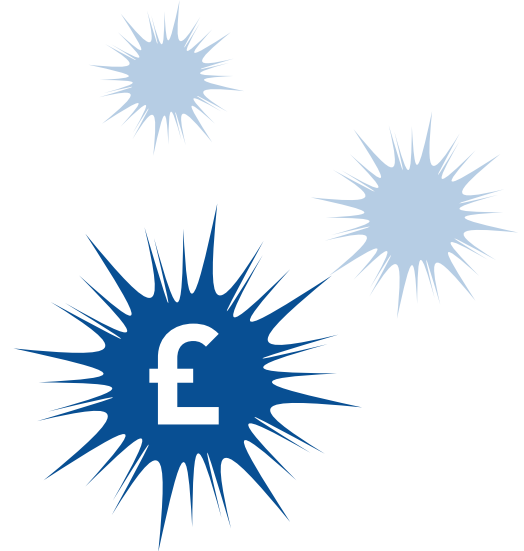




# Financial case for action on liver disease

Escalating costs of alcohol misuse, obesity and viral hepatitis

JULY 2017




Developed by the Foundation for Liver Research  
Endorsed by the Lancet Commission on Liver Disease

# Executive summary

Liver disease has grown to become one of the most common causes of premature death in the UK and its burden continues to escalate. 62,000 years of working life are lost to liver disease every year and its impact on the poorest in our society is disproportionately severe, contributing to the widening of socioeconomic health inequalities in the UK.

Worsening liver disease health outcomes could be reversed through concerted preventive action to tackle its main causes: alcohol misuse, obesity and viral hepatitis. Voluntary agreements with the food and drinks and alcohol industries have proved ineffective.

Through this paper, the Foundation for Liver Research seeks to make the financial case for public health action in these areas and urges the implementation of targeted measures recommended by the independent Lancet Commission on Liver Disease. This paper summarises the escalating financial costs to the health and care system as well as the wider societal costs related to the three lifestyle-related risk factors.

 Worsening liver disease health outcomes could be reversed through concerted preventive action to tackle the main causes of liver disease.

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# Alcohol misuse



Alcohol misuse has been estimated to have a total societal cost in England and Wales of £21bn per year although more recent research suggests the true figure could be at least £27bn and as high as £52bn. Studies have identified severe cost challenges across many parts of society.

Alcohol misuse has contributed to escalating health burden and costs:

- Alcohol-related admissions increased approximately 17% between 2010/11 and 2015/16
- Working years lost due to alcohol rose from 46,000 in 2010 to 167,000 in 2015, 16% of all working years lost in England
- The number of claimants of Employment Support Allowance and Incapacity Benefit / Severe Disablement Allowance citing alcohol misuse as the primary medical condition grew from 38,910 in May 2011 to 57,940 in May 2015

**!** Unless the trends are reversed, it is projected that over the next five years, £17 billion in costs to the NHS will be incurred.

## COST CHALLENGES



**NHS**  
£3.5bn per year  
in England



**CHILD SERVICES**  
Up to £2.8bn per year  
in England



**LOST PRODUCTIVITY**  
£7.3bn per year  
in the UK



**CRIME**  
Up to £13bn per year  
in the UK

## RECOMMENDATIONS



- **Minimum unit price (MUP) for alcohol:** The first five years of a 50p MUP would generate £1.1bn of savings in total direct costs, whilst the total societal value would be worth £3bn. Scotland is awaiting the conclusion of a legal challenge on MUP led by the Scotch Whisky Association, whilst Wales also intends to legislate for MUP
- **Re-introduce the alcohol duty escalator:** A duty escalator 2% above inflation would result in a total saving of £226.9m to the NHS over a five year period
- **New higher duty band for cider based on alcohol content between 5.5% and 7.5%:** A 500ml can of cider at 7.5% ABV generates 19p duty, compared with 69p on a can of beer of equivalent size and strength. The Republic of Ireland has a higher rate of tax for cider above 6% to mitigate its harmful impact
- **Restrict trading hours for off-licence to 10am-10pm and limit alcohol availability for on-licence after midnight:** Australia has demonstrated large reductions in non-domestic assault by restricting trading hours
- **Stronger regulation of alcohol marketing and advertising:** Removing exposure to TV advertising for 11-18 year olds would lead to a fall of 9% in alcohol consumption



## Obesity

With 63% of adults aged over 16 obese or overweight in 2015, and one in three children in England obese or overweight by the time they leave primary school, the obesity epidemic is reaching a crisis point. A range of studies have broken down the cost challenges.

The burden and associated costs of obesity have escalated in recent years:

- The cost to society has grown from £15.8bn in 2007 to £27bn in 2016; the Treasury has suggested the figure could already be £46bn per year
- Finished hospital admission episodes where obesity was a primary or secondary diagnosis increased 150% from 211,783 in 2010/11 to 525,000 in 2015/16
- NHS spending on obesity-related conditions soared 65% in 10 years to £1.027bn each year

**!** Failure to take action on obesity could result in added health costs to the UK of £1.9-2bn each year and a £14bn cost to businesses annually by 2035.

