Trends in oral and oropharyngeal (mouth) cancer incidence in Wales, 2001-2013

November 2015
About us

Public Health Wales exists to protect and improve health and wellbeing and reduce health inequalities for people in Wales. We are part of the NHS and report to the Minister for Health and Social Services in the Welsh Government. Our vision is for a healthier, happier and fairer Wales. We work locally, nationally and, with partners, across communities in the following areas:

- **Health protection** – providing information and advice and taking action to protect people from communicable disease and environmental hazards
- **Primary, community and integrated care** – strengthening its public health impact through policy, commissioning, planning and service delivery
- **Microbiology** – providing a network of microbiology services which support the diagnosis and management of infectious diseases
- **Safeguarding** - providing expertise and strategic advice to help safeguard children and vulnerable adults
- **Screening** – providing screening programmes which assist the early detection, prevention and treatment of disease
- **Health intelligence** – providing public health data analysis, evidence finding and knowledge management
- **NHS quality improvement and patient safety** – providing the NHS with information, advice and support to improve patient outcomes
- **Policy, research and international development** – influencing policy, supporting research and contributing to international health development
- **Health improvement** – working across agencies and providing population services to improve health and reduce health inequalities

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Trends in oral and oropharyngeal (mouth) cancer incidence in Wales 2001-2013

Purpose:
This paper reports on the most recent data available on the incidence of oral and oropharyngeal cancers in Wales, and presents data on the stage of cancer at diagnosis, and one year and five year survival rates. Oral and oropharyngeal cancers are often referred to as mouth cancer, and include the ICD codes for lip, tongue, mouth and oropharyngeal.

This paper provides an update of the 2013 document: Oral and oropharyngeal cancers in the population of Wales CMO briefing 08/11/13 (Welsh Cancer Intelligence and Surveillance Unit (WCISU), Health Intelligence Division, Public Health Wales, 2013).

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Date: 4th November 2015
Key messages

- Approximately 300 people in Wales are diagnosed with oral and oropharyngeal (mouth) cancers each year.

- The main risk factors for these types of cancers are tobacco use and drinking alcohol. Smoking and drinking together multiply their individual risk. HPV (human papilloma virus) infection is increasingly indicated as a risk factor.

- The incidence rate in men is double that in women, and is increasing in both sexes.

- The highest incidence in men is now in the 55-74 age group. However, the largest increase in incidence of 128% occurred in younger adult men (aged 35-44 years), from 2001-2003 to 2011-2013.

- All age groups in women have seen an increase in incidence since 2001. The largest increase of 82% occurred in the age group 65-74 years, from 2001-2003 to 2011-2013.

- This is the first time national staging data has been published in Wales for oral and oropharyngeal cancers. During 2011-2013, the majority (59%) of people diagnosed with one of these cancers had the most advanced stage (stage 4).

- The percentage of people diagnosed with these cancers that survived at least one year gradually increased over the past decade. By the period 2010-2012, the one-year survival was 82% for both men and women. However, the five-year relative survival rate of 55% hardly changed from 2001 to 2008.

Key recommendation

- Improved survival rates from oral and oropharyngeal (mouth) cancers are dependent on early diagnosis and effective treatment. Further collaboration between Public Health Wales, health boards and their Primary Care Clusters, and the Cancer National Specialist Advisory Group’s head and neck clinical group could improve early diagnosis rates in oral and oropharyngeal cancers, and lead to better survival.

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1 If those classified as unknown are excluded from the total
2 One-year relative survival
1 Introduction

The number of people diagnosed with oral and oropharyngeal (mouth) cancers is increasing, with just under 300 people in Wales diagnosed each year. Oral and oropharyngeal cancers are often referred to as mouth cancer, and include the ICD 10 codes C00: Lip, C01-C02: Tongue, C03-C06: Mouth, C10: Oropharyngeal.

2 Risk Factors

The main risk factors for these types of cancer are tobacco use (including smoking cigarettes, pipe smoking and chewing tobacco) and drinking alcohol. Human papilloma virus (HPV) infection is increasingly indicated as a risk factor.

