



Public Health
England

National End of Life Care Intelligence Network

Head and neck cancers in England:
who dies from them and where do they
die?

About Public Health England

Public Health England's mission is to protect and improve the nation's health and to address inequalities through working with national and local government, the NHS, industry and the voluntary and community sector. PHE is an operationally autonomous executive agency of the Department of Health.

The National End of Life Care Intelligence Network

The National End of Life Care Strategy published in 2008, pledged to commission a National End of Life Care Intelligence Network (NEoLCIN) to improve the collection and analysis of national data about end of life care for adults in England. The network was established in May 2010. Its aim is to support the NHS and its partners to commission and deliver high quality end of life care in a way that makes the most efficient use of resources and responds to the wishes of dying people and their families. The NEoLCIN plays a vital role in supporting delivery of the strategy. On 1 April 2013 NEoLCIN became part of Public Health England.

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Foreword

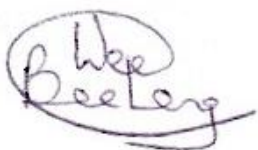
It is a societal responsibility to ensure that patients who are dying are cared for with dignity, that their distress, whether physical, mental or spiritual, is addressed. Supporting patient choice at this time is particularly important, including supporting choice of place of death where possible.

In 2012, 3,718 people died with cancers of the head and neck mentioned anywhere on their death certificate (0.8% of all deaths). Patients dying of these cancers face a number of specific challenges in addition to those related to symptoms such as pain and psychological and spiritual distress. Head and neck cancers and their treatment can be disfiguring and this can have an impact on an individual's feeling of identity and challenges for family and carers. Speaking, eating, swallowing and breathing can become difficult requiring artificial feeding or tracheostomy.

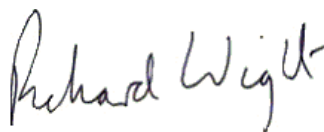
The report finds that one in five men and one in six women will die within a year of diagnosis, just over one in ten within six months. This means that specialists making the diagnosis where prognosis is poor should consider early initiation of discussions with patients and their families about their views on end of life care and involvement of specialist palliative care.

It highlights important factors which need to be taken into consideration in planning care for these patients, especially the relatively young age at death, and the impact deprivation has on place of death. The analyses show that, for head and neck cancer, 44% of people from the most deprived areas of England will die in hospital compared with 38% from the least deprived and conversely 21% of the most deprived die in hospices compared with 23% of the most affluent. This suggests geographical variations in the organisation and resources for end of life care that need to be addressed.

This report should act as a wake-up call, especially to providers of care to head and neck cancer patients including: head and neck cancer multidisciplinary teams, Primary Care Teams and Palliative Care Providers to check that patients under their care are receiving high quality end of life care and that there are no inequalities in access to a preferred place of death by age or socioeconomic group.



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Executive summary

Introduction

This report presents the latest available data on deaths from head and neck cancers in England. Head and neck cancers include lip, tongue and oral cavity cancer, pharynx and tonsil cancer, larynx cancer, thyroid gland cancer, salivary glands cancer, nose, ear and sinus cancer.

The aim of this report is to help end of life care commissioners and providers improve planning and service delivery in line with the needs and wishes of the patient.

It is clear that people dying with a head and neck cancer will have specific needs, therefore this report takes into account variations by cancer type, age, sex, region, place of death and level of income deprivation which will help us to understand these needs better.

Key findings

In 2012 in England, 3,020 people died with a head and neck cancer recorded as the underlying cause on the death certificate.

Head and neck cancers account for 0.6% of all deaths, with lip, tongue and oral cavity cancer, pharynx and tonsil cancer and larynx cancer being the three main contributors to this figure.

A further 0.2% of all death certificates have a mention of head and neck cancer as a contributory cause, bringing the total to 0.8% of all deaths in 2012 (3,718 deaths).

Variations by age and sex

Between 2003 and 2012, more men (0.8%) die from head and neck cancers as the underlying cause of death than women (0.4%), when taken as a percentage of total deaths for that sex. This reflects the patterns of incidence.

For males the median age at death from head and neck cancer is 67 years; younger than deaths from all cancers (75 years) and all causes (77 years), (non-cancers, 79 years).

For females the median age at death from head and neck cancer is 74, younger than deaths from all cancers (77 years) and all causes (83 years), (non-cancers 85 years).

Almost 70% of males with an underlying cause of head and neck cancer died under age 75, compared to about half of females (51%).

Variation by cause and place of death

Hospital is the main place of death for those dying from a head and neck cancer (41%), which is a lower proportion than for deaths in hospital from all cancers (45%).

There appears to be variation in place of death by head and neck cancer type. Thyroid gland cancer and larynx cancer have the largest proportion of deaths occurring in hospital, each at around 50%, while lip, tongue and oral cavity cancer, salivary glands cancer and nose, ear and sinus cancer have the largest proportion of deaths occurring in the home (28%).

Age influences the place of death. The highest proportions of deaths at home (29%) or in a hospice (25%) occur in the under 65 year olds, and the highest proportion of deaths in care homes (27%) in the over 85 year olds.

Socioeconomic deprivation also influences place of death: 44% of people from the most deprived areas of England will die in hospital compared with 38% from the least deprived and, conversely, 21% from the most deprived areas die in hospices compared with 23% from the most affluent areas.

There are very large variations in deaths in hospital by geographical area: 49% of head and neck cancer patients die in hospital in the London Strategic Clinical Network area compared with 37% in the South East Coast Strategic Clinical Network area, whereas deaths in the home range from 19% in London to 29% in the North East Cumbria and the East of England Strategic Clinical network area.

Conclusions and next steps

This report highlights the potential high level of need for patients dying from head and neck cancers because of their young age and high levels of deprivation, and the complexity of management at end of life. It also shows how type of head and neck cancer, age, gender, socioeconomic deprivation and geographical area of residence all impact on place of death.

The findings identify the need for further research on the impact of demographic factors on the type of care and support needed and to what extent socioeconomic deprivation and levels of service provision are leading to true inequalities of end of life care.

1 The importance of information in the end of life care context

In 2008 the first national End of Life Care Strategy for England was published. The rationale behind the strategy included:

- the Department of Health had never previously had a comprehensive strategy on end of life care
- some patients receive excellent care at the end of their lives, others do not
- there is a mismatch between people's preferences for where they should die and their actual place of death
- only a third of the general public have discussed death and dying with anyone

One of the recommendations of the End of Life Care Strategy was to improve the quality of information and research in end of life care and to establish a National End of Life Care Intelligence Network for England (NEoLCIN) to bring together the various holders of information. The NEoLCIN was established in 2010. Its objectives include:

- provide national co-ordination to bring together a national repository of diverse sources of data related to end of life care which will enable people to create intelligence from data and thereby improve quality and productivity
- utilise and disseminate existing data sources more effectively for local service planning and driving improvement in standards of end of life care
- enable use of end of life care information to support audit and research programmes

Routinely collected data, such as the Office for National Statistics (ONS) mortality data which is extracted from death certificates and the Hospital Episode Statistics (HES), have proved to be a treasure chest of information on who dies, what they die from and where they die, as well as how many times people are admitted to hospital and how long they spend there during the last year of life. This data presented in the form of specialist reports and local area profiles is being used by health and social care professionals from the NHS, local authorities and the voluntary sector to assess local generalist and specialist end of life care needs of populations. The data is of use to local statutory and voluntary sector providers of care and to commissioners. The data is also used by NHS England, NHS Improving Quality (NHS IQ), Public Health England and the

Department of Health and Social Care in development of Strategy and Quality Assurance of End of Life Care Services.

To date, the NEOFICIN has produced a wide range of products including specialist reports and local geographical area profiles which are published on www.endoflifecare-intelligence.org.uk

1.1 Place of death as a proxy for quality of end of life care

Every 70 seconds someone in England dies. Currently 49% (ONS, 2012: Males, 51%; Females, 47%) die in hospital and yet we know that the majority of people would prefer not to die in hospital. This reflects people's views expressed in numerous surveys both of the general population and of patients nearing the end of life¹. Moreover, the experience of people dying in hospital as reported by their relatives with respect to being treated with dignity by doctors and nurses is worse than that of patients dying outside hospital.

Many factors determine where people die and, for some, hospital is the right place. A person's likelihood of dying in hospital is influenced by their age at death, gender, cause of death, and material deprivation but also by the quality and levels of provision of local community services for end of life care. These latter can support patients to stay out of hospital if they do not wish to be admitted or to return home for terminal care.

Patients who clearly express or record their wishes have a better chance to die in a place of their choice than those who do not. However, not everyone wishes to discuss or record their wishes for end of life care and this should be respected. It is also acknowledged that for some patients hospital can be the best place to be at the end of their lives; for the management of particularly difficult symptoms, because death is not predicted at the time of admission, out of respect for the wishes of the patient or because family and social support networks cannot cope either at home or in a care home.

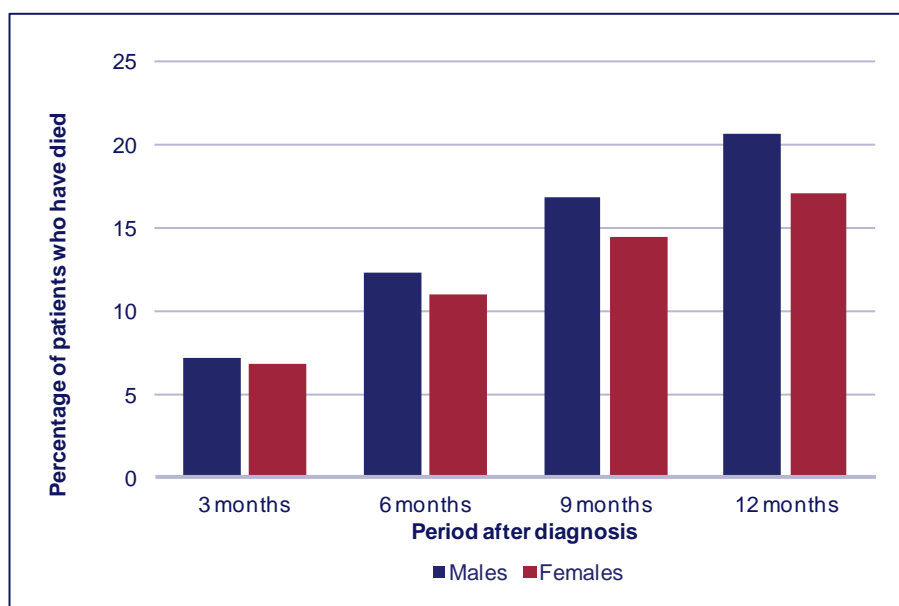
In this report, place of death is used as a proxy for patient perceived quality of care, with death in home, care home or hospice being considered preferable compared to death in hospital.

¹ Gomez, Calzani and Higginson: [Local preferences and place of death in regions within England](#), Cicely Saunders International, 2011 (Listed under "Other publications and presentations from the EPPOC team".)

2 Head and neck cancer epidemiology and its implications for end of life care

About 21% of men and 17% of women who had a diagnosis of head and neck cancer survive less than one year after diagnosis (Figure 1), and just over 10% survive six months or less. Head and neck cancer is therefore a disease for which consideration of end of life care planning is important for many patients shortly after diagnosis. This can enable the patient and their family to come to terms with the terminal nature of the disease and to express and, where possible, achieve their hopes and desires for their last months or years of life.

Figure 1: Percentage of people diagnosed with head and neck cancers who have died, by period after diagnosis, England, 2008 to 2010

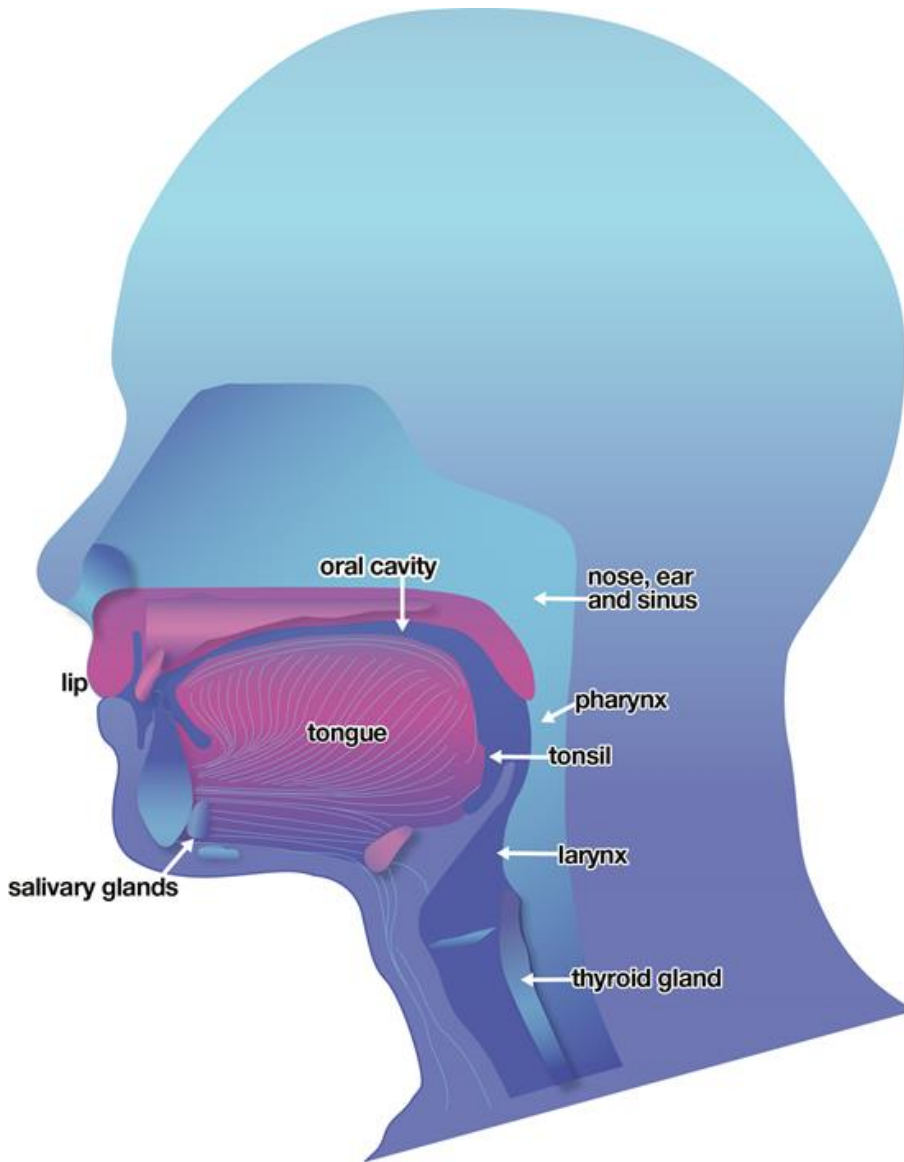


Source: Office for National Statistics mortality data

A total of 11,725 head and neck cancers were diagnosed in 2012 (Males, 6,913; females, 4,812 diagnoses; Figure 3, and Appendix 1, Table 1 and Table 2). There has been a year on year increase in the number of diagnoses; 7,877 people were diagnosed with head and neck cancer in 2003 and 9,101 in 2007.

Using the National Cancer Intelligence Network groupings for types of head and neck cancers, the two most common types of head and neck cancers diagnosed in 2012 were lip, tongue and oral cavity cancer (3,864 cases), and thyroid gland cancer (2,639 cases), followed by pharynx and tonsil cancer (2,279) and larynx cancer (1,913). New

cases of salivary and nose, ear and sinus cancer groups were rarest (584 and 446 new cases respectively.)



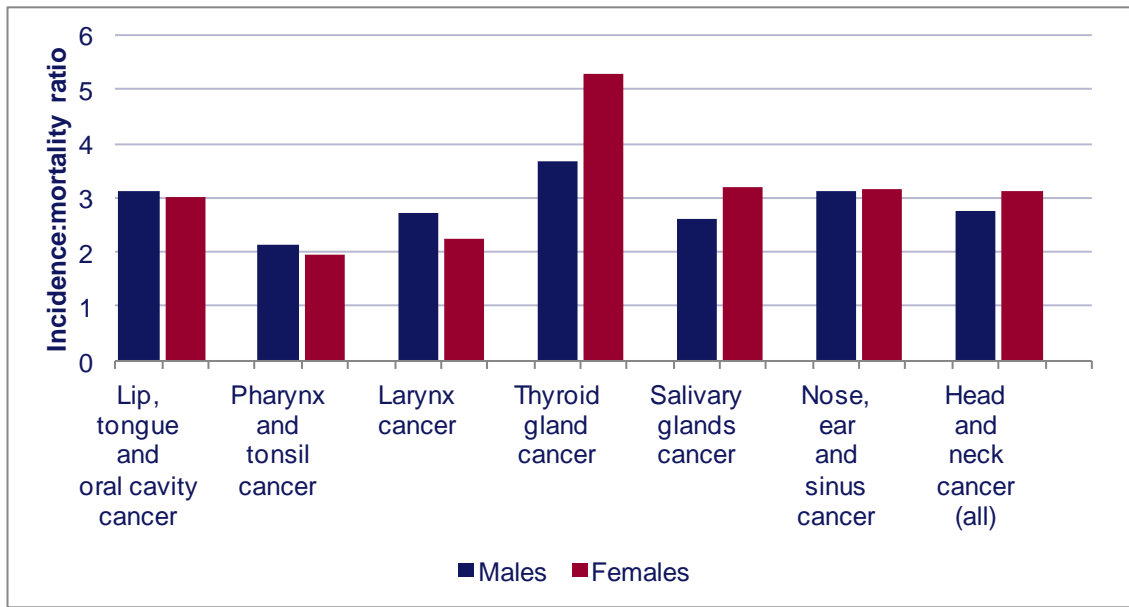
Source: Public Health England

Head and neck cancers are most commonly associated with older men who smoke and consume alcohol; however recent trends show that a younger population and both sexes are now also being affected (Appendix 1, Table 1 and Table 2). Incidence of head and neck cancers are usually higher in men than women. However thyroid gland cancer is an exception to this, where incidence is higher in women.

The numbers of deaths from different types of head and neck cancers do not exactly follow their incidences; there are between two and four new cases for every death from

head and neck cancer. Thyroid cancer is the exception, especially for women among whom there are about seven new cases for every death (Figure 2). Advances in scanning have led to greater detection of thyroid cancer, but the natural history in some of these cases is probably very indolent.

Figure 2: Incidence – mortality ratios for head and neck cancer by type, England, 1990 to 2010



Source: Office for National Statistics mortality data

There has been an increase in the number of deaths with an underlying cause of head and neck cancer in England, from 2,560 deaths in 2003 to 3,020 deaths in 2013; about 460 additional deaths per year (Figure 3).

