

# Oral cancer

Patients diagnosed 1993-2019  
(ICD10: C00-C14)

## Further information

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Further data is available at: [www.qub.ac.uk/research-centres/nicr](http://www.qub.ac.uk/research-centres/nicr)

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## Acknowledgements

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The Northern Ireland Cancer Registry (NICR) is funded by the Public Health Agency and is based in Queen's University, Belfast. NICR uses data provided by patients and collected by the health service as part of their care and support.

The incidence, prevalence and survival statistics in this publication are designated as official statistics signifying that they comply with the Code of Practice for Official Statistics.



# Incidence

During 2015-2019:

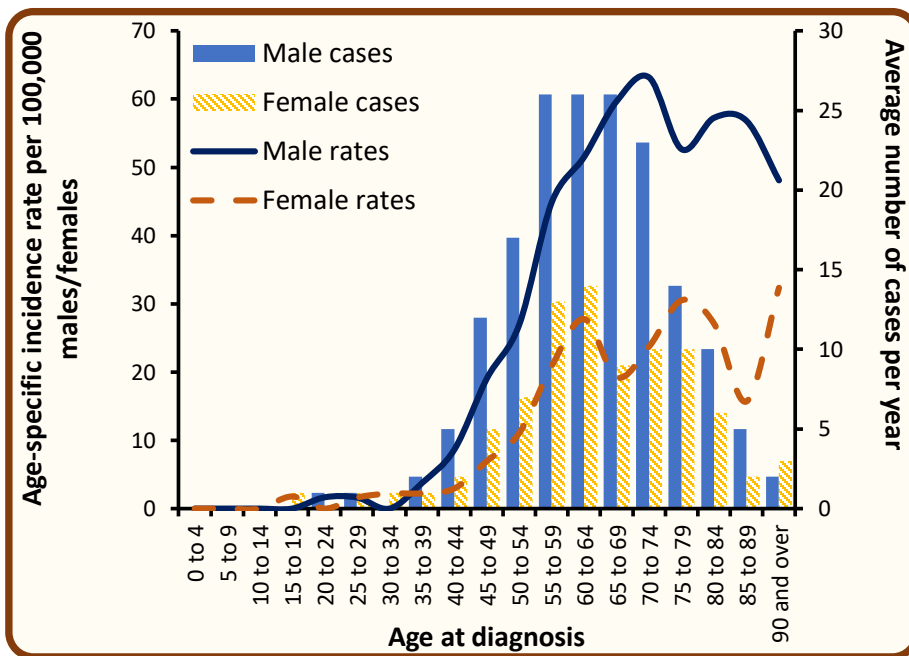
- There were 170 male and 85 female cases of oral cancer diagnosed each year.
- Oral cancer made up 3.4% of all male, and 1.7% of all female cancers (ex NMSC).
- The risk of developing oral cancer before the age of 75 was 1 in 71.6 for men and 1 in 166.0 for women, while before the age of 85 the risk was 1 in 51.6 for men and 1 in 112.5 for women.

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

During 2015-2019:

- The median age at diagnosis was 63 for men and 64 for women.
- Cancer risk increased with age, with 18.2% of men and 24.7% of women aged 75 years or more at diagnosis.
- 23.0% of cases were diagnosed among those aged under 55.

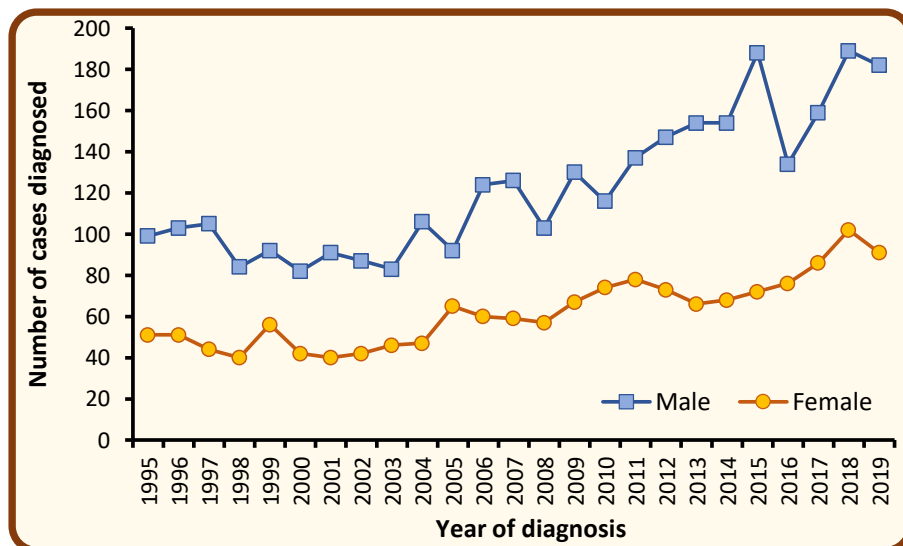
Age at diagnosis	Average cases per year		
	Male	Female	Both sexes
0 - 54	38	18	59
54 - 64	52	27	79
65 - 74	49	19	68
75 +	31	21	51
<b>All ages</b>	<b>170</b>	<b>85</b>	<b>256</b>



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

- Among males the number of cases of oral cancer increased by 19.7% from an annual average of 142 cases in 2010-2014 to 170 cases in 2015-2019.
- Among females the number of cases of oral cancer increased by 18.1% from an annual average of 72 cases in 2010-2014 to 85 cases in 2015-2019.

