronic proforma, which had been developed with the guidance of relevant clinicians.

Exclusions and data analysis
Patients were excluded if their records lacked sufficient information or if information was available only from a death certificate (DCO) or post mortem. Patients were identified using version 10 of the International Classification of Diseases (ICD10) as follows:
- Oesophageal cancer: C15-C16.0 (i.e. Gastro-oesophageal junction is included with oesophagus instead of stomach)
- Stomach cancer: C16.1-C16.9
- Colon cancer: C18-C19 (i.e. Colon cancer includes rectosigmoid junction)
- Rectal cancer: C20 (Note, data on cancer of the anus (C21) was also collected, and contributes to the colorectal cancer total)
- Lung cancer: C33-C34
- Female breast cancer: C50
- Prostate cancer: C61

The majority of analysis is through the derivation of the number of patients falling into particular categories relating to their demographics and process of care, with these numbers frequently presented as a percentage of all patients or a particular sub group of patients (e.g. surgery patients). Random fluctuations in values mean that caution needs to be exercised when comparing proportions. Statistical decisions with regard to differences in proportions are based upon the assumption that any differences are normally distributed about zero, with a 95% confidence level applied.

Patient survival is one of the best indicators as to the efficiency of diagnostic and treatment methods in a geographic area and is widely used by cancer registries as a broad indicator as to the effectiveness of health services in the treatment of cancer. There are several different measures of survival, the most fundamental, and perhaps of most relevance to patients, is observed survival, which is the probability that a patient with cancer will be alive at the end of a particular length of time as measured from the date of diagnosis. The length of time for which survival can be measured is restricted to the amount of follow up data available on a patient. In this report follow up of all audit patients was available to the end of 2009 (an update from published audits which may cause slight variations in values compared to the previously published results), thus restricting survival analysis to three years for patients diagnosed in 2006. Observed survival for cancer patients is independent of the cause of death and thus includes death from causes other than cancer, some of which may be related to cancer or its cause (e.g. other smoking related illnesses) or may even be completely unconnected to the disease (e.g. accidental death).

FURTHER INFORMATION

Further data from the Northern Ireland Cancer Registry is available from the Registry web site: www.qub.ac.uk/nicr, and

NI Cancer Registry
Centre for Public Health   Phone: +44 (0)2890 63 2573
Mulhouse Building   e-mail: nicr@qub.ac.uk
Grosvenor Road
Belfast, BT12 6BJ

ACKNOWLEDGEMENTS

ALL CANCER (EXCLUDING NMSC)

N. IRELAND
Cancer
Registry

AVERAGE NUMBER OF CASES PER YEAR (2010-2014)			AVERAGE NUMBER OF DEATHS PER YEAR (2010-2014)		
Male	Female	Both sexes	Male	Female	Both sexes
4,426	4,393	8,819[1]	2,124	1,923	4,047
FIVE-YEAR SURVIVAL (2005-2009)			21-YEAR PREVALENCE (2014)		
Male	Female	Both sexes	Male	Female	Both sexes
52.3%	55.7%	53.6%	24,386	31,335	55,721

INCIDENCE

From 2010 to 2014, on average, there were 4,426 male and 4,393 female patients diagnosed with cancer each year excluding Non-Melanoma Skin Cancer (NMSC). There were an additional 1,946 male and 1,504 female patients diagnosed with NMSC. The lifetime risk of developing a cancer (excluding NMSC) was 1 in 3.4 for men and 1 in 3.8 for women.

Incidence trends

Table 1: Incidence of cancer by sex and year of diagnosis: 2005-2013

	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
Male	3,619	3,793	4,061	4,173	4,223	4,145	4,454	4,523	4,520	4,486
Female	3,648	3,699	3,874	4,049	4,112	4,123	4,317	4,503	4,568	4,454
Both sexes	7,267	7,492	7,935	8,222	8,335	8,268	8,771	9,026	9,088	8,940

Over the last ten years the number of cancer cases has increased from 3,619 among men and 3,648 among women in 2005 to 4,486 among men and 4,454 among women in 2014. This increase is largely due to an increasing number of older people in the population.

After accounting for our aging population, cancer incidence rates increased among males during 1999-2011 by an average of 1.1% per year, with evidence of a slowing from 2011-2014. From 1993-2014, female incidence rates increased steadily by an average of 0.7% per year.

Figure 1: Trends in cancer incidence rates by sex: 1993-2013
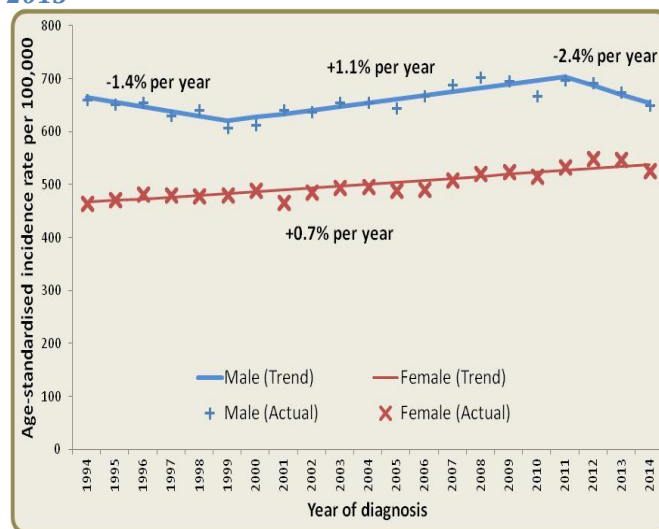
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[1] Mean yearly incidence data for period 2010-2014 has been rounded to nearest integer, and thus some numbers in tables will not add to give the exact total.

Incidence and age

Cancer risk is strongly related to age with over 60% of cancers occurring in those aged over 65 and incidence rates greatest for those aged 80-89 in both men and women.

Table 2: Average number of cancers diagnosed per year by sex and age: 2010-2014

Age (years)	Male	Female	Total
0 to 49	384	701	1,086
50 to 64	1,124	1,159	2,283
65 to 74	1,422	1,095	2,517
75 and over	1,497	1,437	2,933
All ages	4,426	4,393	8,819

Due to rounding of yearly averages, 'All ages' may not equal the sum of age categories in tables.

Figure 2: Incidence of cancer by age and sex: 2010-2014
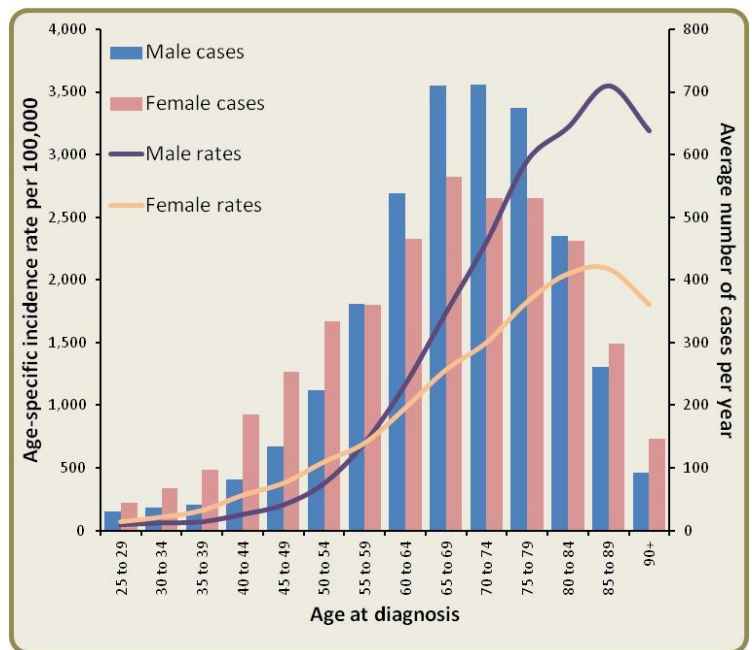
Cancer site

Cancer can occur in many different parts of the body, some more common than others and with considerable variation between males and females. The most common cancers among males between 2010 and 2014 were prostate, colorectal, lung, lymphomas and head & neck (Fig. 3) while the most common cancers among women were breast, colorectal, lung and body of uterus (Fig. 4).

Figure 3: The most common cancers (excluding NMSC) diagnosed in men: annual incidence 2010-2014

Prostate (R1*)	1049
Colorectal (R2)	682
Lung (R3)	656
Lymphoma (R4)	218
Head & Neck (R5)	216
Kidney (R6)	168
Bladder (R7)	149
Melanoma (R8)	144
Stomach (R9)	142
Oesophagus (R10)	135
Leukaemia (R11)	121
Pancreas (R12)	107
Other	639

*Rank 1

Figure 4: The most common cancers (excluding NMSC) diagnosed in women: annual incidence 2010-2014

Breast (R1*)	1245
Colorectal (R2)	537
Lung (R3)	509
Uterus (R4)	233
Melanoma (R5)	188
Ovary (R6)	188
Lymphoma (R7)	182
Kidney (R8)	119
Pancreas (R9)	113
Cervix (R10)	96
Head & Neck (R11)	95
Stomach (R12)	86
Other	802

*Rank 1
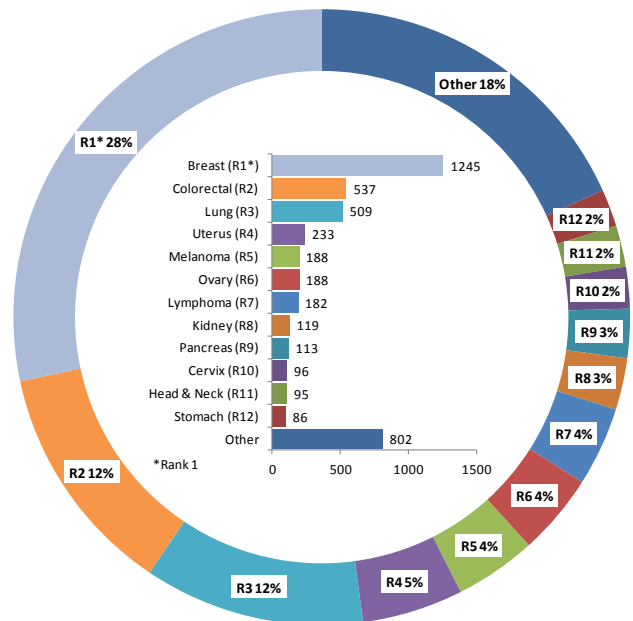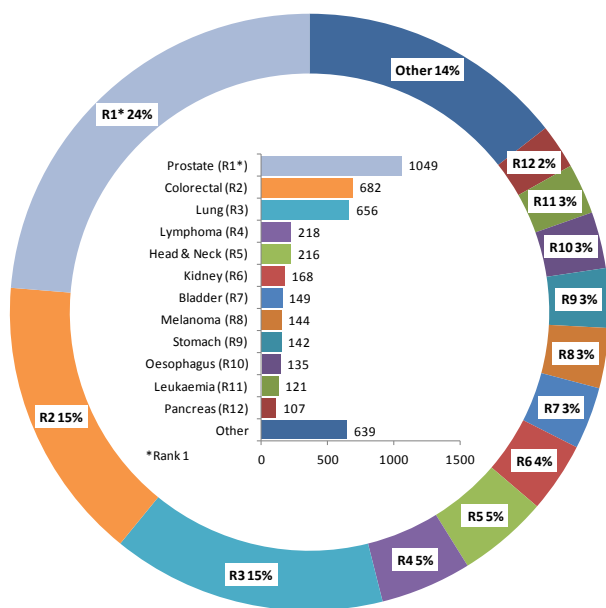
Age at diagnosis by cancer site 2010-2014

Age at diagnosis varied by cancer site. Overall the median age at diagnosis was 69 years and was higher among males (69 years) than females (68 years). In men, the median age ranged from 60 years for brain and CNS cancers to 74 years for bladder cancer. In women, the median age ranged from 40 years for cervical cancer to 76 years for stomach cancer. The most common cancers, breast cancer among females and prostate cancer among males, had a median age at diagnosis of 63 years and 70 years, respectively.

Figure 5: The median age of male cancer patients by cancer site
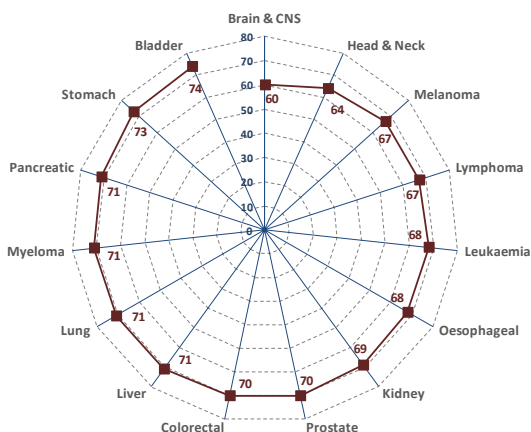
Figure 6: The median age of female cancer patients by cancer site
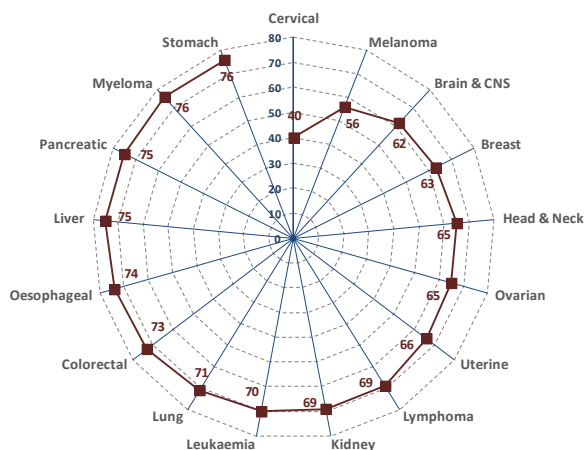
Incidence by Trust area

Incidence rates of cancer (excluding NMSC) in 2010-2014 were 7% higher among people living in Belfast HSCT area than the NI average. Rates were lower than the NI average for those living in the Northern and South-Eastern Trust area.

