

**Rachel Jenkins, Howard Meltzer, Peter B. Jones, Terry Brugha, Paul Bebbington, Michael Farrell, David Crepaz-Keay, [Martin Knapp](#)**  
**Mental health: future challenges**

**Technical Report**

**Original citation:**

Jenkins, Rachael and Meltzer, Howard and Jones, Peter and Brugha, Terry and Bebbington, Paul and Farrell, Michael and Crepaz-Kay, David and Knapp, Martin (2008) *Mental health: future challenges*. Foresight, 104-08-Fo/on. The Government Office for Science, London, UK.

This version available at: <http://eprints.lse.ac.uk/32763/>

Originally available from [Foresight](#)

Available in LSE Research Online: June 2012

© 2008 Crown Copyright

LSE has developed LSE Research Online so that users may access research output of the School. Copyright © and Moral Rights for the papers on this site are retained by the individual authors and/or other copyright owners. Users may download and/or print one copy of any article(s) in LSE Research Online to facilitate their private study or for non-commercial research. You may not engage in further distribution of the material or use it for any profit-making activities or any commercial gain. You may freely distribute the URL (<http://eprints.lse.ac.uk>) of the LSE Research Online website.



Government  
Office for  
**Science**

•••• Foresight



# Mental health:

Future challenges

MENTAL CAPITAL AND WELLBEING PROJECT

# **Mental Capital and Wellbeing: Making the most of ourselves in the 21st century**

## **Mental health: Future challenges**

Rachel Jenkins  
Howard Meltzer  
Peter B. Jones  
Terry Brugha  
Paul Bebbington  
Michael Farrell  
David Crepaz-Keay  
Martin Knapp

### **This report is intended for:**

Policy makers and a wide range of professionals and researchers whose interests relate to mental health. The report focuses on the UK but is also relevant to the interests of other countries.

**This report should be cited as:**

Jenkins, R., Meltzer, H., Jones, P.B., Brugha, T., Bebbington, P., Farrell, M., Crepaz-Keay, D. and Knapp, M. (2008)  
Foresight Mental Capital and Wellbeing Project.  
Mental health: Future challenges.  
The Government Office for Science, London.

The authors of this report and the Government Office for Science would like to thank the many experts from around the world who contributed to the work of this report. In particular: Professor Eugene Paykel and Professor David Kingdon for their advice in the peer review process; Professor Louis Appleby and Hugh Griffiths from the Department of Health; the authors of the supporting papers that were commissioned; the firm shiftN who worked on the futures and systems aspects; and the large number of individuals and organisations and parts of Government who freely contributed advice and assistance, and who generously allowed their research results to be used.

*The Foresight Programme is run by the UK Government Office for Science under the direction of the Chief Scientific Adviser to HM Government. Foresight strengthens strategic policy-making in government by embedding a futures approach.*

# Contents

Executive summary	7
1. Introduction	12
2. The situation today	20
3. How the prevalence and impact of mental disorders could change in the future	58
Appendix A: Overview of the work of the Foresight Project on Mental Capital and Wellbeing	73
Appendix B: Mental health – a visual representation	76
Appendix C: Migration and mental health	83
Appendix D: International comparisons of mental disorders	85
Appendix E: Structure of the Project reports and supporting papers	88
References	90

# Executive summary

The aim of the Foresight Project on Mental Capital<sup>1</sup> and Wellbeing<sup>2</sup> ([www.foresight.gov.uk](http://www.foresight.gov.uk)) is to advise the Government on how to achieve the best possible mental development and mental wellbeing for everyone in the UK in the future.

The starting point of the Project was to generate an understanding of the science of mental capital and wellbeing (MCW) and to develop a vision for how the size and nature of the challenges exposed by the Project could evolve over the next 20 years. To make this analysis tractable, the work was divided into five broad areas:

- Mental capital through life
- Learning through life
- Mental health
- Wellbeing and work, and
- Learning difficulties.

This report presents the findings for “Mental health” and draws upon a comprehensive assessment of the scientific state-of-the art: overall, around 80 reviews have been commissioned across the five areas<sup>3</sup>.

Mental health is a term which is used in a number of different ways and which has unfortunately acquired a substantial stigma in all layers of society. While the main focus of this report is on mental ill-health, positive mental health is also vitally important and is also discussed<sup>4</sup>. However, a more comprehensive consideration of positive mental health has been performed in other parts of the Project (as commissioned reviews<sup>5</sup>, and in the context of the future of work)<sup>6</sup>.

This report starts by looking at the situation today, examining the prevalence of important categories of mental disorder. It then considers the risk and protective factors which influence mental ill health, and determines how its prevalence and impact could change in the future, if existing policies and expenditure remain broadly unchanged. An assessment of strategic choices and interventions to meet the future challenges of mental health (and the challenges associated with the other four areas listed above) will be documented in the final Project report which is due for publication in the autumn of 2008.

- 
- 1 Mental capital refers to the totality of an individual's cognitive and emotional resources, including their cognitive capability, flexibility and efficiency of learning, emotional intelligence (e.g. empathy and social cognition), and resilience in the face of stress. The extent of an individual's resources reflects his/her basic endowment (genes and early biological programming), and their experiences and education, which take place throughout the lifecourse.
  - 2 Mental wellbeing is a dynamic state in which the individual is able to develop their potential, work productively and creatively, build strong and positive relationships with others, and contribute to their community. It is enhanced when an individual is able to fulfil their personal and social goals and achieve a sense of purpose in society.
  - 3 See Appendix E for a full list of the commissioned reviews.
  - 4 Section 2.1
  - 5 Appendix E provides a list of all of the Project reports and commissioned reviews.
  - 6 See Project report: Dewe and Kompier: *Wellbeing and work: Future challenges* (Appendix A refers); see also section 2.2 of the final Project report for a discussion of the importance of promoting positive mental health.

## Key challenges for the future

Poor mental health is expected to continue to have substantial economic and social costs at many levels: for individuals, families, society, business and the economy. Recent estimates put the cost at £77 billion per year in England<sup>7</sup> when wider impacts on wellbeing are included, and £49 billion<sup>8</sup> for economic costs alone.

Some mental disorders are set to grow substantially in the future, as they are strongly linked to trends in important drivers of change: in so doing, they could place a considerable strain on health and social services, and also on family carers. A prime example is dementias, where the number of affected individuals in the UK could double from 700,000 today, to 1.4 million over the next 30 years<sup>9</sup>. Over the same period, the cost to UK economy could treble from £17 billion per year today, to over £50 billion per year. The costs of long-term care alone, for older people with cognitive impairment in England could rise from £5.4 billion to £16.7 billion between 2002 and 2031<sup>10</sup>.

However, the future prevalence of many other disorders is much more uncertain, since they are strongly influenced by a wide range of factors which could evolve and interact in unpredictable ways. For example, common mental disorders (e.g. depression, anxiety, phobias and obsessive compulsive disorder) are linked to: life events (such as bereavement, unemployment, homelessness); lack of social supports; family structures; housing, income, debt, and the workplace environment. This presents two major challenges:

- How to develop new strategies and new interventions that are robust to this future uncertainty.
- How to harness policy development in diverse areas across government, to reduce the prevalence and costs of mental disorders.

Many high-risk groups have been identified for different mental illnesses, including: children in care, drug users, prisoners, people who are in debt, and long-term immigrants. Crucially, mental illnesses often go undiagnosed and/or untreated in high-risk groups. As a result, the behaviours associated with the mental disorders can go unrecognised and misconstrued. The individuals can then easily fall into a cycle of exclusion, inappropriate responses by the authorities, and deprivation. Breaking this cycle is a major challenge, but failure to do so will store up massive and long-term costs in the future<sup>11</sup>.

Particular disorders remain poorly diagnosed and treated. Examples include: childhood disorders, adult common mental disorders, addictions, and personality disorders. However, there is now good understanding and evidence for some social risk and protective factors for illness as well as biological factors, and many of these can be modified. Therefore, much could be done to promote good mental health and to prevent disorders developing. The key message is that prevention, early diagnosis and treatment now have the potential to yield substantial long-term benefits into the future. In particular, early intervention could ensure that evidence-based treatment to reduce distress and disability is made available at the earliest possible stage.

---

7 Sainsbury Centre for Mental Health (2003)

8 McCrone et al. (2008)

9 Knapp and Prince (2007)

10 Wanless et al. (2006)

11 Chapter 2 cites evidence for the present chronicity of many disorders, and their accompanying long-term costs over the lifecourse.



Nevertheless, more research on the effect of early intervention on prognosis would be useful. Also, there are some concerns about whether premature introductions of medications for depression, bipolar disorder and Attention Deficit Hyperactivity Disorder (ADHD), could reduce resilience and self-reliance, and lead to adverse long-term effects. Again, further work would be useful.

Most of us are affected by some form of mental ill-health at some point in our lives. Nevertheless, stigma, prejudice and discrimination continue to be pervasive throughout society, and exacerbate many mental health problems. Major benefits could result if a step-change in attitudes to mental ill-health could be achieved.

## Key challenges relating to specific aspects of mental health

In addition to increases in dementia outlined above, the following will continue to be important:

- **Positive mental health:** this includes: a positive sense of wellbeing; individual resources including self-esteem, optimism, and sense of mastery and coherence; the ability to initiate, develop and sustain mutually satisfying personal relationships; and the ability to cope with adversity (resilience). Together, they enhance the person's capacity to contribute to family and other social networks, the local community and society at large. The importance of these argues strongly for more emphasis to be given to the promotion of positive mental health.
- **Childhood mental disorders:** These are estimated to affect some 9.5% of children<sup>12</sup>. In many cases they have identifiable and preventable risk factors. However, they often remain unrecognised and untreated. A failure to tackle these disorders early in children stores up diverse problems which will affect the individual and many parts of society over many future years.
- **Common mental disorders:** These are very common in adults. Recent estimates of specifiable adult neurotic disorder<sup>13</sup> suggest a rate of over 16% in the general population. They are often disabling, have considerable social impact on families and the workplace, and half last for longer than a year. Around half of those with disorder who visit their GP are not diagnosed, and those that are diagnosed are often inadequately treated. Economic costs can be very substantial, but are not necessarily borne by the NHS: in the case of depression, easily the biggest impact is on productivity, which, at about £8 billion in 2000, was 23 times larger than the estimated costs falling to the NHS. More recently, it has been estimated that the annual costs of services for depression in England in 2007 were £1.7 billion, and that lost employment brings the costs to £7.5 billion, while for anxiety the service costs were £1.2 billion and that lost employment brings the costs to £8.9 billion<sup>14</sup>.
- **Psychosis:** The prevalence of psychosis in the general adult population is relatively low (0.45%), although considerably higher in some population groups (for example, 7% in male and 15% in female sentenced prisoners and 11% in male and 15% in female remand prisoners). However, despite its generally low prevalence, psychosis is often very severe and very disabling, with major impact on families, use of health and social services. The current societal costs of schizophrenia alone are estimated to be about £6.7 billion per year in England<sup>15</sup>. Most people with psychosis are in

<sup>12</sup> Meltzer et al. (2001); Green et al. (2005)

<sup>13</sup> Singleton et al. (2001)

<sup>14</sup> McCrone et al. (2005); McCrone et al. (2008)

<sup>15</sup> in 2004-05 – Mangalore and Knapp (2007)

receipt of treatment, but adequacy of treatment and community support remains patchy, with only a third having seen a community psychiatric nurse in the last year. Psychosis rates are likely to go up with increases in rates of marital separation and divorce, difficulties in home ownership, urbanisation, drug abuse – especially cannabis – and immigration.

- **Addictions:** these are common, especially in young people, and are not well or widely treated. They are also associated with other mental disorders. Addictions have substantial consequences for physical health, family, society and economy. Addictions associated with certain legal drugs (alcohol and tobacco in particular) can be extremely disabling and costly for the individual and society. Rates of consumption and hence hazardous consumption and dependence are directly related to availability (price relative to earnings, distribution etc.), and so rates will continue to rise unless action is taken to reduce availability.
- **Personality disorders:** one survey has suggested that 4% of the British population are affected<sup>16</sup>, which is equivalent to 2.4 million people (although the prevalence of clinically significant problems within this subpopulation is likely to be smaller). However, personality disorders are less well understood compared to other disorders, and more research is needed into causation, prevention and treatment. People with personality disorders are at increased risk of developing other serious mental health problems. Some personality disorders are also associated with an increased risk of violence and suicide, aggravated by co-morbid alcohol abuse.

Consideration of how to address the future challenges associated with these specific disorders, together with the more general aspects considered above, has been undertaken in the second phase of the Project and the findings are documented in the final Project report.

---

16 Singleton et al. (2001)

# **1 Introduction**

**1.1 Positive mental health**

**1.2 Mental ill-health**

**1.3 Epidemiological surveys and other evidence used in this report**

**1.4 The coverage of this report**

# 1 Introduction

Chapter 1 introduces this report, placing it in the context of the Foresight Project on Mental Capital and Wellbeing.

The concepts of both positive mental health and mental ill-health are explained. The latter is divided into several broad categories: those referred to in this report are explained and the epidemiological evidence base is outlined. The coverage of this report is then set out.

# 1 Introduction

The aim of the Foresight Project on Mental Capital<sup>17</sup> and Wellbeing<sup>18</sup> ([www.foresight.gov.uk](http://www.foresight.gov.uk)) is to advise the Government on how to achieve the best possible mental development and mental wellbeing for everyone in the UK in the future.

The starting point of the Project was to generate an understanding of the science of mental capital and wellbeing (MCW) and to develop a vision for how the size and nature of the challenges exposed by the Project could evolve over the next 20 years. To make this analysis tractable, the work was divided into five broad areas:

- Mental capital through life
- Learning through life
- Mental health
- Wellbeing and work, and
- Learning difficulties

This report presents the findings for “Mental health”.

The work here draws upon a comprehensive assessment of the scientific state-of-the-art: overall, around 80 reviews have been commissioned across the five areas<sup>19</sup>. It considers the situation today, and assesses how it could change over the next 20 years – under the baseline assumption that existing policies remain broadly unchanged. An assessment of strategic choices and interventions to meet the future challenges of mental health (and the challenges associated with the other four areas listed above) will be documented in the final Project report which is due for publication in the autumn of 2008<sup>20</sup>.

Mental health is a term which is used in a number of different ways. While the main focus of this report is on mental ill-health, positive mental health is also vitally important and is therefore also briefly discussed here, as well as being considered in more detail in other parts of the Project<sup>21</sup>.

---

17 Mental capital refers to the totality of an individual's cognitive and emotional resources, including their cognitive capability, flexibility and efficiency of learning, emotional intelligence (e.g. empathy and social cognition), and resilience in the face of stress. The extent of an individual's resources reflects his/her basic endowment (genes and early biological programming), parenting, education and their other experiences, which take place throughout the lifecycle.

18 “Wellbeing” throughout this report refers to “mental wellbeing”. Mental wellbeing is a dynamic state in which the individual is able to develop their potential, work productively and creatively, build strong and positive relationships with others, and contribute to their community. It is enhanced when an individual is able to fulfil their personal and social goals and achieve a sense of purpose in society.

19 Appendix E provides a full list of all the Project reports and reviews

20 Appendix A provides further details of the work of the Project.

21 For example, see the final Project Report; the Project report Dewe and Kompier, *Wellbeing and work: Future challenges*; (Appendix A refers). Also see Barry and Friedli (SR-B3) – the latter is one of a number of science reviews commissioned for the Project. See Appendix E for a full list.

## 1.1 Positive mental health

This may be conceptualised as including: a positive sense of wellbeing; individual resources including self-esteem, optimism, and sense of mastery and coherence; the ability to initiate, develop and sustain mutually satisfying personal relationships; and the ability to cope with adversity (resilience). Together, these enhance the person's capacity to contribute to family and other social networks, the local community and society at large. Thus, mental health is more than just the absence of symptoms or distress. It refers to a positive sense of wellbeing and a belief in our own worth and the dignity and worth of others<sup>22</sup>.

Positive mental health includes the capacity to perceive, comprehend and interpret our surroundings, to adapt to them and to change them if necessary, to think and speak coherently, and to communicate with one another. It also affects our ability to cope with change, transition, and life events such as the birth of a child, unemployment, bereavement or physical ill health. Thus, mental health and physical health are closely interlinked and are both essential components of general health in the individual. And together, they are an indivisible part of public health.

Positive mental health has an important societal value, contributing to the functions of society, including overall productivity. It is an important resource for individuals, families, communities and nations, contributing to human, social and economic capital.

## 1.2 Mental ill-health

This is not simply an absence of good mental health. For example, psychological distress is a common and natural reaction: it affects virtually everyone when they experience difficulties associated with various situations, events and problems in life. It usually resolves quickly, and indeed, these responses are normal and often protective; for example the 'fight and flight' reaction to threat.

There are specific recognisable forms of mental illness which are relatively common in the general population. However, normal reactions are considered to become abnormal when: they last a long time, are severe, and have damaging effect on the person and others. Whether help is sought depends: partly on self-determination of when these reactions become 'abnormal'; on knowledge and belief in the availability and effectiveness of interventions; and on availability of services.

Classification of mental disorders is necessary for research and communication concerning causes, consequences and interventions. However, it remains a problematic area, which is exacerbated by the stigma that rapidly accrues to any diagnostic label. In this report, only the very broad categories of disorder are used, but it is recognised that considerable effort is going into improving classification systems and terminology in ways intended to assist mental health developments and reduce stigma.

It has been estimated that the prevalence of common mental disorders (for example, depression and anxiety-disorders in adults, and emotional and conduct disorders in children) is over 16% in adults<sup>23</sup> and nearly 10% of children<sup>24</sup> in the general population at any one time. This can rise to 40-50% in highly vulnerable populations (for example

---

22 Health Education Authority (1997)

23 Singleton et al. (2001)

24 Meltzer et al. (2001); Green et al. (2005)

prisoners<sup>25</sup>) and about 30% for people attending their general practitioner<sup>26</sup>. The prevalence of severe mental disorders involving disturbances in perception, beliefs, and thought processes (psychoses) is around 0.4% of the general population<sup>27</sup>. Rates of substance use and abuse are growing, and 25% of the adult population have a hazardous pattern of drinking, 7% are dependent on alcohol, 4% are dependent on illegal drugs, and 22% are dependent on tobacco. The prevalence of abnormal personality traits that handicap the individual and/or others is around 4.5%<sup>28</sup>. Progressive organic diseases of the brain (dementia) are common, with senile dementia currently affecting 5% of people aged over 65 and 20% of those aged over 80<sup>29</sup>.

### 1.2.1 The causes of mental ill-health

These are social, psychological and physical. Social factors include life events, for example: bereavement, job loss, and in some cases severe trauma; chronic social adversity (for example: unemployment, poverty, illiteracy, child labour and violence); and lack of social supports. Psychological factors include poorly developed coping skills and low self-esteem. Physical factors include poor nutrition, infection, physical trauma, endocrine and genetic factors.

### 1.2.2 The consequences and impact of mental ill-health

Mental ill-health constitutes a heavy burden in terms of suffering, disability, and mortality, and contributes substantially to costs of health care and social care. It causes loss of economic productivity due to people being unable to work, being ill while at work or absent from work, or from accidents at work. Premature death of people with mental illness (for example, from suicide or from physical illness<sup>30</sup>) contributes to lost production and also the loss of a breadwinner for the dependent family, which can lead to poverty. Furthermore, mental ill-health leads to reduced access to, and reduced success of prevention and treatment programmes. For all these reasons mental ill-health poses a burden to families. However, it can also cause an inter-generational burden. For example, untreated childhood disorders can give rise to educational failure<sup>31</sup>, and hence to unemployment and to illness in adult life. And, left untreated, parental disorders can damage intellectual, physical and emotional development of children, leading to childhood disorders, and hence the inter-generational cycle of disadvantage<sup>32</sup>.

The World Bank has estimated that neuropsychiatric disorders form 10.5% of global burden of disease (DALYs) and that this could rise to 15% in 2020 (these figures do not take account of family burden or wider social costs). They comprise five of the ten leading causes of disability, and account for 28% of years of life lived with a disability. Depression alone forms more than 10% of years of life lived with a disability, and suicide was the 10th leading cause of death<sup>33</sup>. Schizophrenia especially carries a very high premature mortality, often of around 20 years.

---

25 Singleton and Meltzer (1998)

26 Goldberg and Huxley (1980)

27 Singleton et al. (2001)

28 Singleton et al. (2001); Moran (SR-B10) – see Appendix E

29 Stewart and Prince (SR-B2); Powell and Lovestone (SR-B12) – see Appendix E

30 Harris and Barraclough (1998)

31 Project report: Goswami, *Learning difficulties: Future challenges* (Appendix A refers)

32 Rutter and Quinton (1984)

33 Murray and Lopez (1996 and 1999)

Recent estimates put the cost at £77 billion per year in England<sup>34</sup> when wider impacts on wellbeing are included, and £49 billion<sup>35</sup> for economic costs alone. The larger estimate comprised 16% for care provision, 30% attributable to lost productivity and the remainder to the inclusion of an imputed value for reduced quality of life.

### 1.3 Epidemiological surveys and other evidence used in this report

The information presented here is based on a wide variety of research studies, from national epidemiological surveys of the general population to genetic studies of patient groups. More detailed information is presented in technical appendices of this report and in background reviews that were commissioned<sup>36</sup>.

Epidemiological surveys are particularly helpful in understanding the distribution of mental disorders, their risk factors and consequences. Such surveys can provide information on prevalence, severity, duration, risk factors, accompanying social disability, other consequences, and the use of services<sup>37</sup>. They also allow the extent of unmet need for services to be estimated. The third main purpose of epidemiological surveys is to examine inequalities of opportunity for people with mental ill health. Overall, the information they provide can be used to develop effective strategies to address mental ill-health today and in the future: to improve the promotion of positive mental health; and reduction of morbidity, disability and mortality.

In mental health surveys, respondents complete questions describing symptoms of mental disorder, as recognised and defined in medical practice: this ensures that the definitions of disorder used are equivalent to those recognised by clinicians. In particular, most mental disorders are defined by degree of severity and complexity sufficient to warrant formal intervention, and prevalence rates are evaluated by counting those who fall at or above the threshold of the definition.

Information on prevalence and associated factors of presumed causal importance allows aetiological hypotheses to be generated and tested, albeit with the limitations inherent in cross-sectional studies. It also allows assessment of the potential scope for public health interventions. By repeating national community surveys, it is possible to monitor the health of the population and trends in disease, together with changes in potential risk factors, and policies to address equalisation of opportunity (e.g. in relation to the Disability Discrimination Act). It also provides information with which future trends may be predicted.

In Great Britain there has been a dedicated programme of national surveys of psychiatric morbidity. As well as mental health surveys of the general household adult population, there have also been surveys of the prison population, people who are homeless, and people in institutional care. Although these special groups represent a relatively small percentage of the total population, they include extensive users of mental health services and pose particular challenges to providers of mental health services. Surveys of the development and wellbeing of children and young people also have a key role to play in completing the epidemiological picture of the nation's mental health. The first adult survey was conducted in 1993, and was followed by further surveys among residents of institutions, homeless people, people with psychosis living in the community, prisoners, carers, children in private households and in local authority

34 Sainsbury Centre for Mental Health (2003)

35 McCrone et al. (2008)

36 See Appendix E for a list of all the reviews that have been commissioned by the Project.

37 Murray and Lopez (1996); Jenkins (1997); Jenkins and Meltzer (2003)



care. To date, three cross-sectional national surveys of adults have been conducted (1995a<sup>38</sup>, 2000<sup>39</sup> and 2008<sup>40</sup>), and two of children (1999<sup>41</sup> and 2004<sup>42</sup>). There have also been longitudinal follow-up surveys of adults and children, although so far these have only been for one follow-up period – 18 months for adults and three years for children. It will therefore be helpful to design surveys with much longer follow-up periods. Much of the information which follows is drawn from these surveys<sup>43</sup>.

#### 1.4 The coverage of this report

Chapter 2 considers the situation today and summarises what is known about both positive mental health and various categories of mental ill-health. It also considers important risk and protective factors that affect the prevalence and impact of mental ill-health. These factors are summarised in a 'conceptual overview' diagram (see Appendix B) and an analysis of them is used in Chapter 3 to consider how the situation may change over the next 20 years – under the baseline assumption that existing policies and overall expenditure remain broadly unchanged. Further work is currently being undertaken to assess how best to address future challenges (for example, through treatment, use of services and the organisation of services); the findings of that will be presented in the final Project report in the autumn of 2008.

It is beyond the scope of this document to consider the many types of mental disorder individually: these are common in the general population and several hundred have been officially recognised<sup>44</sup>. Instead, the analysis focuses on the main broad categories of ICD 10 disorders<sup>45</sup>: these are underpinned by valid and reliable UK data, and are characterised by relatively high prevalence, disability and impact on the use of services. Thus the following categories of disorder are considered here: childhood disorders, adult neurosis or common mental disorders, psychosis, dementias, addictions and personality disorder. Suicidal and violent behaviours are also included, as they are important consequences that are linked to certain disorders. Eating disorders are not specifically addressed in this document, although the interested reader is referred to a review of these which has been commissioned<sup>46</sup>.

Finally, it should be noted that there are continuing developments of classification systems, as professionals try to use common terminology to communicate about patients, and carry out research on the causes and consequences of disorders, and on the effectiveness of interventions. In so doing, they strive for better predictive value of the categories and dimensions in terms of prognosis and management of comorbidities.

---

38 Meltzer et al. (1995a)

39 Singleton et al. (2001)

40 Due to report December 2008

41 Meltzer et al. (2000)

42 Green et al. (2005)

43 Further information on the surveys used is provided at the end of the list of references.

44 World Health Organization (1992)

45 World Health Organization (1993)

46 Treasure (SR-D16) – see Appendix E

## **2 The situation today**

**2.1 Positive mental health**

**2.2 Childhood mental disorders**

**2.3 Common mental disorders**

**2.4 Psychosis**

**2.5 Dementia**

**2.6 Addictions**

**2.7 Personality disorders**

**2.8 Mental ill-health: suicide and violence**

## 2 The situation today

Chapter 2 considers positive mental health and also six important classes of mental ill-health. It assesses the situation today, discussing prevalence, risk factors, and consequences and costs. Use of services is also considered where this is particularly relevant.

The chapter concludes by considering two important social problems that are affected by a range of mental health conditions: suicide and violence.

## 2 The situation today

Mental health (including positive mental health and the absence of disorder) is as important as physical health to wellbeing, and deserves equivalent attention. Moreover, all three are closely linked: mental health can affect physical health and wellbeing in many ways, and vice versa.

### 2.1 Positive mental health

#### 2.1.1 Determinants and measurement

Positive mental health has already been defined in Chapter 1 and is fundamental to good health and good quality of life. It is influenced by multiple biological, psychological, social and environmental factors that interact in complex ways<sup>47</sup>. However, few epidemiological studies to date have included detailed measures of positive mental health or its relationship to risk and protective factors<sup>48</sup>. It is not yet known how positive and negative mental health relate to each other, although there is some evidence that the two dimensions may be independent rather than opposite ends of a single dimension.

The factors that influence positive mental health may be clustered into three key categories:

- Factors at a structural level, such as good living environments, housing, employment, transport, education and a supportive political structure.
- Those at a community level, such as a sense of belonging, social support, a sense of citizenship and participation in society.
- Factors at the level of the individual, such as the ability to deal with thoughts, feelings, to manage life, emotional resilience and the ability to cope with stressful or adverse circumstances.