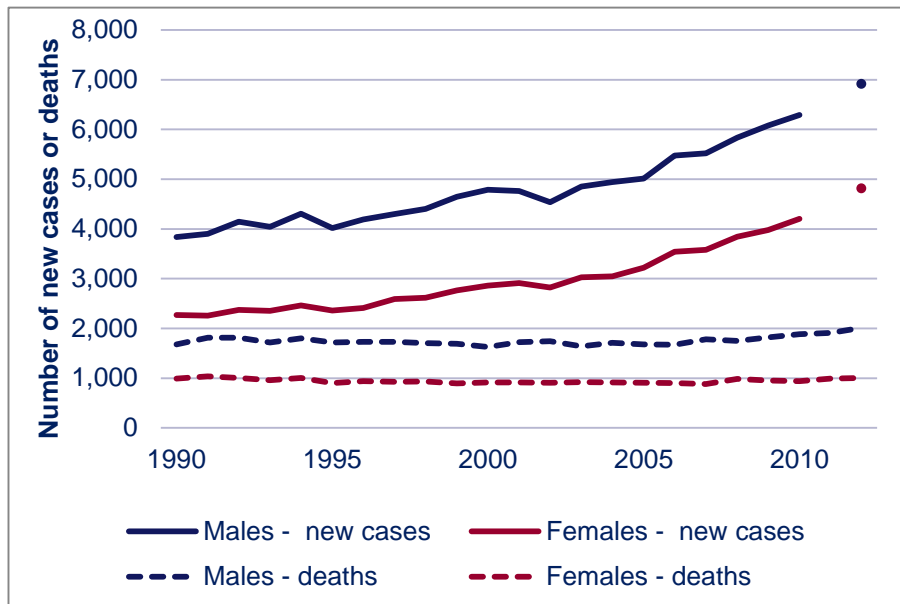
Deaths from lip, tongue and oral cavity cancer together with pharynx and tonsil cancer accounted for 59% (1,792) of all head and neck cancer deaths in 2012, an increase from 52% (1,332) in 2003.

Larynx cancer deaths in 2003 (673) exceed those for pharynx and tonsil cancer but has not increased over the following decade and there were 634 deaths from larynx cancer in 2012. (Appendix 1, Table 3).

Head and neck cancers comprised 0.6% of all deaths in the ten year period 2003 to 2012, that is, a head and neck cancer was recorded as the underlying cause on the death certificate. The proportion of all deaths in England with a mention of a head or neck cancer on the death certificate, in the same period was 0.7%.

In 2012, 0.8% of all deaths had a mention of head and neck cancer: comprising 0.6% with an underlying cause of head and neck cancer, and 0.1% with an underlying cause of another cancer. The other 0.1% had a non-cancer underlying cause of death.

Figure 3: Incidence and mortality trends for head and neck cancer, England, 1990 to 2010



Notes:

1. Figures in Appendix 1, Table 1 and Table 2
2. Incidence data for 2011 is not yet available.

Source: National Cancer Intelligence Network

Head and neck cancer is considered by many a disease caused by smoking and sometimes compounded by industrial exposure to carcinogens. Alcohol intake, infection with Human Papilloma Virus 16 (HPV 16) and a number of other factors are known to be linked to cause. Head and neck cancer still kills many more men than women, and more people from more deprived backgrounds. People continue to die of head and neck cancer relatively young. The epidemiology of head and neck cancer raises a number of issues for end of life care:

- the relatively young age of people who die from head and neck cancer means that they may have family responsibilities to consider, and the diagnosis and prognosis may seem unfair because of this
- the association of head and neck with smoking and other lifestyle factors could lead to both a risk of stigma and a feeling of culpability associated with the diagnosis and death

2.1 The aim of this report

The aim of this report is to analyse and present the latest data on the demographic characteristics of patients dying from head and neck cancer, their places of death and how these vary with age, sex, deprivation and region of residence. The analysis presented in this report uses ONS mortality data, and was commissioned by the NEOLCIN to support the national end of life care service planning and development.

National strategy and policy supporting this work includes:

- the national End of Life Care Strategy (Department of Health, 2008)
- Public Health Outcomes Framework (Department of Health, 2012)

3 Methodological notes

3.1 Source of data

Incidence data are from the UK Cancer Information Service (CIS) and all other data presented in this report are from ONS mortality files containing extracts from death certificates. Key data items used for this analysis include place of death, postcode of place of residence, date of birth, sex and cause of death. Mortality data are available up until 2012.

3.2 Analysis

Data in this report are presented as absolute numbers and proportions in order to support service planning.

3.3 Place of death

Hospital: NHS or non-NHS, acute, community hospitals but not psychiatric hospital/units.

Home: the death occurred in the place of usual residence where this is not a communal establishment.

Care home: Local authority or private residential home. NHS nursing home or private nursing home.

Hospice: many hospices are 'free standing' but some are found within NHS hospitals. At present ONS classifies the place of death as hospice only when the event occurred in a free standing hospice premises. These data will therefore under-report deaths in hospice as some will be recorded as deaths in hospital.

Other places: other communal establishments or a private address other than the usual place of residence or outdoor location or psychiatric hospitals.

For more information on categorising place of death see, [Classification of place of death: A technical bulletin](#) from the National End of Life Care Intelligence Network.

3.4 Analysis by deprivation quintile

Deprivation figures are presented as national quintiles based on the Indices of Deprivation 2010 (ID 2010) income deprivation scores aggregated from Lower Super Output Areas (LSOAs).

LSOAs are small geographical areas specifically designed to improve the reporting and comparison of local statistics. In England there are 32,482 LSOAs with a minimum population of 1,000 and an average population of 1,500.

LSOAs were grouped into quintiles of deprivation based on the income deprivation score from ID 2010, with each quintile having as close as possible to one-fifth of the English population. The income deprivation score measures the percentage of children and adults living in 'income deprived' households, based on a number of definitions.

The residential postcode recorded on the death certificate was used to allocate each death to an LSOA which was then assigned to a deprivation quintile.

3.5 Cause of death

The single 'underlying' cause of death is determined from the death certificate by the ONS and coded using ICD-10 system (International Classification of Disease, tenth issue). The codes of the specific cancers covered in this report are:

Type	ICD-10 code
Lip, tongue and oral cavity cancer	C00 to C06
Salivary glands cancer	C07, C08
Pharynx and tonsil cancer ^{1,2}	C09 to C14
Nose/ear/ sinus cancer	C30, C31
Larynx cancer	C32
Thyroid gland cancer	C73

Notes:

1. Pharynx and tonsil cancer (C09 to C14) including subgroup for Oropharynx cancer (C09, C10) which is analysed specifically as a subgroup in some sections of this report because of changing trends.
2. Pharynx and tonsil cancer group also includes ICD-10 code C14; Other and ill defined sites in the lip, oral cavity and pharynx.

The underlying cause of death is identified by the World Health Organisation as "the disease or injury that initiated the train of events directly linked to death; or the circumstances of the accident or violence that produced the fatal injury" and is the cause of death data recorded on a death certificate.

Death certificates also record "contributory conditions", which are either:

- part of the causal sequence of events leading to death, or
- contributed to the death but are not part of the causal sequence

For the purposes of this report, a death is described as either having an "underlying cause" of head and neck cancer, or, "otherwise mentioned", meaning the death did not

have an underlying cause of head and neck cancer but it was among the contributory conditions.

3.6 Analysis by geographical area

Postcode of residence as recorded on the death certificate was used to assign people to the geographic areas of Clinical Commissioning Groups (CCG) and Strategic Clinical Networks (SCN). This way of grouping patients by CCG will vary from an analysis based on GP practice lists. This is because some patients live outside of the nominal geographic area served by the CCG of which their GP is a member.

4 Results

4.1 Cause of death

On average, for the period 2003 to 2012, head and neck cancers were recorded as the underlying cause for about 2,725 people per year. The annual number of deaths for which head and neck cancers were recorded as the underlying cause has increased; in 2012 it was 3,020.

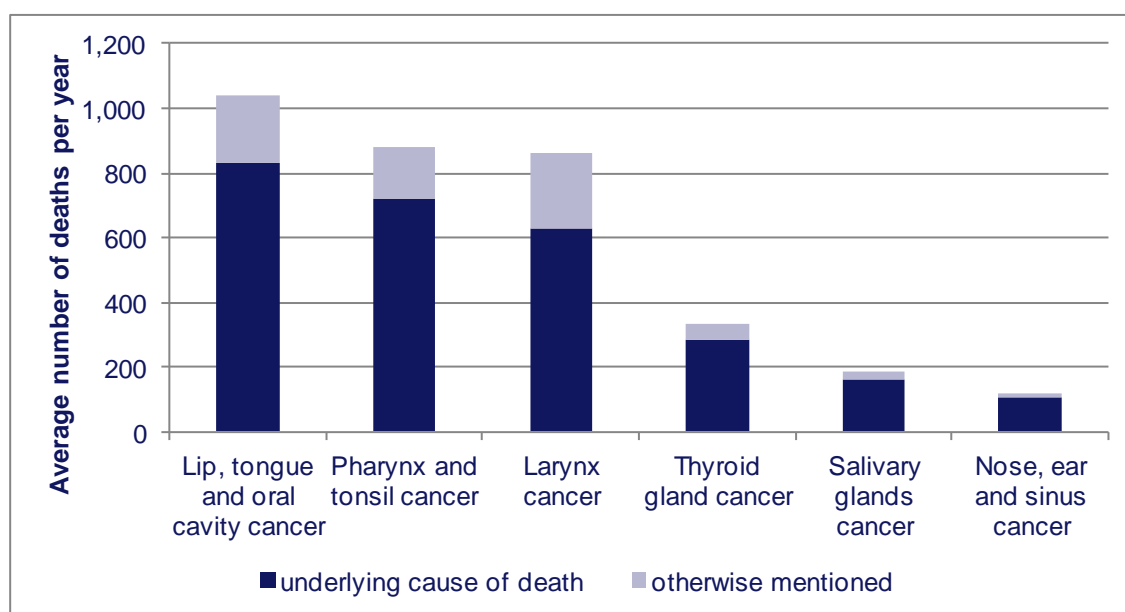
Cancer was recorded as the underlying cause for about 27.3% of all deaths in England for the period 2003 to 2012. In comparison, 0.6% of all deaths were recorded as having an underlying cause of head and neck cancer over the same ten year period. (2012; all cancer 28.6%, head and neck cancers 0.6%).

Overall, 0.7% of all deaths had a mention (underlying or otherwise) of head and neck cancer anywhere on the death certificate for the period 2003 to 2012. In addition to those whose death had an underlying cause of head and neck cancer, during 2003 to 2012, roughly another 630 people die each year with head and neck cancer 'otherwise mentioned' on their death certificate. In 2012, head and neck cancer contributed to 3,718 deaths, of which 286 had an underlying cause of cancer which was not head and neck cancer (just under 8% of all deaths with any mention of head and neck cancer) and 412 (11% of all deaths with any mention of head and neck cancer) had an underlying cause that was not cancer.

The counting of 'otherwise mentioned' contributory causes is important because, when combined, the average annual number of deaths 'otherwise mentioned' for lip, tongue and oral cavity cancer, pharynx and tonsil cancer, and larynx cancer (607) is almost the same as the total number of deaths with any mention (underlying or otherwise) of thyroid gland cancer, salivary gland cancer and nose, ear and sinus cancer combined (638). Deaths with mentions of these cancers (lip, tongue and oral cavity, pharynx and tonsil, and larynx) account for approximately 0.22%, 0.19% and 0.18% of deaths from all causes respectively (Figure 4).

Numbers and percentages of all deaths for each head and neck cancer (underlying and mentions) are included in the Appendix 1 (Table 3).

Figure 4: Deaths from head and neck cancers, underlying causes and mentions, England, 2003-2012



Notes:

1. Figures in Appendix 1, Table 3.
2. Some people with an underlying cause of death of head and neck cancer also have further mentions of head and neck cancers which are not shown in the chart above.
3. Some people who died of an underlying cause of death which was not head and neck cancer had more than one mention of head and neck cancer as a contributory cause. These people appear in more than one of the columns above.
4. The total number of people with otherwise mentioned head and neck cancer is therefore less than the total of the otherwise mentioned deaths shown on the chart above.

Source: Office for National Statistics mortality data

4.2 Cause of death by sex

There are more deaths from an underlying cause of head and neck cancers in males compared with females. Figure 5 and Appendix 1, Table 3 show the breakdown for the type of cancer. Only for deaths from an underlying cause of thyroid gland cancer do females (178 deaths per year) exceed males (108 deaths per year).

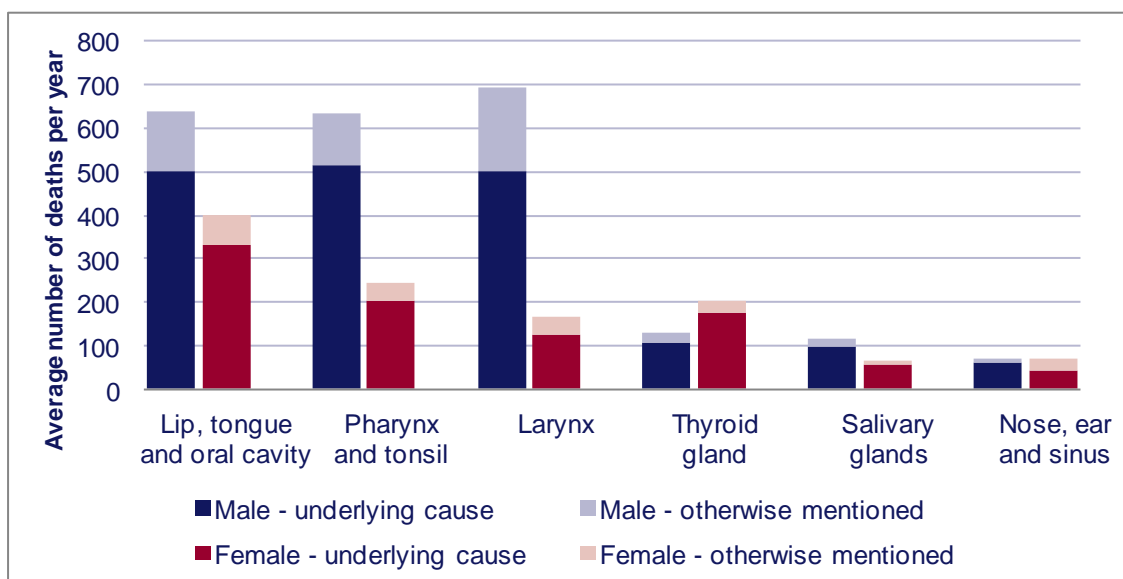
There have been different trends in the number of deaths for the various head and neck cancer groups. The greatest change has been the rise in pharynx and tonsil cancer in males (417 in 2003, 631, in 2012) and in females lip, tongue and oral cavity cancer (300 in 2003, 360 in 2012). Details are shown in Appendix 1, Table 3.

On average over the ten year period, most deaths were from an underlying cause of lip, tongue and oral cavity cancer, pharynx and tonsil cancer, and larynx cancer amongst males (500, 515 and 503 deaths on average per year respectively). Amongst females there were 330 lip tongue and oral cavity cancer, 202 pharynx and tonsil cancer and 127 larynx cancer deaths on average per year respectively, but the latter were exceeded by thyroid cancer deaths (annual average 178). Figure 5 and Appendix 1,

Table 5 also show the numbers of head and neck cancer deaths in males and females, for mentions of the disease.

Overall, death with an underlying cause of head and neck cancer made up 0.8% of all male deaths (all causes) and 0.4% of all female deaths (all causes).

Figure 5: Deaths from head and neck cancers by sex and underlying cause/mentions, average deaths per year, England, 2003 to 2012



Source: Office for National Statistics mortality data

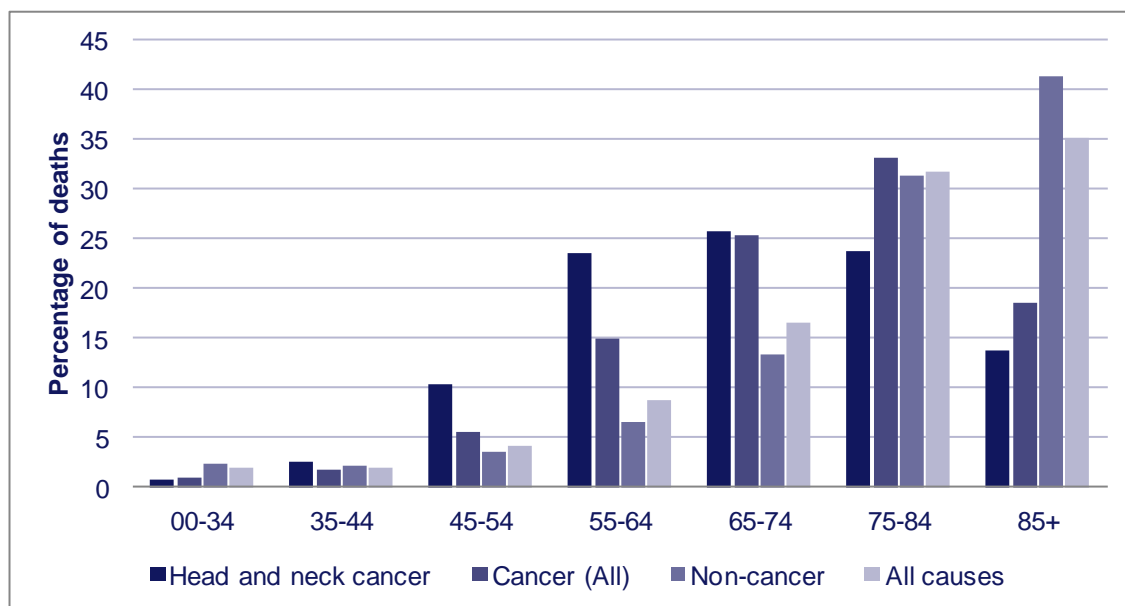
4.3 Underlying cause of death by age

Most deaths from head and neck cancer occur between the age of 55 and 84 years (73%). The distribution of age at death from head and neck cancer is younger than that for both cancers in general and for all deaths (Figure 6). This is particularly so for males (Figure 7). Women who die from head and neck cancer are more likely than men to be aged 75 or over.

Figure 7 shows most males (69%) who died with an underlying cause of head and neck cancer were aged less than 75 years compared to about half of women. For males the median age at death from head and neck cancer is 67 years, younger than deaths from all cancers (75 years) and all causes (77 years; Figure 8). In contrast, the age at death distribution for women who die from head and neck cancers is similar to that for all cancers generally. For females the median age at death from head and neck cancer is 74 years, compared to 77 years for all cancers and 83 years for all causes.

