Strategic Review of Health Inequalities in England post-2010

(Marmot Review)

Task Group 8:

Priority public health conditions

Final report

Prepared on behalf of Task Group 8 by Clare Bambra, Kerry Joyce and Alan Maryon-Davis

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Executive Summary

Clare Bambra, Kerry Joyce and Alan Maryon-Davis  
on behalf of Task Group 8

1. Overall Aim of the Marmot Review:
To propose an evidence-based strategy for reducing the health inequalities in England from 2010, including policies and interventions that address the social determinants of health inequalities.

2. Contribution of Task Group 8:
Task Group 8’s work focuses on inequalities in a limited number of key ‘public health conditions’: the big causes of premature death (cardiovascular disease and cancer); obesity; and other big public health burdens such as risk-taking behaviours in younger adults (alcohol, drugs, violence), mental ill-health throughout life, and the threats to wellbeing in older people. Task Group 8 reviewed new and emerging evidence on the effects of particular policies, strategies, structures and interventions on reducing inequalities in the these conditions, with a particular focus on the social determinants. On the basis of the evidence we have collated and interpreted, we have made a total of 15 recommendations on what we consider to be plausible policy directions and changes in practice. We have subdivided our recommendations into five key recommendations, one research recommendation and nine supporting recommendations. Recommendations in the latter category are those which overlap with the recommendations of the other eight Marmot review task groups (cross-referenced where appropriate). The summary of evidence included in this Executive Summary is by nature brief, and the full evidence review is contained in the various chapters that follow.

3. Inequalities in Priority Public Health Conditions

3.1. Cardiovascular Disease and Cancer
Cardiovascular diseases (CVD) are the main cause of death in the United Kingdom, accounting for over 200,000 deaths every year, followed by cancers which account for over 154,000 deaths (Cancer Research UK, 2006). Within these numbers there are serious inequalities between geographical areas, gender, socioeconomic group, and ethnicity. Chronic conditions disproportionately afflict the poor and the marginalized and create further hardship and deepen poverty. Mortality and morbidity from cardiovascular disease and cancer are unevenly distributed across society with a disproportionate burden in low-income groups, minority ethnic groups...
and people living in the north of England. Mortality and morbidity from cardiovascular disease and cancer are also higher amongst people with poor mental health (after controlling for socioeconomic variables) suggesting an interaction between mental and physical well-being. Recent data from the British Heart Foundation indicate that there are 2.7 times more CVD deaths among men in the most deprived twentieth compared with the least deprived twentieth of the population (Scarborough et al., 2008). Similarly, socioeconomic status was shown to be related to lung cancer incidence, with people with low levels of education having a higher incidence of cancer (Menvielle et al., 2009). Likewise, modifiable risk factors for CVD and cancers such as smoking, physical inactivity, excess alcohol consumption or obesity are elevated in these population groups (Scarborough et al., 2008). As in other high-income countries, while reductions in the prevalence of some risk factors have been decreasing, inequalities have instead been widening (Clarke and Hayes, 2009). Cigarette smoking is one such example.

3.2. Obesity
Obesity is causally linked to such chronic diseases as diabetes, coronary heart disease, stroke, hypertension, osteoarthritis and certain forms of cancer (Cross-Government Obesity Unit, 2008). It is predicted that as the population grows, and ages, the burden of diseases associated with obesity will result in escalating numbers of early deaths and long-term incapacity with associated reductions in quality of life (Cross-Government Obesity Unit, 2008). Childhood obesity is a particular concern and it is widely accepted that there is a link between childhood obesity and morbidity and mortality in later life (Adamson et al., 2007; Reilly et al., 2003). Obesity disproportionately affects certain population groups. As in other high income countries, obesity is associated with social and economic deprivation across all age ranges and recent research suggests that this gradient is embedded with little evidence of change over time (Adamson et al., 2007). Further, it is known that minority ethnic groups and individuals with a mental health problem or physical disability are disproportionately affected by obesity (Adamson et al., 1999; Allison et al 1999; Dinan 2004). Geographical inequalities are also evident, with hotspots in the North East, Yorkshire and Humber, and the East and West Midlands (Adamson et al., 2007).

3.3. Alcohol
The relationship between socioeconomic status and alcohol is complex. For example, people with lower socioeconomic status are more likely to abstain, or, if they do consume alcohol, to have problematic drinking patterns and dependence, whereas those with higher socioeconomic status are likely to drink more often but to consume smaller amounts (Rickards, Fox & Roberts, 2004; Van Oers et al, 1999). In England across all regions, hospital admission for alcohol-specific conditions for both males and females is associated with increased levels of deprivation, with rates of admission for the most deprived quintiles being particularly high (Deacon et al, 2007). The number of alcohol-related deaths varies between English regions and also within regions. In 2005 the percentage of alcohol-specific deaths for both males and females were highest in the North West.
3.4. Drug use
The links between drug use and social and economic inequalities are well recognised in literature and research: There is a significant positive correlation between the prevalence of problematic drug users aged 15-64 years and the deprivation indices of a local authority. Similarly, admission rates for drug-specific conditions for both males and females show a strong positive association with deprivation. Additionally, much of UK drug policy seeks to address factors that contribute to inequalities amongst drug users. The latest UK drug strategy, Drugs: protecting families and communities (Home Office, 2008) highlights the fact that vulnerable individuals, those who live in deprived communities and are part of disadvantaged families, are disproportionately affected by problem drug use.

3.5. Injuries and violence.
The burden of injuries and violence in the UK is not equally distributed across the population, and some groups appear to be more affected than others. Incidence varies with a number of factors, which are often interlinked. These include: age, gender, socioeconomic status, ethnicity and geographical location. The relationships between these factors and injuries and violence often depend on the cause of injury (e.g. road traffic accident, fall, fire-related accident) or type of violence (e.g. self-directed violence or interpersonal violence). In general, there are higher rates of injuries and violence victimisation among individuals with a lower socioeconomic status, measured either at an area-of-residence or individual level. These associations have been reported for all age groups, and for a variety of injury types.

3.6. Mental Health
In terms of disability-adjusted life-years (DALYs), mental health problems are the biggest source of health-related disability and suffering in high-income countries, accounting for 26% of the total disease burden and over 40% of ‘Years Lost due to Disability’. Unipolar depression alone accounts for 8% of the disease burden - more than any other condition (WHO 2008). In England, 23% adults met the diagnostic criteria for at least one mental health problem in the most recent national psychiatric morbidity survey (McManus et al 2009). Mental health is intimately connected with many forms of inequality. Consistent associations have been found between mental ill health and various markers of social and economic adversity – e.g. low education, low income; low socioeconomic status; unemployment; and poorer material circumstances (Melzer et al 2004). The social gradient is particularly pronounced for severe mental illness. For example, in the case of psychotic disorders the prevalence amongst the lowest quintile of household income is nine times higher than in the highest (McManus et al, 2009). However, the social gradient is also evident for common mental health problems, with a two-fold variation between the highest and lowest quintiles (McManus et al, 2009). Poor mental health also increases the incidence of and worsens the prognosis for a wide range of physical health conditions, including heart disease, stroke, cancer, diabetes and asthma. It is associated with a variety of risk factors such as smoking, drug use, alcohol abuse and obesity. It is therefore also important to consider the role of mental health and well-being when tackling inequalities across all priority public health conditions.
3.7. Health and Wellbeing of Older People
According to Age Concern, approximately one in five older people live in poverty (Age Concern England, 2006). Data from the Health Survey for England 2005 show that disparities exist between low and high socioeconomic groups in a number of health indicators for older people, with people in the lowest quintile of income reporting poorer general health, lower levels of fruit and vegetable consumption and higher degrees of mobility problems and lower-limb impairment (Craig and Mindell, 2007). Similarly, the prevalence of ischaemic heart disease amongst older people is higher in the most deprived areas. Diabetes prevalence and uncontrolled hypertension are also inversely related to income (Craig and Mindell, 2007). Chandola et al (2007) illustrated, using longitudinal data from the Whitehall II study, that people from lower occupational grades showed a steeper decline in physical health than those in higher grades. Differences in self-reported health were also found between occupational grades, and a widening of relative inequality was demonstrated with increasing age. It should be noted that the evidence base regarding issues of inequality in older people’s health is less developed when compared with inequalities research in the working-age population (McMunn et al., 2006).

4. Policy context
Past strategies to tackle inequality have largely focused on either improving the health of the most deprived groups or narrowing the gap between the best- and worst-off in society. Universal strategies to address health disadvantage across the social gradient have been fewer. In many instances policy has focused on downstream interventions such as smoking cessation services or GP referrals for physical activity rather than tackling distal causes such as poor living conditions and unemployment. This approach is in contrast to a wide body of epidemiological and sociological work which suggests that health inequalities are likely to persist between socioeconomic groups even if lifestyle factors (such as smoking) are equalised (Health Select Committee, 2009: paragraph 47). Indeed, Phelan et al (2004) suggest that the only way to achieve lasting reductions in inequality is to address society’s imbalances with regard to power, income, social support and knowledge.

5. Background to the Recommendations
Our recommendations for tackling inequalities in priority public health conditions are necessarily wide-ranging, reflecting the fact that the “causes of health inequalities are complex, and include lifestyle factors – smoking, nutrition, exercise to name only a few – and also wider determinants such as poverty, housing and education” (Health Select Committee, 2009). We acknowledge that the most effective strategy to improve health across the population, and to reduce health inequalities, is to implement upstream policy interventions that reach across sectors and create an environment (economic, social, cultural and physical) that fosters healthy living. However, these need to be supported by downstream socially-targeted interventions to mitigate any adverse distributional consequences. We have therefore proposed a mix of both upstream and downstream solutions.
There are four unifying themes within our set of interventions:

a) The importance of improving the physical, social and economic environment of deprived areas (e.g. improving access to high nutrient foods, providing safe places for physical activity, improving the quality of housing, or increasing the level of employment).

b) The long-term public health benefits of intervening early in the life-course to prevent the development of risky health behaviours or chronic conditions (e.g. childhood socialisation schemes to reduce violence; improved infant and maternal health and nutrition).

c) The importance of considering the close interplay between physical and mental health when designing strategies to reduce health inequalities

d) The use of fiscal and financial policy instruments to enable deprived populations to live healthier lives (e.g. cigarette pricing, minimum price for alcohol, financial incentives to reduce drug dependence, or a minimum income for healthy living).

Our recommendations therefore naturally overlap with the remit of some of the other Marmot review task groups, particularly Task Group 1 (early child development and education), Task Group 2 (employment and work), Task Group 3 (social protection), Task Group 4 (built environment), Task Group 5 (sustainable development), and Task Group 9 (social inclusion and mobility). Such overlaps are detailed below.

An important consideration in terms of our review of the evidence on effective interventions to tackle inequalities in the priority public health conditions is the fact that there is far more evaluation evidence of downstream interventions than there is of upstream interventions. This is despite the well-acknowledged importance of upstream interventions in reducing health inequalities (e.g. Phelan et al, 2004). This may reflect the fact that, in the past, downstream (e.g. lifestyle) interventions have been easier to identify and to evaluate. Our research recommendation therefore contains the suggestion that in the future, more evaluations of upstream interventions need to be conducted and funded.

Additionally, our research recommendation also suggests that all future evaluations of public health interventions should incorporate a health inequalities dimension. This is because in all of the priority health conditions covered by Task Group 8 there was a dearth of evidence on the effectiveness of interventions in tackling health inequalities between groups, as opposed to a general improvement in population health. For example, in chapter 2 of this report, Lobstein comments that “systematic reviews of evidence for the prevention of obesity show remarkable paucity in identifying successful means of reducing inequalities”. This problem has been noted elsewhere (Bambra et al, 2008). Our policy recommendations are therefore based on extrapolation from this general population health evidence as it is all that is available. Implicitly, we have been guided by the assumption that as the burden of public health priority conditions disproportionately falls upon lower socioeconomic groups, interventions which have been shown to be generally effective in preventing or treating these conditions could, if targeted at deprived groups or areas, be effective in reducing health inequalities.
6. Recommendations

Here we list our 15 recommendations alongside a synopsis of the supporting evidence. We have subdivided our 15 recommendations into five key recommendations, one research recommendation and nine supporting recommendations. Recommendations in the latter category are those which overlap with the recommendations of the other Marmot review task groups (cross-referenced where appropriate). Further information for each of the recommendations is contained in the relevant sections of the main report.

6.1. Five Key Recommendations

Recommendation 1: Reduce smoking in the most marginalised groups by focusing on price and availability, while providing stop smoking services targeted to help the poorest groups quit.

- Prioritise deprived and marginalised groups, including routine and manual socioeconomic groups, and people with mental health problems in the design and targeting of all stop smoking services, campaigns and interventions
- Reintroduce an annual above-inflation price escalator for tobacco products
- Abolish prescription charges for nicotine replacement therapy for all smokers who want to quit, which has been done in Scotland and Wales (5 year target)
- Set tough new targets for the control of tobacco smuggling (5 year target)
- Reduce the illicit market share for cigarettes to no more than 8% by 2010 and 3% by 2015. Reduce the illicit market share for hand-rolled tobacco to no more than 45% by 2010 and 33% by 2015.

Supporting Evidence: Smoking accounts for around half the difference in life expectancy between the lowest and highest income groups, and smoking-related death rates are two to three times higher among disadvantaged social groups than among the better off (Scarborough et al., 2008; Jarvis and Wardle, 2006). Tobacco control is therefore central to any strategy to tackle health inequalities and to any prevention strategy. Increasing the price of smoking is the most effective means of helping smokers quit. However, tobacco tax is strongly regressive and for those smokers who do not quit it can increase health inequalities, particularly for less affluent smokers. On the other hand, real price increases do help lead some smokers to quit and make very substantial health and welfare gains for those that do quit. This poses a dilemma, which can be resolved only by making the greatest possible efforts to motivate and assist smokers to quit in response to increases in taxation. This would include greater emphasis in smoking cessation initiatives on the psychosocial reasons for smoking. Preventing people from starting to smoke or helping them quit requires measures at population level that impact on all the key levers: price, promotion, place and product, also known as the marketing mix (Action on Smoking and Health, 2008).
Recommendation 2: Improve availability of and access to healthier food choices amongst low income groups

- National and local government should positively influence public opinion and cultural norms around healthy diets (social marketing campaigns; well-resourced advocacy groups, public health groups; link to policies for food security, environment, animal welfare, fair trade).
- The Treasury should undertake a review to reformulate how it calculates minimum income standards and benefit levels, in order to ensure that families can afford the essential requisites to give their children a healthy start in life.
- The government should explore fiscal policies (VAT adjustments e.g. Denmark; product and distribution subsidies to small and medium sized food retailers; remove tax-exemption for marketing specified foods; include explicit ‘food basket’ component when setting benefit levels).
- Incentives to distributors (e.g. Norway) and retailers (e.g. Scotland) to promote healthier food choices.
- Use of public procurement to aid production and distribution (Cornwall NHS).
- Product reformulation (e.g. salt and sat fat reduction, FSA).
- Easy-to-comprehend and consistent food information (traffic-light front-of-pack labelling – FSA; controls on product health claims – EC).
- Restricted marketing (TV ban on junk food ads pre-9pm; planning controls on fast food outlets e.g. Newham, Knowsley).
- Pre-school, school and workplace food policies (e.g. Nutrition standards for catering and food sales; restricted marketing and advertising, debranding of business links in schools; enhanced health education).

Supporting evidence: The Health Survey for England 2007 demonstrates a clear gradient in the consumption of five or more portions of fruit and vegetables per day with quintile of household income, the lowest consumption being in the lowest income group. Low income groups are more likely to consume fat spreads, non-diet soft drinks, meat and meat dishes, pizza, processed meats, whole milk and table sugar (Food Standards Agency, 2007). A survey by the National Consumer Council found that the formulation of various types of food tended to be less ‘healthy’ for the economy lines, cheaper foods for example having higher salt or fat content (National Consumer Council, 2006).
Recommendation 3: Improve the early detection and treatment of cancer, diabetes and cardiovascular disease, especially among the more susceptible groups.

- Use social marketing to increase awareness of early symptoms and the importance of early detection/screening for these conditions among the more susceptible groups
- Further incentivise primary care practitioners to focus prevention and early detection of these conditions on the more susceptible groups.

Supporting evidence: Socioeconomic deprivation is a strong predictor of screening participation with expression of interest in colorectal screening and attendance at the test being lower in deprived groups (McCaffery et al., 2002). Similar findings are reported for breast and cervical screening (Baker and Middleton, 2003). Evidence suggests that people from lower socio-economic groups have their cancer diagnosed at a later stage which subsequently affects treatment options and prognosis (Adams, White and Forman 2004). With regard to vascular checks, a recent systematic review (Soljak, Lonergan and Hayward 2009) has found strong socioeconomic and ethnic gradients in uptake of invitations for CV screening.

Recommendation 4: Introduce a minimum price per unit for alcohol.

Supporting evidence: A systematic review of 112 studies examining the relationship between prices of alcohol and alcohol sales/self-reported drinking concluded there was a large body of evidence indicating an inverse relationship between alcohol prices and taxes, and drinking. Furthermore in comparison to other prevention policies and programmes, policies which raised prices of alcohol were an effective method of reducing consumption (Wagenaar et al, 2008). Given the social patterning of alcohol consumption, this intervention may disproportionately benefit lower socio-economic groups (Brennan et al, 2008).

Recommendation 5: Improve physical healthcare for people with mental health problems and mental healthcare for people with physical health problems.

- Expand the provision of health checks and targeted health promotion services for people with mental health problems, and redesigning the interface between primary care and specialist mental health services.
- Give increased emphasis on the mental/psychosocial dimension of physical health when designing interventions to improve health and reduce health inequalities.
- Encourage the use of primary care registers for people with severe mental illness, in line with NICE guidance
- Improve the identification and treatment of psychological factors underlying ‘medically unexplained’ physical symptoms.

Supporting evidence: Mental and physical well being are closely interrelated, with higher rates of coronary heart disease, stroke, cancer, diabetes, infections, injuries
and asthma amongst people with poor mental health (Prince et al 2007; Blaug et al 2007; Osborn et al 2007). People with a diagnosis of mental illness receive poor quality treatment for physical health problems and are rarely targeted for health promotion initiatives e.g. smoking cessation, healthy eating or exercise (Samele et al 2006). Conversely, people with other priority public health conditions such as diabetes and cancer are more likely to develop mental heath problems, and those that do have poorer prognosis in terms of their physical health condition (Chapman et al 2005; Evans et al 2005; McVeigh et al 2006). The interface between primary and secondary care is particularly important in terms of improving healthcare for people with co-morbidities (Samele et al 2006). The NICE Guidance on management of schizophrenia (NICE 2002) supported the development of primary care registers of people with severe mental illness.

6.2 Research Recommendation

Recommendation 6: Fund more studies which examine the impacts of interventions on socio-economic health inequalities.

- Government should commission evaluations to establish the effectiveness of interventions in terms of reducing health inequalities. For example, invest in natural experiments to help determine the most effective population-level interventions, with at least 10% of budgets for all initiatives earmarked for evaluation. For complex interventions, use the approach recommended in the Medical Research Council guidelines (2008).
- There should also be investment in the evaluation of upstream policy interventions.
- Consideration of health equity issues should be integrated into all future Department of Health funded public health evaluations along the lines of the Cochrane Collaboration health equity checklist (Cochrane Collaboration, 2009).

Supporting evidence: In all sections of this report, the authors highlight the fact that whilst there is often evidence of the general health effects of interventions, there is a dearth of evidence in respect to the impacts and cost-effectiveness of interventions on health inequalities. As a recent Public Health Research Consortium report shows (Bambra et al, 2008), this is the case in terms of both primary studies and systematic reviews. Similarly, there more research has been conducted on the effects on health inequalities of downstream interventions, as opposed to upstream interventions. The recent Health Select Committee report on health inequalities (2009) also made it clear that the lack of evidence and evaluation of current policies makes it difficult to know how to properly address health inequalities.
6.3 Supporting recommendations

Recommendation 7: Improve the social and physical environment to make it easier for lower socioeconomic groups, and the population as a whole, to engage in physical activity

This recommendation links with the work of Task Group 4 (Built Environment) and 5 (Sustainable Development):

- Change planning norms (transport and urban design policies to ensure active travel, restrict car use, building controls to raise incentives for stair use, Health Impact Assessments to match Environmental Impact Assessments).
- Walking and cycling must be at the centre of transport policy at national and local levels. The Department for Transport should commit at least 10% of its budgets to walking and cycling.
- Require training in assessing public health impacts for urban and transport planners, architects and engineers.
- Continue to make PCTs statutory consultees in planning decisions. The NHS London Healthy Urban Development Unit has done significant work helping PCTs engage in the planning process and is a good resource for moving forward.
- Improve the quality, affordability and safety of public transport to ensure that it is a viable transport option, especially taking into account the needs of the disabled, elderly, and morbidly immobile.
- Increased availability of open spaces (Incentives to protect and develop open spaces/green spaces; enhanced safety features e.g. reduced traffic; enhanced security e.g. lighting, CCTV; protection of open sports fields, promotion of clubs; more cycle routes and cycle priority networks)
- Fiscal policies (business tax incentives for workplace activity facilities; disincentives for car use, removal of tax-deductable car costs; business rate charges for car-parking; VAT adjustments on sports and activity equipment; additional car and fuel purchase taxation, congestion charging, parking fees, road tax)
- Pre-school, school and workplace activity policies (Timetabled opportunities for activity; code of practice for sedentary hours per day; enhanced health education; support for out-of-hours use of school sports facilities by community)
- Change public opinion and cultural norms around physical activity (via social marketing campaigns; well-resourced advocacy groups, public health groups, make links to policies for environment, global warming, carbon tax etc).