Belonging to a social network involving communication and supportive relationships is protective of good health and positive wellbeing: strong links between social support and mental health have been found in studies both of positive mental health and of mental ill-health<sup>49</sup>. Protective social factors for positive mental health include: a culture of cooperation and tolerance between individuals, institutions and diverse groups in society; a sense of belonging to family, school, workplace and community; and a good network of supportive relationships. In contrast, social exclusion damages both physical and mental health. For example, perceptions of racial discrimination have been identified as a significant factor in the poor health of black and ethnic minorities, over and above the contribution of socio-economic factors. Populations at most risk from social exclusion include those with limited opportunities for employment, particularly: women, racial and ethnic minority groups, refugees, sex workers; people living with disabilities, addictions or chronic illnesses; homeless people, long-term unemployed, school leavers and older people living on reduced income. Research on social capital has specifically pointed to important influences on mental health by community cohesion; involving levels of trust, reciprocity and participation.

---

47 Mrazek and Haggerty (1994)

48 For example, Lehtinen et al. (2005)

49 Brugha et al. (2003)

Emotional wellbeing is a strong predictor of physical health and longevity, while sustained stress and psychological trauma increase susceptibility to physical illness. Physical exercise has a well-documented beneficial effect on mental health, and in reducing depressive symptoms<sup>50</sup>.

### 2.1.2 Improving positive mental health

Efforts to improve positive mental health, termed 'mental health promotion', tend to focus mostly on those modifiable psychosocial and environmental determinants such as living conditions, education, income, employment, access to community resources, social support and personal competencies. We do not yet have evidence whether enhancing positive mental health prevents mental disorder of moderate or greater severity<sup>51</sup>. This is largely because obtaining such evidence requires longitudinal studies of adequate sample size over a significant period of time, which research funders have hitherto been reluctant to support.

### 2.1.3 Economic aspects

There is currently a small amount of evidence on the economic advantages of prevention, promotion, early identification and early intervention. There are also unpublished reports<sup>52</sup> on the economic case for mental health promotion for Northern Ireland, and imminently from the Mental Health Economics European Network. Both of these could shed more light on the case for prevention and promotion: the evaluation of such evidence is considered in the final Project report.

## 2.2 Childhood mental disorders

### 2.2.1 Prevalence

Combined data from the 1999 national surveys of the mental health of children and young people in Great Britain indicate<sup>53</sup> that 5.5% of 5-15 year olds had clinically significant conduct disorders; 3.9% with emotional disorders such as anxiety and depression; and 1.5% with hyperkinetic disorder. The overall rate of 9.5% included some children who had more than one type of disorder. These rates are based on the diagnostic criteria for research using the ICD-10 Classification of Mental and Behavioural Disorders and its strict impairment criteria: i.e. the disorder causes distress to the child or has a considerable impact on the child's day-to-day life. Children in local authority care have significantly higher rates of illness<sup>54</sup>.

---

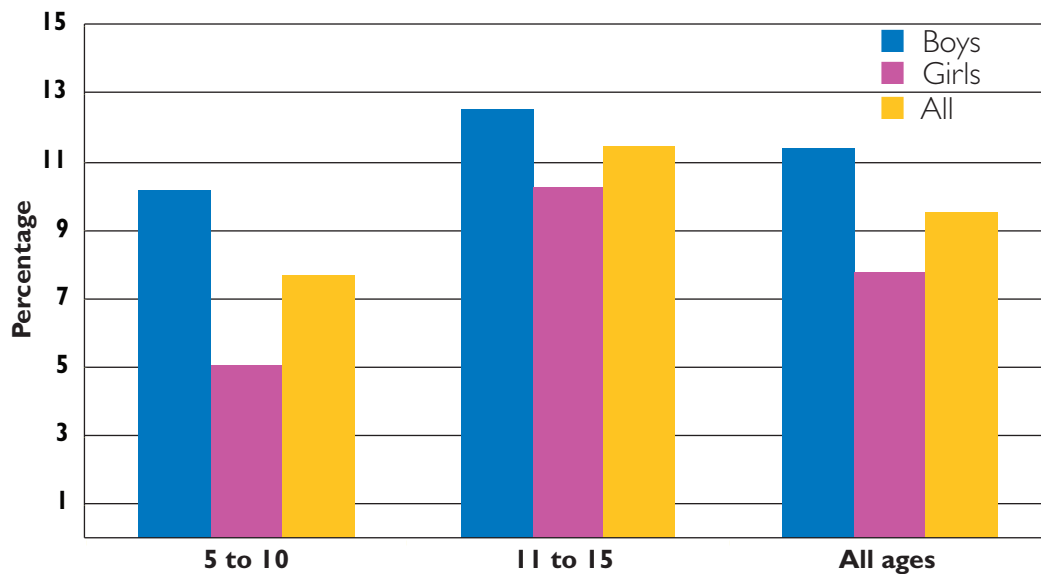
50 Barry and Friedli (SR-B3) – see Appendix E

51 Ibid

52 Friedli and Parsonage (2007) unpublished

53 Meltzer et al. (2001); Green et al. (2005)

54 Meltzer (SR-B7) – see Appendix E

**Figure 2.1: Prevalence of childhood mental disorder by age and sex**

Source: Green, H., McGinnity, A., Meltzer, H., Ford, T. and Goodman, R. (2005.) *Mental health of young people in Great Britain, 2004*. Palgrave Macmillan

The proportion of children and young people aged between 5 and 15 with any mental disorder was greater in boys than girls: 11.4% compared with 7.5%. Among 5-10 year olds, 8.0% had a mental disorder, compared with 11.3% in the older age group (11-15 year olds). Whereas the rates of emotional disorders were similar for boys and girls (5-15 year olds), the prevalence of conduct disorders was found to be approximately twice as common among boys as in girls, while for hyperkinetic disorders the ratio was even greater: 2.5% among boys of all ages compared with 0.4% of girls.

### 2.2.2 Risk factors

The factors associated with higher rates of mental disorder among children include<sup>55</sup>: *characteristics of the child* (physical health problems and having special educational needs); *characteristics of the family* (lone parenthood, reconstituted families, poor educational levels, lack of employment and low income); *family functioning characteristics* (psychological distress among mothers and family discord); *stressful life events* (separation of parents, parents in trouble with the police); and *neighbourhood characteristics* (deprivation and lack of social cohesion).

### 2.2.3 Access to services

Research has shown<sup>56</sup> that when parents reported concerns about their child's mental health, the child had a 50:50 chance of having a psychiatric disorder. Also, it has been shown that the predictive power of parental reports could be increased by asking about the level of concern at school. In the same study, up to a third of children and adolescents attending primary care and paediatric outpatient departments had clinically significant psychopathology. Only a minority of these children reached specialist mental health services, partly because the presenting complaint was rarely psychological, so their disorders might not have been recognised by their GP.

55 Meltzer (SR-B4); Goodyer (SR-D15) – see Appendix E

56 Meltzer (SR-B8) – see Appendix E

### 2.2.4 Consequences and costs<sup>57</sup>

The child's mental health problem has consequences both for family relationships and for the child. In lone parent families, 1 in 5 mothers have reported that it contributed to a previous relationship breaking up. In two-parent families, 1 in 3 mothers said that it put an extra strain on their relationship. A quarter of parents said that their child's problem caused difficulties with other family members. 87% of parents said the child's problem made them worried, while 58% felt it made them depressed.

The consequences of untreated mental illness in children include low academic achievement<sup>58</sup>, subsequent psychiatric problems in adult life which may impair relationships and productivity in the workplace<sup>59</sup>, an increased likelihood of unwanted pregnancy and impaired parenting skills, unhealthy lifestyles, and crime (43% of 11-15 year olds with a mental disorder had been 'in trouble' with the police). All of these have consequences for deprivation of their own children in later life (the intergenerational cycle of deprivation)<sup>60</sup>. However, early and effective intervention can disrupt these links between childhood and adult disorder.

There is currently no published overall estimate of the economic costs of childhood disorder. However there are some data for the costs arising from anti-social behaviour. One study<sup>61</sup> looked at 80 children aged between 3 and 8, who were referred for severe anti-social behaviour (conduct disorder) to child and adolescent mental health services in South London. Mean annual cost of care was approximately £6,000 per child. Almost half this total was borne by the family (see Figure 2.2). Significantly, although the children in this study were all diagnosed as having a health problem and all were eligible for inclusion in a child psychiatry trial of parent training, only 5% of the total cost fell to the National Health Service. Lower annual service use costs (pre-trial) of around £1500 per child<sup>62</sup> were reported in a recently published trial of a parenting programme for children at risk of developing conduct disorder aged 3-4 years. The lower costs in part reflect the younger sample, in part the lower morbidity, and perhaps a difference in the intensity and unit cost of support between London and North Wales.

---

57 Meltzer (SR-B4) – see Appendix E

58 See Project report: Goswami. *Learning difficulties: Future challenges* (Appendix A refers)

59 See Project report: Dewe et al. *Wellbeing and work: Future challenges* (Appendix A refers)

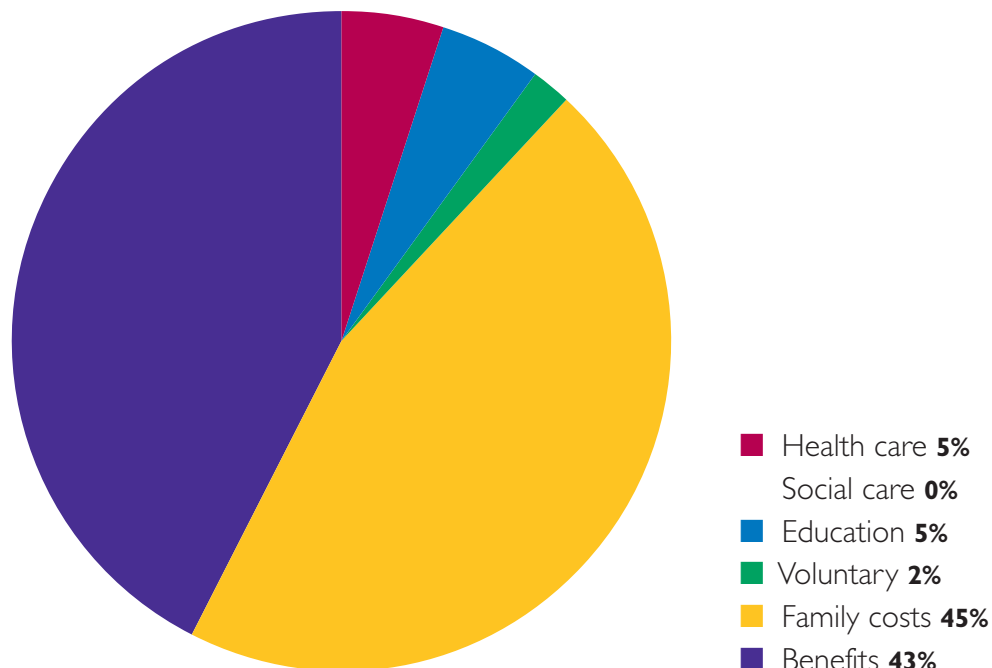
60 Rutter and Quinton (1984)

61 Romeo et al. (2006)

62 Tudor-Edwards et al. (2007)

## Figure 2.2: Breakdown of costs for children with persistent anti-social behaviour

Total cost *excluding* benefits averaged approximately £6,000 per child per year, at 2000/01 prices (benefits approximately £4,300).



Based on: Romeo et al. (2006)

These and previous studies show very clearly the breadth of economic impact of childhood disorders across a variety of service sectors, and particularly the sizable impact on families. Of course, these studies can only measure what is provided (in terms of service costs) and any morbidity costs that result from the disorder. It is widely believed that many behavioural problems in childhood and adolescence are not adequately addressed, which, as is shown in the next section, can lead to substantial long-term costs stretching into adulthood.

There is little other economic evidence on other childhood mental disorders, although a trial of treatments for children with depression has useful cost data<sup>63</sup>. Over the course of the 28-week trial period, service costs amounted to £161 per week for adolescents treated with an antidepressant (an SSRI such as fluoxetine), and £244 for adolescents treated with an antidepressant and cognitive behaviour therapy. For the latter group, half the total cost was due to health service utilisation and just under half to education; while for the group treated with medication alone, the proportion of the total cost falling to the NHS was only 20%. However, one further piece of evidence to mention is the very high cost of children with the most complex needs. A study has looked at 60 children in one local authority<sup>64</sup> who were identified as 'of greatest concern with complex mental health problems'. Mean annual service costs were found to be almost £53,000 (2000-01 prices). The factors which increased annual service costs were social factors rather than the specific type of disorder. Costs were calculated for social care (52% of the total), education (39%), health care (5%), criminal justice (3%) and the voluntary and community sector (1%) – family costs were not measured. Therefore, at the complex end of the spectrum of need, costs to the state can be very substantial.

63 Byford et al. (2007)

64 Clarke et al. (2005)

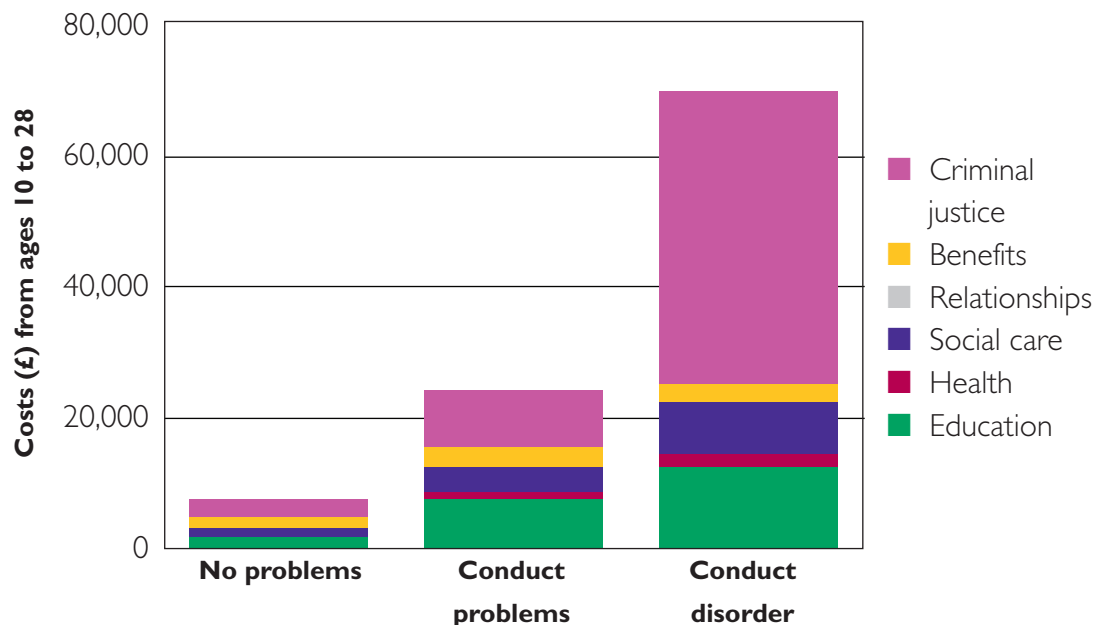


## 2.2.5 Childhood to adulthood links

Mental health problems experienced in childhood or adolescence often have serious adverse effects in adulthood, including: enduring morbidity, anti-social behaviour and criminality, relationship difficulties, substance misuse, and general impacts on quality of life. Many of these adulthood problems and experiences incur measurable costs. Several longitudinal studies have examined the connections between childhood mental health problems and economic consequences in adulthood. The most relevant studies are all from the UK.

The first study found that adults who had conduct disorder as children generated costs for a wide range of agencies that are significantly higher than for people who had no childhood conduct problems<sup>65</sup>. Figure 2.3 shows, from left to right, the costs per individual for children without conduct disorder (88% of the population studied), children with conduct problems (the next 9% of the population, defined as scoring highly on anti-social behaviour but not having a disorder) and children with diagnosed conduct disorders (3%). The costs for this last category were approximately £70,000 per child. Social care costs accounted for 11% of the total public sector costs between the ages of 10 and 27 for the conduct disorder group, compared to 18% of the much smaller amount for individuals who had no conduct problems. Costs to the criminal justice system accounted for the great majority of early adulthood public-sector costs attributable to conduct disorder. The figures shown for the various categories are significant underestimates because many different categories of costs were not included: for example, social work, voluntary and community sector services, primary health care, lost employment, undetected crime, victim costs of crime, and the transmitted effects on family members and other people.

**Figure 2.3: Costs per individual in early adulthood of childhood conduct disorder and conduct problems**



Source: Scott et al. (2001)

Adjusting for other variables, the additional cost between the ages of 10 and 28 (aggregating across all 18 years) of having conduct disorder at age 10 compared to not

65 Scott et al. (2001)

having any anti-social behaviour problems was approximately £41,000 (at 2004-05 prices), and the additional cost of conduct problems over the same comparator was £17,000. Given that child and adolescent mental health services were under-developed and under-resourced in the early 1970s, these costs might be interpreted as conservatively indicative of the untreated morbidity costs of conduct disorder among 10 year olds over the next 18 years of their lives.

The Maudsley long-term follow-up study of child and adolescent depression gathered data from people attending child psychiatric services in South London for depression and followed them up as adults (on average 21 years later). All 149 people in the sample had been treated for childhood depression; 53 of them had also been diagnosed with conduct disorder<sup>66</sup>. The mean annual costs of health care, social care and the use of the criminal justice service in adulthood were calculated for 140 people<sup>67</sup> and were found to be around £1200 (2004-05 prices) with a range from zero to £10,300. General hospital and psychiatric hospital costs accounted for just over half the total. Costs were higher in adulthood for individuals who had: their first contact with psychiatric services at an older age; anxiety in childhood; and comorbid conduct disorder<sup>68</sup>. Individuals with both depression and conduct disorder had much higher utilisation rates for outpatient care, inpatient care and prison stays, and hence higher costs in adulthood than those with depression alone (more than £900 per annum).

The third published study was also based on a London sample, and considered labour market attainments rather than patterns of service use. The Cambridge Study in Delinquent Development sampled 411 boys born in 1952-54 (predominantly born into working class environments) and re-interviewed most of them eight times, most recently at age 48<sup>69</sup>. Another study<sup>70</sup> has looked at the links between 'troublesome behaviour' in childhood, delinquent behaviour in adolescence and poor employment experiences (unemployment, low status employment, low earnings) at ages 18-19 and 32. Findings included:

- Childhood anti-social conduct at age 8-10 (being a 'troublesome' boy: defined as being in the lowest quartile of the distribution of peer/teacher behavioural ratings) was associated with an increased risk of teenage unemployment and employment instability, though less strongly linked to poor employment outcomes identified at age 32.
- Anti-social tendencies that persisted from childhood (being 'troublesome') into adolescence (being 'delinquent', defined as having a criminal conviction between ages 10 and 16) were strongly associated with: a lower probability of employment participation at 32; with long-term periods of unemployment when individuals were in their late 20s and early 30s; and a persistent absence of success in the labour market (lack of employment participation and/or low wages at ages 18 and 32). Expected weekly earnings at age 32 were £205 for those who were both troublesome and delinquent, compared to £301 for the rest of the cohort (2004 prices).
- A variable called 'social handicap', which today would be labelled social exclusion, was significantly related to poor labour market outcomes across the full sample of males.

---

66 Fombonne et al. (2001)

67 Knapp et al. (2002)

68 McCrone et al. (2005)

69 Farrington (2001)

70 Healey et al. (2004)

Finally, there is also unpublished work<sup>71</sup> which analysed data from the 1970 Birth Cohort Study, finding significant links (after adjustment for covariates) between mental health problems at age 10 and certain economic indicators at age 30:

- Anxiety problems at age 10 were associated with lower household income at age 30.
- Attention deficit problems at age 10 were associated with lower household income, lower probability of economic activity for the individual and lower earnings if employed at age 30.
- Anti-social conduct at age 10 was associated with lower probability of economic activity and (surprisingly) higher earnings at age 30 if in employment.

From this evidence, therefore, we can see that the economic consequences of childhood disorders in adulthood can include high utilisation rates of health care and other services, poor employment records and low income.

### 2.2.6 Key messages

Childhood disorders are relatively common (9.5%); they have identifiable and, in many cases, preventable risk factors; have long-term damaging consequences for the children themselves and their families. And the costs to the state can be very high for those with complex cases. But, nevertheless, many children with disorders remain unrecognised and untreated.

## 2.3 Common mental disorders (CMDs)

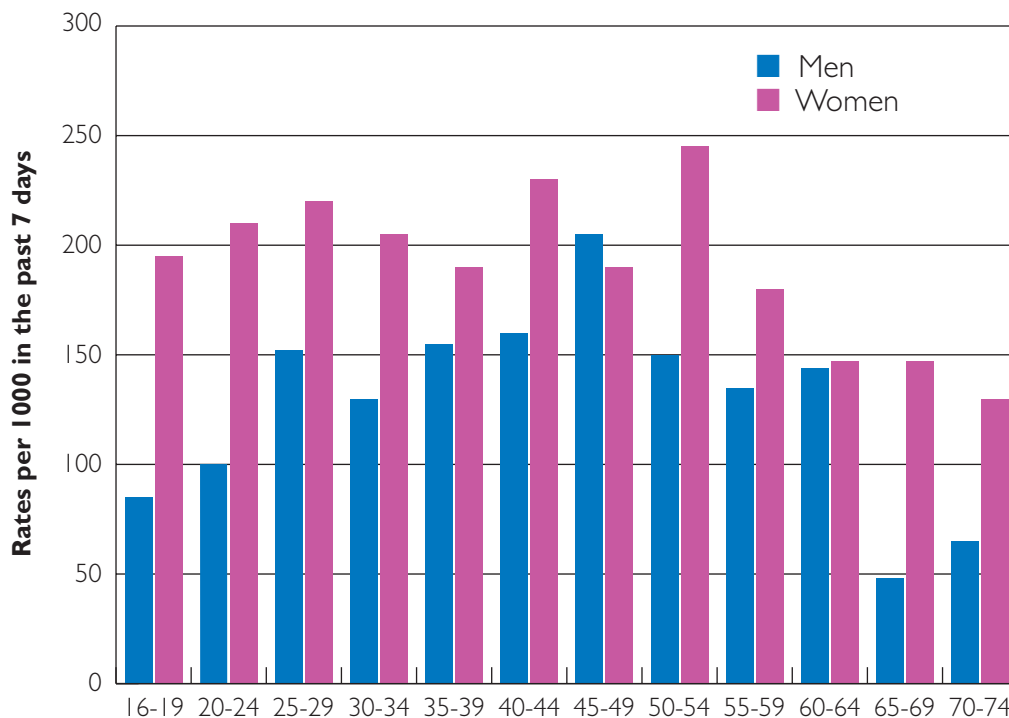
The term common mental disorders encompasses depression, anxiety, phobias, and obsessive compulsive disorder, which are together termed 'adult neurotic disorder'. Their diagnosis is based on the presence of symptoms (of sufficient quantity, severity and chronicity) such as low mood, fatigue, irritability, poor concentration, impaired sleep, appetite and libido, low self-esteem, feelings of worthlessness, suicidal ideation, palpitations, trembling, feelings of unreality, a fear of dying, and repetitive and compulsive thoughts and actions. These symptoms exist on a continuum of severity: some individuals may be below the diagnostic threshold but are nevertheless at very high risk of developing disorder in the future; and a minority of individuals will present with predominantly one of these groups of symptoms, but in the form of a severe disorder requiring immediate treatment in primary or secondary care.

### 2.3.1 Prevalence

The prevalence of adult neurotic disorder (or CMD) in the most recent national household survey<sup>72</sup> was 16.4%, comprising: 4% anxiety, 3% depression, 2% phobias, 1% obsessive compulsive disorder and 1% panic disorder, and the remainder relating to a non-specific CMD group of 9%, termed mixed anxiety – depression. On a continuum measure of neurotic symptoms, it was found that 15% scored at or above the recommended threshold (for defining cases) of 12, and a further 17% had high scores below this threshold (6-11) and were at risk of future episodes

71 Healey (2005)

72 Singleton et al. (2001)

**Figure 2.4: Prevalence of common mental disorders by age and sex**

Source: Singleton, N., Bumpstead, R., O'Brien, M., Lee, A., and Meltzer, H. (2001) *Psychiatric morbidity among adults living in private households, 2000*. London: TSO.

### 2.3.2 Risk factors

#### **Social risk factors for having a CMD:**

Using the above national survey data, it was found that people with a common mental disorder are more likely to be: women, aged between 35 and 54, separated or divorced, living as a one person family unit, or as a lone parent, to have no formal educational qualification, to have a predicted IQ of less than 90, to come from social class V, be tenants of Local Authorities and Housing Associations, to live in an urban area, and to report one or more physical complaints. Common mental disorders are more common in people with low income, and this relationship seems to be mediated by debt<sup>73</sup>. They are less likely to be: aged between 65 and 74<sup>74</sup>, married or cohabiting, come from social class I, to be economically inactive, to own their own home outright, to have lived in the same accommodation for the last two years, and to live in a semi-rural area. People with a common mental disorder are more likely to have experienced several life events in the last six months and to have smaller social networks than those without a disorder. People in prison and homeless people have considerably higher rates than those in the general population<sup>75</sup>. Neurocognition studies and their implications are reviewed in Phillips et al. (SR-B15) and eating disorders are reviewed in Treasure (SR-D16) – see Appendix E.

#### **Social risk factors for episode onset:**

The estimated rate of new episodes ascertained prospectively over an 18-month follow-up period, was 6-7% both for men and women. The rates of onset of new episodes ('episode onset') did not vary with age, but did increase for those with a

73 Jenkins et al. (2008a), (2008b)

74 See Stewart and Prince (SR-B2) for review of common mental disorders in older people

75 Meltzer (SR-B5); Meltzer (SR-B6) – see Appendix E

higher previous symptom score: those with sub-threshold scores of 6-11 initially were more likely to have subsequent onset than those with sub-threshold scores of 0-5<sup>76</sup>. Onsets were twice as common in those living in rented accommodation: 12% of social sector renters and 11% of private sector renters had episode onset compared to 5% of those who owned their own home or were buying it. Onsets were also three times as common in women reporting 6 or more stressful life events: 12% of those who reported 6 or more life events had onset compared to 4% of those who reported experiencing 0 or 1 stressful life event, prior to baseline assessment. Subsequently, 3% of those who reported experiencing 0 or 1 stressful life event between baseline assessment and follow-up assessment 18 months later had onset, compared to 22% of those who reported 6 or more life events during that period. Onsets were also more common in men who were unemployed and in men with low income.

Thus, life events are important risk factors for common mental disorders. The strongest associations between life events and CMD were for: recent threats to health; recent interpersonal problems; and lifetime stressors (including sexual abuse and expulsion from school). The strength of association between recent life events and CMD increased steadily up to the 45-54 age group and then declined. In the 65-74 year age range, CMD was not significantly associated with any recent life event but instead was associated with lifetime stressors of: bullying, sexual abuse, running away from home, and institutional care in childhood. Thus events in recent life were most strongly associated with CMD in mid rather than early or late adult life. In later life, stronger associations were found with lifetime stressors rather than recent events<sup>77</sup>.

