MENTAL AND PHYSICAL HEALTH CHARTER

The Mental and Physical Health Platform

Bridging the Gap between Mental and Physical Health

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HEALTH PLATFORM

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The Mental and Physical Health Platform met for the first time in April 2008 to explore constructive ways to take better into account the interplay between mental and physical health and to put forward conclusions and policy recommendations promoting a more holistic approach to care.

Since the Platform's inaugural meeting in April 2008, members have been exchanging independent views and opinions on the above issues. All along this process, Platform moderator David McDaid has been compiling their input into this document – the Mental and Physical Health Charter – which comprises a Call to Action and a background document gathering the evidence on the interactions between mental and physical health.

The Charter will be launched publicly at European and national levels starting in October 2009 with a view to raise awareness as to the interactions (both virtuous and negative) between mental and physical health and thus make the case for action towards a more integrated and holistic approach to care.

Mental and Physical Health Platform partners include:

John Bowis, OBE, former Member of the European Parliament (Chairman) and Dr. Antonyia Parvanova, Member of the European Parliament; David McDaid, London School of Economics and Political Science (Moderator and author); Dr. Marc De Hert, Katholieke Universiteit Leuven, Belgium; EUFAMI – the European Federation of Associations of Families of People with Mental Illness (represented by Kevin Jones, Sigrid Steffen and Janet McCrae); International Diabetes Federation – Europe Region (represented by Prof. Eberhard Standl, Lex Herrebrugh and Cristian Andriciuc); International Obesity Task Force (represented by Prof. Philip James); HEART EU – the European Cholesterol Foundation (represented by Michael Livingston); GAMIAN-Europe – Global Alliance of Mental Illness Advocacy Networks (represented by Dolores Gauci and Paola Pivano); Wonca – World Organisation of Family Doctors (represented by Dr. Gabriel Ivbijaro).

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Finally, the Platform wishes to thank the European Commission Directorate-General Health and Consumers, represented by Jürgen Scheftlein, Hana Horka and Anke Bramesfeld, for the interest it expressed in the development of the Charter and for contributing through comments.

This initiative is supported by Bristol-Myers Squibb (BMS) and Otsuka Pharmaceuticals.

Bristol-Myers Squibb (BMS) is a global biopharmaceutical company committed to discovering, developing and delivering innovative medicines that help patients prevail over serious diseases. BMS partners with policy makers, patient groups and other stakeholders to achieve improved health care management.

Otsuka is a health care company committed to delivering innovative life-improving treatments that address unmet medical needs.

A Word from the Chairman

By John Bowis OBE, Former Member of the European Parliament

During my years at the European Parliament and my years in the British Parliament and as Health Minister before that, I have witnessed how mental health has made its way up the political agenda, with important milestones such as the adoption of the European Pact for Mental Health and Well-Being in June 2008. At the same time, the protection and promotion of physical health is being addressed increasingly at the European level.

However, an issue which has received comparatively little attention to date is the close and complex interplay between mental health and physical health, despite its huge consequences for the length and quality of people's lives as well as for health systems and the society as a whole.

This is why, in April 2008, leading organisations and experts from across Europe with an interest in mental health, diabetes, cardiovascular health and obesity established a new partnership to raise awareness of the links between mental and physical health and to make the case for action to tackle the related challenges.

Thus was born the Mental and Physical Health Platform, which I have had the privilege to chair since its foundation. The ambition of our work has been to assess the scope and magnitude of the interactions between mental and physical health, and to put forward concrete recommendations for all stakeholders – ranging from policy makers and health care professionals to service users and carers – to improve the current situation.

The conclusions we reached after months of dedicated and insightful discussions have been summarised into the present Mental and Physical Health Charter, which I have the great pleasure of introducing. As part of this Charter you will find a Call to Action, which highlights the major recommendations upon which all partners of the Platform have agreed and invites all relevant stakeholders at different levels to deliver change for people living with mental and physical health problems and their surroundings.

I truly believe that the Mental and Physical Health Charter can make a profound contribution to policy debates across Europe, with the objective of improving mental and physical health and well-being.

With many thanks for your support of this important initiative.

Yours sincerely,

John Bowis

A Call to Action

Combined Mental and Physical Challenges: The Unseen Burden

People with enduring mental health problems are more likely to develop physical health problems than the general population. Conversely, poor physical health can have a negative effect on mental health. These challenges have a huge impact on the length and quality of people's lives and lead to enormous costs for society.