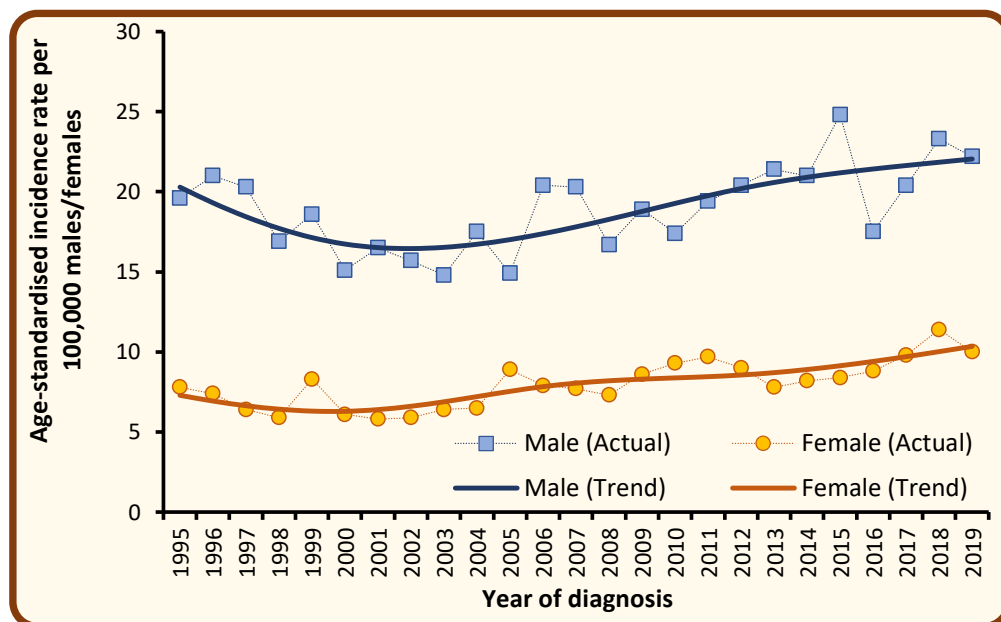
Year of diagnosis	Male	Female	Both sexes
2010	116	74	190
2011	137	78	215
2012	147	73	220
2013	154	66	220
2014	154	68	222
2015	188	72	260
2016	134	76	210
2017	159	86	245
2018	189	102	291
2019	182	91	273



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

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

- Among males age-standardised incidence rates of oral cancer increased by 8.0% from 20.0 per 100,000 person years in 2010-2014 to 21.6 cases per 100,000 persons years in 2015-2019. This difference was not statistically significant.
- Among females age-standardised incidence rates of oral cancer increased by 10.2% from 8.8 per 100,000 person years in 2010-2014 to 9.7 cases per 100,000 persons years in 2015-2019. This difference was not statistically significant.



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

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

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

## Incidence by deprivation quintile - Oral cancer, Cases in 2015-2019

The annual number of cases during 2015-2019 varied in each deprivation quintile due to variations in population size and age.

After accounting for these factors, incidence rates:

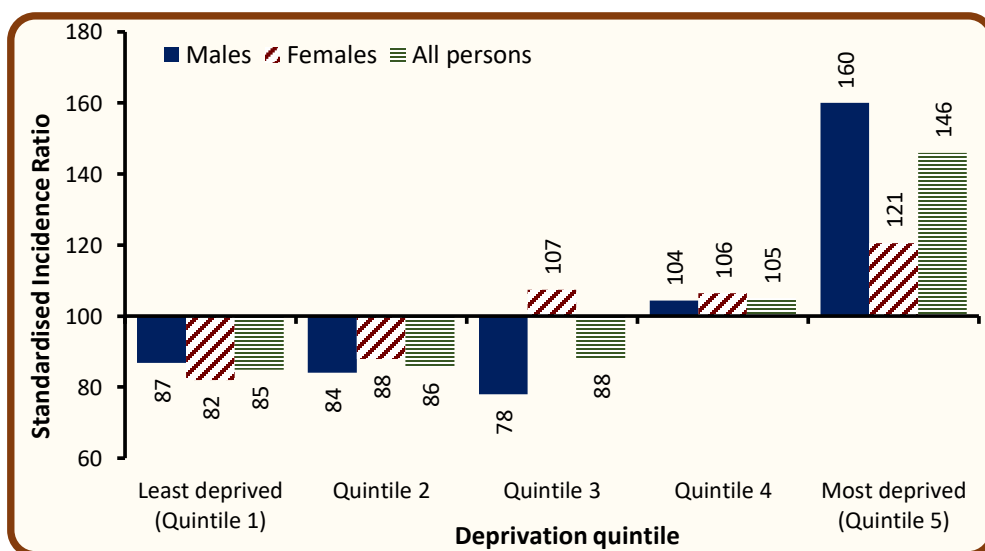
- in the most socio-economically deprived areas were 45.9% higher than the NI average.
- in the least socio-economically deprived areas were 15.2% lower than the NI average.