### COST CHALLENGES



**NHS**  
£6.1bn per year  
in England



**SOCIAL CARE**  
£352m per year  
in England



**LOST PRODUCTIVITY**  
£5.6bn over 2 years  
in the UK



**WELFARE**  
Up to £6bn per year  
in England

### RECOMMENDATIONS

- **Implement further fiscal measures on foods high in sugar, salt and fat in addition to the Soft Drinks Levy:** NICE forecasted savings of £576m each year by year five if sugar was reduced to 5% of total daily energy intake
- **Close the loopholes in advertising to ban adverts for junk food and sweets before the watershed at 9pm:** A review of 22 studies worldwide found a link between children's exposure to junk food adverts and consumption
- **Introduce mandatory controls on supermarket price promotions for unhealthy food and drink:** Public Health England estimated that if future promotions were banned, 6.1% would be cut in overall sugar volume
- **Offer weight loss surgery to obese people with diabetes:** The initial cost of £6,000 for surgery pays for itself within two to three years by reducing the health burden





## Viral hepatitis

Viral hepatitis poses a major health risk to society and the associated costs are high. However, progress to overcome this cause of liver disease is hampered by gaps in data on the prevalence, health burden and financial costs of hepatitis B and C.

The number of individuals chronically infected with hepatitis C in the UK was estimated to be 216,000, although other studies have suggested the true figure could be as high as 466,000 with 86% unaware they are infected. Hepatitis B has also become a major challenge for the UK, with a similarly large pool of people affected by the disease. Marginalised populations face a greater risk, notably individuals who inject drugs, prisoners and immigrant populations.

Further efforts must be made to collate the necessary data to understand the total financial cost of viral hepatitis to society, but for hepatitis C alone, it is thought that lost productivity is worth up to £367m per year.

Moreover, there are signs of escalation in recent years. For example, between 2010 and 2015, preliminary estimates of cases of hepatitis C-related cirrhosis or hepatocellular carcinoma increased from 1,336 to 1,692 in England.

New opportunities are presented by the recent introduction of novel oral antiviral treatments for hepatitis C into the NHS. There is a cost associated with these treatments, with the NHS making a £190m ring-fenced investment into the new antiviral medicines in 2015. However, NICE deems their use as cost-effective, mitigating even higher costs of complications of advanced liver disease. A study of five European countries found that hepatitis C treatment resulted in savings of £435m annually due to improvements in work productivity.

### RECOMMENDATIONS



- **Immunisation for all individuals with risk factors for hepatitis B:** Immunisation for babies born after 2018 should be extended to all individuals with risk factors
- **Improve access to testing and diagnosis of hepatitis:** Public health budgets must be protected and boosted to offer effective testing and diagnosis in the community, with a particular focus on groups at greatest risk and/or not in regular contact with health services
- **Protect harm reduction services:** Funding for harm reduction services must be protected, and access enhanced for individuals in need in order to fulfil their important role in reducing the burden of hepatitis

**!** Disease detection and treatment of patients affected by viral hepatitis in the UK remains often sub-optimal.

## Background: liver disease and its causes

The mounting liver disease epidemic is one of the most pressing public health concerns of our time. Liver disease constitutes a major cause of premature death in the UK, with mortality rates having increased four-fold since 1970.<sup>1</sup>

Liver disease poses a particular threat to economic productivity because it affects people of younger age more severely than other big killer diseases. More than one in ten people who lose their life to liver disease die in their 40s and 90% of liver-related deaths occur in people under the age of 70.<sup>2</sup>

Liver disease now accounts for more years of life lost amongst under-65s than lung and colorectal cancers combined (the two most common non-sex-specific cancers).<sup>3</sup>

We also know that liver disease hits the poorest and the most vulnerable in society the hardest. People in the most disadvantaged quintile of the population are 2.3 times more likely to die from liver disease,<sup>4</sup> making it one of the major factors in widening socioeconomic health inequalities.

Crucially, the trend of worsening liver disease health outcomes could be reversed through concerted preventive action to tackle the three main causes of liver disease:



Between them, these lifestyle-related risk factors are responsible for the great majority of liver disease cases, and the Lancet Commission on Liver Disease has been urging resolute public health intervention in these areas since the publication of its seminal report, *Addressing liver disease in the UK*, in 2014.<sup>5</sup>

Recent governments have prioritised voluntary agreements with the food and drinks and alcohol industries over mandatory regulatory measures. Voluntary agreements offered promise, but failed to deliver change in public health.<sup>6</sup> Furthermore, a study by public health experts showed that self-regulation in the alcohol industry is proving ineffective,<sup>7</sup> a conclusion backed up by Public Health England.<sup>8</sup>

The new Government should break with the legacy of limited public health action in these areas and seek to implement robust preventive measures in line with the recommendations of the independent Lancet Commission on Liver Disease to avoid further escalation of the health and financial burden associated with the main causes of liver disease.

## Purpose of this paper

The health argument for more robust action on alcohol, obesity and viral hepatitis is well established.<sup>9,10</sup> This paper does not seek to restate it but rather to supplement it by making the financial case for targeted public health action to reduce the harm associated with excessive alcohol consumption, obesity and viral hepatitis.