Supporting evidence: Regular physical activity can reduce the risk of CHD, obesity, depression and many other avoidable chronic diseases (WCRF, 2009). Environmental factors are important in terms of promoting (or preventing) physical activity. Studies have found that the lowest socioeconomic group is most likely to be inactive regarding recreational walking (Kamphuis, et al., 2009). Those in lower socio-economic groups are more likely to suffer from a poorer built environment with higher rates of traffic accidents, higher rates of crime which discourages people from
walking and cycling in their neighbourhoods, and less access to green space and other leisure facilities. For example, the Department of Transport estimated that in 2007 there were 2500 “excess” pedestrian casualties in deprived areas (House of Commons Health Committee, 2009).

**Recommendation 8: Improve infant and maternal nutritional status**

*This recommendation links with the work of Task Group 1 (Early Child Development and Education):*

- Targeted measures to improve teenage girls’ diet and increase their physical activity
- Enhance standards for availability and accessibility of pre-conception and antenatal care and advice
- Review fortification offers for women on benefits under pre-conception or antenatal care
- Review ‘food basket’ component of benefits for women under pre-conception or antenatal care
- Improve advice and support on healthy weight maintenance during pre-conception and pregnancy
- Fully implement WHO-UNICEF Marketing Code for Breast-milk Substitutes
- Enhance social marketing for breastfeeding
- Provide breast-feeding facilities in public, workplace etc settings
- Provide Nordic levels of maternity leave
- Review benefit levels for food component for younger children

**Supporting evidence:** Women in lower socioeconomic groups are also more likely to have under- and over-weight babies (both of which are risk factors for later obesity) and are less likely to follow recommended breastfeeding and weaning practices (an additional risk factor for later obesity). Two systematic reviews found that breastfeeding support programmes can be effective for women in low income groups but that education alone had no effect (Robertson et al, 2007).

**Recommendation 9: Enhance the psycho-social wellbeing of lower socioeconomic groups.**

*This recommendation links with the work of Task Group 9 (Social Inclusion and Social Mobility):*

- Enhance and extend evidence-based community engagement programmes targeted at deprived areas and communities
- Focus on youth schemes to enhance societal participation and contribution, from around age 10
- Home visiting and Health Buddies schemes to promote health and reduce isolation
- Review the formulae for calculating the minimum wage and welfare benefits and link more closely to average earnings to reduce income differentials.
Supporting evidence: Morris et al (2001) illustrated how gains in health and reduction in inequalities could be achieved through improved provision of basic and unmet needs relating to nutrition, physical activity, housing, psychosocial interactions, transport, and healthcare. Based on international comparisons of countries with developed economies, obesity prevalence is significantly correlated with higher levels on income inequality (Pickett et al, 2005).

Recommendation 10: Extend use of contingency management within drug treatment programs.

This recommendation links with the work of Task Group 7 (Delivery Systems and Mechanisms):

Supporting evidence: NICE states that contingency management (giving incentives such as vouchers or cash to drug users to quit or reduce consumption) is the ‘only psychosocial intervention with clear evidence for effectiveness as an adjunct to detoxification’ (NICE, 2007a). There is strong evidence for its use (Higgins et al, 2004; Lussier et al, 2006; Prendergast et al, 2006; Roll, 2007; Stitzer and Vandrey, 2008). For instance, an evaluation of a US program which offered vouchers as incentives to cocaine users to abstain found significantly greater treatment retention and cocaine abstinence than usual care, with 68% of behavioural treatment patients achieving 8 weeks of continued abstinence during treatment compared with 11% of patients receiving standard care (Higgins et al, 1993).

Recommendation 11: Widely extend 20mph maximum speed zones especially in residential and inner city/town areas.

This recommendation links with the work of Task Group 4 (Built Environment):

Supporting evidence: In general, increased deprivation is associated with higher rates of injury or death from a road traffic accident (e.g. Adams et al, 2005; Edwards et al, 2006; Graham et al, 2005). There is good evidence that 20mph zones are effective in reducing traffic speeds and reducing injuries in the general population, and in children in particular (Morrison et al, 2003; Towner et al, 2001). For example, a review of 20mph zones in London in 2003 found that the frequency of injury accidents in the zones had reduced by around 42%, and serious or fatal injuries by around 53% since their implementation (Webster and Layfield, 2006).

Recommendation 12: Widely extend early-years interventions, in particular pre-school enrichment programmes and school based social development programmes.

This recommendation links with the work of Task Group 1 (Early Child Development and Education):
Supporting evidence: There is strong evidence from US-based studies that high quality pre-school enrichment programmes (early academic and social skills such as literacy and numeracy, socialisation, problem-solving and the development of self-esteem) targeted in deprived areas can have long-term positive impacts on participants, including reduced involvement in violence, better mental health and improved educational and work achievement (WHO, in press). Internationally, the evidence base for the effectiveness of school-based social development programmes (skills taught include anger management, behaviour modification, moral development, empathy, developing and maintaining healthy relationships, problem solving and conflict resolution) is robust with well-implemented programmes having been found to improve social skills and reduce aggression in young people (WHO, in press).

Recommendation 13: Improve prevention and treatment of childhood mental health problems across the whole social gradient, with a particular focus on disadvantaged groups.

This recommendation links with the work of Task Group 1 (Early Child Development and Education):

- Increase provision of targeted prevention programmes e.g. parent-training/education programmes; school-based social skills training.
- Improve detection of childhood mental health problems in schools and primary care.
- Increase access to effective treatments, for example through expansion of the child psychologist workforce, and ensuring that NICE guidelines are adhered to.

Supporting evidence: Childhood mental health problems are strongly socially patterned, being several times more common amongst low income groups, and amongst other marginalized groups such as children in care and young offenders (Green et al 2005; Meltzer et al 2003; Lader et al 2000). They also have profound consequences for a variety of outcomes in adult life (Ferguson et al 2005; Stewart-Brown 2004; Scott et al 2001). NICE guidelines (e.g. NICE 2005, 2007b, 2008a) outline a number of effective treatment interventions. However, only a quarter of those with a clinically diagnosable disorder have seen any mental health professional in the last year (Meltzer et al, 2003a, 2003b). Given the social patterning of mental ill health in childhood, simply increasing the availability of evidence-based treatments should have an impact on health inequalities (Layard & Dunn, 2009). There is also strong evidence that mental health problems can be prevented through the use of targeted interventions (US DHHS, 2007). The cost-effectiveness of these interventions is high, with many more than paying for themselves in terms of reduced costs to society as a result of avoided health and social problems later in life (Fonagy et al, 2002; Waddell et al 2007).
Recommendation 14: Decrease the association between mental ill-health and unemployment through the use of both targeted support and broader health promotion approaches.

This recommendation links with the work of Task Group 2 (Employment Arrangements and Working Conditions):

- Use effective, evidence-based methods (e.g. Individual Placement and Support) to support people with severe mental illnesses to get and keep paid work
- Encourage the creation of healthier workplaces by spreading existing good practice, with the public sector taking a lead

Supporting evidence: Research indicates a strong, bidirectional relationship between mental ill health and unemployment (Singleton et al., 2001; Waddell & Burton 2006). The most recent data indicates that 42% of people in the UK claiming Incapacity Benefits do so because of mental ill health (DWP 2008). The most effective approach for supporting people with severe mental health problems into employment is provided by the Individual Placement and Support (IPS) model (Bond et al. 2008). Workplaces can also implement cost-effective health promotion approaches - responding better to mental distress among their staff and thereby preventing the downward spiral of mental ill health, job loss and long-term poverty and exclusion that plays such a key role in generating and maintaining health inequalities (Sainsbury Centre, 2007).

Recommendation 15: Implement a Minimum Income for Healthy Living (MIHL) in Older People

This recommendation links with the work of Task Groups 3 (Social Protection) and 9 (Social Inclusion and Social Mobility):

- Implement a minimum income for healthy living (MIHL) in older people is a preventive approach which would work upstream on the broader determinants of health by ensuring equality of opportunity to satisfy basic requirements for personal health.

Supporting evidence: Based on the inextricable link between income and health, Morris et al (2001) illustrate how gains in health and reduction in inequalities can be achieved through provision of basic and unmet needs relating to nutrition, physical activity, housing, psychosocial interactions, transport, medical care and hygiene. Recent analyses show that there is a deficit between the current state pension (supplemented with pension credit guarantee and winter fuel allowance) and the calculated MIHL (Morris et al., 2007). The MIHL model would provide a template for conceptualising the relationship between income and health needs, thus helping to facilitate a shift in thinking towards upstream strategies to tackle pervasive patterns of inequity. Both Age Concern England and the World Health Organisation support such a recommendation.
Introduction

Public policy, priority public health conditions and health inequalities

Kerry Joyce, Clare Bambra and Alan Maryon-Davis

Public Policy and Health Inequalities
Systematic differences in health exist between different population groups mediated by socioeconomic, ethnic, geographical, gender- and age-related dimensions. Various meanings are attributed to health inequalities. Kawachi et al (2002, p.647) define health inequalities as “a term used to designate differences, variations, and disparities in the health achievements of individuals and groups” while Whitehead (2007, p.473) emphasises the moral and ethical meaning behind the term: “[health inequalities are] systematic differences in health between different socio-economic groups within a society. As they are socially produced, they are potentially avoidable and widely considered unacceptable in a civilised society”. Blackman (2006), on the other hand, conceptualises health inequalities as wicked issues and uses complex adaptive systems theory to understand the inter-relationships between multiple and disparate social determinants of health.

Systematic differences are particularly pronounced for a number of priority public health conditions, namely: certain cancers; cardiovascular disease; obesity and public health burdens such as mental ill-health; health and wellbeing in older people and unhealthy behaviours (injuries, violence, alcohol and substance misuse). As Graham and Kelly (2004) observe these axes of differentiation often interlock and disadvantage tends to accumulate over the life course. Graham and Kelly (2004) go on to delineate three different approaches to framing inequalities and understanding how policy approaches might work: health disadvantage, health gaps and health gradients.

Policy approaches to addressing health inequalities fall into three broad but interlinked categories. The first focuses on improving the health of the most disadvantaged groups by concentrating on absolute levels of health by improving social conditions, reducing risk factors and increasing life opportunities (Graham and Kelly, 2004). The advantages of this approach are threefold: (i) it directs attention to marginalised groups; (ii) monitoring and evaluation of the effectiveness of interventions is relatively straightforward by employing case-control designs or making comparisons with the general population; (iii) it enables synergy with other policies such as social inclusion and community regeneration (Graham and Kelly, 2004). Area-based initiatives are often employed to enable measurement of disadvantage using household (e.g. job-seekers allowance claimants) or individual (e.g. teenage mothers) indicators. There are, however, disadvantages associated with this type of approach, not least the problems associated with equating the language of inequality to the language of disadvantage. The consequence of which, as Graham and Kelly (2004) describe, is a shift in the focus of reducing inequalities
from the whole population to a smaller proportion of people and the potential for a widening health gap when compared with the general population.

The second approach entails strategies which focus on reducing the gap between the best and worst off, by implementing interventions targeted towards those people with the greatest burden of disadvantage in terms of risk factors, social exclusion or being hard to reach (Graham and Kelly, 2004). Driven by the realisation that improvements in health have been paralleled by widening of disparities between the best and worst off in the population, interventions under this category would necessitate “raising the health of the poorest, fastest” (Graham and Kelly, 2004, p.8). Programmes like Health Action Zones and Sure Start have tended to adopt this strategy, the benefits of which include the capacity to set targets to facilitate monitoring and evaluation (Graham and Kelly, 2004). There are, however, a number of constraints associated with this type of approach. As with improving the health of the most disadvantaged, this strategy would again target only a small section of the population and perhaps more importantly this type of approach tends to engender a focus on lifestyle factors as the cause of inequalities and ignores wider societal influences. There is concern, also that this approach fails to appreciate social differentials and the effects of disadvantage on health for those just outside the most deprived group.

The third strategy considers the whole social gradient and seeks to focus not only on people in the most deprived groups within society but also on those who, although not at the bottom of the social hierarchy, nonetheless suffer disadvantage in relation to health outcomes. In other words this strategy “locates the causes of health inequality, not in the disadvantaged circumstances and health damaging behaviours of the poorest groups, but in the systematic differences in life chances, living standards and lifestyles associated with people’s unequal position in the socio-economic hierarchy” (Graham and Kelly, 2004, p.10). The benefits of this type of approach are to refocus attention to the largest proportion of the population sitting between the two extremes of the hierarchy thereby achieving maximum health gains for the majority. In order to achieve optimum results it is suggested that each of the three policy approaches should be employed in concert (Graham and Kelly, 2004).

**Public Policy and Priority Public Health Conditions**

To contextualise how policy to tackle inequalities is being shaped in relation to the specific public health conditions focussed upon here, a brief overview of the most critical policy documents since the Black Report is given. This section highlights past recommendations regarding cardiovascular disease, cancer, obesity, mental ill-health, injuries, violence, drug and substance misuse and the health of older people and draws attention to relevant gaps in the policy landscape relating to these conditions. The timeline below illustrates the evolution of UK policy by highlighting the major policy statements relating to health inequalities.
Figure A: Key developments regarding Health Inequalities Policy in England

<table>
<thead>
<tr>
<th>Year</th>
<th>Event</th>
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<tbody>
<tr>
<td>1980</td>
<td>The Black Report</td>
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<td>1998</td>
<td>Independent Inquiry into Inequalities in Health (The Acheson Inquiry)</td>
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<td>1999</td>
<td>Saving Lives: Our Healthier Nation Action Report on Reducing Health Inequalities</td>
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<td>2000</td>
<td>The NHS Plan</td>
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<td>2002</td>
<td>Tackling Health Inequalities: 2002 cross-cutting review</td>
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<td>2003</td>
<td>Tackling Health Inequalities: a programme for action</td>
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<td>2004</td>
<td>Securing Good Health for the Whole Population (The Wanless Report) Choosing Health The NHS Improvement Plan Treasury-led PSA targets Formation of Spearhead Primary Care Trusts and Local Authorities</td>
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<td>2006</td>
<td>Our Health Our Care Our Say The NHS in England: The Operating Framework</td>
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<td>2007</td>
<td>Our NHS Our Future Local Area Agreements for target delivery</td>
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<td>2008</td>
<td>Health Inequalities: Progress and Next Steps</td>
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<tr>
<td>2009</td>
<td>Health Committee Report: Health Inequalities</td>
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**Black Report**
Publication of the Black Report in 1980 brought health inequalities into the spotlight and represented the first example of a comprehensive strategy to draw attention to health disparities over the life course (Mackenbach and Bakker, 2003). Four explanations of health inequalities were discussed: artifact, natural selection, cultural, and structural, and 39 key recommendations were proposed (Exworthy et al, 2003a). With regard to the public health priorities discussed here, the Black Report identified action points beyond the health services (Exworthy et al, 2003a) and specifically highlighted the importance of addressing the steep class gradient in relation to accidents in children, calling for better information reporting and liaison between the police and the NHS regarding traffic accidents. The need to agree measures and targets to bring about population change in terms of diet, exercise, smoking and alcohol consumption was also suggested (Townsend and Davidson, 1992).

**Acheson Report**
The need to address the broader determinants of health in order to tackle social inequalities across the life course was reinforced in the Acheson Report. A socioeconomic explanation of health inequalities was favoured and evidence was considered relating to the wider determinants of health: poverty, education,
employment, housing, transport, nutrition, the life-course, ethnicity, gender, and healthcare (Exworthy et al, 2003b). Thirty nine recommendations were proposed, which were similar to those suggested in the Black report and covered the following areas: poverty, income, tax and benefits; education; employment, housing and environment; mobility, transport and pollution; nutrition and common agricultural policy; mothers, children and families; young people and adults of working age; older people; ethnicity; gender, and the NHS. Overall, three key areas were underscored: health inequalities impact assessment; the health of families with children; and reduction in income inequalities and improved living standards (Mackenbach and Bakker, 2003). Only three of the 39 key recommendations covered health services which is indicative, as Exworthy (2003) observes, of the focus on the wider determinants of health.

In terms of the public health priorities discussed in this report, the health and wellbeing of older people was recognised to be an important area with recommendations around improving material wellbeing by increasing benefits and pensions; improving housing conditions; promoting mobility and social interaction as well as developing health and social services for older people. With respect to measures to reduce smoking, the Inquiry cautioned that if price increases were being considered this would have differential impacts on low-income groups who spend proportionately more of their income on tobacco products, thus any price increase should be accompanied by considerable efforts to relieve financial and social hardship that low-income groups experience (Whitehead, 2007). The Inquiry supported smoking cessation interventions targeting young women before or during pregnancy as well as population approaches such as smoking bans in public places; abolishing tobacco advertising and marketing; community, mass media and educational initiatives and making nicotine replacement therapy available on prescription (Acheson, 1998).

Strategies to promote healthy behaviours were recommended such as those which increase physical activity, for example: enhanced provision of safe cycling and walking routes and safer opportunities for leisure. To address inequalities in accident rates, measures to reduce traffic speed by environmental design, lower speed limits and stricter enforcement were suggested. In addition, policies to reduce alcohol-related ill health, accidents and violence, "which at least maintained the real cost of alcohol" were advocated. Approaches to increase the availability and accessibility of healthy foods were put forward alongside macro policy reform, specifically a review of the Common Agricultural Policy’s impact on health inequalities (Acheson, 1998). Under the theme of mental health the Inquiry recommended strategies to prevent suicide among young people, with a particular focus on young men and seriously mentally ill people (Acheson, 1998).

Exworthy et al. (2003b) considered the development of policies since the Acheson Inquiry and highlighted that many of the recommendations were being addressed, such as redistribution (e.g. tax credits), focus on the life course (e.g. Sure Start), targeting of deprived areas (e.g. Health Action Zones). However interventions tended to be detached from mainstream activities, often funded by one-off initiatives. The introduction of Public Service Agreements (Department of Health, 2004a; Department of Health, 2004b) helped to make delivery mechanisms more coherent but further developments are required to embed these processes fully (Exworthy et
In addition, the authors point to the need to develop health inequalities impact assessment and to concentrate efforts on interventions to improve health inequalities rather than being overly concerned with aetiological processes.

**Beyond Black and Acheson**

Many of the recommendations emerging from the Acheson Inquiry were used to shape subsequent policy documents including *Saving Lives, Our Healthier Nation* (Department of Health, 1999) which advocated a multi-pronged approach to narrowing the health gap and improving the health of the most disadvantaged using individual, community and population approaches. The NHS Plan took account of the broader determinants of health and proposed an agenda hallmarked by cross-agency partnership working to tackle social, economic and cultural dimensions of inequality (Department of Health, 2000). In 2001, the National Health Inequalities Targets were published (Department of Health, 2001) and formalised in Public Service Agreements (PSAs) in 2004 (Department of Health, 2004a; Department of Health, 2004b). Current PSA targets include reducing the inequalities gap by 40% (between the lowest deprivation quintile and the general population) in terms of coronary heart disease and stroke mortality in people under 75 by 2010 (baseline 1995-97). For cancer mortality rates, the PSA target specifies reducing the inequalities gap by at least 6% between the most deprived quintile and the whole population. Other targets include reducing rates of smoking, obesity and under 18 conception rates. Linked to these developments, in the same year, the Spearhead Group of Primary Care Trusts and Local Authorities were selected for geographically targeted action to reduce health inequalities due to their presence in the lowest quintile for at least 3 of the following 5 measures of health inequality: deprivation; male life expectancy; female life expectancy; cancer mortality; and CVD mortality (Department of Health, 2004b).

**Wanless Report onwards**

The Wanless Report was also published in 2004, which contended that the most cost effective strategy to improve population health would involve changing the governing ethos of the NHS from a sickness service to a health service. Wanless (2004) concluded that the capacity of PCTs to deliver on the health inequalities agenda was weak and that the public health workforce was 'not fit for purpose'. He also identified the poor state of the public health evidence base and encouraged further appreciation of the broader determinants of health. Choosing Health consolidated these themes and focused on providing a pragmatic approach despite an acknowledged dearth of evidence around effective interventions to reduce inequality. Specific actions plans, Choosing a Better Diet and Choosing Activity were published a year later (Department of Health 2005a; Department of Health 2005b).