Frequency of smoking and the number of years an individual has been smoking increases the risk of developing cancer (Hashibe et al, 2007). Former smokers have a lower risk of oral cancer than current smokers, and the risk decreases with increasing years since quitting (Blot et al, 1988). Chewing tobacco is also a risk factor for developing oral and oropharyngeal cancers (Petti, 2009).

Alcohol is an independent risk factor for oral cancer, and increased risk has been found to be associated with drinking beer, wine or spirits (World Cancer Research Fund/American Institute for Cancer Research (WCRF/AICR), 2007). The association of alcohol with oral cancer appears to be dose-dependent, with consumption of three or more alcoholic drinks a day doubling the risk (Hashibe et al, 2007).

The interaction between alcohol and tobacco causes more than additive joint effects, transforming moderate drinkers and smokers (8-25 drinks weekly and 20-40 cigarette packs yearly) to high-risk (Maserejian et al, 2006).

HPV-related oral cancers are distinct, most commonly affecting the tonsils and oropharynx (Gillison et al, 2000). Patients tend to be younger and show less association with the usual risk factors of smoking and high alcohol intake (WCISU, 2013). HPV-related oropharyngeal cancer is strongly associated with increasing number of sexual partners and an increase in oral sexual behaviour (D’Souza et al, 2007; Gillison et al, 2012). The prevalence of HPV in oropharyngeal cancers is increasing rapidly in developed countries, now thought to be over 70% of all oropharyngeal cancers (Mehanna et al, 2012).

3 Incidence

The incidence rate in men is double that in women, and it is increasing in both sexes. The incidence in men increased to 12.1 per 100,000 in 2011-2013 (Figure 1), whilst in women it has increased to 6.1 per 100,000 (Figure 2).

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3 The European Age Standardised Rate per 100,000 population uses the new 2013 European standard population as opposed to the old 1976 European standard population that was used previously.
Figure 1 shows men in all age groups continue to see an increase in incidence over the last two years since the previous WCISU report (reporting up to 2009-2011).

**Figure 1: Age specific incidence rates in men for oral and oropharyngeal cancer in Wales, 2001-2013**

![Age specific incidence rates in men for oral and oropharyngeal cancer in Wales, 2001-2013](image)

Source: Welsh Cancer Intelligence and Surveillance Unit’s Cancer Registry

Table 1 shows how, other than for men aged 85+ years, the percentage change in incidence is increasing in all age groups (greater than the figures reported in the previous WCISU report).

**Table 1: Percentage change in incidence of oral and oropharyngeal cancer in men by age**

<table>
<thead>
<tr>
<th>Age (men)</th>
<th>% increase in incidence 2001-2013</th>
</tr>
</thead>
<tbody>
<tr>
<td>85+</td>
<td>-1%</td>
</tr>
<tr>
<td>75-84</td>
<td>9%</td>
</tr>
<tr>
<td>65-74</td>
<td>25%</td>
</tr>
<tr>
<td>55-64</td>
<td>55%</td>
</tr>
<tr>
<td>45-54</td>
<td>48%</td>
</tr>
<tr>
<td>35-44</td>
<td>128%</td>
</tr>
</tbody>
</table>

Source: Welsh Cancer Intelligence and Surveillance Unit’s Cancer Registry

The highest incidence of oral and oropharyngeal cancer in men is now in the 55-74 age groups, at nearly 33 cases per 100,000 population. However, the largest increase in incidence occurred in younger adult men, by 128% from 2001-2003 to 2011-2013 in men aged 35-44 years.
For women, figure 2 shows that all age groups have seen an increase in incidence since 2001. The age groups 85+ years and 45-54 years have seen a very small decrease in incidence since the previous WCISU report (which reported up to 2009-2011), but all other age groups have continued to see an increase over the last two years.

Figure 2: Age specific incidence rates in women for oral and oropharyngeal cancer in Wales, 2001-2013

Source: Welsh Cancer Intelligence and Surveillance Unit’s Cancer Registry

Table 2 shows how the percentage change in incidence is increasing, with the addition of the 2011-2013 data (greater than the figures reported in the previous WCISU report).

