The economic cost of smoking to Wales:

a review of existing evidence

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Executive Summary

Introduction

Following existing research on the economic costs of smoking for England and Scotland, ASH Wales undertook an analysis of existing data sources to compile an estimate of the economic costs of smoking to Wales. Within Wales 23% of adults smoke and this has a significant impact upon health, productivity and the environment, resulting in high costs. The Welsh Government have stated their intention to reduce adult smoking prevalence rates to 16% by 2020, and if achieved, this will significantly reduce the cost of smoking for Wales.

Methods

The research adopted the approach of Nash and Featherstone (2010), and examined data relating to: costs to the NHS; smoking related deaths; absenteeism from work; productivity losses due to smoking breaks; deaths from second hand smoke; smoking-related litter and fires caused by smokers' materials. Where possible, data from Wales were used. However, in some areas, English or UK data was used to create an estimate where no data was available.

Results

The data show that the economic cost of smoking to Wales based upon the factors listed in the below table is an estimated **£790.66 million per year**. However, it could be as high as **£1.04 billion per year.**

	Preferred estimate uprated to 2012 prices	Lower estimate	Higher estimate
Health care costs	£302 million	£190 million	£436.6 million
Premature deaths	£288 million	£80 million	£310.7 million
Excess sickness absence	£49.5 million	£31.2 million	£112.5 million
Smoking breaks	£41 million	£41 million	£63 million
Second hand smoke – early deaths	£45.4 million	£45.4 million	£45.4 million
Smoking-related litter	£25.8 million	£18.7 million	£25.8 million
Fires in businesses	£960,000	960,000 million	£7.6 million
Fires in the home	£38 million	£38 million	£38 million
TOTAL	**£790.66 million per year**	**£455.26 million**	**£1,039.7 million**

On pages 13 and 14, tables show these costs by Local Health Board and Local Authority in Wales. The Betsi Cadwaladr University Health Board experiences the highest estimated costs at **£172.2 million per year**, with Powys Teaching Health Board having the lowest estimated cost of **£30.9 million per year**. A comparison of local authorities shows that the estimated costs are highest in Cardiff (**£91.5 million**) and lowest in Merthyr Tydfil (**£17.5 million per year**). These costs reflect the differential population size, however, as Cardiff's adult smoking rate is 23% and Merthyr Tydfil's 27%, in the context of a national average of 23%.

Conclusion

The economic costs of smoking to Wales are extremely high. In order to reduce these costs, it is essential to reduce the number of young people who become smokers, to reduce smoking prevalence and to ensure cessation services are accessible, equitable and offer a broad range of services. If the Welsh Government's aim of reducing adult smoking prevalence to 16% were to be realised, these estimated costs suggest potentially significant savings for Wales.

Introduction

Cigarettes are the only product on sale in the UK that when used as directed will prematurely kill half of life-long users[1], and experts agree that smoking is the single biggest cause of cancer in the world[2], [3], [4]. Studies from Europe, Japan and North America have shown that 9 in 10 lung cancers are caused by smoking[5]. In Wales, the most recent data available show that lung cancers are the third most common cancer for both men and women[6]. Additionally, between 25% and 40% of smokers will die in middle age[7]. Each year, 5,450 deaths from smoking occur in Wales[8], accounting for almost one fifth of annual deaths in Wales.

Within Wales, 23% of adults smoke[9], in contrast to 20% of adults in England[10]. The rate of adult smoking varies significantly by area with 18% of adults smoking in Monmouthshire, compared to 28% of adults in Blaenau Gwent[11]. This mirrors data on Disability-Free Life Expectancy, which is 54.3 years for males in Blaenau Gwent, but rises to 63.2 for males in Monmouthshire[12]. The adult smoking rate in Wales has reduced from 24% in 2008 and 2009, although the Welsh Government has stated its intention to reduce smoking prevalence to 16% by 2020[13].

Cigarettes have become increasingly affordable in recent decades as the price of tobacco has not kept pace with rising incomes[14]. Moreover, as this report will show, the societal economic costs to the country exceeded the estimated £644.73 million revenue received in taxation in 2012.

Previous research

Beginning in Canada in 1991, studies have attempted to provide an estimate of the cost of smoking for different countries based upon a range of factors. This paper will assume that previously published methods of estimating costs have been correctly applied resulting in robust data. The first piece of research[15] examined key variables that have been used in subsequent estimates: health care costs, workers' absence, premature death and fire. In 1993, a paper from a World Bank economist estimated that the world tobacco market produced a $200 billion global loss annually, based on premature death, sick time and the costs of treating smoking related illness[16].