To assess progress in reducing health inequalities the Department of Health commissioned a status report by the Scientific Reference Group on Health Inequalities. The report concluded that inequalities measured by infant mortality and life expectancy at birth had widened further during the period between 1995-97 and 2001-03. Since then, renewed commitment to the inequalities agenda has been reiterated within a number of policy documents including *Our NHS, Our Future* (Department of Health, 2007a) and *Health Inequalities: Progress and Next Steps* (Department of Health, 2008).
In the most recent Annual Public Health Report, equity impact with regard to socioeconomic status, ethnicity, gender, age, disability and geography, was given importance when considering system reform with aligned incentives at local level (Annual Report of the Chief Medical Officer, 2008). Priority issues relating to key public health concerns included underlining commitment to the public service agreement target of reducing smoking prevalence to 26% or less in routine and manual groups by 2010 and the importance attached to equity issues concerning cancer incidence, access to services and outcomes. In response to the latter challenge, the National Cancer Equality Initiative was identified as a means to begin shaping a research and policy agenda in this area. Commitment to reduce the absolute gap in inequalities related to cardiovascular diseases was also underlined.

Race equality was highlighted as an issue of particular importance in relation to mental health services and the relationship between mental and physical wellbeing was cited as an area of development with respect to the public mental health framework. Compelling evidence of health inequalities in prisoners relating to mental health, substance misuse and smoking was discussed and flagged up as a priority area. Overall, reducing inequalities in respect of adult and children’s health was a key priority for the NHS Operating Framework, 2008-09 (Annual Report of the Chief Medical Officer, 2008).

In summary, policy documents have tended to construct health inequalities in accordance with the health gap model and strategies to tackle inequality have largely focussed on either improving the health of the most deprived groups or narrowing the gap between the best and worst off in society. Universal strategies to address health disadvantage across the social gradient have been less common. In many instances policy has focussed on downstream interventions such as smoking cessation services or GP referrals for physical activity rather than tackling distal causes such as poor living conditions and unemployment. For example, Hunter (2003) draws attention to the increasing medicalisation of conditions such as coronary heart disease and the prescribing of statins to meet health inequalities targets.

This approach is in contrast to a wide body of epidemiological and sociological work which suggests that health inequalities are likely to persist between socio-economic groups even if lifestyle factors (such as smoking) are equalised (Health Select Committee, 2009: paragraph 47). Indeed, Phelan et al (2004) suggest that the only way to achieve lasting reductions in inequality is to address the imbalances by socio-economic status in respect to power, income, social support and knowledge. Task Group 8 on Priority Health Conditions has therefore tried to focus more upstream in shaping its recommendations.
1.1. Introduction

Cardiovascular diseases (CVD) are the main cause of death in the United Kingdom, accounting for over 200,000 deaths every year (Cardio and Vascular Coalition, to be published Spring 2009), followed by cancers, accounting for over 154,000 deaths in 2006 (Cancer Research UK, 2006). Obesity is a major risk factor for these diseases. These chronic conditions disproportionately afflict the poor and create further hardship and deepen poverty.

Preventing and reducing the impact of avoidable chronic conditions should be a priority as the demands of treatment are likely to overwhelm the NHS (Wanless, 2004). There is considerable congruence between the risk factors for CVD and those for cancer, and recommendations for cancer prevention in general are compatible with those for other chronic diseases. (World Cancer Research Fund, 2009) The main modifiable risk factors of both CVD and cancer are: smoking, physical inactivity, diet (high in saturated fats, sugars, salt, and low in fruit and vegetables), excess alcohol consumption, and obesity (World Cancer Research Fund, 2009)

The recently released Health Select Committee report (2009) on health inequalities states, “The causes of health inequalities are complex, and include lifestyle factors – smoking, nutrition, exercise to name only a few – and also wider determinants such as poverty, housing and education.” There is no single intervention that will end health inequalities in CVD, cancer, or any area, and many of the determinants of inequalities lie outside of the health sector. However, this paper makes recommendations for upstream interventions which will address the social determinants of the most common risk factors and together would help to create a healthier environment.

1.2 Overview of socio-economic inequalities in Coronary Heart Disease and Cancer

There is a strong socio-economic gradient in relation to circulatory heart diseases (see Figure 1.a). Recent statistics indicate that premature mortality for coronary heart disease in men is two times greater in deprived groups when compared with the least deprived (Scarborough et al., 2008). Men in the most deprived twentieth
have a 50% greater risk of mortality from stroke than those in the least deprived twentieth of the population (Scarborough et al., 2008).

**Figure 1.a: Age-standardised death rates per 100,000 population for circulatory diseases, aged under 75 years by deprivation (local authority districts, England)**

Similarly, cancer prevalence is socially patterned. Lung, mouth and oesophageal cancer are more commonly found in deprived groups. For example, education was shown to be related to lung cancer incidence with people with low levels of education having a higher incidence of cancer, although half of this risk is explained by smoking behaviour (Menvielle et al., 2009). Conversely, incidence rates of breast, skin and prostate cancer increase with socio-economic status although mortality rates from these cancers are higher in deprived groups (Cancer Research UK, 2008a). According to Cancer Research UK, cancer mortality rates are two fold greater in unskilled workers when compared with individuals with a profession. Although survival rates are improving in relation to some types of cancers (e.g. breast cancer, see Office for National Statistics, 2009), population-based data from the 1990s showed that the deprivation gap between those living in deprived and affluent areas was continuing to widen (Coleman et al., 2004).

Not only is there a social gradient in terms of CVD morbidity and mortality rates, disparities also exist in the distribution of risk factors, with smoking, physical inactivity and excess alcohol consumption being more common in semi-routine and routine occupational groups (Scarborough et al., 2008). Smoking is by far the most important risk factor in relation to cancer, which is estimated to account for over half of the difference in early mortality between socioeconomic groups (Jarvis and Wardle, 2004). Further, disadvantaged individuals are less likely to successfully quit smoking when compared with their more affluent counterparts (Giskes et al., 2005).
1.3 Overview of evidence on the effectiveness of interventions to tackle inequalities

While the descriptive literature on health inequalities in general is increasing, the literature on interventions to reduce health inequalities is by comparison much smaller. This seems true for evidence relating to interventions to reduce inequalities relating to obesity, cardiovascular disease and cancer. As a number of authors have cautioned, however, the lack of evidence on the effectiveness of interventions to reduce inequalities should not be used as an excuse for apathy (Stronks, 2002).

A recent prospective study following the Whitehall cohort suggested that the best way to reduce inequalities in CHD was to tackle risk factors for coronary heart disease (CHD) namely smoking, cholesterol, hypertension and diabetes (Kivimäki et al., 2008). The authors modelled the effect of best practice interventions (reduction of systolic blood pressure by 10mmHg, of total cholesterol by 2mmol/L and of blood glucose by 1mmol/L in pre-diabetic people, halving the prevalence of type 2 diabetes and complete cessation of smoking) compared with primordial prevention (i.e. lifelong optimum risk factor levels) in men of both low and high socio-economic position (defined by employment grade). The analyses showed that 15-year absolute risk of CHD mortality per 100 men standardised to age 55 years was 11.0 in the low socio-economic group compared with 7.5 in the higher group. Models indicated that best practice interventions would reduce CHD mortality by 57% and absolute inequality by 69% (difference in mortality between low and high socio-economic group) while primordial prevention would see a 73% reduction in CHD mortality and a reduction in absolute inequality of 86% (Kivimäki et al., 2008). In the instance that only half of the smokers quit the reduction in absolute inequality falls to 55%. The study makes a number of assumptions most notably that these best practice interventions will have similar success rates in high and low socio-economic groups and is subject to several limitations not least that the data are modelled for a male occupational cohort. Despite these caveats, Kivimäki et al. (2008) conclude that public health strategies to reduce inequalities in cardiovascular disease should continue to focus on the established risk factors and be delivered equitably across the socio-economic strata.

Similarly, in regards to cancer, underpinning the WCRF report is the recognition that many of the risk factors for cancer are beyond the control of the individual such as air pollution, the availability and affordability of healthy food stuffs, accessibility of the environment for physical activity. Similarly, Cancer Research UK has identified the need to address the “causes of the causes” namely poverty. (Cancer Research UK, 2008).

While many of the risk factors for CVD and cancer are due to “lifestyle” factors, the Foresight Tackling Obesities report made clear that we have developed an obesogenic environment which makes unhealthy choices the easier choices (Butland et al., 2007). Societal-level change is necessary in order to promote healthier choices across the population and amongst all socioeconomic groups. The Health
Select Committee’s report on Health Inequalities (2009), also recommended several upstream policy proposals to tackle health inequalities across sectors.

**Early detection and treatment**
Socioeconomic deprivation is a strong predictor of screening participation with expression of interest in colorectal screening and attendance at the test being lower in deprived groups (McCaffery et al., 2002). Similar findings are reported for breast and cervical screening (Baker and Middleton, 2003). Evidence suggests that people from lower socio-economic groups have their cancer diagnosed at a later stage which subsequently affects treatment options and prognosis (Adams, White and Forman 2004). With regard to vascular checks, a recent systematic review (Soljak, Lonergan and Hayward 2009) has found strong socioeconomic and ethnic gradients in uptake of invitations for CV screening.

**Smoking**
Initiation of a full ban on smoking in England rather than a partial ban (where working men’s clubs and pubs not serving food were exempt) is likely to have prevented further widening of inequalities in smoking behaviour (Woodhall et al., 2005). International evidence suggests that since the ban on smoking in all indoor public places was rolled out in Italy in January 2005, reductions in acute coronary events were observed for the Rome population in both 35-64 year old and 65-74 year old groups with reductions of 11.2% (95% CI 6.9% - 15.3%) and 7.9% (95% CI 3.4% to 12.2%) respectively when compared with previous years. Most noteworthy is the finding that the greatest reductions were observed for young people from low socio-economic census blocks (Cesaroni et al., 2008). Similar findings have been reported in the United States (e.g. Sargent, et al., 2004).

A comprehensive review of population tobacco control policies found that there was no evidence to suggest differential effects for smoking bans in work and public places (Thomas et al., 2008). A paucity of robust studies precluded conclusions regarding the effectiveness of health warnings on tobacco and restrictions in advertising. In relation to tobacco pricing, people in low income groups or those with manual occupations were more responsive to price increases. There was some evidence to suggest pricing changes were more effective for people with higher levels of education but these studies were limited by only examining population subgroups (for example pregnant women) (Thomas et al., 2008).

**Physical Activity**
The risk of developing coronary heart disease due to being physically inactive is comparable to that of smoking (Department of Health, 2004c). Regular physical activity can reduce the risk of CHD and many other avoidable chronic diseases.

For example, the WCRF report recognises that physical activity should be woven into day to day life and regulation of design of cities and transport systems to support walking and cycling is necessary alongside schemes to encourage physical activity within schools. A Cochrane review by Priest et al. (2008) identified a lacunae in the
Inequality in the built environment (defined as access to physical activity and recreational facilities) has been shown to impact on disparities in levels of physical activity and obesity between different socio-economic and ethnic groups (Gordon-Larsen et al., 2006). Interventions to promote access to leisure centres have shown some evidence of effectiveness in terms of increasing levels of PA. However, in terms of reducing inequalities in levels of physical activity, Harrison, Gemmell and Heller (2007) caution that broader determinants of health behaviours, such as perceived safety and fear of crime should be considered in the design of interventions. The study also demonstrated that neighbourhood perceptions of leisure facilities were associated with physical activity but, perhaps more importantly, the analysis illustrated how people who felt safe in their neighbourhoods were more likely to be physically active. This underlines the need for context sensitivity to prevent further widening of inequalities if disadvantaged groups are less likely to engage with physical activity initiatives due to fear of crime or perceived lack of safety. Bauman and Bull's umbrella review (2007) supported the associations both between levels of physical activity and accessibility of physical activity facilities and between levels of physical activity and perceived neighbourhood safety. There were, however, no consistent associations found between levels of physical activity and environmental aesthetics, topography or perceived levels of crime (Bauman and Bull, 2007).

Interventions to promote walking and cycling by building traffic free routes have been shown to be successful across the social gradient and in women, minority ethnic groups and older people (Moore et al., 2006). Using the example of traffic calming measures, NICE recommendations caution that strategies to promote active transport might have negative effects on some communities by displacing vehicle traffic elsewhere (NICE, 2008b).

According to NICE (2008b) there is a paucity of studies which consider the differential effects of environmental interventions on physical activity by ethnicity, age, gender, sexual orientation, culture and religion. Similarly, there is a lack of evidence on the impacts of interventions to increase physical activity in disabled people and for people living in rural areas (NICE, 2008b). Much of the evidence that does exist is from studies conducted in the United States so there may be problems in terms of translating these findings to UK contexts (NICE, 2008b).

**Nutrition, Diet and Obesity**

According to research evidence from the WCRF increasing the availability and decreasing the price of healthy foods increases the amounts consumed, and decreasing the availability and increasing the price of snack foods achieves lower levels of snack food consumption. There is an acknowledgement that voluntary agreements to limit advertisement and marketing of unhealthy foods encounters limited success (World Cancer Research Fund / American Institute for Cancer Research, 2009). To this end, regulation is required to protect those most at risk from social inequalities. In the UK, research has shown that the traffic light system
of signposting is effective across all socio-economic groups regardless of level of educational background (Food Standards Agency, 2005).

New research found that obesity is as hazardous to health as smoking, and can shorten life by a full decade. The study also found that amongst middle-aged people in the UK, as many as one in four deaths from heart attack or stroke and one in 16 cancer deaths are due to being overweight or obese. Foresight Tackling Obesities also detailed the complex drivers of the obesity epidemic (Butland et al., 2007).

It is impossible to address inequalities relating to CVD and cancer without addressing obesity. However, as obesity is being addressed in a separate chapter in this report by Tim Lobstein, we will not cover it in detail here.

**Early life**

Key risk factors for developing CHD – raised blood cholesterol, high blood pressure, diabetes and smoking – develop over the life course, and most originate during childhood. Some people have a genetic disposition toward some of these risk factors, but for most people the risk of CHD is largely determined throughout life by diet, physical inactivity, and smoking. Studies have shown that the early signs of CHD are already apparent in some children and adolescents. (National Heart Forum, 2002)

Foetal development and babies’ consequent birthweight are also important factors in potential risk for developing CHD. Studies suggest that low birthweight (particularly when followed by rapid weight gain in infancy) is associated with a number of CHD risk factors. Birthweights show a clear socioeconomic gradient: the average birthweight of babies from low-income families is lower than that of babies born into better off families. Closing this gap demands measures that ensure adequate nutrition during adolescence to support the healthy physical development of future mothers.

Early life events are also crucial modifiers of cancer risk. There is strong evidence that high birthweight, accelerated growth through childhood, early sexual maturity, and greater adult height increase the risk of breast cancer, while greater adult attained height also increases the risk of colorectal, pancreatic, and ovarian cancer. The best start in life is exclusive breastfeeding for the first six months, which among other benefits protects against maternal breast cancer as well as protecting against excessive weight gain in the child. Women of high socioeconomic status in high-income countries are more likely to breastfeed their children exclusively and extensively.
1.4 Recommendations

Early detection and treatment

Improve the early detection and treatment of cancer, diabetes and cardiovascular disease, especially among the more vulnerable groups.

- Use social marketing to increase awareness of early symptoms and the importance of early detection/screening for these conditions among the more vulnerable groups
- Further incentivise primary care practitioners to focus prevention and early detection of these conditions on the more vulnerable groups.

Smoking

To reduce smoking in the most hard to reach groups, we need to focus on price and availability, while providing stop smoking services to help the poorest groups quit (Ash, 2008).

- Move toward a total ban on smoking (a 10 year target).
- Ban smoking in all public spaces (5 year target).
- Abolish prescription charges for nicotine replacement therapy for all smokers who want to quit, which has been done in Scotland and Wales (5 year target)
- Reintroduce an annual above-inflation price escalator for tobacco products
- Set tough new targets for the control of tobacco smuggling (5 year target).

Supporting actions:

- Prioritise deprived and marginalised groups, including routine and manual socioeconomic groups, in the design and targeting of all stop smoking services, campaigns and interventions
- Reduce the illicit market share for cigarettes to no more than 8% by 2010 and 3% by 2015. Reduce the illicit market share for hand-rolled tobacco to no more than 45% by 2010 and 33% by 2015.

Physical activity

- Enact a Planning Policy Statement for health to ensure that health is at the centre of all planning decisions, especially urban planning.
- Walking and cycling must be at the centre of transport policy at national and local levels. The Department for Transport must commit 10% of its budgets to walking and cycling.
  - Promoting walking and cycling must be system-wide and not just focused on new builds – it should also include regeneration and retro-fitting.
  - In particular walking and cycling infrastructure developments must be part of any consideration of new fiscal stimulus measures, especially around new capital investment by Government as a consequence of
the recession and existing capital commitments by Local Authorities, rebuilding schools program, highways agency and the NHS.

- Make 20mph or lower speed limits the norm for residential streets and those used by shoppers, tourists and others, close to schools or public buildings, or important for walking and cycling or children’s play.

**Supporting actions:**
- Require training in public health impacts for urban and transport planners, architects and engineers.
- Make PCTs statutory consultees in planning decisions. The NHS London Healthy Urban Development Unit has done significant work helping PCTs engage in the planning process and is a good resource for moving forward.
- Improve the quality, affordability and safety of public transport to ensure that it is a viable transport option, especially taking into account the needs of the disabled, elderly, and morbidly immobile.
- Carry out equity impact assessments on current work in DH to ensure all communities have health included in planning.
- Provide financial incentives for companies to provide schemes promoting physical activity, commuter benefits for active travel.

**Nutrition, Diet and Obesity**

- Fiscal policies such as VAT adjustments (eg. Denmark)
- Product and distribution subsidies to small and medium-sized enterprises (SMEs)
- Include explicit ‘food basket’ component when setting benefit levels
- Use of public procurement to aid fruit and vegetable production and distribution (eg. Cornwall NHS)
- Create fruit and vegetable incentives for distributors (e.g. Norway) and retailers (e.g. Scotland)
- Free school meals
- Nutrition standards for catering and food sales
- Restricted marketing and advertising, debranding of business links in schools
- Link healthy eating messages to policies for food security, environment, animal welfare, fair trade
- TV ban on unhealthy food ads pre-9pm
- Use planning controls to limit fast food outlets (eg. Newham)

**Supporting actions:**
- Pre-school, school and workplace food policies
- Enhanced health education
- Well-resourced advocacy groups, public health groups
- Social marketing campaigns (Eg. The FSA campaign to encourage consumers to choose lower salt products was supported by parallel work with the food industry to supply products with lower salt levels and traffic light labeling)
- Restricted marketing of unhealthy food and drinks to children
• Product reformulation (Salt and saturated fat reduction (including trans fats))
• Easy-to-understand and consistent food information including Traffic light labelling (FSA) and controls on product health claims (EC)

**Early-Life**

• The Treasury should undertake a review to reformulate how it calculates minimum income standards and benefit levels, in order to ensure that families can afford the essential requisites to give their children a healthy start in life.
• Target interventions to women of child-bearing age before pregnancy occurs, beginning with older adolescents, to break the generational cycle of health inequalities.
• Influence the food culture to support a more balanced diet by addressing manufacturing processes and the retailing, marketing and promotion of food as they influence children and young people.
• Ensure that price and availability are effective disincentives to youth smoking.

**Supporting actions:**

• Improve nutrition in women before and during pregnancy.
• Improve school and pre-school nutrition.
• Strengthen physical education, active play and sport in schools through a combination of investment, school policies and teaching practices.
• Make walking and cycling a safe and healthy means of daily travel for more children and young people.

**Further Research**

There is a clear need for more research looking at the effects of interventions on reducing inequalities in CHD and cancer. Specifically:

• **Alcohol** – The issue of alcohol’s impact on health inequalities and avoidable chronic disease has not been sufficiently addressed. Alcohol use increases the risk of developing cardiovascular disease and certain cancers, and has a significant impact on maternal and child health.

• **Physical activity** – Variations in levels of physical activity are seen by gender, socioeconomic status, ethnicity, age and disability. There are many contributing factors into what makes someone decide to be physically active, and this paper discussed only a few, focusing mainly on the built environment. Other contributing factors include accessibility of facilities and other opportunities to be active; psychosocial factors (low motivation to be active, low understanding of the benefits); and a shortage of socially and culturally sensitive facilities.

• **Taxation** – More research is needed on the regressive impact of using tax as a tool to discourage consumption of foods high in saturated fats, salt and sugar.
Chapter 2: Obesity
Tim Lobstein

2.1 Introduction

This paper summarises the most recent evidence on obesity prevalence inequalities in Britain, largely based on the Health Survey for England, which has measured obesity in adults since the 1980s and in children since the mid-1990s. Limited data for Scotland are available. Data for Wales and for Northern Ireland are very limited and based on self-reported measures of height and weight, and are not used in this document. Although interesting sub-analyses using different methods for assessing overweight and adiposity can be undertaken, this paper focuses on the definition of obesity as an adult Body Mass Index (BMI) of >30 kg/m^2, and a child BMI using UK or international criteria for obesity.