Figure 7: Cancer incidence rates compared to the NI average by sex and HSC Trust of residence: 2010-2014
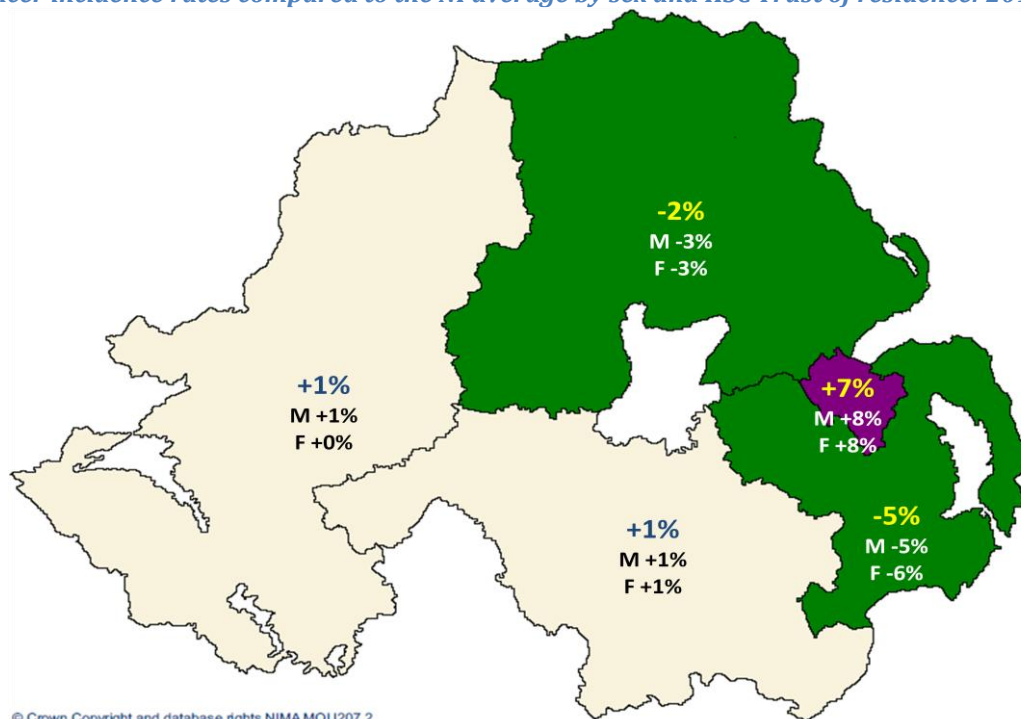
Significantly higher than average

Significantly lower than average

Incidence by deprivation

Some geographical variation is due to a relationship between cancer and socio-economic deprivation. Cancer incidence is higher in the most deprived communities in Northern Ireland though this varies significantly by cancer site. Incidence of cancer of the head & neck, oesophagus, stomach, lung, liver, pancreas, male-colorectal, bladder and cervix are higher in more deprived areas while incidence of melanoma, non-melanoma skin and prostate cancer are higher in the least deprived communities.

Figure 8: All cancer incidence rates compared to the NI average by sex and deprivation quintile: 2010-2014

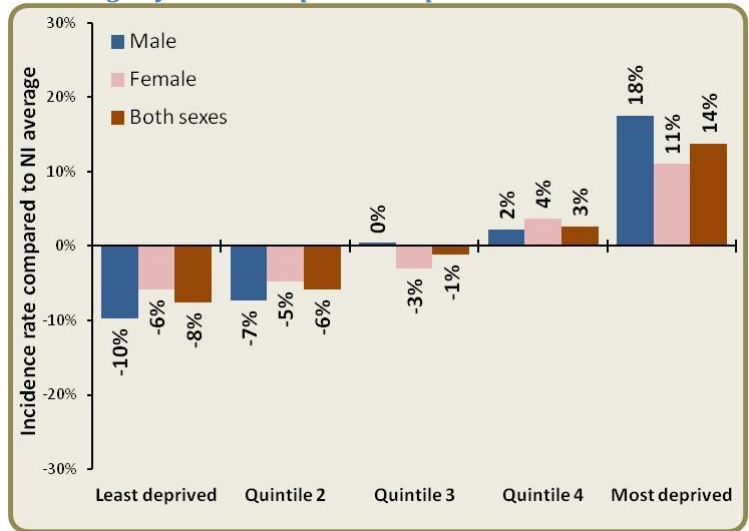*Table 3: The relationship between cancer incidence rates and socio-economic deprivation*

Incidence rates higher in deprived than affluent areas	No significant relationship	Incidence rates higher in affluent than deprived areas
Head & neck, oesophagus, stomach, lung, liver, pancreas, male-colorectal, bladder, cervix	Uterus, Ovary, Testes, Lymphoma, Leukaemia	Melanoma, Non-melanoma skin, Prostate

SURVIVAL

Overall survival

The net survival was 70.1% at one year, and 54.3% at five years for patients diagnosed in 2005 to 2009.

Table 4: Five-year survival by sex: patients diagnosed 2005-2009

Time since diagnosis	Diagnosed 2004-2008		
	Male	Female	Both sexes
6 months	76.8%	77.7%	77.4%
1 year	68.9%	71.0%	70.1%
5 years	52.3%	55.7%	54.3%

Survival Trends

Five-year survival from cancer has improved when we compare patients diagnosed from 1993 to 1999 to those diagnosed from 2005 to 2009; increasing from 37.3% to 52.3% for men and from 47.8% to 55.7% for women.

Table 6: Five-year survival by period of diagnosis and sex

Period of diagnosis	Male	Female	Both sexes
1993-1999	37.3%	47.8%	43.0%
2000-2004	45.4%	52.0%	49.1%
2005-2009	52.3%	55.7%	54.3%

Survival and cancer site

Survival varied by cancer site with estimates of five-year (age-standardised) net survival for male patients diagnosed 2005-2009 ranging from 5.8% for pancreatic cancer to 98.8% for testicular cancer. Among females five-year (age-standardised) net survival ranged from 5.3% for pancreatic cancer to 92.5% for malignant melanoma. Comparisons of five-year survival for patients diagnosed 2005-2009 to those diagnosed 1993-1999 show survival improvements for most cancers in males and females. Three of the four most common cancers showed strong improvement.

Table 7: Five-year age-standardised net survival of patients diagnosed 2005-2009 compared to patients diagnosed 1993-1999 by site

Site (ICD10 code[1])	1993-1999		2005-2009	
	Male	Female	Male	Female
All Cancers excluding NMSC (C00-C43,C45-C97)	37.3%	47.8%	52.3%	55.7%
Bladder (C67)	60.4%	48.4%	59.1%	48.5%
Brain and other CNS (C70-C72,C75.1-C75.3)	16.3%	22.0%	23.7%	24.6%
Breast (C50)	-	75.0%	-	80.9%
Cervix (C53)	-	57.8%	-	65.9%
Childhood cancer (C00-C97,ex C44)	72.8%[3]	74.4%[3]	73.8%[3]	86.3[3]
Colon (C18)	50.3%	51.3%	55.3%	57.3%
Colorectal (C18-C20)	49.2%	50.3%	55.3%	57.5%
Head and Neck (C00-C14; C30-C32)	52.6%	49.5%	55.4%	56.2%
Hodgkin Lymphoma (C81)	75.3%[3]	79.6%[3]	83.2%[3]	75.0%[3]
Kidney (C64-C66,C68)	48.4%	50.7%	56.7%	53.7%
Leukaemia (C91-C95)	33.3%	33.6%	48.5%	49.6%
Lip, Oral Cavity & Pharynx (C00-C14)	46.5%	43.7%	51.0%	54.2%
Liver & Intrahepatic Bile Ducts (C22-C24)	4.5%	5.6%	6.3%	8.0%
Lung, Bronchus & Trachea (C33-C34)	8.0%	9.8%	10.0%	11.4%
Lymphoma (C81-C86)	44.9%	49.1%	61.2%	66.5%
Malignant Melanoma (C43)	84.4%	91.1%	88.0%	92.5%
Multiple Myeloma (C90)	26.2%	34.8%	50.2%	53.3%
Non-Hodgkin Lymphoma (C82-C85)	42.6%	47.7%	59.5%	66.9%
Non-Invasive Brain (D32,D33.0-D33.4,D35.2-D35.4,D42,D43.0-D43.4,D44.3-D44.5)	79.3%	78.9%	84.0%	89.1%
Oesophagus (C15)	8.9%	16.8%	18.0%	16.8%
Ovary (C56)	-	36.8%	-	37.2%
Pancreas (C25)	3.0%	2.8%	5.8%	5.3%
Prostate (C61)	60.4%	-	87.6%	-
Rectum and Anus (C19-C21)	47.6%	47.2%	56.8%	57.9%
Stomach (C16)	15.6%	17.1%	17.8%	23.4%
Testis (C62)	94.5[3]	-	98.8[3]	-
Unknown primary (C76-C80)	5.9%	9.9%	10.8%	10.9%
Uterus body (endometrium) (C54-C55)	-	65.6%	-	77.7%

1 The classification of different tumours codes see: International Statistical Classification of Diseases and Related Health Problem to cancer types, e.g. lung is done using ICD10 codes. For a listing and explanation of ICD10 topography or site s, Tenth Revision, World Health Organisation, Geneva. Or view online at http://apps.who.int/classifications/icd10/browse/2010/en#/II
2 Not-applicable
3 Survival estimate is not age-standardised because of small numbers of patients diagnosed in the period

MORTALITY

Mortality statistics are provided by the Northern Ireland General Registrar's Office. In 2010-2014 there were on average 2,153 male and 1,965 female deaths from malignant cancer each year. The most common cause of cancer death among males was lung cancer followed by prostate cancer and colorectal cancer (Fig. 9), while among women the most common cause of cancer death was lung cancer followed by breast cancer (Fig. 10).

Figure 9: The most common cancer deaths in men: average annual deaths 2010-2014. Kidney, multiple myeloma, mesothelioma, and malignant melanoma included in 'other'.
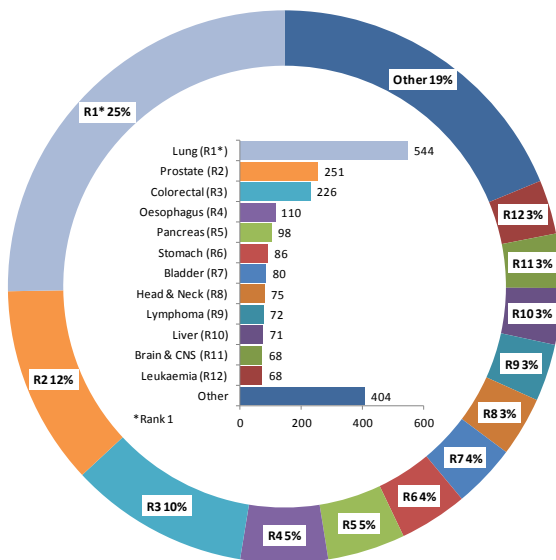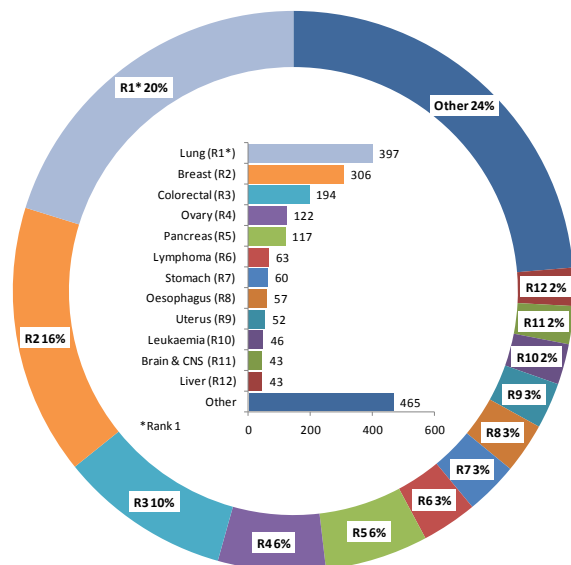
Figure 10: The most common cancer deaths in women: average annual deaths 2010-2014. Liver, bladder, multiple myeloma, head and neck, cervix, malignant melanoma included in 'other'.

Mortality trends

Over the ten years to 2014 the number of cancer deaths increased from 1,907 among men and 1,819 among women in 2005 to 2,164 among men and 2,085 among women in 2014.

When adjusted for age and population change, cancer mortality rates during 1993-2014 decreased per year by 1.0% in males, and 0.5% in females. Trends in cancer death varied by cancer site. Among men, mortality rates decreased for lung, prostate and colorectal cancer. Among women, mortality rates have increased for lung but decreased for breast and colorectal cancer.

Figure 11: Trends in cancer mortality rates by sex: 1993-2014
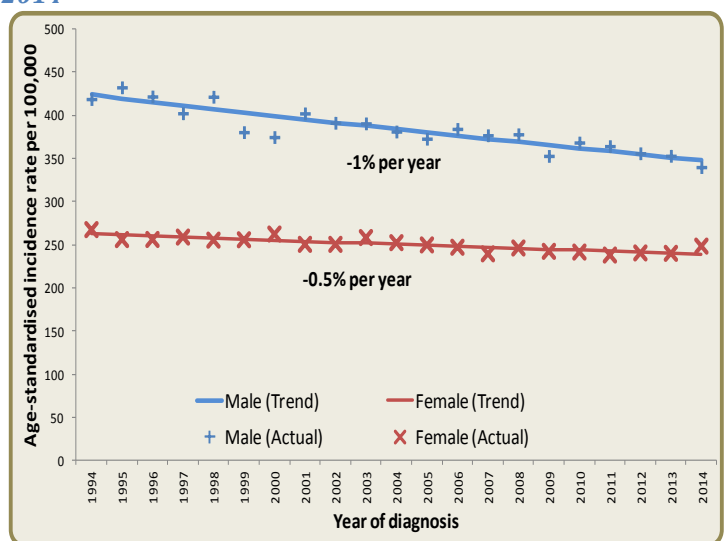
PREVALENCE

At the end of 2014 there were 55,721 people living in NI who had been diagnosed with cancer within the previous twenty-two years (Table 8). Of these, 43.8% were male, 46.1% were aged 70 and over and 11.4% had been diagnosed in the previous year.