The health benefits of addressing these lifestyle-related risk factors would reach beyond liver disease and would deliver health improvement in cancer, cardiovascular disease as well as other disease areas. Crucially, effective preventive intervention in these areas would free up valuable financial resource, which could be re-invested into the health system experiencing ever-greater financial pressures. Furthermore, some of the most effective measures to overcome the main causes of liver disease will also boost gains to the Exchequer.

Targeted at high-level national decision-makers, this paper brings together the latest evidence of escalating financial costs associated with these risk factors. Drawing on a multitude of data sources, the paper sets out the financial costs to the health and care system, as well as the wider societal costs related to the three causes. We outline the costs observed in recent years and, where appropriate, make informed projections of the likely future financial burden. We further identify the financial benefits forgone as a result of the failure to take action and present a series of policy proposals, in line with the evidence-based recommendations of the Lancet Commission, for policymakers' urgent consideration.

This paper focuses on alcohol, obesity and viral hepatitis; however, it should be noted that they are not the only liver disease risk factors. Smoking, for example, is a major aggravating factor and was estimated to be responsible for approximately 4% of all hospital admissions in England for those aged over 35 in 2013/14 at a significant cost to the NHS.<sup>11</sup>

The Lancet Commission on Liver Disease is a group of multi-disciplinary experts assembled to make recommendations to reduce premature liver disease mortality, tackle liver disease burden from avoidable causes and improve the standard of care for patients with liver disease in hospital.

In its seminal report, *Addressing liver disease in the UK*, published in 2014, the Lancet Commission set out a blueprint for improving the prevention and management of liver disease in the UK and made a number of practical recommendations for action.

Since then, the Lancet Commission has produced two progress reports and has continued its campaign for the implementation of its evidence-based recommendations through ongoing engagement with parliamentarians, policy-makers and health system leaders.

The paper has been developed by the Foundation for Liver Research.

The Lancet Commission on Liver Disease endorses the contents of the paper and its recommendations.

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### For further information regarding the work of the Foundation for Liver Research

Please contact: Professor Roger Williams, Director of the Foundation for Liver Research

E: [r.williams@researchinliver.org.uk](mailto:r.williams@researchinliver.org.uk)

T: 0207 255 9830

# Alcohol misuse

▶ Alcohol-related liver disease accounts for 60% of all liver disease and 84% of liver-related deaths.<sup>12</sup> Alcohol consumption is also linked to a wide range of other medical conditions and diseases, including seven types of cancer.<sup>13</sup>

The high levels of alcohol-related health burden show no signs of subsiding, with over 10 million adults regularly drinking more than 14 units of alcohol each week against the advice of the Chief Medical Officer.<sup>14</sup>

The Government's own figure for the total external cost – costs not directly borne by the drinker – of alcohol misuse for England and Wales is £21bn per year.<sup>15</sup> It should be noted that this figure requires updating and is therefore likely to underestimate the true total cost.<sup>16</sup> More recent studies of high-income countries with comparable methodologies could bring the figure up to £27bn and even as high as £52bn for 2016.

The societal financial burden associated with alcohol is set to continue rising, particularly as alcohol is 60% more affordable today than in 1980.<sup>17</sup> The direction of travel in recent years has been contrary to tackling affordability of alcohol, with cuts to duty and the abolition of the alcohol duty escalator.

## Health and care system costs

The financial cost to the NHS of managing alcohol-related health issues was found to be a staggering £3.5bn in 2009/10 – £120 for each taxpayer.<sup>18</sup> This consisted of costs across all parts of the system including:



**£122m** on specialist treatment

**£112m** on GP consultations

**£1.8bn** on inpatient/day visits  
*(including directly or partly attributable to alcohol)*



**£246m** on outpatient visits

**£8m** on dependency prescribed drugs

**£696m** on attendances to A&E



**£16m** on practice nurse consultations

**£449m** on ambulance services

Costs to the NHS have likely further increased given that alcohol-related admissions escalated approximately 17% between 2010/11 and 2015/16.<sup>19</sup>

The cost impact of alcohol reaches beyond the health system into social care. The Institute of Alcohol Studies (IAS) has estimated that the cost of alcohol for child services could sit as high as £2.8bn<sup>20</sup> driven by a strong association between drinking and child neglect and mistreatment. One in five children live with a parent who drinks too much<sup>21</sup> and the Centre for Public Health estimated that as much as 34% of child social care costs are alcohol-related.<sup>22</sup>

## MYTHBUSTER



**MYTH:** Alcohol consumption is an individual choice that only has consequences for the drinker.

**EVIDENCE:** Alcohol abuse leads to significant third party risk and damage, for example, harming spouses, children, colleagues and many others across society.

Modelling has shown that over the next five years, alcohol will be accountable for:<sup>23</sup>

- £17 billion in costs to the NHS, including £638m in cancer treatment costs
- 63,000 deaths
- 4.2 million hospital admissions

The health systems of the devolved nations also face a significant financial burden on the health and care system due to alcohol:

- **Scotland** as high as £392.8m cost to the health system and as high as £346.8m to social care in 2007<sup>24</sup>
- **Wales** as high as £73.3m cost to the health system in 2008/09<sup>25</sup>
- **Northern Ireland** as high as £158m cost to the health system and as high as £82m to social care in 2008/09<sup>26</sup>

Prevention is crucial, but it is also important that reducing variation in treatment for harmful drinkers is not be overlooked. This is another important way to reduce the burden of alcohol misuse on the health service.