The proposals for measures to counter inequalities in obesity are based on expert recommendations and reviews. Interventions in public health and social policy are not amenable to pre-testing in controlled environments and should be considered along with interventions in political, military and economic policy as being investments for future returns, based on cost, risk and benefit analyses. As suggested in the Foresight review of options to tackle obesity inequalities, there is no single solution to a problem that is deeply embedded in the structure of modern society (Butland et al., 2007). A range of interventions using a variety of approaches is more likely to provide the desired return on investment.

2.2 Overview of socio-economic inequalities in obesity

The social gradient in obesity is more clearly demonstrated in women (and female children) than among men. Calculations by Robinson (2001) estimated that in the UK some 10% of obesity in men and up to 33% in women is attributable to socio-economic inequalities. In part this appears to be due to a particularly low level of obesity among the lowest income group. Figure 2.a.
Figure 2.a: Obesity and high waist circumference (WC) by household income quintile, 2007. Men (top) and Women (bottom)

Health Survey for England 2007

Figure 2.b shows a continuing and possibly widening of the inequalities gap over the last decade or so. Comparing 1996 data with 2006 data indicates not only a significant rise in obesity prevalence across all levels of income, but a greater rise among those living in households with lower incomes than those with higher incomes. It could be argued from biological principles that those starting from a lower base would have a greater potential to make larger gains, all things being equal, but this is not shown and instead those with higher levels show the greater gains, making the inequalities gradient steeper.

At a macro level, social inequality is associated with obesity. In a study of wealthier countries (OECD members), Pickett et al (2005) have shown that adult obesity levels are associated with the relative distribution of wealth (using the Gini Index) within each country. One of the principle health co-morbidities of obesity, type 2 diabetes, was also closely linked to this measure of wealth distribution. The links between inequality indices and obesity bear further examination and the figures have been re-worked for the present paper.

Taking the wealthiest countries of Europe, and using the Gini index, which measures inequality in income distribution, there is a tendency for obesity to be greater in countries with a greater inequality in wealth distribution (the correlation is statistically significant for women, though not for men).
It should be noted that during the period showing the dramatic rise in obesity prevalence in the UK, 1980 - 2000, the absolute number of low income households increased, as did the number of better-off households, to create the largest gap between richest and poorest households for forty years. The distribution of wealth became more polarised, and although subsequent improvements have been observed for some population groups, including children and pensioners, inequalities have widened with three-quarters of the increase in prosperity going to those with above average incomes (and a third of it going to the top 10 per cent of the population).

More specifically, the determinants of inequalities in obesity are nutrition security; activity insecurity; maternal and child health; and psychosocial drivers.

Nutrition security refers to difficulties experienced in obtaining a nutritionally optimum diet for health. Studies in the 1980s and 1990s confirmed the view that lower-income households were likely to be suffering nutrition insecurity (James et al, 1997). Additional evidence of nutrient insecurity has been shown in terms of infant feeding practices and infants’ access to breastmilk. Defining social class by partner’s occupation, 40% of mothers in social class V (lowest class) did not initiate breastfeeding in a 2000 survey, compared with 10% in social class 1 (highest class). This had improved somewhat by 2005, but even in the later survey the social gradient remained well-defined, and was also reflected in breast-feeding duration: at 6 months old, only 16% of infants in lower income households were receiving any...
breast milk, while 35% of infants in higher income households continued to benefit from breast milk.

Activity security refers to difficulties experienced in obtaining optimum levels of physical activity for health. Activity insecurity is socially distributed with lower socio-economic groups being less likely to engage in physical activity than higher socio-economic groups. Activity insecurity can be caused by problems in the provision, availability and accessibility, and pricing of various types of environments able to support activity, and the equipment, clothing and washing facilities to make use of these environmental opportunities. Activity insecurity may also result from excessive sedentary behaviour, which in turn may be determined by the individual’s education and knowledge, the information available, the workplace environment, and the commercial promotion of sedentary products, including TV programmes, computer and internet use, and the promotion of car use by manufacturers, urban design, retail and workplace location and fiscal incentives.

Improving maternal and infant health is vital to the reduction of obesity inequalities in the long term. Obesity and overweight among children is associated with the obesity status of their parents. Obesity prevalence among the children of non-obese parents is around 10% while among children whose parents are both overweight it is greater than 20%. With obesity higher among women in lower social classes, the likelihood that obesity will be reproduced from one generation to the next is heightened. Women in lower SES groups may be more vulnerable than men to developing obesity because they are subjected to different environmental pressures including less physical activity, pregnancy, discrimination in employment; and lower self-esteem associated with a failure to meet societal norms and models.

Obesity may be both a cause and a consequence of psycho-social distress. That obesity and stress are linked is well recognised: in their review of the literature, Pomerleau et al (2005) found that obesity is a stigmatised condition in most societies, and stigmatisation is itself associated with poorer health, economic and social outcomes. Weight-related discrimination is known to occur in relation to marriage and occupation. A factor which modulates the association of SES and adult obesity is the upward or downward change in social status from one generation to the next (social mobility). Longitudinal studies have shown that the women who experience upward social mobility had lower levels of adult obesity compared with those who remained in the same social class as their parents, or compared with those whose SES declined.
2.3 Overview of evidence on the effectiveness of interventions to tackle inequalities

Inequalities have been only scantily addressed in national obesity and health promotion policy statements. The Attached Appendix considers all obesity, diet and related systematic reviews and their recommendations on reducing inequalities. It also considers all European national authorities’ policy guidance on obesity and the recommendations for reducing inequalities. The results are depressingly sparse, in terms of attention to the issue and proposals for action.

However, the recent concern over the financial and social costs of obesity, as expressed in the Foresight report, and the current concern over the inequitable distribution of the health problems and the resulting costs, has led to renewed interest in the potential for a range of social and economic intervention policies beyond the (necessary but insufficient) health education approach.

Several authors have discussed the rationale for government intervention categorised under various aspects of market failure, including cost externalities (i.e. costs of obesity not born by the obese person), imperfect information (i.e. an individual’s choices are poorly informed), protection of the vulnerable (i.e. caring for those not expected to make rational choices, such as children) and time-inconsistent choices (i.e. a degree of irrationality in choices because a current gratification is greater than a later, deferred penalty). Other rationales for government intervention include protection of human rights, provision of essential welfare, income support and national food security. All these arguments lend weight to the need for radical policy proposals.

Figure 2.d below summarises systematic review level evidence of which interventions are effective for reducing the social gradient in obesity. The 25 reviews examined reveal a remarkable paucity of evidence for effective interventions to prevent obesity in any section of the population, not just those in lower social groups. The evidence reviews were conducted between 2000 and 2007 and most accept that only small changes in obesity prevalence or in dietary or physical activity behaviour are likely to be found in the best of circumstances. The recommendations concerning inequalities or low socio-economic status group related effects are summarised in 2.d below.
**Figure 2d: Summary of SES-related recommendations in major reviews of evidence on obesity prevention and related interventions** (For details see Robertson et al, 2007)

<table>
<thead>
<tr>
<th>Review</th>
<th>Recommendations specific to low socio-economic groups</th>
</tr>
</thead>
<tbody>
<tr>
<td>Interventions to prevent weight gain, a systematic review of psychological models and behaviour change methods. Hardeman et al, 2000.</td>
<td>Smaller effects were found among low-income participants. Participation dropout was higher among lower-income subjects.</td>
</tr>
<tr>
<td>Consolidation and updating the evidence base for the promotion of breastfeeding. Stockley, 2000.</td>
<td>Information provision alone is not effective, and may exacerbate inequalities. There is a negative impact of returning to full-time work on duration of breastfeeding.</td>
</tr>
<tr>
<td>A systematic review to evaluate the effectiveness of interventions to promote the initiation of breastfeeding. Fairbank et al, 2000.</td>
<td>Among women from different ethnic and low income groups, literature alone is not effective in promoting breastfeeding whereas group health education can be effective. Cash payments increase participation rates.</td>
</tr>
<tr>
<td>Achieving physiological change in school-based intervention trials: what makes a preventive intervention successful? Lytle et al, 2002.</td>
<td>Participants from diverse cultural backgrounds are rarely catered for in experimental design where ‘one size fits all’, compromising the ability to show effects.</td>
</tr>
<tr>
<td>Recommendations to increase physical activity in communities. Task Force on Community Preventive Services, 2002.</td>
<td>Recommends enhanced access to places for physical activity plus informational outreach activities.</td>
</tr>
<tr>
<td>The effectiveness of school-based strategies for the prevention of obesity and for promoting physical activity and/or nutrition, the major modifiable risk factors for type 2 diabetes: A review of reviews. Micucci et al, 2002.</td>
<td>Different age groups, ethnic groups and genders need different approaches.</td>
</tr>
<tr>
<td>The effectiveness of public health interventions to promote the initiation of breastfeeding: Evidence briefing L Protheroe et al, 2003. (Based in large part on Fairbank et al 2000 – see above.)</td>
<td>Women from different ethnic and SES groups respond poorly to literature but better to group health education.</td>
</tr>
<tr>
<td>Promoting walking and cycling as an alternative to using cars: systematic review. Ogilvie, 2004.</td>
<td>Inadequate evidence for the social distribution of effects and the potential for widening social inequalities in health.</td>
</tr>
<tr>
<td>Cardiovascular health promotion in the schools. Hayman et al, 2004.</td>
<td>Across well-controlled, well-conducted studies, differential results in outcome indicators point to the need for researchers to pay more attention to developmental age, gender, culture, and socio-</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Interventions implemented through sporting organisations for increasing participation in sport. Jackson et al, 2005. Cochrane Library.*</th>
<th>Interventions funded and conducted in this area must be linked to a rigorous evaluation strategy in order to examine overall effectiveness, socio-demographic differentials in participation and cost-effectiveness of these strategies.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reducing obesity and related chronic disease risk in children and youth: a synthesis of evidence and ‘best practice’. Flynn et al, 2006.</td>
<td>Few programmes address the needs of subgroups, e.g. immigrants new to developed countries.</td>
</tr>
<tr>
<td>Promotion of breastfeeding initiation and duration: evidence into practice briefing. Dyson et al, 2006.</td>
<td>Population-wide and specified targeted actions are recommended for disadvantaged white women, particularly teenagers, first time mothers and lone parents.</td>
</tr>
<tr>
<td>Promotion of physical activity among adults: evidence into practice briefing. Cavill et al, 2006.</td>
<td>Absence of evidence of effectiveness for physical activity interventions with disadvantaged groups must be considered carefully by managers, policy makers and commissioners of services. New physical activity projects may inadvertently increase SES health gradients if projects have a differential impact on social groups.</td>
</tr>
<tr>
<td>Food-support programmes for low-income and socially disadvantaged childbearing women in developed countries: Systematic review of the evidence. D’Souza et al, 2006.</td>
<td>For low-income women, counselling and nutrient supplements may improve maternal health but not rates of low birthweight. Further evidence is needed on long-term effects of interventions.</td>
</tr>
<tr>
<td>Interventions that use the environment to promote physical activity. Evidence review. Foster et al, 2006.</td>
<td>Evidence gap concerning disadvantaged groups.</td>
</tr>
<tr>
<td>Obesity: guidance on the prevention, identification, assessment and management of overweight and obesity in adults and children. Section 3 – Prevention: evidence statements and reviews. NICE 2006.</td>
<td>There is a paucity of evidence on the effectiveness of interventions among lower socio-economic groups and minority groups.</td>
</tr>
<tr>
<td>Effectiveness and challenges for promoting physical activity globally. Shilton et al, 2007.</td>
<td>Remaining challenges include understanding effective practice in developing countries and in sub-populations with increased needs.</td>
</tr>
<tr>
<td>Interventions to promote walking. Ogilvie et al, 2007.</td>
<td>Concern that targeted interventions may be preferentially taken-up by better off groups in the population.</td>
</tr>
</tbody>
</table>

* Cochrane Library services are available at [http://www.cochrane.org/index.htm](http://www.cochrane.org/index.htm)
2.4 Recommendations

Improve availability of and access to healthier food choices amongst low income groups

- National and local government should positively influence public opinion and cultural norms around healthy diets (social marketing campaigns; well-resourced advocacy groups, public health groups; link to policies for food security, environment, animal welfare, fair trade).
- The Treasury should undertake a review to reformulate how it calculates minimum income standards and benefit levels, in order to ensure that families can afford the essential requisites to give their children a healthy start in life.
- The government should explore fiscal policies (VAT adjustments e.g. Denmark; product and distribution subsidies to SMEs; remove tax-exemption for marketing specified foods; include explicit ‘food basket’ component when setting benefit levels)
- Incentives to distributors (e.g. Norway) and retailers (e.g. Scotland)
- Use of public procurement to aid production and distribution (Cornwall NHS)
- Product reformulation (e.g. salt and sat fat reduction, FSA)
- Easy-to-comprehend and consistent food information (traffic-light front-of-pack labelling – FSA; controls on product health claims – EC)
- Restricted marketing (TV ban on junk food ads pre-9pm; planning controls on fast food outlets e.g. Newham, Knowsley)
- Pre-school, school and workplace food policies (e.g. Nutrition standards for catering and food sales; restricted marketing and advertising, debranding of business links in schools; enhanced health education)

Improve the social and physical environment to make it easier for lower socioeconomic groups to engage in physical activity

- Change planning norms (transport and urban design policies to ensure active travel, restrict car use, building controls to raise incentives for stair use, Health Impact Assessments to match Environmental Impact Assessments).
- Walking and cycling must be at the centre of transport policy at national and local levels. The Department for Transport should commit at least 10% of its budgets to walking and cycling.
- Require training in assessing public health impacts for urban and transport planners, architects and engineers.
- Continue to make PCTs statutory consultees in planning decisions. The NHS London Healthy Urban Development Unit has done significant work helping PCTs engage in the planning process and is a good resource for moving forward.
- Improve the quality, affordability and safety of public transport to ensure that it is a viable transport option, especially taking into account the needs of the disabled, elderly, and morbidly immobile.
- Increased availability of open spaces (Incentives to protect and develop open spaces/green spaces; enhanced safety features e.g. reduced traffic; enhanced security e.g. lighting, CCTV; protection of open sports fields, promotion of clubs; more cycle routes and cycle priority networks)
- Fiscal policies (business tax incentives for workplace activity facilities; disincentives for car use, removal of tax-deductible car costs; business rate charges for car-parking; VAT adjustments on sports and activity equipment; additional car and fuel purchase taxation, congestion charging, parking fees, road tax)
- Pre-school, school and workplace activity policies (Timetabled opportunities for activity; code of practice for sedentary hours per day; enhanced health education; support for out-of-hours use of school sports facilities by community)
- Change public opinion and cultural norms around physical activity (via social marketing campaigns; well-resourced advocacy groups, public health groups, make links to policies for environment, global warming, carbon tax etc).

**Improve infant and maternal nutritional status**

- Targeted measures to improve teenage girls’ diet and increase their physical activity
- Enhance standards for availability and accessibility of pre-conception and antenatal care and advice
- Review fortification offers for women on benefits under pre-conception or antenatal care
- Review ‘food basket’ component of benefits for women under pre-conception or antenatal care
- Improve advice and support on healthy weight maintenance during pre-conception and pregnancy
- Fully implement WHO-UNICEF Marketing Code for Breast-milk Substitutes
- Enhance social marketing for breastfeeding
- Provide breast-feeding facilities in public, workplace etc settings
- Provide Nordic levels of maternity leave
- Review benefit levels for food component for younger children

**Enhance the psycho-social wellbeing of lower socioeconomic groups.**

- Enhance and extend evidence-based community engagement programmes targeted at deprived areas and communities
- Focus on youth schemes to enhance societal participation and contribution, from around age 10
- Home visiting and Health Buddies schemes to promote health and reduce isolation
- Review the formulae for calculating the minimum wage and welfare benefits and link more closely to average earnings to reduce income differentials.
Chapter 3: Alcohol

Mark Bellis and Sara Hughes

3.1 Introduction

Alcohol misuse has been linked to a number of health and social harms with lower socio-economic groups being disproportionately more likely to experience these harms than others. The following sections give a brief overview of these groups. The evidence on the effectiveness of interventions in tackling alcohol related health inequalities is then summarised before tentative recommendations are made.

3.2 Overview of the socio-economic inequalities relating to alcohol use.

The relationship between socioeconomic status and alcohol is complex. For example, people with lower socioeconomic status are more likely to abstain, or, if they do consume alcohol, to have problematic drinking patterns and dependence, whereas those with higher socioeconomic status are likely to drink more often but to consume smaller amounts (Marmot, 1997; Van Oers et al, 1999; Rickards et al, 2004). In 2007, research revealed a number of areas in England where harmful drinking\(^1\) was a problem, these areas tend to be poorer areas with Manchester (8.8%) and Liverpool (8.1%) heading the tables in this category. Drinkers classed as hazardous\(^2\) on the other hand were more likely to live in more affluent areas and in this category Runnymede (26.4%), Harrogate (26.4%) and Surrey Heath (26.0%) had the highest percentages (NWPHO, 2007). Relationships between alcohol use and socio-economic status are apparent even in adolescence. For instance, a survey of 15-16 year olds (n=9,833) in the North West reported that although binge drinking was found across all socioeconomic groups it was more common amongst those living in deprived areas (Hughes et al, 2008).

In England across all regions, hospital admission for alcohol-specific conditions for both males and females is associated with increased levels of deprivation with rates

\(^{1}\) Defined as percentage of adults aged over 16 regularly drinking over 50 units/week (men) and over 35 units/week (women).

\(^{2}\) Defined as percentage of adults over 16 regularly drinking between 22-50 units per week (men) and 15-35 units per week (women).
of admission for the most deprived quintiles being particularly high (Deacon et al, 2007). Alcohol-attributable conditions also show an association with deprivation for both sexes (Figures 3.a and 3.b). Figure 3.c illustrates the relationships between geodemographic classifications and alcohol-attributable hospital admissions. Here, the highest rates are found for the most deprived classifications (urban challenge, disadvantaged households, and multicultural centres) and the lowest for the least deprived (mature oaks, blossoming families, country orchards). This pattern is found for both males and females.

Figure 3.a: Alcohol attributable hospital admissions 2006/07 (LAPE). Correlation of local authority rates with index of multiple deprivation, England.
Figure 3.b: Alcohol attributable hospital admissions 2006/07 (LAPE). Correlation of lower super output area aggregated rates with index of multiple deprivation quintile, England.

![Graph showing correlation between deprivation quintile and alcohol attributable hospital admissions.](image)

Figure 3.c: Alcohol attributable hospital admissions 2006/07 (LAPE). Correlation of lower super output area aggregated rates with P2 people and places ©, England.

![Graph showing correlation between various categories and alcohol attributable hospital admissions.](image)
The number of alcohol-related deaths varies between English regions and also within regions. In 2005 the percentage of alcohol-specific deaths for both males and females were highest in the North West (1.77; 0.87 respectively) and the West Midlands (1.60; 0.73 respectively) and figures in both places were significantly higher than the England average (1.39; 0.59 respectively). Regions with the lowest percentages for both males and females were the East of England (0.92; 0.47 respectively) and also the South East for males only (1.22) and the South West for females only (0.44) (Deacon et al, 2007). In the same year, the North West also had the highest percentage of alcohol-attributable deaths for both males (6.39) and females (4.23) and these figures were both significantly higher than the England average (5.80; 3.91 respectively) (Deacon et al, 2007).

2.3 Overview of evidence on the effectiveness of interventions to tackle inequalities

There are many interventions aimed at reducing alcohol consumption itself and others which aim to tackle alcohol-related harms. Interventions have been subject to review to assess their effectiveness.

School-based programmes
School-based programmes include those delivered in the classroom by teachers or other professionals, multi-component programmes that incorporate wider community or family interventions, or brief interventions and peer support programmes that are targeted at school children but based outside of lesson time.

Classroom-based education programmes
A review of primary and secondary school interventions for alcohol use found evidence that interventions delivered by teachers using a life skills approach, or focusing on harm reduction through skill based activities, can produce medium to long term reductions in alcohol use and risky drinking behaviours such as binge drinking or drunkenness (Jones et al, 2007). In Australia, the School Alcohol Harm Reduction Programme (SHAHRP) has reported some success in reducing alcohol use among secondary school students, with intervention students being significantly more likely to be non-drinkers or to drink with supervision than controls. Intervention students also reported a decrease in alcohol-related harm from their own alcohol use and these effects were found to be still present 17 months after the completion of the intervention. Furthermore, differences between intervention and comparison students' had increased after this time, indicating a continuing effect on the harm that young people reported from their own use of alcohol (Spoth et al, 2001a). However, more research on the applicability and transferability of such programmes is needed (Jones et al, 2007). Furthermore, there is not enough evidence to determine the effectiveness of classroom-based programmes led by external educators (Jones et al, 2007).
Brief interventions and peer support programmes

Brief interventions are short, low intensity programmes consisting of between one and three sessions of motivational interviewing, counselling and/or education. A review of primary and secondary school interventions for alcohol use found some evidence for the short term (but not medium term) effectiveness of brief interventions such as STARS for families, in reducing short term heavy drinking among children (Jones et al, 2007). STARS for families (Start Taking Alcohol Risks Seriously) is a health promotion program in the US for preventing alcohol use among at-risk middle and junior high school youths. The programme aims to postpone alcohol use until adulthood, and consists of three phases:

- A health care consultation with a nurse or other health professional concerning how to avoid alcohol use;
- A series of key facts postcards mailed to parents to help their children avoid alcohol;
- Family take-home lessons that include activities for parents and children.