1. People with severe mental illnesses have a two to threefold increased risk of death compared to persons of the same age and sex in the general population. They die on average 20 years younger than the general population, cardiovascular disease being the leading cause of excess mortality.
2. People with severe mental illnesses are 2 to 3 times more likely to develop diabetes and other cardiovascular risk factors. Only one-third have normal weight.
3. Poor physical health can entail severe mental illness – the risk of developing depression doubles in people with diabetes. The majority of cancer sufferers will also get depressed, affecting both quality of life and survival.
4. Combined mental and physical health problems engender stigma for individuals and their families. Almost two-thirds of all people with mental disorders do not seek treatment, largely because of stigma.
5. Mental and physical health problems have substantial costs to society: the costs of poor mental health alone in the EU have been estimated at €436 billion each year (more than €2,000/household). The additional costs of physical health problems in mentally ill may increase this figure by as much as 70%.
6. There are also positive interactions between mental and physical health: mental well-being supports good physical health and vice versa.

In recognition of the above, the Mental and Physical Health Platform was established in April 2008 as a new partnership bringing together associations and individuals from across disease areas and countries, with the twofold aim of raising greater awareness of the interplay between mental and physical health, and changing mindsets to address the personal, social and economic consequences of ignoring that interaction.

To support these objectives, the Mental and Physical Health Platform has developed a consensus document – the Mental and Physical Health Charter – which assesses the magnitude and impact of the links between mental and physical health and puts forward policy recommendations for an integrated approach to preventing and caring for ill health. The Charter aims to mobilise all relevant stakeholders, including policy makers, health care professionals, service users and their families and carers, in a joint effort to bridge the gap between mental and physical health.

The Mental and Physical Health Platform supports the European Pact for Mental Health and Well-Being launched in June 2008 and calls for the inclusion of the links between mental and physical health as a horizontal theme across all priority areas of the Pact.

As the Mental and Physical Health Charter is officially launched, we call upon authorities, organisations and individuals to enable and deliver change for people living with mental and physical health problems and their surroundings by enacting the following principles and actions:

Joining Forces to Bridge the Gap: A Call to Action

Enabling Change Through Policy

1. The links between mental and physical health must be recognised and addressed in all health-related strategies and programmes at EU and national levels, including disease-specific and other policies such as social, employment, discrimination, research and education, nutrition, tobacco and alcohol. Policy makers should ensure that integrated mental and physical health care is the norm and not the exception.
2. Health systems need to ensure adequate structures and processes, such as training schemes and guidance to health care professionals, carers, families and service users, in order to empower them to tackle combined mental and physical health challenges in their respective environments.
3. Health promotion objectives and measures should better reflect the interplay between mental and physical health, including in health information campaigns and incentives to encourage behaviour change.
4. Decision makers should set up systematic monitoring structures, benchmarks and performance assessments to ensure the implementation of policies supporting integrated care.
5. Targets and actions for improved mental and physical health and well-being must be matched with need-based resource allocation.

Delivering Change on the Ground

1. Better communication and co-operation between medical disciplines, carers, families and service users must be prioritised to ensure a 360° approach to mental and physical health.
2. Service users, health care professionals and carers should be incentivised to learn from good practices and make use of existing guidelines for improved recognition, monitoring, diagnosis and management of combined mental and physical health problems.
3. Improved training of the medical community, including specialist and primary care, must be developed and rolled out, including with the involvement of service users and their families and other informal carers.
4. Primary care teams need to be adequately resourced and trained to act as the first point of contact for those with combined physical and mental health care needs.
5. Service users, together with their families and carers, should be empowered to maintain an active life, including where appropriate, through measures for improved health literacy, access to better health-promoting services, information and advice on lifestyle changes and other factors.
6. Stigma and discrimination associated to mental and physical health problems must be combated in all settings. Enforcement of existing anti-discriminatory legislation is one key element.

A Call to Action (continued)

Expanding and Disseminating Knowledge

1. Greater efforts and resources must be invested in learning more about the reasons, consequences and costs of combined mental and physical health challenges, and how to deal with them.
2. Tools, such as risk models and practical guidance for different groups of people, need to be developed to translate knowledge into practice.
3. Existing knowledge on the links between mental and physical health should be gathered and categorised in a central information resource which can be accessed by the medical community as well as by service users, their families and other carers.
4. Silos in the research community need to be broken down, in favour of a pan-disciplinary approach involving people across health promotion, public health, various disease areas as well as engaging with service users, their families and their local communities.
5. Clinical and public health research should focus on filling gaps in current practice and data with the aim to feed into future practice and policy making at all levels.

