

# Tobacco Control Northern Ireland

**QUIT TOBACCO**

*'Smoking has been identified as the  
single greatest cause of preventable  
illness and premature death in  
Northern Ireland.'*



Gilmore G. Wilmot E. Tobacco Control Northern Ireland. 2015 Public Health Agency: Belfast, 2015.

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## The impact of smoking

### Deaths attributable to smoking

Smoking has been identified as the single greatest cause of preventable illness and premature death in Northern Ireland with 2014 data revealing approximately 16% or 1 in 6 of all deaths in Northern Ireland (NI) were attributable to smoking.<sup>1,2</sup>



Indeed smoking has been shown to contribute to deaths from a wide variety of causes and is thought to account for:<sup>2i</sup>

- 86% of all deaths from lung cancer;
- 85% of all deaths from Chronic Obstructive Lung Disease;
- Over half the deaths from Stomach/Duodenum ulcers;
- 1 in 4 of all cancer deaths and;
- 1 in 10 of all circulatory disease deaths.

During the past decade the number of deaths attributable to smoking has been estimated to be between 2,300-2,400 per year, equating to approximately 6 deaths a day.<sup>1</sup>

Moreover, research has shown a smoker's life span is shortened by about five minutes for each cigarette smoked and on average, those killed by smoking have lost 10-15 years of life.<sup>3</sup>

### Inequality and smoking related mortality

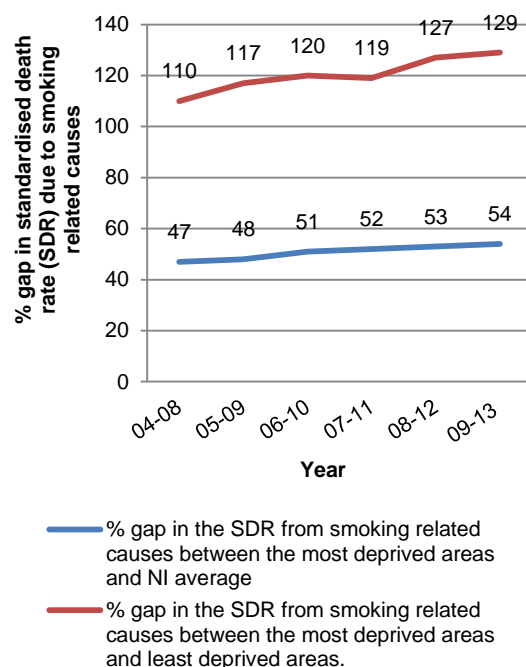
The regional standardised death rate due to smoking related causes in NI was 168 per 100,000 in the period 2009-13, a decline from previous years.<sup>4,5</sup>

<sup>i</sup> Deaths relate to deaths registered in the 2012 year.

Nevertheless, the '*standardised death rate due to smoking related causes in the most deprived areas<sup>ii</sup> was 54% higher than the overall regional rate and 129% higher than the standardised death rate in the least deprived areas<sup>5iii</sup>* .

Furthermore, over the past decade, there is now a widening inequality gap between the standardized death rate in the most deprived and the least deprived areas of NI (see Figure 1).<sup>5</sup>

Figure 1: Inequality gap in the standardized death rate due to smoking in NI (2004/08-2009/13)<sup>5</sup>



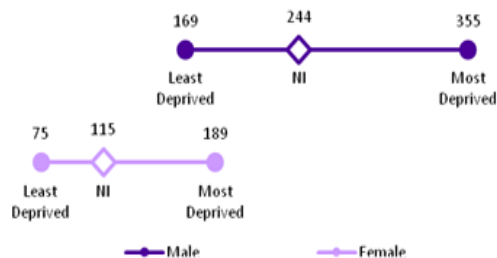
Smoking related mortality among males is twice that of females (244 vs. 115 deaths per 100,000 population)

<sup>ii</sup> Deprivation level is assessed in Northern Ireland by the use of the Northern Ireland Multiple Deprivation Measure (NIMDM) 2010. This measure examines 7 areas of deprivation which are given individual weights to produce an overall combined measure of deprivation. The small geographical area used for the NIMDM is the super output area (SOA). Northern Ireland consists of 890 SOA areas, each with an average population of 2,000 people. These 890 areas are divided into 5 equal quintiles representing a measure of the diversity of deprivation in the population.

<sup>iii</sup> Smoking related death rate in most deprived areas: 258 per 100,000, regional average 168 per 100,000 and in least deprived areas 113 per 100,000.