Other school-based approaches such as counselling programmes, peer support programmes and teacher training were not found to be effective in reducing alcohol use or harms among children (Jones et al, 2007).

Multi-component programmes

A systematic review of 56 psychosocial and educational interventions to prevent alcohol misuse by young people aged up to 25 years in 2003, found no firm conclusions about the effectiveness of programmes in the short and medium term but found that in the long term the Strengthening Families Program (Spoth et al, 2001a, Spoth et al, 2001b) showed greatest promise as an effective intervention (Foxcroft et al, 2003). The programme is a 14 session parenting skills, children’s life skills and family life skills training intervention specifically designed for high-risk families. The programme targets various age groups from age 6 to 16. Components include:

- For parents - learning positive interactions with children, communication, effective discipline;
- For children – communication skills, hopes and dreams, resilience skills, problem solving, peer resistance, feeling identification, anger management and coping skills;
- For families –sessions for parents and children to practice newly acquired skills, improvements in child/parent interactions.

Evaluation of the programme estimated that for every nine pupils that received the intervention, four years later there would be one fewer young person reporting that they had ever used alcohol, used alcohol without permission or ever been drunk (Foxcroft et al, 2003).

Interventions to prevent the sale of alcohol to underage children

Police and Trading Standards have jointly run test purchasing schemes in shops and other premises where alcohol is sold, for example The Tackling Underage Sales of Alcohol campaign which was launched in 2006 (Home Office, 2006). The proportion of successful sales to underage drinkers has decreased from 50% in 2004 to 15% in 2007 (Home Office 2007).
Increasing the price of alcohol

Increasing alcohol prices have been shown to reduce drinking, heavy drinking and the harms associated with alcohol use and abuse (Chaloupka et al, 1998; Babor et al, 2003; Phillips-Howard et al, 2008). A systematic review of 112 studies examining the relationship between prices of alcohol and alcohol sales/self-reported drinking concluded there was a large body of evidence indicating an inverse relationship between alcohol prices and taxes, and drinking. Furthermore in comparison to other prevention policies and programmes, policies which raised prices of alcohol were an effective method of reducing consumption (Wagenaar et al, 2008). Price increase has also been shown to impact on young people’s alcohol consumption (Babor et al, 2003; Laixuthai and Chaloupja, 1993).

Research modelling the effects of pricing and promotion policies for Alcohol in England estimated that a 10% general price increase in alcohol would reduce (Brennan et al, 2008):

- Average weekly consumption by 4% (consumption was estimated to reduce by on average 35.5 units per person per year);
- Deaths by 232 per annum, rising to 1,681 deaths per annum after 10 years; and
- Hospital admission by 10,100 per annum, rising to 50,800 per annum after 10 years.

The benefits were estimated to impact differentially on different population groups. For instance, greatest changes in alcohol consumption would be seen by harmful drinkers (who drink proportionately more low-priced alcohol), whereas moderate drinkers would only be affected in small ways. Larger changes would also be seen for those aged 11-18, and for 18-24 year old hazardous drinkers (a proxy for binge drinkers). Additionally, a 40p per unit minimum price policy was estimated to reduce:

- Average weekly consumption by 2.6% (consumption was estimated to reduce by on average 22 units per person per year);
- Deaths by 157 per annum, rising to 1,381 deaths per annum after 10 years; and
- Hospital admission by 6,300 per annum, rising to 40,800 per annum after 10 years.

Again, reductions were estimated to have different effects on different population groups, with greatest changes seen for harmful drinkers and 11-18 year olds, and less reductions seen for 18-24 year old hazardous drinkers. Although the review did not examine differential impacts on socio-economic groups, increases in the price of alcohol are likely to affect poorer population groups more than affluent ones, and may contribute to a reduction in socio-economic inequalities in alcohol use and harms.

Brief interventions

A review of the effectiveness of treatments for alcohol misuse carried out on behalf of the NHS found that brief interventions carried out in a variety of settings, for example primary healthcare settings and A&E departments, were effective in reducing alcohol consumption among hazardous and harmful drinkers to low-risk levels with effects for these lasting up to two years after the intervention and in some
cases as long as four years (Heather et al, 2006). Another systematic review and meta-analysis focusing on 19 trials in primary care in America concluded that brief interventions were effective in reducing alcohol consumption by 0.38g (95% CI, −51 to −24g.week) of alcohol per week (adjusted effect size after correction for lost subjects) at follow up of 6 months and 12 months (Bertholet et al, 2005). Other reviews have also reported that opportunistic screening and brief interventions in the form of advice or brief counselling have been shown to be effective for drinkers classified as hazardous and harmful respectively. Such interventions delivered by health-care professionals are effective in a number of ways including: reducing overall levels of alcohol consumption, changing harmful drinking patterns, preventing future drinking problems, improving health and also in reducing health care costs (Bien et al, 1993; Kahan et al, 1995; Wilk et al, 1997; Moyer et al, 2001).

**Drink-driving Interventions**

An international review of the impact of introducing or lowering legal blood alcohol concentration (BAC) limits on traffic safety measures found that in most cases levels of drink-driving and drink-drive casualties was reduced. Effects were seen in drivers who were at the legal BAC and also those driving at higher BAC levels (Mann et al, 2001). Another review in America of six studies to determine if lowering the legal blood alcohol concentration (BAC) laws among younger drivers were effective in reducing motor vehicle injuries found that all six studies showed a reduction in crashes or injuries following the implementation of the law. A dose response effect was found with a mean reduction of 17% in states where the BAC was 0.02% and a reduction of 7% in states where the BAC was 0.04 to 0.06% (Zwerling and Jones, 1999). At present the legal BAC level for driving is 0.8 and is one of the highest in Europe, (for example in Sweden, Norway and Poland the limit is 0.2 per mg, and in Germany, France and Italy it is 0.5mg (Safe Travel, 2008). Random and selective breath testing has resulted in reductions in the number of drink-driving, alcohol-related crashes and related injuries (Waller et al, 2002).

In the US and Canada, graduated driving licences where stricter rules are enforced for young and inexperienced drivers have shown a significant impact on driving offences and injuries. For example, a night-time curfew on teenage drivers reduced Road Traffic Accidents (RTAs) by more than 25% (Williams, 1985; Hedlund and Compton, 2004; Morrisey et al, 2006). In Sweden, the right to sell beer with an ABV of 4.5% or stronger was removed from grocery shops, resulting in a significant reduction in traffic accidents in young people under the age of 20 (Ramstedt, 2002). Between 1992 and 1996 in the US, community programmes used various initiatives such as media and community education, a responsible beverage service, local enforcement of drink-drive laws, limited underage sales and outlet restrictions. Together these are estimated to have reduced self-reported drink-driving by 51% and night-time RTA injuries by 10% (Holder et al, 2000).

### 2.4 Recommendations

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3 UK, Canada, Japan, The Netherlands and USA.
Introduce a minimum price per unit for alcohol.

A systematic review of 112 studies examining the relationship between prices of alcohol and alcohol sales/self-reported drinking concluded there was a large body of evidence indicating an inverse relationship between alcohol prices and taxes, and drinking. Furthermore in comparison to other prevention policies and programmes, policies which raised prices of alcohol were an effective method of reducing consumption (Wagenaar et al, 2008). Given the social patterning of alcohol consumption, this intervention may disproportionately benefit lower socio-economic groups (Brennan et al, 2008).
Chapter 4: 
Drug use

Mark Bellis and Sara Hughes

4.1 Introduction

The links between drug use and social and economic inequalities are well recognised in literature and research. Additionally, much of the UK drug policy seeks to address the factors that contribute to inequalities amongst drug users. The latest UK drug strategy Drugs: protecting families and communities – 2008-2018 strategy (Home Office, 2008) highlights that vulnerable individuals, those who live in deprived communities and are part of disadvantaged families, are disproportionately affected by problem drug use. The following sections give a brief overview of these groups. The evidence on the effectiveness of interventions in tackling alcohol related health inequalities is then summarised before tentative recommendations are made.

4.2 Overview of the socio-economic inequalities relating to drug use.

The Index of Multiple Deprivation is the official Government measure of multiple deprivation on a small scale area. In this section, the IMD has been graphically displayed with rates of problematic drug use, rates of those in treatment and claimants of Incapacity Benefit (IB) and Severe Disablement Allowance (SDA) to provide an illustration of the correlation between these variables in English local authorities.

Problematic drug use (PDU) in England refers to the use of opiates and/or crack cocaine (Hay et al, 2008). There is a significant positive correlation between the prevalence of problematic drug users aged 15-64 years and the IMD score of local authority (Figure 4.a) ($r=0.77, p<0.01$). The majority of the outliers with relatively high deprivation rates and high prevalence rates of drug users represent densely populated London boroughs (including Islington, Tower Hamlets, Hackney, Lambeth, Southwark, Newham, Lewisham and Haringey). The local authorities with low IMD and low rates of PDU were mainly represented by the South East areas including Hart, Wokingham, Waverley, Elmbridge and East Hampshire.

The National Drug Treatment Monitoring System (NDTMS) collects data on all individuals in contact with structured drug treatment in England (i.e. high threshold
tier 3 and 4 as defined by the Models of Care – see National Treatment Agency, 2002). NDTMS is the key resource for monitoring the number of individuals in contact with treatment, whilst also being the basis for examining the success of the UK Drugs Strategy. Figure 4.b illustrates the correlation between the rate of individuals in contact with structured drug treatment services and the IMD score in each local authority. At a local authority level, England as a whole showed a significant positive association between the number of individuals in contact with structured drug treatment services per 1,000 population and deprivation ($r=0.80$, $p<0.01$). All regions separately also showed a positive association between numbers in treatment and deprivation. Notably, many of the local authority areas which had low IMD and PDU rates also had low rates of individuals in contact with structured drug treatment (i.e. Hart, Wokingham, Waverley and East Hampshire). Many of the local authority areas with high rates of deprivation and individuals in contact with structured treatment are situated in the North West (i.e. Liverpool, Wirral, Knowsley, Rochdale, Blackpool).

*Figure 4.a: Prevalence of problematic drug users (2006/07) (aged 15-64 years) by local authority of residence and Indices of Multiple Deprivation (2007).*

Source: NWPHO from Hay et al. 2008 [130] and Communities and Local Government (Index of Multiple Deprivation, 2007)
Figure 4.b: Prevalence of individuals in contact with structured drug treatment aged 15-64 by local authority of residence (2006/07) and Index of Multiple Deprivation score (2007).

Source: NWPHO from NDTMS and Communities and Local Government (Index of Multiple Deprivation, 2007)

Drug use may affect an individual’s ability to participate in the labour market, whether through intermittent, regular or long term absences, the loss of work or negative effects on the capacity to secure work. The rate of individuals claiming such benefits provides better understanding of the extent to which drug dependency affects the ability to participate in the labour market. At a local authority level, all regions show a positive association between the rate of claimants per 100,000 working age population and deprivation, with those in the more deprived areas generally having a higher rate of claimants (r=0.54, p<0.01) (Figure 4.c). The local authorities represented by the outliers on the graphs above represent traditional seaside towns (i.e. Bournemouth, Plymouth and Weymouth and Portland).
Admission rates for drug-specific conditions for both males and females show a strong positive association with deprivation. Figure 4.d illustrates the relationships between geodemographic classifications and age standardised rates for drug related hospital admissions. In England as a whole, Disadvantaged Households and Urban Challenge areas have particularly high rates of admission, which is reflected in all regions. The most deprived lifestyle group ‘Urban Challenge’, who are typically unemployed, low income smokers, have over 17 times greater drug-related hospital admission than the most affluent group, ‘Mature Oaks’. Whilst most groups show levels of drug-related hospital admissions in line with their level of deprivation experienced in their group, the ‘New Starters’ show levels slightly higher than the level of deprivation, with ‘Multicultural Centres’ showing lower rates in comparison to areas with slightly lower levels of deprivation. Regionally, the highest rates of admission are found in ‘Urban Challenge’ areas of the North West and South West (712.0 and 677.7 per 100,000 population respectively).
4.3 Overview of evidence on the effectiveness of interventions to tackle inequalities

There is a wealth of research and review relating to what works in preventing and reducing drug use and its associated harms. Interventions are typically focussed on either prevention (i.e. amongst young people before initiation into drug use), harm reduction with current drug users, and abstinence. Drug use prevention programmes and treatment interventions are categorised according to a four tier system (National Treatment Agency, 2002) as described below:

- **Tier 1** interventions are universal drug education and advice typically delivered by healthcare agencies such as hospitals, social services etc.
- **Tier 2** services are open-access (i.e. drop in) frontline specialist services delivered by practitioners and specialists with drug and alcohol knowledge which provide harm reduction interventions and referral to specialist agencies.
- **Tier 3** services are community drug treatment agencies at which individuals attend regular appointments. Typically they offer treatment interventions including specialist prescribing, structured day programmes and structured psychosocial interventions.
- **Tier 4** is residential drug treatment i.e. inpatient or residential rehabilitation agencies.
In general, the evidence suggests that knowledge or drug awareness in itself does not make massive changes in an individual's likelihood of drug use and associated problems, but addressing other factors associated with their vulnerabilities and inequalities has an indirect positive impact on drug use in vulnerable populations.

Prevention
Drug prevention can be defined as those interventions that prevent the onset, delay the initiation, promote cessation, and reduce the harms associated with drug use. Drug prevention is a means of addressing a range of health-related behaviours, and is a means of reducing health inequalities and promoting social inclusion. The majority of reviews relating to drug prevention are aimed at young people, as age is shown to be a protective factor for initiation into drug use. Evidence shows that drug prevention programmes and interventions for young people are most effective when they are combined with interventions which address young people's other risk factors (i.e. disengagement from school, unemployment, residence outside family home, residence in a home with other drug users, those involved in the criminal justice system) (Sumnall et al, 2006). Drug prevention is a mechanism for reducing inequalities and reducing social exclusion and should not be viewed in isolation. There are three types of drug prevention, and each category describes target populations that are expected to gain optimal benefits from interventions (Jones et al, 2006a):

- **Universal**: Targets a whole population group (e.g. national, local community, school or neighbourhood) and each member of the population is considered to benefit from prevention programmes. The aim of universal prevention is to prevent young people from starting to use illegal substances. An example of universal prevention is a school drug-prevention curriculum.

- **Selective**: Targets subsets of the population whose risk of developing drug use is above average, identified by the presence of biological, psychological, social or environmental risk factors. An after-school programme for children with behavioural problems is an example of selective prevention.

- **Indicated prevention**: Targets individuals who seem to be at risk of developing drug use but who do not meet DSM-IV criteria for dependence. An example of indicated prevention is an intervention to reduce consumption of cannabis in non-problematic users.

In 2005 Roe and Becker (2005) produced a review of drug prevention with vulnerable young people, all of the studies included were from North America and therefore the authors concluded that there is a lack of outcome evaluations of UK targeted drug prevention initiatives.

School-based universal programmes (Jones et al, 2006b)
With links between drug experimentation in childhood and problematic drug use in adulthood, an important part of drug prevention is reducing the number of children trying drugs initially, and preventing the shift from experimental use to addiction. Schools are well placed to reach children before they initiate drug use, or in the early stages of experimentation. School-based programmes can be based on a number of different methods including: increasing knowledge about drugs and their effects, changing attitudes towards drug use, building self esteem and self awareness, teaching social life skills and methods to deal with peer pressure, and encouraging
alternative activities to drug use. Although UK-based studies are generally lacking, there is international evidence (mainly from the US) that school-based prevention programmes can delay the onset of substance use by non-users for a short time, and temporarily reduce use by some current users (Canning et al, 2004; McGrath et al, 2006). A systematic review of school-based programmes found that those based on developing life skills were the most consistent at reducing aspects of drug use in school settings (Faggiano et al, 2005). These programmes also effectively increased drug knowledge, decision making skills, self esteem, and resistance to peer pressure. Programmes may be more effective when they are targeted at pupils aged 11-14 (Gottfredson and Wilson, 2003); there is little supportive evidence for the use of primary school interventions (children aged 5-10 years).

Family-based interventions (Jones et al, 2006c)
Family factors play an important role in young people’s choices around drug use, and family based interventions aim to strengthen parents’ ability to help their children avoid drugs. British parent-oriented programmes, including FRANK (the Government’s communications initiative), have not been adequately evaluated. However, some positive examples can be found in international literature where there is evidence for their use in reducing risk factors for drug use in children. For instance the Strengthening Families Program in the US is a 14 session parenting skills, children’s life skills and family life skills training intervention specifically designed for high-risk families. Evaluation of the programme reported delayed initiation of cannabis use at a 6 year follow up, improved youth resistance to peer pressure, reduced affiliation with anti-social peers and reduced levels of problem behaviours (Spoth et al, 2002).

Community-based interventions (Jones et al, 2006d)
Community based drug interventions for youths are combined sets of activities aimed at adolescents, parents and organisations, and are often targeted towards socially excluded and deprived communities. They can include mass media campaigns, prevention in the workplace, community mobilising committees and educational activities. In the UK, community-based interventions have often been combined with other drug prevention initiatives such as school-based programmes. Little research has been undertaken to evaluate community-based programmes, particularly in the UK. Furthermore, where community programmes are combined with other types, it is often difficult to separate the effects of the different programme types. For these reasons, their effectiveness is currently inconclusive.

Mass media interventions (Jones et al, 2006d)
Media campaigns have been used to increase knowledge on the risks associated with drug use, alter perceptions of social norms, and encourage discussion of drug misuse. In the UK, FRANK targets 11-21 year olds and their parents, using television advertising, a helpline and a website to prevent drug use among young people. However, as with many media campaigns, there have been no scientific evaluations and effectiveness is difficult to determine.
Treatment
Drug treatment interventions are categorised by the tier system described above. Within each tier (with the exception of Tier 4) there is a wide variety of different interventions and methods of delivery. There is a wealth of evidence indicating that drug treatment interventions can be effective at reducing, and in some cases, ceasing an individual’s drug use (Gossop, 2006). However, there are differences within drug treatments as some interventions are more successful than others, and some work better with particular groups or in particular areas. In addition to making a difference to an individual’s drug use, drug treatment also aims to address inequalities and factors which make a person more susceptible to using drugs and associated harms. Typically, the effectiveness of drug treatment is not only measured against differences in drug use, but also with reference to an individual’s health (physical and psychological) and their social functioning (employment or educational status, accommodation situation and involvement with crime) (Gossop, 2006).

Drug treatment in itself can help enable individuals to overcome inequalities and make them more employable, reduce their offending, and increase their ability to respond to housing issues and access social welfare etc (39). Specifically, community prescribing and inpatient detoxification have been shown to reduce offending behaviour amongst those engaged in treatment (National treatment Agency, 2006; Ghodse et al, 1997; Gossop et al, 2000). Engagement with treatment services amongst young people has also been linked with a reduction in offending (National treatment Agency, 2008). The majority of homeless individuals are also problematic drug users and their lack of appropriate and stable accommodation is a barrier to their ability to access and remain in drug treatment services, therefore effective treatment for this group should focus on ‘wraparound’ care which responds not only to drug use but also the problem underlying their drug use (Randall and Drugscope, 2002). Other underlying factors associated with drug use have been found to negatively impact upon the outcomes of a person’s drug treatment. These include unemployment, lack of educational skills and qualifications and mental health problems, which when left unaddressed can influence a person’s likelihood to relapse (Jones et al, 2007; Moos et al, 2001).

The National Institute for Health and Clinical Excellence (NICE) has published guidelines on treatment interventions, specifically psychosocial interventions and opioid detoxification (NICE, 2007a; NICE 2007c). The NICE guidance on these interventions indicates that each the personal, social and economic aspects of each individual’s life should also be considered when undertaking these treatments and the appropriate support should be provided.

Contingency Management
Contingency management involves the distribution of incentives to individuals who reduce their drug use or become abstinent, or those who engage in health-promotion interventions. NICE states that contingency management is the ‘only psychosocial intervention with clear evidence for effectiveness as an adjunct to detoxification’ (NICE, 2007b). There is strong evidence for its use (Stitzer et al, 2008; Higgins et al, 2004; Lussier et al, 2006; Prendergast et al, 2006; Roll et al, 2007). Research into contingency management indicates that this intervention fits
better with the neurology of drug users (i.e. reinforcing positive behaviours as opposed to penalising negative ones), increases positive behaviours among drug users and is cost-effective. Effective incentives include vouchers, small financial rewards and privileges (i.e. take home methadone). For instance, in the US, a program for cocaine abusers (alongside individual counselling) offered vouchers exchangeable for goods or services over a three month period if all urine samples collected were cocaine negative. To encourage continued abstinence, the monetary value of the voucher earned increased steadily over time. Vouchers could be exchanged for goods or services. One evaluation of the scheme reported significantly greater treatment retention and cocaine abstinence than usual care, with 68% of behavioural treatment patients achieving 8 weeks of continued abstinence during treatment compared with 11% of patients receiving standard care (Higgins et al, 1993).