Deprivation quintile	Average cases per year		
	Male	Female	Both sexes
Least deprived (Quintile 1)	31	15	45
Quintile 2	31	16	47
Quintile 3	28	19	47
Quintile 4	36	18	54
Most deprived (Quintile 5)	45	18	63
<b>Northern Ireland</b>	<b>170</b>	<b>85</b>	<b>256</b>

Standardised incidence ratios compare incidence rates in each deprivation quintile with the Northern Ireland incidence rate.

A value above 100 means that incidence rates in that deprivation quintile are greater than the Northern Ireland average.

This measure takes account of population size and age structure. Differences are thus not a result of these factors.



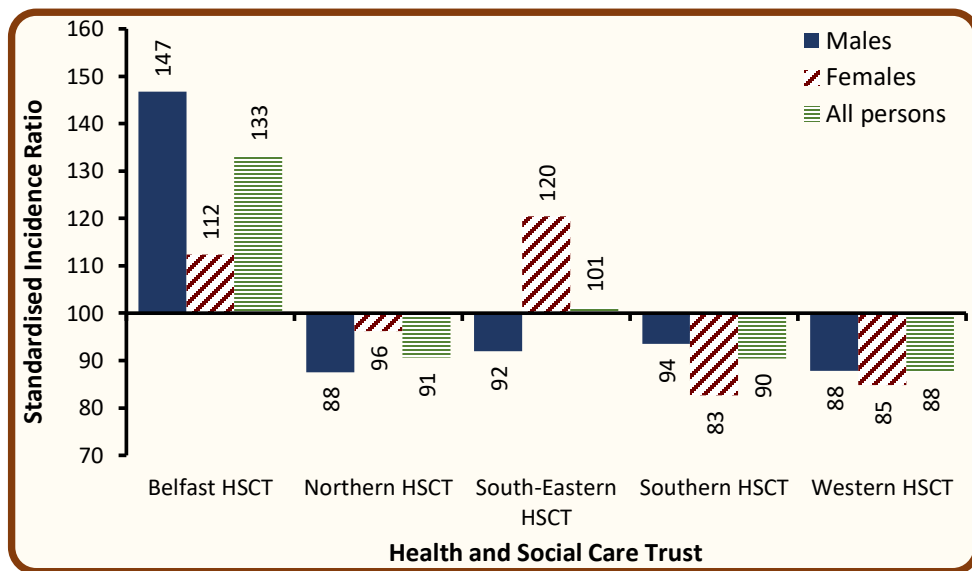
## Incidence by Health and Social Care Trust (HSCT) - Oral cancer, Cases in 2015-2019

The annual number of cases during 2015-2019 varied in each HSCT due to variations in population size and age.

After accounting for these factors, incidence rates:

- in Belfast HSCT were significantly higher than the NI average.
- in Northern HSCT did not vary significantly from the NI average.
- in South-Eastern HSCT did not vary significantly from the NI average.
- in Southern HSCT did not vary significantly from the NI average.
- in Western HSCT did not vary significantly from the NI average.

Health and Social Care Trust	Average cases per year		
	Male	Female	Both sexes
Belfast HSCT	44	18	62
Northern HSCT	40	22	61
South-Eastern HSCT	32	21	54
Southern HSCT	31	13	44
Western HSCT	24	11	35
<b>Northern Ireland</b>	<b>170</b>	<b>85</b>	<b>256</b>



Standardised incidence ratios compare incidence rates in each HSC Trust with the Northern Ireland incidence rate. A value above 100 means that incidence rates in that HSC Trust are greater than the NI average.

This measure takes account of population size and age structure. Differences are thus not a result of these factors.