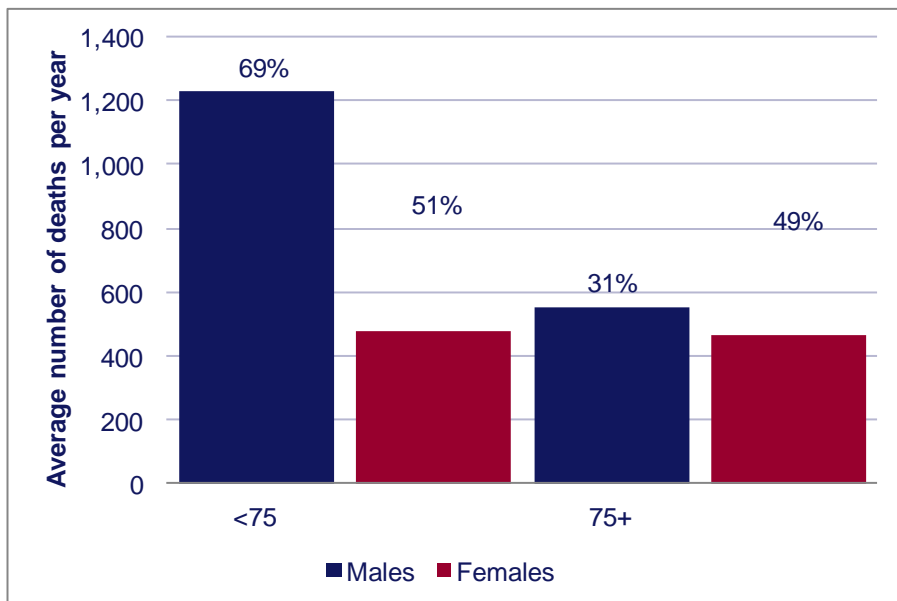
37% of head and neck cancer deaths occur in under 65s compared to 17% for deaths in under 65s from all causes (Figure 9 and Figure 10). Death from head and neck cancers as a proportion of deaths from all causes is highest in males under 65 years (1.5% of deaths from all causes aged less than 65 years, 737 deaths per year), although the largest number of head and neck cancer deaths occurs in males aged 65 to 84 years (880 deaths per year, 0.7% of all deaths from causes aged 65 to 84 years). Figure 10 and Appendix 1, Table 6 shows age specific death rates.

Figure 6: Age profile of percentage of deaths from all causes, cancers and head and neck cancers, England, 2003 to 2012



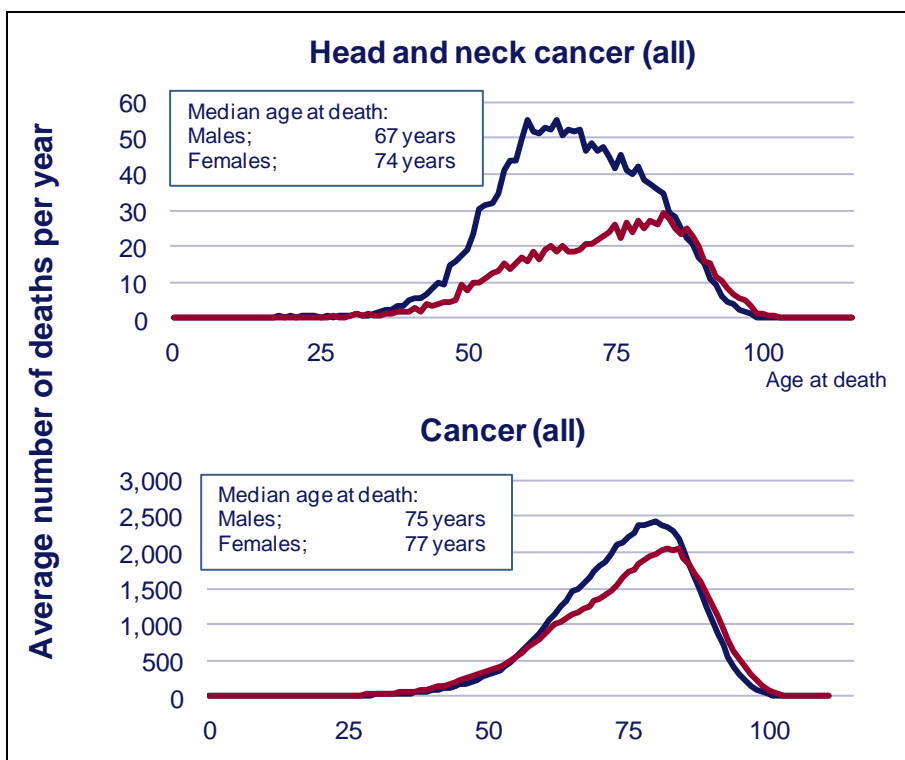
Source: Office for National Statistics mortality data

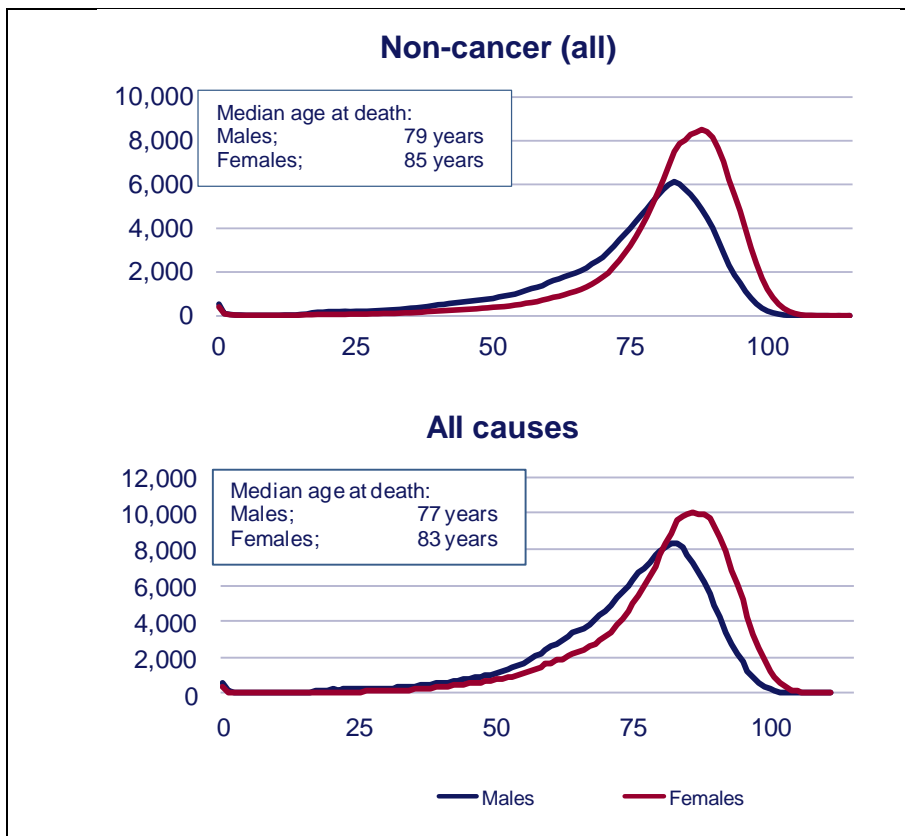
Figure 7: Number and percentages of deaths from head and neck cancer, by age band and sex, England, 2003 to 2012



Source: Office for National Statistics mortality data

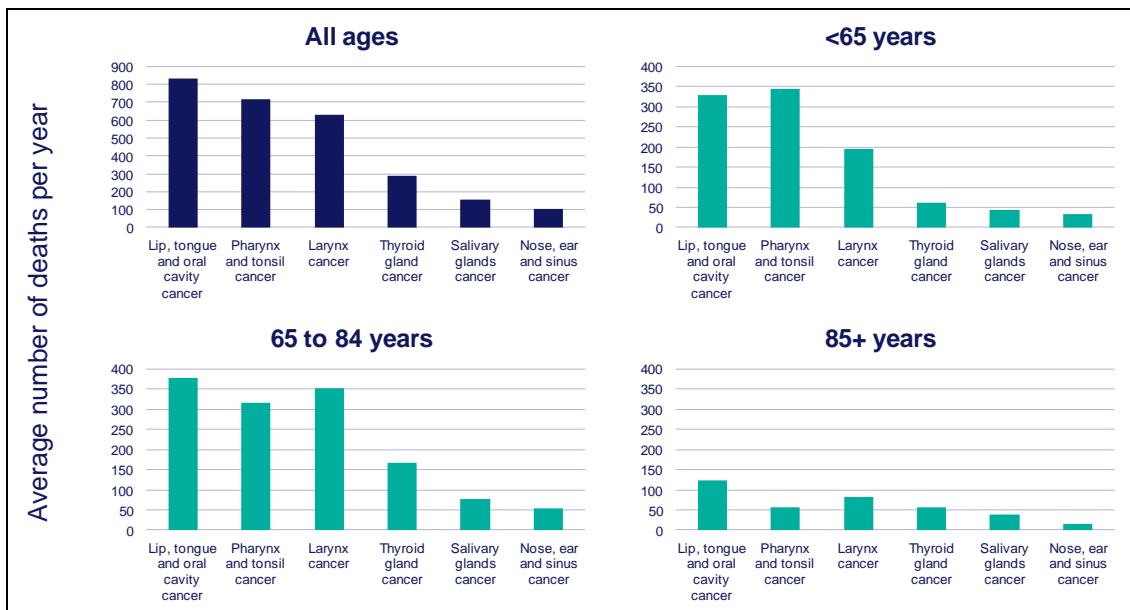
Figure 8: Distribution of deaths by sex and age, for head and neck cancers, all cancers, non-cancers, and all causes, England, 2003 to 2012





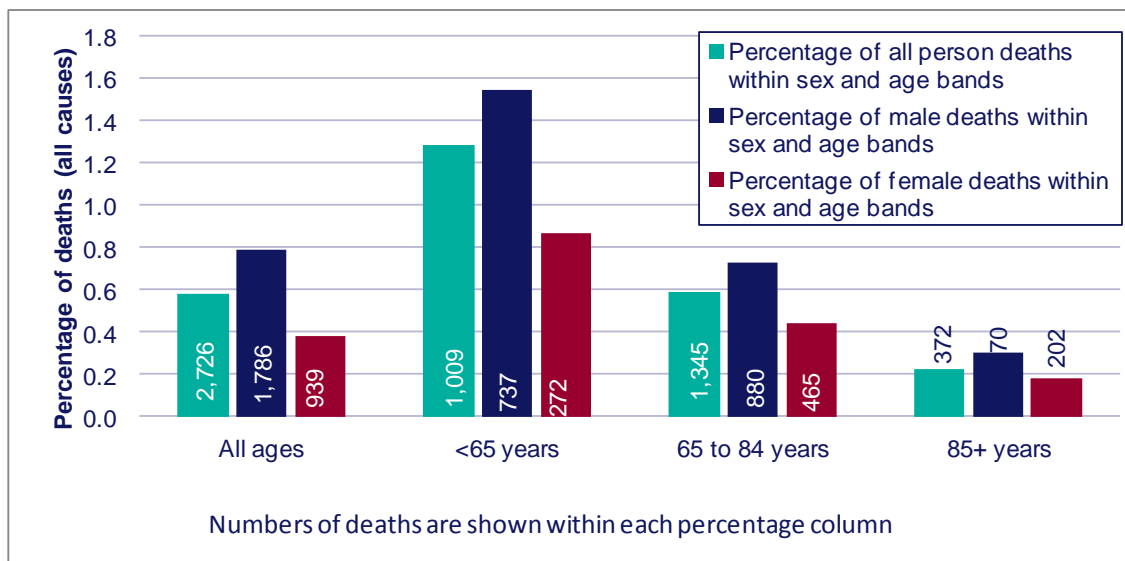
Source: Office for National Statistics mortality data

Figure 9: Deaths from head and neck cancers by age, and type of head and neck cancer, England, 2003 to 2012



Source: Office for National Statistics mortality data

Figure 10: Deaths from head and neck cancers by age and sex, average deaths per year, England, 2003 to 2012



Source: Office for National Statistics mortality data

4.4 Cause of death by age and sex

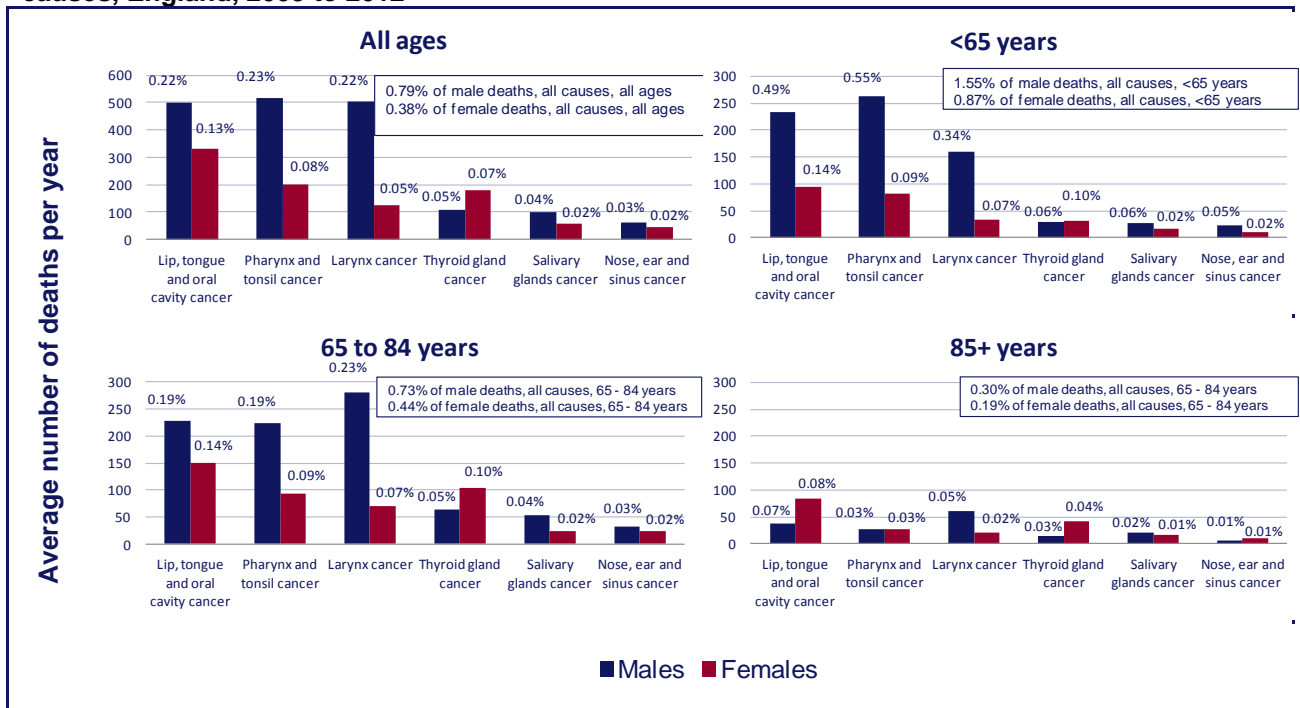
Deaths from head and neck cancers occur more frequently in males than females (Figure 5, Figure 8 and Figure 10). The greatest number of deaths from head and neck cancer were in the male 65-84 age group (880 deaths, average annual 2003 to 2012), however, as a percentage of all deaths within age bands, the contribution of head and neck cancer was highest for males in the under 65 age group (1.5%), Figure 11.

The highest average annual number of deaths was for males with larynx cancer aged 65-84 (281). The highest percentage of all deaths, within age groups, is for males aged under 65 years with pharynx and tonsil cancer (0.6% of all deaths in males under 65 years).

Deaths from lip, tongue and oral cavity cancer, pharynx and tonsil cancer, and larynx cancer are considerably higher for males compared with females in age groups <65 and 65-84, however in age group 85+, this pattern is only maintained for larynx cancer and the number of deaths from lip, tongue and oral cavity cancer is higher in females.

The highest average annual number of deaths for females was for lip, tongue and oral cavity cancer in age group 65-84 (Annual average, 151 deaths; less than 0.1% of deaths from all causes in females as a proportion of female deaths in that age band). The highest percentage of all female deaths within age bands is for under 65s with lip, tongue and oral cavity cancer (0.3% of female deaths aged under 65, 95 deaths per year on average).

Figure 11: Deaths from head and neck cancers by age and sex, as a percentage of deaths from all causes, England, 2003 to 2012



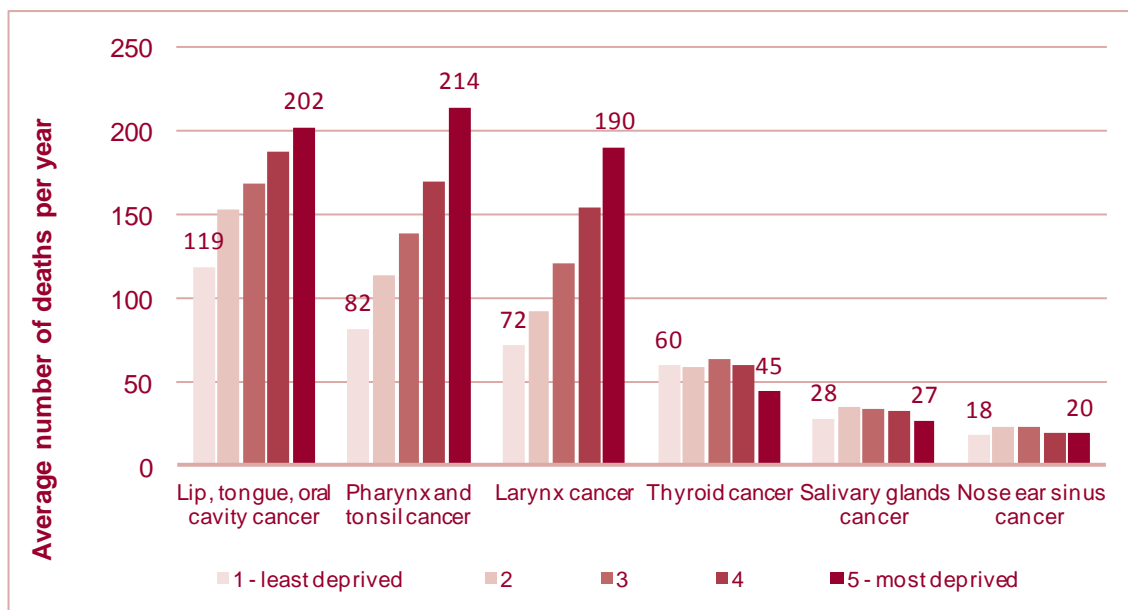
Source: Office for National Statistics

4.5 Underlying cause of death by deprivation

For the three largest types of head and neck cancers, the highest numbers of deaths occur in the most deprived quintile of income deprivation (Figure 12).

Deaths from larynx cancer and pharynx and tonsil cancer are considerably higher in the most deprived quintile (each with around 30% of deaths in the most deprived quintile compared with 11% of deaths in the least deprived quintile).