(see Figure 2). Moreover, the inequality divide is strongly evident within the genders. The standardised death rate due to smoking related causes is highest among males in the 20% most deprived areas, more than twice that of males in the 20% least deprived areas and almost five times that of females in the 20% least deprived areas.<sup>6</sup>

Figure 2: Standardised death rate per 100,000 (2009-13) from smoking related causes by gender and deprivation<sup>6</sup>



Smoking not only causes death but reduced quality of life through illness. While it is difficult to quantify the extent and impact of these illnesses, it has been estimated **17,889 people were admitted to hospitals in NI due to smoking related causes in 2013.**<sup>7</sup>

## The costs of smoking

In Northern Ireland it has been estimated the costs of treating smoking related illness **in NI hospitals alone is around £164m a year.**<sup>8</sup>

However, hospital costs are only one of the many financial outlays associated with smoking. Several studies conducted within the UK have examined the overarching costs of smoking to society. These studies have accounted for a wide range of smoking related costs including health

care, premature death, excess sickness absence, smoke breaks, second hand smoke (early deaths), smoking related litter and fire in the business place or home. The costs of smoking have been estimated to be £790m per year in Wales, £1.1 billion in Scotland and £12.9 billion in England with an additional one billion pounds required for social care costs in England alone.<sup>9,10,11,12</sup>

Based on the economic studies above, (and accounting for the number of smokers within the Northern Ireland population) it is **estimated that smoking costs the Northern Ireland economy around £450 million per year.**

Given the economic costs outlined above, it is estimated the **total cost of smoking to the UK as a whole could substantially outweigh the tax generated through cigarettes by an excess of £5 billion a year.**<sup>13iv</sup>

Moreover, nationally it has been reported a 1% decrease in the prevalence of smoking could be estimated to produce a net revenue gain of £240 million pounds per year in the UK.<sup>14</sup>

Asides from the societal costs of tobacco, the financial burden to individual smokers is considerable. In 2014, a **20-a-day smoker would spend on average, over £3,000 a year on cigarettes with lower income groups in the UK spending twice as much of their total income on cigarettes compared to the more affluent groups (4% vs 2%).**<sup>15,16</sup>

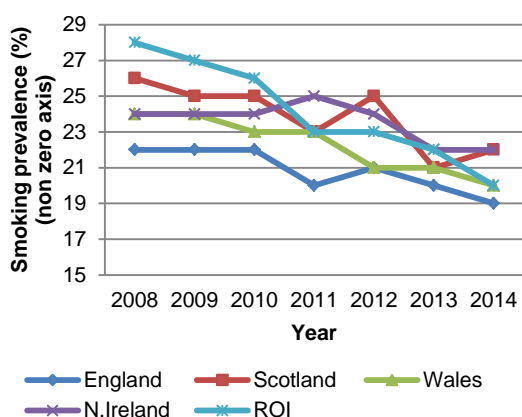
<sup>iv</sup> Total costs exclude any social care costs in Northern Ireland, Scotland and Wales. £5 billion is calculated as the total costs of tobacco throughout the UK (minus tax revenue) plus an additional one billion lost through illicit tobacco. Note: additional pension costs or costs of quitter's health care gained through extra life years are not included in the calculation.

## The extent of smoking in Northern Ireland

### Population prevalence

Twenty two percent of the NI population currently smoke, a figure which has declined from 24% in 2012 but still remains the highest prevalence rate (equal to Scotland, 22%), within the UK and Republic of Ireland (ROI), (Figure 3).<sup>17,18,19,20,21</sup>

Figure 3: Smoking prevalence throughout the UK and ROI



It is now estimated around 320,000 adults aged 16 and over smoke in Northern Ireland with the prevalence of smoking among males being 23% and females 21%.<sup>17</sup>

Smoking prevalence differs substantially by local government district (LGD). Belfast (25.1%) and Londonderry/Strabane (23.3%) LGD's have the highest estimated smoking prevalence compared to the LGD areas of Lisburn and Castlereagh with a prevalence of only 16.5% and North Down and Ards with a prevalence of 17.4%<sup>v</sup> (see Figure 4, overleaf).<sup>22</sup>