## MYTHBUSTER



**MYTH:** Intervention to reduce alcohol consumption would damage a valuable industry.

**EVIDENCE:** The benefits to public services and the economy of a reduction in alcohol consumption would far outweigh the potential negative impact on the UK alcohol industry's £1.7bn surplus.<sup>35</sup>

## Unemployment and productivity

The Department of Health estimated that alcohol misuse in the UK costs the economy £7.3bn per year due to factors such as unemployment, sickness absence, early retirement from an inability to work and premature deaths among economically active people of working age.<sup>27</sup> In 2015, 167,000 working years were lost due to alcohol, 16% of all working years lost in England.<sup>28</sup> This has grown considerably since 2010 when NICE estimated the figure stood at approximately 46,000.<sup>29</sup>

Furthermore, as of May 2015, 57,940 claimants of Employment Support Allowance and Incapacity Benefit / Severe Disablement Allowance had alcohol misuse cited as the primary medical condition.<sup>30</sup> This has escalated steeply from 38,910 in May 2011.<sup>31</sup>

In addition to unemployment, alcohol misuse represents a significant cost for UK business through limiting the productivity of its workforce. Members of the workforce who consume alcohol have higher levels of absenteeism and this costs businesses £1.7bn per year – 17m absent days at a cost to employers of £98.96 per day.<sup>32</sup>

The devolved nations have also reported losses to productivity due to alcohol:

- Scotland as high as £1bn<sup>33</sup>
- Northern Ireland as high as £258.2m<sup>34</sup>



## Crime and disorder

Previous estimates have suggested the cost to the UK taxpayer of alcohol-related crime and social disorder stands at up to £13bn each year.<sup>36</sup> Physical and sexual assault, homicide, and anti-social behaviour are just a few examples of offences which exhibit positive correlation with alcohol consumption.

Alcohol-related crime is likely to be under-estimated as not all relevant offences are reported to the police;<sup>37</sup> therefore, the true burden is likely to be understated. In cases that result in injury to the victim, there can be an added cost to the NHS. Furthermore, it should not be overlooked that half of respondents to an IAS survey of ambulance staff reported being injured at least once during call-outs to intoxicated members of the public.<sup>38</sup>

Binge drinking continues to pose a challenge and has been shown to lead to a rise in public costs by increasing:<sup>39</sup>



Daily average of road accidents by 17% – each fatal accident costs on average **£2.07m**



Average number of alcohol-related arrests by 45% – each arrest costs **£14,836**



Number of police officers on duty by 30% – **£15** average hourly wage per Police Constable

In addition, violent crimes are very often committed under the influence of alcohol:

- 40% in 2011/12 in England and Wales<sup>40</sup>
- 54% in 2014/15 in Scotland<sup>41</sup>
- 40% in 2015/16 in Northern Ireland<sup>42</sup>

## MYTHBUSTER



**MYTH:** There is no added benefit of implementing MUP and duties policies together.

**EVIDENCE:** MUP and duties can complement each other, with the former targeting the cheapest alcohol consumed by the most harmful drinkers, and the latter tackling consumption in the wider population.

# What can be done?

There are a number of policy levers that the Government can use to tackle these challenges by addressing the availability, affordability and acceptability of alcohol.

## 1 Introduce a minimum unit price for alcohol

One policy that has attracted attention in recent years is setting a minimum price per unit of alcohol (MUP) – a minimum price below which a unit of alcohol cannot legally be sold. This measure would target the cheapest alcohol in supermarkets, as opposed to increasing the price in pubs or bars where alcohol is generally sold above the minimum threshold.

The University of Sheffield's Alcohol Research Group's modelling, funded by the Policy Research Centre for Prevention at Cancer Research UK, finds that MUP at a level of 50p<sup>43</sup> – the level legislated at by the Scottish Government<sup>44</sup> – would have a significant impact:

In the first five years after implementation, the policy will lead to:

- 1,150 fewer deaths
- 74,500 fewer hospital admissions



Significant financial savings would be achieved over the first five years:

- £325.7m savings in healthcare costs
- £710.9m savings in crime costs
- £65.1m savings in workplace absence
- Total direct costs of **£1.1bn**  
*(healthcare, crime and absence)*
- Total societal value, including the value of improved health, of **£3bn**

Furthermore, real world evidence from Canada shows that increases in minimum prices were associated with substantial reductions in deaths caused by alcohol.<sup>45</sup>

The Scottish Government plans to introduce MUP, but must await the conclusion of a lengthy legal challenge led by the Scottish Whiskey Association. In June 2017, the Welsh Government also announced its intention to legislate for MUP.

## 2 Re-introduce the alcohol duty escalator

The alcohol duty escalator saw the duty rate of alcohol increase by 2% above inflation each year; however, it was scrapped for beer in 2013 and for wine, cider and spirits in 2014.