Figure 12: Number of deaths from head and neck cancers by quintile of income deprivation and underlying cause, England 2003 to 2012



Source: Office for National Statistics mortality data

4.6 Place of death

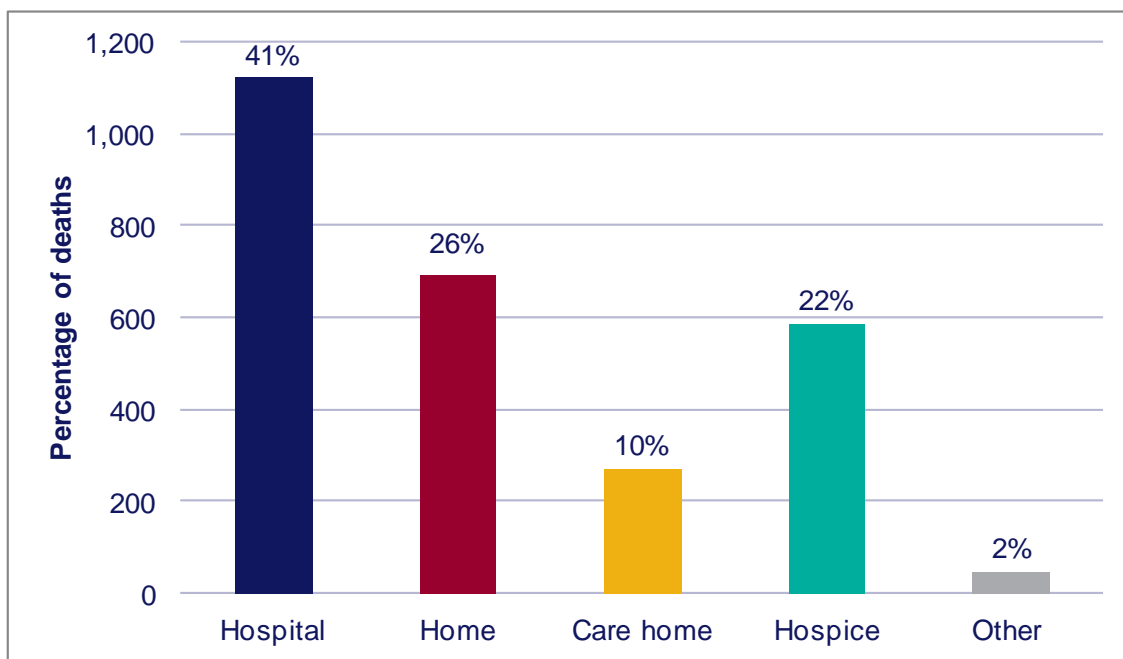
The most common place of death for head and neck cancer patients is hospital (41% of deaths, Figure 13). The percentage of deaths from head and neck cancer in hospital is slightly lower than for all cancers and considerably lower than for all causes (Hospital deaths: head and neck cancers, 41%; all cancers, 45%; all non-cancers, 59%; All causes, 55%; Figure 14).

A higher proportion of head and neck cancer deaths occur at home compared with deaths from all causes (Head and neck cancers, 26%; All causes, 20%).

The percentage of deaths from head and neck cancers occurring in hospices is smaller than for home deaths, but exceeds the proportions for hospice deaths for all cancers (head and neck cancers 22%; all cancers 17%).

A smaller proportion of deaths from head and neck cancer are in care homes (10%) compared to all cancers (11%), all non-cancers, (18%) or all causes (18%).

Figure 13: Distribution of deaths by place of death, deaths from head and neck cancer, England 2003 to 2012



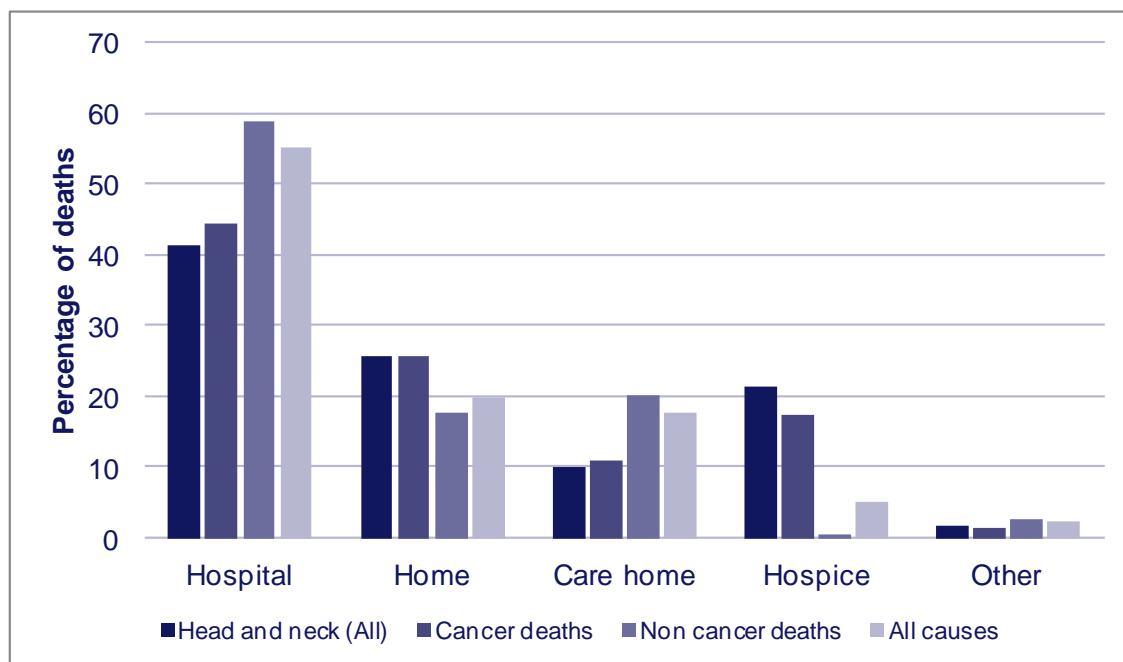
Source: Office for National Statistics mortality data

The younger age of people affected by head and neck cancer and the multiplicity of specialist interventions required for end of life care adds layers of complexity, which can affect place of death, reducing the likelihood of death at home. In particular, people dying of head and neck cancer commonly have complex breathing and feeding requirements, which may require tracheostomy or percutaneous endoscopic gastrostomy (PEG) care and communication can be challenging owing to physiological changes. They are also likely to experience massive sudden bleeding and asphyxia at end of life. Without provision of additional specialist support, some carers may feel that the interventions they may be required to provide in a non-hospital setting are overwhelming at an already difficult time.

Hospice care, specialist and community nursing services, and specialist palliative care which can enable people to stay in their usual place of residence to die, if they wish, are currently limited by local availability and funding (some of which is self-funding and therefore restricted). Barriers to access are greater than through the hospital system, with the result that only a small proportion of those who could benefit currently do. As providers and commissioners consider how to improve end of life care pathways in their localities, in the context of growing need and diminishing resources, it is vital to keep

sight of the long term and collateral personal and health costs to and for carers in addition to the financial short term costs of service reconfigurations.

Figure 14: Distribution of deaths by place of death, deaths from head and neck cancers, all cancers and all deaths, England 2003 to 2012



Source: Office for National Statistics mortality data

4.7 Place of death by type of head and neck cancer

Considered at all age level, most types of head and neck cancers follow the same pattern, with hospital the most common place of death, followed by home, then hospice (Figure 13, Figure 14 and Appendix 1, Table 7).

Larynx cancer (48% hospital; 304 deaths a year on average) and thyroid gland cancer (49%; 141 deaths a year on average), are most likely of the head and neck cancers to involve airway obstruction at end of life, and have the largest proportions of deaths occurring in hospital compared to other types of head and neck cancer. Larynx cancer and thyroid cancer also have a greater proportion of hospital deaths compared to the proportions of deaths for all cancers (45%), but lower than for all causes (55%; Figure 17).

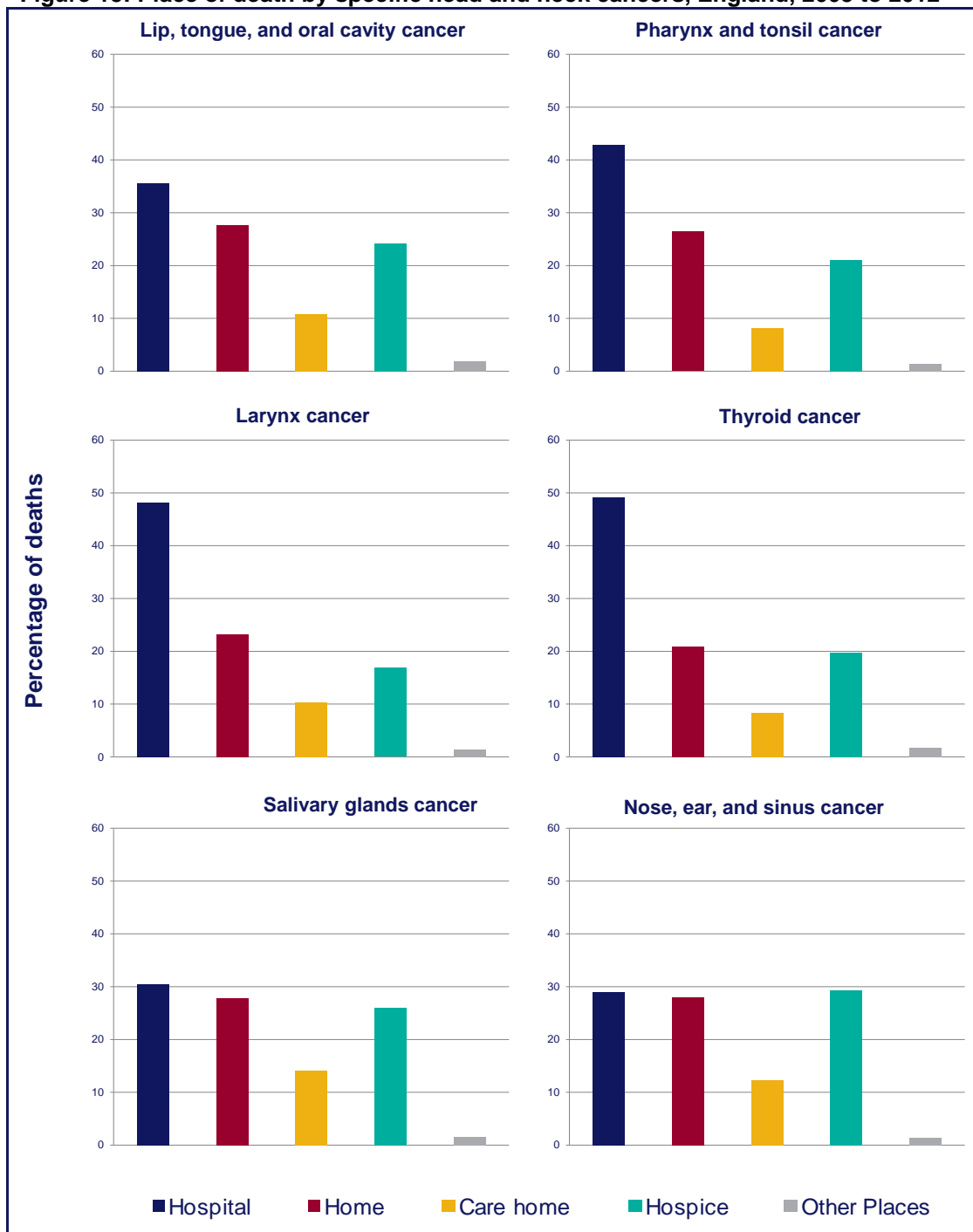
The largest proportion of deaths occurring at home (all ages) is shared by lip, tongue and oral cancer, salivary glands cancer, and nose, ear and sinus cancer groups. All have 28% home deaths, representing 2,290, 441, and 292 deaths respectively).

Cancer site and type are important considerations determining likely place of death. Head and neck cancers are a heterogeneous group of malignancies with different

complications and modes of death. These factors influence end of life care and are likely to influence choice of place of death (Figure 15, Figure 16, Figure 17 and Appendix 1, Table 7 and Table 8).

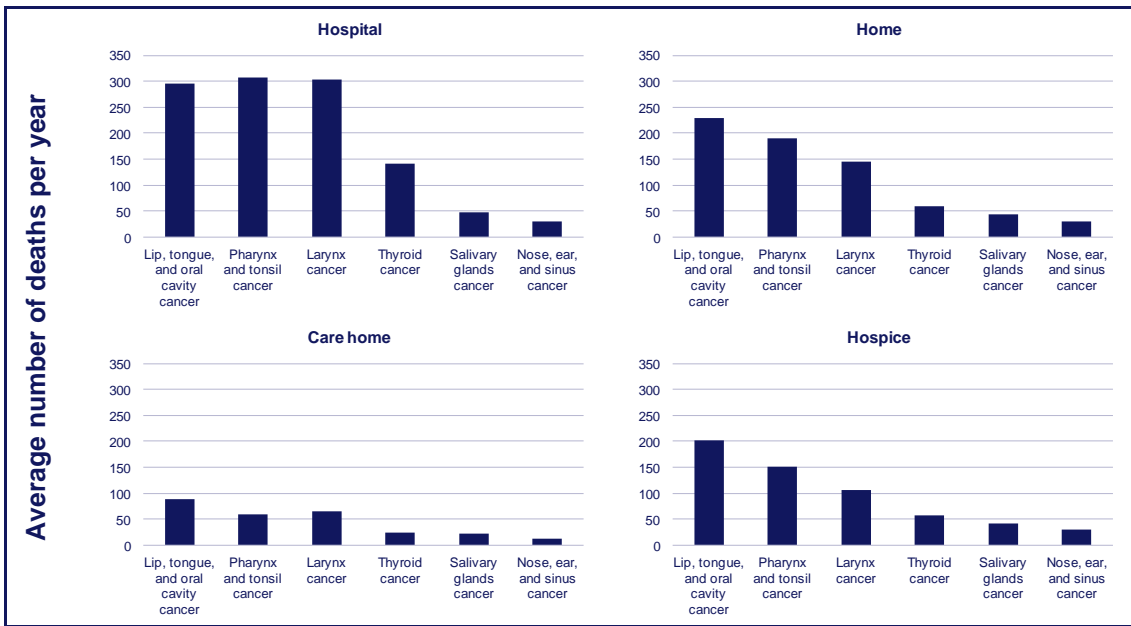
Larynx cancer has the lowest proportion of deaths in hospices (17%) for any head and neck cancer, on a par with all cancers, and other underlying cancer causes which are not head and neck cancer, but higher than for non-cancer deaths (1%).

Figure 15: Place of death by specific head and neck cancers, England, 2003 to 2012



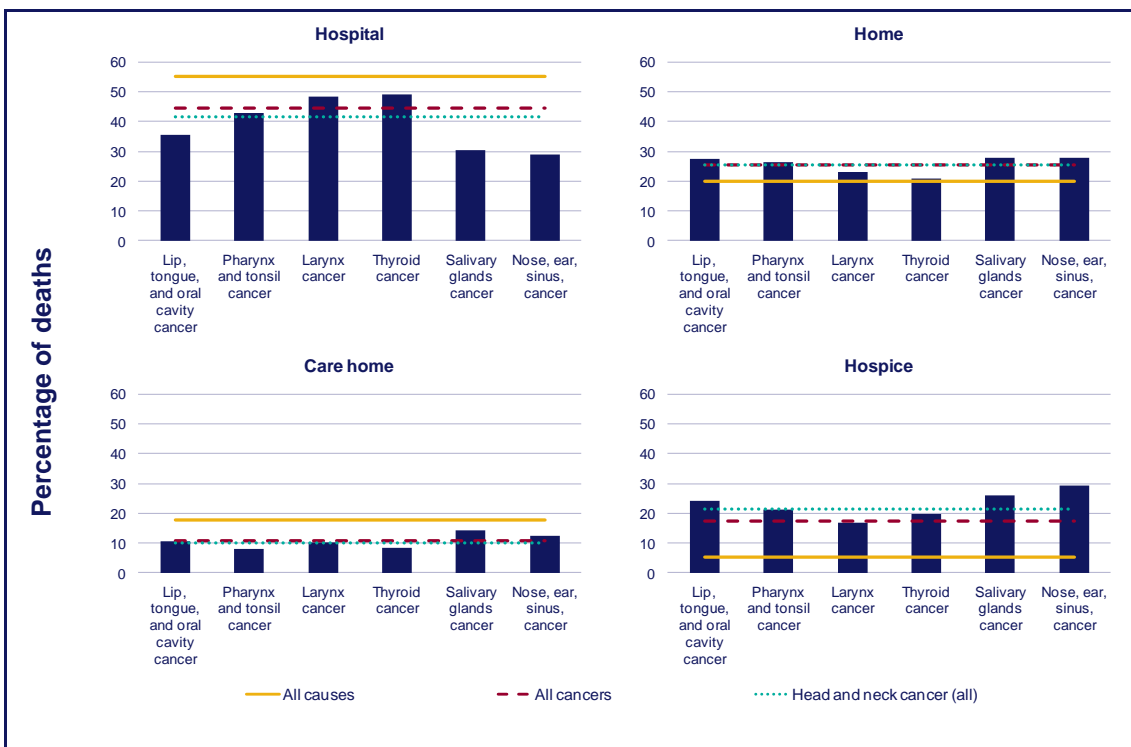
Source: Office for National Statistics mortality data

Figure 16: Number of deaths from head and neck cancers by place of death and underlying cause, England 2003 to 2012



Source: Office for National Statistics mortality data

Figure 17: Percentage of deaths from head and neck cancer by place of death and underlying cause, England, 2003 to 2012



Source: Office for National Statistics mortality data

4.8 Place of death by type of head and neck cancer and age

Different patterns emerge according to the type of cancer and age at death (Figure 18, Figure 19 **Error! Reference source not found.** and Appendix 1, Table 8). For those dying from lip, tongue and oral cavity cancer, (the most common underlying cause head and neck cancer type), the 65-84 age group has the highest proportion of deaths in hospital (37%, 140 deaths per year, annual average 2003-2012) followed closely by those aged under 65 (36%). However for deaths age 85 and over the proportion of deaths in care homes (32%) exceeds that in hospital (29%) for lip, tongue and oral cavity cancer, equating to about 39 deaths a year.

For the other most common forms of head and neck cancer, (pharynx and tonsil cancer, larynx cancer and thyroid cancer), hospital deaths make up the greatest proportion of deaths in all age bands, and especially among deaths aged 65 to 84 (389 deaths a year, annual average 2003-2012). The number of hospital deaths with an underlying cause of pharynx and tonsil cancer (141 deaths per year, annual average 2003-2012), and larynx cancer (175 deaths per year, annual average 2003-2012) exceed those for lip, tongue and oral cavity cancer in this age group, and the proportions of hospital deaths for larynx and thyroid cancer are around 50% (65-84 years hospital deaths: head and neck cancers, 43%; all cancers, 45%; all causes, 58%).

The rarer salivary glands cancers and nose, ear and sinus cancers tend to show variation from the prevailing patterns of proportions in places of death for head and neck cancers, but with some of the lowest proportions of hospital deaths of any types of head and neck cancers in all of the age groups.

4.8.1 Deaths under 65 years

The highest proportion of deaths in those aged under 65 are in hospital, (hospital deaths under 65 years: all causes 51%; all non-cancers, 56%; all cancers 43%; head and neck cancers 40%) followed by home, then hospice. This hierarchy holds true in the under 65s for all causes, all cancers and head and neck cancer. Although most types of head and neck cancer have proportions of hospital deaths which are less than the proportion for all cancers (43%), larynx (46%) and thyroid cancers (50%) are higher. A greater proportion of thyroid cancer deaths in the under 65s are in hospices (24%) than at home (23%). The under 65 age group records the highest proportions of hospice deaths of any age group with any head and neck cancer, and the proportion for head and neck cancers as a whole exceed those for all cancers (hospice deaths under 65 years: all causes, 10%; all cancers 24%; head and neck cancers, 25%). The proportion of hospice deaths aged under 65 years for larynx cancer (21%) is less than for all cancers.