Dissatisfaction with social support from others and having a small primary social network group (a small number of people with whom you can confide and rely upon) also predicted future probability of Common Mental Disorder, even when adjusting for initial CMD<sup>78</sup>. Curiously, this effect was greatest in men who were initially non-cases at baseline (average odds: 4.5) and in women who were initially cases at baseline (average odds: 2.9). Primary group size at the follow-up time was significantly predicted by level of common mental disorder at the initial assessment time in women, but not in men. Thus, confounding by baseline disorder does not explain risk of developing poor mental health in socially isolated men.

There is also evidence from other longitudinal studies that unemployment, actual redundancy itself and the threat of redundancy<sup>79</sup> all cause mental illness, although it is also true that people who are already ill are more likely to become either voluntarily or involuntarily unemployed<sup>80</sup>. Given what is known about the mean rates of illness in the population as a whole, and the higher rates in the unemployed, one would expect to find relatively lower rates of mental illness in people at work. However, those studies which have looked at specific working populations tend to find quite high rates of illness<sup>81</sup>. It may be that this is because those particular working populations have been chosen for study because there is some a priori reason to believe they may be a particularly stressed group.

---

76 Singleton and Lewis (2003)

77 Jordanova et al. (2007)

78 Brugha et al. (2005)

79 Banks and Jackson (1982); Kasl et al. (1975); Jenkins et al. (1982)

80 Jenkins (1985a)

81 Jenkins (1985b); McGrath et al. (1989); Stansfeld et al. (1995); MacBride et al. (1981); Jenkins (1993)

### 2.3.3 Recovery

A variety of studies have found that only half of CMD have recovered by 12-18 months. A study in two general practices in and near Stratford-upon-Avon found that: only half of people with CMD who had already been diagnosed by their GP had recovered a year later<sup>82</sup>; and that, 12 years later, a high proportion had pursued relapsing courses and had been heavy service users throughout that period<sup>83</sup>. Similarly, the longitudinal national survey found that 49% of men and 51% of women who had illness at baseline assessment still had disorder 18 months later<sup>84</sup>. In similar vein, a seven-year follow-up study of civil servants showed that half the illnesses pursued a chronic course, emphasising the need for early detection and prompt management<sup>85</sup>.

Recovery was associated with: lower symptom score at baseline (40% of those with scores over 17 recovered, compared with 59% of those with lower scores); higher socio-economic status; being employed (60% recovered) rather than long-term sick or disabled (21% recovered); having higher social support; and less life events (59% of those with no stressful life event recovered compared to 48% of those with 2, and 24% experiencing 3 or more).

### 2.3.4 Costs and consequences

The consequences of common mental disorders have already been summarised in Chapter 1. Of particular relevance for the economy is the evidence that untreated common mental disorders in employed people, however they are caused, reduce productivity, and lead to increased sickness absence<sup>86</sup>, labour turnover<sup>87</sup> and accidents<sup>88</sup>.

The links between depression and reproductive health provide another example of the consequences of CMDs: depressed women are less likely to access family planning services; aggressive and substance-abusing men are less likely to agree to use condoms; depressed women are less likely to access antenatal and postnatal care, avoid nutritional deficiency (folate and iron), immunise infants, breastfeed successfully, avoid smoking, combat violence and abuse, and avoid unsafe sex. Also, if depression in parents is not treated, it leads to cognitive, physical and psychological consequences for the children. Postnatal depression is common; mothers also get depressed after hysterectomies, abortion and stillbirth, and perinatal psychoses affect the care of the child<sup>89</sup>. In relation to the management of STDs (including HIV/AIDS), depressed adults have lower immunity, are less likely to comply with treatments and less likely to attend clinics, while people with STDs need prompt treatment to avoid social isolation, depression, suicidal tendencies and psychosis. Depressed young adults are less likely to be assertive and safe; unprotected sex leads to unwanted pregnancy, abortions, complications and depression and STDs; and substance abuse in young people damages reproductive health.

Most of the evidence of economic costs of common mental disorders relates to (unipolar) depression. There is little research on the costs of anxiety disorders. The

---

82 Mann et al. (1981)  
83 Lloyd et al. (1996)  
84 Singleton and Lewis (2003)  
85 Jenkins et al. (1996)  
86 Jenkins (1985a), (1985b)  
87 Jenkins (1985a)  
88 Jenkins (1993)  
89 Scott and Jenkins (1998)

most recent and comprehensive economic descriptive study of depression<sup>90</sup> computed an overall annual cost of more than £9 billion for England in 2000. Costs of primary care consultation were estimated at £8 million, medication £310 million, and secondary health care £51 million. These service costs were dwarfed by: mortality costs (2615 deaths were associated with depression in 2000, most of them suicides), calculated as lost future lifetime earnings (£562 million), and the morbidity costs calculated from lost work days as shown by incapacity benefit claims (over £8 billion). Easily the biggest element is therefore the effect of depression on employment (productivity), which was 23 times larger than the estimated costs falling to the NHS.

An earlier study<sup>91</sup> showed that (self-reported) depression/anxiety by participants in the Quarterly Labour Force Survey was the single most important cause of workplace absenteeism in the UK. Workers with long-term mental health problems (primarily depression and anxiety) had 10 more days of absenteeism than their 'healthy' counterparts, adjusting for covariates. If the mental health problem is comorbid with another long-term sickness or disability, the worker had 19 more days of absence than 'healthy' workers. Mental health problems are now the leading cause of incapacity benefit in the UK, their contribution having doubled over a decade<sup>92</sup>, and almost all of this will be due to common mental disorders. Moreover, US research has pointed to the huge additional cost of 'presenteeism'. For example, Stewart et al. (2003) suggest that 81% of the productivity losses associated with depression are due to reduced performance while at work. Reducing depressive symptoms through effective treatment improves employment and productivity, and reduces benefit costs<sup>93</sup>. This theme will be picked up in the Project's final report.

There have been few estimates of the overall costs for anxiety disorders, and none for the UK; however, such studies that have been carried out suggest the costs are substantial. Europe-wide estimates by Andlin-Sobocki et al. (2005) are based on continent-wide imputations of service use and other impacts and are not helpful at country level. Studies for the US point to large employment-related impacts that outweigh health care expenditures<sup>94</sup>. In Britain, it has been found<sup>95</sup> that absenteeism-related costs for people with social phobia were larger than health service costs, using data from the first Psychiatric Morbidity Surveys. Mean annual health care costs were approximately £600 (1997/98 prices) and absenteeism costs for those in employment averaged £440. Social security benefits averaged nearly £1500. However, none of these differences was significantly different from the 'psychiatrically well' population. Other anxiety disorders, such as obsessive-compulsive disorder (OCD) are likely to be associated with noticeably higher costs; for example, an older study<sup>96</sup> estimated that OCD accounted for 6% of all expenditure on mental health problems in the US. However, one complication in attempts to estimate costs is the high level of comorbidity with depression.

---

90 Thomas and Morris (2003)

91 Almond and Healey (2003)

92 Henderson et al. (2005)

93 Layard et al. (2007); Knapp et al. (2008). *Better treatment responses to depression: economic consequences*; a paper prepared for the Project (see [www.foresight.gov.uk](http://www.foresight.gov.uk)).

94 Rice and Miller (1998); Greenberg et al. (1999)

95 Patel et al. (2002)

96 Dupont et al. (1995)

### 2.3.5 Use of services by people with CMD

This section looks at the extent to which people with and without disorders had used medication, other forms of treatment from formal services, and a range of health and community services. The data here are generally drawn from the most recent National Psychiatric Morbidity Survey<sup>97</sup> unless stated otherwise. It also examines the extent to which help or treatment has not been accessed and why. In particular, it will be seen that although use of antidepressant medication at least doubled between 1993 and 2000, there was no increase in use of psychological interventions, and also no evidence of improvement in rates of depression and CMD over that period<sup>98</sup>. People with common mental disorders also commonly use forms of self-help, but the prevalence of this has not yet been formally quantified in national surveys.

#### *Use of medication by people with CMD:*

Most people (76%) with CMD in Britain are not receiving treatment<sup>99</sup>. While 20% were taking psychoactive medication, 9% were having counselling or therapy, and 4% were receiving both forms of treatment. The proportion receiving any kind of treatment rose with the numbers of neurotic disorders present (4% of those with no disorder, 19% of those with one disorder, and 54% of those with two or more disorders), and so did the proportion receiving medication (3% of people with no disorder, 16% of those with one disorder and 47% of those with two or more disorders). The group most likely to be receiving treatment were those with phobias (54%), while the group least likely to receive treatment were those with mixed anxiety depression and depression (only 16% were being treated: 11% by medication alone, 3% by counselling of therapy only and 2% having both forms of treatment). Antidepressants were the most common psychoactive medication used (prescribed to 16% of people with a current neurotic disorder, compared to: 2% of those without; 13% of those with one disorder; and 39% of those with two or more disorders). Hypnotics and anxiolytics, which are generally addictive, were nonetheless being taken by 6% of people with neurotic disorders; this compares with 1% of those with no disorder, 4% of those with one disorder and 20% of those with two or more disorders.

#### *Use of psychological treatments by people with CMD:*

Only 6% of people with neurotic disorders had spoken to their GP in the last two weeks (5% for those with one disorder, 17% for those with two or more) compared to 1% of those without a disorder. Only 9% of those with CMD were receiving some form of psychological treatment. The most common types of therapy received were counselling and psychotherapy (4% of all those with a neurotic disorder were having counselling, while 3% were having psychotherapy and 1% were having behavioural or cognitive therapy). Only 3% of people with neurotic disorder had visited an outpatient department for treatment or for a check-up because of a mental or emotional problem in last three months, and only 1% of those with neurotic disorder had had a stay in an inpatient department in the previous three months for emotional or mental problems.

#### *Contact with Primary care and community services:*

Only 39% of people with CMD had spoken to their GP in the previous year about a mental or emotional problem, compared with 6% of those without a neurotic disorder. A much smaller proportion (8%) of those with a CMD had used one or more

---

97 Singleton et al. (2001)

98 Brugha et al. (2004)

99 Singleton et al. (2001)



community services in last three months, compared to 2% of those with no disorder. Only 4% of those with a neurotic disorder had seen a social worker compared with 1% of those with no neurotic disorder in last 12 months. Only 5% of those with a neurotic disorder had seen another nursing service compared with 2% of those with no neurotic disorder in last 12 months, and only 3% of those with neurotic disorders had seen another nursing service in last 3 months compared with 1% of those with no disorder. Similarly only 3% of people with a neurotic disorder mentioned using a psychiatrist, psychologist, home help or care worker in the previous 12 months, 2% used a psychiatrist in the last 3 months, 1% a psychologist and 1% a home help or home care worker. 3% of people with a neurotic disorder had used a day centre activity in the last 12 months and 2% within the last 3 months, compared to practically none with no disorder.

When followed up for 18 months, it was found that over half of all needs for treatment of depressive disorder and adjustment disorder were met; around a third of all needs for treatment of anxiety disorders were met; and most people with alcohol dependence were not receiving treatment.

### **Some key conclusions about the use of services:**

- **Problems with diagnosis:** Studies show that while 1 in 3 people attending their GP clinic have a CMD, only 50% on average are diagnosed<sup>100</sup>. Those instances diagnosed are known as “conspicuous morbidity” while the remainder are known as “hidden morbidity”. The latter partly arises because many people with CMD who consult their GP do so citing physical rather than psychological symptoms. Enhancing the capacity of GPs to diagnose will need: better training; awareness and use of screening tools for risk factors and for actual symptoms; diagnostic guidelines; and also performance management and contractual frameworks so that mental health is seen as core business. A study of routine GP data has shown, for example, that routine recording of life events by GPs was poor, and that of 339 suicide cases, only 29% had not consulted their GP in the last 6 months, indicating that there were opportunities for diagnosis and treatment in the 70% who did consult prior to their death, thereby offering potential to reduce the number of suicides<sup>101</sup>.
- **Inadequate treatment and consequences for health service use, social and economic costs and mortality:** Even when diagnosed, a significant proportion of people with CMD are not adequately treated, resulting in: greatly increased load on health services due to repeat consultations<sup>102</sup>; increased social and economic indirect costs due to greatly prolonged illness; and increased mortality<sup>103</sup>. For example, in the former study, the standardised mortality ratio<sup>104</sup> for people who had been diagnosed with CMD 11 years earlier was 1.73, and the mean number of consultations per year over the 11 years was 10.8. Eighteen out of the 87 patients who were followed up had consulted more than once a month over the entire 11 years. Psychiatric illness was independently associated with high attendance after age, sex, and physical illness were adjusted for.
- **Problems with addressing social causation:** In this study, the GPs had often seen their illness as socially caused, and had therefore taken the view that

100 Goldberg et al. (1980)

101 Haste et al. (1998)

102 Lloyd et al. (1996)

103 Lloyd et al. (1996)

104 i.e. the ratio of the numbers of deaths in the population who had been diagnosed with CMD 11 years earlier, compared with the numbers of deaths that would have been expected had the people with CMD had the same mortality as the general population. This ratio is standardised for socio-demographic variables.

the conditions were not appropriate for medical treatment, despite evidence of symptom severity, disability and chronicity. Neither had they seen it as their role to address the social problems that had caused and perpetuated the symptoms or illness.

### 2.3.6 Key messages for CMDs

- Common mental disorders are very common in adults, often disabling, with considerable social impact on families and the workplace, and half last for longer than a year.
- CMDs have identifiable social risk and protective factors.
- Approximately half are not diagnosed by the GP, and those that are diagnosed are inadequately treated, especially in relation to addressing social risk and protective factors.
- Economic costs can be huge, but are not necessarily borne by the NHS. For depression, easily the biggest element is effect on employment (productivity), which at about £8 billion in 2000, was 23 times larger than the estimated costs falling to the NHS; and £7.5 billion in 2006 (including lost employment but not total lost productivity)<sup>105</sup>.
- There also needs to be more research on prevalence of use of effective self-help techniques for CMDs.

## 2.4 Psychosis

Psychoses<sup>106</sup>, broadly defined, encompass a set of severe mental disorders which include schizophrenia, schizoaffective disorder, bipolar disorder, severe unipolar depression and substance-induced psychoses. Psychoses are predominantly characterised by a collection of symptoms, the most obvious being the presence of hallucinations and delusions. Psychoses may be accompanied by marked changes in affect (mood), towards depression, mania or both. Diagnostically, this inflexion distinguishes the affective psychoses (bipolar disorder and psychotic depression) from non-affective psychoses (schizophrenia, schizotypy and schizoaffective disorder). Bipolar disorders are generally characterised by extreme elation (mania) and severe depression, and are recurrent, disabling and costly. During both manic and depressive states, sufferers are often limited in their social, familial and employment roles. Several recent studies found that patients with bipolar disorder had substantial impairment in health-related quality of life compared to the general population, as well as problems in cognition<sup>107</sup>.

As with CMD, the diagnosis of psychotic disorders is based on a collection of symptoms. In addition to the positive symptoms of hallucinations and delusions, disorders may be accompanied by various negative symptoms, which include affective blunting (lack of affect in speech), alogia (lack of speech), anhedonia (lack of enjoyment) and a loss of psychomotor function. There is evidence that psychotic disorders are likely to operate on a continuum, with a burden of sub-clinical symptoms present in the population at-risk.

---

<sup>105</sup> McCrone et al. (2005)

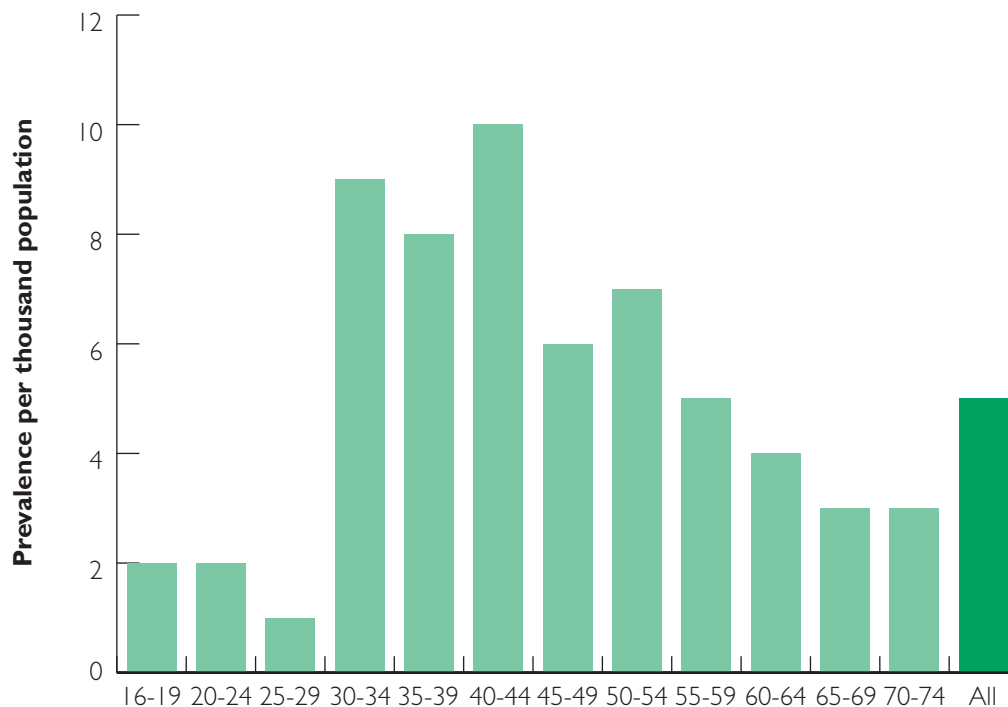
<sup>106</sup> Uher and McGuffin (SR-B1) – see Appendix E

<sup>107</sup> Phillips et al. (SR-B15) – see Appendix E

### 2.4.1 Prevalence

The incidence of all clinically relevant psychoses<sup>108</sup> is approximately 36 new cases per 100,000 people per year, which although low, presents a substantial burden to morbidity as well as to society and the economy. The incidence of specific psychotic disorders is lower; for schizophrenia there are around 13 new cases per 100,000 people per year. The prevalence of psychosis is 0.45 % in the general adult population, but substantially elevated in the prison population (for example, 7% in male and 15% in female sentenced prisoners and 11% in male and 15% in female remand prisoners).

**Figure 2.5: Prevalence of probable psychosis by age**



Source: Singleton, N., Bumpstead, R., O'Brien, M., Lee, A., and Meltzer, H. (2001) *Psychiatric morbidity among adults living in private households, 2000*. London: TSO.

The incidence of psychosis is also known to vary. Men are twice as likely to develop non-affective psychoses as women, but the incidence of affective psychoses is equal. The incidence of psychosis also varies by age, with the highest incidence rates occurring during the late teens and throughout the twenties. By aged 35, evidence suggests that 76% of men and 63% of women who will develop a psychosis will have presented to services. However, around the age of menopause, there is a small secondary peak in the incidence of psychosis for women.

### 2.4.2 Risk factors

#### **Biological risk factors:**

The single most important risk factor for psychosis is a family history of disorder. Indeed, numerous family, twin and adoption studies show conclusively that risk of schizophrenia is increased among the relatives of affected individuals and that this is the result largely of genes rather than shared environment. In the children and siblings of individuals with schizophrenia, the increase in risk is around 10-fold compared with the general population where, very roughly, one percent of people will experience an

<sup>108</sup> Singleton et al. (2001); Singleton and Meltzer (1998)

episode of a schizophrenia-like illness at some time in their lives, most commonly as young adults. The increased risk is somewhat less than this in the parents of people with the illness. While the twin and adoption literature leave little doubt that genes are important, they also point to the importance of environmental factors, since the concordance for schizophrenia in monozygotic twins who have the same genes is typically around 50% and heritability estimates are less than 100%. It is clear from genetic epidemiology that the mode of transmission is complex. The number of susceptibility loci (individual genes), the disease risk conferred by each locus, the extent of genetic heterogeneity and the degree of interaction among loci all remain unknown<sup>109</sup>.

Maternal influenza and other infections during pregnancy may lead to abnormal brain development during infancy and childhood, thus increasing the risk of psychosis in later life. This may also be a candidate risk factor for the relationship between living in an urban area and psychosis, since the likelihood of transmission of infectious diseases increases with overcrowding, though there is little firm evidence to support this pathway. There appears to be a small seasonal birth effect, such that people born in the winter months are around 20% more likely to develop psychoses than those during the summer months, though this may equally be attributed to a viral hypothesis. Advanced paternal age also appears to increase the risk of psychoses in offspring, possibly due to greater *de nova* mutations in spermatozoa with increasing age. People with schizophrenia are more likely to have experienced obstetric complications, including premature birth, low birth weight and perinatal hypoxia. Such factors can lead to developmental impairment and later onset of psychoses.

### **Social risk factors:**

In the British national psychiatric morbidity surveys<sup>110</sup>, people with probable psychosis were more likely to: be aged 25 to 54; living alone, separated or divorced; have educational qualifications no higher than GCSE; be in social class IV or V; be economically inactive; live in accommodation rented from a local authority or housing association; live in an urban area; report long-standing physical health problems; and be less likely to have a degree or A levels (2% and 7% respectively compared with 15% for both qualifications among those without psychosis). These data on risk factors apply to the group with probable psychosis, which comprises both people with schizophrenia and people with bipolar disorder. It was not possible within these household epidemiological surveys to separate out the people with bipolar disorder, and their social risk factors as indicated by clinical studies are rather different, with no bias towards lower socio-economic grouping.

The relationship between schizophrenia and lower socioeconomic status is unlikely to be entirely causal: people with schizophrenia tend to have lower educational achievement and, during the prodromal (pre-clinical) phase of disorder, are more likely to be unemployed and drift into lower social classes. There is little evidence that parental social class at the birth of the subject is associated with the risk of psychoses in adult life<sup>111</sup>. However, there is evidence that socio-environmental factors operating at the level of the neighbourhood may increase the risk of psychoses. These include markers of social fragmentation, including socioeconomic deprivation and poor social cohesion (community) and greater social isolation. For example, there is evidence that the risk of psychoses for black and minority ethnic (BME) groups and immigrants

---

109 Gottesman (1991); Craddock et al. (2005)

110 Jenkins et al. (2005)

111 Lewis et al. (1992)

increases when they make up a smaller proportion of the area they live in. This finding suggests poorer neighbourhoods, in terms of both material deprivation and available social support, may fail to buffer against the stresses of city living. The survey of people with psychosis<sup>112</sup> showed that a fifth (20%) reported feeling close to fewer than four people, compared to only 5% in the survey of adults living in private households in 2000.

Immigrants are at much greater risk of psychoses than native-born groups, the risk typically varying between 2-8 times higher in various immigrant populations. Elevated rates extend into the descendants of immigrants, so-called “second generation” groups, too, suggesting migration and/or post-migratory environmental experiences are likely to be important in the aetiology of disorder. Factors to explain raised rates in immigrants and their descendants include: stressful life events, discrimination, urban living and socio-economic deprivation, all of which are to some degree correlated. However, living in an urban area also independently increases the risk of psychoses, as mentioned above. This effect is present from birth, such that the more urban the birthplace, and the longer time spent living in urban areas during upbringing, the greater the risk of later psychoses. It is postulated that both social and biological factors in the urban environment may be important here<sup>113</sup>.

Stressful life events are also important factors: people with psychosis are found to have experienced much higher rates of exposure to stressful life events than the general population. In one study<sup>114</sup>, almost everyone (97%) in the sample of people with psychosis had experienced one of the stressful life events concerning relationship problems, illness and bereavement. In particular, a very high proportion of people in this sample reported experiencing victimisation, including sexual abuse (21%), violence in the home (25%), bullying (41%) and being homeless (23%).

It is hypothesised that chronic exposure to social stress may be sufficient to sensitise key parts of the brain which lead to the onset of psychotic symptoms, most likely in individuals with a genetic susceptibility to psychoses. Gene-environment interactions may be vital in understanding how common environmental exposures are linked to the onset of psychoses. One fertile area for research thus far has been the link between cannabis consumption during adolescence and the later onset of psychotic-like symptoms; the risk appears to be modified depending upon variations in the catechol-O-methyltransferase (COMT) gene<sup>115</sup>.

### 2.4.3 The costs and consequences of psychosis

The course of psychosis is often chronic, and, given the early age at onset, presents a substantial burden in terms of morbidity. According to the WHO, schizophrenia accounts for 1.1% of all disability-adjusted life years, while both schizophrenia and bipolar disorder were included in the ten leading causes of ‘Years Living with Disability’. Mortality from suicide is high in people with schizophrenia, with the lifetime prevalence estimated to be about 25%. There is some evidence of better outcome for schizophrenia in lower income countries, although there is debate about this<sup>116</sup>.

---

112 Jenkins and Meltzer (2003)

113 Kirkbride and Jones (SR-B13) – see Appendix E

114 O'Brien et al. (2001)

115 Uher and McGuffin (SR-B1) – see Appendix E

116 Institute of Medicine (2001)

People with psychosis experience relatively high rates of disability with over half of a national sample of people with psychotic disorder reporting difficulties with one or more activities of daily living (ADL). Help with activities of daily living is most commonly provided by family and friends (41%), and to a lesser degree from health care and social workers (19%) or from paid individuals such as domestic help (23%)<sup>117</sup>.

Most people with a psychotic disorder (70%) are economically inactive; only a quarter are in paid employment, of whom half are full time and half part time. Most (79%) of respondents are receiving some form of state benefit or allowance. Apart from benefits, over half of the sample (54%) had no other sources of income. Almost half of this sample (45%) had a gross weekly income of under £100, and debts are a significant problem with ensuing disconnections from water, gas, electricity and telephone. Smoking is more common in people with psychosis (44%) than in the general population (29%), and adds to the premature mortality experienced by people with psychosis<sup>118</sup>. However, hazardous levels of drinking and substance abuse are similar in people with psychosis and the general population. Suicidal ideation is much more common in people with psychosis (70% have experienced suicidal thoughts at some time compared to only 13% of the general population), and people with psychosis experience a greatly increased risk of suicide attempts (45% compared to 4% of the general population) and of actual suicide (10% -15% of people with psychosis commit suicide)<sup>119</sup>.

There is limited cost information on bipolar disorder<sup>120</sup>. Das Gupta and Guest (2002) have undertaken the only published attempt to calculate the overall UK cost. They built up estimates of service and non-service costs from a variety of sources but a greater difficulty was finding suitable prevalence data, and the epidemiological robustness of their estimates is uncertain. Total cost was £2.1 billion in 1999-2000, with 10% of the total falling to the NHS, 4% to other service systems, and the remaining 86% attributed to excess unemployment (around £1500 million), absenteeism from work (£150 million) and suicide (£110 million discounted). Carer costs could not be estimated, but generally service coverage was good.

For schizophrenia there is a recent estimate of the total societal costs in England: a total of £6.7 billion in 2004-05<sup>121</sup>. The cost of treatment and care falling directly to the public purse was about £2 billion, with other costs falling to society amounting to nearly £4.7 billion. Within this latter sum, the cost of informal care and private expenditures borne by families was £615 million, and the costs of lost productivity due to unemployment, absence from work and premature mortality was £3.4 billion. An estimate was also included for the cost of lost productivity for family carers (£32 million). The calculated cost to the criminal justice system (£1 million) was considered to be an under-estimate because of data limitations. This study also estimated that about £570 million is paid out annually in social security benefits (plus around £14 million in the administration of these benefits). Figure 2.6 provides a summary.