The first estimate of the economic cost of smoking for Wales was conducted as part of the Heartbeat Wales programme by Ceri Phillips and Malcolm Prowle[17]. Examining the effect of smoking cessation on mortality and morbidity, the study found that the cost of a smoking cessation programme, Heartbeat Wales, was less than the economic costs of smokers not giving up in terms of treating smoking and lost productive years. This included over a million working days lost as a result of sickness absence from smoking related illnesses, and over 6,000 years of working life lost as a result of lung cancer, coronary heart disease and chronic bronchitis.

Nash and Featherstone (2010)[18], estimated that the costs of smoking to England were £13.74 billion annually. The report used the following indicators: the cost to the NHS of treating smokers (not including passive smokers); loss of productivity at work as a result of absenteeism, smoking breaks

and premature death of smokers and passive smokers; the cost of cleaning up cigarette-related litter; and the cost of smoking-related house fires.

A similar analysis was undertaken by ASH Scotland in 2010[19]. The report found that smoking cost Scotland £1.1 billion per year. Both reports were cautious, and used low or midpoint estimates throughout. What is clear from the research is that smoking is costing both England and Scotland more than the Treasury recoups through tobacco taxation.

A third report, carried out by Alistair McGuire at the London School of Economics[20] provided detailed estimates of the costs of absenteeism and smoking breaks to businesses for the UK. These estimates were calculated for each region of the UK, and the estimates for Wales have been used in this report. In addition to this, David Cohen undertook a modelling exercise in 2005[21] showing the financial impact of a smoking ban, in which costs to the NHS and businesses were estimated.

Methods

Data relating to Wales was favoured wherever it was present in existing research or obtainable from the Welsh Government and other related agencies. Where this was not possible, information from the above reports was used to create estimates based on scaling figures found in estimates produced for the UK or England relative to the population of Wales.

Where costs were available for the UK as a whole, the population of Wales[22] was calculated to be 4.83% of the UK population[23]. Smoking prevalence throughout the UK varies (England 20%; Wales 23%; Scotland 24%; Northern Ireland 24%). However, the figure of 4.83% of the population has been used to calculate estimates, and thus they are likely to be a slight underestimate as a result of England's lower adult smoking prevalence.

Results

1. Cost of smoking to the Welsh NHS

Mirroring the methodology used by Callum (2006) estimating the cost of smoking to the NHS in England[24], research by Phillips and Bloodworth (2009)[25] estimated the cost of smoking-related diseases to the Welsh NHS. The simulation was based upon estimates of unit costs and the relative risk of smokers and ex-smokers of needing treatment including hospital admissions, outpatient visits, GP and practice nurse consultations and prescriptions. The difference between those who had never smoked and those who had smoked or were smokers was attributed entirely to smoking. Using this methodology, the cost of smoking to the Welsh NHS was £386 million per year, uprated to 2012 prices this is equal to **£436.6 million per year**. This amounted to 7% of NHS expenditure and 22% of the costs of adult hospital admissions.

Using a similar methodology but different data sources, research by Allender et al. (2009)[26] estimated the direct cost to the NHS in Wales of smoking attributable conditions in 2005-06 to be **£234.2 million per year**. The estimate was based upon a range of smoking-related conditions identified and costs for treatment including: inpatient and outpatient costs, primary care expenditure, pharmaceutical expenditure and community care services expenditure. However, Allender notes that the necessity of using cost data relating to disease categories from 1992 was a limitation that did not allow the analysis to reflect new treatment methods, and that there was evidence that this had affected treatment costs. As such, Allender's estimate was viewed as an overestimate by Callum[27]. Allowing for inflation, the cost rises to **£296 million per year** based on 2012 prices provided by the Bank of England.