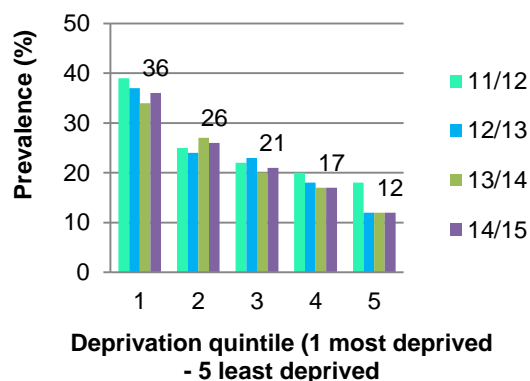
<sup>v</sup> Smoking prevalence by LGD is calculated from Quality outcomes framework (QOF) data.<sup>22</sup> Raw QOF data is available to download from: <http://www.dhsspsni.gov.uk/index/statistics/qof/qof-achievement/qof-practice-13-14.htm>. Data analysis indicates an overall smoking prevalence of 21% as opposed to the 22% estimate derived from the Health Survey for Northern Ireland data<sup>17</sup> Smoking information

The Northern Ireland Ten Year Tobacco Control Strategy for Northern Ireland identifies a number of priority groups for targeted action owing to the high prevalence of smoking or the particularly detrimental health impact smoking can cause within these groups. These priority groups have been identified as: disadvantaged adults who smoke, pregnant women who smoke and children and young people (11-16 years old).<sup>23</sup>

### Disadvantaged adults who smoke

Smoking prevalence analysis by deprivation quintile (see page 5, footnote ii for further information on deprivation quintiles) shows a strong gradient exists. The most recent NI data for 2014/15 shows **three times as many smokers living within the most deprived quintile (36%) compared to the least deprived quintile (12%)**, (Figure 5).<sup>5</sup>

