



Faculty of Public Health

of the Royal Colleges of Physicians of the United Kingdom

Working to improve the public's health

UK Faculty of Public Health (FPH) response to the Strategic Review of Health Inequalities in England Post 2010 (Marmot Review)

The UK Faculty of Public Health (FPH) is the leading professional body for public health specialists in the UK. It aims to advance the health of the population through three key areas of work: health promotion, health protection and healthcare improvement. In addition to maintaining professional and educational standards for specialists in public health, FPH advocates on key public health issues and provides practical information and guidance for public health professionals.

The FPH welcomes the opportunity to contribute to the Marmot review of health inequalities – an issue which is at the heart of public health and underpins its central principle of improving population health.

Question 1: Are the Principles and values of social justice the right approach to addressing the social determinants of health inequality?

Yes, the principles and values of social justice are absolutely the right approach to addressing the social determinants of health inequalities. The review largely presents a lucid and comprehensive survey of the key causes of poor health and the reasons why some people fare better than others.

The review rightly focuses on socio-economic inequalities, as these frequently compound other inequalities related to gender, disability, age or race. However, more consideration needs to be made of the wider social justice issues beyond income inequalities, including social discrimination and its impact upon health. For example, discrimination based upon gender, age, race, disability, mental health and sexuality all have an impact upon health inequalities, by a variety of mechanisms, including excess rates of violence and abuse, social exclusion and reduced employment opportunities. The focus on income inequalities may hide the often very large increased health inequalities of discriminated groups. More emphasis needs to be placed upon this and supported by evidence of increased degree of health inequality.

Question 2: Are there any significant gaps in the evidence presented in the task group reports?

The sheer weight of evidence, and the manner in which it is presented by the task group reports, makes it difficult to say absolutely whether there are any gaps; however, by the same token, it seems a very comprehensive summary of the evidence available.

As there are known to be many gaps in evidence it is important that innovation in practice and policy is evaluated in ways which will allow learning to be achieved. Cross country comparisons, natural experiments, and introduction of new initiatives in experimental or quasi- experimental designs are particularly likely to provide useful information without stifling innovation.

Nonetheless, the following areas are relatively weak compared to their impact upon inequalities in health:

- Conduct and emotional disorders in Children and Young People
- Adverse Childhood Experiences
- Violence and abuse (in childhood and adulthood)
- Housing
- Mental health – although psycho-social impact is mentioned a number of times more emphasis is needed on the relative contribution of poor mental health upon overall burden of disease (the largest single contributor – the main focus is made on physical causes e.g. CHD, Cancer etc with no specific mention of mental health)

Question 3: Is there additional alternative evidence available which the review should be considering?

A recent review suggests that individual-based prevention interventions may widen the social inequalities gap¹. This should be considered when taking next steps (question 10).

On the gaps outlined in the answer to question 2, evidence that should be considered is annexed to our response.

Although poor mental health and psycho-social impact is mentioned upon health inequalities, this needs much greater emphasis at the beginning and throughout the document. It does not sufficiently outline the links between poor mental health and risk taking behaviour (see Table 1 in Appendix). One in ten children and young people have a mental health problem and this is predicted to increase.

Additionally, more could be made of the physiological links between stress, anxiety/depression, adrenalin and cortisol production and negative physical health outcomes (see Table 2, and Figure 1 in Appendix).

This is an area that contributes significantly to wider health inequalities. A meta-analysis of 15 population based studies found that depression diagnosis in those over 65 was linked to subsequent all-cause mortality and yielded a pooled odds ratio of 1.7 (Saz and Dewey, 2001).

Implications should be considered within mainstream physical health interventions in terms of common care pathways – for example, identifying and treating mental health problems in those presenting with physical health problems (and vice versa).

Greater links need to be made between violence and abuse, adverse childhood experiences and poor mental health, risk taking behaviour and longer- term health inequalities (see summary paper attached in Appendix).

¹ (White M, Adams J, Heywood P. “How and why do interventions that increase health overall widen inequalities within populations?” in Babones S (Ed.). Health, inequality and society. Bristol: Policy Press (2009).)

Question 4: Are these the most relevant themes?

Yes, largely, with the caveats outlined above and below.

In particular, we applaud the inclusion of a working group on sustainable development. As this group reports, echoing the conclusions of the recent UCL/Lancet project² "climate change presents unprecedented and potentially catastrophic risks to health". It is indeed the biggest public health threat of the 21st century, and we urge the Review team to reflect this reality in its final report. The Review covers a vast amount of ground on a number of critically important topics, but it is vital that this issue is not lost amongst them.