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Executive Summary

There has been a welcome interest among policy makers across Europe – at both national and EU levels – on the importance of promoting mental well-being and alleviating mental health problems. Most recently in June 2008, Member States endorsed a 'European Pact on Mental Health and Well-Being', which seeks, through coordinated efforts at EU and national levels, to ensure the mental well-being of the European population and improve it where necessary.

In its broader initiatives – ranging from the Health Strategy[1] to the Lisbon Strategy[2] – the European Commission seeks to promote health and well-being, in particular by targeting inequalities in health status and the underlying risk factors for poor health as key areas for action. Moreover, the signing in 2008 of the Tallinn charter on health systems for health and wealth by the Member States of the WHO European region is yet further recognition of the importance of investing in promoting and protecting health and well-being.

One area for action in the promotion of health and well-being that this paper identifies is the interactions between mental and physical health, both virtuous (i.e., good physical health contributes to mental well-being, and vice versa) and negative (people living with a mental illness are at greater risk than the general population of nearly all physical ailments). To date, these interactions and their compounding positive and negative impacts have not been recognised enough, thus missing opportunities for intervention on the one hand and creating gaps in the care of certain groups of people.

[1] COM(2007)630 White Paper "Together for Health: A Strategic Approach for the EU 2008-2013", published by the European Commission on 23 October 2007.

[2] The Lisbon Strategy is an action and development plan for the European Union, agreed upon by the heads of state and government of the EU countries at the March 2000 summit. Its aim is to make the EU "the most dynamic and competitive knowledge-based economy in the world capable of sustainable economic growth with more and better jobs and greater social cohesion, and respect for the environment by 2010" (http://www.europarl.europa.eu/summits/lis1_en.htm).

This paper is intended to help inform a 'call to action' at both national and European levels for a greater focus on this issue. In keeping with the aim of having a more holistic approach to physical and mental health, it has been prepared drawing on the expertise and insights of stakeholders from across the physical and mental health domains. It is not intended to provide a detailed analysis of the medical literature, nor does it propose clinical guidelines. Instead, it is intended to raise awareness among a range of stakeholders including people living with physical and/or mental health problems, their families, policy makers, service providers and the general public, of the importance of not neglecting the associations between physical and mental health. It identifies a number of key risk factors to good physical and mental health, before going on to look at potential policy actions and practical interventions to address these risks and suggests mechanisms to help in policy implementation at EU, national and local levels.

Examining interactions between poor physical and mental health

People living with a mental illness such as depression and anxiety disorders, bipolar disorder and schizophrenia have worse levels of physical health and reduced life expectancy compared to the general population. They are more likely to be overweight, smoke and have a range of physical health problems. The difference in life expectancy between those with poor mental health and the general population might be as much as 30 years. People living with severe mental illness including depression, schizophrenia and bipolar disorders are between one and a half and three times more likely to die in any one year compared to the general population. Approximately 60% of all this excess mortality is due to physical health problems, with the most common cause of death at all ages being cardiovascular disease. The increased risk of mortality from depression alone is similar to that from smoking.

Individuals with mental health problems are prone to many different physical health problems. People with schizophrenia are three times more likely to have diabetes and twice as likely to have cardiovascular disease as the general population. People with depression have a 50% greater risk of cardiovascular disease and a 60% increased risk of diabetes; again equivalent to the risk associated with smoking. The risk of obesity can be twice as high as in the general population.

Some physical health problems are also associated with an increased risk of mental health problems, particularly depression and reduced life expectancy, often linked to suicide. There is evidence that treating the depression of people with physical health problems can help improve their life expectancy. People living with cancer have at least a 50% greater risk of suicide than the general population; this risk is considerably higher in the first year following diagnosis. Surveys indicate that people who are obese are between 20% and 50% more likely to have a depression or anxiety-related disorder, 50% more likely to have bipolar disorder and 25% more likely to have panic disorder or agoraphobia. Physical illness can be a trigger for depression: for instance, people with cardiovascular disease are 70% more likely to have a depression or anxiety disorder, while on average 33% of stroke survivors, 40% of people with chronic obstructive pulmonary disease, and 25% of people with arthritis may experience depression.

Calculating the economic impact

The costs of poor mental health alone in the EU are in excess of €2,000 to every European household. While evidence on the incremental costs of co-morbid physical illness is limited, data indicate that the costs to the health care system for people with co-morbid depression and physical illness may be increased by as much as 70%. Avoidable health care costs in the EU due to co-morbid physical illness in people with a primary diagnosis of a mental disorder conservatively may lie between €18 and €50 billion per annum. There may also be substantial avoidable health care costs for individuals with a primary physical illness diagnosis. For instance, individuals with diabetes who also have depression may have costs that are between 1.7 and 4.5 times greater than the costs of individuals who have diabetes alone.