4.8.2 Deaths aged 65 to 84 years

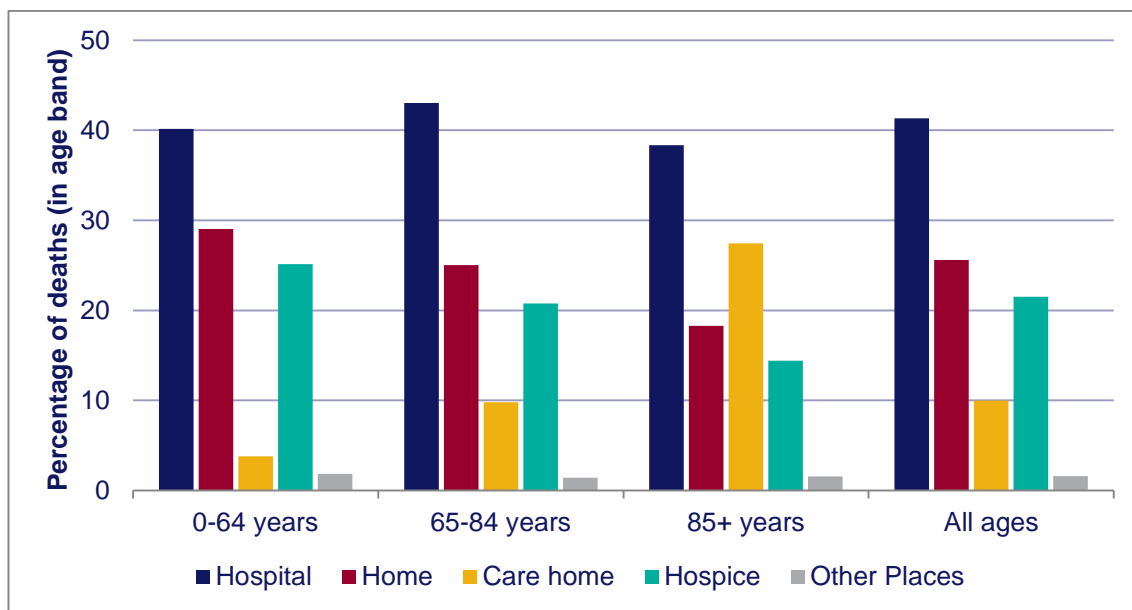
The largest number of deaths of any type of head and neck cancer when split by age band, and place of death is in this age band; about 6% of all head and neck cancer deaths are in hospital from larynx cancer, aged 65 to 84 years (175 deaths a year; annual average 2003-2012). Compared to the youngest age band there are higher proportions of deaths in hospital aged 65 to 84 years (All causes, 58%; all cancers, 45%; head and neck cancers, 43%). Pharynx and tonsil cancer (45%), larynx cancer (50%), and thyroid cancer (50%) all equal or exceed the proportion of hospital deaths for all cancers in this age group. The proportion of hospice deaths for all types of head and neck cancers exceed that of all cancers (17%) in this age group, except in the case of larynx cancers (16%).

4.8.3 Deaths aged 85 years and over

With increasing age, higher proportions of people die in care homes and fewer die in hospices or at home. For head and neck cancer deaths at 85 years and over, care homes are a more common place of death than home or hospice for almost all types of head cancers, to the extent that for lip, tongue and oral cavity cancer (32% care home, 389 deaths a year on average), and nose, ear and sinus cancer (36% care home, 56 deaths a year on average), care home deaths exceed hospital deaths. Differences in place of death for residents and non-residents of care homes are explored in section 4.9.

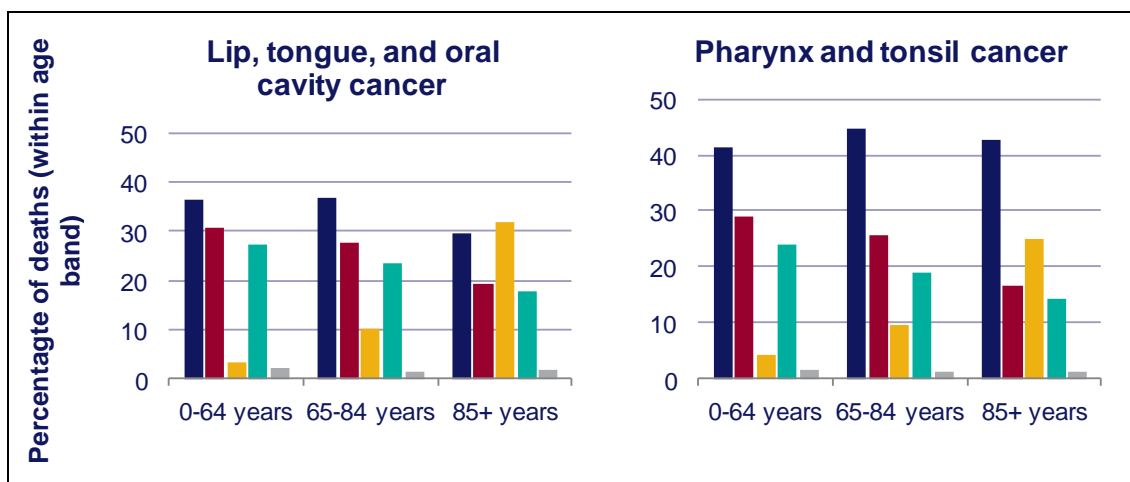
The characteristically younger age distribution of head and neck cancer patients means that the numbers with head and neck cancer requiring care aged 85 and over are small. However, this is a growing number of people, many of whom are likely to have co-morbidities which further complicate their care and affect their quality of life. It is therefore important that appropriate specialist care and training, and the right sort of good quality information is available and shared appropriately across organisational boundaries to promote high quality end of life care, in all settings.

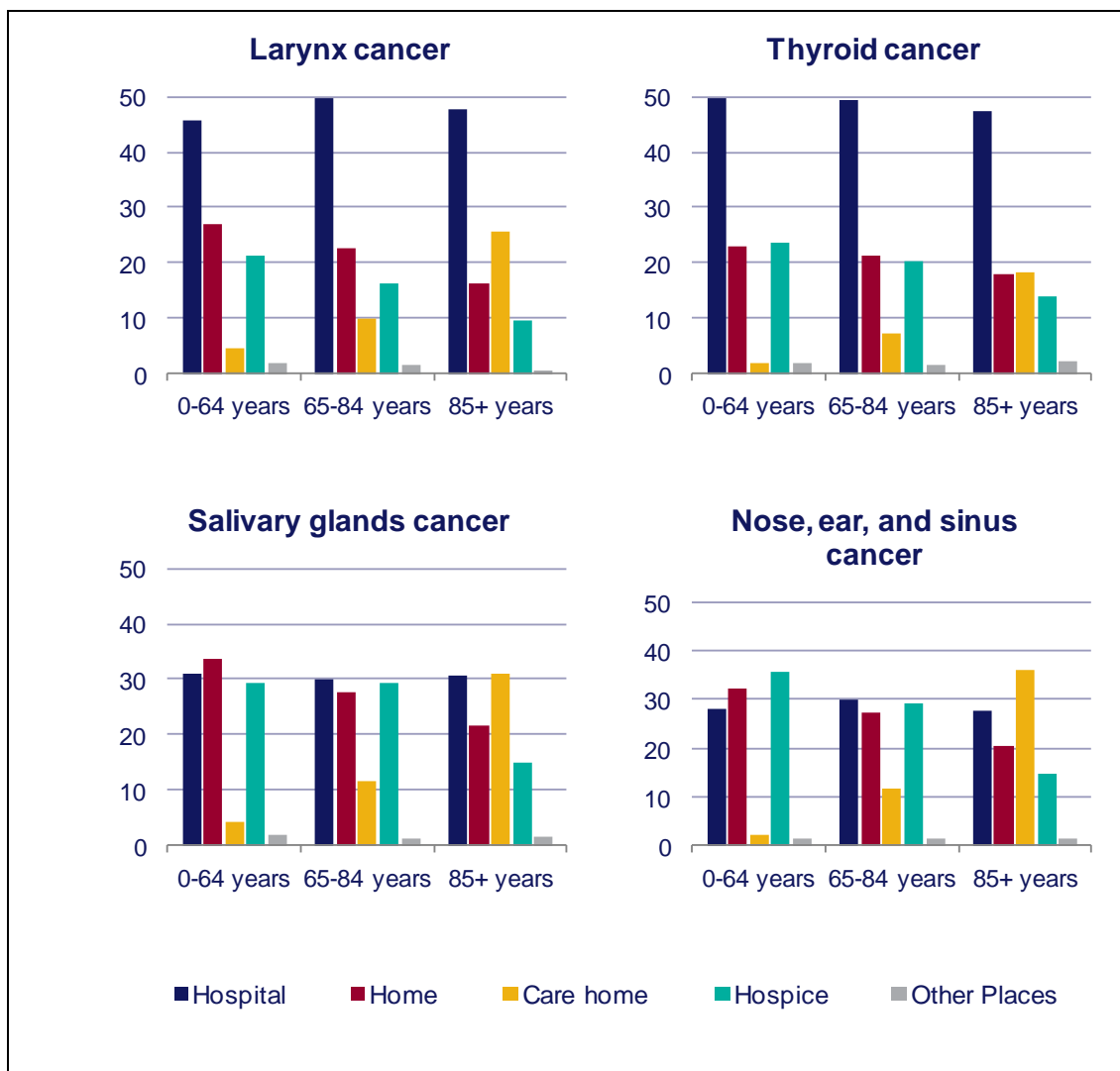
Figure 18: Distribution of place of death by age, deaths from head and neck cancer, England, 2003 to 2012



Source: Office for National Statistics mortality data

Figure 19: Distribution of place of death by age and type of head and neck cancer, England, 2003 to 2012





Source: Office for National Statistics mortality data

4.9 Underlying cause of death by deprivation quintile and place of death

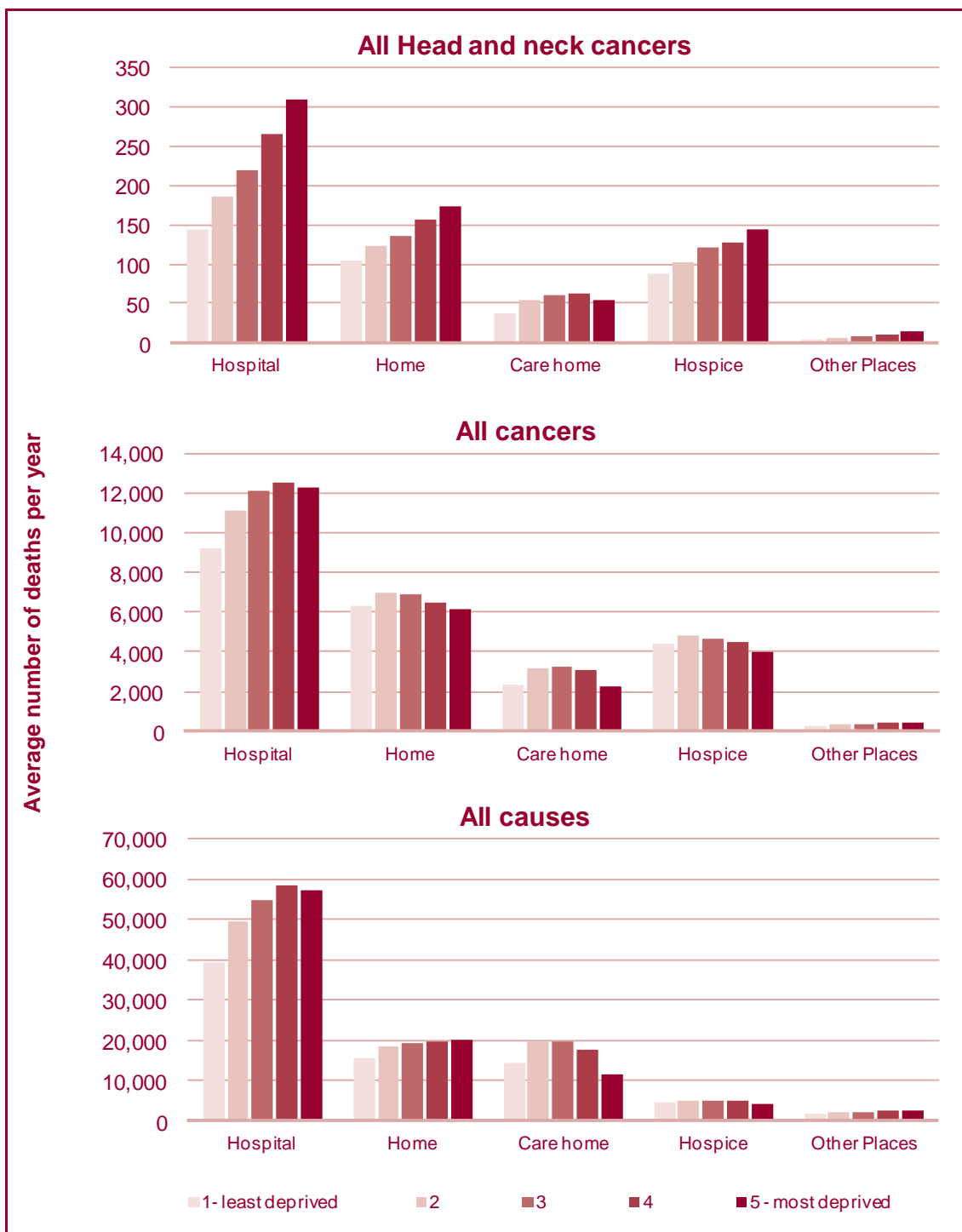
Hospital is a more common place of death in the most deprived quintile of the resident population than the least deprived quintile, both numerically (Figure 20) and as a proportion of all head and neck deaths in the quintile (Figure 21). Care home and hospice deaths are proportionately least common for the most deprived quintile.

Factors such as the expense of some services (care home and other specialist nursing services, for example) rather than others (hospital) are relevant to the outcomes for head and neck cancer. Whereas the results for all cancers show that “middle income groups” are sometimes most affected in such circumstances, compared to those at extremes of the deprivation quintiles (because they can neither afford self-funded care, nor are they eligible for help from statutory sources), the distributions for head and neck

cancer types mainly show that people resident in the most deprived quintiles are more likely affected.

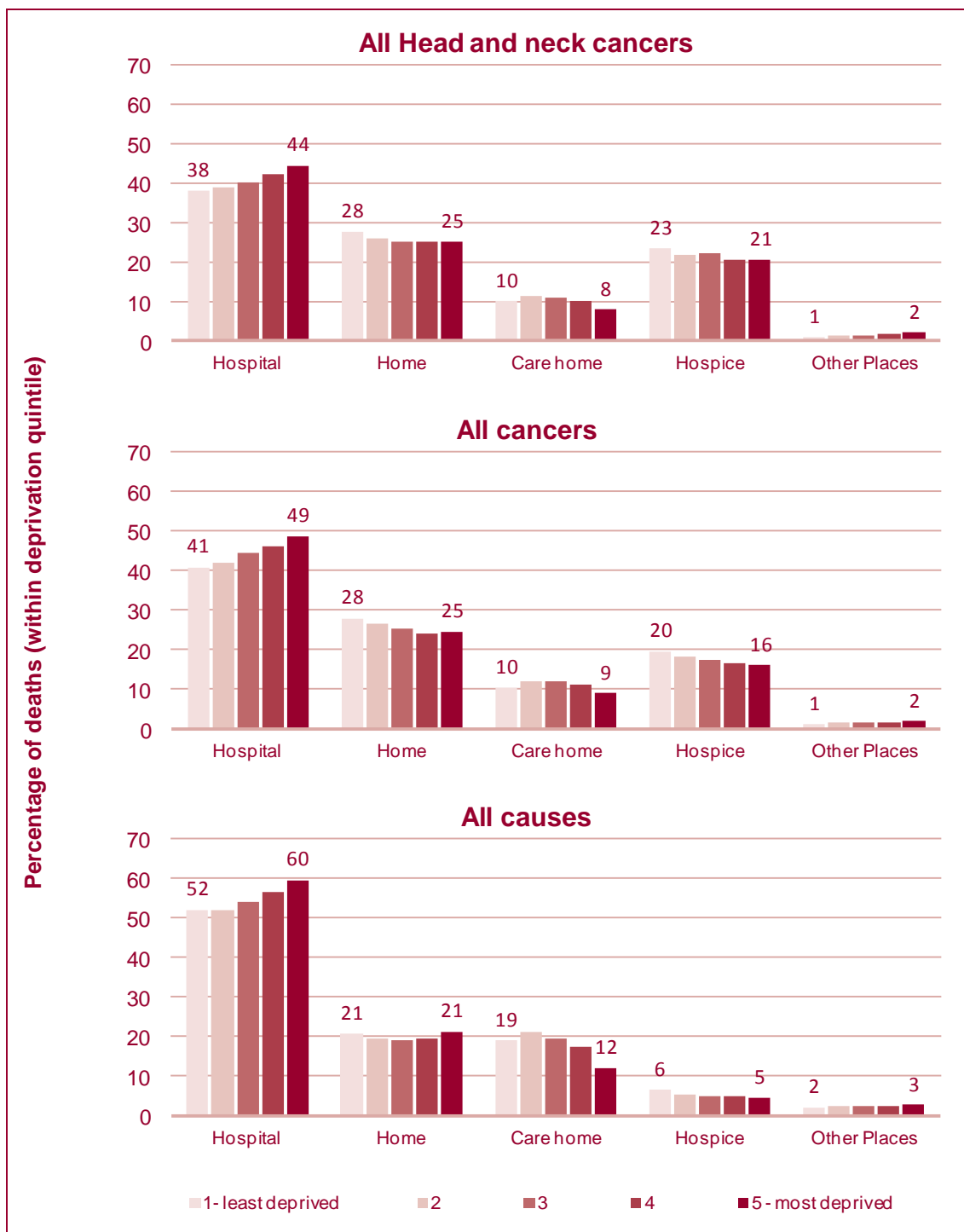
While it is important to remember that residence in an area of deprivation does not necessarily apply to the personal circumstances of all individuals within that area, and that it does not necessarily reflect characteristics such as ability or willingness, lack of “social capital” and access to networks to provide knowledge, and sometimes leverage, on timely use of services makes it more likely for some that a hospital death will ensue.