Question 5: Do the themes provide a sufficiently comprehensive and appropriate framework through which to develop the review's proposals?

The multiple task groups divide up the evidence and create an occasionally fragmented approach to understanding the links between common areas in the determinants of health. A more strategic approach is needed which identifies the key determinants affecting inequalities in health (including burden of disease/ size of impact of determinants/ size of population affected). Many of these are in common and affect similar population groups. 'Hidden' determinants are relatively underrepresented including poor mental health and violence and abuse.

'Common solutions' need to be emphasised – interventions that are upstream, have multiple health (and wider social effects) – for example, safe green spaces; parental mental health and parenting skills; insulating homes.

Furthermore, a greater emphasis needs to be made on the life-course perspective throughout the report, outlining key interventions at different life stages and those that support the overall community. A life-course approach needs to recognise that action to address health inequalities needs to be sustained. The inter-generational transmission of inequalities may take (at least) a generation to eradicate. This makes action to start to tackle these inequities urgent.

Question 6: Are there alternative themes which need to be explored and what evidence exists to support their inclusion?

As outlined above, the links between social discrimination and health inequalities should be explored further, given their impact through violence, abuse, social exclusion etc.

Question 7: What are your views on the challenges raised?

This is an astute summary of the challenges facing the review, and the implementation of its recommendations. Addressing the issue of the social gradient, especially allied with the recent evidence by Wilkinson and Pickett³ that continues to gain currency amongst policymakers, is a key priority.

² The Lancet (vol 373:9676 (p1699-1734), May 16-22, 2009) vol 373:9676 (p1699-1734)

³ Richard Wilkinson and Kate Pickett, 2009, *The Spirit Level: Why More Equal Societies Almost Always Do Better*

Question 8: Are there other significant challenges the review needs to address?

The last FPH survey of the public health workforce, conducted in autumn 2007, shows that the number of public health consultants/specialists across the UK has declined still further to 939 – a fall of 30% since 2003. If government is committed to reducing health inequalities, then it must (in addition to protecting the expertise currently in place) support the development of a well trained and adequately resourced specialist public health workforce.

Question 9: Are the current systems for delivering reductions in health inequalities the most appropriate? What would improve them?

The current focus on life expectancy and mortality rates (particularly in the 2010 Health Inequalities PSA targets⁴) should be applauded - it is important that this is addressed, as (for example) infant mortality rates vary greatly across different parts of the country, and overall rates for England are still amongst the highest in Western Europe. The report further illustrates the shocking disparities between mortality rates across the social strata.

However, this is still a somewhat crude measure for measuring inequalities across the country, and while not losing the importance of reducing inequalities in infant mortality, life expectancy and overall mortality, it is imperative that measures are developed to deliver a more nuanced national picture of population health and wellbeing. We are pleased that the review has recognised this, and the focus “beyond mortality” on inequalities in “being well” and “well being” is very welcome.

The Health Poverty Index visualisation tool (<http://www.hpi.org.uk/>) developed by the NHS Information Centre is a useful step towards this, and deserves wider publicity. Similarly, the data provided by Public Health Observatories should also prove to be an invaluable resource for both public health specialists and policymakers at large.

As the mental health chapter (6) of the Priority public health conditions task group report says “Inequalities in health are not the same as inequalities in life expectancy.” Greater focus is needed on a wider range of indicators, including those looking at overall happiness and wellbeing. Richard Layard’s recent, popular work⁵ has nudged policymakers in the right direction, but there is still much work to be done.

Question 10: Are the proposed interventions those most likely to impact on health inequalities?

Health inequalities, as the review acknowledges, are the result of a complex bundle of different factors. The evidence cited above that individual-based prevention interventions may widen the social inequalities gap makes the task proposed even trickier. There is no panacea or golden bullet: it is clear that no one intervention will improve health inequalities. As the review correctly identifies, what is required is a

⁴ Department of Health, Health Inequalities PSA Target
http://www.dh.gov.uk/en/Publichealth/Healthinequalities/Healthinequalitiesguidancepublications/DH_064183

⁵ Richard Layard, 2006, *Happiness: Lessons from a new science*

long-term, multilateral, holistic approach, delivered at scale, that has buy-in from every agency and government department. Again, the work of Wilkinson and Pickett⁶ has relevance, with its emphasis on reducing inequalities across society.