The Treasury's own forecasts show that scrapping the alcohol duty escalator reduced potential income to the Exchequer by £5bn over five years – £3.45bn taking into account consumption increases.<sup>46</sup>

In 2016, modelling funded by the Policy Research Centre for Prevention at Cancer Research UK and carried out by the University of Sheffield's Alcohol Research Group projected that, over five years, an escalator 2% above inflation would lead to a total of:<sup>47</sup>

- 850 fewer alcohol-attributable deaths
- 56,000 fewer alcohol-attributable hospital admissions
- A saving of £226.9m to the NHS



## MYTHBUSTER



**MYTH:** MUP would impact moderate drinkers.

**EVIDENCE:** The impact on moderate drinkers would be minimal. The policy would specifically target harmful drinkers who usually purchase alcohol below the MUP threshold.<sup>48</sup>





### 3 Introduce a new higher duty band for cider between 5.5% and 7.5%

High strength cider has become the 'drink of choice' for many of the most at-risk drinkers.<sup>49</sup> This is due to the design of the duty system that has allowed its price to be extremely low by being taxed according to its volume rather than alcohol content. A new higher duty band for cider based on alcohol content, set between 5.5% and 7.5% ABV would be the most effective way of making use of the tax system to tackle the proliferation of cheap, high strength 'white' ciders.

A 500ml can of cider at 7.5% ABV generates 19p of duty, compared with 69p on a can of beer of equivalent size and strength, according to the Alcohol Health Alliance (AHA),<sup>50</sup> whilst the Institute for Fiscal Studies has also highlighted the current structure's limitations.<sup>51</sup>

The Treasury has an opportunity to introduce a new duty band for 'white' ciders in response to its recent consultation on the issue. Lessons can be learnt from the Republic of Ireland where action has been taken to ensure that white cider does not have the same harmful impact as in the UK, by taxing cider above 6% ABV at a much higher rate.<sup>52</sup>

### 5 Strengthen regulation of alcohol marketing and advertising

In 2011 Ofcom suggested that children on average watched 3.2 alcohol adverts per week on TV.<sup>54</sup> Children exposed to alcohol marketing are more likely to start drinking alcohol, whilst those who already drink will consume greater quantities. Modelling undertaken in the UK found that removing exposure to TV advertising for 11-18 year olds would result in a 9% fall in alcohol consumption.<sup>55</sup>

This paper supports the call by the AHA for a ban on sports sponsorship by alcohol brands, a watershed for alcohol adverts on television and restricting cinema adverts to showing alcohol products only before 18 certificate films, with a longer-term objective to prohibit all advertising.<sup>56</sup>

### 4 Restrict trading hours for off and on-licences

Longer trading hours are associated with higher rates of alcohol-related harm. Lessons can be learnt from Australia where the introduction of policies to restrict trading hours have resulted in 45.1% and 20.3% reductions in non-domestic assault in the Kings Cross and CBD areas of Sydney respectively.<sup>53</sup>

To reverse the damaging trends in the UK, off-licence opening hours should be restricted to between 10am and 10pm. In addition, on-licence trading should be restricted to limit the availability of alcohol after midnight.



# Obesity

► The UK is in the midst of an obesity crisis. In 2015, 63% of adults aged over 16 were obese or overweight.<sup>57</sup> In addition, one in three children in England are already obese or overweight by the time they leave primary school.<sup>58</sup> The result has been an escalation in cases of non-alcoholic fatty liver disease in recent years,<sup>59</sup> which is closely associated with a range of severe complications such as hepatocellular carcinoma.<sup>60</sup> It is striking that the growing childhood obesity crisis has led to 38% of obese children showing evidence of non-alcoholic fatty liver disease.<sup>61</sup>

In addition, obesity commonly compounds liver disease, for example heavy drinkers who are also overweight experience a higher risk of liver events than those who are a healthy weight.<sup>62</sup>

The socioeconomic picture is concerning too, with 40% of year six children from the most deprived areas of England overweight or obese compared to 27% in the least deprived areas.<sup>63</sup> The gap between the most and least deprived areas has been steadily widening since before 2010.<sup>64</sup>

Projections estimated the total cost of obesity to health and the wider economy could have reached £27bn in 2016,<sup>65</sup> a dramatic rise from £15.8bn in 2007. By 2025, it is projected that the cost will have escalated to £37.2bn;<sup>66</sup> however, more recently, the Treasury has suggested the figure could already be £46bn per year.<sup>67</sup>

## Health and care system costs

The direct cost to the NHS in England of people being overweight and obese was estimated at £6.1bn per year in 2016,<sup>69</sup> uprated from £5.1bn in 2006/07.<sup>70</sup>

In 2015/16, there were 525,000 finished hospital admission episodes where obesity was a primary or secondary diagnosis.<sup>71</sup> This represents an increase of almost 150% from 2010/11 when the number of obesity-related hospital admissions stood at 211,783.<sup>72</sup>

On top of this, the cost to social care stands at £352m, which includes extra formal hours of support for the severely obese.<sup>73</sup> Severely obese individuals are also thought to be over three times more likely to need social care than those of a healthy weight.<sup>74</sup>

Excess body fat has contributed to premature mortality.<sup>75</sup> In addition to liver disease, excess body fat has been a contributing factor to a range of serious conditions, including but not limited to:<sup>76</sup>