4.4 Recommendations

Extend use of contingency management within drug treatment programs.

NICE states that contingency management (giving incentives such as vouchers or cash to drug users to quit or reduce consumption) is the ‘only psychosocial intervention with clear evidence for effectiveness as an adjunct to detoxification’ (NICE, 2007a). There is strong evidence for its use (Higgins et al, 2004; Lussier et al, 2006; Prendergast et al, 2006; Roll, 2007; Stitzer and Vandrey, 2008). For instance, an evaluation of a US program which offered vouchers as incentives to cocaine users to abstain found significantly greater treatment retention and cocaine abstinence than usual care, with 68% of behavioural treatment patients achieving 8 weeks of continued abstinence during treatment compared with 11% of patients receiving standard care (Higgins et al, 1993).
Chapter 5: Injuries and violence

Mark Bellis and Sara Hughes

5.1 Introduction

The burden of injuries and violence in the UK is not equally distributed across the population, and those from lower socio-economic groups are disproportionately affected. The relationship between socio-economic status and injuries and violence often depend on the cause of injury (e.g. road traffic accident, fall, fire-related accident) or type of violence (e.g. self-directed violence or interpersonal violence), and are discussed in more detail in the following section. The evidence on the effectiveness of interventions in tackling injury and violence related health inequalities is then summarised before tentative recommendations are made.

5.2 Overview of socio-economic inequalities relating to injuries and violence.

There is a wealth of evidence from the UK linking the incidence of injuries and violence victimisation to measures of socioeconomics (Haynes et al, 2003; Kendrick wet al, 2005; Lalloo, 2003; Bridgman and Wilson, 2004; Bellis et al, 2008). In general, there are higher rates of injuries and violence victimisation among individuals with a lower socio-economic status, measured either at an area (of residence) or individual level. These associations have been reported for all age groups, and for a variety of injury types e.g. head injury (Tennant, 2005), brain injury (Parslow et al, 2005), hand injury (Horton et al, 2007), and fractures (Jones et al, 2004). However, relationships vary slightly with the cause of injury and with the type of violence.

All accidents

Figure 5.a shows the correlation between the rate of hospital admissions for all accidents and the index of multiple deprivation score for local authorities within England. Local authorities with higher deprivation scores have, in general, higher rates of hospital admissions for accidents.
In general, increased deprivation is associated with higher rates of injury or death from a road traffic accident (WHO, 2009; Wood et al, 2006; Edwards et al, 2008; Edwards et al, 2006; Adams et al, 2005; Graham et al, 2005; Graham et al, 2008). While a relationship is found for all ages, it appears to be stronger for children (Graham et al, 2005), particularly for those aged 0-4 years (Hippisley-Cox et al, 2002). Associations are found for all road accident types (pedestrian, cyclist, vehicle occupant). For instance, compared with children (0-15 years) of parents with higher managerial or professional occupations, the death rates for children with parents classified as never having worked or as long term unemployed are around 20 times higher for deaths as pedestrians, 27 times higher for deaths as cyclists, and 5 times higher for deaths as car occupants (Edwards et al, 2006). Furthermore, rates of hospital admissions for serious injury among children aged 0-15 are higher in the most deprived areas than in the least deprived for pedestrian injuries (RR 4.1), cyclist injuries (RR 3.0), and car occupant injuries (RR 4.8) (Edwards et al, 2008). However, for both children and adults, there is less socio-economic variation in hospital admissions for non-pedestrian road traffic injuries than for pedestrian injuries (Lyons et al, 2003). The link between road traffic accidents and deprivation is likely related to geographical location.
Falls

Figure 5.b shows the rate of hospital admission for fall injuries by quintile of deprivation. Here, those living in the most deprived areas of residence have a slightly higher rate of hospital admission for fall injuries than those living in the least deprived. The association between deprivation and rate of falls appears to be related to age, with a link found for older age groups (65+) but not for children (Edwards et al, 2008). For those aged 65+, there is a small but significantly higher rate of fall-related non-fracture injuries reported to A&E amongst those living in the most deprived wards compared to those living in the least deprived (Jones et al, 2004). In addition, for this age group, hospital admissions for falls is significantly higher amongst those living in the most deprived wards compared to the least deprived (West et al, 2004).

Figure 5.b: Emergency hospital admissions for fall injuries (ICD 10. W00-W19) in lower super output areas (LSOA) classified according to Index of Multiple Deprivation quintile. Directly standardised rate per 100,000 population. England 2004/05 to 2006/07.
Fire-related injuries
Positive associations have been reported between deprivation and the rate of hospital admissions or A&E attendance for burns (Lyons et al, 2003; Mendonca et al, 2004; Rajpura, 2002), and between deprivation and fire related deaths. Figure 5.c shows the rate of emergency hospital admissions for fire-related injuries in England by deprivation quintile, and shows slightly higher rates for those living in the most deprived areas. Furthermore, among children aged 0-15, rates of death due to exposure to smoke, fire and flames was around 37 times higher for those with parents classified as never having worked or as long term unemployed, compared to those with parents with higher managerial or professional occupations (Edwards et al, 2006).

Figure 5.c. Emergency hospital admissions for fire related injuries in lower super output areas (LSOA) classified according to Index of Multiple Deprivation quintile. Directly standardised rate per 100,000 population. England 2004/05 to 2006/07

![Graph showing emergency hospital admissions for fire related injuries by deprivation quintile]

Source: NWPHO from Hospital Episode Statistics

Self harm and suicide
In general, increased social deprivation has been associated with increased suicide mortality (WHO, 2009; Brock et al, 2006; Platt et al, 2005; Middleton et al, 2004; Rezaeian et al, 2005, 2006) and self harm (Lyons et al, 2003; Wood et al, 2006). Figure 5.d shows the rate of hospital admission for self harm by deprivation quintile. Here, the highest rates are found those living in the most deprived quintiles of residence. In England and Wales, suicide rates for those living in the most deprived areas were double those living in the least deprived (Brock et al, 2006). The
association appears to be stronger for males and younger age groups (WHO, 2009; Rezaeian et al, 2005). There is also evidence of an association between social class and suicide rates, with higher rates found in the lowest social class (class V) than in other social classes (Platt et al, 2005). However, some studies find no association between measures of socio-economics and suicide, and it is likely that results depend on factors such as measurement of deprivation, time periods and age categories studied (WHO, 2009).

Figure 5.d: Emergency hospital admissions for self harm (ICD 10. X60-X84) in lower super output areas (LSOA) classified according to Index of Multiple Deprivation quintile. Directly standardised rate per 100,000 population. England 2004/05 to 2006/07

Interpersonal violence
Lower socio-economic status has been related to increased rates of fatal and non-fatal violence. For instance, increases in murder rates seen in Britain between 1981 and 2000 were found to be concentrated in the poorest areas of residence (36). Additionally, higher rates of emergency hospital admission for assault have been associated with increased deprivation (Bellis et al, 2008; Wood et al, 2006). Figure 5.e shows rates of emergency hospital admission for assault by deprivation quintile. Here, there is a clear link with deprivation, with rates of admission higher in the most deprived quintiles of. Associations between deprivation and violence have been reported for a variety of violence types, including intimate partner violence (Finney, 2006) and child maltreatment (Sidebotham and Heron, 2006).
Figure 5.e: Emergency hospital admissions for assault (ICD 10. X85-Y09) in lower super output areas (LSOA) classified according to Index of Multiple Deprivation quintile. Directly standardised rate per 100,000 population. England 2004/05 to 2006/07

Source: NWPHO from Hospital Episode Statistics
5.3 Overview of evidence on the effectiveness of interventions to tackle inequalities

There are many interventions designed to prevent or reduce injuries and violence, and a large number of systematic reviews examining overall effectiveness. These reviews vary by how interventions are examined, so for example they may be broken down by setting (e.g. home, school), intervention type (e.g. education, campaigns), target group (e.g. children, elderly), type of injury (e.g. fractures, head injury) or cause of injury (e.g. road traffic accident, fire related accidents). Here, for ease of reading, we present findings based on four broad classifications of injury cause (road traffic injuries, injuries in the home and community, self harm and suicide, and interpersonal violence). We focus on those interventions targeted at higher risk groups such as children and the elderly, low income families, or those living in deprived areas. We also include safety-for-all strategies, although it is often unknown whether such interventions can differentially favour those groups with higher injury/violence rates.

Road traffic injuries

Traffic calming
Traffic calming measures aim to reduce traffic speed and volume in specific areas through a variety of measures, including: speed humps, road narrowings, 20mph zones, road closures and speed cushions. There is good evidence that these measures are effective in reducing traffic speeds and reducing injuries in the general population, and in children in particular (Towner et al, 2001; Morrison et al, 2003). Speed enforcement detection devices (e.g. speed cameras and laser and radar devices) have also found to be effective in reducing traffic speeds and reducing the level of road traffic crashes in the vicinity of device sites (Wilson et al, 2006). Traffic calming measures implemented in more deprived, urban neighbourhoods can help to reduce the inequalities gap in road traffic injuries between the most affluent and most deprived geographical areas (Jones et al, 2005).

School-crossing patrols
Evidence on the effectiveness of school crossing patrols is lacking. However, in the UK, an evaluation of their use in the late 1980’s suggested that they can reduce the number of accidents occurring to child pedestrians at, or near, crossing sites (Boxall, 1988).

Safety education programmes for pedestrians
There is some evidence for the effectiveness of safety education programmes in positively changing observed road crossing behaviours among children (Reading, 2002)
**Provision and promotion of bicycle helmets**

Reducing the cost of helmets through discounts, or offering helmets free of charge has been found to facilitate their uptake and use (Towner et al, 2001). In the UK, a hospital-led helmet promotion campaign targeted 5 to 15 year olds and used educational methods involving children, parents, schools and safety organisations. The scheme also offered a low cost helmet purchasing scheme. Compared to a control group, self-reported helmet use significantly increased among those targeted after a 5 year period, from 11% to 31%. Furthermore, the percentage of head injuries as a proportion of all bicycle related injuries decreased from 22% to 12% in the intervention area (Lee et al, 2000). Since ownership and use of bicycle helmets is lower among children living in deprived areas (Lang, 2007), such schemes have the potential to address inequalities in injuries between socio-economic groups.

**Provision and promotion of child restraints and seat belt use**

In health care settings, the loan of car safety seats for children has been found to be effective in increasing the numbers of children transported safely in cars (Towner et al, 2001). There is also evidence for the effectiveness of educational campaigns to increase the use of child restraints (Towner et al, 2001). Often these two components are combined together for a more comprehensive intervention. However, there is a lack of studies measuring the impact of the provision and promotion of child restraints on road traffic accidents or injuries, and their effectiveness is as yet unknown (Towner et al, 2001).

**Use of visibility aids**

Fluorescent materials, lamps, flashing lights, and retroflective materials have been found to improve the detection of cyclists and pedestrians among drivers (Kwan and Mapstone, 2002). However no studies have examined their effects on accidents or injuries. Furthermore, research is needed on the efficacy of programmes aiming to increase accessibility of visibility aids or promote their use for pedestrians or cyclists.

**Multi-component community interventions**

Comprehensive interventions that combine strategies such as education and traffic calming measures and engage the community at large have been found to be effective in reducing the incidence of childhood pedestrian injury (Turner et al, 2004). While there have been no evaluations of such schemes in the UK, those implemented in the US, Australia and Norway have reported reductions in pedestrian injury among children of between 12% and 54%. The greatest reductions in injuries were found in those projects that involved a wide variety of governmental and voluntary organisations in its implementation (Turner et al, 2004).

**Media education campaigns**

In the UK, media education campaigns have been used to increase knowledge around a range of road safety behaviours using television, radio and printed materials such as newspapers, posters and magazines. These include for instance:
reducing speed, wearing seat belts, using child restraints, drink driving, driver tiredness, and using a mobile phone while driving (Department for Transport, 2009). While these campaigns have been effective in reaching high levels of the population, increasing knowledge, and changing attitudes towards safety behaviours, changes in behaviour are harder to determine. However, some positive results have been reported. For instance, following a Department of Transport campaign promoting the use of child seats and restraints, 14% of people surveyed said they had bought or installed a child seat or restraint as a result of the campaign (Department for Transport, 2006). A meta-analysis of 48 health behaviour campaigns (covering a range of health behaviours) reported that on average, 9% more people performed a health behaviour following a campaign than before.

**Legislation on the use of child restraints, seat belts and bicycle helmets**

Child restraint and seat belt legislation has been found to be effective in increasing the numbers of children observed using restraints, and in reducing injury and death (Towner et al, 2001; Dinhr-Zarr, 2001; Shults et al, 2004). Although it is not a legal requirement to wear a bicycle helmet in the UK, a review of the effectiveness of such legislation in other countries have reported some positive changes in helmet use. While the baseline rate of helmet use among the studies reviewed varied between 4% and 59%, after legislation this range changed to 37% and 91% (Karkhanen et al, 2006). However, it is not known whether the change in legislation was associated with any reductions in cycle-related injuries.

**Legislation on blood alcohol concentration**

There is evidence for the effectiveness of lower blood alcohol concentration laws for young and experienced drivers in reducing alcohol impaired driving and alcohol-related crashes (Morrison et al, 2003; Shults et al, 2001). In Norway, France and Australia, reducing the illegal limit from 0.08 to 0.05 was found to substantially reduce injury crashes (Fell et al, 2006). In Sweden, lowering the illegal limit from 0.05 to 0.02 resulted in a 9.7% reduction in fatal crashes, 11% reduction in single vehicle crashes, and 7.5% reduction in all crashes in the six years following the change in legislation (Norstrom and Laurell, 1997).

**Injuries in the home and community (fire related, falls, poisonings)**

**Improved playground layout**

Although more research is needed, there is some indication that modification of playground environments can be effective in reducing childhood injuries (Towner et al, 2001). For instance, in Wales, reducing the height of play equipment and increasing the depth of impact-absorbing surfaces around equipment has been found to reduce overall injury rates and fractures among children (Sibert et al, 1999).

**Provision of home safety devices**

The provision of home safety devices, such as cupboard catches, electric socket covers, stair gates, fire guards, window locks, thermometers to test hot water temperatures, anti-scald devices in hot water taps, and smoke alarms can offer
some protection against injuries arising in the home. Devices can be distributed free of charge, loaned, or offered at a reduced cost to households, and such schemes are often targeted at families with children, or older children themselves, living in disadvantaged areas. In general, the provision of home safety equipment has been found to achieve some positive benefits in terms of behaviours (reported use of safety devices), but the impact on injury rates is inconclusive (Towner et al, 2001). In the UK, evaluation of a home safety equipment loan scheme, targeted at families with children less than 5 years of age and living in low income areas, found that while home accidents among children decreased by 10% following the scheme, there was no effect on injury outcomes (Thompson et al, 1998). Similarly, a scheme providing safety advice and free (or low cost) safety devices that were fitted without charge was targeted at deprived families in Nottingham with a child less than 5 years of age. Compared to a control group, families participating in the scheme were significantly more likely to have a range of safety practices, but there were no differences in the rates of injury among children (Edwards et al, 2006). Further analysis of the scheme reported that it was partially successful in reducing inequalities in the use of safety equipment by social-economic group (Kendrick et al, 2009).

Home safety education programmes
Home safety education is most commonly provided on a one-to-one basis, either in the home or health care setting. Programmes are often combined with the provision of home safety devices, and targeted at families with young children or living in deprived areas. There is evidence of the effectiveness of such programmes in increasing safety behaviours and the use of safety devices. For instance, a comprehensive review of programmes found that they increased: stair-gate use, safe storage of medicine and cleaning products, possession of syrup of ipecac (substance that can induce vomiting), the likelihood of having poison control centre numbers accessible, socket covers on unused sockets, safe storage of sharp objects, possession of a functional smoke alarm and the likelihood of having safe hot tap water temperatures (Kendrick et al, 2007). There was also some evidence for a reduction in the use of baby walkers and an increase in the use of fire guards. However, there was little evidence of increased possession of other items such as window locks, windows with limited openings, fire extinguishers, or non-slip bath mats. Furthermore, there was little evidence that changes in safety practices impacted on subsequent accident or injury rates among children. Programmes were found to have more of an effect if they provided safety equipment alongside education sessions.

Exercise programmes for older people
There is clear evidence that exercise programmes can significantly reduce the incidence of falls in older adults (Carter et al, 2001; Chang et al, 2009; Gardner et al, 2000). A review of physical activity interventions reported that the risk of falling among older people could be reduced through the use of either individually prescribed home exercise programs focusing on strength, balance and walking practice, or non-prescribed group exercise programmes that challenged balance (e.g. Tai Chi) (Sherrington et al, 2004). However, there is not enough evidence to determine whether such programmes can reduce injurious falls.
Multi-component community interventions to prevent falls among older people

Multi-component interventions use a wide range of activities to change attitudes, behaviours, and other known risk factors for fall-related accidents among older people. Activities can include: community education using posters, television and radio, home visits, the removal of hazards, control of medication, and promotion of safe footwear and physical activity. Although it included no studies from the UK, a review of multi-component programmes in other countries reported significant decreases in fall-related injuries in all included studies, ranging from 6% to 33% (McClure et al, 2005).

Community and media campaigns to promote safety

Community and media campaigns have been used to educate about safety practices and promote a variety of safety behaviours. Campaigns can be targeted at the general population or at certain higher risk groups such as children, or families with children. In the UK, campaigns have included: increasing awareness of firework safety (Department for Business BERR, 2009), encouraging people to test smoke alarms in their homes (Direct Gov, 2009), the dangers of burning candles, smoking in the home and cooking (82), and safe storage of medicines (Stone, 1998). However, such campaigns are rarely evaluated, and little is currently known about their effectiveness in preventing injuries either in the general population or among children (Towner et al, 2001). In Scotland, evaluation of a television campaign to raise awareness of fire dangers in the home reported that the advertising had made them think about safety issues. However, there were few changes in attitudes towards fire safety, and no evidence of any change in behaviour or intended behaviour in relation to smoke alarm fitting or testing (Scottish Executive, 2006).

Self harm and suicide

School based suicide prevention programmes

School-based skills training and social support programmes for high risk adolescents have been found to reduce risk factors for suicide such as depression, hopelessness and stress. There is also evidence that programmes focusing on behaviour change and coping strategies in more general school populations can be effective in lowering suicidal tendencies, improving ego identity and improving coping ability (Guo and Harstall, 2004). However, there is not enough evidence to support the use of curriculum based education programmes in changing attitudes towards suicide (Guo and Harstall, 2004). Furthermore, there is little evidence that any school-based suicide prevention programme can impact on the level of suicides occurring, largely because they are so rare.

Training and education for physicians

An ability to recognise the signs of depression within primary care, particularly among those groups of people most at risk, is an important factor in the prevention of suicide so that appropriate referral and support can be provided. Training programmes for physicians about the signs of depression have been shown to
improve detection and treatment of sufferers, although results are sometimes mixed (Mann et al, 2005). Furthermore, research on the effects of training on suicidal behaviour is lacking.

**Screening for risk of suicide**

Screening tools have the potential to identify, and refer to treatment, suicidal individuals who may otherwise go undetected. Screening tools may be particularly useful when used with high-risk groups. While screening tools have been effective in increasing identification of victims of interpersonal violence, there is currently insufficient evidence to recommend (or not recommend) their use for self-directed violence (Gaynes et al, 2004).

**Treatment for depression**

Although the use of anti-depressants has been found to be effective in alleviating depression and other psychiatric disorders, more research is needed before any firm conclusions can be drawn on its efficacy in reducing levels of suicide or attempted suicide (Mann et al, 2005). However, there is some evidence that psychotherapies (e.g. cognitive therapy, problem solving therapy, family therapy) can be effective in treating depression and reducing repetition of suicidal behaviour (Guo and Harstall, 2004; Mann et al, 2005).

**Training and education for gatekeepers**

A range of education interventions have been targeted at community gatekeepers – individuals in contact with at-risk populations who can identify and refer sufferers to appropriate services. Gatekeepers include for instance: clergy, pharmacists, caregivers, personnel staff, prison workers, teachers and other institution staff. Education is given around risk factors, changes in policy to encourage help-seeking behaviour, and how to reduce stigma associated with help seeking behaviours. However, evidence on the efficacy of such schemes to impact on suicidal behaviour is lacking (Mann et al, 2005).