Figure 5: Smoking prevalence by deprivation quintile 2011/12-2014/15

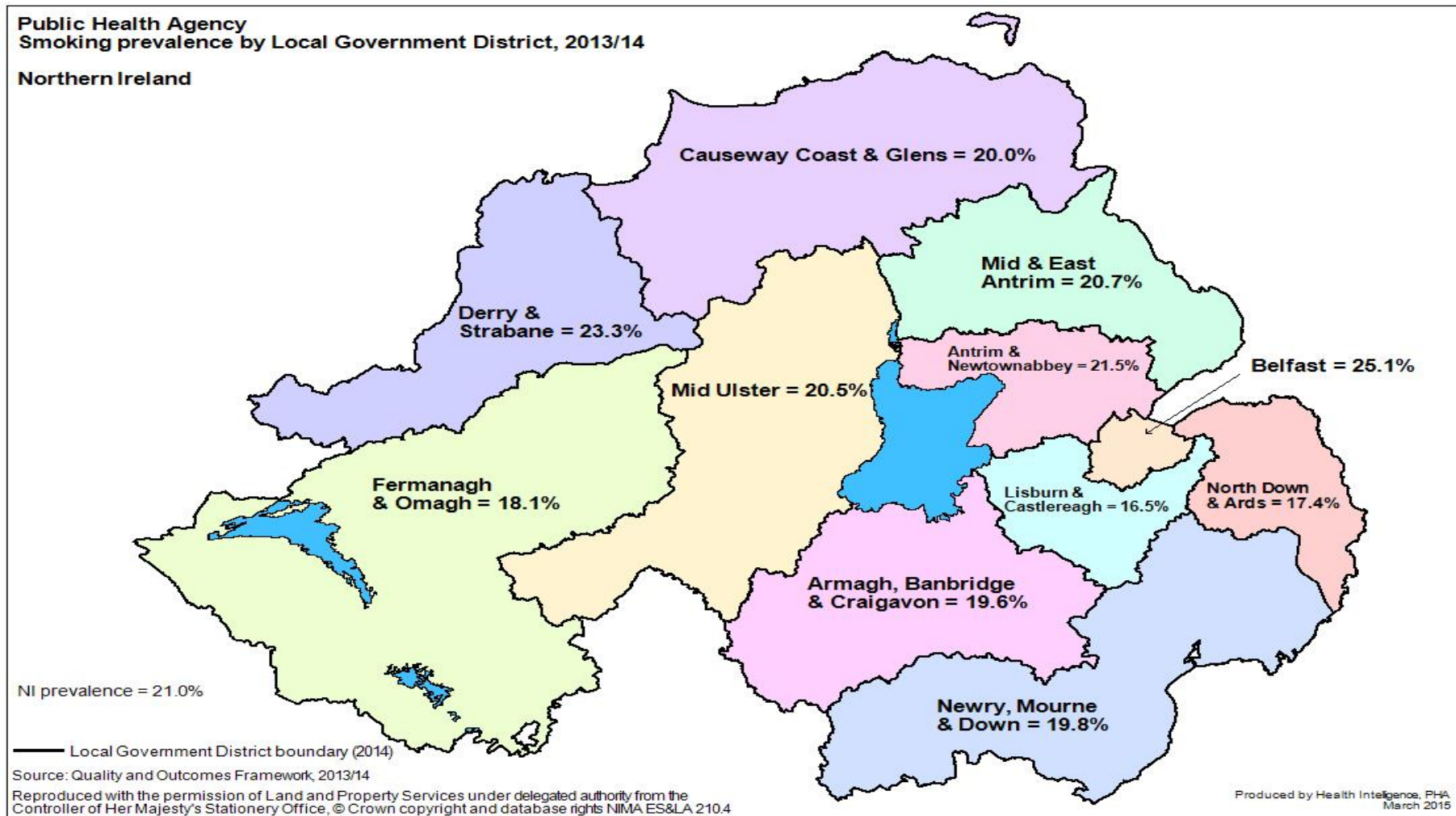


Likewise, the smoking prevalence among routine and manual workers remains around one third higher than the general population average at around 30% and substantially higher than that observed in professional occupations (9%).<sup>24,25</sup>

has been recorded for 85% of all patients aged 16+ who have registered with a General Practitioner (GP) in NI.



Figure 4: Smoking prevalence by Local Government District (LGD)<sup>22</sup>





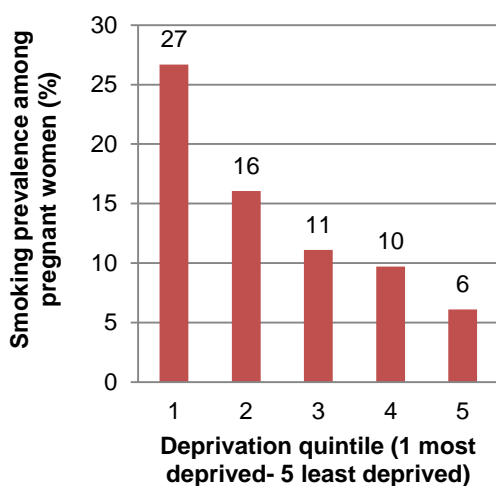
### Pregnant smokers

Fifteen percent of pregnant women self-reported being a smoker at the time of their first antenatal appointment during 2014/15, a fall from the 16% level observed in 2013/14.<sup>26</sup>

Pregnant women who smoke are more likely to have a baby of low birth weight (under 2,500g), a factor which can result in future health problems for the child. NI data shows over **twice as many mothers who smoke had a low birth weight baby 11.1%, compared to only 4.5% of mothers who do not smoke.**<sup>26</sup>

The extent of the relationship between smoking in pregnancy and deprivation is shown in Figure 6. 27% of pregnant women in the most deprived areas of NI smoke compared to only 6% of pregnant women in the least deprived quintile who smoke.<sup>26</sup>

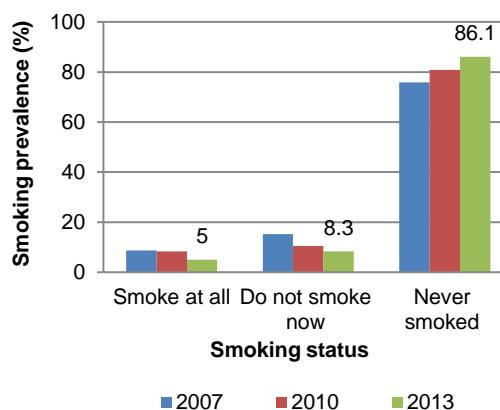
Figure 6: Prevalence of smoking in pregnancy by deprivation quintile 2014/15



### Children and young people: 11-16 year olds

Smoking prevalence among 11-16 year olds has declined over the last seven years from 8.7 % in 2007 to 8.4% in 2010 and then to 5% in 2013 (see Figure 7).<sup>27,28,29</sup>

Figure 7: Smoking habits of 11-16 years old 2007-2013



Further analysis of 11-16 years olds smoking prevalence (2013) has shown for the first time no deprivation difference is now evident among children who smoke (see Table 1).<sup>30</sup>

Table 1: Smoking status of 11-16 years old by deprivation quintile (2013)

(Deprivation quintiles: 1 most deprived -5 least deprived).