Figure 20: Deaths from head and neck cancers by quintile of income deprivation, England, 2003 to 2012



Source: Office for National Statistics mortality data

Figure 21: Percentage of deaths from head and neck cancers by quintile of income deprivation and place of death, average deaths per year, England, 2003 to 2012



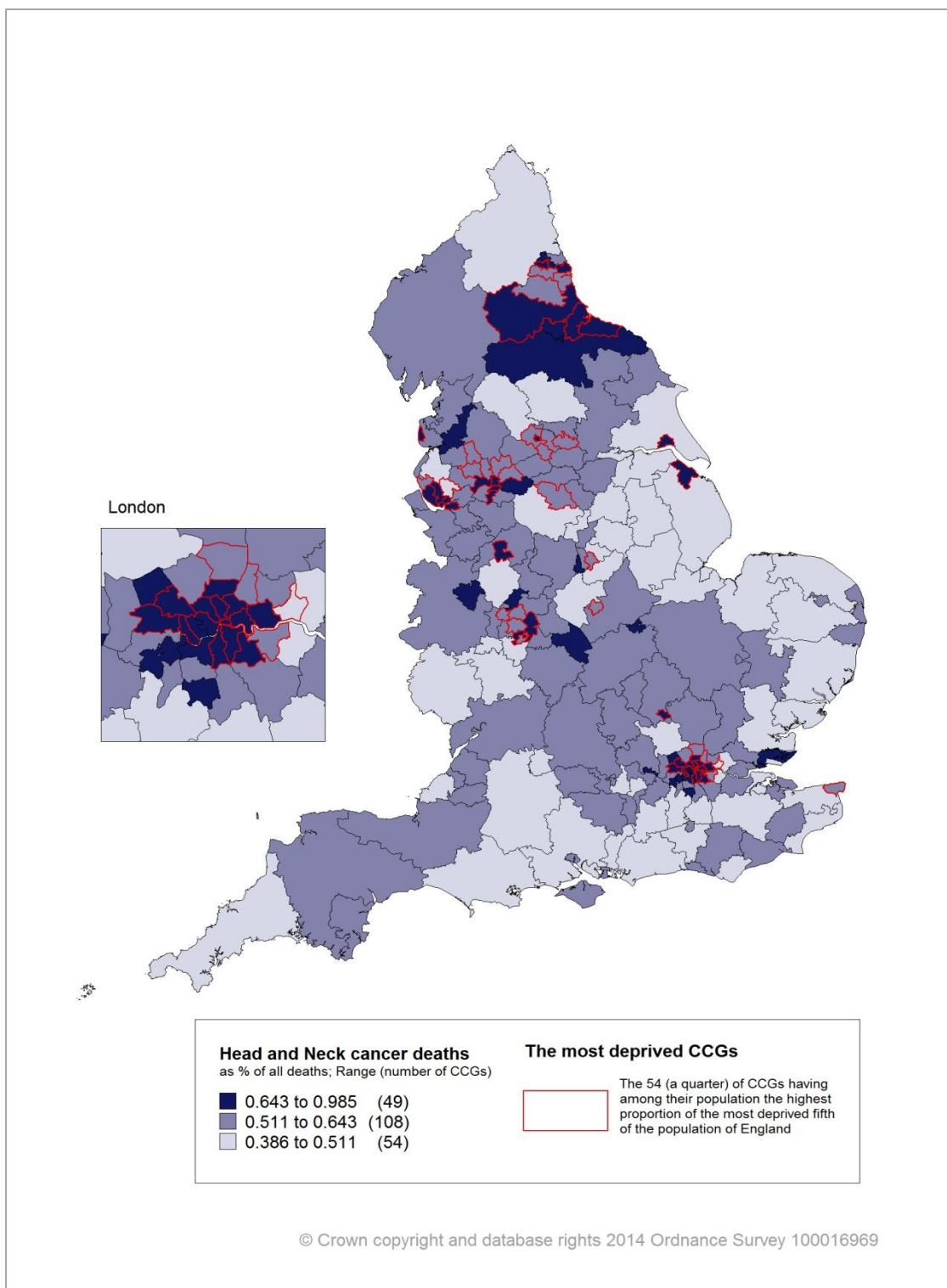
Source: Office for National Statistics mortality data

4.10 Place of death by geographical area of residence

Some areas of the country have a greater proportion of deaths from head and neck cancer than others. Figure 22 illustrates the variation by Clinical Commissioning Group (CCG). Many of those CCGs where death from head and neck cancer is most common are among the CCGs with the most deprived populations.

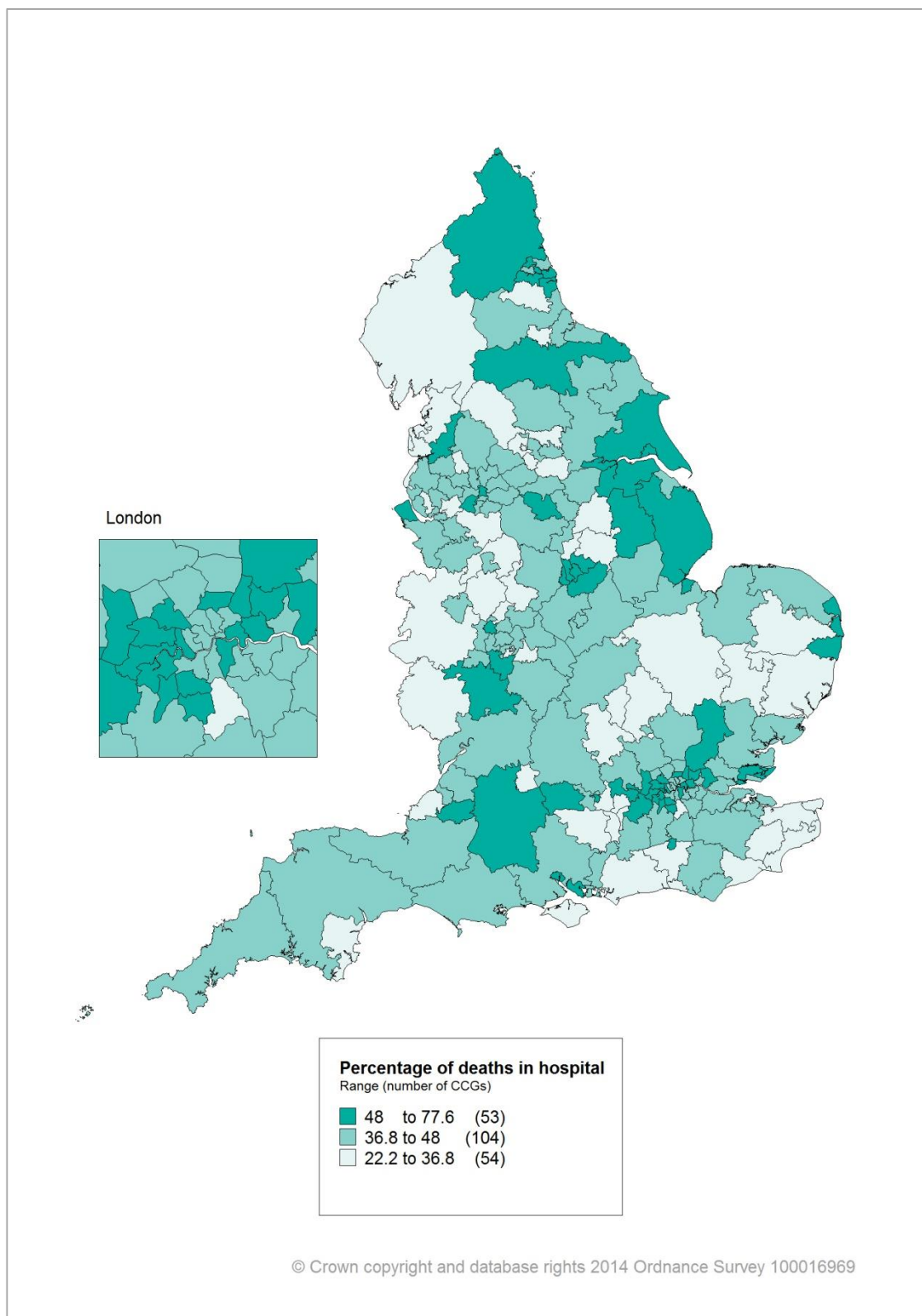
In some CCG areas less than a third of deaths from head and neck cancer occur in hospital. Figure 23 illustrates that the lowest rates are distributed across the country but appear most common in the East, the West Midlands and the extreme North West. The highest hospital death rate is in London.

Figure 22: Percentage of all deaths that have an underlying cause of head and neck cancer by CCG, England, 2003 to 2012



Source: Data from Office for National Statistics mortality statistics. Map produced by Public Health England
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Figure 23: Percentage of deaths with an underlying cause of head and neck cancer that occur in hospital by CCG, England, 2002 to 2011



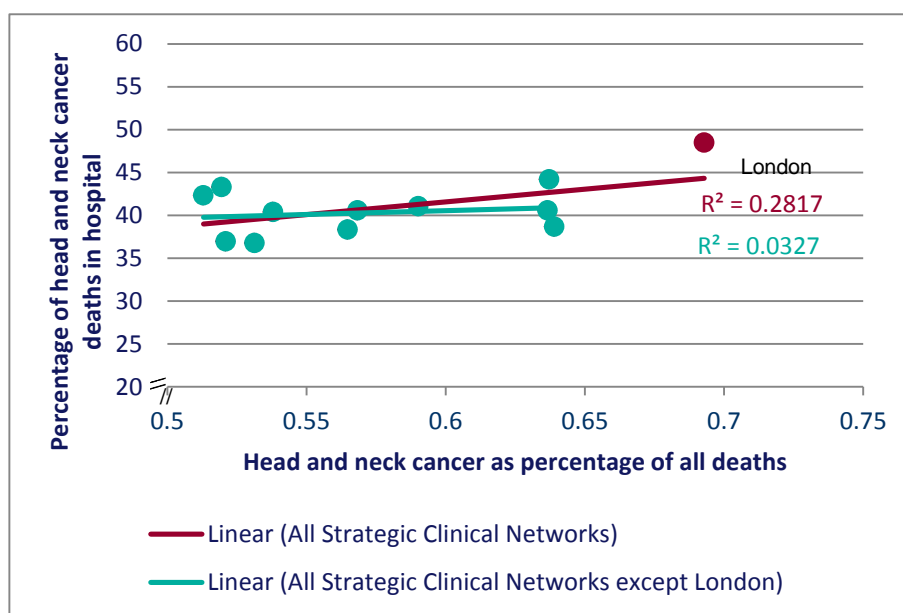
Source: Data from Office for National Statistics mortality statistics. Map produced by Public Health England
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The detail in the maps is summarised for Strategic Clinical Networks in Figure 24 and shows that the highest proportion of deaths from head and neck cancer are in London and the North of the country, while the lowest are in the South West, South East and East Midlands.

London has both the highest proportion of deaths from head and neck cancer, and the highest proportion of these deaths in hospital. Among the networks outside London there is no association between the rate of death in hospital and the proportion of deaths from head and neck cancer.

The lowest death in hospital rates are in South East Coast and Thames Valley and South West Strategic Clinical Network areas.

Figure 24: Deaths from head and neck cancer, and percentage of these occur in hospital by Strategic Clinical Network, England, 2002 to 2011



Source: Office for National Statistics mortality data

4.11 Trends in place of death by age and sex

Between 2003 and 2012, there are differing trends in places of death for males and females, depending on their broad age band (under 65 years, 65 to 84 years or 85 years and over), as shown in Figure 25 and Figure 26.

In order to describe this, the average annual number and percentage of deaths for the earlier five years (2003 to 2007) are compared to the later five years (2008 to 2012).

On average, there are 248 extra deaths a year with an underlying cause of head and neck cancer in the most recent five years (Average annual deaths 2008 to 2012: 2,850 deaths per year) compared to the earlier period (2003 to 2007; 2,602 deaths per year).

In the five years since 2008, the number and percentages of deaths in homes and care homes is rising for both sexes in all age bands.

The picture is more complex for hospital deaths, where although the percentages are falling in all age groups for males and females, the number of deaths in hospitals is rising for females under 65 years and steady for males 85 years and over. Possibly this may be because of a) increasing smoking uptake by younger females and b) more men living for longer (over 85 years) affecting numbers in the most recent five years

Analysis of deaths with an underlying cause of head and neck cancer, by age and sex and by place of death, results in small numbers for “other places” and for female deaths under 65 in care homes. As a result the percentage variations for these groups need to be considered with caution in this section.

4.11.1 Deaths in under 65 year olds by sex and place of death

The average number of male deaths under 65 years is higher in the most recent five year period (2008-2012) by 45 deaths per year (a total of 760 deaths per year) compared to 2003-2007, while the number of female deaths is higher by 32 per year (at 288 deaths per year).

Death in hospital is less common in the most recent five years for both males and females in this age group, for males falling from 43% to 37% of deaths and for females 41% to 39%.

Death at home has become more common in the most recent five years period, for males rising from 27% to 31% and for females 28% to 30%.

The percentage of deaths in a hospice have not changed, being in the most recent five years 25% of male deaths and 26% of female deaths.

Few people at this age die from head and neck cancer in a care home and there has been little change in the proportion of deaths that occur in a care home for males (5% in 2008-2012 and 4% in 2003-2007) or females (3% and 2%).

4.11.2 Deaths in 65 to 84 year olds by sex and place of death

On average the number of male deaths between 65 and 84 years is higher in the most recent five year period (2008-2012) by 100 deaths per year (a total of 929 deaths per year) compared to 2003-2007, while the number of female deaths has barely changed (a rise of eight deaths per year) at 469 deaths per year in 2008-2012.

Death in hospital is less common in the most recent five years for both males and females in this age group, for males falling from 48% to 40% of deaths and for females 45% to 38%.

Death at home has become more common in the most recent five years period, for males rising from 23% to 28% and for females 20% to 28%.

The percentage of deaths in a hospice have not changed, being in the most recent five years 20% of male deaths and 21% of female deaths.

About 11% of deaths in this age group are in a care home, this place of death has become more common for males in the most recent five years (11% from 8% of deaths), and little change for females (11% from 10%).

4.11.3 Deaths in people aged 85 years and over by sex and place of death

There are relatively few deaths from head and neck cancer in this age group. On average the number of male deaths over 85 years is higher in the most recent five year period (2008-2012), by 34 deaths per year (a total of 187 deaths per year), compared to 2003-2007, while the number of female deaths is higher by 29 deaths per year at 217 deaths per year in 2008-2012.

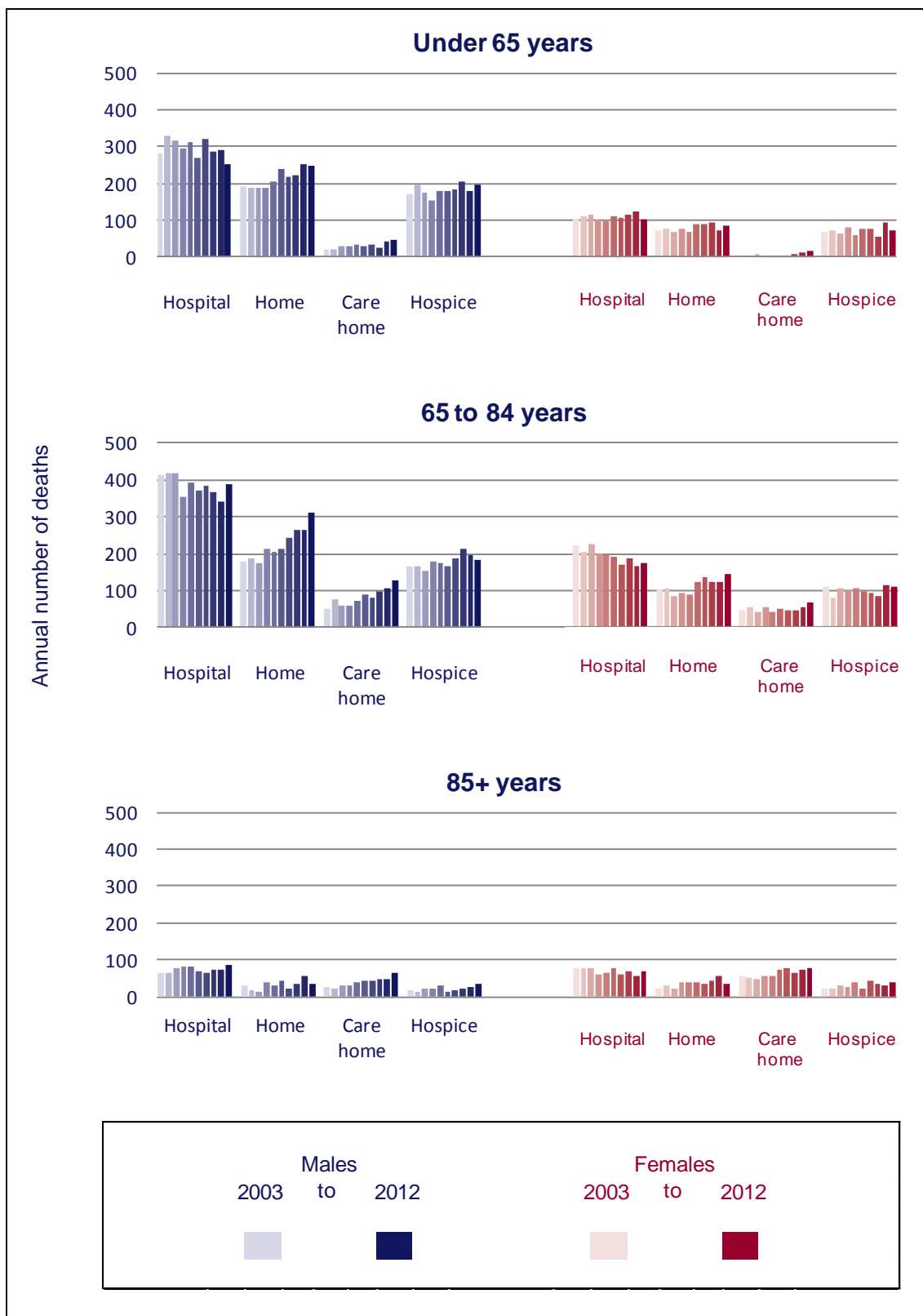
Death in hospital is less common in the most recent five years for both males and females in this age group, for males falling from 48% to 40% of deaths and for females 39% to 30%.

Death at home has become more common in the most recent five years, for males rising from 17% to 20%, and for females rising from 16% to 19%.

The percentage of deaths in a hospice have changed little, being in the most recent five years 13% of male deaths in 2008-2012 (down from 15% in 2003-2007) and 15% of female deaths (no change).