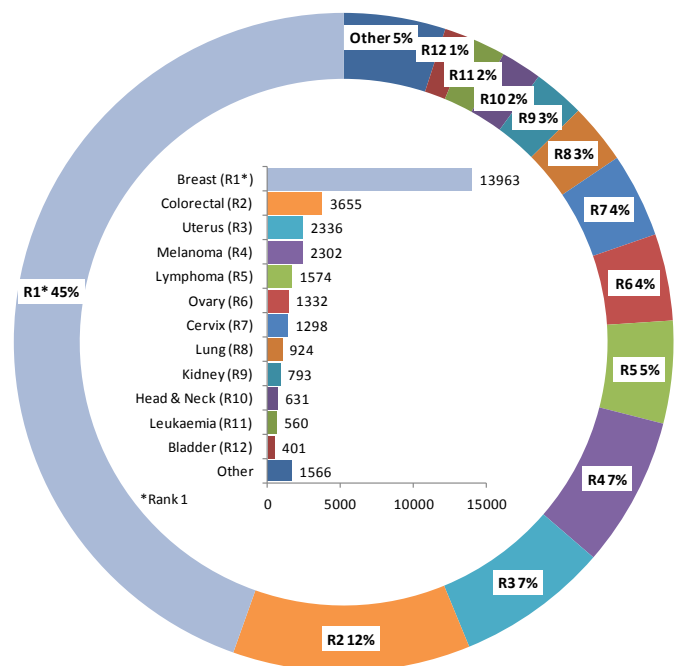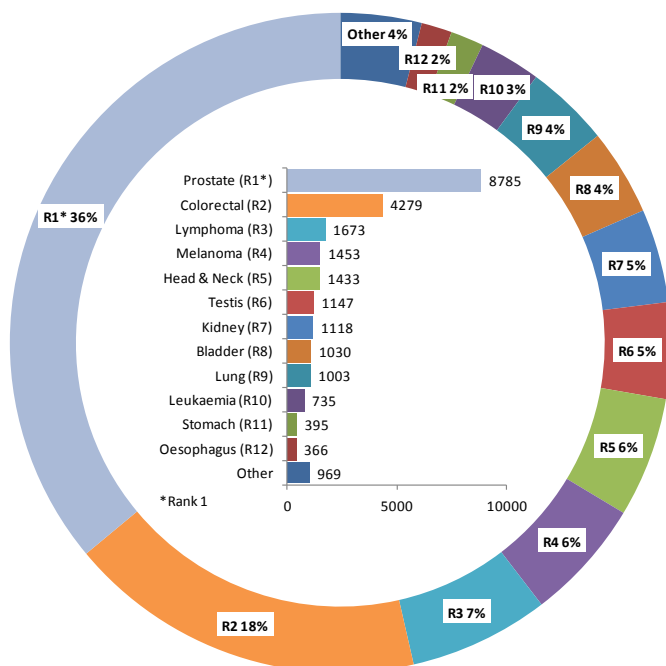*Table 8: Number of people living with cancer at the end of 2014 who were diagnosed within the past twenty-two years by time since diagnosis*

Sex	Age at end of 2014	Time since diagnosis				22-year Prevalence
		0-1 year	1-5 years	5-10 years	10-22 years	
Male	0-69	1,767	4,385	3,037	2,579	11,768
	70+	1,395	3,972	3,772	3,479	12618
	All ages	3,162	8,357	6,809	6,058	24386
Female	0-69	2,004	5,957	4,995	5,305	18,261
	70+	1,167	3,531	3,017	5,359	13,074
	All ages	3,171	9,488	8,012	10,664	31,335
Both sexes	0-69	3,771	10,342	8,032	7,884	30,029
	70+	2,562	7,503	6,789	8,838	25,692
	All ages	6,333	17,845	14,821	16,722	55,721

Among men, prostate cancer was the most prevalent cancer accounting for 36% of total prevalence (Fig. 12). This was followed by colorectal cancer (18%) and lymphoma (7%). Among women, breast cancer (45%) was most prevalent followed by colorectal cancer (12%) and body of uterus (7%) (Fig. 13).

Figure 12: The number of male cancer patients alive on 31st December 2014 diagnosed since 1993 (22-year prevalence) by cancer site

Figure 13: The number of female cancer patients alive on 31st December 2014 diagnosed since 1993 (20-year prevalence) by cancer site

Prostate (R1*)	8785
Colorectal (R2)	4279
Lymphoma (R3)	1673
Melanoma (R4)	1453
Head & Neck (R5)	1433
Testis (R6)	1147
Kidney (R7)	1118
Bladder (R8)	1030
Lung (R9)	1003
Leukaemia (R10)	735
Stomach (R11)	395
Oesophagus (R12)	366
Other	969

*Rank 1

Breast (R1*)	13963
Colorectal (R2)	3655
Uterus (R3)	2336
Melanoma (R4)	2302
Lymphoma (R5)	1574
Ovary (R6)	1332
Cervix (R7)	1298
Lung (R8)	924
Kidney (R9)	793
Head & Neck (R10)	631
Leukaemia (R11)	560
Bladder (R12)	401
Other	1566

*Rank 1

Background notes

ICD10 Topography Codes
The classification of tumour sites is carried out using ICD10 codes. For a listing and explanation of ICD10 topography or site codes see: International Statistical Classification of Diseases and Related Health Problems, Tenth Revision, World Health Organisation, Geneva. Or view online at http://apps.who.int/classifications/icd10/browse/2010/en#/II

Age Standardised Incidence Rate
An age-standardised incidence rate per 100,000 persons is an estimate of the incidence rate if that population had a standard population age structure. Eighteen or nineteen age-group specific incidence rates are weighted by standard weights of the Standard Population, and summed to give the age-standardised rate. Commonly used Standard Populations (with number of age groups) are the 1976 European Standard Population (18), 2013 European Standard Population (19), and the World Standard Population (18). Standardising to a common Standard Population allows comparisons of incidence rates to be made between different time periods and geographic areas.

Standardised Incidence Ratio (SIR)
The ratio of the number of cases observed in a given population to the number of cases expected if the age-groups specific rates of a reference population were operative. This statistic is often used to compare if smaller geographic units (e.g. Trust areas) incidence rates differ from the national incidence rates, (e.g. Northern Ireland in these statistics), which is taken as the reference. An SIR of 100% indicates no difference.

Confidence Intervals (CI)
Confidence intervals are a measure of the precision of a statistic (e.g. lung cancer incidence rate). Typically, when incidence is 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.

Lifetime risk
Lifetime risk is estimated as the cumulative risk of getting cancer up to age 75 (life expectancy for a typical person) using the age-specific cancer incidence rates according to this formula: cumulative risk=1 - exp(-sum(rates from age 1-74)). This method was proposed by Day (Day, 1987. Cumulative rates and cumulative risk. In Cancer Incidence in Five Continents, Muir C, Waterhouse J, Mack T, Powell J, Whelan S [eds] vol. V, pp 787-789. International Agency for Research on Cancer. IARC Scientific Publications No. 88: Lyon), and represents the lifetime risk of developing cancer when competing risks are ignored. Although this is currently the standard statistic for estimating lifetime risk of developing cancer, there are other methods which employ death information to address competing risk (see: Sasieni PD, Shelton J, Ormiston-Smith N, Thomson CS, Silcocks PB, 2011. What is the lifetime risk of developing cancer?: the effect of adjusting for multiple primaries. Bristish Journal of Cancer 105, 460-465). The odds of developing the disease before age 75 is the inverse of the cumulative risk.

Geographic Areas
Geographic areas are assigned based on a patient's postcode of usual residence at diagnosis using the Central Postcode Directory (CPD) produced by the NI Statistics and Research Agency (available at www.nisra.gov.uk)

Deprivation Quintiles
Super output areas (SOA), or 897 census output areas of NI, are assigned to each patient based on their postcode of usual residence at diagnosis. The patient is then assigned, through its SOA, to a socio-economic deprivation quintile based on the SOA's 2010 Income domain of the Multiple Deprivation Measure. The 2010 Multiple Deprivation Measure is available from the NI Statistics and Research Agency (www.nisra.gov.uk)

Prevalence of patients who have had a diagnosis of cancer

Prevalence is the number of cancer-diagnosed patients who are alive in the population on a specific date, e.g. 31st December 2013. If the Registry is recently established, there will be patients in the population diagnosed prior to establishment who were not registered by the Registry; hence the prevalence will be underestimated, and more so in good-prognosis cancers. An 'x'-year prevalence, e.g. 20-year prevalence, is defined as the number of patients that were diagnosed in a `x'-year period (prior to a time point) and alive at that time point. 'x'-year prevalence can be used between registries of differing ages to measure the survivorship associated with a certain type of cancer. Age in the prevalence table refers to the age of patients on the 31st December 2013, not age at cancer diagnosis.

Net Survival

Net Survival is an estimate of survival where the effect on survival of background population mortality rates has been removed. As background population mortality rates, as presented in a life table, are a good approximation to the non-cancer related death rates among cancer patients, the net survival represents the [theoretical] survival of cancer patients if they could only die from cancer-related causes. Net survival is suitable for comparison of survival between different time periods and populations, as the confounding effect of non-cancer death rates is removed. Age-standardised net survival estimates are the estimates that would occur if that population [of cancer patients] had a standard population age structure. Five age-group specific survival estimates are weighted by standard weights, and summed to give the age-standardised survival estimate. The age groups and weights used here are those defined by EUROCARE, an international study group that compares cancer survival among European countries (Corazziari I, Quinn M, Capocaccia R, 2004. Standard cancer patient population for age standardising survival ratio. European Journal of Cancer 40: 2307-2316). The weights reflect the age-structure of cancer patients and can differ between cancer sites. Due to small numbers in NI for many cancer sites, the two youngest age-groups have been combined, as well as their weights, in the estimation of age-standardised net survival.

Mortality

Information relating to cancer mortality is sourced from GRONI and is based upon the date on which death occurs. Results 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 GRO.

BREAST CANCER

NUMBER OF CASES PER YEAR (2010-2014)			NUMBER OF DEATHS PER YEAR (2010-2014)		
Male	Female	Both sexes	Male	Female	Both sexes
9	1283	1293	3	306	309

FIVE-YEAR SURVIVAL (2005-2009)			22-YEAR PREVALENCE (2014)		
Male	Female	Both sexes	Male	Female	Both sexes
-	80.9%	-	-	13963	-

INCIDENCE

In 2010-2014 there were 1,283 female patients diagnosed with breast cancer each year. The lifetime risk of developing a breast cancer was 1 in 11 for women.

Incidence trends

Table 1: Incidence of female breast cancer and year of diagnosis: 2005-2014

	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
Female	1079	991	1166	1179	1231	1217	1288	1322	1297	1293

Over the last ten years the number of breast cancers cases in women has increased from 1079 in 2004 to 1293 in 2013.

After accounting for the increasing number of older people in the NI population, breast cancer incidence rates in women have increased during 1993-2014 by an average of +1.2% per year.

Figure 1: Trends in female breast cancer incidence rates: 1993-2014
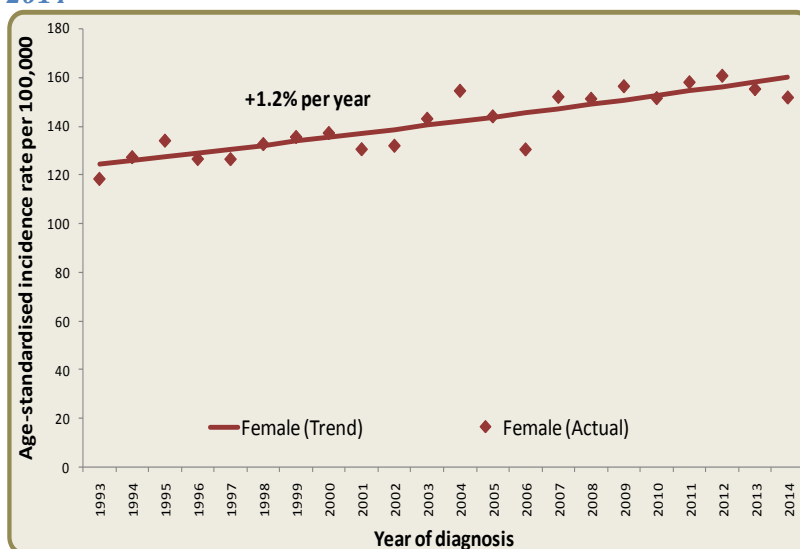
Incidence and age

Breast cancer risk is strongly related to age with 79% of cases occurring in females over the age of 50 years and incidence rates greatest among women aged 80-89.

Table 2: Average annual number of breast cancers diagnosed by age: 2010-2014

Age	Female
0 to 49	271
50 to 64	433
65 to 74	294
75 and over	287
All ages	1283

Due to rounding of yearly averages, 'All ages' may not equal the sum of age categories in tables.
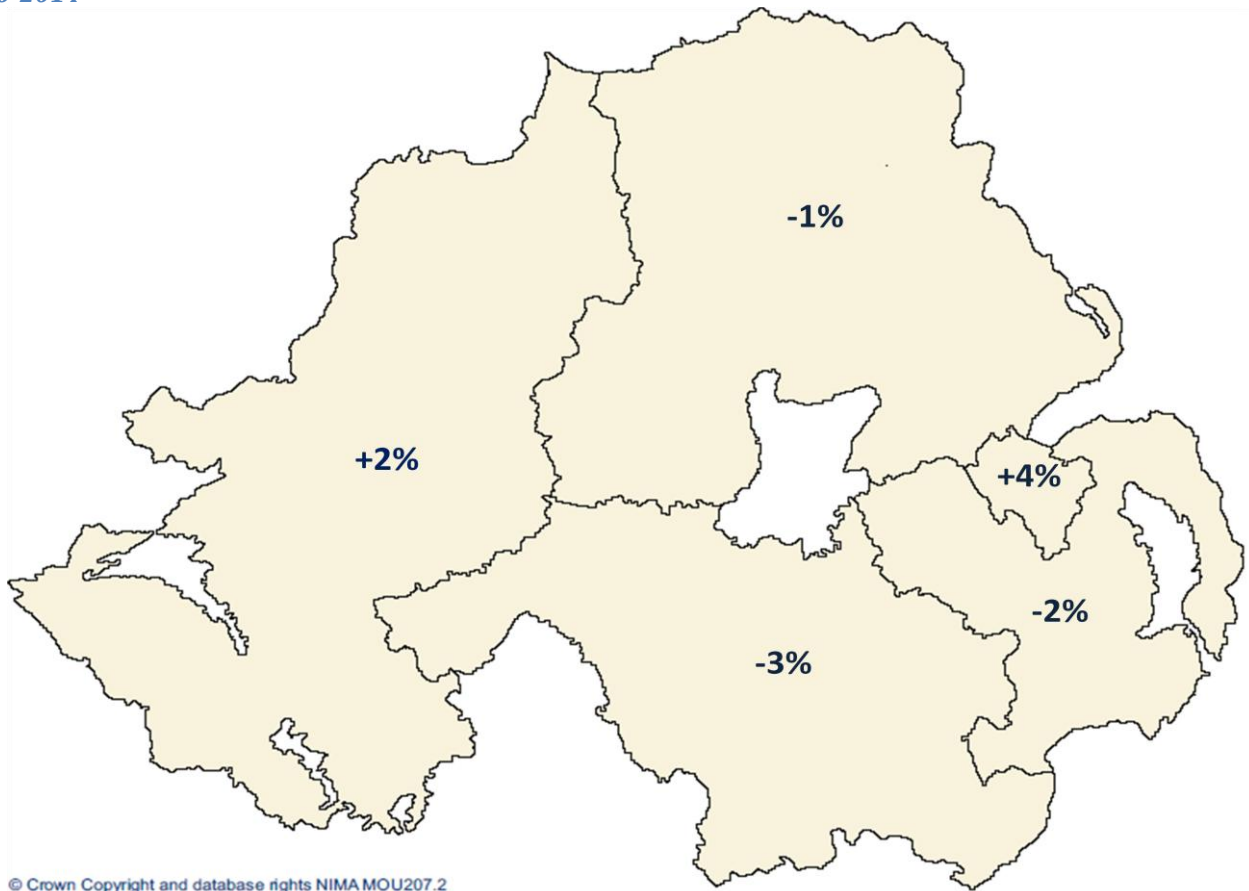
Figure 2: Incidence of female breast cancer by age: 2010-2014
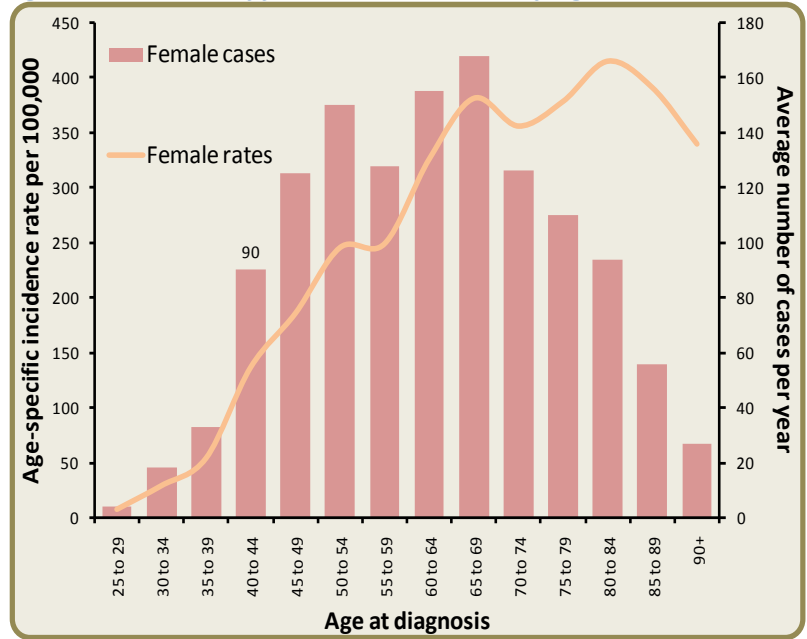
Incidence by Trust area

Breast cancer incidence rates in 2010-2014 did not vary significantly across HSCT Trusts in Northern Ireland.