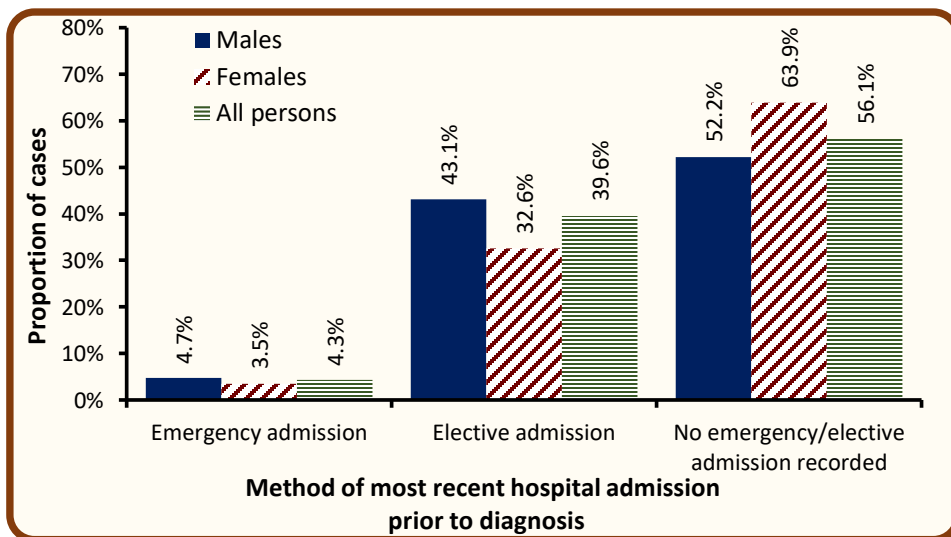
Data for Local Government Districts and Parliamentary Constituencies are available at [www.qub.ac.uk/research-centres/nicr](http://www.qub.ac.uk/research-centres/nicr)

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

During 2015-2019:

- 4.3% of cases had an emergency admission to hospital recorded up to 30 days prior to their cancer diagnosis.
- 4.7% of male cases had an emergency admission up to 30 days prior to diagnosis, compared to 3.5% of female cases.
- In 56.1% of diagnosed cases there was no record of a hospital inpatient admission up to 30 days prior to diagnosis.

Method of admission	Average cases per year		
	Male	Female	Both sexes
Emergency admission	8	3	11
Elective admission	73	28	101
No emergency/elective admission recorded	89	55	144
<b>Total</b>	<b>170</b>	<b>85</b>	<b>256</b>



Admission method refers to the most recent hospital inpatient admission that a patient had prior to cancer diagnosis, regardless of reason for the admission.

Admissions are considered up to a maximum of 30 days prior to diagnosis. Admissions up to two days post diagnosis are also considered to allow for a reasonable margin or error in data recording.

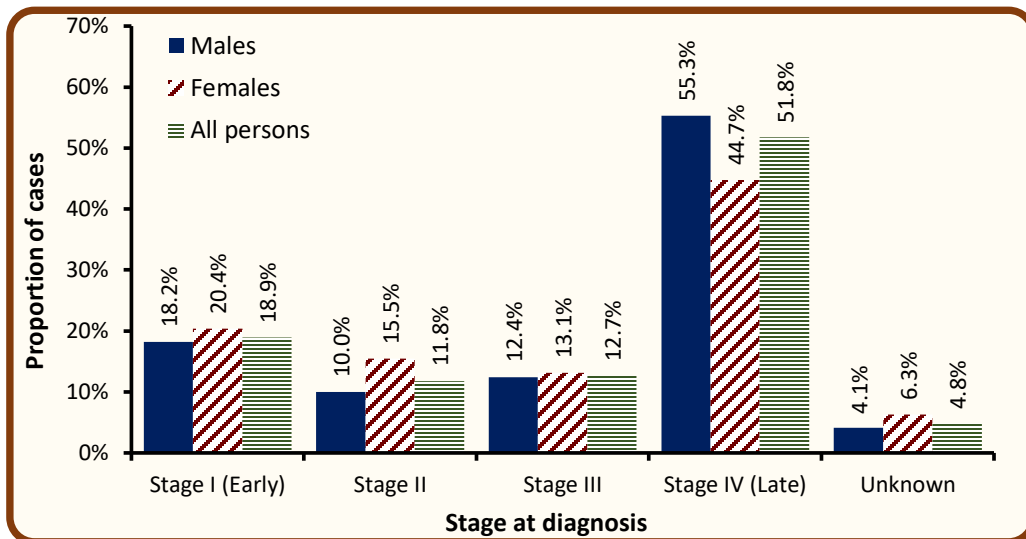
The majority of patients with no inpatient admission recorded prior to diagnosis are likely to have been diagnosed via an outpatient route.

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

During 2015-2019:

- 95.2% of cases diagnosed had a stage assigned.
- 18.9% of cases were diagnosed at stage I. (19.9% of staged cases)
- 51.8% of cases were diagnosed at stage IV. (54.4% of staged cases)
- Among cases which were staged, 57.6% of male cases were diagnosed at stage IV, compared to 47.7% of female cases.

Stage at diagnosis	Average cases per year		
	Male	Female	Both sexes
Stage I (Early)	31	17	48
Stage II	17	13	30
Stage III	21	11	32
Stage IV (Late)	94	38	132
Unknown	7	5	12
<b>All stages</b>	<b>170</b>	<b>85</b>	<b>256</b>



Cancer stage describes the size of a cancer and how far it has grown and spread.