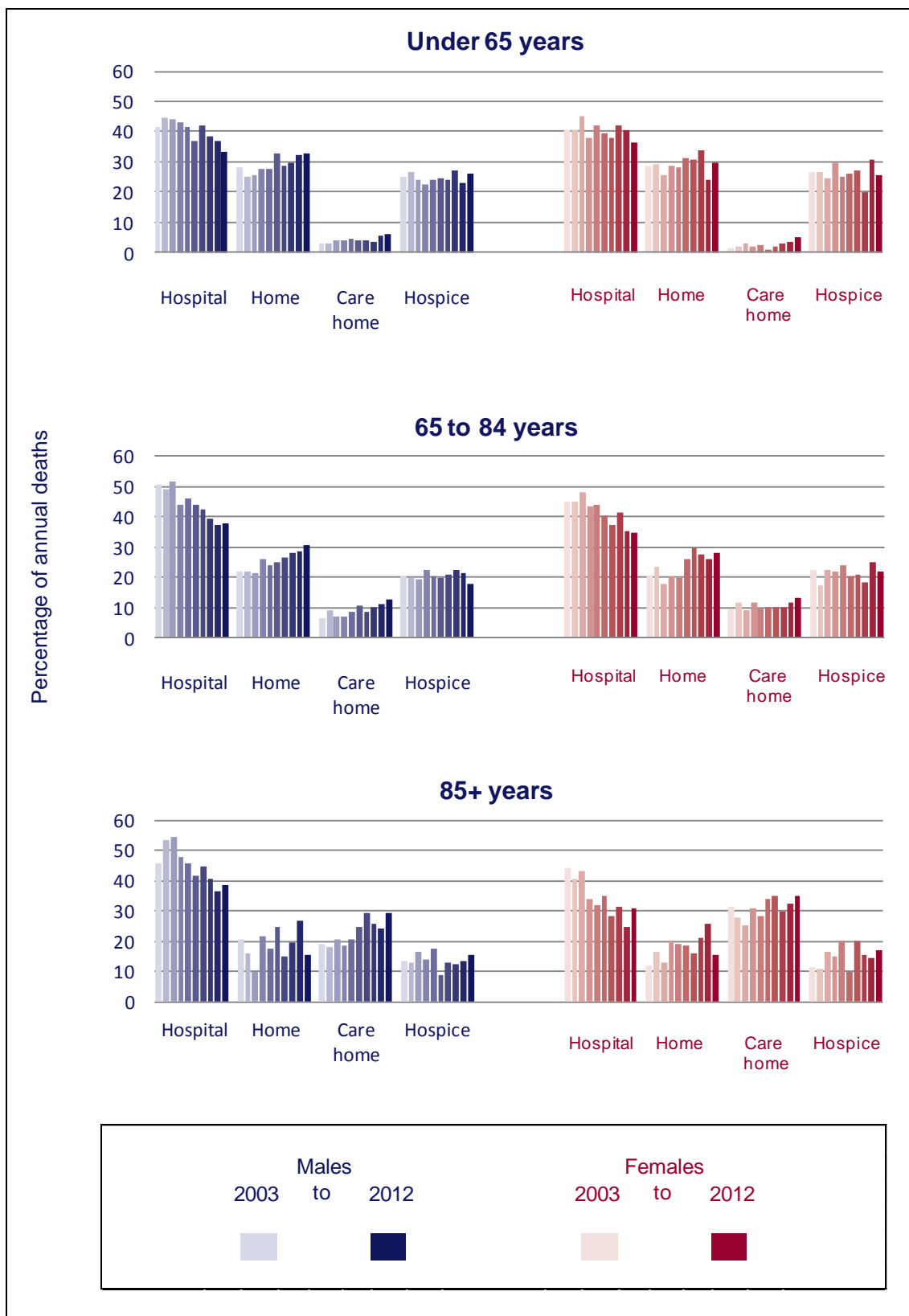
Death in a care home has become more common for both males and females, and is now the most common place of death for females who die from head and neck cancer aged 85 or older. For males deaths in care home have risen from 19% in 2003-2007 to 26% in 2008-2012, and for females there has been a rise from 29% to 33%.

Figure 25: Trends in numbers of death by age and sex and place of death, England, 2003 to 2012



Source: Office for National Statistics mortality data

Figure 26: Trends in percentages of deaths by age and sex and place of death, England, 2003 to 2012



Source: Office for National Statistics mortality data

4.12 Differences in place of death for residents and non-residents of care homes

This question was answered approximately by assuming that all residents of care-homes would have the care-home's postcode as their place of residence declared on the death certificate. These people were identified if their postcode of residence is in the list of addresses for care homes held by ONS that are used to categorise place of death. All other deaths are considered non-residential in care homes for the purposes of this report (Figure 27 and Figure 28)

4.12.1 Increasing numbers of people who die with an underlying cause of head and neck cancer were residents in care homes

The vast majority of people who die with an underlying cause of head and neck cancer are non-resident in care homes (2003-2012: Males 94%, females 90%)

There are a rising percentage of deaths from head and neck cancer who are care home residents. This is of importance in planning appropriate care support. In 2012, 6% of males (140 deaths) and 10% of females (125 deaths) who died of head and neck cancer were residents of care homes.

4.12.2 Care home residents who die with an underlying cause of head and neck cancer are more likely to die in a care home than in hospital

The most common place of death for residents of a care home who die from an underlying cause of head and neck cancer is a care home, although the total number of deaths is quite small (2012: males, 67%, 94 deaths; females, 76%, 96 deaths).

Care home is becoming an increasingly likely place of death for care home residents with head and neck cancer (55% in 2003, 71% in 2012).

In contrast, the most common place of death for non-residents of a care home with an underlying cause of head and neck cancer is hospital (In 2012: males 38%, females 37%).

4.12.3 Care homes are also recorded as place of death for non-residents

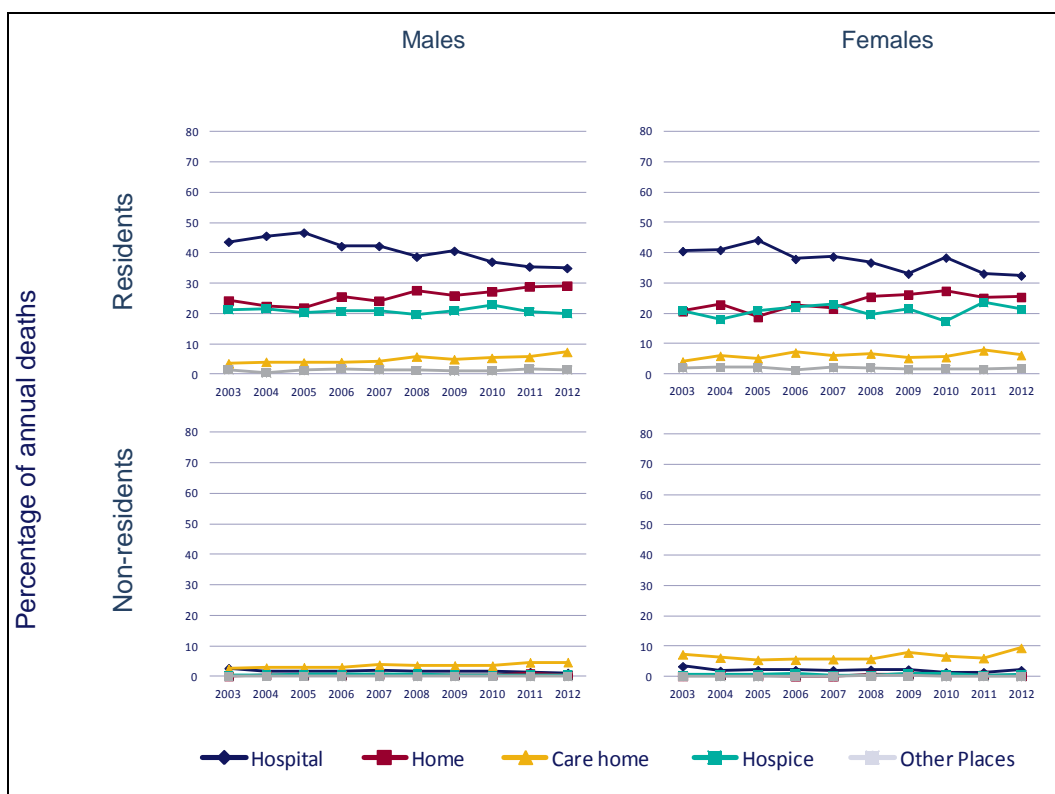
Just over half of deaths in a care home are of people whose residential address is not that of a care-home (2003-2012, 53% on average; 2012 53%).

Of non-residents who died with an underlying cause of head and neck cancer in 2012 the small percentage of who died in a care-home (8%, 210 deaths) exceeded the

number of residents (190) who died with an underlying cause of head and neck cancer where care homes are recorded as the place of death.

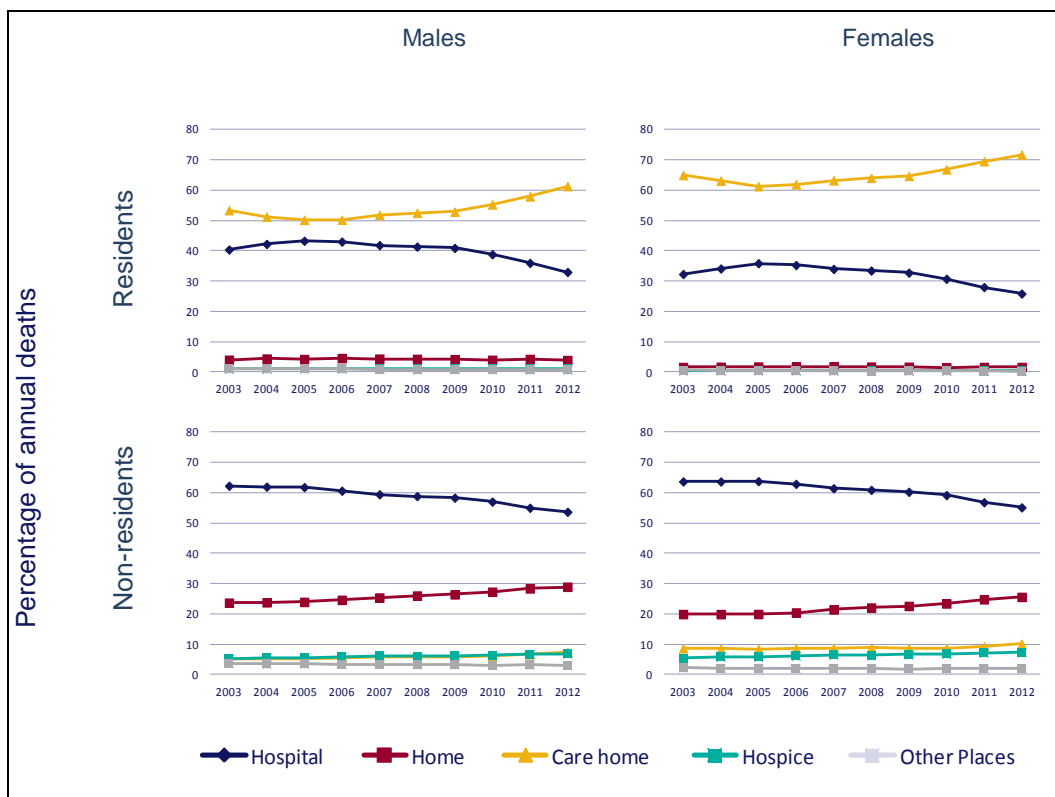
These people and their families and carers have the additional challenges of negotiating changes in location and often service providers. This requires careful consideration of how to rapidly implement appropriate end of life care packages for temporary residents of care homes.

Figure 27: Percentage of annual deaths for residents and non-residents of care homes, by sex; underlying cause of head and neck cancer



Source: Office for National Statistics mortality data

Figure 28: Percentage of annual deaths for residents and non-residents of care homes, by sex; all causes



Source: Office for National Statistics mortality data

5 Discussion

Head and neck cancers, when recorded as the underlying cause of death, account for over 2% of all cancer deaths and 0.6% of all deaths (3,020 in 2012). Using the national mortality dataset spanning a decade we have been able to undertake detailed analyses of place of death and the influence of type of head and neck cancer, demographic characteristics of patients and region of residence on where patients die.

We have shown that counting only those deaths where head and neck cancers are recorded as the underlying cause of death underestimates the numbers of patients who potentially need specialist end of life care for their head and neck cancer. Adding deaths where head and neck cancers are mentioned elsewhere on the death certificate increases the number to 3,718 deaths in 2012 and the proportion of all deaths to 0.8%.

It is not known whether a recording of head and neck cancer as the underlying cause of death is a better marker of need for specialist palliative care. It is also not known to what extent the 0.8% still undercounts the number of patients needing specialist palliative care for terminal head and neck cancer. The latest (2012) incidence figures show that 11,725 patients were diagnosed with head and neck cancer, yet counting all deaths with at least a mention of head and neck cancer on the death certificate brings the total to 3,718, which is only about one third of all cases. The only way to assess more accurately the proportion of head and neck patients who have specialist palliative care needs would be through prospective audit.

The eight key findings of this study are:

- the young age at death especially for many male patients with head and neck cancers
- the larger number of males dying of head and neck cancer than females
- one in five male and one in six female head and neck cancer patients will die within a year of diagnosis, 10% will die within six months of diagnosis
- patients dying of head and neck cancer are more likely to live in the most deprived areas of the country
- patients from more deprived areas of the country are more likely to die in hospital
- there is significant geographical variation in proportion of patients dying in hospital across the country over and above the relationship between deprivation and death in hospital

- the proportion of patients dying of head and neck cancer in hospital has reduced and the proportion dying at home and in care homes has increased
- two-thirds of the patients dying of head and neck cancer who live in care homes stay there to die and less than one in five are admitted and die in hospital

We have shown that demographic characteristics of patients affect the place of death and this may reflect both differences in care needed and accessed by patients dying of head and neck cancer.

The majority of males (70%) who died with an underlying cause of head and neck cancer were aged less than 75 years at death compared to about half of women. This young age at death has important implications for the support of families as well as the patients themselves, especially as half of the men dying of head and neck cancer will be of working age at the time of death and may therefore have dependent family. This means that providing family support for young patients dying of head and neck cancer may be especially important. Women dying of head and neck cancer tend to be older and may be widowed and this may explain the higher proportion of older women who die in care homes. While there has been generic work with care homes in some areas to improve end of life care, it will be important to ensure that patients who die of head and neck cancer in care homes have specific needs met.

In this report, place of death is used as a proxy for quality of care, with death in home, care home or hospice being considered preferable compared to death in hospital. This reflects people's views expressed in numerous surveys both of the general population and of patients nearing the end of life.

The report shows that the most common place of death is in hospital (41%) and this is slightly lower than for all cancers and much lower than for all deaths. Home (26%) is the next most common place of death for all age groups (under 65s, 29%; 65 to 84 years 25%), except those aged 85 years or older where it is for fewer than 20%. This compares with 20% for deaths from all ages/all causes. Hospice is the place of death for 22% of head and neck patients overall, with more than 25% of younger patients dying in hospices, but less than 15% of people aged 85 and over. For people aged 85 years and over dying of head and neck cancers, care homes (27%) are the second most frequent place of death after hospitals (38%).

Trends over the decade have shown that the proportion of patients dying in hospital has reduced and at home increased, with a slight increase in the proportion of deaths in care homes. For those patients resident in care homes, the proportion being admitted to hospital to die has reduced and the proportion dying in the care home has increased.

The increasing numbers of patients dying where they normally live, either at home or in care homes suggests that the national End of Life Care Strategy has had an impact on patient choice, if this trend continues it will have an impact on the way palliative care is delivered in the community.

The report shows that for all types of head and neck cancer except thyroid and salivary glands, greater numbers of people dying have lived in the most deprived areas of England than in the most affluent. This is because these cancers tend to be smoking and/or alcohol related and historically there were higher levels of prevalence of both smoking and alcohol misuse in more deprived areas. However, this observation has implications for care provision, people from more deprived area and their families may have less resources and options in terms of end of life care, housing may not be suitable for care at home and carers may suffer large income losses when they take time off to care for their loved ones. It has been suggested that it costs twice as much to provide end of life care for the most deprived than the most affluent. Socioeconomic resources may contribute to the higher proportion of patients from more deprived areas dying in hospital. Other factors may be co-morbidities especially smoking and alcohol related which increase the complexity of care.

The large geographical variations in proportion of patients dying in hospital probably reflect both the local demographic characteristics of patients but also the quality and quantity of palliative and community care.

6 Conclusions and next steps

This is the first national report to look at the demographic and tumour characteristics of head and neck cancer patients with a focus on need for end of life care. It shows that not only do these characteristics reflect need, but they may also identify inequalities in access to care. This is especially true for the elderly and people from the most deprived areas of the country. Mortality data is limited in its ability to assess the true need. It will be important in future studies to differentiate between need and preference for place of death. The small numbers of deaths per year emphasise the need for national audit, in order to better characterise the spectrum of needs of head and neck cancer patients at the end of life.

This report will be widely circulated to head and neck cancer specialists and palliative care specialists. It has already been shared with the National Cancer Intelligence Network (NCIN), Site Specific Specialist Group for head and neck cancer and the National Cancer Research Institute (NCRI) head and neck group. It is hoped that providers of care to head and neck cancer patients, including head and neck cancer multidisciplinary teams, primary care teams and palliative care teams, will reflect on the findings of this report and their own practice, particularly whether patients presenting with less than a year prognosis are referred quickly to palliative care teams and whether there are inequalities in access to a preferred place of death by gender, age or socioeconomic group.

This report has focussed on place of death. The next report on end of life care for head and neck cancer patients will focus on hospital admissions during the last year of life and how cancer type and demographics influence this.