Deprivation quintile	1	2	3	4	5	All
Current smoker (%)	5	5	5	4	6	5

## Prevalence of E-cigarette use

E-cigarettes are designed to look and feel like cigarettes; however, E-cigarettes are not licensed nicotine replacement products. These products are not regulated in terms of their safety and therefore the level of risk associated with their use is unknown.<sup>31</sup> Trend data from England has shown E-cigarette use among adults has taken a downturn, due to a reduction in use by people who continue to smoke; nevertheless use for quitting continues to increase somewhat.<sup>32</sup> Currently data from England shows the prevalence of any E-cigarette use among smokers and ex-smokers to be 24%, (around 5% of the overall population) while the prevalence of daily use is approximately 15% and use for quitting purposes is 38%.<sup>32</sup>

NI data has shown that around 14% of the overall population have ever used an E-cigarette, with 5% of the population currently using these products.<sup>vi</sup> Similar to the prevalence of smoking, this use is focused within the more deprived areas (8%) compared to the least deprived areas (4%).<sup>5,33</sup>

Data from England has shown that the majority of 11-15 year olds are aware of E-cigarettes (88%), with over a fifth of children and young people having reported 'ever' to have had an E-cigarette (22%). Indeed young people's experimentation with E-cigarettes has now overtaken that of the traditional cigarette (18%).<sup>34</sup> This finding coupled with the close linkages between E-cigarette use and smoking

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<sup>vi</sup> E-cigarette use in NI is reported from the overall population, in contrast to England which reports on prevalence among smokers and ex-smokers only. Nevertheless equivalent overall rates of E-cigarette use within the overall population of around 5% are evident in both countries.

behaviour is therefore a concern for public health given its potential to displace the current downward trend in smoking prevalence among young people.

## Second hand smoke exposure

Exposure to second hand smoke (SHS) is a major health concern owing to its association with smoking related illnesses such as lung cancer, heart disease and stroke.<sup>35</sup> Second hand smoke is also a threat to the health of children and babies due to the established links between SHS and respiratory disease, cot death, middle ear disease and asthma.<sup>36</sup>

Information from the infant feeding survey (UK including NI) has shown **almost one fifth of mothers (19%) lived in a household in which someone other than the mother herself smoked.**<sup>37</sup>

Beyond the physical damage caused by SHS, exposure to SHS has been shown to have an impact on the uptake of smoking and nicotine dependence symptoms in young people. Becklake *et al.*, (2005) showed that the proportion of nicotine absorbed from that available in SHS during childhood was associated with subsequent smoking in adolescence. This was after adjustment for a number of factors such as sex, socio-economic group and number of adult smokers at home.<sup>38</sup>

Indeed, it has been shown that children who live with parents or siblings who smoke are up to 3 times more likely to become smokers themselves than children living in non-smoking households.<sup>39</sup> Additionally local data (2008) indicates

approximately 45% of primary seven children reported having at least one parent who smokes, with 14% from homes in which both parents smoke.<sup>40</sup>

Furthermore, a multi-country study carried out in NI, Wales and Scotland pre and post smoke free legislation showed SHS exposure was highest, and private smoking restrictions least frequently reported, among children from lower socio-economic groups.<sup>41</sup>

Research has shown the home and car to be the major sources of children's smoking exposure, however the most recent results from the 2014/15 Health Survey Northern Ireland found that 8 in 10 respondents did not allow smoking in the home and just over 8 in 10 respondents (85%) who had a family car did not allow smoking in their car at all.<sup>17</sup>

Nevertheless, a 2013 omnibus survey, which also examined smoking in the car found rules on smoking in the car varied significantly depending on whether the individual was a smoker or not. 81% of those who never smoked reported not allowing smoking in the car compared to only 24% of current smokers.<sup>42</sup>

## Tobacco control vs tobacco industry

### Key advertising strategies

One key mechanism by which tobacco has emerged as a social norm within our society is the extensive advertising carried out by the tobacco industry.

Advertising may be defined as 'above the line' (ie TV, radio or billboards) or 'below the line' (sales promotion, point of sale etc), however few jurisdictions across the globe have introduced comprehensive bans on smoking

advertising, (ie above and below the line advertising bans). This, thereby allows the tobacco industry to simply divert its resources to fill market gaps, thus maintaining visibility and hence tobacco consumption.