This information is used to help decide what treatments are needed.

The classification used here to stage cancer is the TNM classification (Version 7 prior to 2019, Version 8 from 2019 onwards).

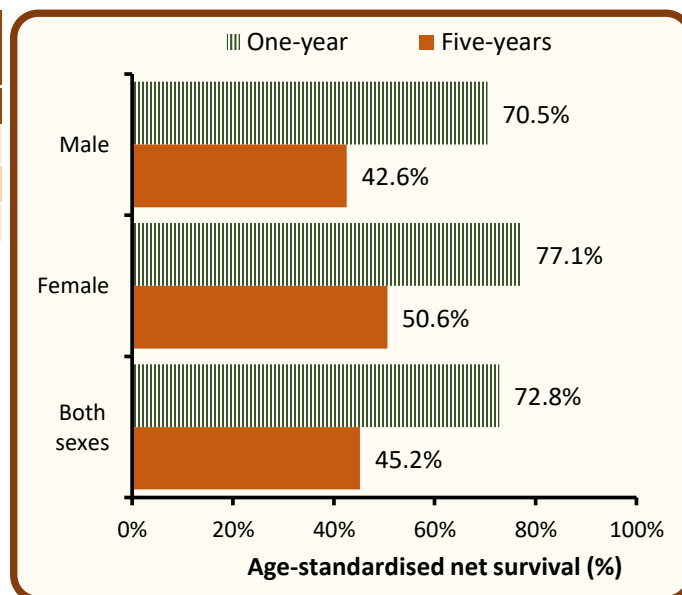
## Survival

- 73.0% of patients were alive one year and 44.1% were alive five years from a oral cancer diagnosis in 2010-2014. (observed survival)
- Age-standardised net survival (ASNS), which removes the effect of deaths from causes unrelated to cancer, was 72.8% one year and 45.2% five years from a oral cancer diagnosis in 2010-2014.
- Five-year survival (ASNS) for oral cancer patients diagnosed in 2010-2014 was 42.6% among men and 50.6% among women.

Gender	Observed survival		Age-standardised net survival	
	One-year	Five-years	One-year	Five-years
Male	71.4%	41.4%	70.5%	42.6%
Female	76.3%	49.2%	77.1%	50.6%
<b>Both sexes</b>	<b>73.0%</b>	<b>44.1%</b>	<b>72.8%</b>	<b>45.2%</b>

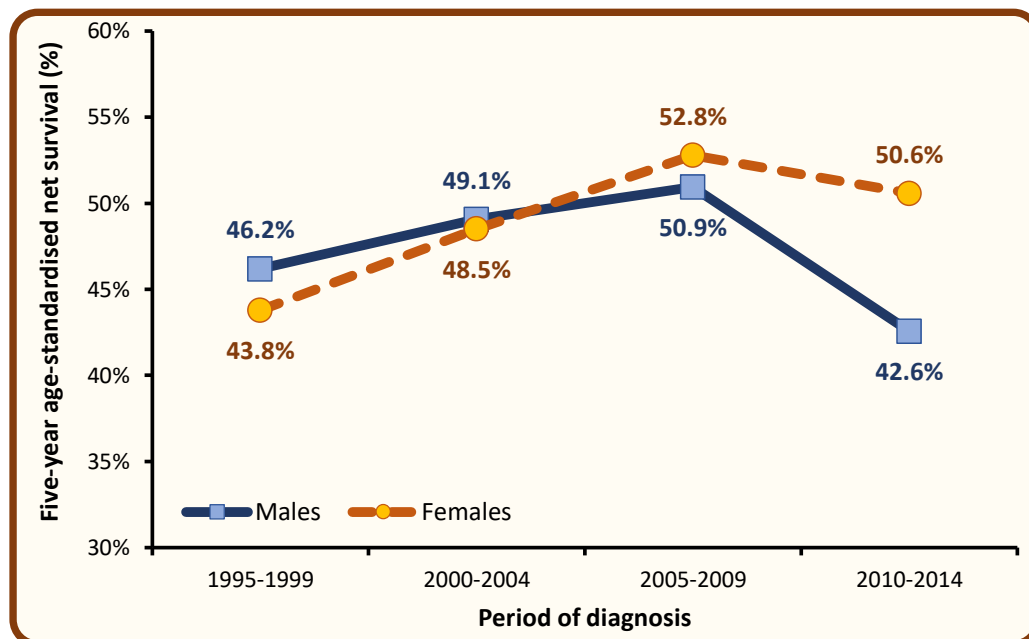
Observed survival is the proportion of patients still alive one/five years after diagnosis. However, in this measure patients may have died from causes unrelated to their cancer.

Age-standardised net survival is the proportion of patients who would survive if the patient could not die from causes unrelated to their cancer. This measure is more typically used in studies of cancer survival.