Within England, the method used by Callum, and subsequently used by Phillips and Bloodworth in Wales, resulted in an estimate of £2.7 billion per year, which was a lower estimate of health care costs than Allender's at £4.4 billion. Callum's estimate was adopted by Nash and Featherstone as a result of the limitations of Allender's data. However, it is unexpected that the methodology of Callum resulted in higher estimated treatment costs in Wales than the overestimate of Allender. In part, this can be explained by the limitations of the data available in Wales as compared to England: Callum's analysis was able to identify diseases at a more detailed level than the Welsh data allowed. A projection from Callum's results based on population size alone, which assumes that rates of disease and costs are equal throughout England and Wales, and does not allow for a slightly higher smoking rate in Wales, estimates the cost to Wales would be £155 million per year, uprated to 2012 prices this becomes **£190 million per year.** It should be acknowledged that Wales has a higher prevalence of smoking than England, a higher prevalence of conditions (circulatory, respiratory and cancer) that lead to hospital admissions and higher unit costs[28]. With these caveats in mind, to be conservative, the report will adopt the midpoint between Phillips and Bloodworths' £386 million and the projection based on Callum's English data of £155 million. The estimated cost of smoking to Wales is £270.5 million based on 2007 prices. Uprated to 2012 prices, this resulted in an estimated midpoint cost of **£302 million per year**.

The estimated cost of smoking to the Welsh NHS is £302 million per year.

2. Cost of smoking to productivity

a. Smoking related deaths

The Public Health Wales Observatory estimates that each year there are 5,450 deaths from smoking-related illnesses[29]. In 2010, there were 31,197 deaths in Wales[30], showing that almost one fifth of the deaths in Wales are a result of smoking tobacco. Using the most recent estimate from the Public Health Wales Observatory, this amounts to 23% of male deaths and 13.1% of female deaths[31].

Nash and Featherstone's (2010) analysis of English data on forgone productivity and earnings lost from premature death took the estimate of smoking related deaths by age from the NHS Information Centre and performed an analysis of the estimated life time earnings using data from

the Office for National Statistics. In doing so, they estimated the economic cost of lost productivity from premature smoking-related deaths based upon lost years of work and the earning potential of such work. The analysis assumed that all workers who died prematurely would have ordinarily continued to work until they retired. A partial level of productivity was assumed until the age of 74, based upon employment data from the Office for National Statistics. As research shows that those who smoke in Wales are more likely to have other health conditions and to engage in other health risk behaviours[32], this may result in an overestimate.

For the 28,385 premature deaths in England among those aged 35-74, Nash and Featherstone calculated the cost to be £4.07 billion, or £143,386 per death. Whilst this may appear to be a high estimate, the economic impact of a death under the age of 74 will usually be felt for many years. Moreover, in the context of the median gross UK salary for full time workers in 2011 amounting to over £26,000[33], this cost would be accounted for in six years of working full time at the average salary. Using a projection based upon the English data, in the absence of age specific premature death data, ASH Scotland estimated that smoking related premature deaths in Scotland cost £343 million per year to the economy, based upon productivity losses among those aged under 74 years.

Age-specific premature death data and data relating to the forgone productivity and lost earnings as a result of premature death were not available for Wales. Accordingly, the best available estimate was a projection based upon the English data. Nash and Featherstone stated that in 2008 there were 83,900 deaths attributed to smoking in England, of which 28,385 were among those aged under 74. This amounted to 34% of deaths attributed to smoking. Accordingly, assuming that 34% of smoking related deaths in Wales occurred between the ages of 35 and 74, there would be 1,921 deaths per year in this group. Based upon the cost per death established in Nash and Featherstone (2010), the projected estimated cost for Wales is £275 million per year, uprated for inflation, this becomes **£310.7 million per year.**

An alternative methodology was used by ASH Scotland in their analysis of the cost of smoking-related deaths was a projection using Nash and Featherstone's (2010) data. The estimate was a projection based upon the size of the Scottish population as a whole, compared to the English population, as opposed to data relating to smoking-related deaths. Using this approach, the estimated cost falls to £234 million per year, or **£264.2 million per year** allowing for inflation to 2012 prices.

As an alternative measure of how premature death affects the economy, research in Scotland focused upon lost expenditure[34]. The estimated cost of each premature death was calculated by the West Midlands Health Observatory to be £11,000[35]. If the cost of premature death was seen as comparable in Wales to England, using this estimate the cost of premature deaths in Wales shrinks to £61.6 million per year. Uprated from 2004 prices, this becomes **£80 million per year**. This figure is lower than Nash and Featherstone's (2010) estimate as a result of measuring only consumer spending, as opposed to all earnings which would be spent in a wide range of ways, all of which would impact on the economy.