**Media campaigns**

Media campaigns have been used to encourage help seeking behaviours and remove the stigma around mental health problems. They can be particularly useful when targeted at high-risk groups, such as young men who are often reluctant to seek help for issues such as depression or stress, or individuals living in rural areas. For instance, in the UK, Campaign Against Living Miserably (CALM) offers advice and support to men aged 15-35. Initially led by the Department of Health, the campaign uses a phone line and website to encourage men to open up, deal with their problems and get support (Calm, 2009). Additionally, in Scotland, the Remote and Rural campaign targeted men aged 16-40 living in more isolated communities. It used a variety of local events along with television, newspaper and bus ticket advertising to promote a free, confidential helpline (Breathing Space). However, as with media campaigns in general, there is a lack of evidence examining the effectiveness of such campaigns, particularly for suicidal behaviour.
Restricting access to lethal means

Internationally, there is evidence that suicide attempts using lethal means (e.g. firearms, paracetamol, barbiturates, vehicle emissions) can be reduced by laws restricting access to those means. In the UK, regulations introduced in 1998 restricted the maximum number of tablets allowed in one pack of paracetamol, and the maximum number of tablets that could be bought over the counter at any one time. The introduction of these regulations have been associated with reduced hospital attendance due to paracetamol poisoning (e.g. reduced admissions to liver units and liver transplants), and reduced sales of paracetamol (Hawton et al, 2001; Morgan and Majeed, 2005). Furthermore, in England and Wales, suicidal deaths from paracetamol reduced by 22% in the year after the change (Hawton et al, 2004). However, more research is needed on overall levels of suicide, since restricting access to lethal means may result in a suicidal individual substituting this method for another.

Interpersonal violence

Parenting programmes

Parenting programmes are designed to increase parental skills and improve relationships between parents and young children. They provide support and information, strengthen parents’ ability to adapt to the changing needs of the child, develop strategies to cope with their child’s behaviour and increase knowledge about child development and capabilities. Although they can be universal, programmes are usually targeted at vulnerable groups e.g. low income families. They are often delivered by a nurse or other health professional, and presented either individually in the home or delivered to a group in the community. Evidence for parenting programmes is mixed, but some positive results have been found internationally for reducing child maltreatment (Olds et al, 1986; WHO, in print).

Preschool enrichment programmes

These programmes aim to prepare children for school by providing them with early academic and social skills, and thus increase their chances of future academic success. Programmes can include: language development, literacy, numeracy, socialisation, problem solving and the development of self-esteem. Although they can be delivered universally, they are often targeted at children living in deprived neighbourhoods and considered at risk of low academic achievement. There is strong evidence from US-based studies that high quality programmes targeted in deprived areas can have long term positive impacts on participants, including reduced involvement in violence and improved educational and work achievement (WHO, in print).

Comprehensive parent and child programmes

Parent and child programmes incorporate a variety of components, including family support, preschool education, child care, and health and community services. Typically, such programmes target vulnerable families such as those living in deprived areas or with low incomes. In the UK, Sure Start provides such services to all children living within areas served by a Sure Start Children’s Centre. While there
have been some positive evaluations in terms of children’s behaviour, effects on child maltreatment have yet to be measured. However, similar programmes in other countries have been associated with reductions in child maltreatment and referrals to child protection services (WHO, in print; Love et al, 2005; Reynolds and Robertson, 2003).

Social development programmes
These aim to promote prosocial behaviour and prevent aggressive tendencies developing in children by fostering their social competencies and skills. Skills developed can include anger management, behaviour modification, moral development, empathy, developing and maintaining healthy relationships, problem solving and conflict resolution. Often delivered in school settings, social development programmes can be universal or specifically target at-risk groups. Classroom curriculum can be combined with broader measures to increase children’s social participation (e.g. involvement in school activities). Internationally, the evidence base for the effectiveness of social development programmes is robust with well-implemented programmes having been found to improve social skills and reduce aggression in young people (WHO, in press).

Academic enrichment programmes
Academic enrichment programmes aim to improve children’s academic achievement and school involvement by providing study support and recreational activities outside normal school hours. Academic enrichment programmes can cover a wide range of subjects and skills, including basic numeracy and literacy, curriculum and exam revision, new skills development (e.g. foreign languages), and sports, crafts and adventure activities. Such programmes targeted at disadvantaged children have been found to increase numeracy, literacy and school attendance, and improve exam outcomes and pro-school attitudes (Wilson et al, 2006). In general, research on the effects of programmes on violent outcomes is lacking. However in the US, programmes have been associated with lower engagement in violent crime and less association with delinquent peers (WHO, in print; Murray and Belenko, 2005).

Incentives to attend and complete school
Providing young people with incentives to attend and complete school can increase school participation and educational attainment, and promote factors that can protect young people from involvement in violence. Incentives programmes are typically used in secondary education settings, and involve financial support to encourage youths to complete school and attend higher education. They are usually targeted at youths from low-income families at risk of low academic achievement. In the UK, an incentive scheme to encourage youths to continue on to higher education has been implemented nationally since 2004, showing positive impacts on higher education participation and, for males, on educational attainment. However evaluations of this and similar programmes have not measured violence as an outcome (WHO, in print; Aitken et al, 2007).
**Vocational training programmes for disadvantaged youths**

These seek to provide disadvantaged young people with skills to enter employment. Such programmes aim to prevent unemployment and provide greater potential for young people to earn an income, while reducing young people’s likelihood of involvement in crime. Programmes typically involve, either individually or combined, classroom-based learning, paid work experience and on-the-job training. Since the impact of such programmes on violence has not been widely studied and in general, presents mixed results, more research is needed before any firm conclusions about their effectiveness can be drawn (WHO, in print).

**School-based education programmes**

These programmes have been widely used to increase knowledge about sexual abuse, teach children how to recognise dangerous situations, and develop protective skills. There is evidence that school-based education programmes on sexual abuse can significantly improve knowledge and protective behaviours among pupils (Zwi et al, 2007), but more research is needed about their efficacy in preventing abuse.

**School-based multi-component programmes**

These programmes are commonly used to address cultures of bullying and violence amongst pupils. Programmes can include: the use of positive and negative sanctions for bullying, training in emotions, values and attitudes, peer support networks, befriending schemes, involvement of pupils in resolving conflicts or punishing perpetrators, encouraging bystanders to intervene in bullying incidents, and student-planned after school activities. While there have been some positive evaluations of multi-component programmes in terms of victimisation and perpetration (Foshee et al, 2004; 2005; Komro et al, 2004), reviews of programme evaluations often report mixed results (Hickman et al, 2004; Smith et al, 2003), and more research is needed.

**Use of screening tools to detect violent abuse**

Screening tools aim to identify victims of violence who may otherwise be hidden. A range of screening tools have been developed for use in settings such as emergency departments, pre-natal services and mental health settings, most commonly targeting victims of intimate partner violence. Evidence suggests that screening by skilled healthcare providers is effective in facilitating the disclosure of intimate partner violence and improving identification levels (Olive, 2007; WHO, in print). However, there is little evidence examining the effectiveness of screening for other types of violence. Findings from systematic reviews suggest that while screening for child abuse can identify cases (Nygren et al, 2004) it also results in high levels of false-positives and consequently should not be recommended (MacMillan, 2000).

**Training for health care professionals**

A review of research has shown that a lack of violence-related education among healthcare staff can be a major barrier to the recognition and identification of victims of abuse (Ronnberg et al, 2000). Studies from outside of the UK suggest that
training can have positive impacts on improving healthcare professionals’ knowledge about identifying victims of intimate partner violence (Campbell). However, there is conflicting evidence on the effects training has on victim identification and support provision. Fewer studies have examined the effectiveness of education programmes in tackling other types of violence and more research is needed before any conclusions about efficacy can be drawn (WHO, in print).

**Media campaigns**
Mass media campaigns have been successfully employed to address a wide range of health attitudes and behaviours. However, evaluations of campaigns that address violent behaviours are found much less frequently than for other health behaviours. A meta-analysis of 48 health behaviour campaigns (covering a range of health behaviours) reported that on average, 9% more people performed a health behaviour following a campaign than before (Snyder et al, 2002). In general, while health campaigns to prevent violence can change attitudes, there is less evidence for any change in behaviour (WHO, in print).

**Policies to reduce the concentration of poverty in urban areas**
Although no studies exist in the UK, in the US, providing families with the opportunity to move out of crowded, deprived areas to neighbourhoods with lower poverty levels reduced violent behaviour by adolescents (Ludwig et al, 2001).

**Restriction to lethal means**
There is good evidence from the US and elsewhere that restriction of access to lethal means such as firearms can be effective in lowering levels of firearm related violence. In the UK, since 2006, legislative changes have restricted accessibility to knives further through the following methods: raising the minimum purchasing age for knives from 16 to 18, increasing the maximum prison sentence for knife possession from two to four years, providing police with greater powers to search individuals for knives, providing teachers with powers to search pupils for knives, and adding replica samurai swords to the banned weapons list. However, as yet the impact of these legislative changes on access to knives or violence has not been measured.

### 5.4 Recommendations

**Widely extend 20mph maximum speed zones especially in residential and inner city/town areas.**

In general, increased deprivation is associated with higher rates of injury or death from a road traffic accident (e.g. Adams et al, 2005; Edwards et al, 2006; Graham et al, 2005). There is good evidence that 20mph zones are effective in reducing traffic speeds and reducing injuries in the general population, and in children in particular.
(Morrison et al, 2003; Towner et al, 2001). For example, a review of 20mph zones in London in 2003 found that the frequency of injury accidents in the zones had reduced by around 42%, and serious or fatal injuries by around 53% since their implementation (Webster and Layfield, 2006).

**Widely extend early-years interventions, in particular pre-school enrichment programmes and school based social development programmes.**

There is strong evidence from US-based studies that high quality pre-school enrichment programmes (early academic and social skills such as literacy and numeracy, socialisation, problem-solving and the development of self-esteem) targeted in deprived areas can have long-term positive impacts on participants, including reduced involvement in violence, better mental health and improved educational and work achievement (WHO, in press). Internationally, the evidence base for the effectiveness of school-based social development programmes (skills taught include anger management, behaviour modification, moral development, empathy, developing and maintaining healthy relationships, problem solving and conflict resolution) is robust with well-implemented programmes having been found to improve social skills and reduce aggression in young people (WHO, in print).
Chapter 6: Mental health

Chris Naylor and Angela Greatley

6.1 Introduction

Inequalities in health are not the same as inequalities in life expectancy. Mental health is the biggest single source of the ‘burden of disease’ in England and is strongly socially patterned. The relationship between mental health problems and socioeconomic disadvantage is bi-directional and mutually reinforcing. There is also a bi-directional relationship with physical ill health, with mental health problems leading to increased morbidity and mortality from physical disorders, and vice versa. Mental ill health is therefore often implicated in vicious circles which blight individuals’ lives and exacerbate the inequalities in wider society.

This report touches on all these issues. It starts by outlining the problem – the prevalence of mental health problems in England, and the relationship between these and inequalities. It then describes the evidence relating to three areas which are critical determinants of mental health and inequalities: childhood mental health problems; employment and mental health; physical health and its interaction with mental health

6.2 Overview of socio-economic inequalities in mental health

Mental health problems are highly prevalent in England. 23% of adults met the diagnostic criteria for at least one mental health problem in the most recent national psychiatric morbidity survey (McManus et al 2009). Mental health is intimately connected with many forms of inequality. Consistent associations have been found between mental ill health and various markers of social and economic adversity – e.g. low education, low income; low social status; unemployment; and poorer material circumstances (Melzer et al 2004). The social gradient is particularly pronounced for severe mental illness. For example, in the case of psychotic disorders the prevalence amongst the lowest quintile of household income is nine times higher than in the highest (McManus et al, 2009). However, the social gradient is also evident for common mental health problems, with a two-fold variation between the highest and lowest quintiles (McManus et al, 2009). It is therefore important to keep both common mental health problems and severe mental illness in mind when thinking about mental health inequalities.
Childhood mental health

Mental ill health in childhood is a significant problem. Nearly 10% of all children aged 5-16 in Great Britain have a clinically diagnosable mental health problem (Green et al., 2005). These include 4% with an emotional disorder, 6% with a conduct disorder and 3% with other problems. Some children have more than one type of disorder. Rates of illness are particularly high among children in care and other vulnerable groups such as young offenders (Meltzer et al., 2003; Lader et al., 2000). The social gradient in mental ill health is particularly pronounced in childhood, with a threefold variation in prevalence between the highest and lowest socioeconomic groups. Figure 6.a illustrates this with reference to a number of characteristics.

Figure 6.a: Associations between childhood mental health problems and a range of measures of social disadvantage. Source: Green et al., 2005.

<table>
<thead>
<tr>
<th></th>
<th>% of children with any disorder</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Family type</strong></td>
<td></td>
</tr>
<tr>
<td>Couples</td>
<td>7.7</td>
</tr>
<tr>
<td>Lone parents</td>
<td>15.6</td>
</tr>
<tr>
<td><strong>Educational qualifications of parents</strong></td>
<td></td>
</tr>
<tr>
<td>Degree</td>
<td>4.4</td>
</tr>
<tr>
<td>A-level</td>
<td>8.9</td>
</tr>
<tr>
<td>None</td>
<td>17.0</td>
</tr>
<tr>
<td><strong>Family employment</strong></td>
<td></td>
</tr>
<tr>
<td>Both parents working</td>
<td>7.5</td>
</tr>
<tr>
<td>One parent working</td>
<td>9.3</td>
</tr>
<tr>
<td>No parents working</td>
<td>19.5</td>
</tr>
<tr>
<td><strong>Household income per week</strong></td>
<td></td>
</tr>
<tr>
<td>Over £770</td>
<td>5.3</td>
</tr>
<tr>
<td>Under £200</td>
<td>13.9</td>
</tr>
<tr>
<td><strong>Socio-economic classification</strong></td>
<td></td>
</tr>
<tr>
<td>managerial/professional</td>
<td>5.2</td>
</tr>
<tr>
<td>routine occupations</td>
<td>14.9</td>
</tr>
<tr>
<td>long-term unemployed</td>
<td>16.1</td>
</tr>
</tbody>
</table>
Employment and mental health

Employment status is strongly associated with poor mental health. Levels of employment are lowest amongst those with severe mental illness – only 9% of adults diagnosed with a psychotic disorder are in full-time employment. However, the association also exists for common mental health problems (Singleton et al, 2001). A major review of the literature on work and health argued that the relationship between mental ill health and unemployment can be bi-directional and mutually reinforcing, concluding that “people with mental health problems are more likely to be or become workless…with a risk of a downward spiral of worklessness, deterioration in mental health and consequent reduced chances of gaining employment” (Waddell & Burton 2006). It is through these sorts of self-perpetuating processes that the relationship between mental health and social inequalities is likely to be mediated.

The problem is not only with unemployment per se. Whilst the evidence shows that being employed is better for mental health than being unemployed, workplaces do not always provide a supportive environment conducive to positive mental wellbeing, and levels of mental health literacy and awareness can be low. Most employers vastly under-estimate the extent of mental ill health among their workers. A Shaw Trust survey of senior managers found half thought none of their staff would ever have a mental health problem (Shaw Trust, 2006). A Department for Work and Pensions survey indicated that people find employers to be less helpful in dealing with mental health problems than with physical health problems (Kemp & Davidson, 2007). Evidence discussed in the following section suggests that there is considerable scope for intervening to encourage the development of healthier workplaces.

Physical health and mental health

A significant component in the relationship between mental health and inequalities is the interdependency of mental and physical health. Again, the relationship is bi-directional. The evidence in this section demonstrates that poor mental health impacts strongly on levels of physical ill health and on the prognosis for recovery. Conversely, long-term physical ill health carries with it a risk of undermining mental health and wellbeing. In addition to this, poor mental health often presents to health services as physical symptoms for which no physical cause can be found. These ‘medically unexplained symptoms’ represent a significant drain on health resources as well as on the ability of individuals to live their lives well.

There is good evidence that mental health problems increase the prevalence of a range of physical health conditions such as coronary heart disease, stroke, cancer, diabetes, infections, injuries, and respiratory diseases including asthma (Prince et al 2007; Blaug et al 2007; Osborn et al 2007). For some conditions the associations between mental and physical health is very strong. For instance, individuals with depressive disorders are about twice as likely to develop coronary artery disease, twice as likely to have a stroke and four times as likely to have a myocardial infarction as people who are not depressed (Sederer et al 2006). It has been
estimated that depression and stress explain around 30 per cent of the total risk of heart attacks in the US (PWMH 2006). In the UK, depression has been associated with a fourfold increase in the risk of heart disease, even when other risk factors like smoking are controlled for (Hippsley-Cox et al 1998).

People with these severe and enduring mental illnesses are also at increased risk of coronary heart disease, diabetes, infections and respiratory disease, and are almost twice as likely to die from coronary heart disease as the general population and four times more likely to die from respiratory disease (Harris & Barracough 1998; Phelan et al 2001). A person with schizophrenia can expect to live for ten years less than someone without a mental health problem and much of this excess mortality is caused by physical health problems (Brown et al 2000).

6.3 Overview of evidence on the effectiveness of interventions to tackle inequalities

Interventions in childhood
Childhood mental health problems have identifiable and, in many cases, preventable risk factors. In addition, effective treatment interventions are available for many disorders, as described in a number of NICE guidelines published in recent years (e.g. 2005, 2007b, 2008a). Despite this growing evidence base, a large amount of mental ill health among children and young people goes unrecognised and untreated. Only a quarter of those with a clinically diagnosable disorder have seen any mental health professional in the last year (Meltzer et al., 2003) and a recent BMA guide for healthcare professionals on child and adolescent mental health has highlighted the widespread lack of availability of appropriate treatments (BMA, 2006). Given the social patterning of mental ill health in childhood, simply increasing the availability of evidence-based treatments should have an impact on health inequalities. A similar conclusion was reached by the recent Good Childhood Inquiry, which recommended that the Government invest in the training of at least 1000 extra child psychologists over the next five years (Layard & Dunn, 2009).

The costly and enduring consequences of childhood mental health problems imply that the benefits of effective intervention, particularly of a preventive nature, are extremely large. The lengthy period of time over which benefits accrue mean that their full scale cannot easily be captured in research studies, but where long-term follow-up information is available the evidence suggests that a number of interventions have extremely high returns.

For example, a recent review published by the US Department of Health and Human Services presents findings for a sample of seven different prevention and early intervention programmes aimed at pre-school or school-age children, including life skills training for elementary and middle school students, multi-systemic therapy for 11-17 year-olds, and nurse-family partnerships for low-income pregnant women. In all cases measurable benefits exceed the costs of intervention by large margins, ranging from 3:1 to over 40:1 (US DHHS, 2007). If unmeasured quality of life effects
were also taken account of, the full value of these programmes would be even larger.

Many of these interventions are of relatively low cost. For example, the typical cost of a group-based parent-training/education programme of the kind recommended by for the management of children with conduct disorders is between £1,000 and £2,000 per child (NICE 2007b). Set against potential lifetime benefits of preventing conduct disorder valued at £150,000 (Friedli and Parsonage, 2007) it follows that intervention is worthwhile even if the success rate is as low as 1 in 75. Literature reviews and meta-analyses indicate that success rates above this level can be achieved in real life settings by a variety of interventions, such as parenting programmes and child social skills training for conduct disorder; and cognitive-behavioural therapy for depression and anxiety (see for example Fonagy et al, 2002 and Waddell et al., 2007).

The literature on these interventions stresses the importance of the proper training of practitioners and programme fidelity. Without this, effectiveness is compromised. In the case of parenting interventions, the National Academy for Parenting Practitioners was created in 2007 with a view to raising standards amongst suppliers.

The examples cited above make it clear that it is possible both to treat childhood mental health problems and to prevent them using targeted, secondary prevention approaches. There is less evidence to suggest that population-wide primary prevention is possible, although the recent second-phase evaluation of SureStart programmes is encouraging (Melhuish et al, 2008).

**Employment-based interventions**

There are two forms of employment-based interventions which could play a role in tackling mental health inequalities. Firstly, interventions to help people with severe mental illnesses find and keep paid work. Secondly, interventions to create healthier workplaces which promote and safeguard the mental health of their workforce. This section reviews the evidence on both these areas.

A recent review by the UK Government’s Foresight Programme concluded that “There is strong evidence that programmes to encourage and support people with mental health problems into work offer very high economic and social returns” (Foresight 2008). The evidence suggests that re-employment reverses the ill effects of unemployment - improving self-reported physical health and reducing psychological distress. However, the beneficial effects of re-employment depend on the security of the new job and the employee’s satisfaction with it. Unless adequate support is provided there is a risk of persisting poor employment patterns and future unemployment (Waddell & Burton 2006).

The most effective approach for supporting people with severe mental health problems into employment is provided by the Individual Placement and Support (IPS) model (Bond et al. 2008). This involves placing people in work and then
providing individualised support to both employer and employee for as long as it is required. A major study conducted across six European countries found that IPS participants were twice as likely to gain employment compared with traditional vocational rehabilitation approaches using a ‘train then place’ model (55% versus 28%). These figures suggest that at least half of people with severe mental health problems could return to the workplace if given adequate support. IPS participants also sustained jobs for longer and earned higher wages (Burns et al., 2007).