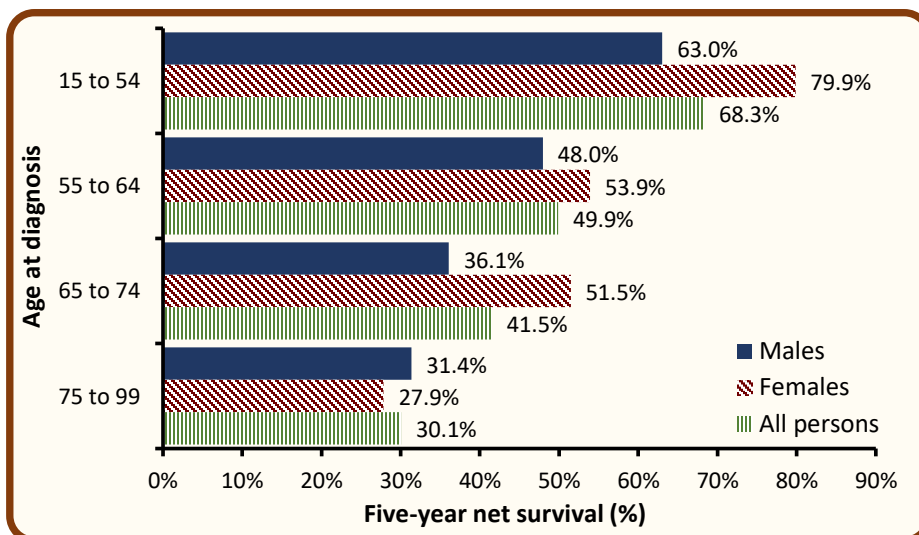
## Trends in survival - Oral cancer, Patients diagnosed in 1995-2014

- Among men five-year survival (ASNS) from oral cancer decreased from 50.9% in 2005-2009 to 42.6% in 2010-2014. This difference was not statistically significant.
- Among women five-year survival (ASNS) from oral cancer decreased from 52.8% in 2005-2009 to 50.6% in 2010-2014. This difference was not statistically significant.



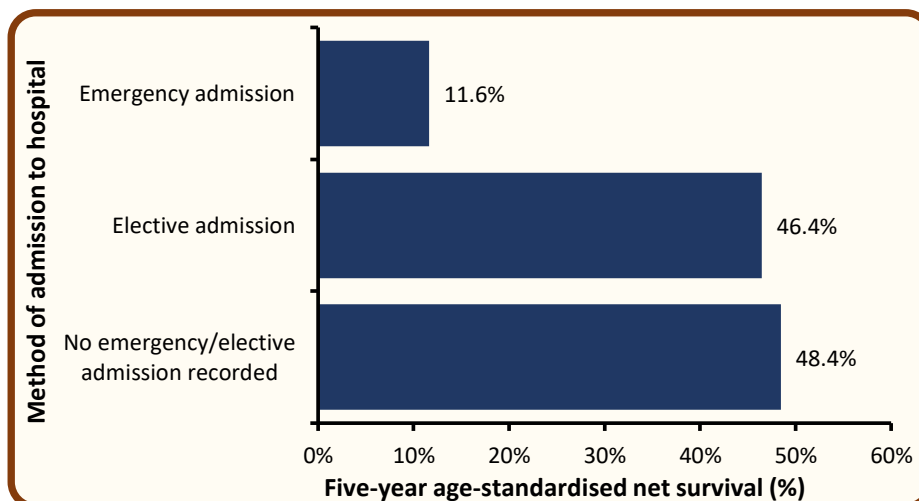
## Survival by age at diagnosis - Oral cancer, Patients diagnosed in 2010-2014

- Survival from oral cancer among patients diagnosed in 2010-2014 was strongly related to age with five-year survival decreasing as age increases.
- Five-year net survival ranged from 68.3% among patients aged 15 to 54 at diagnosis to 30.1% among those aged 75 and over.
- Five-year net survival among patients aged 75 and over was 31.4% for men and 27.9% for women.