While the tobacco industry in the UK has traditionally carried out 'above the line' advertising this is now prohibited through the UK Tobacco advertising and promotion Act 2002.<sup>43</sup> This ban was then supplemented in 2005 with the European union (EU) Directive which regulates tobacco advertising and sponsorship with cross-border implications in the media other than television.<sup>44</sup>

Owing to these bans, the industry has shifted its advertising strategies to 'below the line' activities including point of sale displays and product placement in various guises from alibi<sup>vii</sup> branding of tobacco companies in formula one to more mainstream tobacco imagery<sup>viii</sup> in the media.<sup>ix</sup> While evidence has shown the extent of this type of advertising within the film industry has somewhat declined it continues to occur in films deemed by the British Board of Film Classification as suitable for children and young people.<sup>45</sup>

Indeed more recent research has revealed this tobacco imagery extends beyond the film industry into mainstream television broadcasts. 34% of programmes shown on free to air prime time (18:00-22:00) United Kingdom (UK) TV contained some tobacco imagery with 12% of these programmes showing actual tobacco

<sup>vii</sup> Alibi branding refers to the use of colours and branding representative of that of a product but omitting the product name.

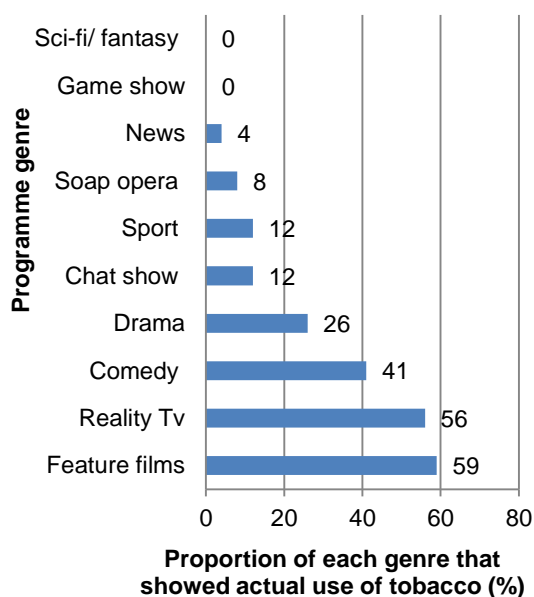
<sup>viii</sup> Tobacco imagery refers to actual tobacco use, implied tobacco use, the appearance of tobacco paraphernalia, tobacco brands and other references to tobacco.

<sup>ix</sup> Tobacco imagery in television programmes for artistic or editorial purposes is exempt from the Tobacco Advertising and Promotion Act.

use. Indeed, over 60% of these incidences of tobacco use occurred before the 21:00 watershed thereby exploiting a potential source of young people's tobacco exposure.<sup>46</sup>

Further analysis showed tobacco use on mainstream TV to be highly variable depending on the programme genre with over half of feature films (59%) and reality TV shows (56%) shown during the peak viewing times of 18:00-22:00 showing actual tobacco use (see Figure 8). Nevertheless, 8% of soap operas also showed tobacco use, while 49% of soap operas showed any tobacco imagery.<sup>46</sup>

Figure 8: The proportion of each programme genre that contained any tobacco use on prime time (18:00-22:00) UK free to air television, 2010<sup>x</sup>



In addition, tobacco imagery appears in 22% of YouTube music videos while e-cigarette imagery appears in 2%.<sup>47</sup>

The impact of this 'below the line' marketing has clearly proved lucrative for the tobacco industry with data showing that in the United States of

America, the tobacco industry is investing 97% of expenditure in 'below the line' marketing despite 'above the line' advertising still being allowed in the USA.<sup>48</sup>

The value of anti-tobacco advertising is an important component in tobacco control. The United States National Cancer Institute released a comprehensive scientific review of international evidence concerning the impact of media on smoking attitudes and behavior. The Institute concluded on balance that well-funded anti-tobacco campaigns can reduce smoking prevalence, with the extent of reductions highly related to levels of media expenditure.<sup>49</sup>

While the amount spent by the tobacco industry in the UK is unknown, in the US figures released by the [Federal Trade commission in 2012, report over 9 billion dollars was spent on advertising by the tobacco industry](#)<sup>xi</sup> (around \$285 per second).<sup>50</sup> This is in stark contrast to the approximately £11.7m spent on mass media anti-tobacco advertising in England (approx. 37p per second) and the £440,000 in NI in 2013/14 (approx. 1p a second).<sup>51,52</sup>

The key value of local anti-tobacco advertising has been observed with the 2012/13 NI anti-tobacco campaign estimated to have reached 72% of NI smokers and aided 6.8% smokers to make a quit attempt.<sup>53</sup> Nevertheless, media spend restrictions in NI on public sector advertising may impinge on the frequency and sustainability of anti-tobacco advertising and the resultant impact on smoking prevalence.