Accordingly, the more comprehensive methodology of Nash and Featherstone will also be adopted here, as in the ASH Scotland estimate of the cost of smoking to Scotland. In order to be conservative, the midpoint between the projection based upon Welsh death data and the projection

based entirely upon Nash and Featherstone's work will be taken. Uprated to 2012 prices, the estimated cost is **£288 million per year.**

The estimated cost of premature death on productivity in Wales is £288 million per year.

b. Absenteeism

Adopting the methodology used by Parrott et al. (2000)[36], where an excess absence based upon US data of 0.9 days (7.2 hours) per year for each full time worker was used alongside the UK average hourly rate, Cohen and Lisles (2005) estimated the cost of absenteeism to Wales. Their research used average wages (including National Insurance contributions) based on 2003 prices, and found that the estimated cost of absenteeism caused by smoking was £23.3 million. Uprated to 2012 prices, this becomes **£31.2 million per year**.

However, McGuire (2008:8) used data from a wide range of international studies and estimated an average of 1.77 excess sickness days were taken for each full time equivalent per year. The cost of such absence was estimated in light of the hours that smokers had reported working in the General Household Survey and the Annual Survey of Hours and Earnings. Across Wales, McGuire estimates smoking-related excess absenteeism costs £44 million per year. Uprated to 2012 prices, this increases to **£49.5 million**.

Within Nash and Featherstone's (2010) research, however, an estimate from NICE[37] of an additional 33 hours of sickness absence a year is noted. Having estimated McGuire's 1.77 days to equal 13.28 hours (7.5 hours per full time equivalent per day), this is a significant increase, which Nash and Featherstone attribute to using 'more UK specific data' (p.14). Accordingly, the figure rises to **£109 million per year** based upon each smoking full time equivalent being absent for an additional 33 hours.

The middle of the three estimates will be adopted here in order to be conservative. It should be noted, however, that this is likely to be an underestimate, as additional sickness absences for former smokers have been calculated to be increased compared to non-smokers[38], and these were not accounted for in this analysis.

The estimated cost of smoking related excess absence is £49.5 million per year.

c. Smoking breaks

Cohen and Lisles' (2005) analysis before the smoking ban was attempting to estimate what difference in productivity would occur if a smoking ban in the workplace occurred. They estimated that a ban on smoking in the workplace would cost employers an additional **£394,210 per year** as a result of additional smoking breaks. Cohen and Lisles (2005) used assumptions from the Parrott et al. (2000) research which estimated that smokers would smoke an average of 1.3 cigarettes smoked outside of existing breaks, and estimated this would take six minutes per cigarette. However, that

research was modelling the impact of a change in the regulations and therefore only considered the cost of additional breaks. As such the research did not attempt to measure the full cost of all smoking breaks to Wales.

McGuire et al.'s (2008) research, however, aimed to measure the full cost of all smoking breaks. Using estimates of heavy and light smokers, and full and part time workers, Professor McGuire estimated the cost of smoking breaks to businesses in Wales to cost £36 million per year. Uprated to 2012 prices, this rises to **£41 million per year.**

The McGuire estimate was based upon each smoking break lasting 6 minutes. In Nash and Featherstone's analysis, however, the figure of 10 minutes per day was used. Applying Nash and Featherstone's 10 minutes per day to Wales' specific data from McGuire et al., the costs rise to **£63 million per year.**

Finally, research on 200 Scottish employers by Parrott et al. (2000) estimated that the cost of smoking breaks in Scotland resulted in productivity losses of £450 million per year. In light of the changes in smokefree legislation, some of the assumptions in the research no longer hold true. Accordingly, Parrott's estimate will not be used to calculate a projection for Wales.

In order to make use of the most reliable Welsh specific data available, McGuire et al.'s estimate will be adopted.

The estimated cost of smoking breaks to Wales is £41 million per year.

3. Second Hand Smoking – early deaths

The Royal College of Physicians (2005)[39] stated that 12,253 premature deaths occurred in the UK among adults aged 20+ years, as a result of second hand smoking in the home. Nash and Featherstone (2010) adopted this estimate, with an adjustment to account for a reduced smoking rate. The non-reduced rate for Wales, at 4.83% of the UK population, is 592 deaths a year. Reducing this to reflect a smoking prevalence rate of 23% shows that an estimated **454 deaths a year** occur in Wales among those aged 20 years and above because of passive smoking in the home.