**44%** of diabetes cases

**23%** of heart disease cases



Up to **41%** of uterine cancer cases

**10% or more** of liver, gallbladder, colon and kidney cancers in the UK<sup>77</sup>



The Obesity Health Alliance states that the health cost of obesity is the equivalent to at least.<sup>68</sup>

- The salary of 165,000 nurses or 85,000 hospital doctors
- 116,000 heart transplants
- 730,000 hip replacements

1 + 1

## MYTHBUSTER



**MYTH:** The Soft Drinks Industry Levy will result in significant job losses in the soft drinks industry

**EVIDENCE:** The industry will remain competitive and successful:

- Comparable taxes in the EU have not shown any long-term impact on the competitiveness of the food and drinks industry<sup>84</sup>
- HMRC expects the impact on business to be negligible<sup>85</sup>

Figures show NHS spending on conditions linked to obesity is £1.027bn each year, soaring 65% in ten years.<sup>78</sup>

Projections have found that, on current trends, the UK will face added health costs of £1.9-2bn each year from obesity-related diseases with as many as 48% of men and 43% of women obese by 2030.<sup>79</sup> The rising levels of obesity could result in 670,000 additional cases of cancer by 2035.<sup>80</sup>

The financial burden of treating people who are overweight and obese in the devolved nations is also significant:

- Scotland £363m in health and care costs in 2015, although the true cost could be closer to £600m<sup>81</sup>
- Wales £86m in 2008/09<sup>82</sup>
- Northern Ireland £92m in 2009<sup>83</sup>



## Productivity

The impact of obesity is also felt by UK businesses, faced with a less productive and an unhealthy workforce. This indirect cost to society was estimated in 2010/12 to have reached £5.6bn (excluding premature mortality).<sup>86</sup>

Research shows that obese individuals are less likely to be in employment. The subsequent obesity-related welfare costs are thought to stand at as high as £6bn.<sup>87</sup> The Department for Work and Pension's figures for May 2015 showed that 1,630 Employment Support Allowance claimants cited obesity as the main disabling condition;<sup>88</sup> however, it is thought there are as many as 807,000 claimants with a main disabling condition for which obesity is potentially a contributory factor.<sup>89</sup>

Obesity also has an impact on workforce productivity with NICE estimating that an organisation employing 1,000 people could face over £126,000 each year in lost productivity due to issues associated with obesity, such as back problems and sleep apnoea. NICE has estimated that 16m days of sickness absence per year are due to obesity.<sup>90</sup>

**!** The growing loss of productivity to employers is projected to hit £14bn annually by 2035.<sup>91</sup>

# What can be done?

There are a range of interventions that the Government should implement if the trend of growing obesity is to be challenged.

This paper welcomes the Government's intention to implement the Soft Drinks Industry Levy. Previous research has estimated that implementation of the levy would result in 144,000 adults and children avoiding obesity every year, as well as preventing 19,000 cases of Type 2 diabetes.<sup>72</sup> The expected revenue for the Exchequer from the levy of £380m per year from 2018-19<sup>73</sup> underlines the importance of this policy. Furthermore, Coca-Cola has already cut the sugar content of some of its products without undermining sales.<sup>74</sup> This policy must represent just the first step.



## 1 Implement further fiscal measures on foods high in sugar, salt and fat

Other fiscal measures on foods high in sugar, salt and fat must be introduced. A recent international study concluded that food taxes aimed at specific nutrients can reduce consumption and divert preferences to untaxed products.<sup>96</sup> NICE forecasted savings of £576m per annum by year five for the NHS when it recommended that sugar should form no more than 5% of total daily energy intake.<sup>97</sup> Moreover, as set out above with the Soft Drinks Industry Levy, there is significant potential income that can be generated for the Exchequer through fiscal measures on sugar, salt and fat taxes.



**!** There is significant potential income that can be generated through fiscal measures on sugar, salt and fat taxes.

## 2 Close the loopholes in advertising to ban adverts for junk food and sweets from all TV shows broadcast before the watershed

Existing regulations from Ofcom and the Committee of Advertising Practice on advertising junk food to children require strengthening. This should be in the form of a TV advertising ban before the watershed at 9pm. The loophole that allows advertising of junk food during TV programmes where children make up more than 25% of the audience means the full benefits to health outcomes and the associated cost savings will not be achieved.

The Food Standards Agency's (FSA) analysis for Ofcom suggested significant financial benefits of banning adverts before the watershed at 9pm and called for more robust action.<sup>98</sup>

A review of 22 studies worldwide found a link between children's exposure to junk food adverts and consumption.<sup>99</sup>

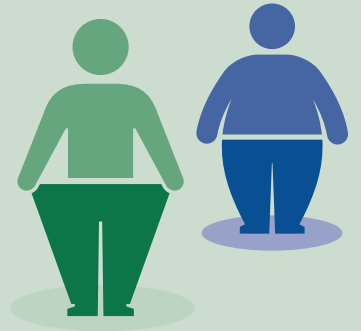


### 3 Introduce mandatory controls on supermarket price promotions for unhealthy food and drink

40% of food purchased to eat at home is on promotion, and disproportionately includes food and drink high in sugar content – on average, a household would have to spend £630 extra each year to buy their annual selection of promoted items at full price.<sup>100</sup> Moreover, the health burden particularly impacts groups with lower incomes as their dietary patterns are heavily influenced by cost.<sup>101</sup>

Analysis has found that promotions lead to consumers swapping one brand for another, but also lead to a 20% expansion of the category over time; thus, consumers are buying more food and spending more money despite the promotion.<sup>102</sup>

Public Health England estimated that if future promotions were banned, 6.1% would be cut in overall sugar volume.<sup>103</sup> It is therefore crucial that supermarkets play their role in promoting healthier eating.