Figure 3: Female breast cancer incidence rates compared to the NI average by sex and HSC Trust of residence: 2010-2014

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Significantly higher than average   *Significantly lower than average*

Incidence by deprivation

While incidence of many cancers vary by socio economic deprivation, there is no evidence of this association for breast cancer incidence rates in Northern Ireland since 2010.

Figure 4: Breast cancer incidence rates compared to the NI average by deprivation quintile: 2010-2014
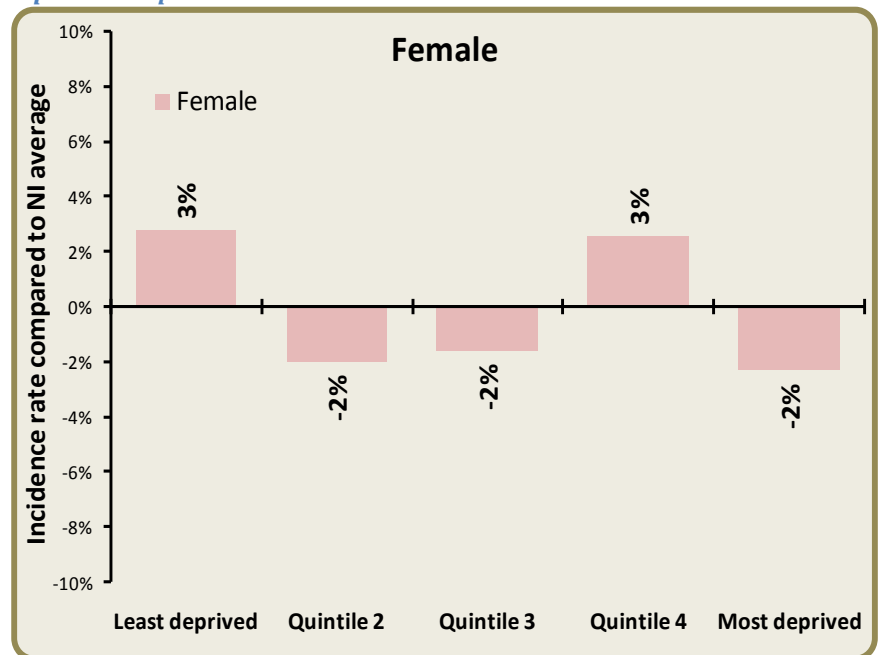
Incidence by stage

Cancer stage is a way of describing the size of a cancer and how far it has grown and spread. This information is important in helping decide what treatments are needed and stage of disease at diagnosis is strongly associated with survival.

Figure 5: Breast cancer stage distribution: 2010-2014
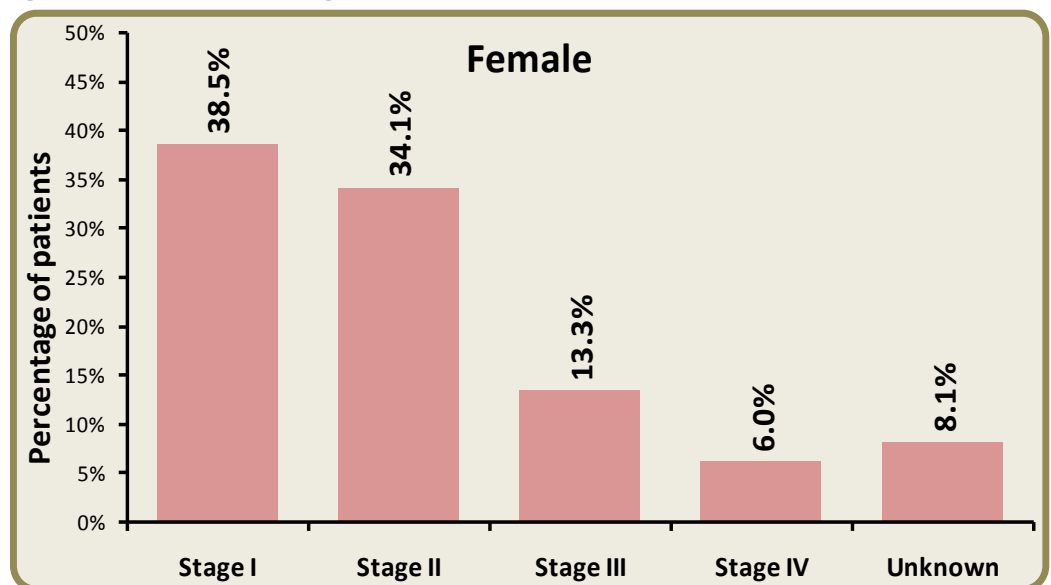
In 2010-2014 over 90% of female breast cancer patients in Northern Ireland were assigned a stage at diagnosis.

The majority of breast cancer patients were diagnosed at Stage I (38.5%) and Stage II (34.1%) with 6.0% diagnosed at stage IV.

SURVIVAL

The net survival for women with breast cancer was 94.7% at one year, and 80.9% at five years for patients diagnosed in 2005 to 2009.

Table 3: Five-year female breast cancer survival by survival time: patients diagnosed 2005-2009

Time since diagnosis	Diagnosed 2005-2009
	Female
6 months	96.2%
1 year	94.7%
5 years	80.9%

Survival Trends

Five-year survival for breast cancer in women has improved over time with survival increasing from 75.0% in the 1993-1999 diagnosis period to 80.9% in the 2005-2009 diagnosis period.

Table 4: Five-year breast cancer survival by period of diagnosis

Period of diagnosis	Female
1993-1999	75.0%
2000-2004	78.1%
2005-2009	80.9%

Survival and stage

Stage at diagnosis is one of the most important factors in breast cancer survival with five year survival decreasing as stage at diagnosis increases. Five-year survival ranged from 100.0% for early (stage I) disease to 14.4% for late (stage IV) disease highlighting the importance of early diagnosis.

Figure 6: Five year survival from breast cancer by stage of diagnosis: patients diagnosed 2005-2009
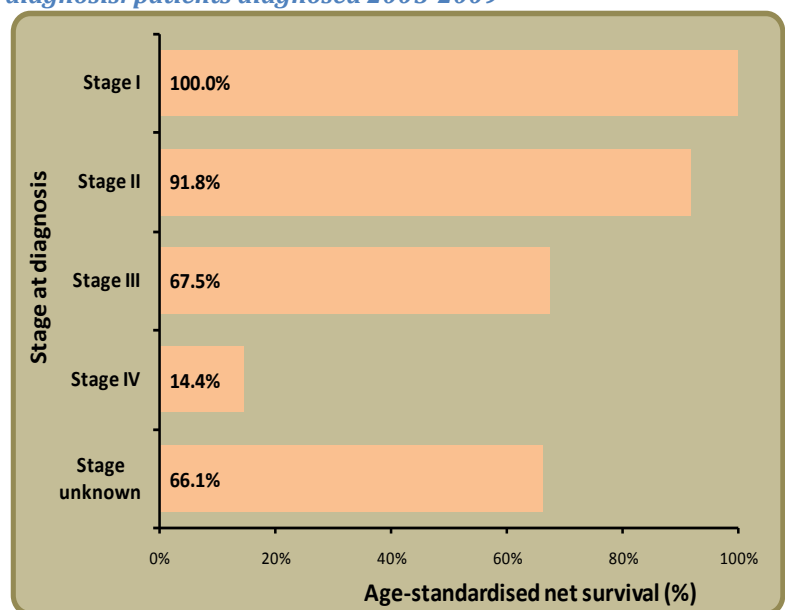
MORTALITY

Mortality statistics are provided by the Northern Ireland General Registrar's Office. In 2010-2014 there were 306 female deaths from breast cancer each year.

Mortality trends

Over the last ten years, the number of breast cancer deaths have not changed from 301 among women in 2005 to 320 among women in 2014.

When adjusted for age and population change, female breast cancer mortality rates decreased by -1.3% per year during 1993-2014.

Figure 7: Trends in female breast cancer mortality rates: 1993-2014
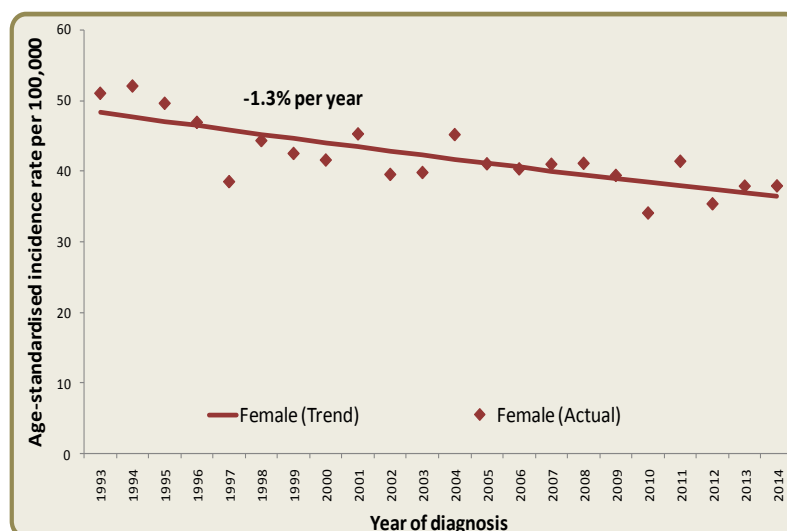
PREVALENCE

At the end of 2014 there were 13,963 females living in NI who had been diagnosed with breast cancer from 1993-2014 (Table 5). Of these, 39.9% were aged 70 and over and 8.5% had been diagnosed in the previous year.

Table 5: Number of people living with breast cancer at the end of 2014 who were diagnosed from 1993-2014 by time since diagnosis

Sex	Age	Time since diagnosis				22-year Prevalence
		0-1 year	1-5 years	5-10 years	10-22 years	
Female	0-69	829	2692	2424	2447	8392
	70+	362	1445	1284	2480	5571
	All ages	1191	4137	3708	4927	13963

FURTHER INFORMATION

ACKNOWLEDGEMENTS

LUNG CANCER

NUMBER OF CASES PER YEAR (2010-2014)			NUMBER OF DEATHS PER YEAR (2010-2014)		
Male	Female	Both sexes	Male	Female	Both sexes
656	509	1165[1]	544	397	940

FIVE-YEAR SURVIVAL (2004-2008)			22-YEAR PREVALENCE (2014)		
Male	Female	Both sexes	Male	Female	Both sexes
10.0%	11.4%	10.5%	1003	924	1927

INCIDENCE

In 2010-2014 there were 656 male and 509 female patients diagnosed with lung cancer each year. The lifetime risk of developing a lung cancer was 1 in 20 for men and 1 in 29 for women.

Incidence trends

Table 1: Incidence of lung cancer by sex and year of diagnosis: 2005-2014

	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
Male	559	574	602	654	621	640	657	657	685	640
Female	395	369	423	410	462	422	465	535	551	574
Both sexes	954	943	1,025	1,064	1,083	1,062	1,122	1,192	1,236	1214

Over a ten year period the number of lung cancer cases increased from 559 among men and 395 among women in 2005 to 640 among men and 574 among women in 2014.

After accounting for the increasing number of older people in the NI population, lung cancer incidence rates decreased among males during 1993-2014 by an average of 0.8% per year. However for the same period, female incidence rates increased by an average of 1.1% per year between 1993 and 2009 and 6.0% per year between 2010 and 2014. These patterns reflect historic smoking trends, (the most important risk factor for lung cancer), with decreasing rates of smoking among males and increasing rates among females influencing recent trends.

Figure 1: Trends in lung cancer incidence rates by sex: 1993-2014
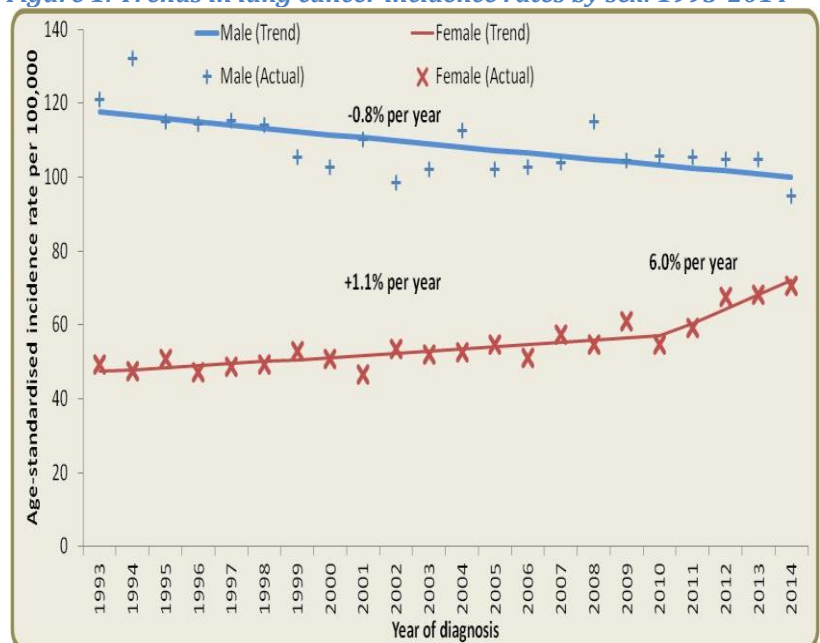
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[1] Mean yearly incidence data for period 2010-2014 has been rounded to nearest integer, and thus some numbers in tables will not add to give the exact total.