In order to estimate the cost to the economy of these deaths, Nash and Featherstone use the same methodology as to estimate the costs of smoking related early deaths. Nash and Featherstone conclude that this costs £713 million per year to England. As such, this leads to a projected figure of **£40 million** per year for Wales. Uprated to 2012 prices, this becomes **£45.4 million per year.**

Research also shows that second hand smoke has a significant effect on perinatal death with one third of still-born babies and neonatal deaths (death within the first four weeks of life) caused by maternal smoking[40]. This accounts for one death as a result of maternal smoking for every 1,000 live births in Wales[41]. There were 36,000 births in Wales in 2010[42], as such there were an estimated **36 neonatal deaths in 2010** that were related to second hand smoking during pregnancy. A projection from UK figures by the Royal College of Physicians, suggests that smoking amounts to **15 deaths in the first week of babies' lives** in Wales[43]. It was not possible, however, to find an estimate of deaths

related to second hand smoke for those aged 4 weeks – 20 years, nor was it possible to attribute a cost to the 51 deaths among infants in the first four weeks of life.

The estimated cost of early deaths as a result of second hand smoking of adults aged over 20 years costs Wales £45.4 million per year.

4. Smoking-related litter

Nash and Featherstone (2010) use an estimate of the cost of cleaning up smoking-related litter in the UK from Keep Britain Tidy. The report stated it cost £342 million annually, based on 78% of locations containing smoking-related litter[44]. As 4.83% of the UK population, a projected cost for Wales is £16.5 million. Uprated to 2012 prices, this becomes **£18.7 million per year**.

The Local Environment Audit & Management Survey (LEAMS, 2010) [45] reported the prevalence of smoking-related litter per local authority based on a random sample of 8% of all streets in Wales. Smoking-related litter was found on 90% of Wales' streets and was the biggest source of street litter throughout Wales. Analysis did not occur to determine the proportion of smoking-related litter. The level of cleanliness did not vary significantly between local authorities. APSE (2011) stated that the cost of street cleaning per UK household was £36.19[46]. In 2010, Wales was estimated to have 1.3 million households[47]. Thus total street cleaning costs for Wales are estimated to cost £48 million per year. ASH Scotland (2010) estimated the cost of cleaning smoking-related litter based upon Nash and Featherstone's data and costs for cleaning all litter in England. Assuming that costs are comparable in Wales to England, the cost of cleaning smoking-related litter was 52.31% of total costs, and thus street cleaning to remove smoking-related litter is estimated to cost Wales **£25.8 million per year.** This is likely to be an underestimate as Nash and Featherstone (2010) report that smoking related litter was present in 78% of locations in England as opposed to 90% in Wales.

The estimated cost of street cleaning for smoking-related litter costs Wales £25.8 million per year.

5. The cost of Fire

a. To business

Research by Cohen and Lisles (2005) used the Parrott (2000) methodology to estimate the risk of fire damage to Welsh businesses. Based on data from 2003 and 1986, the cost of fires to businesses in Wales that was attributable to smoking was estimated to be £6 million, which increases to **£7.95 million per year** when uprated to 2012 prices. However, as a result of the subsequent smoking ban in the workplace it is likely that this will have declined significantly.

McGuire et al.'s (2008) research used 2004 calculations from the Office of the Deputy Prime Minister regarding the average cost of a business fire (£30,798 per business) and Local Authority statistics from 2006 about the prevalence of fires caused by smokers' materials (approximately 7%). Allowing

for a reduction in business related fires since the 2007 smoking ban until 2009 and uprating the costs to 2008 prices, McGuire et al. estimate the cost of smoking related fire damage in commercial premises to be £118.4 million per year for England. Assuming fire risk and costs are equal across the UK, and that the number of fires has not continued to fall since 2009, the proportionate cost to Wales of commercial fires caused by smoking materials was £6.8 million; uprated to 2012 prices, this becomes **£7.6 million per year**.

Data from the Incident Recording System show that there was a reduction in non-dwelling fires between 2009/10 and 2010/11. As such, the previous two calculations are likely to be overestimates. In 2010/11, there were 24 accidental fires in Welsh businesses where the source of ignition was smokers' materials[48]. If each fire costs £30,798, as used by McGuire et al., the cost of fires caused by smokers' materials to businesses in Wales is £740,000 per year based on 2004 prices. If these costs are uprated to 2012 prices, the cost becomes **£960,000** per year.