This and other studies of schizophrenia costs<sup>122</sup> demonstrate a number of pervasive features despite there also being marked country differences:

---

117 Singleton et al. (2001)

118 Harris and Barraclough (1998)

119 See section 2.8

120 McCrone et al. (2008)

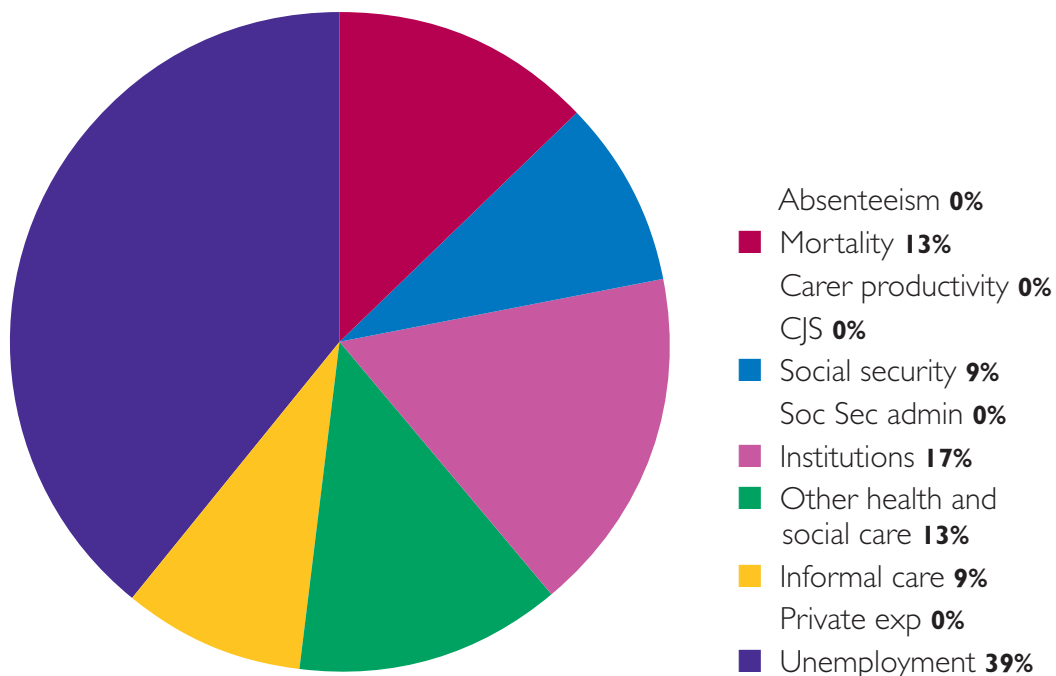
121 Mangalore and Knapp (2007)

122 Knapp et al. (2004)

- Sizeable non-service costs (often called indirect costs) which usually outweigh the service costs.
- A high proportional cost contribution of in-patient services, even in countries such as Italy and England which have closed most of the old psychiatric asylums, with a strong suggestion of supplier-induced demand. (A five-country study found a close association between in-patient costs and per capita bed provision<sup>123</sup>.)
- A low proportional contribution of medications, even since the introduction of the newer and much more expensive atypical antipsychotics.
- Use of a broad range of health and other services by many individuals.
- Substantial burdens falling on the families of some people with schizophrenia.

### Figure 2.6: Schizophrenia costs, England 2005

Average cost was approximately £54,000 per person per year (2005 prices)



Based on Mangalore and Knapp (2007)

#### 2.4.4 Use of services by people with psychosis

In one study, 85% of those with a probable psychotic disorder were having some kind of treatment at the time of interview<sup>124</sup>, four fifths of whom were having medication and two fifths were having counselling or therapy. 56% were taking antipsychotic medication, 48% were taking antidepressants, and over 20% were taking hypnotics and anxiolytics. 28% of those with a probable psychotic disorder had visited outpatients in the last three months, over 50% had used community services in the last year, and 37% had used community day services. It is important to note that psychotropic medication has side effects, some of which can be severe, which have an impact on compliance/adherence to medication. Concerning use of other treatments by people with psychosis: 15% of those with a probable psychosis were receiving psychotherapy and 17% were receiving counselling, compared with 1% of those without psychosis.

<sup>123</sup> Chisholm and Knapp (2002)

<sup>124</sup> Singleton et al. (2001)

Ethnicity influences service use, and people from some communities are reluctant to seek help, and may fear referral to specialist services.

### *Contact with primary care and community services:*

In contrast with people with neurosis, 71% and 14% of people with psychosis had spoken to their GP in the last year and in the last two weeks respectively about a mental or emotional problem. 28% of those with a probable psychosis had visited an outpatient clinic in the last three months for mental or emotional disorder, and 19% a psychiatric outpatient clinic, while 51% with probable psychosis used one or more community care services in the last 12 months. 30% of people with probable psychosis used a community psychiatric nurse and 26% a psychiatrist in the community, and 18% a social worker in the last 12 months. 38% of those with probable psychosis had used one or more community care services in the last year, and a similar percentage had used one or more day activity services. 7% of people with psychosis refused health and social care services offered to them, a rate similar to those without a psychotic disorder. Self-management techniques are helpful and increasingly used, especially for relapse prevention in affective psychosis (see below); however, statistics on their use amongst all people with psychosis are not yet available.

### 2.4.5 Key messages

- The prevalence of psychosis is only 0.5% of the adult population, but it is often very severe and very disabling, with major impact on families, use of health and social services, and on the economy.
- Both biological and social risk factors are operative.
- Most people with psychosis are in receipt of treatment, but adequacy of treatment and community support remains patchy, with only a third having seen a community psychiatric nurse in the last year.



## Affective disorders

The disorders that are usually grouped together as “affective” or “mood disorders” are primarily covered in this report within common mental disorders (unipolar depression<sup>122</sup>) and psychoses (bipolar disorder<sup>123</sup> or manic-depressive disorder). However, as bipolar disorder may be non-psychotic in severity and as the more severe unipolar depressions cause considerable disability and burden, they are also reviewed briefly here.

Unipolar depression is a common disorder with one-year prevalence around 5%, female predominance of at least 2:1 and lifetime rate of an episode approaching 30% in women. It spans a spectrum of severity from a disorder with a mild single-episode, to one which is severe, recurrent and psychotic. Rates of more severe disorder are not clear but may be approximately one half to one third. Bipolar disorder, which is defined by occurrence of at least one manic attack, usually with depressive episodes also, is much less common. It has a lifetime risk of around 1%, tends to be severe and recurrent, and produces substantial disability and burden. A milder bipolar spectrum has also been described, with higher rates. Both the more severe unipolar disorders and bipolar disorder produce significant disability, family burden, impact on children and costs. Figures for 2000 from the ‘Global Burden of Disease’ study<sup>124</sup>, measuring impact in DALYs (Disability Adjusted Life Years, which encompass both mortality and disability), show unipolar depression ranks fourth globally, third in Europe (responsible for 6% of DALYs), and first in the Americas. Bipolar disorder ranks lower because of lower prevalence, a little lower than schizophrenia.

For unipolar disorder, social factors (including life events) are major causes. However, biological and genetic elements are also important, particularly for the more severe disorders. For bipolar disorder, biological and genetic factors are more predominant with concordance rates in monozygotic (identical) twins indicating genetic factors, of around 80%. Unipolar episodes recover in most cases, although residual symptoms are common. The more severe episodes are liable to be recurrent, with at least one further attack at some stage in 80% of cases, and sometimes with many recurrences. Bipolar disorder tends in most cases to be very recurrent, although a smaller proportion of sufferers do well, particularly on lithium treatment, and experience no or very few further attacks. Unipolar depression is mainly treated by general practitioners, although about 10% of cases (the more severe or chronic) require substantial care from specialist mental health services and periods of hospital admission. In many cases Bipolar patients have high needs for specialist care and hospitalisation.

## 2.5 Dementia

The term ‘dementia’ is used to describe a collection of symptoms, including a decline in memory, reasoning and communication skills, and a gradual loss of skills needed to carry out daily activities. Alzheimer’s disease is the most common type of dementia. It changes the chemistry and structure of the brain, causing brain cells to die. Vascular dementia is caused by problems with the supply of oxygen to the brain following a stroke or small vessel disease.

<sup>125</sup> Paykel et al. (2005)

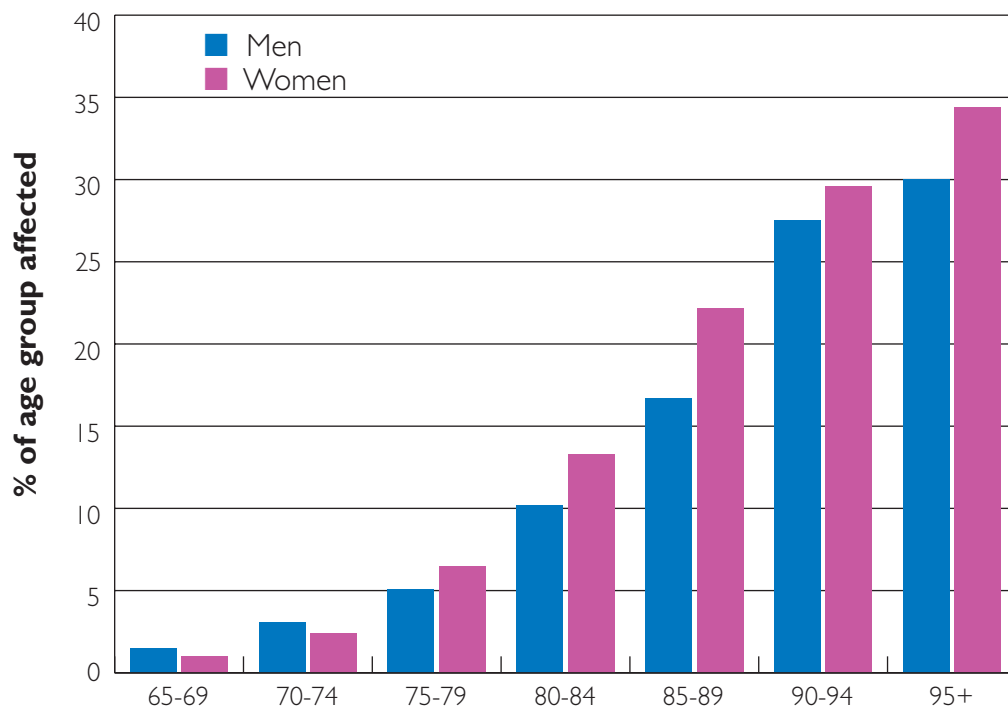
<sup>126</sup> For epidemiology of bipolar disorder in Europe, see Pini et al. (2005)

<sup>127</sup> Ustun et al. (2004)

### 2.5.1 Prevalence

Dementia can affect people of any age, but is most common in older people. The proportion of deaths attributable to dementia increases steadily from 2% at age 65 to 18% at age 85–89 in men, and from 1% at age 65 to 23% at age 85–89 in women. Overall, 10% of deaths in men over 65 years, and 15% of deaths in women over 65 years are attributable to dementia<sup>128</sup>.

**Figure 2.7: The consensus estimates of the population prevalence of late onset dementia**



Source: Knapp, M. and Prince, M. (2007). *Dementia UK: A report into the prevalence and cost of dementia prepared by the Personal Social Services Research Unit (PSSRU) at the London School of Economics and the Institute of Psychiatry at King's College London, for the Alzheimer's Society.*

### 2.5.2 Risk factors

Many factors can be associated with dementia<sup>129</sup> including age, genetic background, medical history and lifestyle, and these can combine to lead to the onset of dementia. The prevalence of both young onset and late onset dementia increases with age, doubling with every five-year increase across the entire age range from 30 to 95 and beyond. The prevalence of young onset dementia is adjudged to be higher in men than in women for those aged 50–65, while late onset dementia is considered to be marginally more prevalent in women than in men. Alzheimer's disease is considered to be the dominant subtype, particularly among older people, and in women. 6% of all people with dementia among black and minority ethnic groups are young onset, compared with only 2% for the UK population as a whole, reflecting the younger age profile of BME communities. The prevalence of dementia among people in institutions varied little by age or gender, increasing from 56% among those aged 65–69 to 65% in those aged 95 and over.

<sup>128</sup> Knapp and Prince (2007)

<sup>129</sup> Stewart and Prince (SR-B2) – see Appendix E

### 2.5.3 Costs and consequences

Dementia is one of the main causes of disability in later life. In the WHO Global Burden of Disease report<sup>130</sup>, disability from dementia was accorded a higher weighting than that for almost any other condition, with the exception of spinal cord injury and terminal cancer. Dementia, however, has a disproportionate impact on capacity for independent living.

About two thirds of people with late onset dementia live in private households (the community), whereas just over a third live in care homes. The proportion of those with dementia living in care homes rises steadily with age, from 26.6% of those aged 65–74, to 60.8% of those aged 90 and over.

In old age, mental health problems can often lead to expensive admissions to nursing homes or hospital. However, while this attracts considerable attention of policy makers, overall a bigger impact is often felt in the family. Although it is difficult to put an economic value on informal care, there is no doubt that the cost for this is also high: arguably, insufficient emphasis is given to the financial burden on the family in discussions of policy and practice<sup>131</sup>. However, the recently published *Dementia UK* report offered new estimates of the overall cost of dementia<sup>132</sup>. Annual costs were calculated for health care, social care, informal care and accommodation – distinguishing older people with dementia living in supported accommodation (including residential and nursing homes) and those living in the community (further subdivided by severity of symptoms). The total annual costs per person are estimated in Table 2.1.

**Table 2.1: Estimated total annual costs per person for a person living with dementia (Note: all amounts are rounded to the nearest £1000)**

£17,000	For someone with mild dementia living in the community
£26,000	For someone with moderate dementia living in the community
£37,000	For someone with severe dementia living in the community
£31,000	For someone living in supported accommodation

Total annual UK costs of dementia amounted to £17 billion: accommodation accounted for 41% of the total, health services 8%, social care services 15% and imputed costs for informal care support and lost employment 36%. (This last element is sensitive to the value placed on informal care, and different studies have used different methods. However, the consistent finding across studies is of a high cost of informal care)<sup>133</sup>.

### 2.5.4 Key messages

- Dementia is increasingly common in people aged over 65 and is a major cause of disability,
- Total costs in the UK are estimated to be £17 billion, however these are distributed across society. In particular, dementias pose a major burden for carers.

<sup>130</sup> Murray and Lopez (1996)

<sup>131</sup> McDaid (2001)

<sup>132</sup> Knapp and Prince (2007)

<sup>133</sup> Powell and Lovestone (SR-B12) – see Appendix E

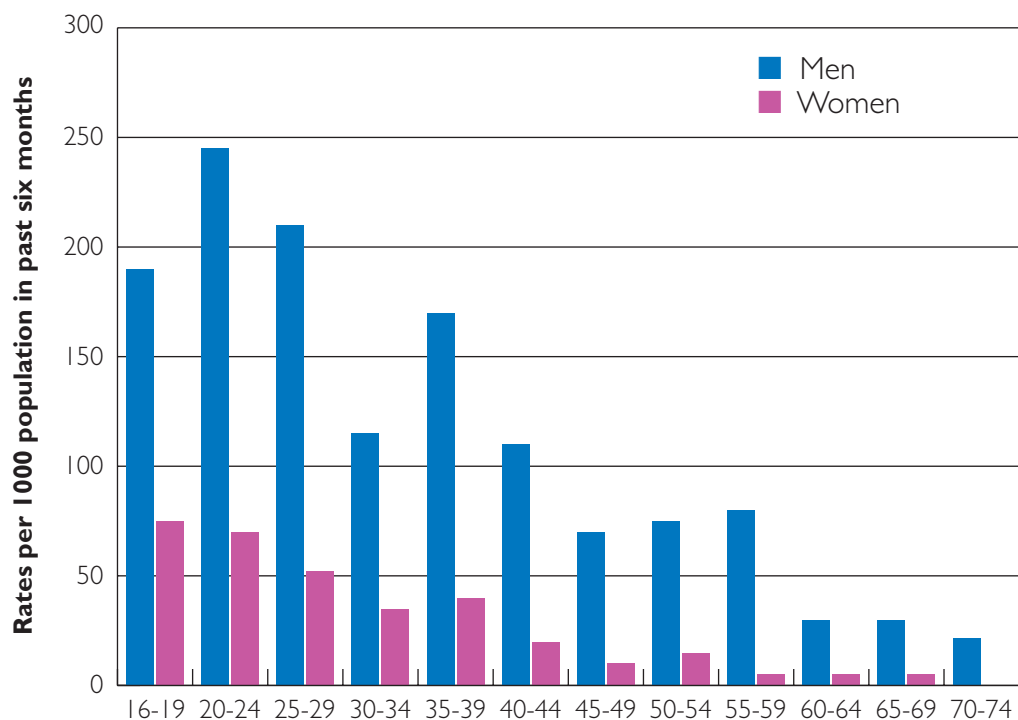
## 2.6 Addictions

Three types of addictions are considered here in view of the widespread acceptance of their importance: alcohol, drugs and tobacco. The statistics below are drawn from the most recent national psychiatric morbidity survey<sup>134</sup>. The interested reader is also referred to the Foresight project on Brain Science, Addiction and Drugs (see [www.foresight.gov.uk](http://www.foresight.gov.uk)). Brief reference is also made in this section to gambling, which is another important addiction.

### 2.6.1 Alcohol

The use of alcohol is widespread: 80% adults have consumed alcohol in the previous 12 months, while 20% report abstaining from alcohol or only drinking occasionally (less than one unit per week in the past 12 months). Just under a quarter of adults can be classed as heavy drinkers (15 or more units a week for women, and 22 or more units a week for men), while 20% are moderate drinkers (8-14 units a week for women and 11-21 units a week for men), and 38% light drinkers (1-7 units a week for women and 1-10 units a week for men)<sup>135</sup>. Approximately 12% of men report symptoms of alcohol dependence and 3% of women do so, providing an estimate of 7% alcohol dependence rate for the general population.

**Figure 2.8: The prevalence of alcohol dependence by age and sex**



Source: Singleton, N., Bumpstead, R., O'Brien, M., Lee, A., and Meltzer, H. (2001) *Psychiatric morbidity among adults living in private households, 2000*, London: TSO.

People with hazardous or dependent levels of alcohol use<sup>136</sup> were substantially more likely to be male, aged under 25, single, separated, or divorced, have a predicted IQ less

<sup>134</sup> Singleton et al. (2001)

<sup>135</sup> Ibid

<sup>136</sup> Hazardous drinking was assessed with a questionnaire which assessed frequency and quantity of drinking, frequency of heavy drinking, dependence symptoms (impaired control over drinking, increased salience of drinking and morning drinking), and harmful alcohol consumption (feelings of guilt or remorse after drinking bouts, blackouts, alcohol-related injury and others concerned about drinking). Answers to all questions are scored zero to four, and summed to provide a total score ranging from zero to 40. A total score of 8 and above indicates hazardous alcohol use.

than 90, be employed, rent from a local authority or housing association, own their own home with a mortgage, and live in urban areas.

Hazardous drinking is strongly age-related, falling significantly with increasing age. Also males are three times more likely than females to be hazardous drinkers, and being married was associated with a lower risk of being a hazardous drinker. Levels of hazardous drinking are similar among the employed and unemployed. Non-manual occupations were associated with lower levels of hazardous drinking. In general restricted income is associated with lower rates of reported hazardous drinking.

The population who were surveyed<sup>137</sup> were followed up 18 months later<sup>138</sup> and those who had reported hazardous drinking were interviewed again. A move away from hazardous drinking was associated with lower baseline drinking levels: 58% of women and 37% of men scoring 8-15 on the Alcohol Use Disorders Identification Test (AUDIT<sup>139</sup>) were no longer classed as hazardous drinkers compared to 20% of women and 6% of men scoring 16-40 on AUDIT: highly significant after controlling for age. Also those who scored lower CISR (Clinical Interview Schedule Revised) scores (less than 6), indicating an absence of a common mental disorder; and those who reported not smoking (49% of ex-regular smokers and 47% of those who had never smoked) were more likely to have reduced their levels of drinking on follow-up.

The study found that psychoactive medication was rarely used by people with hazardous alcohol consumption. Only 3% of those with hazardous alcohol use without dependence were using psychoactive medication compared to 6% of those with less hazardous drinking, and 7% of those with dependence in the last 3 months. Only 10% of hazardous drinkers were taking any psychoactive medication compared with 17% of those with no hazardous drinking and 16% of those with dependence in the last year.

Health and social services were also rarely used by people with hazardous alcohol consumption. People with hazardous drinking were less likely to have seen their GP about a mental or emotional problem in the last year or to have used community care services than those with no alcohol problem; and there was no difference in use of other health care and/or day care services. Alcohol-dependent people were more likely to have turned down services (8% had done so compared with 3% of each of the other groups). Individuals with alcohol dependence were more likely to be receiving counselling or therapy for a mental or emotional problem; 4% compared with 2% of people who were not dependent.

Finally, four per cent of people who had been drinkers at some point in their lives reported having given up drinking. Nearly half (49%) gave health concerns as the main reason for stopping. The other two main reasons given were not liking the effects of alcohol (25% of females and 15% of males) and stopping for religious reasons (6%). In the younger age groups, dislike and religious reasons were more commonly cited while older people cited health reasons for the behaviour change.

## 2.6.2 Drugs

27% of all adults interviewed reported having taken an illegal drug. Cannabis was the most commonly used drug (24%), followed by amphetamines (7%) and hallucinogens (5%). Ecstasy, cocaine and LSD were reported to be used by 4%, and tranquillisers by 3%. Rates of heroin, crack cocaine and non-prescribed methadone were less than 1%.

<sup>137</sup> Singleton et al. (2001)

<sup>138</sup> Singleton and Lewis (2003)

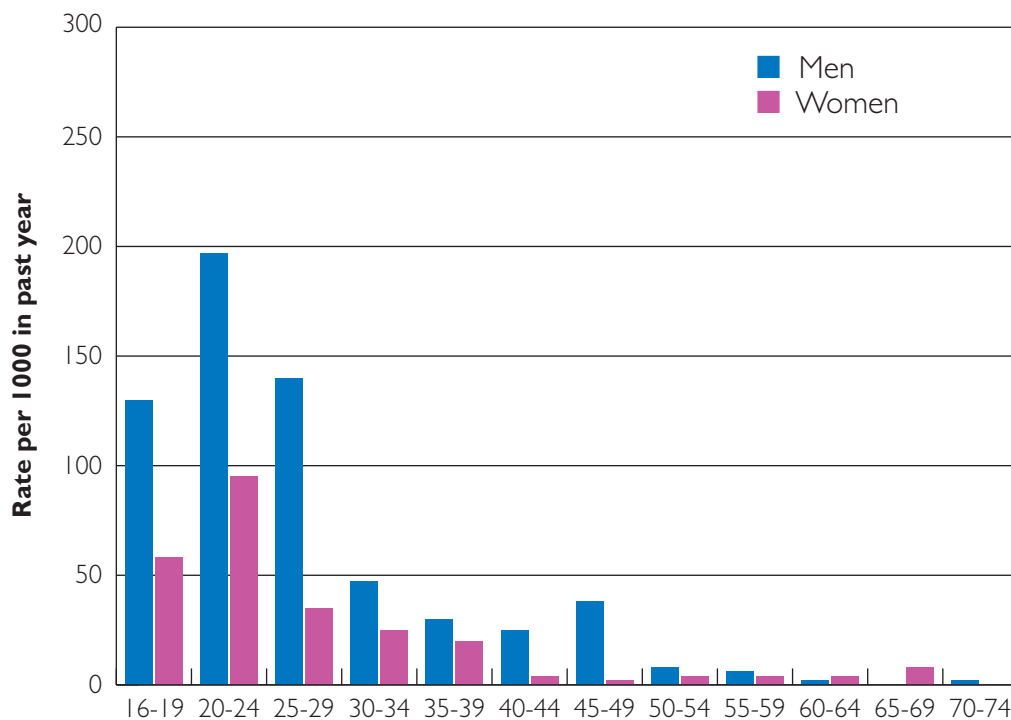
<sup>139</sup> [http://whqlibdoc.who.int/hq/2001/WHO\\_MSD\\_MSB\\_01.6a.pdf](http://whqlibdoc.who.int/hq/2001/WHO_MSD_MSB_01.6a.pdf).

Looking at use in the past year, 10% reported using cannabis, and 2% reported using amphetamines, ecstasy and less than 1% reported using any other drug. Use of cannabis in the past month was reported by 6% and less than 1% reported use of other drugs in the last month (3% were dependent on illicit drugs: 2% on cannabis alone and 1% on another drug, with or without cannabis dependence). In the first national psychiatric morbidity survey in 1993<sup>140</sup>, it was found that five per cent of the British population reported any drug use in the last year whereas among people of the same age surveyed in 2000 the reported rates were 12%, indicating a very significant rise in the incidence and prevalence of drug use.

While injecting drug use is a relatively uncommon behaviour in the general population, it carries significant risk for both blood-borne virus transmission and risk of accidental drug overdose mortality. Looking at the whole population in the 2000 survey<sup>141</sup>, 4 per 1000 had ever injected, 2 per 1000 had injected regularly, and 1 per 1000 had injected in the past month. Of those who had ever used drugs, 17 per 1000 had ever injected, 7 per 1000 had injected regularly and 3 per 1000 had injected in the last month<sup>142</sup>.

Men were significantly more likely to have used an illegal or non-prescribed drug in their lifetime (32% compared with 21% for women) and in the past year (13% compared with 8%). The use of drugs was far more common among the youngest age groups and declined rapidly with increasing age. People in their early twenties were most likely to report ever using illicit drugs, and more than half (52%) of that age group had used drugs at some time in their lives. The rates decline significantly with age and are indicative of a substantial cultural change in attitudes in drug taking over the past few decades. People with drug dependency were more likely to be single, to have lower predicted IQ, to be unemployed, and to be less likely to own their own home.

**Figure 2.9: The prevalence of drug dependence by age and sex**



Source: Singleton, N., Bumpstead, R., O'Brien, M., Lee, A., and Meltzer, H. (2001). *Psychiatric morbidity among adults living in private households, 2000*, London: TSO.

140 Meltzer et al. (1995a)

141 Singleton et al. (2001)

142 Coulthard et al. (2002)

In the longitudinal study where cases and controls were followed up at 18 months, factors were explored that were associated with onset of use during that study period<sup>143</sup>. Once age and sex were taken into account, other factors linked to onset were unemployment (4% of those working full time, 7% of unemployed and 7% of those long-term sick or disabled); perceived lack of social support; stressful life events (3% of those with no life events, 5% of those with two life events, and 13% of those reporting 3 or more life events experienced onsets); and increasing CISR score (3% of those with no disorder at baseline compared to 9% of those who had a disorder at both baseline assessment and follow-up). Further factors included: increasing AUDIT score (3% of those who were not hazardous drinkers at baseline reported onset of drug use, compared to 5% who were rated as hazardous drinkers and 14% of those who were rated as alcohol dependent); and increasing tobacco use (after adjusting for age and sex, the odds of drug use for moderate and heavy smokers compared with those who had never been regular smokers were 5.5 and 5.7).