Workplaces can also do more to respond better to mental distress among their staff to prevent the downward spiral of mental ill health, job loss and long-term poverty and exclusion that plays such a key role in generating and maintaining health inequalities. A few simple (and often inexpensive) measures to reduce stress and support people who become unwell can save thousands in lost output and skills (Sainsbury Centre, 2007):

- Preventing work-related mental distress: e.g. tackling bullying at work, giving workers greater control over how they work.
- Raising awareness among line managers: giving them more knowledge about mental health to help them respond confidently and in good time to staff who appear to be distressed.
- Improving access to help: enabling speedy access to psychological therapies (e.g. cognitive behavioural therapy) that can prevent the downward spiral from taking hold. The Government’s forthcoming ‘Fit for Work Services’ pilots should determine how best to organise employment support alongside the delivery of better access to psychological therapies in primary care.
- Providing effective rehabilitation for those who need time off work, including regular contact during periods of absence.

There is a strong business case for introducing such measures. The cost to businesses in the UK of mental ill health at work is £25.9 billion each year, through a combination of sickness absence, reduced productivity and increased staff turnover. This equates to £1,035 for every employee in the country (Sainsbury Centre, 2007).

Examples of good practice demonstrate that it is possible for employers to reduce these costs and contribute to efforts to reduce health inequalities. BT has reduced its mental health sickness absence by one third through its WorkFit programme that offers support to staff experiencing distress (Sainsbury Centre, 2007). Other examples of good practice include the beyondblue and Mental Health First Aid programmes developed in Australia (Sainsbury Centre, 2008). Forthcoming NICE guidance on promoting mental wellbeing at work, expected September 2009, should clarify what the common components of effective interventions in this area are.

There is enormous potential for the public sector to lead by example. Mental ill health among staff costs the NHS over £1 billion - equivalent to a quarter of the entire mental health budget for England. By demonstrating good employment practices, the NHS and other public sector bodies could not only improve the lives of their employees but show to other employers what can be achieved and the scale of the benefits to business.
Physical health and mental health

The intimate connection between mental and physical health problems is of paramount importance when attempting to tackle health inequalities. A systematic approach towards health inequalities needs to take account of both the mental health component of physical disorders, and the higher rates of physical illness amongst those with mental health problems.

Psychological therapies can improve health and wellbeing by improving people’s ability to manage their long-term physical conditions, such as diabetes and heart disease, through the positive management of their mental health (DH 2007). For example, an estimated 40% of hospital admissions and half of revascularisations can be avoided by providing cognitive behavioural therapy (CBT)-based education to those suffering with refractory angina. Diverse studies have shown that CBT was effective in reducing pain experience and improving positive behavioural expression, appraisal and coping in individuals with chronic pain (Morley et al 2009).

There is huge potential to improve the quality of physical health care provided to people with mental health problems. Research shows that despite increased levels of smoking and excessive drinking, lower levels of physical activity, and poorer diet, people with mental health problems are poorly served in terms of physical health care and health promotion. The diagnosis of a mental health problem can overshadow physical health problems, such that physical health checks are underprovided, symptoms are missed, and opportunities for health promotion are not exploited (Samele et al 2006). A recent survey found that 52% of mental health service users had not been offered an annual health check in the previous two years, despite high levels of primary care attendance (Rethink 2008).

The recent House of Commons Health Committee report on health inequalities drives this point home by highlighting “shocking health differences between mental health patients and the rest of the population”, and concluding that the Marmot Review should pay “particular attention” to the issue of poor access to physical healthcare for people with mental health problems (HOC Health Committee 2009).

Evidence suggests that what is important is the interface between primary and secondary care. Community Mental Health Teams need to be able to take notice of physical health problems and act as an advocate for service users to get these problems properly addressed in primary and secondary care. Third sector agencies can also play a key role, both by directly providing physical health checks and by acting as advocates, accompanying service users to medical appointments (Samele et al 2006).

The prevalence of smoking amongst people with mental health conditions is high, as much as 80% amongst those with a diagnosis of schizophrenia (McNeill 2001). As a

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consequence smoking is far and away the most important aspect of substance abuse in schizophrenia (McCreaddie 2002). The single most important contribution that can be made to improving physical health for mental health service users is help them to stop or reduce their levels of smoking. The complete smoking ban in psychiatric settings will not of itself achieve a reduction in prevalence. Guidance exists to support smoking reduction and cessation for these groups (HDA 2004).

The NICE Guidance on management of schizophrenia (NICE 2002) supported the development of primary care registers of people with severe mental illness. The subsequent GP contract of 2004 included incentive payments to establish such registers. Behaviour change programmes for smoking, diet, exercise etc. should address underlying mental health issues. Implementation of these guidelines needs to be as comprehensive as possible and monitored by commissioners.

Within secondary care settings, a good medical history is an essential starting point in ensuring that the physical health needs of people with severe mental illness are addressed. Psychiatrists have an important role in helping to tackle the general ill health, excess of undiagnosed physical illness and reduced survival rates among their patients (Phelan & Blair 2008).

For people with medically unexplained symptoms (MUS), correctly identifying and treating the psychological factors underlying poor physical health has the potential to improve outcomes. Martin et al have shown that providing psychological therapies for those suffering with MUS produced a reduction of 50% in GP visits (Martin et al 2007). Guidelines are available for the most effective approaches for managing different forms of MUS. However, these guidelines are not always adhered to and the effective interventions are often not available. Community mental health teams and primary care mental health services have not been successful in engaging with patients experiencing MUS, as they often do not perceive their condition to be related to mental health problems.

6.4 Recommendations

The evidence cited in the previous sections makes it clear that if health inequalities are to be successfully reduced, mental health will need to be a central part of the strategy. This section summarises the key messages from the research, and draws recommendations on the basis of this.

Childhood mental health

Mental ill health among children and young people is a major public health problem in its own right and one which is of particular importance in the inequalities context, as prevalence is strongly associated with socio-economic disadvantage and problems frequently persist into adult life, leading to a wide range of negative outcomes. Cost-effective, evidence-based interventions are available that would have a sizeable impact on health and other inequalities, both in childhood and in later life. However, these interventions are insufficiently used.
• **Recommendation one:** Improve prevention and treatment of childhood mental health problems across the whole social gradient, with a particular focus on disadvantaged groups. This could involve:
  o Improving diagnosis of childhood mental health problems, and increasing access to effective treatments
  o Increasing provision of targeted prevention programmes e.g. parent-training/education programmes

**Employment and mental health**

The interaction between mental ill health and unemployment plays an important part in generating and reinforcing inequalities. Mental health problems can be both a cause and a consequence of unemployment. Difficulties finding and keeping paid work can be the start of a downward spiral leading to lifelong social exclusion. This is in spite of the fact that the majority of people with mental health problems express the desire to return to the workplace. There exists effective, evidence-based interventions both for supporting people with mental health problems back into work, and for making workplaces more mental health-friendly environments that do not cause or exacerbate mental health problems. The economic case for taking such action is increasingly compelling.

• **Recommendation two:** Decrease the association between mental ill health and unemployment through the use of both targeted support and broader health promotion approaches. This could involve:
  o Using effective, evidence-based methods (e.g. Individual Placement and Support) to support people with severe mental illnesses to get and keep paid work
  o Encouraging the creation of healthier workplaces by spreading existing good practice, with the public sector taking a lead

**Physical health and mental health**

The intimate connection between mental and physical health problems is of paramount importance when attempting to tackle health inequalities. Poor mental health impacts strongly on levels of physical ill health and on the prognosis for recovery, partly because people with a mental health diagnosis receive a poorer service for their physical health needs. Conversely, long-term physical ill health carries with it a risk of undermining mental health and wellbeing. A systematic approach towards health inequalities needs to take account of both the mental health component of physical disorders, and the higher rates of physical illness amongst those with mental health problems.

• **Recommendation three:** Improve physical health care for people with mental health problems and mental health care for people with physical health problems. This could involve:
  o Expanding the provision of health checks and targeted health promotion services for people with mental health problems, and
- redesigning the interface between primary care and specialist mental health services
  - Giving increased emphasis on the mental/psychosocial dimension of physical health when designing interventions to improve health and reduce health inequalities
  - Improving the identification and treatment of psychological factors underlying 'medically unexplained' physical symptoms
Chapter 7: Health and Wellbeing of Older People

Kerry Joyce, Jerry Morris, Paul Wilkinson, Alan Dangour, Christopher Deeming and Sally Greengross

7.1 Introduction

With the increasing recognition that the UK population is ageing (people aged 65 years and over make up an increasing proportion of society), government policy is beginning to address the associated consequences for health care and public services in general (Association of Public Health Observatories, 2008; McMunn et al., 2006). The evidence base regarding issues of inequality in older people’s health is less developed when compared with inequalities research in the working age population (McMunn et al., 2006). This is especially true with regard to those older people in late old age. This report will provide an overview of the inequalities in health outcomes that exist in relation to socioeconomics, ethnicity, geography and gender in the older population (aged 65 years and above). A brief description of the policy approaches developed to address these inequalities will follow before the discussion moves on to propose a recommendation targeted upstream at the broader determinants of health in old age. The recommendation, which is underpinned by corroborating evidence, proposes policy review to support implementation of a Minimum Income for Healthy Living in older people.

7.2 Overview of socio-economic inequalities in health amongst the elderly

According to Age Concern, approximately one in five older people live in poverty (Age Concern England, 2006). Data from the Health Survey for England 2005 show that disparities exist between low and high socioeconomic groups in a number of health indicators for older people, with people in the lowest quintile of equivalised income reporting lower levels of good self-reported general health (see Figure 7.a) and fruit and vegetable consumption and higher levels of mobility problems and lower limb impairment (Craig and Mindell, 2007). Similarly, the prevalence of ischaemic heart disease was higher in Spearhead5 PCTs compared with non-Spearhead PCTs. Diabetes prevalence and uncontrolled hypertension were also

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5 The Spearhead group refers to those Primary Care Trusts and Local Authorities selected for targeted action in 2004 to reduce health inequalities due to their presence in the lowest quintile for at least 3 of the following 5 measures of health inequality: deprivation; male life expectancy; female life expectancy; cancer mortality; and CVD mortality
inversely related to income (Craig and Mindell, 2007). In relation to social capital at the local level (defined as the resources available through membership of social networks or communities (Craig and Mindell, 2007, p.15)) more people in Spearhead areas reported negative views about their neighbourhood. These socioeconomic differences in health outcomes are supported by the findings of other studies. For example, Chandola et al (2007) illustrated, using longitudinal data from the Whitehall II study, that people from lower occupational grades showed a steeper decline in physical health than those in higher grades. Differences in self-reported health were also found between occupational grades and a widening of relative inequality was demonstrated with increasing age.

Figure 7.a: Socio-economic inequalities in self-reported health: comparison of Spearhead and non-Spearhead PCTs

Source: Craig and Mindell (2007)
6.3 Overview of evidence on the effectiveness of interventions to tackle inequalities

Provision of a minimum income for healthy living (MIHL) in older people is a preventative approach which would work upstream on the broader determinants of health by ensuring equality of opportunity to satisfy basic requirements for personal health. It is important to note that although we propose the MIHL for older people, Morris et al (2009) argue that the MIHL template is relevant to and should be adopted for the whole population.

Based on the observation that scientific knowledge relating to personal needs for healthy living is not adequately translated into policy, Morris et al (2009) propose a direct preventive approach with the suggestion of a Minimum Income for Healthy Living (MIHL) model for explicating the links between income and health to inform policy making. The rationale behind the evidence-based Minimum Income for Healthy Living (MIHL) is to provide a benchmark for what is a safe minimum standard of living and to increase equality of opportunity of health for the poorest groups of the population. The core principles of the MIHL are set out in Table 1

Table 1: Principles of the MIHL

<table>
<thead>
<tr>
<th>I</th>
<th>Consensual, solid, science base of personal needs for health and wellbeing.</th>
</tr>
</thead>
<tbody>
<tr>
<td>II</td>
<td>Translation of this knowledge into acceptable ways of living for specific population groups, with their realistic minimal personal costs</td>
</tr>
<tr>
<td>III</td>
<td>Formulation of popular consensus on other necessities for healthy decent participatory living, again with realistic and minimal personal costs.</td>
</tr>
<tr>
<td>IV</td>
<td>II and III and their prices can conventionally be regarded as ‘budget standards’.</td>
</tr>
<tr>
<td>V</td>
<td>Popular acceptability.</td>
</tr>
<tr>
<td>VI</td>
<td>Sensitivity analyses of variation by region, ethnicity, etc.</td>
</tr>
</tbody>
</table>

Source: Morris and Deeming, 2004

The MIHL model fits with current government policy in that it is evidence-based, requires a joined-up government approach, works towards reducing poverty and social exclusion and assists those in greatest need with the aim of reducing persistent inequalities (Morris and Deeming, 2004). There is potential also that implementation of the MIHL framework in reviewing cross departmental social policy may help to reduce costs to health and social care services by improving the broader determinants of health such as diet, social participation, housing, access to goods and services.

Morris et al (2000) illustrate how gains in health and reduction in inequalities can be achieved through provision of basic and unmet needs relating to nutrition, physical activity, housing, psychosocial interactions, transport, medical care and hygiene.
Table 7.1 sets out a breakdown of the costs to fulfil basic needs for older people without significant disability calculated as of April 2008. The MIHL was calculated to be £144.20 for single persons and £230.00 for couples; this excludes rent, mortgage, council tax and allows for government and Local Authority provisions. Recent analyses show that there is a deficit between the current state pension (supplemented with pension credit guarantee and winter fuel allowance) and the calculated MIHL (see Table 7.c; Morris et al., 2007).

### Table 7.b: MIHL components and summary personal costs. Older people, 65+, without significant disability living in the community, England, April 2008.

<table>
<thead>
<tr>
<th>Weekly cost (£s)</th>
<th>Singles</th>
<th>Couple</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Diet/nutrition. Weight regulation</strong></td>
<td>35.30</td>
<td>69.70</td>
</tr>
<tr>
<td><strong>Physical activity: health, fitness. Anti-ageing. Autonomy. Weight regulation</strong></td>
<td>2.30</td>
<td>4.30</td>
</tr>
<tr>
<td><strong>Housing, a home</strong></td>
<td>35.00</td>
<td>38.20</td>
</tr>
<tr>
<td><strong>Psychosocial relations, social connections/participation. Active minds. Education. Anti-ageing.</strong></td>
<td>23.50</td>
<td>34.00</td>
</tr>
<tr>
<td><em><em>Getting about</em> (personal transport)</em>*</td>
<td>3.50</td>
<td>6.90</td>
</tr>
<tr>
<td><strong>Medical care</strong>§</td>
<td>2.20</td>
<td>4.40</td>
</tr>
<tr>
<td><strong>Hygiene</strong>†</td>
<td>5.30</td>
<td>8.50</td>
</tr>
<tr>
<td><strong>Other costs of healthy social living</strong>ζ</td>
<td>12.90</td>
<td>25.50</td>
</tr>
<tr>
<td><strong>Contingencies. Inefficiencies. Emergencies</strong></td>
<td>14.20</td>
<td>18.50</td>
</tr>
<tr>
<td><strong>Personal choice/error</strong></td>
<td>10.00</td>
<td>20.00</td>
</tr>
<tr>
<td><strong>Total MIHL at April 2008</strong></td>
<td><strong>144.20</strong></td>
<td><strong>230.00</strong></td>
</tr>
</tbody>
</table>

* – Prominently bus, occasional taxi
§ – The few residuals in England
† – Including personal care, household cleaning, laundry, dry cleaning
ζ – e.g. clothing, households goods

MIHL excludes rent, mortgage, Council Tax, and allows for Government and Local Authority provisions.

Source: Morris et al., 2009; Age Concern, 2005
Table 7.c. Numbers (%) of pensioner persons aged 65+ years in England, 2006/07, in private households and with no income from earnings, living below the defined Minimum Income for Healthy Living (MIHL) (Age Concern, England, 2005; Department for Work and Pensions 2006/07; Morris et al., 2007; Morris and Deeming, 2004)

<table>
<thead>
<tr>
<th></th>
<th>Single pensioners</th>
<th>Pensioner couples$</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>(MIHL$ = £122.28 /week)</td>
<td>(MIHL$ = £194.78/week for couples)</td>
</tr>
<tr>
<td></td>
<td>No. below MIHL</td>
<td>Total</td>
</tr>
<tr>
<td>65-84 years</td>
<td>510,000</td>
<td>2,710,000</td>
</tr>
<tr>
<td>85+ years</td>
<td>150,000</td>
<td>610,000</td>
</tr>
<tr>
<td>Total</td>
<td>650,000</td>
<td>3,330,000</td>
</tr>
</tbody>
</table>

* All numbers rounded to the nearest 10,000, percentages calculated on unrounded estimates
† MIHL excludes rent, mortgage, Council Tax
\$ A pensioner couple are married or cohabiting pensioners where one or more adults are aged 65+. Single or couple pensioners may be living in households with other adults
ζ For couples, age relates to head of household
Source: DWP, 2008.

Source: Morris et al., 2009; Age Concern, 2005
The process of formulating the MIHL necessitated negotiating and balancing evidence from research, trends in national expenditure and observed social norms; it was inevitably a process characterised by trade-off (Morris and Deeming, 2007). Importantly, Morris and Deeming do not deny the complex nature of the social determinants of health and recognise that variables other than income, such as education, culture, attitudes and habits shape individual capacities for healthy living (Morris and Deeming, 2004). Also the authors caution that the MIHL is subject to changes in time, person (that is population subgroups, i.e. older people, young men or families with children, minority ethnic groups), place (UK context) and of course developments in scientific knowledge.

Although some may criticise the MIHL model as reductionist and mechanistic, it represents a laudable attempt to use the best possible scientific and socially relevant evidence to underpin a move towards increasing equality and life chances for all older people. The focus is on creating conditions for healthy living by providing an assessment of the minimum costs required to meet those basic needs. Clearly, the basic tenets of public health - a collective response and social justice - are at the very core of this recommendation (Morris et al., 2000). The MIHL model would provide a template for conceptualising the relationship between income and health needs, thus helping to facilitate a shift in thinking towards upstream strategies to tackle pervasive patterns of inequality. Morris and Deeming (2004, p.442) argue that the MIHL can provide a “new welfare safety net” to counteract poverty, improve living standards and henceforth life chances for those most at risk, in this instance older people. Both Age Concern England and the World Health Organisation support such a recommendation.

7.4 Recommendations

Implement a Minimum Income for Healthy Living (MIHL) in Older People

Implement a minimum income for healthy living (MIHL) in older people is a preventive approach which would work upstream on the broader determinants of health by ensuring equality of opportunity to satisfy basic requirements for personal health.

Based on the inextricable link between income and health, Morris et al (2001) illustrate how gains in health and reduction in inequalities can be achieved through provision of basic and unmet needs relating to nutrition, physical activity, housing, psychosocial interactions, transport, medical care and hygiene. Recent analyses show that there is a deficit between the current state pension (supplemented with pension credit guarantee and winter fuel allowance) and the calculated MIHL (Morris et al., 2007). The MIHL model would provide a template for conceptualising the relationship between income and health needs, thus helping to facilitate a shift in thinking towards upstream strategies to tackle pervasive patterns of inequity. Both Age Concern England and the World Health Organisation support such a recommendation.
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Appendix: Full List of Recommendations

A. Key Recommendations

Recommendation 1: Reduce smoking in the most hard to reach groups by focusing on price and availability, while providing stop smoking services to help the poorest groups quit.

Recommendation 2: Improve availability of and access to healthier food choices amongst low income groups.

Recommendation 3: Improve the early detection and treatment of cancer, diabetes and cardiovascular disease, especially among the more vulnerable groups.

Recommendation 4: Introduce of a minimum price per unit for alcohol.

Recommendation 5: Improve physical health care for people with mental health problems and mental health care for people with physical health problems.

B. Research Recommendation

Recommendation 6: Fund more studies which examine the impacts of interventions on socio-economic health inequalities.

C. Supporting Recommendations

Recommendation 7: Improve the social and physical environment to make it easier for lower socio-economic groups to engage in physical activity.

Recommendation 8: Improve infant and maternal nutritional status.

Recommendation 9: Enhance the psycho-social wellbeing of lower socio-economic groups.

Recommendation 10: Increase use of contingency management within drug treatment programs.
Recommendation 11: Ensure widespread implementation of 20mph maximum speed limits, especially in residential areas.

Recommendation 12: Widespread introduction of early years interventions in particular pre-school enrichment programmes and school based social development programmes.

Recommendation 13: Improve prevention and treatment of childhood mental health problems across the whole social gradient, with a particular focus on disadvantaged groups.

Recommendation 14: Decrease the association between mental ill health and unemployment through the use of both targeted support and broader health promotion approaches.

Recommendation 15: Implement a Minimum Income for Healthy Living (MIHL) in Older People