The estimated cost of commercial fires started accidentally by smokers' materials in Wales is £960,000 per year.

b. Dwelling fires

In 2010/11, there were 190 dwelling fires in Wales where the source of ignition was smokers' materials[49]. However, it is difficult to provide an estimate of the cost of these fires. We do know that within Wales 8 of the 20 dwelling fire fatalities in 2010/11 were as a result of fires that were ignited by smokers' materials[50], showing that smoking-related fires result in a disproportionately high number of fatalities, as was found in England by Nash and Featherstone (2010).

Nash and Featherstone (2010) calculate the cost of dwelling fires in England as a result of smokers' materials to cost £507 million annually. This accounts for injuries and fatalities, property damage, fire service costs and costs in anticipation of fire. If costs in Wales were equal to those in England, dwelling fires would cost Wales £29 million per year. Uprated to 2012 prices this rises to **£38 million per year.**

The estimated cost of dwelling fires in Wales that were caused by smokers' materials is £38 million per year.

The cost of smoking to Wales: a summary

	Preferred estimate uprated to 2012 prices	Lower estimate	Higher estimate
Health care costs	£302 million	£190 million	£436.6 million
Premature deaths	£288 million	£80 million	£310.7 million
Excess sickness absence	£49.5 million	£31.2 million	£112.5 million
Smoking breaks	£41 million	£41 million	£63 million
Second hand smoking – early deaths	£45.4 million	£45.4 million	£45.4 million
Smoking related litter	£25.8 million	£18.7 million	£25.8 million
Fires in businesses	£960,000	£960,000	£7.6 million
Fires in the home	£38 million	£38 million	£38 million
TOTAL	**£790.66 million per year**	**£455.26 million**	**£1,039.7 million**

The estimated economic cost of smoking to Wales is £790.66 million per year.

The higher estimate of the economic cost of smoking to Wales is £1.04 billion per year.

The cost of smoking by Local Authority in Wales

Based on population data for Wales[51] and Welsh Health Survey prevalence of smoking by Local Authority of those aged 16+ years[52], it is possible to estimate the number of smokers by Local Authority. This allows an estimate of the cost per Local Authority to be created. The estimates assume that the burden of smoking related expenditure is equally distributed among smokers, and thus the cost of smoking per person is spread evenly among all smokers in Wales.

Rank	Local Authority	Adult smoking population (%)	Adult smoking population	Cost of smoking (£ million)
1	Cardiff	24	68,000	£91.5 M
2	Rhondda Cynon Taf	27	51,000	£65.6 M
3	Swansea	22	43,000	£57.8 M
=4	Carmarthenshire	23	35,000	£47.1 M
=4	Caerphilly	24	35,000	£47.1 M
6	Neath Port Talbot	26	30,000	£40.4 M
=7	Newport	25	29,000	£39 M
=7	Wrexham	27	29,000	£39 M
9	Flintshire	21	26,000	£35 M
10	Bridgend	22	25,000	£33.6 M
=11	Powys	21	23,000	£30.9 M
=11	Gwynedd	23	23,000	£30.9 M
=13	Pembrokeshire	22	22,000	£29.6 M
=13	The Vale of Glamorgan	21	22,000	£29.6 M
15	Conwy	21	20,000	£26.9 M
16	Torfaen	26	19,000	£25.6 M
17	Denbighshire	22	17,000	£22.9 M
18	Blaenau Gwent	28	16,000	£21.5 M
19	Ceredigion	23	15,000	£20.2 M
20	Monmouthshire	18	14,000	£18.8 M
=21	Isle of Anglesey	23	13,000	£17.5 M
=21	Merthyr Tydfil	27	13,000	£17.5 M
TOTAL	**Wales**	***23***	**588,000**	**£790.66 M**

NB –The Wales estimate is not equal to the sum of estimate by Local Authorities. This is as a result of percentages being rounded across areas, resulting in additional smokers when Local Authority estimates are combined. Accordingly, the results appear slightly higher as a consequence.

The table shows that the cost of smoking is highest in Cardiff, with a cost of over **£91.5 million per year**. Conversely, Merthyr Tydfil, which has a higher smoking prevalence, has the lowest cost in Wales at £17.5 million per year, as a result of the smaller population within the Local Authority.