Incidence and age

Lung cancer risk is strongly related to age with 73% of patients diagnosed over the age of 65 years. Incidence rates are highest among men aged 85-89 and among women aged 75-79.

Table 2: Average number of lung cancers diagnosed per year by sex and age: 2010-2014

Age	Male	Female	Total
0 to 49	19	15	35
50 to 64	147	125	272
65 to 74	238	165	403
75 and over	251	201	452
All ages	656	509	1,165

Due to rounding of yearly averages, 'All ages' may not equal the sum of age categories in tables.

Figure 2: Incidence of lung cancer by age and sex: 2010-2014
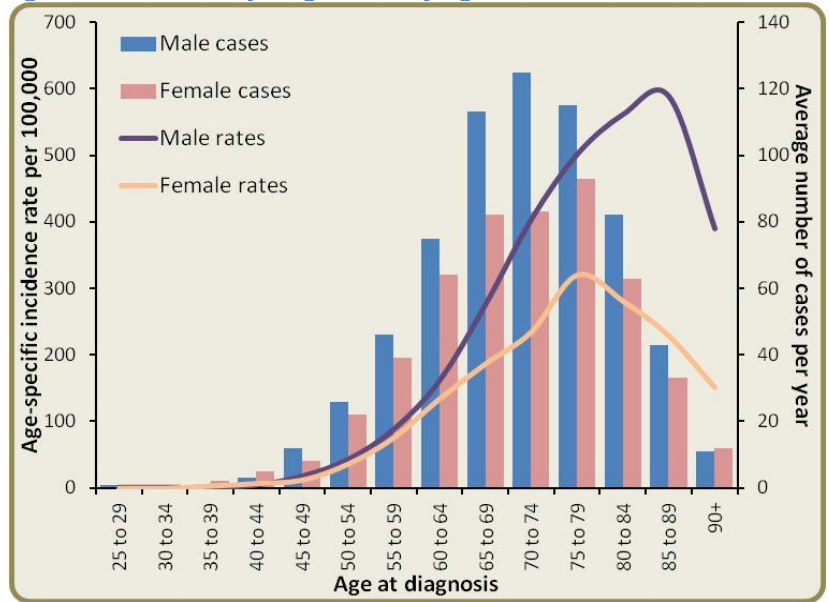
Incidence by Trust area

Lung cancer incidence rates in 2010-2014 were 33% higher than the NI average among people living within the Belfast HSCT area. Incidence rates were lower than the NI average in the Northern, Southern, and South-Eastern Trust areas.

Figure 3: Lung cancer incidence rates compared to the NI average by sex and HSC Trust of residence: 2010-2014

-9%
M -11%
F -6%

0%
M -2%
F 0%

+33%
M +32%
F +37%

-14%
M -10%
F -20%

-6%
M -4%
F -8%
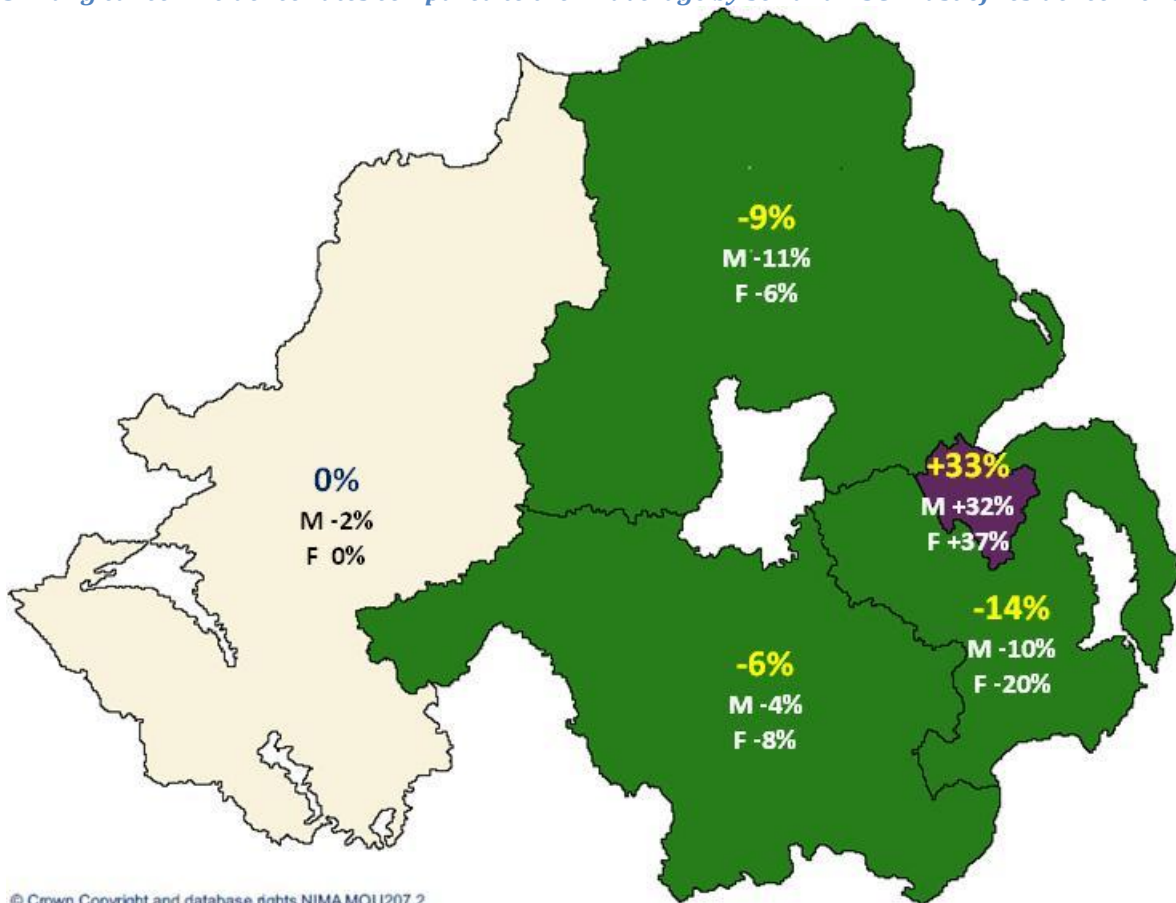
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Significantly higher than average

Significantly lower than average

Incidence by deprivation

Lung cancer incidence is higher among the most deprived communities in Northern Ireland. This likely relates to higher smoking prevalence in these areas.

It is estimated that 230 fewer men and 190 fewer women would be diagnosed each year in Northern Ireland if the lung cancer incidence rates (in years 2010-2014) in the least deprived regions applied to all Northern Ireland.

Figure 4: Lung cancer incidence rates compared to the NI average by sex and deprivation quintile: 2009-2014
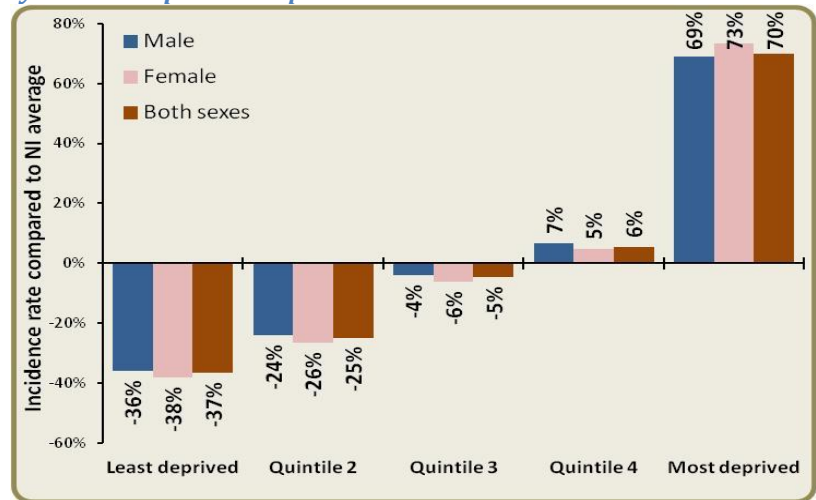
Incidence by stage

Cancer stage is a way of describing the size of a cancer and how far it has grown and spread. This information is important in helping decide what treatments are needed and stage of disease at diagnosis is strongly associated with cancer survival.

In 2010-2014 over four fifths (85.3%) of lung cancer patients in Northern Ireland were assigned a stage at diagnosis.

The majority of lung cancer patients were diagnosed at a later stage with 43.4% (50.9% of staged disease)

Figure 5: Lung cancer stage distribution: 2010-2014

diagnosed at stage IV compared to 12.6% (14.8% of staged disease) at stage I. There was no significant difference in the distribution of stage at diagnosis between men and women.
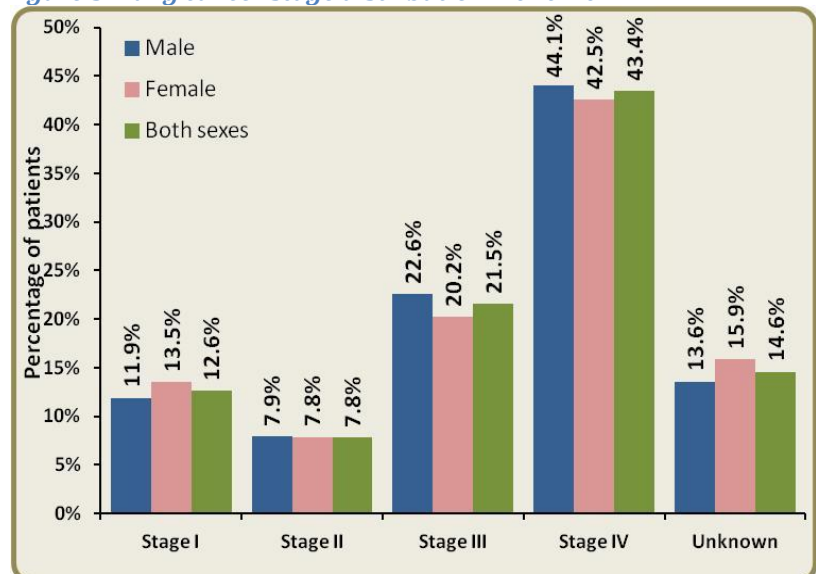
SURVIVAL

The net survival was 31.5% at one year, and 10.5% at five years for lung cancer patients diagnosed in 2005 to 2009.

Table 3: Five-year lung cancer survival by survival time and sex: patients diagnosed 2005-2009

Time since diagnosis	Diagnosed 2005-2009		
	Male	**Female**	**Both sexes**
6 months	46.2%	51.8%	48.5%
1 year	30.1%	33.7%	31.5%
5 years	10.0%	11.4%	10.5%

Survival Trends

Five-year survival for lung cancer has improved from the 1993-1999 diagnosis period to the 2005-2009 diagnosis period; increasing for men from 8.0% to 10.0% and for women from 9.8% to 11.4%.

Table 4: Five-year lung cancer survival by period of diagnosis and sex

Period of diagnosis	Male	Female	Both sexes
1993-1999	8.0%	9.8%	8.6%
2000-2004	8.7%	9.9%	9.2%
2005-2009	10.0%	11.4%	10.5%

Survival and stage

Stage at diagnosis is one of the most important factors in lung cancer survival with five year survival decreasing as stage increases. Five-year survival ranged from 35.7% for early (stage I) disease to 2.2% for late (stage IV) disease highlighting the importance of early diagnosis.

Differences in survival between males and females diagnosed with stage I lung cancer is also apparent with 31.6% of males surviving five years compared to 42.0% of females.

Figure 6: Five year survival from lung cancer by stage of diagnosis: patients diagnosed 2005-2009
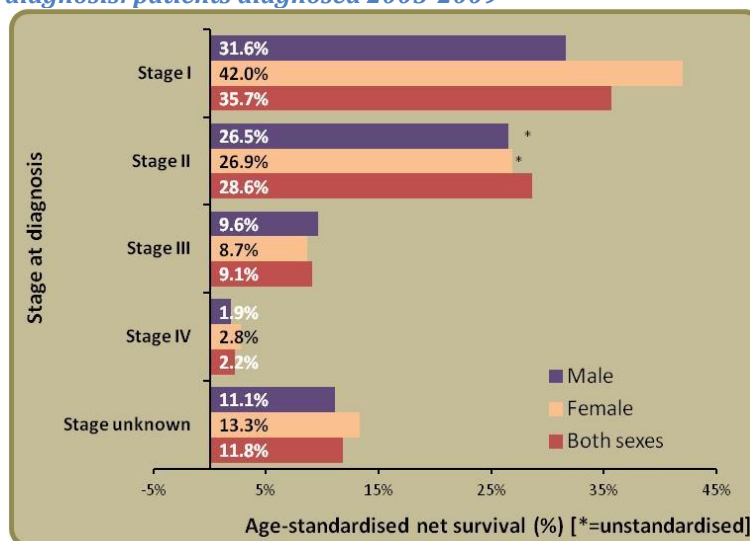
MORTALITY

Mortality statistics are provided by the Northern Ireland General Registrar's Office. In 2010-2014 there were 544 male and 397 female deaths from lung cancer each year.

Mortality trends

Over the last ten years the number of lung cancer deaths has increased from 511 among men and 319 among women in 2005 to 518 among men and 442 among women in 2014.

When adjusted for age and population change, lung cancer mortality rates decreased for males by -1.4% per year during 1993-2014, but increased by 1.0% per year for females.

Figure 7: Trends in lung cancer mortality rates by sex: 1993-2014
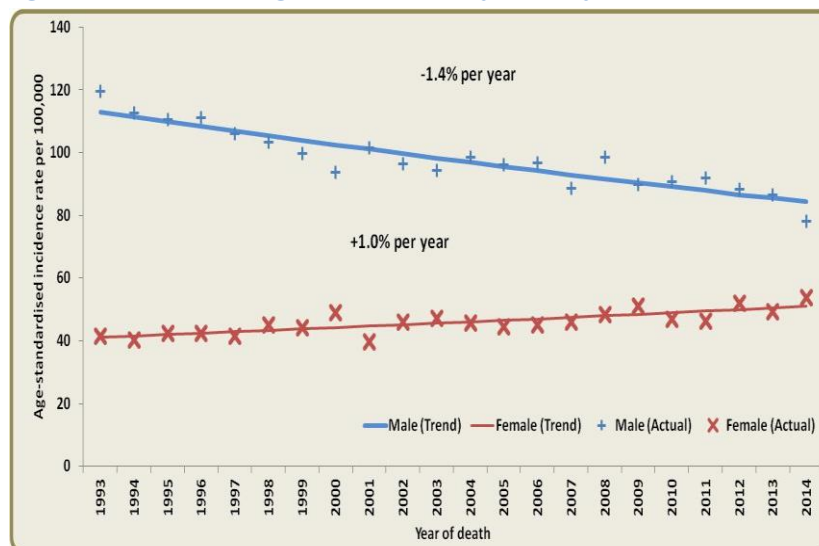
PREVALENCE

At the end of 2014 there were 1,927 people living in NI who had been diagnosed with lung cancer from 1993-2014 (Table 5). Of these, 52.0% were male, 56.7% were aged 70 and over and 33.8% had been diagnosed in the previous year.