The cessation of illicit drug use was 27% in the previous year (49% women and 16% men), and cessation rates increased with increasing age (16% in 16-24 year olds, 27% in 25-34 year olds, 54% in 35-44 year olds, and 57% of 45 and over group); living in a rural area; being married (59% of married, 30% cohabiting, 18% single and 39% of those who were widowed, divorced and separated at first assessment reported subsequent cessation by the time of the follow-up survey); and increased perceived social support.

Rates of treatment and access to services are relatively low. Only 16% of those dependent on drugs other than cannabis reported receiving some form of treatment compared to 9% of those dependent on cannabis (this difference is not statistically significant). Only 27% of those dependent on other drugs had seen their GP in last 12 months, and 18% of those dependent on cannabis only. This compared to 11% of those not dependent on drugs. 17% of those dependent on other drugs had used community care services in last year and 11% in last 3 months, compared to 6% and 3% without drug dependence, and 8% and 3% for those dependent on cannabis only. Those dependent on other drugs were more likely to have turned down services (15% compared with 3% of those not dependent on drugs and 8% of those dependent on cannabis only).

### 2.6.3 Tobacco use

At the time of interview in the most recent national psychiatric morbidity survey for Britain<sup>144</sup>, 47% had never smoked, 22% were ex-smokers and 30% of those surveyed were current smokers, with 9% classed as light smokers (less than 10 a day), 12% moderate smokers (10-20 a day) and 9% heavy smokers (more than 20 a day).

Unlike alcohol and drug consumption, there were no gender differences in tobacco consumption. Patterns of cigarette consumption did vary with age, with the heaviest smoking being more common in men and women aged 25-55. In the more recent surveys, there are lower proportions of men starting smoking now, and the percentage of men who have never smoked is greater in the younger groups. However, there is less change in females where the proportion of never smokers has remained constant. Approximately one quarter of smokers reported that they started smoking under the age of 15 and 58% started in the 15-19 age range. In the youngest age range group, women have significantly higher rates of early smoking initiation than men. Those aged

<sup>143</sup> Singleton and Lewis (2003)

<sup>144</sup> Singleton et al. (2001)

20-24 reported the highest prevalence of smoking (44%), and this figure decreased with age, with only 14% of those in the 70-74 range reporting smoking.

The proportion of regular ex-smokers increases with age from 6% in the youngest category to 45% in the oldest category. This, however, also indicates that over half of smokers continue their smoking habit for most of their lives. In the 18-month follow-up study, the rate of smoking cessation was 12% (14% for women and 9% for men), and was not linked to age. The patterns of smoking cessation may be changing with national campaigns and changing social attitudes to smoking. However, higher socio-economic groups report significantly greater rates of achieving 12-month periods of abstinence after the cessation of smoking.

There are clear data in many studies to indicate a strong interaction between different behaviours. The nature of the interaction is complex and is probably rooted within a mixture of constitutional, developmental, familial, and environmental factors. Smokers are four to five times as likely as non-smokers to have ever used drugs (24% versus 5%). Also heavier drinkers were more likely to use drugs with 47% reporting having ever taken drugs compared to 19% of light drinkers<sup>145</sup>. In general, there appears to be a clear relation between the intensity of consumption of tobacco or alcohol or illicit drug use, and the risk of being involved in all three substances. There was also a clear relationship between substance dependence (nicotine, alcohol or drugs) and mental ill-health.

The non-dependent population differed significantly from the drug-, alcohol- and nicotine-dependent population in terms of the presence of mental disorders. 12% of the non-dependent population were assessed as having any disorder compared with 22% of the nicotine-dependent (odds ratio 1.60), 30% of the alcohol-dependent (odds ratio 2.20), and 45% of the drug-dependent population (odds ratio 3.25). There does not appear to be any consensus about the nature of the relationship, but a bidirectional model appears to be most plausible. Studies to elucidate this association require a large population cohort to be followed from early teens into adulthood so that risk factors and measures of personality and psychological wellbeing prior to involvement with tobacco, alcohol or other drugs could be measured. Longitudinal follow-up might also determine the contribution of quantified tobacco, alcohol and other drug consumption and dependence to the evolution of psychiatric morbidity<sup>146</sup>.

### *Consequences of addictions*

Tobacco consumption is by far the most prevalent and harmful substance of consumption. Overall, half of young people who initiate smoking will develop a long-standing smoking habit, and a substantial proportion of those – up to a half – will die of smoking-related diseases.

High levels of alcohol abuse severely damage the liver as well as the brain and other body organs. The rates of mortality due to liver cirrhosis in the UK have risen steeply over the past two decades<sup>147</sup>. This is likely to continue unless there is a substantial change in patterns of alcohol consumption. There are reports of very significant growth in the numbers presenting at an earlier age with end-stage alcohol-related liver disease. This appears to be linked with heavier drinking among young people. In addition, the rates of illegal drug consumption have risen over the past decade and would now appear to be stabilising or even falling.

---

145 Coulthard et al. (2002)

146 Farrell et al. (2003)

147 Leon and McCambridge (2006)



The relative cost of psychoactive substances across the UK has fallen and the amount of disposable income has grown, and this has predictably resulted in a significant surge in consumption of all substances. The increase in one type of substance probably also interacts at both an individual and at the population level to increase the initiation and consumption of other substances. There are substantial social, psychological and health consequences to these changes, and there appears to be some variation in how different income groups respond.

Injection of drugs greatly increases the risk of contracting Hepatitis C and other chronic liver disease requiring anti-viral treatment or liver transplantation. High levels of use of psychostimulants such as ecstasy, amphetamine and cocaine may impact on the long-term incidence and prevalence of anxiety and affective disorders. This may be in part because psychostimulants affect brain structures with a particular effect on serotonergic- and dopaminergic-producing nerve cells<sup>148</sup>, which play an important role in mood regulation.

Surveys of psychiatric morbidity<sup>149</sup> and studies of populations of users of mental health services report high rates of overlap between substance use and severe psychiatric morbidity. It is estimated that 8% of the annual incidence of schizophrenia is accounted for by cannabis consumption<sup>150</sup>. There is, however, a far more striking impact of heavy drinking and drug taking on the aggravation of psychiatric symptoms and on reductions in social functioning. People with mental health problems are disproportionately heavy smokers<sup>151</sup>. The burden of substance abuse falls disproportionately on socially marginalised populations, and this is unlikely to improve over the coming decades and indeed may become more extreme over time<sup>152</sup>.

Any strategy that aims to tackle positive mental health and wellbeing will need to have, at the heart of its approach, strategies to promote reductions in all substance consumption in the population. Approaches to such reduction are not simple and the leverage for change at a policy level has limitations. However, clarity on the centrality and essential urgency of tackling smoking, drinking and drug use is the first step in tackling this complex problem.

#### 2.6.4 Key messages

- Addictions are common, especially in young people.
- Addictions are not well treated.
- Addictions are associated with other mental disorders.
- Addictions have substantial consequences for physical health, family, society and the economy.
- Addictions associated with certain legal drugs (alcohol and tobacco in particular) are extremely costly to the individual, the community and to society.

---

<sup>148</sup> Foresight report on Brain Science, Addiction and Drugs (see [www.foresight.gov.uk](http://www.foresight.gov.uk))

<sup>149</sup> Singleton et al. (2002)

<sup>150</sup> Arseneault et al. (2002)

<sup>151</sup> Farrell et al. (2003)

<sup>152</sup> Farrell (SR-B14) – see Appendix E

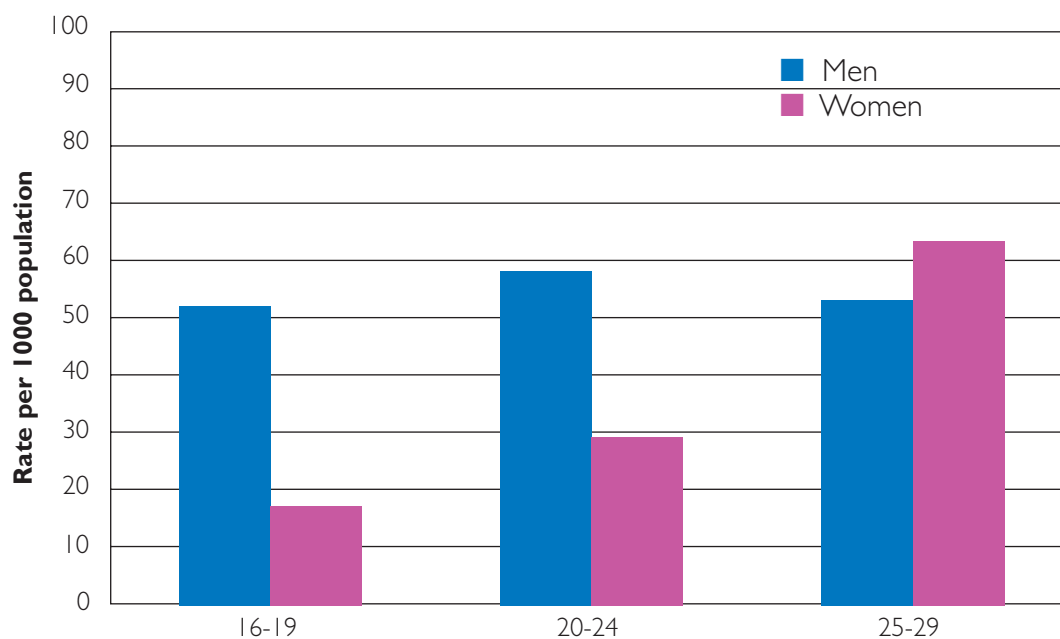
## 2.7 Personality disorders

Personality disorders (PDs) are long-term patterns of thoughts, feelings and behaviours that are handicapping to the individual. The fourth edition of the Diagnostic and Statistical Manual of Mental Disorders (DSM-IV) defines a personality disorder as: “an enduring pattern of inner experience and behaviour that deviates markedly from the expectations of the individual’s culture”.

### 2.7.1 Prevalence

In the 2000 ONS survey of psychiatric morbidity in adults<sup>153</sup>, the prevalence of personality disorder in the British population was reported to be 4%. Personality disorders tend to be more frequent among single individuals, those from lower socio-economic classes and those living in urban locations. The figure of 4% is equivalent to approximately 2.4 million people, although the prevalence of clinically significant problems within this subpopulation is likely to be smaller than this. The most consistently studied personality disorder in community studies has been anti-social personality disorder, which has a lifetime prevalence of between 2 and 3%, and is commoner in men, younger people, those of low socio-economic status, single individuals, the poorly educated and those living in urban areas.

**Figure 2.10: The prevalence of personality disorder by age and sex**



Source: Singleton N, Bumpstead R, O'Brien M, Lee A, and Meltzer H (2001) *Psychiatric Morbidity among adults living in private households, 2000*. London: TSO.

### 2.7.2 Risk factors

Recent twin studies<sup>154</sup> have shown that all personality disorders are genetically influenced and, in particular, that there is a strong genetic influence for the emotional and fearful clusters of personality disorder. Longitudinal studies<sup>155</sup> have shown that the experiences of childhood maltreatment and supervision neglect also independently increase the risk of developing personality disorder in young adulthood. There is also

<sup>153</sup> Singleton et al. (2001)

<sup>154</sup> Torgersen et al. (2000)

<sup>155</sup> Werner (1982); Johnson et al. (2000)

good evidence for gene-environment interactions in the aetiology of some subtypes of personality disorder, and recent epidemiological studies have shown that genotypes can moderate children's sensitivity to environmental insults in the aetiology of anti-social personality traits.

### 2.7.3 Costs and consequences

Personality disorders are associated with a significant burden to the individual, those around them and society as a whole. They are associated with an increased risk of co-morbid mental illness (for example, depression, anxiety, substance misuse); of suicide and deliberate self-harm. The magnitude of risk varies considerably between specific categories of disorder; of violence and offending (especially cluster B personality disorder); and of premature mortality due to their higher rates of engaging in impulsive and dangerous behaviour<sup>156</sup>.

There is very little economic evidence of costs attributable to personality disorder. A convenience sample of 303 people attending four general practices in London (74 of whom had at least one PD) was followed up a year later. Service use and employment patterns were examined<sup>157</sup>. Although those people with personality disorder appeared to have higher costs than those without (around £3100 vs £1600 per annum), it is in fact the interaction between PD and common mental disorders which is driving the significant cost difference. This reflects a more general finding that PD is commonly comorbid with other mental disorders. Most of the people in the POPMACT study (of treatment options for those who deliberately self-harm) had PD<sup>158</sup>, and the cost and cost-effectiveness findings from that study could be of relevance here<sup>159</sup>.

Of course, the PD spectrum is broad, and evidence on some people with rather particular needs indicates much higher economic impacts. Indeed, the only cost evidence in the UK has been in forensic samples. Cost per year for a sample of patients in the personality disorder directorate of Rampton high secure hospital was around £130,000<sup>160</sup>, and the new DSPD beds are even more expensive. In a recent study (CODES) the estimated cost per place was between £192,000 to £223,000 per prisoner per year in hospital-based sites, and £68,000 to £118,000 in prison-based sites<sup>161</sup>. NHS medium secure services for PD are equally costly, at around £200,000 per year<sup>162</sup>.

### 2.7.4 Key messages

- The interaction of personality and life events is a key determinant of mental health and ill-health. However, personality disorders are less well understood compared to other disorders, and more research is needed into causation, prevention and treatment. The extent to which personality disorder forms a continuum in the general population also needs further study.
- People with personality disorders are at increased risk of developing other serious mental health problems.

<sup>156</sup> Moran (SR-B10) – see Appendix E

<sup>157</sup> Rendu et al. (2002)

<sup>158</sup> Tyrer et al. (2003)

<sup>159</sup> Byford et al. (2003)

<sup>160</sup> Barrett (2005)

<sup>161</sup> Barrett, personal communication, based on as yet unpublished report to Ministry of Justice

<sup>162</sup> Ibid

- Some personality disorders are associated with an increased risk of violence and suicide, aggravated by co-morbid alcohol abuse.

## 2.8 Mental ill-health: suicide and violence

The above has focused on different types of mental ill-health, and has shown that the costs and consequences of each can be diverse and substantial. In contrast, this section now focuses on two particular consequences: suicide and violence. Clearly, many other consequences could also be considered. However, these are used to illustrate how a range of mental disorders can affect specific issues of deep concern to society, and to show the potential for making a substantial change to these outcomes.

### 2.8.1 Suicide

The rate of suicide (official and undetermined combined) in England and Wales has shown a downward trend between 1979-81 and 1989-91: falling from 11.38 to 10.58 deaths per 100,000 in 10 years. It subsequently fell to 9.2 between 1990 and 1995-97 during the Health of the Nation Strategy (which aimed to reduce rates to 9.4 by 2000), and again has so far fallen to 8.3 in 2004-06 with the Our Healthier Nation Strategy (this aims to reduce rates to 7.3 per 100,000 by 2009-11). Both strategies targeted national suicide prevention<sup>163</sup>.

Most people who kill themselves have a mental disorder at the time, and a significant proportion are under the influence of alcohol. Social factors are also significant precipitants (life events and chronic social adversity, combined with a lack of social supports.) The so called 'rational suicide' is extremely rare<sup>164</sup>.

The annual incidence of suicidal thoughts<sup>165</sup> is 4% (3% in men and 5% in women). Risk factors for onset of suicidal thoughts include: age (10% of 24 year olds reported onset of suicidal thoughts); being single, separated or divorced; living alone, lower educational attainment, lower social class, unemployment, being long-term disabled, having several stressful life events, smoking, and illicit drug use. However, the strongest risk factor is high baseline psychiatric symptom score (2% of people with score 0-5 reported onset of suicidal thoughts compared to 23% of those with score of 18 and above).

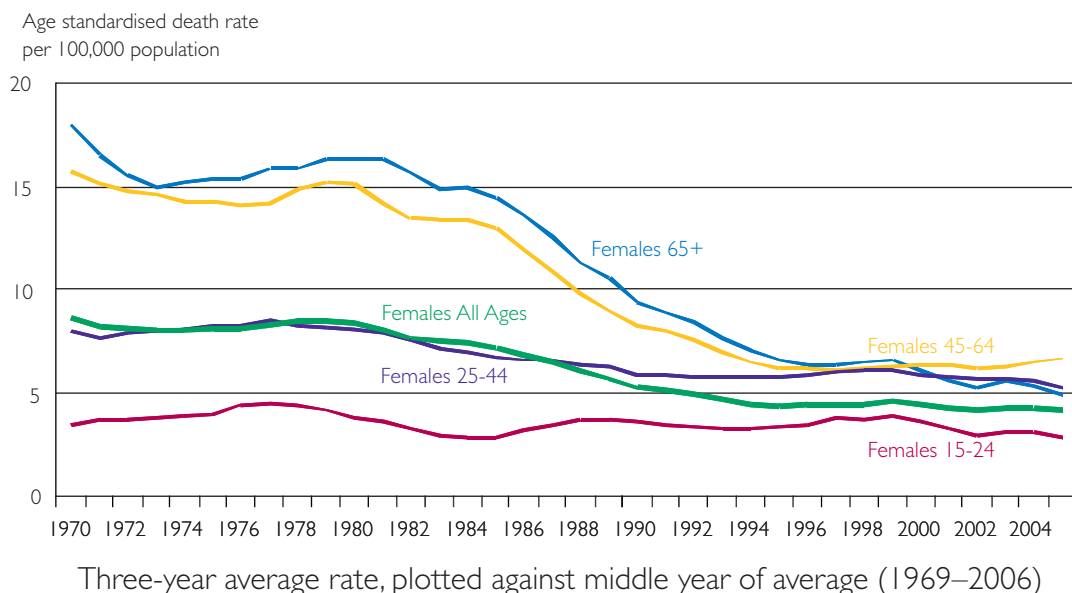
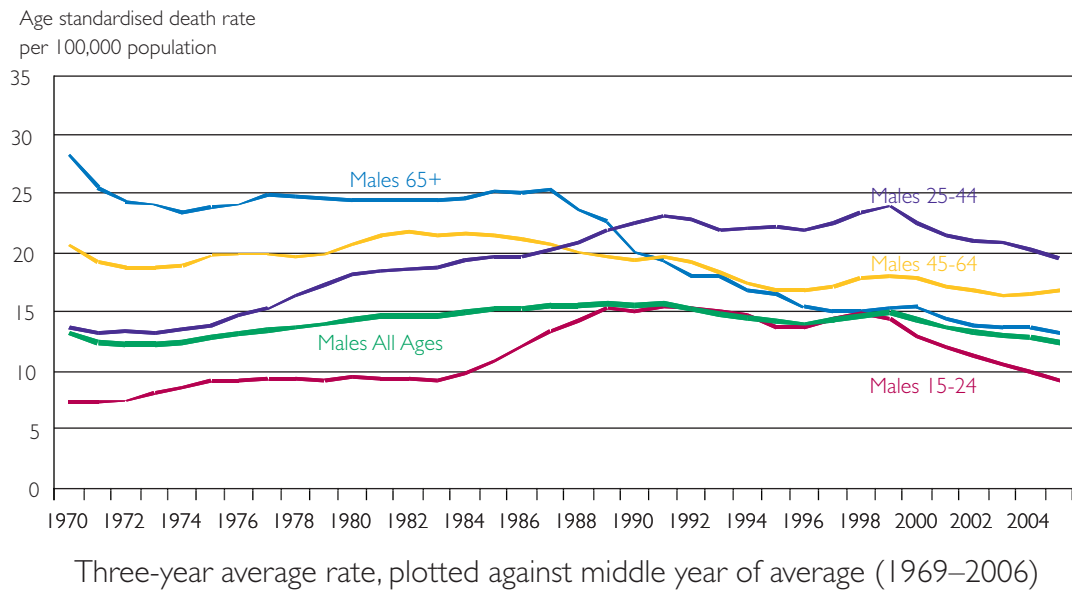
After 18 months, 50% had recovered from having suicidal thoughts. Recovery was associated with being 16-24 (66% compared to 44% of those aged over 55), lower psychiatric symptom scores (the odds of recovery were four times lower for those with scores of 6-11, seven times lower for those with scores of 12-17 and 20 times lower for those with scores of 18 or above, compared to those with scores of 0-5), more social support and higher income.

---

<sup>163</sup> Department of Health (1992); Department of Health (1999); Care Services Improvement Partnership (2008)

<sup>164</sup> Jenkins et al. (2005); Harris and Barraclough (1998)

<sup>165</sup> Singleton and Lewis (2003)

**Figure 2.11: Trends in suicide rates for males and females in England**

Note: Rates are calculated using population estimates based on 2001 census, and using the European Standard Population to take account of differences in age structure. Years to 1998 and 2000 have been coded using ICD9; 1999 and 2001 onwards are coded using ICD10.

Source: Department of Health 2008 and [www.statistics.gov.uk](http://www.statistics.gov.uk).

## 2.8.2 Violence

A small proportion of the British population is responsible for a large proportion of the anti-social behaviour in the population including violence<sup>166</sup>. In the most recent national psychiatric morbidity survey, 12% of the population admitted to violent behaviour in the last five years, 4% admitted having injured someone, 3% admitted that they had been involved in five or more violent incidents, 1% that they had assaulted three or more different types of victim and 5% that they had assaulted someone or been involved in a fight when intoxicated with drugs or alcohol in last five years.

<sup>166</sup> See the most recent national psychiatric morbidity survey, Singleton et al. (2001)

Violence was associated with being male, social class III-V, younger age, and single marital status, with reporting having injured someone, having been injured oneself, being involved in 5 or more violent incidents in last 5 years and three or more victim types. Violence was also associated with different psychiatric disorders. Less than 2% of the general adult household population with no psychiatric diagnosis were violent to the extent of injuring others, receiving injuries themselves, being involved in more than 5 violent incidents, or being violent towards more than one type of victim. 5% of people with neurosis reported severe and repetitive violence, 7% of people with PD, 10% of people with hazardous drinking, and 13-20% of those with alcohol dependence reported serious or repetitive violence. Anti-social personality disorder demonstrated greatest risk (over 4 times greater) of reporting injury to victim. More than a quarter reported that they had injured someone violently in the last 5 years. Anti-social personality disorder also substantially increases risks of being injured and reporting five or more violent incidents. 29% of individuals with ASPD reported that they had been violent when intoxicated. A study of offenders with dangerous and severe personality disorder reported that they were three times more likely to be reconvicted of violence than others<sup>167</sup>. People with psychosis were six times more likely to report five or more violent incidents.

By far the largest public health impact on serious and repetitive violence and versatility of violence was exerted by hazardous drinking. Estimates of the proportion of violent crime which involve alcohol vary with type of crime and country, but an appropriate estimate is that over 50% of assailants have been drinking<sup>168</sup>. The socio-demographic characteristics of violent individuals who have been drinking are the same as those of violent individuals in general: being young, single, male, and of lower social class.

The population attributable risk to injuring a victim in the last 5 years is 13.8% for any neurotic disorder, 37% for any personality disorder, 1.2% for psychosis screen positive, 50.9% for hazardous drinking, 29.8% for alcohol dependence, 21.7% for drug dependence and 24% for anti-social personality disorder. Thus the contribution to violence at the population level from persons screening positive for psychosis was very small, while by far the largest public health impact on serious and repetitive violence was exerted by hazardous drinking. A relatively small reduction in exposure to the risk factor of hazardous drinking at the level of the individual could result in a relatively large impact on violent behaviour<sup>169</sup>.

### 2.8.3 Key messages

#### **Suicide:**

- Is a significant cause of mortality, especially for young men, with devastating consequences for the family and community.
- Many suicides are preventable, and government efforts to reduce national suicide rates are bearing fruit.

#### **Violence:**

- A small proportion of the population is responsible for a large proportion of the anti-social behaviour in the population, including violence. Rates of violence are increased in people with neurosis, personality disorder, and substance abuse, but only to a relatively small extent in people with psychosis.

---

167 Coid (2007); [www.dspdprogramme.gov.uk](http://www.dspdprogramme.gov.uk)

168 Murdoch et al. (1990); English et al. (1995)

169 Coid (SR-B11) – see Appendix E

- The greatest risk factors for causing injury are hazardous alcohol consumption (50% population attributable risk), alcohol dependency (30% population attributable risk ), and anti-social behaviour (24% population attributable risk).
- The effect of alcohol is particularly enhanced in people with co-morbid anti-social personality disorder. A disproportionate number of the most serious offences are linked to personality disorder, and are often compounded by alcohol consumption.

### **3 How the prevalence and impact of mental disorders could change in the future**

**3.1 Drivers of change for mental health and vulnerable groups**

**3.2 Childhood disorders in the future**

**3.3 Common mental disorders in the future**

**3.4 Psychosis in the future**

**3.5 Dementias in the future**

**3.6 Addictions in the future**

**3.7 Personality disorders in the future**

**3.8 Conclusions: Future challenges**



### **3 How the prevalence and impact of mental disorders could change in the future**

Having looked in Chapter 2 at the situation today, this chapter now looks 20 years into the future and considers the same categories of mental disorder. In particular, it considers how the risk factors associated with mental disorders could change, and the consequences for the prevalence and level of impacts on the individual and on society.

### 3 How the prevalence and impact of mental disorders could change in the future

This chapter looks up to 20 years ahead, and considers how the prevalence, management and consequences of mental ill-health could change in the UK. However, it is important to bear in mind that, as yet, there is not good evidence of significant changes in population rates of mental disorder over time in the UK. For example, between 1993 and 2003, there was no significant change in rate of disorder and it is possible that future increases in some risk factors will be buffered by other contextual and protective factors – which may themselves change over time. Such factors are termed “drivers of change” or “drivers” in this report.

The analysis of this chapter starts by identifying and discussing the key drivers of change, and then builds on the information in Chapter 2 to consider how the prevalence and impact of specific classes of disorder could evolve in the future. This analysis is predicated on the baseline assumption that existing policies and overall expenditure on services remain broadly unchanged<sup>170</sup>. In so doing, the discussion seeks to provide evidence-based signposts to important future challenges, and, therefore, where new interventions or policy development may be most usefully considered<sup>171</sup>. Where the trends in drivers are less clear, the analysis highlights the consequent uncertainty.

However, as many of the drivers of change may evolve (or interact) in unpredictable ways, it should be stressed that the findings do not purport to provide firm predictions of the future. Nevertheless, where trends in drivers are clear<sup>172</sup>, the analysis makes use of them to minimise uncertainty: the demographic ageing of the UK’s population is one example; this is well understood and is likely to have a strong effect on the prevalence of dementias in particular.

#### A note of caution:

This chapter identifies key challenges for mental health in the future – if existing policies and overall expenditure continue broadly unchanged. It does not say what **will** happen, but rather what **could** happen. Further work in the Project shows how these challenges could be met and will be reported in the final Project report.

While the future cannot be predicted, consideration of future uncertainty is important, so that the robustness and flexibility of new interventions and policies can be evaluated accordingly. For this reason, three alternative (but equally plausible) future socio-economic scenarios have been produced by the Project and have been used to explore how mental capital and wellbeing might be different in these alternative futures. In effect the scenarios sample the future ‘possibility space’. A description of these scenarios and their use within the Project is the subject of a separate Project

<sup>170</sup> Note: It is recognised that evolving prevalence rates of different disorders in the future may require the redistribution of resources, if existing levels of services are to be maintained. While the resourcing and nature of services (and indeed, the introduction of new treatments) will primarily be considered in the final Project report (see Appendix E), this chapter does seek to identify instances where there is a future threat of substantial mismatches between resources for services and demand for those services.