The cost of smoking by Local Health Board in Wales

Costs were estimated by combining the costs for each of the Local Authorities making up the seven Local Health Boards in Wales.

Rank	Health Board	Number of smokers	Cost of smoking (£ million)
1	Betsi Cadwaladr University	128,000	£172.2 M
2	Aneurin Bevan	113,000	£152 M
3	Abertawe Bro Morgannwg University	98,000	£131.8 M
4	Cardiff & Vale University	90,000	£121.1 M
5	Hywel Dda	72,000	£96.9 M
6	Cwm Taf	64,000	£82.89 M
7	Powys Teaching	23,000	£30.9 M

It can be seen that estimated costs in all seven health boards were substantial, with the lowest estimate for Powys Teaching Health Board costing an estimated **£30.9 million per year**. Moreover, for Betsi Cadwaladr University Health Board, costs were particularly high at **£172.2million per year**.

Tax generated by smoking

The Swansea Centre for Health Economics at Swansea University undertook an estimate of the likely amount of tax generated by smokers in Wales based upon populations proportions adjusted for smoking prevalence on behalf of ASH Wales. Updated calculations based on the data used in the report show:

> (As a result of the Barnett Formula), it would be expected that of the £9,878million tobacco duty received in the UK in 2012, Scotland should have received £827.89 million, and Wales should have received £478.95 million. This assumes that smoking prevalence and smoking levels are equal across the UK, however, given that the figure stated by the Scottish Government for tobacco duty received in Scotland in 2012[53] is £1,129 million, it is safe to say that this assumption is not true.
>
> The 2011 Scottish household survey[54] gives a smoking prevalence, for Scotland, of 23.3%, while the 2011 Welsh health survey gives the prevalence as 23%[55] in Wales. With the population of Scotland estimated to be 5,295,400 in 2011[56] the £1,129 million tobacco duty was generated by 1,233,828 smokers, at a cost of £915.04 per smoker. In Wales, with a population of 3,063,456, it could be seen that 704,595 smokers who, if spending the same £915.04 in tobacco duty per head as in Scotland, would generate a total tobacco duty of £644.73 million (per year).

Income from duty in 2012 is therefore estimated at **£644.73 million per year**.

It is clear that the economic costs of smoking are higher than that raised in tobacco duty. Seen in the context of taxation on tobacco affecting those on low incomes the most, alongside increased morbidity and premature deaths, there is a strong economic case for increasing the cessation support available to smokers in Wales.

Conclusion

This report uses information from a variety of sources including: existing evidence, projections based upon UK data and data collected by the Welsh Government. It can be seen that the economic cost of smoking to Wales is extremely high in terms of health care costs, loss of productivity to businesses, deaths from second hand smoke and environmental costs including litter and fire.

However, there are inadequacies in the data which do not allow the economic impact to be measured in relation to children. Research shows that children who are exposed to second hand smoke are more likely to develop illnesses including asthma and meningitis. In addition to health care costs, illness can result in absenteeism from school which can have a negative impact on the child's performance at school.

The long term solution to reducing the cost of smoking to Wales is to prevent young people becoming smokers. Accordingly, the Welsh Government should do more to ensure that every young person in Wales is provided with appropriately tailored evidence-based information on smoking at a young age to prevent more children becoming addicted to tobacco. Youth-specific smoking cessation services should also be available across Wales. Alongside this tobacco control measures should reduce young people's access to tobacco, including initiatives such as the ban on tobacco vending machines implemented in February 2012 and the Welsh Government's commitment to press the UK Government for a retail register of tobacco sellers. Moreover, the attractiveness of tobacco products to young people should be reduced: smoking should not be glamorised on television and film productions, and tobacco should be sold in standardised packaging and not displayed in shops.

Evidence shows that 70% of adult smokers in Wales want to stop smoking and that 38% have tried to quit in the last year[57]. This commitment to attempting to quit is further attested to by almost 15,000 users of Stop Smoking Wales per year[58]. To reduce the smoking rate for adults to 16% by 2020 the Welsh Government has stated that 5% of Welsh smokers should be accessing cessation services each year[59], amounting to almost 30,000 smokers each year. This will be a significant challenge but can be achieved if cessation services are accessible, equitable and broad in the services they offer.

If the Welsh Government's aim of reducing adult smoking prevalence to 16% were achieved, estimated costs would therefore result in significant savings to Wales.

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