<sup>x</sup> Figure 8: reproduced from *Lyons et al*, 2014.<sup>46</sup>

<sup>xi</sup> For comparison purposes the prevalence of smoking in USA was 21.3% in 2012-13.

While above the line advertising, such as TV advertising is no-longer permitted for tobacco products, this is not the case for E-cigarettes. The evolution of E-cigarettes has led to 'above the line' advertising of these devices in the UK, an issue of concern for tobacco control given the increasing number of 11-18 year old users observed in the UK.<sup>34</sup>

#### Point of sale advertising

Point of sale is a key mechanism in below the line advertising. A strong positive relationship has been shown between point of sale (POS) advertising and increased tobacco consumption with POS displays reportedly increasing young people's susceptibility to smoke, stifling ex-smokers ability to remain quit or detaching smokers from making a quit attempt.<sup>54</sup> As a result point of sale display bans have come into force in large retailers since 31 October 2012 in NI and in small retailers from 6 April 2015 as a key mechanism to reduce public exposure to cigarettes.

#### Packaging as advertising

One key strategy the tobacco industry still utilizes to sell tobacco is branding. While the industry implies this is to influence brand choice, plain packaging has been found to reduce the appeal of cigarettes and smoking while enhancing the salience of health warnings on packs.<sup>55</sup> Visibility of cigarettes is an important advertising strategy for the tobacco industry with some companies having increased the range of tobacco products displaying their branding to maximize the visibility of their products.<sup>54</sup>

Nonetheless, Australia has led the way globally in instigating a comprehensive advertising ban on tobacco products including the introduction of

standardised packaging. The value of this strategy has been observed with the daily smoking rate falling pre plain packaging from 15.9% (2010) to a level of 13.3% post plain packaging (2013) in those aged 18 and over.<sup>56</sup> Furthermore, emerging evidence has shown the introduction of standardised packaging in Australia has increased the effectiveness of health warnings, reduced the ability of packaging to mislead about smoking harms and reduced the appeal of cigarettes to adults and adolescents.<sup>57,58</sup> Furthermore, larger graphic health warnings on the new standardised packets have been associated with increasing rates of thoughts of quitting among adult cigarette smokers.<sup>59</sup>

More recently the Republic of Ireland and the UK have followed in the footsteps of Australia and have taken steps towards the introduction of standardised packaging.

One counter-argument provided by the industry for plain packaging is that this will increase illicit tobacco, however, the Chantler review has strongly refuted this argument.<sup>60</sup> Moreover, recent evidence from the implementation of standardised packaging in Australia has shown no evidence of increased use of two categories of manufactured cigarettes likely to be contraband, no increase in purchase from informal sellers and no increased use of unbranded illicit tobacco.<sup>61</sup>

#### Taxation/illicit tobacco

Increased taxes placed on tobacco in recent years have played a significant role in the increased costs of the products. Price increases are considered to be the most effective mechanism for decreasing consumption; yet, these increases are still not substantive enough to cover



the economic costs of smoking within society.<sup>62</sup> While, the tobacco industry claims price rises simply result in increased smuggling and illicit tobacco, this argument is contradicted by the **downward trends displayed in the illicit market share for cigarettes from 15% in 2005/06 to 10 per cent in 2013-14.**<sup>13</sup>

### Stop Smoking Services

Current evidence shows combined pharmacotherapy and behavioral interventions to be the most effective mechanism to aid smokers to quit.<sup>63</sup> In line with this evidence, the Public Health Agency (PHA) commission specialist quality assured Stop Smoking Services as recommended by the National Institute for Health and Clinical Excellence.<sup>64,65</sup>

These services are designed specifically for those smokers who are motivated, ready to quit and prepared to set a quit date. The services are offered in a range of local settings including GP practices, pharmacies, hospitals and community/voluntary settings across Northern Ireland.

The Stop Smoking Services are delivered by specialist providers who have received specific training for this role. The services offer intensive treatment, over the course of 6-12 weeks, with structured support being available for at least four weeks after the clients quit date. To date, the provision of specialist Stop Smoking Services in NI has supported over 200,000 people to stop smoking since 2001/02, and over 50% of these clients remain quit at 4 weeks.