<sup>171</sup> See the final Project report (Appendix E refers)

<sup>172</sup> See for example, Eich et al. (2007)

report<sup>173</sup> which will be made available in the autumn of 2008. It is therefore important that the following Chapter is read alongside that report.

### 3.1 Drivers of change for mental health and vulnerable groups

Important drivers of change for which we have evidence may be grouped into the following categories:

- **Biographic characteristics:** age, sex, ethnicity; family and socio-economic characteristics (marital status, number of children, family composition, employment); individual circumstances (life events, social supports, immigrant status);
- **Household characteristics** (accommodation type, housing tenure); geography (urban/rural, region);
- **Societal characteristics:** for example, crime, deprivation index.

Particularly vulnerable groups include carers of all ages<sup>174</sup>; women<sup>175</sup> and children (especially those with ill parents, or with dyslexia<sup>176</sup>); men who drink over safe limits<sup>177</sup>; children in local authority care<sup>178</sup>, people in prisons<sup>179</sup>; people in debt<sup>180</sup>; children and adults with learning disabilities; older people ; people with sensory impairment, and refugees. Men also have higher levels of suicide, and people from some Black and Minority Ethnic (BME) populations experience higher levels of psychosis.

Drawing on the evidence of the Project's supporting papers<sup>181</sup> and the information contained in the list of references, Table 3.1 summarises how particular drivers of change interact with the specific classes of mental disorder considered in Chapter 2. Several points should be noted:

- While many important drivers of change appear in the Table, the list of drivers is intended to be illustrative rather than exhaustive.
- The size, scope and organisation of services are not included in the table since they are considered elsewhere in the project where 'interventions' are analysed. However, these will, of course, crucially affect the prevalence and impact of all the mental disorders.
- Following the discussion in Chapter 2, Table 2.1 includes columns for "violence" and "suicide", although it is recognised that these are not mental disorders per se.

#### Key message

Table 3.1 shows that an extremely diverse range of drivers are linked to many different forms of mental ill-health, and that a wide range of government policies (not directly aimed at mental health) crucially affect those drivers. This, coupled with the high cost of mental disorders to the individual, families and society argues for mental health issues to be strongly considered in wider policy development in government.

---

173 Available through [www.foresight.gov.uk](http://www.foresight.gov.uk)

174 Singleton et al. (2002)

175 Bebbington et al. (1998)

176 Green et al. (2005); Meltzer et al. (2003a)

177 Farrell et al. (2003)

178 Meltzer et al. (2003b)

179 Jenkins et al. (2005)

180 Jenkins et al. (2008a)

181 See Appendix E

**Table 3.1: Some important interactions of particular drivers of change with specific classes of mental disorder**

	Childhood disorders	Adult common mental disorders	Psychosis	Dementia	Personality disorders	Addictions			Violence	Suicidal thoughts
						Alcohol abuse	Substance abuse	Tobacco		
Age	Increases with increasing age	Highest rates in 35-54 age group	Highest rates 20-34 age group, median age at onset ~3 years later in women than men	Increases with age 5% of over 65s and 20% of over 80s	Increased in younger people	Highest in 16-24 year olds	Highest in 16-24 year olds	Increased onsets in 16-24 year olds, highest rates 25-55	Highest in young adults	Highest in young adults
Gender	M>F	F>M	M>F, but secondary peak in women around 40-45 years	M=F	M>F	M>F	M>F	M=F	M>F	F>M, but actual suicide M>F
Ethnicity	Lower rates in young Indian girls	Higher rates in Irish and Black Caribbean	Higher rates in several BME groups; notably Black Caribbean and Black African populations							
Marital status	N/A	Increased in separated and divorced	Increased in separated and divorced		Increased in single	Increased in single, separated or divorced	Increased in single, separated and divorced	Increased in single, separated and divorced	Increased in single	Increased in single, separated and divorced
Family composition	Increased in lone parents, and reconstituted families	Increased in lone parents			Couple with children have lower rates				Increased rates in those living alone	
Employment	Increased in poor education of parents, lack of employment and low income of parents	Increased in social class V and unemployed.	Increased in social class IV and V, and in economically inactive. Little evidence that parental social class is influential		Increased in those with lower socio-economic status and poorly educated	Increased in manual occupations	Increased in unemployed	Higher rates with lower educational qualifications, nursing and teaching, lower incomes	Increased in social class III and IV	Higher rates in lower educational qualifications and lower social class

	Childhood disorders	Adult common mental disorders	Psychosis	Dementia	Personality disorders	Addictions			Violence	Suicidal thoughts
						Alcohol abuse	Substance abuse	Tobacco		
Social supports	Increased with psychological distress in mother and family discord	Increased in those with few social supports	Increased in those with few social supports							Increased rates with few social supports
Immigration status			Higher rates in immigrants, probably due to increased stressful life events, urban living, discrimination, social isolation							
Housing tenure		Increased rates in people who rent rather than own home	Increased rates in people who rent			Increased rates in those who rent from LA or housing association and in those with a mortgage	Increased rates in those who rent			Increased rates in those living alone
Urbanisation		Urban > rural	Urban > rural		Urban > rural	Urban > rural	Urban > rural	Urban > rural	Urban > rural	Urban > rural
Deprivation index	Increased rates with neighbourhood deprivation and lack of social cohesion		Increased rates with neighbourhood deprivation and lack of social cohesion, both in childhood neighbourhood and current neighbourhood				Increased rates with neighbourhood deprivation and lack of social cohesion			

### 3.2 Childhood disorders in the future

Children are not immune from the drivers of change which affect their families, households and neighbourhoods. The surveys of the mental health of children in Britain<sup>182</sup> have demonstrated that the elements of social deprivation and social exclusion (unemployment, discrimination, poor housing, poor educational attainment, lack of skills, ill health and family breakdown) are all associated with increased rates of mental disorders among children.

The Treasury Report on long-term demographic and socio-economic trends<sup>183</sup> suggests that the number of lone-parent households is likely to continue to be large by historical standards and could increase. Yet children in lone-parent families are twice as likely to have a mental disorder as those living in two-parent families.

The Treasury Report also states that poverty is associated with urban areas where social sector housing is concentrated. If income inequality were to increase, children born to poor families would be less likely to break free from their background. Therefore there is a possibility of creating an underclass of children with emotional and behavioural problems living in deprived circumstances, and with fewer opportunities to break free from the vicious cycle of social exclusion. This could mean that the increased prevalence of mental disorders of children living in social housing in inner city areas may not improve in future years.

However, these social changes have to be seen in the context of demographic changes. As a result of falling fertility rates, the average completed family size has fallen over the past three decades and is expected to converge to 1.74 by 2017. While the number of children aged between 5-15 is projected to continue to fall between 2007 and 2017 (by around 5%) the number of young children between the ages of 0-4 is actually projected to increase (by around 4%). There is mixed evidence on the association between the number of children in the household and the mental health of children.

Migration has been an increasingly important driver of population growth over past decades. The effect on the mental health of children will continue to depend on the source of the migration. Young Indian girls (0-5) have by far the lowest rate of mental disorders among all children, but we do not yet know the rates of disorder in the children of migrants from East Europe.

These negative trends may be offset by the drive to get more children into education, increasing the school-leaving age and increasing the proportion of low income families going on to further education.

Children's mental health is also related to lifestyle choices, for example, smoking, drinking and drug taking. There is certainly a trend for increased use of alcohol (particularly binge drinking) and drug use among young adults, especially young women. If these trends continue, both emotional and behavioural disorders are also likely to increase.

Finally, it was shown in Chapter 2 that mental health problems experienced in childhood or adolescence often have serious and diverse adverse effects in adulthood, including: enduring morbidity, anti-social behaviour and criminality, relationship difficulties, substance misuse, impacts on employment and productivity, and quality of life. Therefore, any future increases in child mental health problems, or indeed a failure

<sup>182</sup> Meltzer et al. (2000); Meltzer et al. (2001); Yar et al. (2002); Meltzer et al. (2003a), (2003b); Green et al. (2005)

<sup>183</sup> Eich et al. (2007)

to reduce them below today's levels, has the potential to create the seeds for later economic and social impacts on the individual, wider society and across the interests of many Government Departments and agencies. Moreover, these impacts could last for decades into adulthood.

### **Key message**

Any increases in social deprivation, substance misuse and numbers of looked after children will lead to increased rates of disorder in children leading to educational and occupational failure, and will add to the inter-generational cycle of deprivation. A failure to tackle these disorders early in children would store up diverse problems which will affect many parts of society and Government and which would be spread over many years.

## **3.3 Common mental disorders in the future**

The Government has set targets to increase employment rates to 80% of the adult population. Given the links with risk factors described above, it can be seen that CMD may decrease significantly with such an increase in employment rates if they are achieved. On the other hand, rates of CMD may be expected to increase significantly with: increases in separation and divorce, increase in living alone, increase in single parent families, reduced home ownership as young people find it difficult to get on the housing ladder; increases in the intensification of work, and increased urbanisation. However, we do not have any long-term studies demonstrating linkages between such increases in CMD prevalence and changes in risk factors.

Rates of episode onsets of CMD for the individual are likely to increase if there is reduced access to home ownership, and will also be influenced by changes in the frequency of threatening life events such as crime, terrorism, and flooding. They will also occur due to the usual events such as unemployment, bereavement, low income and debt. Rates of episode onset of CMD are likely to decrease with enhanced investment in mental health promotion in schools, workplaces, prisons, and local authority care for children, and in appropriate educational support for children with learning difficulties.

Recovery rates from CMD are likely to be dependent on whether employment rates go up or down, on provision of social supports by communities or services; and on provision of effective treatments by primary care services.

### **Key message**

The picture for Common Mental Disorders is mixed, and will be dependent on a wide range of factors in many areas of public policy such as employment and home ownership; on societal patterns such as the proportions of people divorcing, and living alone; on the frequency of unpredictable life events such as crime and flooding trauma; and on work patterns which may influence access to supportive social networks. However, the high prevalence and costs of CMDs in the UK, coupled with this substantial uncertainty in the future, argues strongly for the need to consider mental health in wider policy formulation.

## **3.4 Psychosis in the future**

Predicting changes in the incidence of psychoses is difficult. Initial reports of a decline in the incidence of schizophrenia in the 1980s<sup>184</sup> appear to be ascribed to changes in

---

184 Der et al. (1990)

diagnostic practices<sup>185</sup> and service provision. Several studies since have reported an increased incidence of psychoses<sup>186</sup> though some of this increase may be due to changes in the demographic composition of the sample<sup>187</sup>. The best evidence, using a standardised methodology in a geographically defined study area, suggests that the age-sex adjusted incidence of psychoses in Nottingham has not declined over the last 30 years. In fact, the changes in point estimates showed a slight increase over time, though this was not statistically significant. For specific diagnoses, the same study did observe a significant increase in the incidence of substance-induced psychosis over time<sup>188</sup>.

We do know that factors which are associated with the incidence of psychoses have increased in the last few decades, including the prevalence of substance abuse (most notably the use and dose of cannabis), separation and divorce<sup>189</sup>, migration<sup>190</sup> and urbanisation<sup>191</sup>. It is likely that such factors act as markers of risk for a range of adverse social conditions which underpin their association with psychoses risk. If these factors continue to become more prevalent in the UK, as past trends suggest, then we can anticipate an increase in the incidence of psychoses over the forthcoming years. In particular, modelling projections suggest that if cannabis use is causally associated with schizophrenia<sup>192</sup> a rise could cause significant increases in incidence rates by 2010<sup>193</sup>.

Given the increased incidence of psychoses in immigrant groups and their descendants, including non-British white immigrants, and given the current rates of immigration to the UK (for example, following the expansion of the European Union into Eastern Europe from 2004) it is prudent to monitor the mental health needs of all new groups of migrants. This will be particularly important for those cases where there is little or no existing research on the effects of immigration on disorder for those groups.

### **Key message**

Psychosis rates are likely to go up with increased separation and divorce, difficulties in home ownership, and increased urbanisation. They will increase if more children have to be taken into care because of increased rates of parental separation and if foster care cannot expand sufficiently to prevent high use of local authority residential care. They will also go up with any increase in drug abuse, especially cannabis, and could also rise with any increases in immigration.

## **3.5 Dementias in the future**

It is estimated<sup>194</sup> that there are now about 700,000 people with dementia in the United Kingdom, and this number is forecast to increase with the demographic shift in the age of the population, with more people surviving beyond 80 years. In particular, over the next thirty years the total is estimated to double to 1.4 million people, with the numbers of men and women affected increasing at a similar rate. Dementia

---

185 Allardyce et al. (2000)

186 Bray et al. (2006); Boydell et al. (2003); Brewin et al. (1997); Castle et al. (1991)

187 Boydell et al. (2003)

188 Kirkbride et al. (2008)

189 Morgan et al. (2007)

190 Cantor-Graae et al. (2005)

191 Mortensen et al. (1999)

192 Moore et al. (2007)

193 Hickman et al. (2007)

194 Knapp and Prince (2007)



currently costs the UK economy £17 billion a year, and this could treble to over £50 billion a year over the same period.

The increases in the numbers of people with dementia under 80 years of age will be relatively small. Numbers of people with young onset dementia are projected to remain relatively stable over time.

The PSSRU (Personal Social Services Research Unit) has built a model to project the likely future demand for long-term care for older people and its costs<sup>195</sup>. A wide range of scenarios has been examined for a variety of purposes, including for the Wanless Review of social care<sup>196</sup>. A variant of the model has been constructed to make projections of the numbers of older people with cognitive impairment (a good proxy for dementia) and the associated costs of their support<sup>197</sup>. The number of older people with cognitive impairment in England is projected to rise by more than two-thirds from 468,000 to 855,000 between 2002 and 2031, faster than the increase in numbers of older people with functional disability only. Over the same period, expenditure on long-term care services for older people with cognitive impairment in England is projected to rise from £5.4 billion to £16.7 billion, equivalent to an increase from 0.60% to 0.96% of projected GDP. This figure does not include any imputed cost for informal care. Under present arrangements for the financing of long-term care, a sizeable proportion of this total would be publicly funded<sup>198</sup>.

Current medications used in the treatment of Alzheimer's disease (cholinergic enhancers) bring about limited improvement in cognitive function in some patients, but do not affect the fundamental course of the disease. There is a good chance that at some point in the next 20 years, the current large amount of research into biological mechanisms underlying the disease and potential drug treatments will result in medications which do have preventive or true disease-modifying effects. These could have major effects on prevalence, survival and costs, with increased health service cost for medications, but also possibly substantial savings on social care.

### **Key message**

Rates of dementia will increase geometrically with increasing rates of longevity of the general population. This will have a major impact on family carers, and their mental health, and on health and social services.

## **3.6 Addictions in the future<sup>199</sup>**

The prevalence of addictions and the hazards to mental capital and wellbeing will be affected by the effectiveness and vigour of policies to control use, to help people avoid dependency, and in helping addicts to combat their addictions. However, certain societal trends could also act to increase addictive behaviour:

- Drivers that will tend to increase drinking rates include: increased availability of alcohol, reduced prices in real terms, increased earning power<sup>200</sup>, more young people, increased proportions of single, separated and divorced people, difficulties

---

195 Wittenberg et al. (2006)

196 Wanless et al. (2006)

197 Comas-Herrera et al. (2007)

198 Knapp and Prince (2007)

199 Note – the subject of future trends in addictions has been the subject of a Foresight report on Brain Science, Addiction and Drugs (see [www.foresight.gov.uk](http://www.foresight.gov.uk)).

200 Cook and Moore (1993)

getting on to the housing ladder, and increased urbanisation. The onset of hazardous and dependent drinking is also likely to increase with increased numbers of young people, increased divorce rates, stressful drinking and increased smoking in young people. However, recovery rates are likely to increase with reductions in smoking. Importantly, any increases in alcohol consumption are likely to increase levels of violence, especially in people with anti-social behaviour disorder:

- Drug taking is likely to increase with availability, reduced price, unemployment, and reduced home ownership.
- Smoking onset could increase with increased numbers of teachers and nurses (rates of smoking are particularly high in these professions), lower incomes, increased urbanisation, increased rates of drinking, increased rates of CMD and increased rates of illicit drug use. However, the effect of the ban on smoking in public places may be expected to mitigate these effects.

Note: Gambling is not otherwise addressed here, but it is another important behavioural addiction, with major damaging consequences for individuals and families. Rates are highly likely to increase directly with increased availability of casinos and other gambling opportunities. This would be especially so if gambling were to be actively promoted.

### **Key message**

Rates of consumption and hence hazardous consumption and dependence are directly related to availability (price relative to earnings, distribution etc.), and so rates will continue to rise unless vigorous action is taken to reduce availability.

## **3.7 Personality disorders in the future**

There are environmental exposures that are highly prevalent in British society (e.g. living in an urban area), and which are important aetiological factors in personality disorder. Indeed, in some cases their prevalence seems to be steadily increasing. It is therefore reasonable to speculate that, over the course of time, in turn the prevalence of disturbances in personality and personality disorder will increase.

Nevertheless, it should be emphasised that, at present, there is no good evidence for a significant change in the prevalence of personality disorder. One possible explanation for this might be that any increase in prevalence has been offset by a corresponding increase in mortality, which is raised among those with personality disorder. Personality disorder is often associated with childhood trauma and the increased awareness of this as an issue may have an impact in the future.

### **Key message**

Violence is highly related to a combination of anti-social personality disorder (ASPD) with heavy alcohol consumption – so even if the rate of ASPD stays constant, violence by people with ASPD will increase with increased availability and consumption of alcohol.

## Social exclusion and mental health: Current situation and future directions

The relationship between social exclusion and mental ill-health is complex: many of the elements of “exclusion” (poor educational levels, unemployment, low income, poor housing, lack of social networks, neighbourhood deprivation) can be both causal factors and consequences of mental ill-health in different circumstances. In addition there are groups of the population that are often regarded as excluded from society. Important examples are:

- **Adults aged 16-64 in the general population with common mental disorders:** The national surveys of psychiatric morbidity in Britain show that this group, compared with those without mental ill-health, were more likely to be: separated or divorced, to have no formal educational qualifications, to be unemployed, and to rent rather than own their accommodation. However, the most significant differences related to social participation. Adults with neurotic disorders, compared with other people, were more likely to have small primary support groups, express a severe lack of social support, and participate in fewer leisure activities. The situation is even worse for people diagnosed with significant mental illness; these are among the most ‘excluded’ in society. At best 15% of people of working age with long-term mental health problems are working, far lower than any other group of disabled people and joblessness. And their lack of social networks is often exacerbated by discrimination and profound loss of social status.
- **Prisoners:** About 80-90% of prisoners in England and Wales have one mental disorder (personality disorder, functional psychosis, neuroses, alcohol dependence or drug dependence), and about a half of the prison population have two or more disorders. Disorders are more prevalent among remand than sentenced prisoners. Severe mental health problems are prevalent among the majority of the homeless population. The combination of mental disorders, alcohol, drug, and tobacco abuse exacerbates the situation.
- **Children and young people, aged 5–17 years, looked after by local authorities:** In a national survey of England, 45% were assessed as having a mental disorder; five times the rate of children in the private household population.

The future position of people with mental disorders may be ameliorated by recent government policies as well as local initiatives. The Disability Rights Commission with the power of the Disability Discrimination Act can undertake formal investigations, and organisations could be open to scrutiny if they are suspected of discriminating on mental health grounds. Also, initiatives generated by the Social Exclusion Unit may prove to have some significance in terms of prevention. For example, if the Connexions Direct service were to succeed in reducing the numbers of young people who are poor, unskilled, jobless, disaffected, lonely, and without hope and bringing up children alone, this is likely to impact on rates of depression in these groups.

Finally, in view of the importance of the stigma associated with mental disorders, the subsequent phase of this Project specifically looks at how that could be addressed in the future.

### 3.8 Conclusions: Future challenges

Under the baseline assumption that existing policies and the overall level of resources for addressing mental ill-health remain broadly unchanged:

- Poor mental health is expected to continue to have substantial economic and social costs at many levels: for individuals, families, society, business and the economy. Estimates of costs of between £49 billion and £77 billion per year have been calculated in recent years<sup>201</sup>.
- Some mental disorders are set to grow substantially in the future, as they are strongly linked to trends in important drivers of change: in so doing, they could place a considerable strain on health and social services, and also on family carers. A prime example is dementias, where the number of affected individuals in the UK could double from about 700,000 today, to 1.4 million over the next 30 years<sup>202</sup>. Over the same period, the cost to the UK economy could treble from £17 billion per year today, to over £50 billion per year. The costs of long-term care alone for older people with cognitive impairment in England could rise from £5.4 billion to £16.7 billion between 2002 and 2031<sup>203</sup>.
- However, the future prevalence of many other disorders is much more uncertain, since they are strongly influenced by a wide range of factors which could evolve and interact in unpredictable ways. For example, common mental disorders (for example, depression, anxiety, phobias and obsessive compulsive disorder) are linked to: changing family structures, societal values, wealth and housing, the changing environment of work and life events (for example, exposure to crime, flooding, and illness). This presents two major challenges:
  - How to develop new strategies and new interventions that are robust to this future uncertainty.
  - How to harness policy development in diverse areas across government, to reduce the prevalence and costs of mental disorders.
- Many high-risk groups have been identified for different mental illnesses, including: children in care, drug users, prisoners, people who are in debt, and long-term immigrants and their descendants. Crucially, mental illnesses often go undiagnosed and/or untreated in high-risk groups. As a result, the behaviours associated with the mental disorders can go unrecognised and misconstrued. The individuals can then easily fall into a cycle of exclusion, inappropriate responses by the authorities, and deprivation. Breaking this cycle will be a major challenge, but failure to do so will store up substantial and long-term costs in the future.
- Particular disorders remain poorly diagnosed and treated. Examples include: childhood disorders, adult common mental disorders, addictions, and personality disorders. However, there is now good understanding and evidence for some social risk and protective factors for illness as well as biological factors, and many of these can be modified. Therefore, much could be done to promote good mental health and to prevent disorders developing. The key message is that prevention and early diagnosis and treatment now have the potential to yield substantial long-term benefits into the future.

---

201 The £49 billion figure was calculated by the Kings Fund (see McCrone et al. 2008). The £77 billion figure was for England in 2002-03 – Sainsbury Centre for Mental Health (2003).

202 Knapp and Prince (2007)

203 Wanless et al. (2006)

- Most of us are affected by some form of mental ill-health at some point in our lives. Nevertheless, stigma continues to be pervasive throughout society, and itself exacerbates many mental health problems. Major benefits could result if a step-change in attitudes to mental ill-health could be achieved.

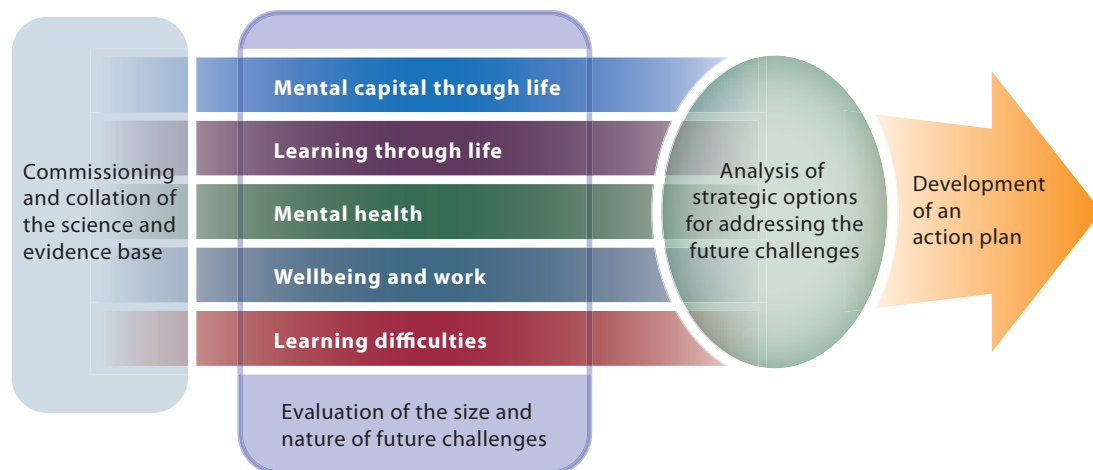
In conclusion, we should expect that the considerable challenges associated with mental ill health will continue into the future, and indeed, for some, such as dementia, the situation is likely to worsen considerably. Addressing these, as well as the promotion of positive mental health, will be vital to the future wellbeing and prosperity of individuals and society. Addressing these challenges is therefore the subject of the next phase of this Project, and will be reported in the Project's Final Report, to be published in October 2008.

# Appendix A: Overview of the work of the Foresight Project on Mental Capital and Wellbeing

The aim of the Project is to advise the Government on how to achieve the best possible mental development and mental wellbeing for everyone in the UK.

The principal parts of the Project are set out in Figure A.1 and are described below. Further information may be found on the Project website ([www.foresight.gov.uk](http://www.foresight.gov.uk)). All the Project papers and reports will also be made freely available through this website – either electronically or in hard copy (Note: some of these will only become available at the launch of the final Project report in October 2008).

**Figure A.1: The principal parts of the Project**



## Analysis of future challenges

The starting point was to generate a vision for the size and nature of future challenges associated with mental capital and wellbeing, and to assess how the situation might change over the next 20 years. This analysis was predicated on the assumption that existing policies and the overall level of expenditure for mental health remain broadly unchanged. To make the analysis tractable, the work was divided into five broad areas, as indicated in Figure A.1 (second from left box). The present report documents the findings from one of these – Mental health. Details of the reports of the five areas are listed in Table A.1.

Table A.1: The challenges ahead – reports of the findings		
Designation	Title	Authors
CR-E	Mental capital through life: Future challenges	T. Kirkwood J. Bond C. May I. McKeith M. Teh
CR-A	Learning through life: Future challenges	L. Feinstein J. Vorhaus R. Sabates
CR-B	Mental health: Future challenges	R. Jenkins H. Meltzer P. B. Jones T. Brugha P. Bebbington D. Crepaz-Keay M. Knapp
CR-C	Wellbeing and work: Future challenges	P. Dewe M. Kompier
CR-D	Learning difficulties: Future challenges	U. Goswami

The five areas were chosen to map closely onto the interests of important Government Departments, although it was recognised from the outset that the areas were interrelated. Therefore, consideration across the five has also been undertaken – the results of that will be reported in the final Project report.

### Supporting evidence and analysis

The above analysis was informed by:

- Consideration of the underpinning science associated with each of the five areas. This was informed by approximately 80 commissioned reviews – these set out the current state-of-the-art of science in diverse fields, and also scientific developments of particular interest (Appendix E provides a full list).
- Reviews of certain socio-economic factors. These were performed when the existing literature was deemed insufficient for the purposes of the project. In particular, these reviews addressed the relationship of the physical environment to wellbeing, and the evolving use of information and communication technology (see Appendix E).
- Economic analysis. This has taken a broad view of the direct and indirect impacts of important issues – such as specific learning difficulties and mental health problems.
- Systems analysis relating to each of the five areas. An account of the Project systems work is being prepared in a separate Project report (see Appendix E; S1: Systems maps).

- The development of hypothetical future scenarios. These have been used to explore future uncertainty in the five areas (listed in Figure A.1), and to test the robustness of possible interventions. An account of the scenarios and their use within the Project will appear in a separate report (see [www.foresight.gov.uk](http://www.foresight.gov.uk) and the final Project report).