### 4 Offer weight loss surgery to obese people with diabetes

There is a significant benefit to offering more obese people weight loss surgery. Despite the growing levels of obesity in the UK, in contrast to many other countries, the number of surgical weight loss procedures in the NHS is falling.<sup>104</sup>

Weight loss surgery costs £6,000 in the short-term, but is far outweighed by the costs that would be averted by avoiding obesity-related complications of liver disease, long-term diabetes or many other health conditions. Weight loss surgery is highly effective and pays for itself within less than two to three years.<sup>105</sup>

Patients experience significant health improvement following weight loss surgery as they are:<sup>106</sup>

- Nine times more likely to see major diabetes improvement
- 70% less likely to have a heart attack
- Likely to see beneficial impact in hypertension, angina and sleep apnoea

## MYTHBUSTER



**MYTH:** There is little evidence that the levy will work.

**EVIDENCE:** Levies have worked in other countries:<sup>95</sup>

- In Mexico, a \$1 peso excise tax, on average, led to a 12% fall in consumption in 12 months
- In Hungary, 40% of manufacturers reduced or eliminated sugar following a tax on sugary products

**!** Weight loss surgery is highly effective and pays for itself within less than two to three years.

# Viral hepatitis

- ▶ The burden of viral hepatitis has grown considerably in recent decades to become one of the main causes of liver disease in the UK. Unlike the other chief causes, data has been more challenging to collect in order to understand the complete picture of the burden and associated costs of viral hepatitis.

The number of individuals chronically infected with hepatitis C in the UK has been estimated to be 216,000,<sup>107</sup> although other studies have suggested the true figure could be as high as 466,000 with 86% unaware they are infected.<sup>108</sup>

The prevalence of hepatitis B has also become a major challenge for the UK, with a similarly large pool of people affected by the disease.<sup>109</sup>

Marginalised populations, such as people who inject drugs, prisoners and immigrant populations,<sup>110</sup> are at an elevated risk.<sup>111,112,113,114</sup> In the UK, 95% of new chronic hepatitis B infections can be found in migrant populations, and 90% of chronic hepatitis C infections occur in people who inject drugs or have done previously.<sup>115</sup>

Disease detection and treatment of patients affected by viral hepatitis in the UK is often sub-optimal in comparison to other European countries.<sup>116</sup> No testing for hepatitis B or C at the time of immigration visa applications is in place unlike in many countries around the world.<sup>117</sup>

## Health and care system costs

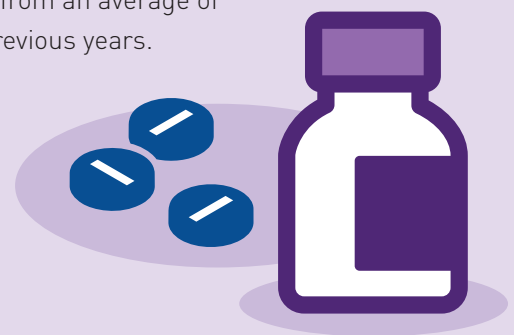
The consequences of viral hepatitis take time to be felt, but if left untreated, it can lead to severe liver disease, including cirrhosis, hepatocellular carcinoma and end-stage liver failure. The management of these complications can put a significant financial strain on the health system. Between 2010 and 2015, preliminary estimates of cases of hepatitis C-related cirrhosis or hepatocellular carcinoma increased from 1,336 to 1,692 in England,<sup>119</sup> indicating that the burden of hepatitis C-related complications on the health system is rising.

In view of the high health and financial burden associated with the management of complications of advanced liver disease, prevention of viral hepatitis must be prioritised. For those living with the disease – many of whom are unaware – access to testing, early diagnosis and appropriate treatment is crucial. Research has shown low levels of hepatitis B testing amongst migrants in the UK, and highlights the importance of primary care in this area.<sup>120</sup>

Work previously undertaken by West Midlands Public Health England with a prison in the region identified a number of findings and recommendations on how to improve detection and treatment of hepatitis B and C amongst prisoners.<sup>121</sup>

The recent introduction of novel oral antiviral treatments for hepatitis C into the NHS offers new opportunities. With significantly higher cure rates and more tolerable side-effect profiles than historical treatments, the health system needs to maximise their potential in averting hepatitis C-related complications. Through establishing a system of operational delivery networks, the NHS targeted to treat 10,000 patients for hepatitis C in 2016<sup>122</sup> and increase this to 15,000 per year by 2021.<sup>123</sup>

This is up from an average of 5,100 in previous years.