Addressing key risk factors

A range of factors may contribute to the higher rates of morbidity and mortality seen in people with co-morbid mental and physical health problems. Many of these are avoidable. Lifestyle risk factors, access and coordination of services and medical management are all issues that need to be considered. Reviews indicate that people with severe mental health problems may take less exercise and have poorer nutritional habits than the general population. Individuals with schizophrenia are twice as likely to smoke as the general population.

There is evidence that only about a third of those who might benefit from access to mental health services actually do so in Europe, irrespective of any need for out of pocket payments. People with severe mental illness in Europe may not receive comparable care for physical health problems compared to the general population and there is also evidence to suggest lower rates of participation in public screening programmes.

The benefits of medications must be balanced against the potential risks that they present to overall health of the individual. It is important both to monitor the physical health status of people with mental health problems and to assess the mental health status of people with physical health problems such as cancer, particularly in the first year following diagnosis.

Promoting mental and physical health

At both EU and national levels, strategies and action plans on prevention could include some focus on reducing the risk of secondary health problems in high-risk groups such as those with severe mental or physical health problems. Positive public health initiatives of benefit can include for instance tighter restrictions on access to alcohol, prohibitions on recreational drugs, a ban on smoking in workplaces, including health and social care facilities and limiting the fat and salt content of food products.

Raising awareness of the links between physical and mental health in policies and programmes can help. Guides and easily accessible information and advice on how to lead a healthy lifestyle produced for patients, carers and the general population can help improve health literacy, but it should be clear that access to such information in itself is unlikely to lead to changes in behaviour and it would need to be supported by other measures. Ensuring that primary care practitioners, as well as mental and physical health specialists, including those based in long-term care facilities, have sufficient skills at least to diagnose co-morbid problems is essential to the development of an integrated and holistic health care system.

The delivery of cost-effective interventions and strategies also requires collaboration and co-operation between specialists and other sectors, notably primary care, within the health care system. Referrals and communication between specialists and primary care practitioners as appropriate can help tailor care and prevention interventions to best meet the needs of the individual. Routine monitoring and assessment of physical/mental health status should be encouraged.

Across Europe, between 40% and 90% of all people with mental health problems remain in close contact, or live with relatives who often provide them with long-term physical and emotional support. Supports also need to be in place for these family members, whose own physical and mental health may also be at risk.

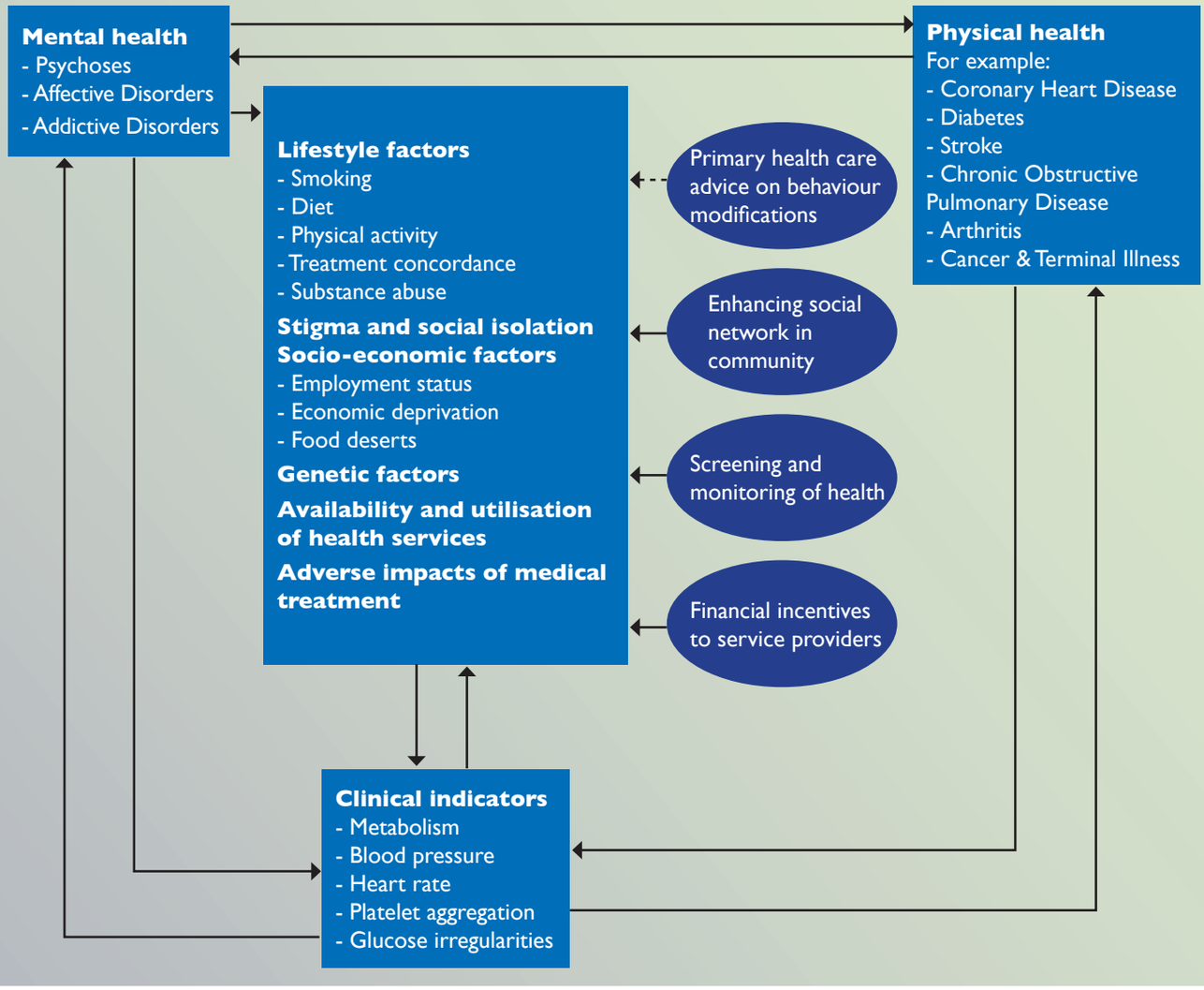
Implementing effective strategies: towards a holistic approach to care and support