⁶ Richard Wilkinson and Kate Pickett, 2009, *The Spirit Level: Why More Equal Societies Almost Always Do Better*

Appendix

Table 1

Related Health Risk Taking Behaviour associated with poor mental health in C & YP (Green 2004)

Risk Behaviour	Emotional Disorder	Conduct Disorder	No Disorder
Smoke Regularly (age 11- 16)	19%	30%	5%
Drink at least twice a week (age 11- 16)	5%	12%	3%
Ever Used Hard Drugs (age 11- 16)	6%	12%	1%
Have ever self harmed (self report)	21%	19%	4%
Have no friends	6%	8%	1%
Have ever been excluded from school	12%	34%	4%

Table 2

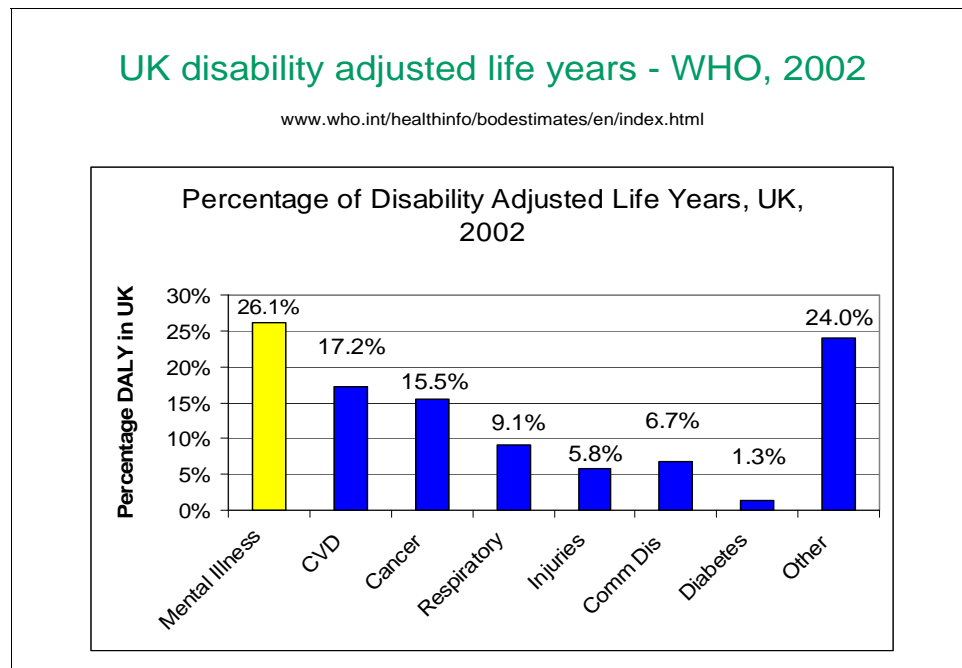
Interaction between mental and physical health - Process

- The Hypothalamic Pituitary Adrenal (HPA) axis acts as a communication system between the limbic system and the body
- Increased stress levels increases release of adrenalin which increases blood pressure, heart rate & heart rate incoherence

Increased stress levels releases cortisol, chronic higher levels of cortisol are associated with:

- Weight gain (interfering with central appetite control and insulin resistance)
- Influences inflammatory responses (eg CRP) with increased heart disease and anti-body formation
- Reduces memory, attention and neurogenesis (nerve formation) – depression reduces volume of hippocampus

Figure 1



A Summary of the Adverse Childhood Experiences (ACE) Study

The Adverse Childhood Experiences (ACE) Study is the largest study of the health and social effects of adverse childhood experiences throughout the lifespan. The study is an ongoing, decade-long collaboration between the Division of Adult and Community Health at the Centers for Disease Control and Prevention (CDC) and Kaiser Permanente's, a leading medical insurer in the US, Department of Preventive Medicine in San Diego.

During two survey waves conducted during 1995 to 1997, 17,337 predominantly well educated, middle-class members of the Kaiser Permanente Medical Care Program in San Diego, California agreed to participate in the Study, as part of a comprehensive medical evaluation. The ACE study population included 9,367 (54%) women and 7,970 (46%) men (total sample=17,337). Their mean age was 56 years. Seventy-five percent were white, 11% were Hispanic and 5 % African American. The survey population was generally well educated; 39% were college graduates, 36% had some college education, and 18% were high school graduates. Only 7% had not graduated from high school.

Each study participant completed a confidential survey that contained questions about childhood maltreatment and family dysfunction, as well as items detailing their current health status and behaviours. This information was combined with the results of their physical examination to form the baseline data for the study. The Study assessed 10 categories of stressful or traumatic childhood experiences. Childhood abuse, neglect, and exposure to other traumatic stressors termed *adverse childhood experiences* (ACE) are common, even in this well-educated, predominantly middle class study sample. Almost two-thirds of the study participants reported at least one ACE, and more than one in five reported three or more ACE.