## MYTHBUSTER



**MYTH:** People who inject drugs are only able to start treatment once they stop injecting

**EVIDENCE:** National and European treatment guidelines make it clear that treatment must be considered for people who inject drugs, provided they wish to receive treatment and are able and willing to maintain regular appointments.<sup>118</sup>

The new treatments come at a cost, with the NHS making a £190m ring-fenced investment into the new antiviral medicines in 2015,<sup>124</sup> but their use is deemed cost-effective by NICE, helping to avert an even higher cost of complications of advanced liver disease.

A 2014 study found that complete treatment coverage for individuals needing it would cost £1.5bn over the next 30 years; however, under current levels of treatment, the total healthcare cost of the hepatitis C-infected population would be £4.7bn due to the complications arising from failing to treat all those affected by the disease.<sup>125</sup>

Furthermore, after many years of rising deaths due to hepatitis C, 2015 saw an 11% fall in the number. This coincided with a 40% increase the number of people who received treatment.<sup>126</sup>

Research has concluded that hepatitis C treatment should be provided to people who inject drugs regardless of the severity of their condition. This has the potential to be more cost-effective than treating patients in a similar condition but who pose less disease transmission risk.<sup>127</sup>

## Productivity

The impact of viral hepatitis is felt by businesses as well. Hepatitis C alone was estimated to be responsible for productivity losses of as high as £367m due to absenteeism and presenteeism.<sup>128</sup>

An international study assessing five European countries found that hepatitis C treatment for patients resulted in improvements in work productivity. Absenteeism and presenteeism saw a 16.28% and 19.53% improvement respectively in the study, leading to savings of £435 million annually.<sup>129</sup>



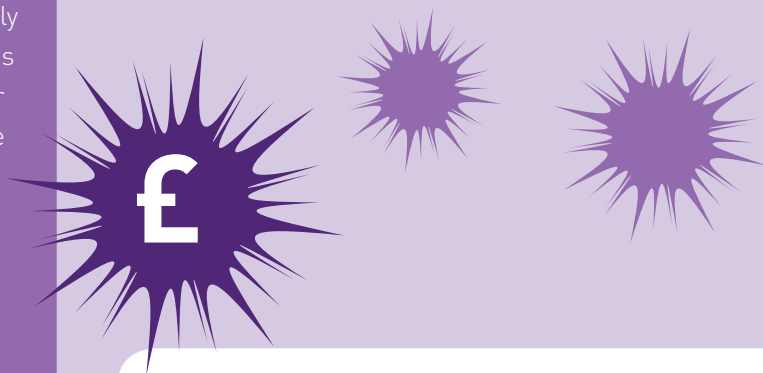
**!** Hepatitis C treatment for patients resulted in improvements in work productivity.



# What can be done?

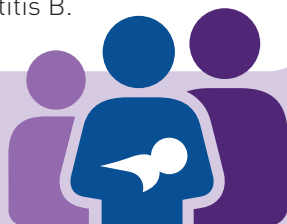
Both the costs of new treatments and managing the complications caused by viral hepatitis could be reduced through effective prevention measures and early diagnosis.

Some important action is already underway, notably the planned implementation of a universal hepatitis B vaccination for babies taking effect from October 2017. A previous study of a vaccination programme estimated the cost to be £229,000, outweighed by net savings of approximately £288,000 or potentially as high as £489,000.<sup>130</sup> However, it will take a significant length time for the impact to be felt. Additional measures are required to achieve progress and avert the high costs of complications of viral hepatitis-related liver disease.



## 1 Immunise all individuals with risk factors for hepatitis B

Universal immunisation for babies is an important step, but will only cover those born after 2018. Immunisation should be extended to individuals with risk factors who will not be captured by the new programme. This would help to achieve progress at a much quicker pace, reducing the current population with hepatitis B.



## 3 Protect harm reduction services

Improving testing and diagnosis is crucial, but harm reduction services must also play a major role in reducing the burden of hepatitis. These services must remain funded and simple to access for individuals in need. Schemes including needle exchange and opioid substitution are instrumental in rehabilitating injecting drug users.

## 2 Improve access to testing and diagnosis of hepatitis

Further initiatives that help to raise awareness amongst the public about the disease are required, but crucially, healthcare professionals in primary care and drug services must also be further educated. Diagnosing hepatitis at an earlier stage will avoid the health and cost burden of complications of advanced liver disease.

Public health budgets must be protected and increased to enable effective testing and diagnosis in the community. Targeted efforts should be made to improve local provision to offer testing to groups who are at greatest risk and/or not in regular contact with health services. Drug users, the homeless population and prison population should be a key focus.

We welcome steps that have been taken to improve diagnosis rates within this cohort. The Hepatitis C Trust's mobile testing unit for the homeless found 8% of the 1,731 tested to be positive for hepatitis C between 2011 and 2014<sup>131</sup> – this initiative should be expanded. In addition, bloodborne virus opt-out testing for new receptions to prisons has been important, and we would also welcome opt-out testing in drug services.

Investing in more of these innovative approaches to accessing testing and diagnosis will help to drive change.

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**For further information regarding the work of the Foundation for Liver Research**

Please contact: Professor Roger Williams, Director of the Foundation for Liver Research

E: [r.williams@researchinliver.org.uk](mailto:r.williams@researchinliver.org.uk)

T: **0207 255 9830**