Table 5: Number of people living with lung cancer at the end of 2014 who were diagnosed from 1993-2014 by time since diagnosis

Sex	Age	Time since diagnosis				22-year Prevalence
		0-1 year	1-5 years	5-10 years	10-22 years	
Male	**0-69**	152	151	75	45	423
	70+	190	203	89	98	580
	All ages	342	354	164	143	1003
Female	**0-69**	141	173	53	45	412
	70+	169	174	86	83	512
	All ages	310	347	139	128	924
Both sexes	**0-69**	293	324	128	90	835
	70+	359	377	175	181	1092
	All ages	652	701	303	271	1927

FURTHER INFORMATION

Further data is available from the Northern Ireland Cancer Registry web site: **www.qub.ac.uk/nicr**

NI Cancer Registry
Phone: +44 (0)28 9063 2573
e-mail: nicr@qub.ac.uk

ACKNOWLEDGEMENTS

PROSTATE CANCER

NUMBER OF CASES PER YEAR (2010-2014)	NUMBER OF DEATHS PER YEAR (2010-2014)
Male	Male
1,049	251
FIVE-YEAR SURVIVAL (2004-2008)	22-YEAR PREVALENCE (2014)
Male	Male
87.6%	8,785

INCIDENCE

In 2010-2014 there were 1,049 men diagnosed with prostate cancer each year. The risk for men of developing a prostate cancer up to the age of 75 was 1 in 12.

Incidence trends

Table 1: Incidence of prostate cancer and year of diagnosis: 2005-2014

	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
Male	843	885	972	1,024	1,117	964	1,061	1,072	1,030	1,119

Over a ten year period from 2005 to 2014 the number of prostate cancers cases in men has increased from 843 to 1,119. Prostate cancer incidence rates in men have increased during 1998-2008 by an average of +4.5% per year, and then have decreased by -2.3% from 2008-2014. Incidence rates of prostate cancer have increased internationally. This is primarily a result of the widespread use of prostate specific antigen (PSA) testing which is a blood test that is used as a diagnostic approach to detect prostate cancer at an early stage but which also detects very slowly growing cancers that would never cause any problems or symptoms in a man's lifetime.

Figure 1: Trends in prostate cancer incidence rates: 1993-2014
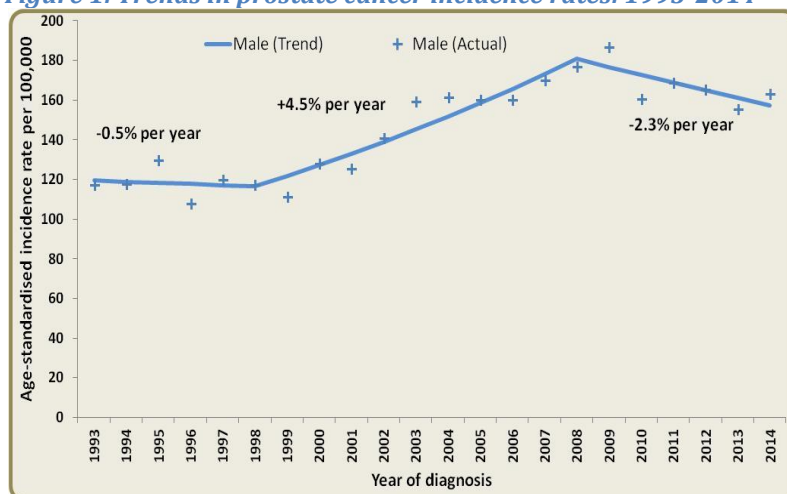
Incidence and age

Prostate cancer risk is strongly related to age with approximately 70% of patients diagnosed over the age of 65 years and incidence rates greatest among those aged over 70.

Table 2: Average number of prostate cancers diagnosed per year by age: 2010-2014

Age	Male
0 to 49	18
50 to 64	290
65 to 74	393
75 and over	348
All ages	1,049

Due to rounding of yearly averages, 'All ages' may not equal the sum of age categories in tables.

Figure 2: Incidence of prostate cancer by age: 2010-2014
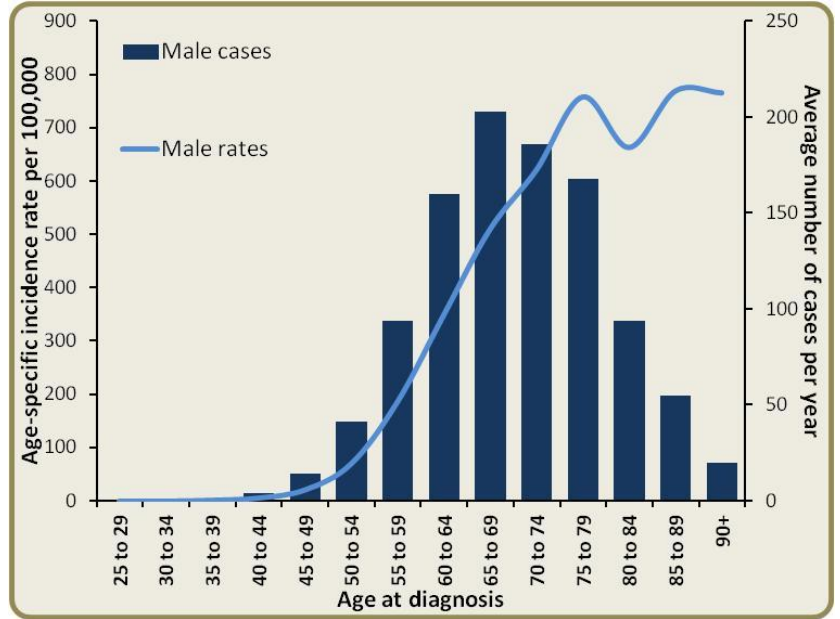
Incidence by Trust area

Prostate cancer incidence rates in 2010-2014 were 9% higher among people living in the Northern Trust area than in Northern Ireland as a whole while those living in Belfast and the South-Eastern Trust areas had 7% lower incidence of prostate cancer than the Northern Ireland Average.

Figure 3: Prostate cancer incidence rates compared to the NI average by sex and HSC Trust of residence: 2010-2014
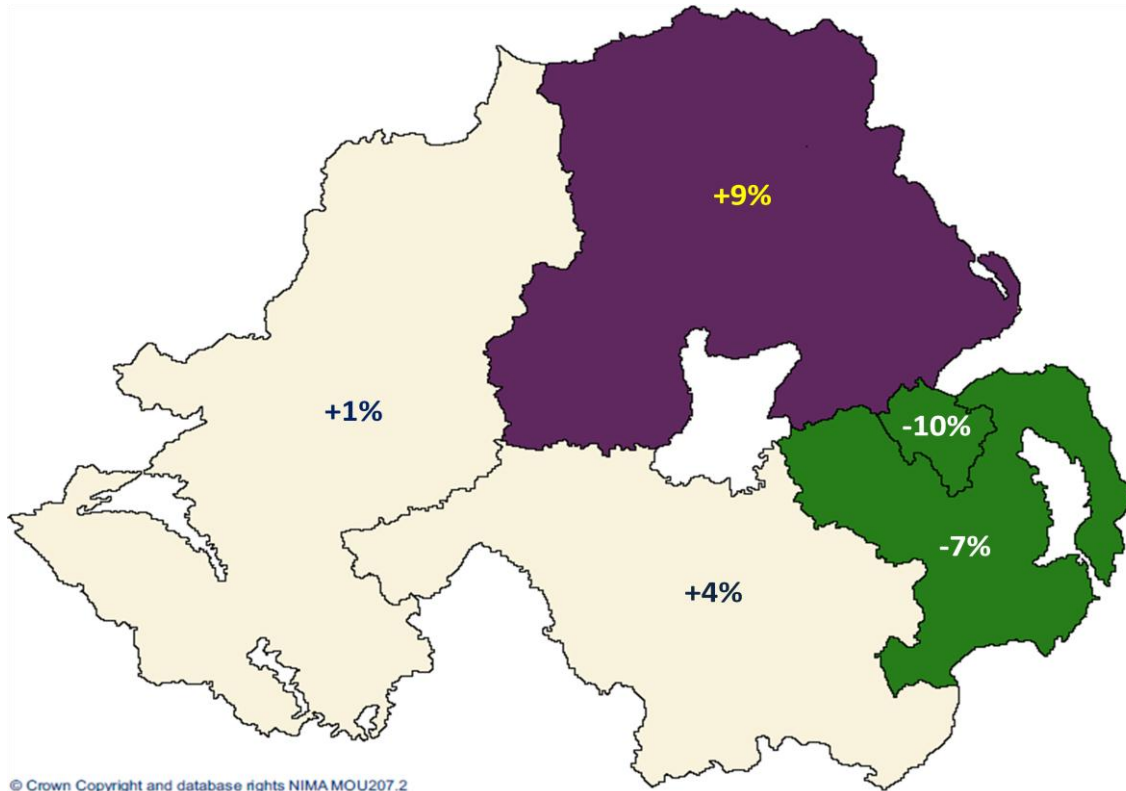
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Significantly higher than average   *Significantly lower than average*

Incidence by deprivation

Prostate cancer incidence rates varied depending upon socio-economic deprivation. Incidence is significantly lower (-8%) in the most-deprived areas in comparison to Northern Ireland as a whole. This pattern most likely reflects higher rates of PSA testing in the most-affluent communities compared to the most-deprived.

Figure 4: Prostate cancer incidence rates compared to the NI average by deprivation quintile: 2010-2014
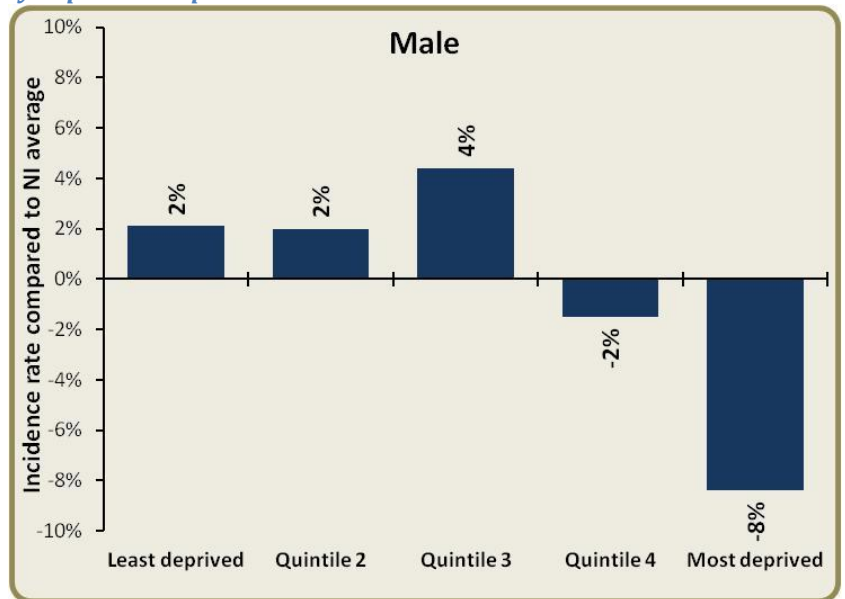
Incidence by stage

Cancer stage is a way of describing the size of a cancer and how far it has grown and spread. This information is important in helping decide what treatments are needed and stage of disease at diagnosis is strongly associated with cancer survival.

From 2010 to 2014 88% of prostate cancer patients in Northern Ireland were assigned a stage at diagnosis.

The majority of prostate cancer patients were diagnosed at early stage (20.9% at stage I and 34.3% at Stage II) and 15.1% diagnosed at late stage (stage IV).

Figure 5: Prostate cancer stage distribution: 2010-2014
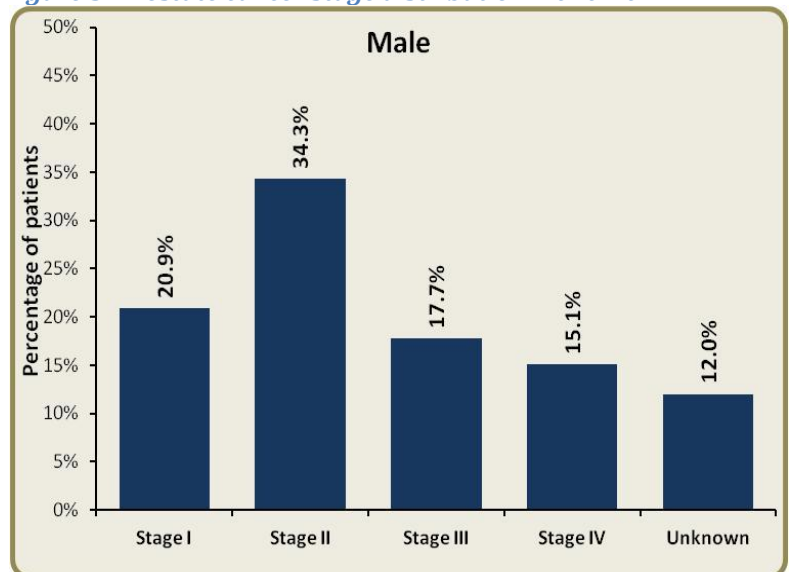
SURVIVAL

The net survival was 97.7% at one year, and 87.6% at five years for prostate cancer patients diagnosed in 2005 to 2009.

Table 3: Five-year prostate cancer survival by survival time: patients diagnosed 2005-2009

Time since diagnosis	Diagnosed 2005-2009
	Male
6 months	97.7%
1 year	96.4%
5 years	87.6%

Survival Trends

Five-year survival for prostate cancer in men has improved from 60.4% in the 1994-1999 diagnosis period to 87.6% in the 2005-2009 diagnosis period. Improvements are largely due to increased detection of slow growing prostate cancer and increasing diagnosis in younger men because of PSA testing. Consequently, epidemiologists consider mortality rates as a better indicator of cancer outcome than survival

Table 4: Five-year prostate cancer survival by period of diagnosis

Period of diagnosis	Male
1994-1999	60.4%
2000-2004	81.3%
2005-2009	87.6%

Survival and stage

Stage at diagnosis is one of the most important factors in prostate cancer survival with one-year survival decreasing as stage increases. Stage at diagnosis data is available for cancer patients diagnosed since 2009. One-year survival was 100% for all patients except those diagnosed with late stage IV disease (82.8%).