In 2014/15, 21,779 smokers registered with the NI **Stop Smoking Services, thereby reaching approximately 6.8% of all smokers in Northern Ireland,** and

above the 5% reach of Stop Smoking Services recommended within the NI Ten Year Tobacco Strategy.<sup>66</sup>

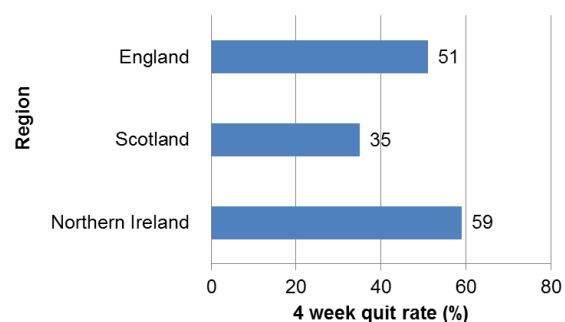
Cross country comparisons have shown the reach and effectiveness of NI Stop Smoking services compare favorably with elsewhere in the UK (see Table 2 and Figure 9).<sup>66,67,68,69</sup>

Table 2: Uptake and reach of services across the UK 2014/15

	Uptake (n)	Reach (%)
Scotland	73,338	7.0
Northern Ireland	21,779	6.8
England	450,582	5.4

The four week quit rate of smokers registered with the NI Stop Smoking Services was **59% in 2014/15, thereby maintaining the highest rate since the launch of the services in 2001/02.** Indeed, this quit rate exceeded that observed throughout the UK (Figure 9).<sup>66, 67, 68</sup>

Figure 9: 4 week quit rates within the Stop Smoking services, across the UK, 2014/15



NI services collect and collate 52 week quit rates for all smokers who quit at four weeks. For those smokers registering with the Stop Smoking services in 2014/15, a 52 week quit

rate of 24.4% was observed, a figure considerably higher than the 5% 52 week quit rate observed in Scotland.<sup>66,67</sup>

Furthermore, the observed 52 week quit rate in NI was the highest rate since the services began and equated to the Stop Smoking services aiding 2.0% of all smokers to remain abstinent from smoking for at least one year.

Despite the demonstrated effectiveness of the Stop Smoking Services, these services alone cannot eliminate tobacco as a public health issue in NI. Recently, observed unexplained declines in the number of smokers using Stop Smoking Services have been noted throughout the UK, a fact which limits the reach and effectiveness of a key evidenced based service.<sup>66,67,68</sup> Estimates suggest, if the number of clients utilizing the Stop Smoking Services in NI continue to decline at the current rate<sup>xii</sup>, it would take a minimum of 32 years for the services alone to aid NI approach the target 15% smoking prevalence level depicted within the current Ten Year Tobacco Control Strategy for Northern Ireland, and 102 years to eliminate smoking from society.<sup>xiii</sup>

## Conclusion

Tobacco remains a key public health issue in society with over a fifth of the NI population still smoking. Moreover, the health effects and financial costs of

smoking to the individual and to society as a whole are immense. The impact of tobacco is greatest among the poorest in our society impacting on their income, health and the health and social norms their children are inadvertently exposed to. It is evident the tobacco industry continually utilizes a plethora of mechanisms to promote tobacco products and encourage tobacco use within the population, thereby comprehensive tobacco control policies are a necessity.

The 2010 inquiry into the cost and effectiveness of tobacco control in the UK estimated overall costs of tobacco control to be around £300 million a year, money which is primarily spent on the anti-smuggling strategy, Stop Smoking Services and mass media. The inquiry reported the net annual revenue benefits to government given the decline in smoking prevalence since 1998 stood at £1.7 billion per year and that Government expenditure on tobacco control '*provides substantial economic value and a positive return on investment. Cutting back on expenditure in this area would almost certainly result in net revenue losses rather than gains to the Exchequer*'<sup>14</sup>

While this briefing paper summarizes some but not all of the key mechanisms of tobacco control in NI (advertising, taxation and Stop Smoking Services) it is clear comprehensive, sustained and adaptive evidenced based tobacco control measures are required to counteract and overcome the influence of the tobacco industry in NI.

<sup>xii</sup> Approx. 18% yearly decline in service use has been observed between 2012/13-2014/15. Future declines are calculated at -18% until a limit whereby the services reach the 5% of smokers recommended by NICE guidance and the ten year Tobacco control strategy for Northern Ireland.

<sup>xiii</sup> Estimates only account for quitting activity and do not take into account uptake of smoking. Predictions are therefore likely to vastly underestimate the necessary timelines for a smoke free society.



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