In addition to the above, the work also drew extensively upon the existing literature as well as numerous workshops and meetings with leading stakeholder organisations.

### **Analysis of strategic options**

Having identified important challenges for the future, the project identified and analysed possible interventions and strategic options (see final Project report). Here the analysis of possible costs and benefits has taken a lifecourse approach, recognising that interventions affecting today's children might affect them for the rest of their lives.

Consideration was also given to practicalities affecting the effective realisation of the interventions. For example, these included issues of ethics, governance and public attitudes.

### **Stakeholder engagement**

From the outset, the Project has involved a wide range of leading stakeholders from both the public and private sectors. The intention is to work closely with these to develop a comprehensive plan to take forward the findings of the Project. That plan will be announced at the time of the launch of the final Project report in October 2008.



# Appendix B: Mental health – a visual representation

This report has shown that there are many factors that affect mental health: such factors are termed “drivers of change” or “drivers” in this report. Figure B.1 provides a visualisation of the interaction of these drivers which has previously been developed.

In view of the complexity of the many drivers of change, and their diverse interactions, it was considered useful to develop a more comprehensive visual representation. This Appendix briefly presents that visual representation (also termed a “conceptual overview”). Figure B.2 provides a schematic of the principal parts of the conceptual overview which appears in full in Figure B.3. This representation has been used in the present work to conceptualise the many drivers within a common framework.

This Appendix provides a brief explanation of these figures. However, a detailed description will be made available in a separate Project report (see [www.foresight.gov.uk](http://www.foresight.gov.uk); see also Appendix E, SI: Systems maps). Those reports also provide equivalent diagrams for four other important areas of mental capital and wellbeing (introduced in Appendix A). They also include other types of systems diagrams which have been used within the Project: for example, a causal model which links the various factors affecting stigma associated with mental disorders.

It should be stressed that Figure B.3 does not purport to cover every possible aspect of mental health. That would have rendered an already detailed representation overly complex, and masked the underlying structure. Likewise, it is expected that other experts might contest the precise choice of elements and some aspects of the detailed structure. However, this diagram was considered to be sufficiently detailed and sufficiently accurate to be of use for the present Project, and a useful basis for further development by others.

Referring to the simplified version of Figure B.3 (Figure B.2) the principal parts are outlined as follows:

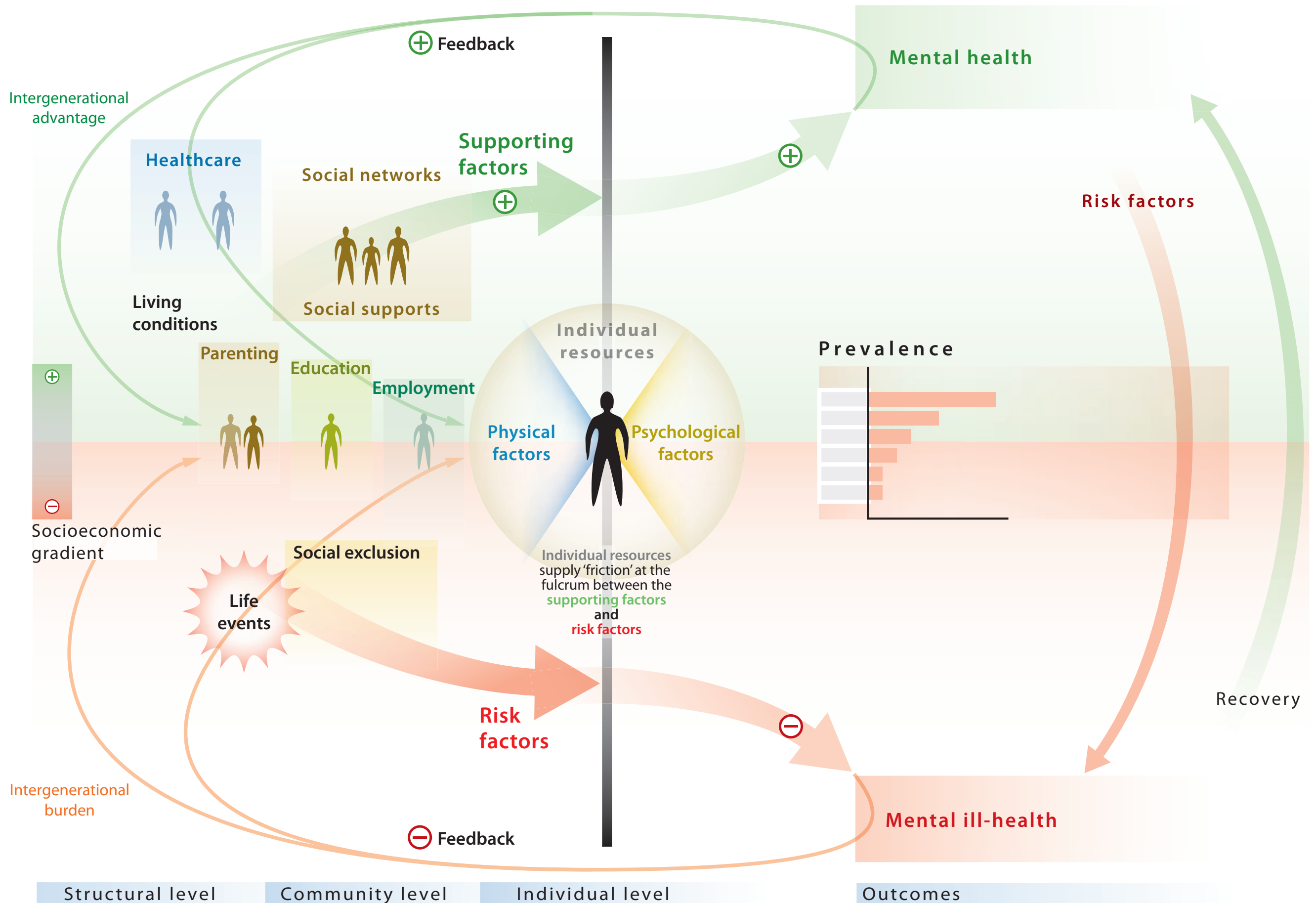
- The core of the diagram is the individual (and his/her coping resources), who appears within a circle. The mental health of this person is seen as a balance between ‘risk factors’ (red arrow below the individual) which cause mental ill-health, and ‘supporting factors’ (green arrow, above the individual) which contribute to good mental health and recovery.
- The diagram also shows feedback loops: both positive and negative. These act on individuals and also across generations. Poor mental health can also lead people into environmental conditions that are harmful to mental health. Conversely, positive mental health can promote the conditions which are conducive for improving mental health still further.
- The outcome of the mental health of the individual appears to the right of the circle, and includes prevalence rates for various disorders. These, together with an increasing understanding of the various risk factors, enables interventions to be designed, thereby reducing levels of risk, and aiding recovery.

**Figure B.1: The causal factors and the outcomes associated with mental health**

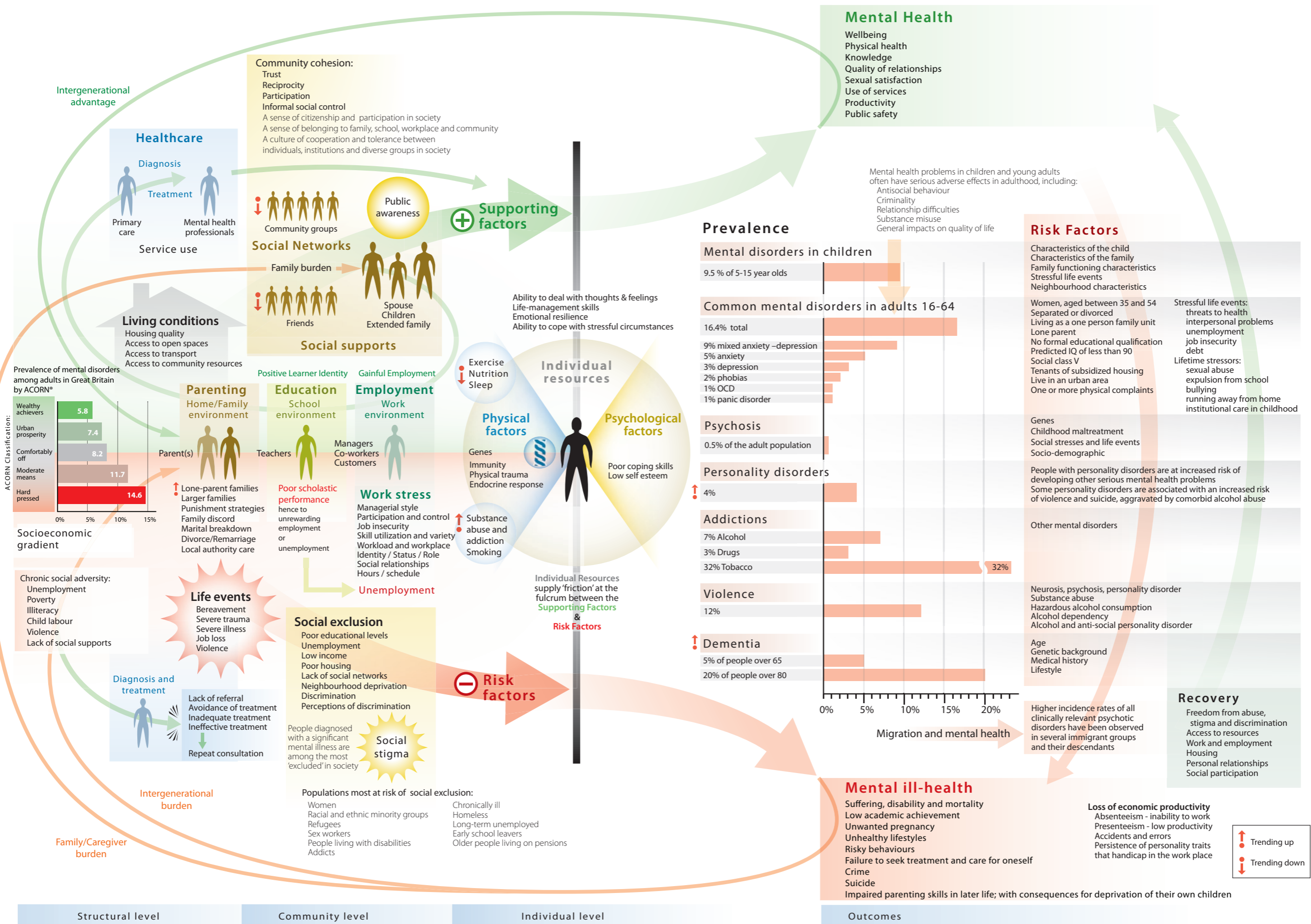


*Based on: Lahtinen et al. 1999.*

**Figure B.2: Schematic of the principal parts of the conceptual overview of the factors associated with mental health**



**Figure B.3: A conceptual overview of the factors associated with mental health**



# Appendix C: Migration and mental health

The rich diversity of the UK population is a direct result of successive phases of inward migration which have occurred over thousands of years. This is continuing today in the wake of socio-political change (such as the accession of Eastern European countries to the EU), and in response to the need to fill skills shortages in important sectors such as healthcare.

However, long-term migrants in the UK, and indeed in other countries, often suffer from rates of mental illness that are higher than the indigenous population, and higher than those of their home country. The Project therefore commissioned a review of mental health in immigrants<sup>204</sup>. This Appendix provides a brief overview, specifically considering psychosis and common mental disorders.

## 1. Psychosis

For all substantial immigrant groups that have been studied<sup>205</sup>, higher incidence rates of all clinically relevant psychotic disorders have been observed when compared with the White British group, defined according to 2001 census categories and used as a standard reference. Mis-diagnosis is not an explanation for these raised rates.

However, incidence rates of psychoses are not uniformly elevated in immigrant groups, and there is marked variation according to: age, sex, ethnicity and generation status. The highest incidence rates of psychoses are consistently observed for Black Caribbean and Black African groups in the UK, and are between 4-10 times the elevated rates compared with the White British group.

The two most recent studies of incidence rates in immigrants in the UK have also suggested that non-British white immigrants may be roughly at double the risk of psychoses than the White British groups. Further, Indian, Pakistani and Bangladeshi women (but not men) living in the UK also appear to have elevated rates of psychoses, somewhere in the region of 2-5 times the rates for White British women. Finally, there is some evidence that mixed-race groups, particularly the Mixed White and Black Caribbean population, have particularly elevated rates (in the region of 6-12 times the rate in the White British population).

Demographic differences (age and sex) between immigrants and the baseline population do not explain raised rates in immigrants. Elevated rates of psychoses in immigrants are not restricted to first generation immigrants but are also present in their UK-born, "second and third generation" descendants. This suggests that migration alone is not sufficient (or even necessary) to cause psychoses: post-migratory factors are also likely to be important. Langfeldt, who did pioneering work on mental illness and migration many years ago, suggested that predisposition to mental illness, as reflected for example in dissatisfaction with current circumstances, might produce a tendency to migrate. This cannot be entirely ruled out as a contributory factor, although it is unlikely to be the most important one. Furthermore, the baseline incidence of psychiatric illnesses in immigrants' country of origin is comparable to the baseline rate

204 Kirkbride and Jones (SR-B13) – see Appendix E

205 Note: there have not been adequate studies to assess the relatively recent group of immigrants from Eastern Europe. It is therefore not known if this group experiences a different level of risk to the native population.

in the White British population in the UK. Higher rates of psychoses in immigrants are therefore not due to higher rates of disorder in their country of origin.

## 2. Common mental disorders

The evidence for non-psychotic disorders, for example common mental disorders such as anxiety and depression, is less clear. The prevalence of depression may be raised for some black and minority ethnic (BME) groups (Irish, Black Caribbean), but not others (Indian, Pakistani and Bangladeshi), although there may be high-risk groups within these populations (see below).

The risk of suicide in BME and immigrant groups appears to vary by sex and ethnicity. In the UK, Asian men generally have lower rates of suicide than the host population, but there is some evidence that rates may be elevated for Asian women. Black Caribbean immigrants appear to have lower rates of suicide than the White British group. Rates may be particularly elevated in the descendants of immigrants. In Canada, the risk of suicide appears to be lower in most immigrant groups than Canadian-born groups. Finally, refugees are at significantly raised rates of post-traumatic stress disorder (PTSD).

### *Key messages*

Migration and post-migratory experiences can be major stressors, leading to increased rates of psychosis, common mental disorders, PTSD (in refugees), and suicide.

In view of the different levels of mental disorder in some migrant groups, it is prudent to monitor the mental health needs of new groups of migrants. For example, there is currently virtually no literature on the effects of immigration on disorder in the case of recent economic migrants from Eastern Europe to the UK, and therefore no evidence whether their rates of disorder are higher, or indeed lower. Careful monitoring of such groups would help to determine whether new waves of migration will present new challenges to mental health services.

# Appendix D: International comparisons of mental disorders

Two major projects have investigated international comparisons in mental ill-health: The European Study of the Epidemiology of Mental Disorders (ESEMeD) and the WHO World Mental Health Survey.

The ESEMeD study involved the collection of data from representative samples of the adult general population of six European countries: Belgium, France, Germany, Italy, the Netherlands and Spain between January 2001 and August 2003. DSM-IV disorders were assessed by lay interviewers using a revised version of the Composite International Diagnostic Interview (WMH-CIDI). Fourteen per cent of respondents reported a lifetime history of any mood disorder, 13.6% any anxiety disorder and 5.2% a lifetime history of any alcohol disorder. More than 6% reported any anxiety disorder, 4.2% any mood disorder, and 1.0% any alcohol disorder in the last year. Major depression and specific phobia were the most common single mental disorders.

Women were almost twice as likely to have had any mental disorder in the past 12 months. Women were more likely to have mood (OR = 2.04) and anxiety disorders (OR = 2.43), and less likely to have alcohol disorders (OR = 0.16). The highest rates of mental disorders were found in the youngest age group (aged 18–24 years), and show a consistently significant decline with age. This finding was also consistent for broader diagnostic groups of any mood, any anxiety and any alcohol disorder.

In general, those who were never married, and to a lesser degree those who were previously married, had a higher probability of having a mental disorder in the past 12 months. Compared with respondents who were married at the time of the interview, those who were previously married were almost twice as likely to have a mood disorder (OR = 1.90). Persons who were never married before were slightly more likely to have mood (OR = 1.54) or anxiety disorders (OR = 1.21), but they had almost threefold higher odds of having an alcohol disorder in the past year (OR = 2.89). The odds ratios for both education and employment status were to some extent variable, but higher education yielded lower rates of mood and higher rates of alcohol disorders. Unemployment was related to an increased risk of any mental disorder in general, and mood and alcohol disorders in particular. Respondents who were disabled or on illness leave also had higher odds of both mood and anxiety disorders<sup>206</sup>.

The WHO World Mental Health Survey Consortium analysed data from 60,463 face-to-face household surveys with adults in 14 countries to estimate the prevalence, severity, and treatment of mental disorders. The surveys were conducted from 2001-03 in the Americas (Colombia, Mexico, United States), Europe (Belgium, France, Germany, Italy, Netherlands, Spain, Ukraine), the Middle East and Africa (Lebanon, Nigeria), and Asia (Japan, separate surveys in Beijing and Shanghai in the People's Republic of China).

All surveys used the World Mental Health -Composite International Diagnostic Interview (WMH-CIDI)

---

206 Alonso et al. (2004)

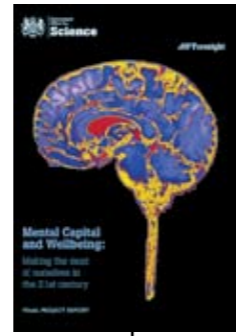
## Mental health: Future challenges

The researchers found that the prevalence of having any mental disorder in the prior year to assessment varied widely from 4.3 per cent in Shanghai to 26.4 per cent in the United States. Between 33.1 per cent (Colombia) and 80.9 per cent (Nigeria) of 12-month cases were mild. Serious disorders were associated with substantial role disability, i.e. inability to carry out usual activities<sup>207</sup>.

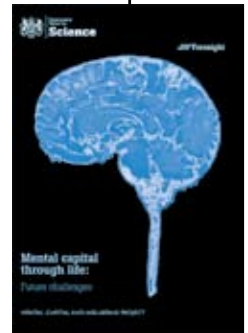
---

207 Demyttenaere et al. (2004)



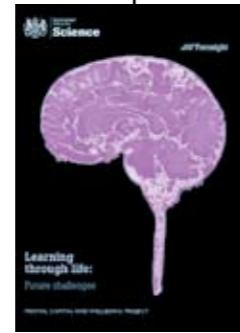


# Appendix E: Structure of the Project reports and supporting papers



**Mental capital through life:  
Future challenges**

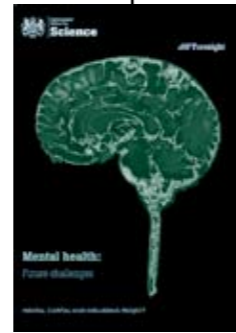
- SR-E1:** Neuroscience of education
- SR-E2:** Human reward
- SR-E3:** Neuroeconomics
- SR-E4:** Cognitive reserve
- SR-E5:** The adolescent brain
- SR-E6:** Behavioural economics
- SR-E7:** Resilience
- SR-E8:** Adolescent drug users
- SR-E9:** Pharmacological cognitive enhancement
- SR-E10:** Stem cells in neural regeneration and neurogenesis
- SR-E11:** Early detection of mild cognitive impairment and Alzheimer's disease: An example using the CANTAB PAL
- SR-E12:** Anxiety disorders
- SR-E13:** Neurocognition and social cognition in adult drug users
- SR-E14:** Normal cognitive ageing
- SR-E15:** Social cognition in teenagers – inclusion
- SR-E16:** HPA axis, stress, and sleep and mood disturbance



**Learning through life:  
Future challenges**

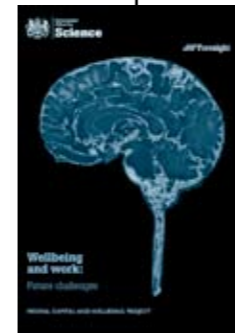
- SR-E17:** Nutrition, cognitive wellbeing and socioeconomic status
- SR-E18:** Nutrition and cognitive health
- SR-E20:** Effect of chronic stress on cognitive function through life
- SR-E21:** Depression and its toll on mental capital
- SR-E22:** Fitness and cognitive training
- SR-E24:** Effects of exercise on cognitive function and mental capital
- SR-E25:** Technology solutions to prevent waste of mental capital
- SR-E27:** Housing as a determinant of mental capital
- SR-E29:** Cognitive neural prosthetics
- SR-E31:** Cellular and molecular logic of neural circuit assembly

- SR-A2:** Learning at work
- SR-A3:** Skills
- SR-A4:** Participation in learning
- SR-A5:** Evidence-informed principles from the Teaching and Learning Research Programme
- SR-A7:** Estimating the effects of learning
- SR-A9:** Self-regulation and executive function
- SR-A10:** Lifelong learning across the world
- SR-A11:** Non-cognitive skills
- SR-A12:** Future technology for learning



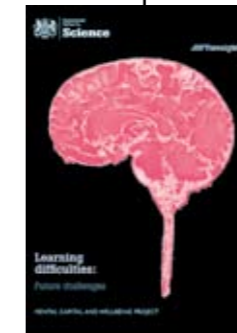
**Mental health:  
Future challenges**

- SR-B1:** Genetics and social factors
- SR-B2:** Mental health of older people
- SR-B3:** Positive mental health
- SR-B4:** Mental disorders in the young
- SR-B5:** Prisoners
- SR-B6:** The homeless
- SR-B7:** Children in local authority care
- SR-B8:** The costs of mental disorders
- SR-B9:** Serious and enduring mental illness
- SR-B10:** Personality disorders
- SR-B11:** Violence
- SR-B12:** Ageing
- SR-B13:** Migrants
- SR-B14:** Substance abuse
- SR-B15:** Depression



**Wellbeing and work:  
Future challenges**

- SR-C1:** Workplace stress
- SR-C2:** Mental wellbeing at work and productivity
- SR-C3:** Management style and mental wellbeing at work
- SR-C4:** Flexible working arrangements and wellbeing
- SR-C5:** New technology and wellbeing at work
- SR-C6:** Stress management and wellbeing
- SR-C7:** Working longer
- SR-C8:** Leisure: the next 25 years
- SR-C9:** Training in the workplace
- SR-C10:** Careers
- SR-C11:** Violence at work



**Learning difficulties:  
Future challenges**

- SR-D1:** Specific language impairment
- SR-D2:** Dyslexia
- SR-D3:** Adult learning disabilities
- SR-D4:** Dyscalculia
- SR-D5:** Deafness
- SR-D7:** Genetics and diagnosis of learning difficulty
- SR-D8:** Conduct disorder and anti-social behaviour
- SR-D9:** Social cognition and school exclusion
- SR-D10:** Autism and autism spectrum disorders
- SR-D11:** Attention Deficit Hyperactivity Disorder
- SR-D12:** New technologies and interventions
- SR-D13:** Trajectories of development and learning difficulties
- SR-D14:** Early neural markers of learning difficulty
- SR-D15:** Childhood depression
- SR-D16:** Eating disorders

**Cross-Project papers**

- SR-X2:** Science of wellbeing
- SR-X3:** Neurobiology of wellbeing
- SR-X5:** Neural circuit assembly
- DR-1:** ICT as a driver of change
- DR-2:** Physical environment and wellbeing
- ER-1:** Ethics



**S1: Systems maps**

Note 1: Some reference numbers were assigned to topics; however, the reports/papers were not subsequently commissioned.

Note 2: The Project commissioned some additional “discussion papers” as referred to in the text of the final report.

These will be made available through [www.foresight.gov.uk](http://www.foresight.gov.uk) in due course.

# References

Note: a list of surveys that have been drawn upon appears at the end of this list of references.

Allardyce, J., Morrison, G., Van Os, J., Kelly, J., Murray R.M. and McCreadie, R.G. 2000. Schizophrenia is not disappearing in South West Scotland. *British Journal of Psychiatry*, 177, 38-41.

Almond, S. and Healey, A. 2003. Mental health and absence from work. *Work, Employment and Society*, 17, 731-742.

Alonso, J., Angermeyer, M.C., Bernert, S. et al., ESEMeD/MHEDEA 2000 Investigators. 2004. The European study of the epidemiology of mental disorders (ESEMeD) project. Prevalence of mental disorders in Europe: results from the European study of the epidemiology of mental disorders (ESEMeD) project. *Acta Psychiatr Scand Suppl.*, 420, 21-7.

Andlin-Sobocki, P. and Wittchen, H. 2005. Cost of anxiety disorders in Europe. *European Journal of Neurology*, 12 (supplement 1), 39-44.

Arseneault, L., Cannon, M., Poulton, R., Murray, R., Caspi, A. and Moffitt, T. 2002. Cannabis use in adolescence and risk of adult psychosis: longitudinal prospective study. *British Medical Journal* 325, 1212-1213.

Banks, M.H. and Jackson, P.R. 1982. Unemployment and risk of minor psychiatric disorder in young people: cross sectional and longitudinal evidence. *Psychological Medicine* 12, 789-798.

Barrett, B. 2005. Service costs for severe personality disorder at a special hospital. *Criminal Behaviour and Mental Health*, 15, 184-190.

Bebbington, P., Dunn, A., Jenkins, R., Lewis, G., Brugha, T., Farrell, M. and Meltzer, H. 1998. The influence of age and sex on the prevalence of depressive conditions: report for the National Survey of Psychiatric Morbidity. *Psychological medicine*, 28, 9-19.

Boydell, J., Van Os, J., Lambri, M., Castle, D., Allardyce, J., McCreadie, R.G. and Murray, R.M. 2003. Incidence of schizophrenia in south-east London between 1965 and 1997. *Br J Psychiatry*, 182:45-49.

Bray, I., Waraich, P., Jones, W., Slater, S., Goldner, E.M. and Somers, J. 2006. Increase in schizophrenia incidence rates: findings in a Canadian cohort born 1975-1985. *Soc Psychiatry Psychiatr Epidemiol*, 41, 611-618.

Brewin, J., Cantwell, R., Dalkin, T., Fox, R., Medley, I., Glazebrook, C., Kwiecinski, R. and Harrison, G. 1997. Incidence of schizophrenia in Nottingham. A comparison of two cohorts, 1978-80 and 1992-94. *British Journal of Psychiatry*, 171, 140-144.

Brugha, T.S., Morgan, Z., Bebbington, P., Jenkins, R., Lewis, G., Farrell, M. and Meltzer, H. 2003. Social support networks and type of neurotic symptom among adults in British households. *Psychological Medicine*, 33, 307-318.