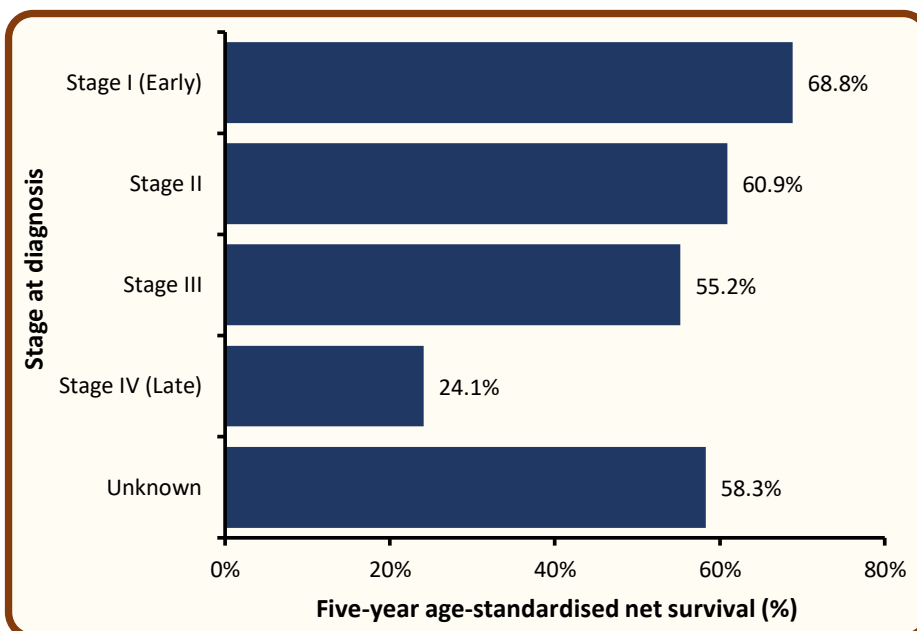
## Survival by method of most recent admission to hospital - Oral cancer, Patients diagnosed in 2010-2014

- Five-year survival (ASNS) among oral cancer patients who had an emergency admission to hospital up to 30 days prior to their cancer diagnosis was 11.6% compared to 46.4% among those with elective admissions and 48.4% among those who had no hospital admissions recorded up to 30 days prior to diagnosis.



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

- Stage at diagnosis is one of the most important factors in oral cancer survival with five-year survival decreasing as stage increases.
- Five-year survival (ASNS) ranged from 68.8% for early stage (stage I) disease to 24.1% for late stage (stage IV) disease.
- Five-year survival (ASNS) for unstaged cancer was 58.3%.



## Prevalence

- At the end of 2019, there were 1,624 people (Males: 1,027; Females: 597) living with oral cancer who had been diagnosed with the disease during 1995-2019.
- Of these, 63.2% were male, 23.5% were aged 75 and over, and 14.4% had been diagnosed in the previous year.

25-year prevalence refers to the number of cancer survivors who were alive at the end of 2019, and had been diagnosed with their cancer in the previous 25 years (i.e. 1995-2019).

Time since diagnosis	25-year prevalence								
	Aged 0-74			Aged 75+			All ages		
	Male	Female	Both sexes	Male	Female	Both sexes	Male	Female	Both sexes
0-1 year	120	67	187	31	16	47	151	83	234
1-5 years	307	160	467	64	36	100	371	196	567
5-10 years	184	108	292	46	36	82	230	144	374
10-25 years	184	113	297	91	61	152	275	174	449
0-25 years	795	448	1,243	232	149	381	1,027	597	1,624

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

- Among males the number of survivors from oral cancer who had been diagnosed within the previous ten years increased by 20.3% from 625 survivors in 2014 to 752 survivors in 2019.
- Among females the number of survivors from oral cancer who had been diagnosed within the previous ten years increased by 18.2% from 358 survivors in 2014 to 423 survivors in 2019.

	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Male	530	546	571	606	625	644	649	680	741	752
Female	297	331	351	357	358	353	358	360	393	423
Both sexes	827	877	922	963	983	997	1,007	1,040	1,134	1,175

# Mortality

- During 2015-2019 there were 69 male and 31 female deaths from oral cancer each year.
- Oral cancer made up 3.0% of all male, and 1.5% of all female cancer deaths (ex NMSC).

## Deaths by age at death - Oral cancer, Deaths in 2015-2019

- The median age at death during 2015-2019 was 68 for men and 70 for women.
- Risk of death from oral cancer was strongly related to patient age, with 29.0% of men and 35.5% of women aged 75 years or more at time of death.
- 10.9% of oral cancer deaths occurred among those aged under 55.

Age at death	Average deaths per year		
	Male	Female	Both sexes
0 - 54	7	3	11
55 - 64	18	7	27
65 - 74	24	8	32
75 +	20	11	31
<b>All ages</b>	<b>69</b>	<b>31</b>	<b>101</b>