Figure 6: One year survival from prostate cancer by stage of diagnosis: patients diagnosed 2009-2013
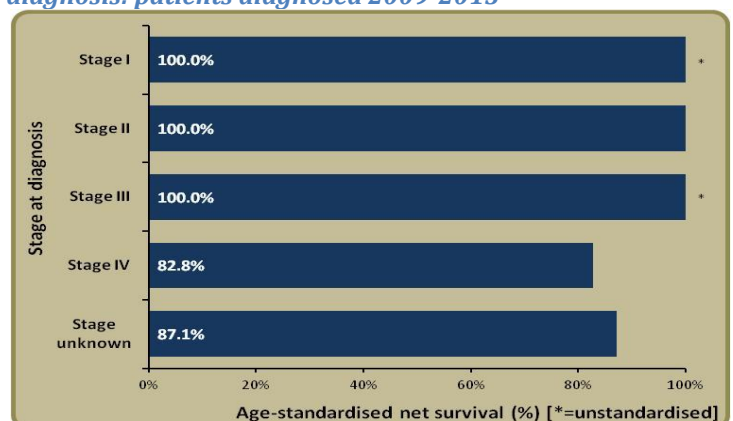
MORTALITY

Mortality statistics are provided by the Northern Ireland General Registrar's Office. In 2010-2014 there were 251 deaths from prostate cancer each year.

Mortality trends

Over the last ten years the number of prostate cancer deaths has not changed significantly from 221 among men in 2005 to 239 among men in 2014.

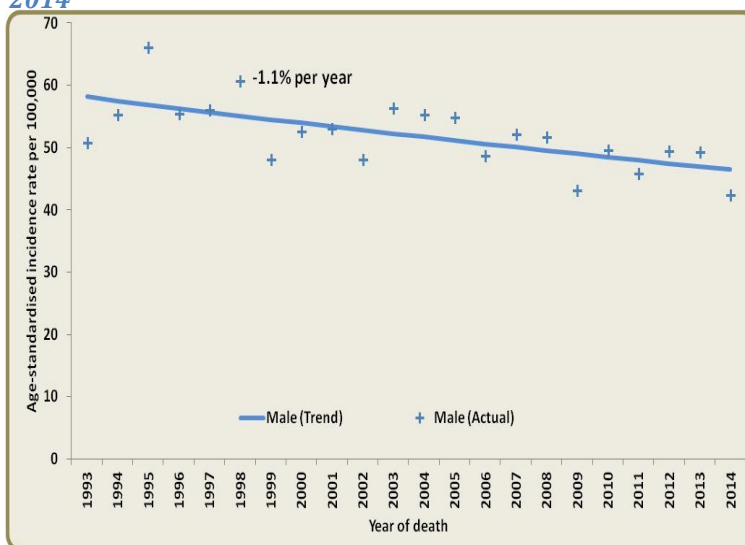When adjusted for age and population change, prostate cancer mortality rates decreased by -1.1% per year during 1993-2014.

Figure 7: Trends in prostate cancer mortality rates: 1993-2014

PREVALENCE

At the end of 2014 there were 8,785 men living in NI who had been diagnosed with prostate cancer from 1993-2014 (Table 5). Of these, 65.3% were aged 70 and over and 12.2% had been diagnosed in the previous year.

Table 5: Number of men living with prostate cancer at the end of 2014 who were diagnosed from 1993-2014 by time since diagnosis

Sex	Age	Time since diagnosis				22-year Prevalence
		0-1 year	1-5 years	5-10 years	10-22 years	
Male	0-69	536	1439	884	191	3,050
	70+	539	1,852	2,088	1,256	5,735
	All ages	1,075	3,291	2,972	1,447	8,786

FURTHER INFORMATION

Further data is available from the Northern Ireland Cancer Registry web site: **www.qub.ac.uk/nicr**

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ACKNOWLEDGEMENTS

COLORECTAL CANCER

N. IRELAND Cancer Registry

NUMBER OF CASES PER YEAR (2010-2014)			NUMBER OF DEATHS PER YEAR (2010-2014)		
Male	Female	Both sexes	Male	Female	Both sexes
682	537	1219	226	194	419
FIVE-YEAR SURVIVAL (2005-2009)			**22-YEAR PREVALENCE (2014)**		
Male	Female	Both sexes	Male	Female	Both sexes
55.3%	57.5%	56.3%	4279	3655	7934

INCIDENCE

In 2010-2014 there were 682 male and 537 female patients diagnosed with colorectal cancer each year. The lifetime risk of developing a colorectal cancer was 1 in 19 for men and 1 in 31 for women.

Incidence trends

Table 1: Incidence of colorectal cancer by sex and year of diagnosis: 2005-2014

	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
Male	571	570	641	589	605	654	682	742	676	655
Female	415	470	512	503	464	514	553	536	574	510
Both sexes	986	1040	1153	1092	1069	1168	1235	1278	1250	1165

Over a ten year period the number of colorectal cancer cases increased from 571 among men and 415 among women in 2005 to 655 among men and 510 among women in 2014.

After accounting for the increasing number of older people in the NI population, colorectal cancer incidence rates among males and females during 1993-2014 have remained constant.

Figure 1: Trends in colorectal cancer incidence rates by sex: 1993-2014
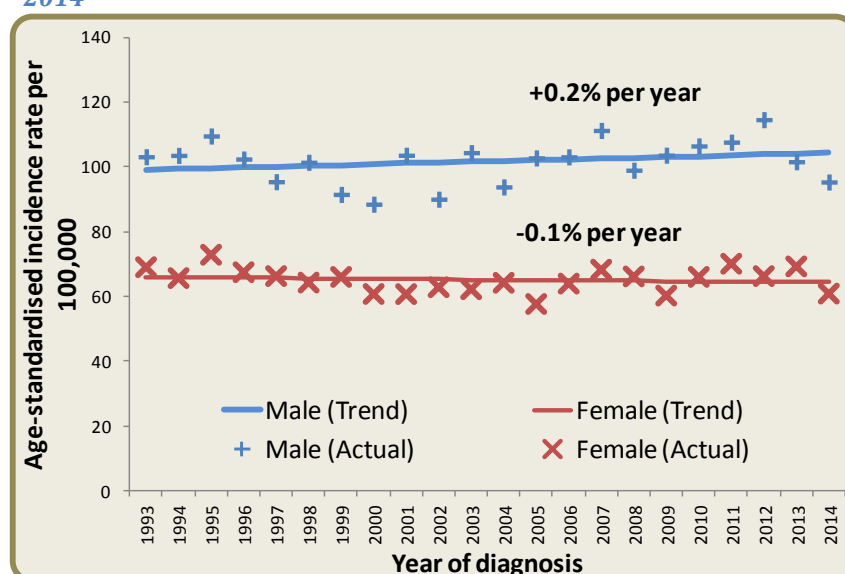
Incidence and age

Colorectal cancer risk is strongly related to age with almost 70% of patients diagnosed over the age of 65 years. Incidence rates are highest among men and women aged 85-89.

Table 2: Average annual number of colorectal cancers diagnosed by sex and age: 2010-2014

Age	Male	Female	Total
0 to 49	42	38	83
50 to 64	173	116	289
65 to 74	230	144	374
75 and over	235	237	474
All ages	682	537	1219

Due to rounding of yearly averages, 'All ages' may not equal the sum of age categories in tables.

Figure 2: Incidence of colorectal cancer by age and sex: 2010-2014
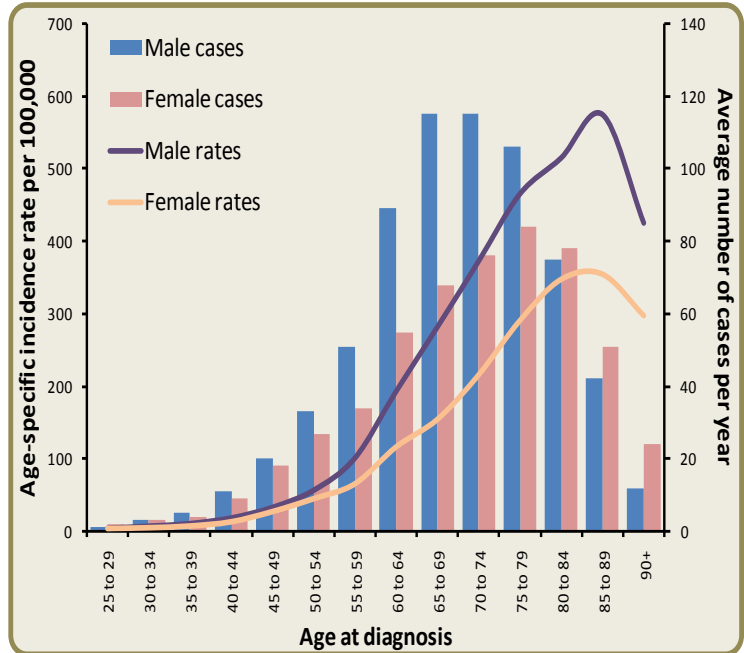
Incidence by Trust area

Colorectal cancer incidence rates in 2010-2014 were and higher than the NI average among people living within the Southern and Western HSCT areas, respectively. Incidence rates were lower than the NI average in the South-Eastern Trust area, particularly for men.

Figure 3: Colorectal cancer incidence rates compared to the NI average by sex and HSC Trust of residence: 2010-2014
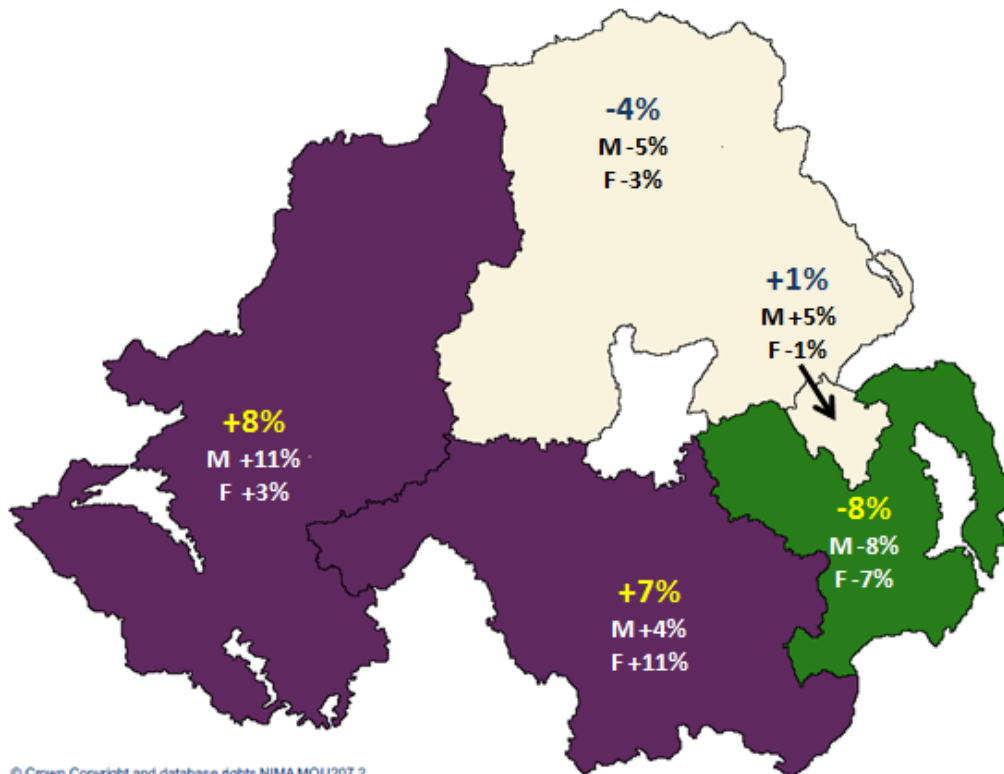
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Significantly higher than average   *Significantly lower than average*

Incidence by deprivation

Colorectal cancer incidence rates are associated with socio-economic deprivation with incidence rates increasing with levels of deprivation. This pattern is particularly marked for male colorectal cancer with incidence 12% higher in the most deprived communities than the NI average and 8% lower in the least deprived areas compared to NI as a whole.
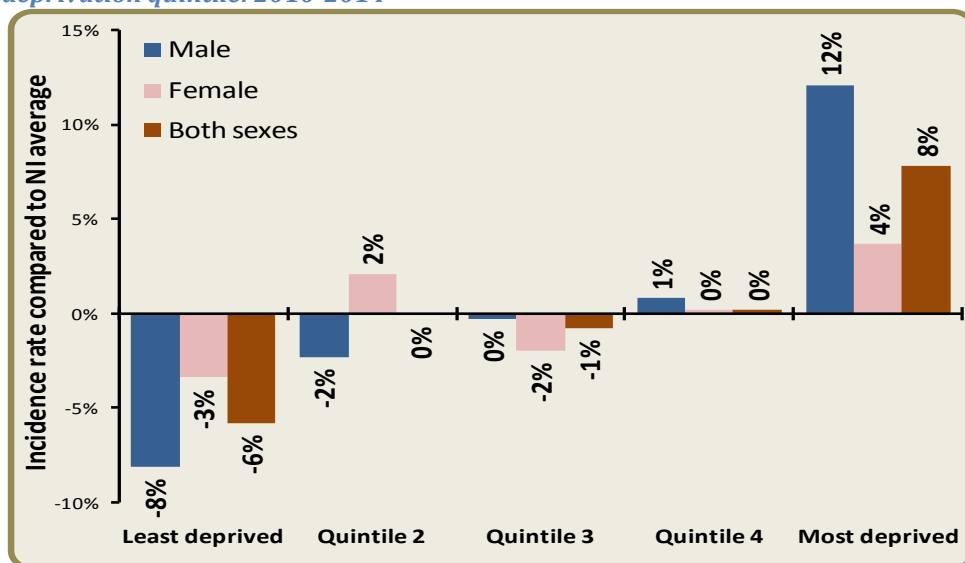
Figure 4: Colorectal cancer incidence rates compared to the NI average by sex and deprivation quintile: 2010-2014

Incidence by stage

Cancer stage is a way of describing the size of a cancer and how far it has grown and spread. This information is important in helping decide what treatments are needed and stage of disease at diagnosis is strongly associated with cancer survival.

In 2010-2014 over four fifths (86.5%) of colorectal cancer patients in Northern Ireland were assigned a stage at diagnosis.