Table 2: Percentage change in incidence of oral and oropharyngeal cancer in women by age

<table>
<thead>
<tr>
<th>Age (women)</th>
<th>% increase in incidence 2001-2013</th>
</tr>
</thead>
<tbody>
<tr>
<td>85+</td>
<td>50%</td>
</tr>
<tr>
<td>75-84</td>
<td>65%</td>
</tr>
<tr>
<td>65-74</td>
<td>82%</td>
</tr>
<tr>
<td>55-64</td>
<td>34%</td>
</tr>
<tr>
<td>45-54</td>
<td>23%</td>
</tr>
<tr>
<td>35-44</td>
<td>25%</td>
</tr>
</tbody>
</table>

Source: Welsh Cancer Intelligence and Surveillance Unit’s Cancer Registry

The largest increase in women occurred in the age group 65-74 years, an increase of 82% from 2001-2003 to 2011-2013. So, unlike for men, older women had a larger percentage incidence increase between 2001 and 2013 than younger and middle-aged women.
4 Stage of cancer at time of diagnosis

Oral and oropharyngeal cancers can significantly impact on a person’s eating, drinking, speaking, breathing, appearance, social interaction and work (Health and Social Care Information Centre, 2013). Most patients are diagnosed at a late stage in their illness, worsening their prognosis. Many patients require intensive treatment of many types, such as surgery and radiotherapy, as well as prolonged rehabilitation and long-term support.

Late stage at diagnosis may be in part due to patient delay in seeking medical help, due to low awareness of symptoms, risk factors, perceived risk, and perceived effectiveness of treatment (Austoker, 2009). Diagnostic delay has been found to contribute to a 30% worsening of the stage of oral cancer at presentation (Gomez et al, 2009).

In Wales, national data on the stage of oral and oropharyngeal cancers at time of diagnosis has been collected for the past few years, and the following data reports on the final time period, 2011-2013.

Stage of cancer refers to the size of the tumour and spread of the cancer. Stages 3 and 4 are considered as late presentation of the cancer, and stages 1 and 2 as earlier presentation. The proportion of cases diagnosed at each stage of cancer 2011-2013, is shown in Table 3.

Table 3: The proportion of cases of oral and oropharyngeal cancer in Wales, by stage at diagnosis, 2011-2013.

<table>
<thead>
<tr>
<th></th>
<th>Stage 1</th>
<th>Stage 2</th>
<th>Stage 3</th>
<th>Stage 4</th>
<th>Unknown</th>
</tr>
</thead>
<tbody>
<tr>
<td>Men</td>
<td>14.8%</td>
<td>9.5%</td>
<td>4.8%</td>
<td>43.3%</td>
<td>27.6%</td>
</tr>
<tr>
<td>Women</td>
<td>18.2%</td>
<td>10.5%</td>
<td>3.9%</td>
<td>44.2%</td>
<td>23.2%</td>
</tr>
<tr>
<td>Persons (Total number= 811)</td>
<td>16.0%</td>
<td>9.9%</td>
<td>4.4%</td>
<td>43.6%</td>
<td>26.0%</td>
</tr>
</tbody>
</table>

Source: Welsh Cancer Intelligence and Surveillance Unit’s Cancer Registry

If those classified as unknown are excluded, the proportion of cases diagnosed at the most advanced stage of cancer (stage 4) is 59%.

5 Survival rates

Survival rates globally average around 50% at five years (WCRF/AICR, 2007) and have had little change since the 1970s (Cancer Research UK, 2014).

Figure 3 shows that in Wales, there has been a modest improvement in the one year relative survival rate of oral and oropharyngeal cancer over the past decade, with the rate in 2010-2012 being 82% for both men and women. Whilst the improvement has been sustained in men, the fluctuation seen for women reflects the small number of cases.

4 The spread of cancer relates to if the cancer has involved the lymph nodes or has metastasised to cause a secondary tumour elsewhere in the body.
The five year relative survival rate did not change significantly between 2001 to 2008, and remains at around 55%. Data for 2009 onwards is not presented as five year follow up data is not complete at present.

**Figure 3: One year and five year relative survival of oral and oropharyngeal cancer in Wales, 2001-2012**

Source: Welsh Cancer Intelligence and Surveillance Unit’s Cancer Registry
References


Welsh Cancer Intelligence and Surveillance Unit, Health Intelligence Division, Public Health Wales (2013). Oral and oropharyngeal cancers in the population of Wales - CMO briefing 08/11/13.