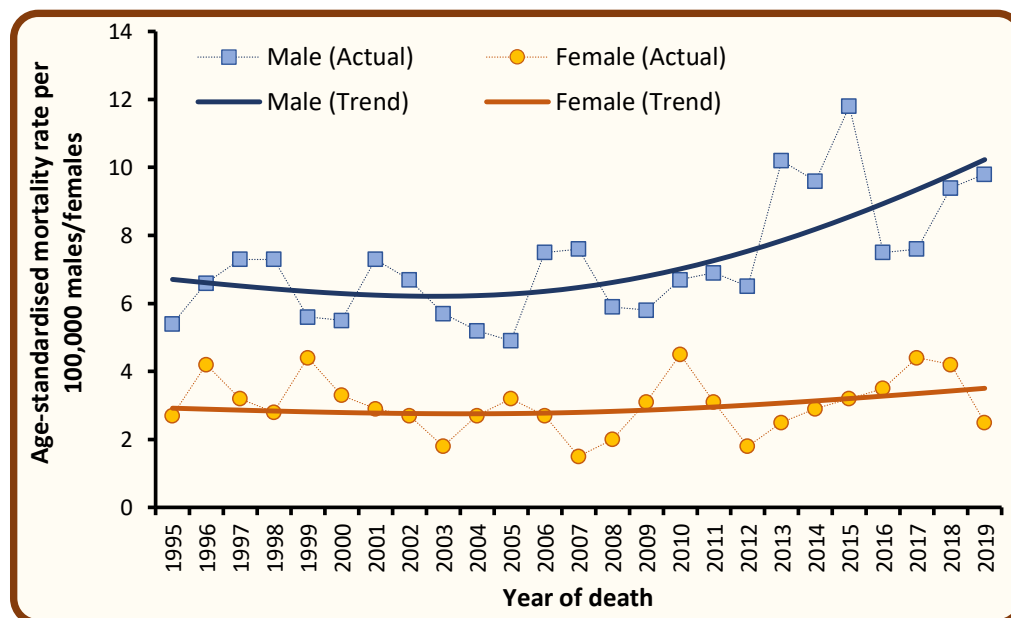
## Deaths by year of death - Oral cancer, Deaths in 2010-2019

- Among males the number of deaths from oral cancer increased by 27.8% from an annual average of 54 deaths in 2010-2014 to 69 deaths in 2015-2019.
- Among females the number of deaths from oral cancer increased by 29.2% from an annual average of 24 deaths in 2010-2014 to 31 deaths in 2015-2019.

	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
<b>Male</b>	42	46	44	69	67	83	58	58	71	77
<b>Female</b>	37	25	15	21	24	27	31	38	37	23
<b>Both sexes</b>	79	71	59	90	91	110	89	96	108	100

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

- Among males age-standardised mortality rates from oral cancer increased by 15.0% between 2010-2014 and 2015-2019 from 8.0 to 9.2 deaths per 100,000 persons years. This difference was not statistically significant.
- Among females age-standardised mortality rates from oral cancer increased by 16.7% between 2010-2014 and 2015-2019 from 3.0 to 3.5 deaths per 100,000 persons years. This difference was not statistically significant.



Mortality data are provided by the Northern Ireland General Registrar Office via the Department of Health.

Counts of the number of deaths are based upon the year that death occurred, and upon the primary cause of death only.

Age-standardised mortality rates remove changes over time caused by population growth and/or ageing.



## Background notes

**Cancer classification:** Classification of tumour sites is carried out using ICD10 codes. For a listing and explanation of ICD10 codes see: World Health Organisation at <http://apps.who.int/classifications/icd10/browse/2010/en#/II>

**Population data** for Northern Ireland, and smaller geographic areas, are extracted from the NI mid-year population estimates available from the NI Statistics and Research Agency (available at [www.nisra.gov.uk](http://www.nisra.gov.uk)).

**Geographic areas** are assigned based on a patient's postcode of usual residence at diagnosis using the Jan 2021 Central Postcode Directory (CPD) produced by the NI Statistics and Research Agency (available at [www.nisra.gov.uk](http://www.nisra.gov.uk)).

**Deprivation quintiles:** Super output areas (SOA) are assigned to each patient based on their postcode of usual residence at diagnosis. Using the SOA each patient is assigned a socio-economic deprivation quintile based on the 2017 Multiple Deprivation Measure. The 2017 Multiple Deprivation Measure is available from the NI Statistics and Research Agency (available at [www.nisra.gov.uk](http://www.nisra.gov.uk)).

A **crude incidence/mortality rate** is the number of cases/deaths per 100,000 person years in the population. Person years are the sum of the population over the number of years included.

An **age-standardised incidence/mortality rate** per 100,000 person years is an estimate of the incidence/mortality rate if that population had a standard age structure. Throughout this report the 2013 European Standard Population has been used. Standardising to a common Standard Population allows comparisons of incidence/mortality rates to be made between different time periods and geographic areas while removing the effects of population change and ageing.

A **Standardised Incidence/Mortality Ratio (SIR/SMR)** is the ratio of the number of cases/deaths observed in a population to the expected number of cases/deaths, based upon the age-specific rates in a reference population. This statistic is often used to compare incidence/mortality rates for geographic areas (e.g. Trusts) to the national incidence/mortality rates (i.e. Northern Ireland). An SIR/SMR of 100 indicates there is no difference between the geographic area and the national average.

**Confidence intervals** are a measure of the precision of a statistic (e.g. colorectal cancer incidence rate). Typically, when numbers are low, precision is poorer and confidence intervals will be wider. As a general rule, when comparing statistics (e.g. cervical cancer incidence rate in year 2012 vs year 2013), if the confidence interval around one statistic overlaps with the interval around another, it is unlikely that there is any real difference between the two. If there is no overlap, the difference is considered to be **statistically significant**.

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

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

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

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

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