- Brugha, T. S., Bebbington, P. E., Singleton, N., Melzer, D., Jenkins, R., Lewis, G., Farrell, M., Bhugra, D., Lee, A. and Meltzer, H. 2004. Trends in service use and treatment for mental disorders in adults throughout Great Britain. *British Journal of Psychiatry* 185, 378-384.
- Brugha, T.S., Weich, S., Singleton, N., Lewis, G., Bebbington, P.E., Jenkins, R. and Meltzer, H. 2005. Primary group size, social support, gender and future mental health status in a prospective study of people living in private households throughout Great Britain. *Psychological Medicine*, 35, 705-714.
- Byford, B., Knapp, M., Ukoumunne, O. et al. (on behalf of the POPMACT Group). 2003. Cost-effectiveness of brief cognitive behaviour therapy versus treatment as usual in recurrent deliberate self-harm: the POPMACT study. *Psychological Medicine*, 33, 977-986.
- Byford, S., Barrett, B., Roberts, C., Wilkinson, P., Dubicka, B., Kelvin, R., White, L., Ford, C., Breenn, S. and Goodyer, I. 2007. Cost effectiveness of selective serotonin reuptake inhibitors and routine specialist care with and without cognitive behavioural therapy in adolescents with major depression. *British Journal of Psychiatry*, 191, 521-527.
- Cantor-Graae, E. and Selten, J.P. 2005. Schizophrenia and Migration: A Meta-Analysis and Review. *Am J Psychiatry*, 2005, 162, 12-24.
- Care Services Improvement Partnership. 2008. *National Suicide Prevention Strategy for England Annual report on progress 2008*. London: CSIP.
- Castle, D., Wessely, S., Der, G. and Murray, R.M. 1991. The incidence of operationally defined schizophrenia in Camberwell, 1965 to 1984. *British Journal of Psychiatry*, 159, 790-794.
- Chisholm, D. and Knapp, M. 2002. The economics of schizophrenia care in Europe: the EPSILON study, *Epidemiologia e Psichiatria Sociale*, 11, 12-17.
- Clarke, A., O'Malley, A., Woodham, A., Barrett, B. and Byford, S. 2005. Children with complex mental health problems: needs, costs and predictors over one year, *Child and Adolescent Mental Health*, 10, 170-178.
- Comas-Herrera, A., Wittenberg, R., Pickard, L., Knapp, M. and MRC-CFAS. 2007. Cognitive impairment in older people: its implications for future demand for services and costs, *International Journal of Geriatric Psychiatry*, 22, 1037-1045.
- Cook, P.J. and Moore, M.J. 1993. Violence reduction through restrictions on alcohol availability. *Alcohol Health Res World*, 17, 151-56.
- Craddock, N., O'Donovan, M.C., Owen, M.J. 2005. The genetics of schizophrenia and bipolar disorder: dissecting psychosis. *J Med Genet*. 42(3):193-204.
- Das Gupta, R. and Guest, J. 2002. Annual cost of bipolar disorder to UK society, *British Journal of Psychiatry*, 180, 227-233.
- Demyttenaere, K., Bruffaerts, R., Posada-Villa, J., et al. 2004. WHO World Mental Health Survey Consortium: Prevalence, severity, and unmet need for treatment of mental disorders in the World Health Organization World Mental Health Surveys. *Journal of the American Medical Association*, 291, 2581-90.

- Department of Health. 1992. Health of the Nation. London: Department of Health.
- Department of Health. 1999. Our Healthier Nation. London: Department of Health.
- Department of Health. 2008. *National Suicide Prevention Strategy for England. Annual Report 2007*. Care Services Improvement Partnership and National Institute for Mental Health in England.
- Der, G., Gupta, S. and Murray, R.M. Is schizophrenia disappearing? *Lancet*, 335, 513-516.
- Dupont, R., Rose, D., Shivaki, S. and Rowland, C.R. 1995. Economic costs of obsessive-compulsive disorder, *Medical Interface*, 89, 102-109.
- Eich, F., Fleming, J. and Pybus, T. 2007. *Long term demographic and socio-economic trends*. International and Finance Directorate, HM Treasury.
- English, R.D., Holman, C.D., Milne, E., et al. 1995. The Quantification of Drug Caused Morbidity and Mortality in Australia. Canberra: Commonwealth Department of Human Services and Health.
- Farrell M., Howes, S., Bebbington, P., Brugha, T., Jenkins, R., Lewis, G., Marsden, J., Taylor, C. and Meltzer, H. 2003. Nicotine, alcohol and drug dependence, and psychiatric comorbidity--results of a national household survey. *Int Rev Psychiatry*, 15, 50-56.
- Farrington, D. 2001. Key results from the first forty years of the Cambridge Study in Delinquent Development. (In Thornberry, T.P. and Krohn, M.D. (Eds). *Taking Stock of Delinquency*, Kluwer, New York.)
- Fombonne, E., Wostear, G., Cooper, V., Harrington, R. and Rutter, M. 2001. The Maudsley long term follow up study of child and adolescent depression. *British Journal of Psychiatry* 178, 218-223.
- Goldberg, D. and Huxley, P. 1980. *Mental Illness in the Community: the Pathway to Psychiatric Care*. London: Tavistock.
- Gottesman, I.I. 1991. *Schizophrenia genesis: the origins of madness*. New York: Freeman.
- Green, H., McGinnity, A., Meltzer, H., Ford, T. and Goodman, R. 2005. *Mental Health of Children and Young People in Great Britain, 2004*. Hampshire: Palgrave MacMillan.
- Greenberg, P., Sisitsky, T., Kessler, R. et al. 1999. The economic burden of anxiety disorders in the 1990s. *Journal of Clinical Psychiatry* 60, 427-435.
- Harris, E.C. and Barraclough, B. 1998. Excess mortality of mental disorder *British Journal of Psychiatry* 173, 11-53.
- Haste, F., Charlton, J. and Jenkins, R. 1998. Potential for suicide prevention in primary care. An analysis of factors associated with suicide. *British Journal of General Practice*, 48, 1759-1763.
- Healey, A. 2005. *Economic implications of psychosocial development in childhood: long-term outcomes and the costs of interventions*. PhD thesis, London School of Economics.
- Healey, A., Knapp, M. and Farrington, D. 2004. Adult labour market implications of anti-social behaviour in childhood and adolescence: findings from a UK longitudinal study. *Applied Economics*, 36, 93-105.

- Health Education Authority. 1997. *Mental Health Promotion: A Quality Framework*. London: HEA.
- Henderson, M., Glozier, N. and Holland-Elliott, K. 2005. Editorial: long term sickness benefit. *British Medical Journal*, 330, 802-803.
- Hickman, M., Vickerman, P., Macleod, J., Kirkbride, J.B. and Jones, P.B. 2007. Cannabis and Schizophrenia : Model predictions of the impact of the rise in cannabis use on historical and future trends in schizophrenia in England and Wales. *Addiction* 102, 597-606.
- Institute of Medicine. 2001. *Neurological, Psychiatric, and Developmental Disorders. Meeting the Challenge in the Developing World*. National Academy Press. Washington DC.
- Jenkins, R. 1985a. Minor psychiatric morbidity and labour turnover. *British Journal of Industrial Medicine*, 42, 534-539.
- Jenkins, R. 1985b. Minor psychiatric morbidity in civil servants and its contribution to sickness absence. *British Journal of Industrial Medicine*, 42, 147-154.
- Jenkins, R. 1993. Mental health at work – why is it so under-researched? *Occupational Medicine*, 43: 65-67.
- Jenkins, R. 1997. Nations for Mental Health. *Social Psychiatry and Psychiatric Epidemiology*, 32, 309-311.
- Jenkins, R., Bebbington, P., Brugha, T., Farrell, M., Lewis, G. and Meltzer, H., 1998. British Psychiatric Morbidity Survey. *British Journal of Psychiatry* 173, 4-7.
- Jenkins, R., Bhugra, D., Bebbington, P., Brugha, T., Farrell, M., Coid, J., Fryers, T., Singleton, N. and Meltzer, H. 2008b. Mental disorder in people with debt in the general population. *Journal of Public Health Medicine*. In press.
- Jenkins, R., Bhugra, D., Bebbington, P., Brugha, T., Farrell, M., Coid, J., Fryers, T., Weich, S., Singleton, N. and Meltzer, H. 2008a. Debt, income and mental disorder in the general population. *Psychological Medicine*, 10, 1-9.
- Jenkins, R., Brugha, D., Meltzer, H., Singleton, N., Bebbington, P., Brugha, T., Coid, J., Farrell, M., Lewis, G. and Paton, J. 2005. Psychiatric and social aspects of suicidal behaviour in prisons. *Psychological Medicine*, 35, 257-269.
- Jenkins, R., Butler, T., Harvey, S. and Lloyd Thomas, R. 1996. Minor psychiatric morbidity and its consequences for sickness absence, labour turnover, promotion and job attitudes on a cohort of civil servants – a seven year follow up study. *Journal of Occupational Medicine*, 48, 216-221.
- Jenkins R., Macdonald A., Murray, J. and Strathdee, G. 1982. Minor psychiatric morbidity and the threat of redundancy in a professional group. *Psychological Medicine*, 12, 799-899.
- Jenkins, R. and Meltzer, H. 2003. A Decade of National Surveys of Psychiatric Epidemiology in Great Britain: 1990-2000. *International Review of Psychiatry*, 15, 1-2.
- Jenkins, R. and Singh, B. 1999. National Suicide Prevention Strategies. *Psychiatrica Fennica*, 9-30.

- Johnson, J.G., Smailes, E.M., Cohen, P., Brown, J. and Bernstein, D.P. 2000. Associations between four types of childhood neglect and personality disorder symptoms during adolescence and early adulthood: findings of a community-based longitudinal study. *J Personal Disord*, 14, 171-187.
- Jordanova, V., Stewart, R., Goldberg, D., Bebbington, P., Brugha, T., Singleton, N., Lindsay, J., Jenkins, R., Prince, M. and Meltzer, H. 2007. Age variation in life events and their relationship with common mental disorders in a national survey population. *Social Psychiatry and psychiatric epidemiology*, 42, 611-616.
- Kasl, S.V., Gore, S. and Cobb, S. 1975. The experience of losing a job: reported changes in health, symptoms and illness behaviour. *Psychosomatic Medicine*, 37, 106-122.
- Kendler, K.S., Appelbaum, P.S., Bell, C.C. et al. 2008. Issues for DSM-V: DSM-V should include a conceptual issues working group. *Am. J. Psychiatry*, 165, 174-5.
- Kirkbride, J.B., Croudace, T.J., Brewin, J., Donaghue, K., Mason, P., Glazebrook, C., Medley, I., Harrison, G.L., Cooper, J.E., Doody, G. and Jones, P.B. Is the incidence of psychoses in decline? Epidemiological evidence from two decades of research. *International Journal of Epidemiology*. In press.
- Knapp, M. and Prince, M. 2007. *Dementia UK*. A report into the prevalence and cost of dementia prepared by the Personal Social Services Research Unit (PSSRU) at the London School of Economics and the Institute of Psychiatry at King's College London, for the Alzheimer's Society.
- Knapp, M., Mangalore, R. and Simon, J. 2004. The global costs of schizophrenia. *Schizophrenia Bulletin*, 30, 279-293.
- Knapp, M., McCrone, P., Fombonne, E., Beecham, J. and Wostear, G. 2002. The Maudsley long-term follow-up of child and adolescent depression: Impact of comorbid conduct disorder on service use and costs in adulthood. *British Journal of Psychiatry*, 180, 19-23.
- Lahtinen, E., Lehtinen, V., Riikonen, E. and Ahonen, J. (Eds.) 1999. *Framework for promoting mental health in Europe*. Hamina (STAKES). National Research and Development Centre for Welfare and Health, Ministry of Social Affairs and Health, Finland.
- Layard R., Clark D., Knapp M., Mayraz, G. 2007. Cost benefit analysis of psychological therapy *National Institute Economic Review* 202, 90-98.
- Lehtinen, V., Sohlman, B., and Kovesss Masfety, V. 2005. Level of positive mental health in the European Union: Results from the Eurobarometer 2002 survey. *Clinical Practice and Epidemiology in Mental Health*, 1, 9.
- Leon, D.A., McCambridge, J. 2006. Liver cirrhosis mortality rates in Britain from 1950-2002: an analysis of routine data. *Lancet* 367, 52-56.
- Lewis, G., David, A., Andreasson S.A.P. 1992 Schizophrenia and early life. *Lancet* 340, 137-140.
- Lloyd, K., Jenkins, R. and Mann, A.H. 1996. The long term outcome of patients with neurotic illness in general practice. *British Medical Journal*, 313, 26-28.
- Mangalore, R. and Knapp, M. 2007. Cost of schizophrenia in England. *Journal of Mental Health Policy and Economics*, 10, 23-41.

- Mann A. H., Jenkins, R. and Belsey, E. 1981. The twelve-month outcome of patients with neurotic illness in general practice. *Psychological Medicine*, 11, 535-550.
- McCrone, P., Dhanasirj, S., Patel, A., Knapp, M. and Lawton-Smith, L. 2008. *Paying the Price: The Cost of Mental Health Care in England to 2026*. The King's Fund.
- McCrone, P., Knapp, M. and Fombonne, E. 2005. The Maudsley long-term follow-up of childhood and adolescent depression: predicting costs in adulthood. *European Child and Adolescent Psychiatry*, 14, 407-413.
- McDaid, D. 2001. Estimating the costs of informal care for people with Alzheimer's disease: methodological and practical challenges. *International Journal of Geriatric Psychiatry*, 16, 400-5.
- MacBride, A., Lancee, W. and Freeman, S. 1981. The psychosocial impact of a labour dispute. *Journal of Occupational Psychology*, 54, 125-133.
- McGrath, A., Reid, N. and Boore, J. 1989. Occupational stress in nursing. *International Journal of Nursing Studies*, 26, 343-358.
- Meltzer, H., Gill, B., Petticrew, M. and Hinds, K. 1995a. *OPCS Surveys of Psychiatric Morbidity in Great Britain, Report 1: The prevalence of psychiatric morbidity among adults living in private households*. HMSO: London.
- Melzer, D., Fryers, T., Jenkins, R., Brugha, T. and McWilliams, B. 2003. Social position and the common mental disorders with disability: estimates from the National Psychiatric Survey of Great Britain. *Social Psychiatry and Psychiatric Epidemiology*, 38, 238-43.
- Meltzer, H., Gatward, R., Corbin, T., Goodman, R. and Ford, T. 2003a. *Persistence, onset, risk factors and outcomes of childhood mental disorders*. London: TSO.
- Meltzer, H., Gatward, R., Corbin, T., Goodman, R. and Ford, T. 2003b. *The mental health of young people looked after by local authorities in England*. London: TSO.
- Meltzer, H., Gatward, R., Goodman, R. and Ford, T. 2000. *Mental health of children and adolescents in Great Britain*. London: TSO.
- Meltzer, H., Harrington, R., Goodman, R. and Jenkins, R. 2001. *Children and adolescents who try to harm, hurt or kill, themselves*. National Statistics: London.
- Meltzer, H., Singleton, S., Lee, A., Bebbington, P., Brugha, T. and Jenkins, R. 2002. *The social and economic circumstances of adults with mental disorders*. London: TSO.
- Moore, T.H.M., Zammit, S., Lingford-Hughes, A., Barnes, T.R.E., Jones, P.B., Burke, M. and Lewis, G.. 2007. Cannabis use and risk of psychotic or affective mental health outcomes: a systematic review. *The Lancet*, 370, 319-328.
- Moran, P. Dangerous severe personality disorder – bad tidings from the UK. 2002. *Int J Soc Psychiatry*, 48, 6-10.
- Morgan, C., Kirkbride, J.B., Leff, J. et al. 2007. Parental separation, loss and psychosis in different ethnic groups: a case-control study. *Psychological Medicine*, 37, 495-503.

- Mortensen, P.B., Pedersen, C.B., Westergaard, T. et al. 1999. Effects of family history and place and season of birth on the risk of schizophrenia. *New England Journal of Medicine*, 340, 603-608.
- Mrazek, P.J. and Haggerty, R.J. 1994. *Reducing the risks for mental disorders: Frontiers for preventive intervention research*. National Academy Press.
- Murdoch, D., Pihl, R.O. and Ross, D. 1990. Alcohol and crimes of violence: present issues. *International Journal of the Addictions*, 25, 1065-1081.
- Murray, C.J.L. and Lopez, A.D. 1996. *The Global burden of disease – a comprehensive assessment of mortality and disability from diseases, injuries and risk factors in 1990 and projected to 2020*. Boston: Harvard University Press.
- Murray, C.J.L. and Lopez A. D. 1999. *Global burden of disease*. Geneva: World Health Organization.
- O'Brien, M., Mortimer, L., Singleton, N. and Meltzer, H. 2001. *Psychiatric Morbidity among women prisoners in England and Wales*. London: TSO.
- Patel, A. and Knapp, M. 1998. Costs of mental illness in England. *Mental Health Research Review*, 5, 4-10.
- Patel, A., Knapp, M., Henderson, J. and Baldwin, D. 2002. The economic consequences of social phobia. *Journal of Affective Disorders*, 68, 221-233.
- Paykel, E.S., Brugha, T. and Fryer, T. 2005. Size and burden of depressive disorders in Europe. *European Neuropsychopharmacology*, 15, 411-423.
- Pini, S., de Queiroz, V., Pagnin, D., Pezawas, L., Angst, J., Cassano, G.B. and Wittchen H.U. 2005. Prevalence and burden of bipolar disorders in European countries. *Eur Neuropsychopharmacol*, 15, 425-34.
- Rendu, A., Moran, P., Patel, A., Knapp, M. and Mann, A. 2002. Economic impact of personality disorders in UK primary care attenders. *British Journal of Psychiatry*, 181, 62-66.
- Rice, D. and Miller, L. 1998. Health economics and cost implications of anxiety and other mental disorders in the United States. *British Journal of Psychiatry* 173, 4-9.
- Romeo, R., Knapp, M. and Scott, S. 2006. Children with anti-social behaviour: what do they cost and who pays? *British Journal of Psychiatry*, 188, 547-553.
- Rutter, M. and Quinton, D. 1984. Parental psychiatric disorder: effects on children. *Psychological Medicine*, 14, 853-880.
- Sainsbury Centre for Mental Health. 2003. *Economic and social costs of mental illness in England*. SCMH, London.
- Scott, J. and Jenkins, R. 1998. Psychiatric disorders specific to women. (In Johnstone, E. C., Freeman, C. P. L. and Zealley, A. K. (Eds). *Companion to Psychiatric Studies 6th Edition*, pp. 551-564. Edinburgh, Churchill Livingstone.)



- Scott, S., Knapp, M., Henderson, J. and Maughan, B. 2001. Financial cost of social exclusion: follow up study of anti-social children into adult. *British Medical Journal*, 323, 191-194.
- Singleton, N. and Meltzer, H. 1998. Mental disorders in our Prisons. *Social Trends Quarterly*, Winter 1998.
- Singleton, N., Bumpstead, R., O'Brien, M., Lee, A. and Meltzer, H. 2001. *Psychiatric morbidity among adults living in private households*. (ed. National Statistics). p 154. London: TSO.
- Singleton, N. and Lewis, G. 2003. *Better or worse: A longitudinal study of the mental health of adults living in private households in Great Britain*. Great Britain Office for National Statistics. London: TSO.
- Singleton, N. 2002. *Mental health of carers: the report of a survey carried out by Social Survey Division of the Office for National Statistics on behalf of the Department of Health*. London: TSO.
- Smith, K., Shah, A., Wright, K. and Lewis, G. 1995. The prevalence and costs of psychiatric disorders and learning disabilities. *British Journal of Psychiatry*, 166, 9-18.
- Stansfeld, S.A., North, F.M., White, J., and Marmot, M.G. 1995. Work characteristics and psychiatric disorder in civil servants in London. *Journal of Epidemiology and Community Health*, 49, 48-53.
- Stewart, W., Ricci, J., Chee, E., Hahn, S.R. and Morganstein, D. 2003. Cost of lost productive work time among US workers with depression. *Journal of the American Medical Association*, 289, 3135-3144.
- Thomas, C. and Morris, S. 2003. Cost of depression among adults in England in 2000. *British Journal of Psychiatry*, 183, 514-19.
- Torgersen, S., Lygren, S., Oien, P.A., Skre, I., Onstad, S., Edvardsen, J., Tambs, K. and Kringlen, E. 2000. A twin study of personality disorders. *Compr Psychiatry*, 41, 416-425.
- Tudor-Edwards, R., O'Ceilleachair, A., Bywater, T., Hughes, D. and Hutchings, J. 2007. Parenting programme for parents of children at risk of developing conduct disorder: cost-effectiveness analysis. *British Medical Journal*, online publication.
- Tyrer, P., Thompson, S., Schmidt, U., Knapp, M. et al. (POPMACT Group). (2003) Randomised controlled trial of brief cognitive behaviour therapy versus treatment as usual in recurrent deliberate self-harm: the POPMACT study. *Psychological Medicine*, 33, 969-976.
- United Nations. 1996. *Prevention of Suicide – Guidelines for the formation and implementation of national strategies*. UN, New York.
- Ustün, T.B., Ayuso-Mateos J.L., Chatterji S., Mathers C. and Murray C.J. 2004. Global burden of depressive disorders in the year 2000. *Br J Psychiatry*; 184, 386-92.
- Wanless, D., Forder, J., Fernández, J-L., Poole, T., Beesley, L., Henwood, M. and Moscone, F. 2006. *Wanless Social Care Review: Securing Good Care for Older People, Taking a Long-term View*. The King's Fund, London.

Werner, E.E. 1982. *Vulnerable but invincible: A longitudinal study of resilient children and youth*. New York, McGraw Hill.

World Health Organization (WHO). 1992. *The ICD 10 Classification of Mental and Behavioural Disorders: Clinical descriptions and diagnostic guidelines*. WHO Geneva.

World Health Organization (WHO). 1993. *The ICD 10 Classification of Mental and Behavioural Disorders – Diagnostic criteria for research*. WHO Geneva.

Wittenberg, R., Comas-Herrera, A., King, D., Malley, J., Pickard, L. and Darton, R. 2006. *Future demand for long-term care, 2002 to 2041: Projections of demand for long-term care for older people in England*. PSSRU Discussion Paper 2330. London School of Economics: London.

Yar, M., Hennell, S., Clarke, P., Meltzer, H. and Gatward, R. 2002. Model-based small area estimation series no. 1: *Childhood mental disorder in England*. London: Office for National Statistics.

### **Office of Population Censuses and Surveys and Office of National Statistics reports**

Coulthard, M., Farrell, M., Singleton, N. and Meltzer, H. 2002. *Tobacco, alcohol and drug use and mental health*. London: TSO.

Evans, O., Singleton, N., Meltzer, H., Stewart, R. and Prince, M. 2003. *The mental health of older people*. London: TSO.

Foster, K., Meltzer, H., Gill, B. and Hinds, K. 1996. *OPCS Surveys of Psychiatric Morbidity in Great Britain, Report 8: Adults with a psychotic disorder living in the community*. London: HMSO.

Gill, B., Meltzer, H., Hinds, K. and Petticrew, M. 1996. *OPCS Surveys of Psychiatric Morbidity in Great Britain, Report 7: Psychiatric morbidity among homeless people*. London: HMSO.

Green, H., Maginnity, A., Meltzer, H., Ford, T. and Goodman, R. 2005. *Mental health of young people in Great Britain, 2004*. London: TSO.

Kershaw, A., Singleton, N. and Meltzer, H. 2000. *Survey of the health and well-being of homeless people in Greater Glasgow*. London: National Statistics.

Lader, D., Singleton, N., and Meltzer, H. 2000. *Psychiatric morbidity among young offenders in England and Wales*. London: National Statistics.

Meltzer, H., Gatward, R., Goodman, R. and Ford, T. 2000. *Mental health of children and adolescents in Great Britain*. London: TSO.

Meltzer, H., Gatward, R., Corbin, T., Goodman, R. and Ford, T. 2003. *Persistence, onset, risk factors and outcomes of childhood mental disorders*. London: TSO.

Meltzer, H., Gatward, R., Corbin, T., Goodman, R. and Ford, T. 2003. *The mental health of young people looked after by local authorities in England*. London: TSO.

Meltzer, H., Gill, B., Hinds, K. and Petticrew, M. 1996. *OPCS Surveys of Psychiatric Morbidity in Great Britain, Report 4: The prevalence of psychiatric morbidity among adults living in institutions*. London: HMSO.

- Meltzer, H., Gill, B., Hinds, K. and Petticrew, M. 1996. *OPCS Surveys of Psychiatric Morbidity in Great Britain, Report 5: Physical complaints, service use and treatment of residents with psychiatric disorders*. London: HMSO.
- Meltzer, H., Gill, B., Hinds, K. and Petticrew, M. 1996. *OPCS Surveys of Psychiatric Morbidity in Great Britain, Report 6: Economic activity and social functioning of residents with psychiatric disorders*. London: HMSO.
- Meltzer, H., Gill, B., Petticrew, M. and Hinds, K. 1995a. *OPCS Surveys of Psychiatric Morbidity in Great Britain, Report 1: The prevalence of psychiatric morbidity among adults living in private households*. London: HMSO.
- Meltzer, H., Gill, B., Petticrew, M. and Hinds, K. 1995b. *OPCS Surveys of Psychiatric Morbidity in Great Britain, Report 2: Physical complaints, service use and treatment of adults with psychiatric disorders*. London: HMSO.
- Meltzer, H., Gill, B., Petticrew, M. and Hinds, K. 1995c. *OPCS Surveys of Psychiatric Morbidity in Great Britain, Report 3: Economic activity and social functioning of adults with psychiatric disorders*. London: HMSO.
- Meltzer, H., Harrington, R., Goodman, R. and Jenkins, R. 2001. *Children and adolescents who try to harm, hurt or kill, themselves*. London: Office for National Statistics.
- Meltzer, H., Jenkins, R., Singleton, S., Charlton, J. and Yar, M. 1999. *Non-fatal suicidal behaviour among prisoners*. London: Office for National Statistics.
- Meltzer, H., Lader, D., Corbin, C., Singleton, S., Jenkins, R. and Brugha, T. 2002. *Non-fatal suicidal behaviour among adults aged 16-74 in Great Britain*. London: TSO.
- Meltzer, H., Singleton, S., Lee, A., Bebbington, P., Brugha, T. and Jenkins, R. 2002. *The social and economic circumstances of adults with mental disorders*. London: TSO.
- O'Brien, M., Mortimer, L., Singleton, N. and Meltzer, H. 2001. *Psychiatric morbidity among women prisoners in England and Wales*. London: TSO.
- O'Brien, M., Singleton, N., Sparks, J., Meltzer, H. and Brugha, T. 2002. *Adults with a psychotic disorder living in private households, 2000*. London: TSO.
- Singleton, N., Aye Maung, N., Cowie, A., Sparks, J., Bumpstead, R. and Meltzer, H. 2002. *Mental health of carers*. London: TSO.
- Singleton, N., Bumpstead, R., O'Brien, M., Lee, A. and Meltzer, H. 2001. *Psychiatric morbidity among adults living in private households, 2000*. London: TSO.
- Singleton, N., Farrell, M. and Meltzer, H. 1999. *Substance misuse among prisoners in England and Wales*. London: Office for National Statistics.
- Singleton, N. and Meltzer, H. 1998. Mental disorders in our Prisons. *Social Trends Quarterly*, Winter 1998.
- Yar, M., Hennell, S., Clarke, P., Meltzer, H. and Gatward, R. 2002. *Model-based small area estimation series no. 1 Childhood mental disorder in England*. London: Office for National Statistics.

*This review has been commissioned as part of the UK Government's Foresight Project, Mental Capital and Wellbeing. The views expressed do not represent the policy of any Government or organisation.*

All the reports and papers produced by the Foresight Mental Capital and Wellbeing Project may be downloaded from the Foresight website ([www.foresight.gov.uk](http://www.foresight.gov.uk)).  
Requests for hard copies may be made through this website.