Figure 5: Colorectal cancer stage distribution: 2010-2014
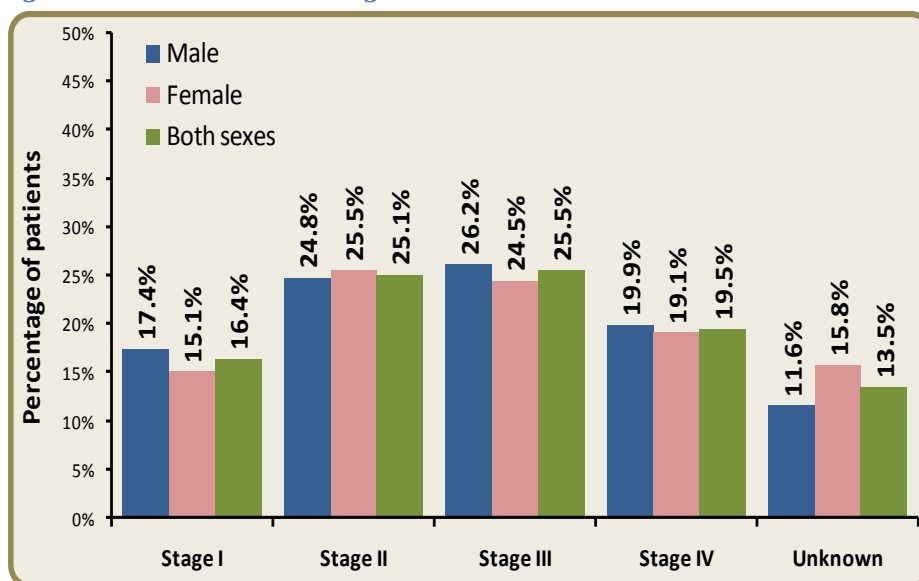
A significant proportion of colorectal cancer patients were diagnosed at a later stages with 25.5% at stage III and 19.5% at stage IV, compared to 16.4% at stage I. There were no significant differences in stage distribution between males and females.

SURVIVAL

The net survival was 77.3% at one year, and 56.3% at five years for colorectal cancer patients diagnosed in 2005 to 2009.

Table 3: Five-year colorectal cancer survival by survival time and sex: patients diagnosed 2005-2009

Time since diagnosis	Diagnosed 2005-2009		
	Male	Female	Both sexes
6 months	84.8%	82.7%	83.9%
1 year	78.6%	75.7%	77.3%
5 years	55.3%	57.5%	56.3%

Survival Trends

Five-year survival for colorectal cancer has improved from the 1993-1999 diagnosis period to the 2005-2009 diagnosis period; increasing from 49.6% to 56.3%.

Table 4: Five-year colorectal cancer survival by period of diagnosis and sex

Period of diagnosis	Male	Female	Both sexes
1993-1999	49.2%	50.3%	49.6%
2000-2004	50.1%	55.4%	52.6%
2005-2009	55.3%	57.5%	56.3%

Survival and stage

Stage at diagnosis is one of the most important factors in colorectal cancer survival with five year survival decreasing as stage increases. Five-year survival ranged from 91.2% for early (stage I) disease to 6.4% for late (stage IV) disease highlighting the importance of early diagnosis.

Figure 6: Five year survival from colorectal cancer by stage of diagnosis: patients diagnosed 2005-2009
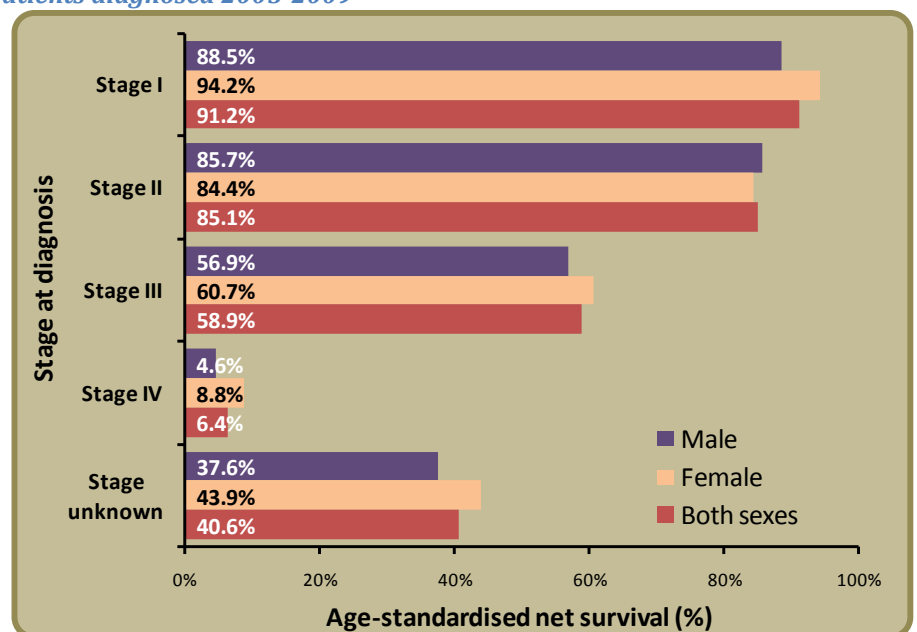
MORTALITY

Mortality statistics are provided by the Northern Ireland General Registrar's Office. In 2010-2014 there were 226 male and 194 female deaths from colorectal cancer each year.

Mortality trends

Over the last ten years the number of colorectal cancer deaths has decreased among men from 223 in 2005 to 201 in 2014 and have not changed among women from 207 in 2005 to 212 in 2014.

When adjusted for age and population change, colorectal cancer mortality rates decreased for males by -1.8% per year during 1993-2013, and decreased by -1.9% per year for females.
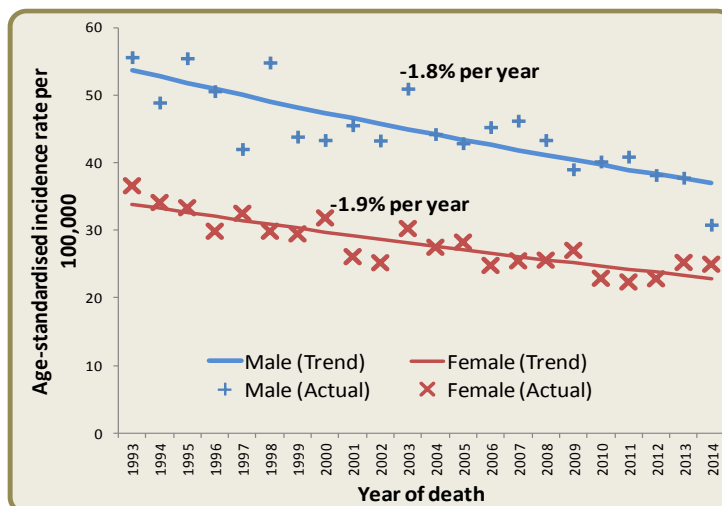
Figure 7: Trends in colorectal cancer mortality rates by sex: 1993-2014

PREVALENCE

At the end of 2014 there were 7,934 people living in NI who had been diagnosed with colorectal cancer from 1993-2014 (Table 5). Of these, 53.9% were male, 63.4% were aged 70 and over and 11.7% had been diagnosed in the previous year.

Table 5: Number of people living with colorectal cancer at the end of 2014 who were diagnosed from 1993-2014 by time since diagnosis

Sex	Age	Time since diagnosis				22-year Prevalence
		0-1 year	1-5 years	5-10 years	10-21 years	
Male	0-69	259	732	389	243	1623
	70+	283	867	691	815	2656
	All ages	542	1599	1080	1058	4279
Female	0-69	179	535	314	254	1282
	70+	211	706	579	877	2373
	All ages	390	1241	893	1131	3655
Both sexes	0-69	438	1267	703	497	2905
	70+	494	1573	1270	1692	5029
	All ages	932	2840	1973	2189	7934

FURTHER INFORMATION

Further data is available from the Northern Ireland Cancer Registry web site: **www.qub.ac.uk/nicr**

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Average number of cases and deaths (in 2010-2014) and prevalence by assembly constituency of all cancers excluding non-melanoma skin cancer (C00-C43, C45-C97)

Assembly Constituency	Average number of cases per year in 2010-2014			Average number of deaths per year in 2010-2014			22-year prevalence*		
	Male	Female	Both sexes	Male	Female	Both sexes	Male	Female	Both sexes
Belfast East	239	270	509	133	127	260	1210	1792	3002
Belfast North	292	299	591	165	151	315	1354	1838	3191
Belfast South	228	261	489	120	115	235	1293	1837	3129
Belfast West	238	241	478	128	123	251	1073	1539	2612
East Antrim	238	242	480	107	110	217	1373	1658	3030
East Londonderry	237	235	472	116	106	222	1387	1768	3155
Fermanagh & South Tyrone	250	231	481	108	96	204	1447	1672	3118
Foyle	233	229	462	114	106	220	1234	1585	2819
Lagan Valley	246	239	485	118	98	216	1474	1913	3387
Mid Ulster	213	189	402	92	82	174	1221	1475	2697
Newry & Armagh	275	261	536	125	113	238	1502	1853	3355
North Antrim	275	260	534	134	113	247	1531	1886	3417
North Down	256	248	504	127	120	247	1421	1885	3306
South Antrim	235	239	474	109	96	204	1272	1685	2957
South Down	256	247	503	124	108	232	1483	1851	3334
Strangford	220	225	445	109	100	209	1255	1666	2921
Upper Bann	274	278	552	129	119	248	1577	2002	3580
West Tyrone	219	197	416	95	83	178	1280	1429	2710
Unknown	2	3	5	1	0	1			
Northern Ireland	4426	4393	8819	2153	1965	4118	24386	31335	55721

*Note: Prevalence is the number of cancer-diagnosed patients that are alive in the population on 31st December 2014. The 22-year prevalence is the number of patients that were diagnosed in the past 22 years and alive at 31/12/2014. Non-melanoma skin cancer is excluded from these statistics as registrations for non-melanoma skin cancer are likely to be less complete and less accurate than for other cancer sites. Such cancers are relatively common and usually non-fatal.

Standardised incidence and mortality ratio by assembly constituency of all cancers excluding non-melanoma skin cancer (C00-C43, C45-C97) in 2010-2014

Assembly Constituency	Standardised incidence ratio* (95% CI) for 2010-2014			Standardised mortality ratio* (95% CI) for 2010-2014		
	Male	Female	Both sexes	Male	Female	Both sexes
Belfast East	99.6 (93.9,105.2)	105.0 (99.4,110.6)	101.7 (97.8,105.7)	109.4 (101.1,117.7)	103.4 (95.4,111.5)	105.6 (99.8,111.3)
Belfast North	116.9 (110.9,122.9)	112.3 (106.6,118.0)	113.8 (109.7,117.9)	133.1 (124.0,142.2)	121.6 (112.9,130.3)	126.2 (120.0,132.4)
Belfast South	95.3 (89.7,100.8)	102.3 (96.8,107.9)	98.3 (94.4,102.2)	101.4 (93.3,109.5)	97.2 (89.2,105.2)	98.5 (92.9,104.2)
Belfast West	123.9 (116.9,131.0)	113.5 (107.1,120.0)	118.1 (113.3,122.8)	138.7 (128.0,149.5)	132.2 (121.8,142.7)	134.4 (126.9,141.8)
East Antrim	99.5 (93.8,105.1)	103.7 (97.9,109.6)	101.7 (97.6,105.8)	91.5 (83.8,99.3)	104.6 (95.9,113.4)	97.8 (92.0,103.6)
East Londonderry	92.5 (87.3,97.8)	96.3 (90.8,101.8)	94.6 (90.8,98.4)	93.1 (85.5,100.7)	97.8 (89.5,106.1)	95.6 (90.0,101.3)
Fermanagh & South Tyrone	98.3 (92.8,103.7)	96.2 (90.6,101.7)	97.5 (93.6,101.4)	87.1 (79.7,94.4)	89.7 (81.7,97.7)	88.7 (83.3,94.2)
Foyle	107.2 (101.0,113.3)	106.2 (100.1,112.4)	107.1 (102.7,111.4)	112.0 (102.8,121.2)	118.3 (108.2,128.3)	115.3 (108.5,122.1)
Lagan Valley	92.9 (87.7,98.1)	91.2 (86.0,96.4)	92.0 (88.4,95.7)	91.3 (83.9,98.6)	83.1 (75.8,90.5)	87.4 (82.2,92.6)
Mid Ulster	96.7 (90.9,102.5)	89.8 (84.0,95.5)	93.6 (89.5,97.6)	86.7 (78.8,94.7)	88.9 (80.3,97.5)	88.2 (82.3,94.1)
Newry & Armagh	105.7 (100.1,111.3)	103.4 (97.8,109.1)	104.7 (100.8,108.7)	100.1 (92.3,108.0)	102.9 (94.4,111.3)	101.7 (95.9,107.5)
North Antrim	95.0 (90.0,100.0)	92.8 (87.7,97.8)	93.9 (90.4,97.5)	94.3 (87.1,101.4)	89.1 (81.8,96.4)	92.0 (86.8,97.1)
North Down	96.8 (91.5,102.1)	93.8 (88.6,99.1)	95.3 (91.6,99.0)	96.7 (89.2,104.2)	96.9 (89.2,104.7)	96.6 (91.2,102.0)
South Antrim	100.0 (94.3,105.7)	104.0 (98.1,109.9)	102.3 (98.2,106.4)	96.8 (88.7,105.0)	97.1 (88.4,105.8)	97.3 (91.3,103.3)
South Down	98.3 (92.9,103.7)	99.4 (93.8,104.9)	99.1 (95.2,102.9)	98.6 (90.8,106.4)	98.1 (89.8,106.4)	98.9 (93.2,104.6)
Strangford	88.6 (83.4,93.8)	94.1 (88.6,99.6)	91.6 (87.8,95.4)	90.5 (82.9,98.1)	92.9 (84.8,101.1)	91.9 (86.3,97.5)
Upper Bann	100.8 (95.5,106.2)	101.4 (96.1,106.7)	100.9 (97.1,104.7)	98.7 (91.1,106.3)	99.2 (91.3,107.2)	98.8 (93.3,104.3)
West Tyrone	99.3 (93.4,105.1)	95.6 (89.6,101.5)	97.9 (93.6,102.1)	89.1 (81.1,97.1)	91.8 (83.0,100.6)	90.9 (84.9,96.9)
Unknown						
Northern Ireland						

*Note: The standardised incidence (mortality) ratio is the ratio of the number of cases (deaths) observed in a given population to the number of cases (deaths) expected if the age-groups specific rates of a reference population were operative. This statistic is often used to compare if smaller geographic units incidence rates differ from the national incidence rates, (Northern Ireland in these statistics), which is taken as the reference. A ratio of 100 indicates no difference. Cells that are highlighted in purple indicate a significantly higher incidence/ mortality compared to the NI average and cells that are green indicate a significantly lower incidence/ mortality compared to the NI average.