Table 1: Prevalence of Adverse Childhood Experiences in study

Category and type of Adverse Childhood Experience. (ACE)	Percentage reported prevalence
Household dysfunction:	
Substance abuse	27%
Parental sep/divorce	23%
Mental illness	17%
Battered mother	13%
Criminal behavior	6%
Abuse:	
Psychological	11%
Physical	28%
Sexual	21%
Neglect:	
Emotional	15%
Physical	10%

The ACE Study uses the ACE Score, which is a count of the total number of ACE respondents reported. The ACE Score is used to assess the total amount of stress during childhood and has demonstrated that as the number of ACE increase, the risk for the following health problems increases in a strong and graded fashion:

- alcoholism and alcohol abuse
- chronic obstructive pulmonary disease (COPD)
- depression
- foetal death
- health-related quality of life
- illicit drug use
- ischemic heart disease (IHD)
- liver disease
- risk for intimate partner violence
- multiple sexual partners
- sexually transmitted infections (STIs)
- smoking
- suicide attempts
- unintended pregnancies

In addition, the ACE Study has also demonstrated that the ACE Score has a strong and graded relationship to health-related behaviours and outcomes during childhood and adolescence including early initiation of smoking, sexual activity, and illicit drug use, adolescent pregnancies, and suicide attempts.

Table 2: Number of ACE scores by gender.

Number of Adverse Childhood Experiences (ACE Score)	Women	Men	Total
0	34.5	38.0	36.1
1	24.5	27.9	26.0
2	15.5	16.4	15.9
3	10.3	8.6	9.5
4 or more	15.2	9.2	12.5

The ACE Study findings suggest that these experiences are major risk factors for the leading causes of illness and death as well as poor quality of life. One of the strongest relationships seen was between the ACE score and alcohol use. The negative health and social consequences of alcohol abuse and alcoholism constitute a major public health problem and ACEs have a particularly strong association with alcohol abuse. Similarly, ACEs increase the likelihood of early smoking initiation and also indicate a propensity for continued smoking and the increased risk of Chronic Obstructive Pulmonary Disease.

Table 3: Increased Risks associated with an ACE score of 4 or more:

Risk factors	Odds ratio
Smoking	OR 2.2; (CI: 1.7-2.9)
Severe obesity – BMI > 35	OR 1.6; (CI: 1.2-2.1)
Depression in last year	OR 4.6; (CI: 3.8-5.6)
Ever attempted suicide	OR 12.2; (CI: 8.5-17.5)
Alcoholic	OR 7.4; (CI: 5.4-10.2)
Illicit drug use	OR 4.7; (CI: 3.7-6.0)
Injecting drug use	OR 10.3; (CI: 4.9-21.4)
50 plus sexual partners	OR 3.2; (CI: 2.1-5.1)
Sexually Transmitted Infection	OR 2.5; (CI: 1.9-3.2)
Long term risk factors	
Ischaemic Heart Disease	OR 2.2; (CI: 1.3-3.7)
Any Cancer	OR 1.9; (CI: 1.3-2.7)
Stroke	OR 2.4; (CI: 1.3-4.3)
Chronic bronchitis or emphysema	OR 3.9; (CI: 2.6-5.8)

Information from the ACE Study suggests that stressors during childhood and adolescence represent a common pathway to a variety of important long-term behavioral, health, and social problems. Thus, an integrated rather than a separate or categorical, perspective on the origins of health and social problems throughout the lifespan is needed.

Table 4: Health and Social Problems shown to have a graded relationship to the ACE score.

Type of Problem	Outcomes associated with Adverse Childhood Experiences
Prevalent Diseases	Ischemic Heart Disease, Cancer, Chronic Lung disease, Skeletal fractures, sexually transmitted infections, and liver disease.
Behavioural Risk factors	Smoking, alcohol abuse, multiple sexual partners, obesity, illicit drug use, injected drug use, multiple somatic symptoms, poor related self-rated health, high perceived risk of AIDS
Poor Mental Health	Depressive disorders, anxiety, hallucinations, panic reactions, sleep disturbances, memory disturbances, poor anger control, risk of perpetrating or being a victim of domestic violence.
Sexual and Reproductive Health	Early age at first intercourse, sexual dissatisfaction, teen pregnancy, unintended pregnancy, teen paternity, foetal death.
General Health and Social Problems	High perceived stress, difficulty with job performance, relationship problems, marriage to an alcoholic.

(Table abridged from: Anda R. The Health and Social Impact of Growing Up with Adverse Childhood Experiences.)

(A complete bibliography of ACE Study Publications listed by topic area is available online at www.cdc.gov/nccdphp/ace/)

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