7 Feedback

We welcome your feedback about this report. Please send comments to:
neolcin@phe.gov.uk

Further reading

For contextual and supplementary reading, we recommend reading this report alongside:

Department of Health, (2010). Manual for Cancer Services 2008: Head and Neck Measures, available from: www.gov.uk/government/publications/manual-for-cancer-services-2008-head-and-neck-measures

Department of Health, (2008). End of Life Care Strategy: promoting high quality care for adults at the end of their life, available from: www.gov.uk/government/publications/end-of-life-care-strategy-promoting-high-quality-care-for-adults-at-the-end-of-their-life

National Cancer Research Institute, (2012). NCRI Head and Neck Cancer Clinical Studies Group, Annual Report 2011/2012, available from: www.ncri.org.uk/csg/annual_reports/NCRI_Head_&_Neck_CSG_-_Annual_Report_2011-12.pdf

References

Department of Health (2008). End of Life Care Strategy: promoting high quality care for all adults at the end of their life, available from: www.gov.uk/government/publications/end-of-life-care-strategy-promoting-high-quality-care-for-adults-at-the-end-of-their-life

Department of Health (2012). Healthy Lives, Healthy People: Improving outcomes and supporting transparency, from: www.gov.uk/government/publications/healthy-lives-healthy-people-improving-outcomes-and-supporting-transparency

Appendix: Additional tables (1 to 9)

**Table 1: Male incidence trends for head and neck cancers, by type, and age band
England, 1990 to 2012**

Year of diagnosis	under 65 years							65 to 84 years							85 years or older							Total	
	Lip, tongue and oral cavity cancer	Pharynx and tonsil cancer	Larynx cancer	Thyroid gland cancer	Salivary glands cancer	Nose, ear and sinus cancer	All Head and Neck	Lip, tongue and oral cavity cancer	Pharynx and tonsil cancer	Larynx cancer	Thyroid gland cancer	Salivary glands cancer	Nose, ear and sinus cancer	All Head and Neck	Lip, tongue and oral cavity cancer	Pharynx and tonsil cancer	Larynx cancer	Thyroid gland cancer	Salivary glands cancer	Nose, ear and sinus cancer	All Head and Neck		
1990	482	383	646	128	76	98	1,813	496	292	815	80	78	123	1,884	43	21	41	8	19	8	140	3,837	
1991	563	370	599	142	79	78	1,831	504	306	834	85	115	106	1,950	36	15	45	*	14	*	122	3,903	
1992	587	379	645	146	88	106	1,951	535	343	871	89	107	103	2,048	56	14	56	*	12	*	149	4,148	
1993	557	409	600	161	75	90	1,892	513	331	849	72	115	120	2,000	50	23	48	*	19	*	152	4,044	
1994	635	414	662	140	101	84	2,036	572	329	908	95	104	98	2,106	49	15	64	7	22	9	166	4,308	
1995	581	455	623	148	81	75	1,963	491	293	793	88	131	99	1,895	45	27	53	8	17	7	157	4,015	
1996	649	438	638	193	67	77	2,062	506	327	802	87	110	107	1,939	68	29	58	*	23	*	189	4,190	
1997	664	467	640	194	94	89	2,148	546	323	809	96	103	99	1,976	53	29	54	8	20	13	177	4,301	
1998	678	514	613	186	111	74	2,176	525	338	825	137	118	102	2,045	54	20	62	9	20	14	179	4,400	
1999	760	593	635	203	93	89	2,373	593	372	780	108	118	93	2,064	57	34	79	10	18	11	209	4,646	
2000	782	611	685	194	102	94	2,468	614	333	815	114	119	98	2,093	66	24	94	12	19	15	230	4,791	
2001	888	577	679	214	109	99	2,566	560	337	762	114	144	87	2,004	62	17	70	11	17	16	193	4,763	
2002	840	619	623	202	95	86	2,465	519	322	726	117	113	82	1,879	68	33	50	9	22	14	196	4,540	
2003	916	707	620	245	100	93	2,681	613	331	729	94	114	88	1,969	52	27	62	14	33	14	202	4,852	
2004	901	693	635	260	135	87	2,711	580	353	757	117	122	103	2,032	66	29	67	11	17	11	201	4,944	
2005	927	739	641	259	126	77	2,769	594	380	734	121	108	85	2,022	69	20	76	14	33	8	220	5,011	
2006	1,012	859	670	288	135	90	3,054	663	405	713	144	133	109	2,167	75	32	79	16	38	13	253	5,474	
2007	1,095	852	624	332	125	98	3,126	635	364	761	157	123	93	2,133	77	28	99	13	27	15	259	5,518	
2008	1,100	881	664	330	138	107	3,220	779	412	753	121	146	119	2,330	76	36	101	24	32	14	283	5,833	
2009	1,170	914	657	375	142	115	3,373	828	431	784	152	158	100	2,453	84	27	67	21	43	14	256	6,082	
2010	1,266	956	661	414	122	116	3,535	804	460	783	190	141	91	2,469	82	38	85	26	38	19	288	6,292	
2011																							
2012	1,283	1,116	626	472	120	122	3,739	1,003	528	831	212	142	120	2,836	117	53	94	22	38	14	338	6,913	

Note: * Some values are suppressed because of small numbers

Source: National Cancer Intelligence Network (NCIN)

Head and neck cancers in England: who dies from them and where do they die?

Table 2: Female incidence trends for head and neck cancers, by type, and age band England, 1990 to 2012

Year of diagnosis	under 65 years								65 to 84 years								85 years or older								Total
	Lip, tongue and oral cavity cancer	Pharynx and tonsil cancer	Larynx cancer	Thyroid gland cancer	Salivary glands cancer	Nose, ear and sinus cancer	All Head and Neck		Lip, tongue and oral cavity cancer	Pharynx and tonsil cancer	Larynx cancer	Thyroid gland cancer	Salivary glands cancer	Nose, ear and sinus cancer	All Head and Neck		Lip, tongue and oral cavity cancer	Pharynx and tonsil cancer	Larynx cancer	Thyroid gland cancer	Salivary glands cancer	Nose, ear and sinus cancer	All Head and Neck		
1990	245	136	139	397	68	46	1,031		318	185	177	193	80	90	1,043		82	20	19	35	22	16	194	2,268	
1991	203	156	118	398	61	44	980		313	171	196	225	70	84	1,059		87	32	22	38	17	23	219	2,258	
1992	251	148	119	425	78	56	1,077		324	184	192	203	85	100	1,088		81	30	17	39	26	16	209	2,374	
1993	256	163	123	403	62	55	1,062		349	153	221	201	64	77	1,065		84	25	27	50	25	18	229	2,356	
1994	245	144	121	500	79	57	1,146		360	182	201	220	75	69	1,107		86	29	27	29	22	18	211	2,464	
1995	270	140	117	472	100	34	1,133		344	179	197	174	59	69	1,022		79	32	31	27	21	16	206	2,361	
1996	283	162	128	444	92	51	1,160		363	162	177	211	79	78	1,070		87	17	23	33	13	11	184	2,414	
1997	310	181	124	484	102	39	1,240		403	170	181	181	90	74	1,099		108	25	29	41	19	28	250	2,589	
1998	351	169	116	528	107	36	1,307		387	151	187	208	68	85	1,086		99	40	17	33	14	18	221	2,614	
1999	365	182	119	533	105	52	1,356		411	160	174	204	90	95	1,134		128	34	28	45	25	16	276	2,766	
2000	355	202	135	599	101	45	1,437		454	150	168	214	70	86	1,142		121	38	28	48	26	21	282	2,861	
2001	412	212	133	660	103	60	1,580		400	145	165	195	81	68	1,054		128	26	35	50	25	17	281	2,915	
2002	377	199	121	698	82	52	1,529		411	143	164	228	64	56	1,066		99	37	23	36	18	16	229	2,824	
2003	426	211	139	729	108	46	1,659		417	161	164	224	60	78	1,104		116	38	23	47	19	19	262	3,025	
2004	430	220	108	786	103	53	1,700		455	145	141	236	83	63	1,123		109	23	24	36	15	16	223	3,046	
2005	438	226	132	820	99	58	1,773		460	172	147	263	82	59	1,183		127	27	20	51	25	14	264	3,220	
2006	466	277	149	985	118	53	2,048		469	146	143	267	79	67	1,171		144	40	25	49	38	25	321	3,540	
2007	492	269	127	1,020	113	76	2,097		489	138	137	297	83	67	1,211		130	33	21	47	25	19	275	3,583	
2008	564	239	140	1,065	154	68	2,230		550	171	145	285	84	54	1,289		168	28	24	57	29	18	324	3,843	
2009	559	327	125	1,142	152	64	2,369		525	173	161	282	72	61	1,274		171	24	20	62	31	28	336	3,979	
2010	576	338	128	1,223	144	68	2,477		598	171	155	308	97	78	1,407		162	35	25	47	28	25	322	4,206	
2011																									
2012	628	334	159	1,454	166	76	2,817		666	208	169	418	84	93	1,638		167	40	34	61	34	21	357	4,812	

Note: * Some values are suppressed because of small numbers

Source: National Cancer Intelligence Network (NCIN)

Table 3: Annual deaths from head and neck cancers and other underlying causes, by sex, England, 2003 to 2013

Underlying cause of death	Year of death registration										Grand Total (2003 - 2012)
	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	
Persons:											
Head and neck cancer (all)	2,560	2,622	2,585	2,578	2,663	2,732	2,775	2,820	2,902	3,020	27,257
Lip, tongue and oral cavity cancer	732	795	759	771	809	841	859	880	911	942	8,299
Pharynx and tonsil cancer	600	636	696	644	714	697	747	778	814	850	7,176
Larynx cancer	673	630	608	620	599	677	612	601	640	634	6,294
Thyroid gland cancer	288	272	285	280	295	294	280	280	279	309	2,862
Salivary glands cancer	140	181	144	158	144	144	184	173	159	156	1,583
Nose, ear and sinus cancer	127	108	93	105	102	79	93	108	99	129	1,043
Other cancers	124,728	123,426	123,662	124,201	125,056	126,070	125,774	126,703	128,130	130,084	1,257,834
Cancer	127,288	126,048	126,247	126,779	127,719	128,802	128,549	129,523	131,032	133,104	1,285,091
Other causes (non-cancer)	374,699	352,552	351,320	341,309	340,849	344,784	328,567	329,458	319,738	331,686	3,414,962
All causes	501,987	478,600	477,567	468,088	468,568	473,586	457,116	458,981	450,770	464,790	4,700,053
Males:											
Head and neck cancer (all)	1,642	1,708	1,676	1,675	1,783	1,750	1,822	1,882	1,913	2,013	17,864
Lip, tongue and oral cavity cancer	432	497	452	463	519	475	499	540	536	582	4,995
Pharynx and tonsil cancer	417	444	513	449	524	487	542	561	584	631	5,152
Larynx cancer	527	503	481	487	477	543	505	480	519	505	5,027
Thyroid gland cancer	103	95	91	117	110	109	110	114	116	116	1,081
Salivary glands cancer	89	112	87	94	91	89	121	115	98	109	1,005
Nose, ear and sinus cancer	74	57	52	65	62	47	45	72	60	70	604
Other cancers	64,631	64,226	64,102	64,719	64,743	65,555	65,975	66,325	67,012	68,376	655,664
Cancer	66,273	65,934	65,778	66,394	66,526	67,305	67,797	68,207	68,925	70,389	673,528
Other causes (non-cancer)	170,194	161,988	160,972	157,676	156,843	158,284	153,402	153,041	148,922	152,941	1,574,263
All causes	236,467	227,922	226,750	224,070	223,369	225,589	221,199	221,248	217,847	223,330	2,247,791
Females:											
Head and neck cancer (all)	918	914	909	903	880	982	953	938	989	1,007	9,393
Lip, tongue and oral cavity cancer	300	298	307	308	290	366	360	340	375	360	3,304
Pharynx and tonsil cancer	183	192	183	195	190	210	205	217	230	219	2,024
Larynx cancer	146	127	127	133	122	134	107	121	121	129	1,267
Thyroid gland cancer	185	177	194	163	185	185	170	166	163	193	1,781
Salivary glands cancer	51	69	57	64	53	55	63	58	61	47	578
Nose, ear and sinus cancer	53	51	41	40	40	32	48	36	39	59	439
Other cancers	60,097	59,200	59,560	59,482	60,313	60,515	59,799	60,378	61,118	61,708	602,170
Cancer	61,015	60,114	60,469	60,385	61,193	61,497	60,752	61,316	62,107	62,715	611,563
Other causes (non-cancer)	204,505	190,564	190,348	183,633	184,006	186,500	175,165	176,417	170,816	178,745	1,840,699
All causes	265,520	250,678	250,817	244,018	245,199	247,997	235,917	237,733	232,923	241,460	2,452,262

Source: Office for National Statistics mortality data

Table 4: Deaths from head and neck cancers, underlying cause of death and total mentions, numbers and percentages of deaths from all causes, average deaths per year, England, 2003 to 2012

Cancer Type	Underlying cause		Any mention	
	Number	%	Number	%
Lip, tongue and oral cavity cancer	830	0.18	1,039	0.22
Pharynx and tonsil cancer	718	0.15	881	0.19
Larynx cancer	629	0.13	863	0.18
Thyroid gland cancer	286	0.06	333	0.07
Salivary glands cancer	158	0.03	185	0.04
Nose, ear and sinus cancer	104	0.02	120	0.03
Head and neck (all)	2,726	0.58	3,358	0.71

Source: Office for National Statistics mortality data

Table 5 Deaths from head and neck cancers by sex, underlying cause of death and total mentions, percentages of deaths from all causes, England, 2003 to 2012

Cancer type	Males		Females	
	Underlying cause %	Any mention %	Underlying cause %	Any mention %
Lip, tongue and oral cavity cancer	0.22	0.28	0.13	0.16
Pharynx and tonsil cancer	0.23	0.28	0.08	0.10
Larynx cancer	0.22	0.31	0.05	0.07
Thyroid gland cancer	0.05	0.06	0.07	0.08
Salivary glands cancer	0.04	0.05	0.02	0.03
Nose, ear and sinus cancer	0.03	0.03	0.02	0.02
Head and neck cancers (all)	0.79	0.79	0.38	0.46

Source: Office for National Statistics mortality data

Table 6: Age profile of deaths from head and neck cancers, England, 2003 to 2012 (age specific death rate per million per year)

Age at death	<35	35-44	45-54	55-64	65-74	75-84	>85	All age
males	1	12	61	162	239	314	495	71
females	1	6	23	54	89	156	270	36
persons	1	9	42	107	161	223	340	53

Source: Office for National Statistics mortality data

Table 7: Deaths from head and neck cancers, all cancers, non cancers and all causes, by place of death and age band, England, 2003 to 2012

	Average annual deaths (2003-2012)					
	Place of death					
	Hospital	Home	Care home	Hospice	Other Places	All places
0-64, all causes	40,094	23,603	1,684	7,465	5,315	78,161
Lip, tongue, and oral cavity cancer	120	101	11	90	7	330
Pharynx and tonsil cancer	143	100	14	83	5	345
Larynx cancer	89	52	9	41	4	194
Thyroid cancer	31	14	1	15	1	62
Salivary glands cancer	14	15	2	13	1	44
Nose, ear, and sinus cancer	10	11	1	12	1	34
All head and neck (H&N) cancer	405	293	39	254	19	1,009
Other cancer (not H&N)	12,413	8,274	723	6,798	420	28,627
All cancer	12,818	8,567	761	7,052	438	29,636
All non-cancer	27,276	15,036	923	413	4,877	48,525
65-84, all causes	132,043	49,464	27,825	14,099	3,696	227,127
Lip, tongue, and oral cavity cancer	140	104	39	89	6	378
Pharynx and tonsil cancer	141	81	30	60	4	316
Larynx cancer	175	80	35	57	5	352
Thyroid cancer	83	36	12	34	3	167
Salivary glands cancer	23	21	9	23	1	77
Nose, ear, and sinus cancer	16	15	6	16	1	54
All head and neck (H&N) cancer	578	336	132	279	19	1,345
Other cancer (not H&N)	33,568	19,543	6,750	12,796	1,048	73,705
All cancer	34,146	19,880	6,881	13,075	1,067	75,049
All non-cancer	97,897	29,584	20,944	1,024	2,629	152,077
85+, all causes	86,454	20,233	53,587	2,670	1,774	164,718
Lip, tongue, and oral cavity cancer	36	24	39	22	2	123
Pharynx and tonsil cancer	24	9	14	8	1	56
Larynx cancer	40	14	21	8	1	83
Thyroid cancer	27	10	11	8	1	57
Salivary glands cancer	12	8	12	6	1	37
Nose, ear, and sinus cancer	4	3	6	2	0	16
All head and neck (H&N) cancer	143	68	102	54	6	372
Other cancer (not H&N)	10,140	4,351	6,304	2,270	387	23,452
All cancer	10,283	4,419	6,406	2,324	392	23,824
All non-cancer	76,171	15,815	47,181	346	1,381	140,894
All ages, all causes	258,591	93,300	83,096	24,234	10,784	470,005
Lip, tongue, and oral cavity cancer	296	229	89	201	15	830
Pharynx and tonsil cancer	308	190	58	152	10	718
Larynx cancer	304	146	65	106	9	629
Thyroid cancer	141	60	24	57	5	286
Salivary glands cancer	48	44	22	41	2	158
Nose, ear, and sinus cancer	30	29	13	31	1	104
All head and neck (H&N) cancer	1,126	698	272	587	44	2,726
Other cancer (not H&N)	56,121	32,168	13,777	21,864	1,854	125,783
All cancer	57,247	32,865	14,049	22,451	1,898	128,509
All non-cancer	201,344	60,435	69,048	1,784	8,886	341,496

Table 8: Percentage of deaths from head and neck cancers, all cancers, non cancers and all causes, by place of death, England, 2003 to 2012

	Percentage of deaths by type of underlying cause					
	Place of death					All places
	Hospital	Home	Care home	Hospice	Other Places	
0-64, all causes	51	30	2	10	7	100
Lip, tongue, and oral cavity cancer	36	31	3	27	2	100
Pharynx and tonsil cancer	41	29	4	24	2	100
Larynx cancer	46	27	5	21	2	100
Thyroid cancer	50	23	2	24	2	100
Salivary glands cancer	31	34	4	29	2	100
Nose, ear, and sinus cancer	28	32	2	36	1	100
All head and neck (H&N) cancer	40	29	4	25	2	100
Other cancer (not H&N)	43	29	3	24	1	100
All cancer	43	29	3	24	1	100
All non-cancer	56	31	2	1	10	100
65-84, all causes	58	22	12	6	2	100
Lip, tongue, and oral cavity cancer	37	28	10	24	1	100
Pharynx and tonsil cancer	45	26	9	19	1	100
Larynx cancer	50	23	10	16	1	100
Thyroid cancer	50	21	7	20	2	100
Salivary glands cancer	30	28	12	29	1	100
Nose, ear, and sinus cancer	30	27	12	29	1	100
All head and neck (H&N) cancer	43	25	10	21	1	100
Other cancer (not H&N)	46	27	9	17	1	100
All cancer	45	26	9	17	1	100
All non-cancer	64	19	14	1	2	100
85+, all causes	52	12	33	2	1	100
Lip, tongue, and oral cavity cancer	29	19	32	18	2	100
Pharynx and tonsil cancer	43	17	25	14	1	100
Larynx cancer	48	16	26	10	1	100
Thyroid cancer	47	18	18	14	2	100
Salivary glands cancer	31	22	31	15	2	100
Nose, ear, and sinus cancer	28	21	36	15	1	100
All head and neck (H&N) cancer	38	18	27	14	2	100
Other cancer (not H&N)	43	19	27	10	2	100
All cancer	43	19	27	10	2	100
All non-cancer	54	11	33	0	1	100
All ages, all causes	55	20	18	5	2	100
Lip, tongue, and oral cavity cancer	36	28	11	24	2	100
Pharynx and tonsil cancer	43	26	8	21	1	100
Larynx cancer	48	23	10	17	1	100
Thyroid cancer	49	21	8	20	2	100
Salivary glands cancer	31	28	14	26	2	100
Nose, ear, and sinus cancer	29	28	12	29	1	100
All head and neck (H&N) cancer	41	26	10	22	2	100
Other cancer (not H&N)	45	26	11	17	1	100
All cancer	45	26	11	17	1	100
All non-cancer	59	18	20	1	3	100

Source: Office for National Statistics mortality data

Head and neck cancers in England: who dies from them and where do they die?

Table 9: Head and neck cancers; average annual deaths, percentage of all deaths, percentage in hospital by Strategic Clinical Network, England, 2003 to 2012

Strategic Clinical Network	Average annual head and neck cancer deaths	As a percentage of all deaths	Percentage of head and neck cancer deaths in hospital
Cheshire and Mersey	155	0.64	40.6
East Midlands	218	0.52	43.3
East of England	279	0.54	40.4
Greater Manchester Lancashire and South Cumbria	267	0.64	38.7
London	350	0.69	48.5
North East Cumbria and North Yorkshire	201	0.64	44.2
South East Coast	222	0.52	37.0
South West	236	0.53	36.8
Thames Valley	84	0.56	38.3
Wessex	129	0.51	42.3
West Midlands	304	0.59	41.1
Yorkshire and the Humber	282	0.57	40.6
Total	2,726	0.58	41.3

Source: Office for National Statistics mortality data