A number of different mechanisms might be used to help support implementation of policies into practice. One way may be to establish appropriate benchmarks to help monitor progress in implementing national strategies. Publishing comparative information on how different services perform compared to benchmarks both within and across countries can also be an incentive for improved performance, with service providers not wishing to be seen near the bottom of any comparative list.

Guidelines have now been developed that focus on the screening and monitoring of the physical health of people with mental health problems. They will however be ineffectual unless rolled out as part of an active implementation strategy which includes measures such as audit and feedback. Financial rewards and other incentives might be used to promote better quality care of people in the primary care, so as to identify concurrent physical and mental health problems. In the UK, for instance, general practitioners receive additional funds if they meet targets in screening the physical health needs of their practice list who have mental health problems.

There is also a role to be played by national and local governments, as well as international agencies, in monitoring the enforcement of existing legislative instruments to counteract and deal with discrimination on the grounds of disability including mental and physical health problems. Only with such monitoring are they likely to promote fair access to services and enhance social inclusion.

Illustration of some links between mental health and physical health
(Source: David McDaid, October 2008)



1. Background

Mental health has moved up the political agenda in many European countries in recent years. The European Commission added its weight to this trend with the publication of its Green Paper in 2005 [1], while the World Health Organization brought together all 52 of Europe's health ministries earlier that same year to endorse an ambitious plan for the region [2]. In June 2008, the Commission established a European Pact on Mental Health and Well-Being to facilitate action alongside Member States and other stakeholders. This recognises that the primary responsibility for action still rests with Member States and other stakeholders, but envisages an active role for the Commission to inform, complement and encourage actions by these players [3]. The implementation of the Pact is ongoing through a two-pronged approach: firstly, the European Commission, in co-operation with the EU Member State holding the Council Presidency, will organise thematic conferences in 2009-2010 on each of the priority areas of the Pact. Secondly, the Commission is collecting examples of good practices with the aim to compile a comprehensive inventory of such practices in what will be called the 'Mental Health Compass'. This inventory will serve to share, and learn from, existing experiences across Europe.

The Tallinn charter on health systems for health and wealth by the Member States of the WHO European region (2008) further recognises the importance of investing in promoting and protecting health and well-being. Poor mental health remains one of the main contributors to the overall burden of poor health in the European Union. The personal, social and economic impacts of poor mental health can be profound. As many as one in four individuals may experience a mental health problem during their lifetimes, while for men and women in the WHO European region, mental health and neurological problems account for 22% and 17% of the total burden of disease burden respectively, second only to cardiovascular disease [4].

The economic impacts of poor mental health are also substantial. Conservatively, they have been at €386 billion (2004 prices) in the EU 25 plus Norway, Iceland and Switzerland [5]. These economic impacts fall well beyond the health care system: poor mental health may mean that individuals are absent or even permanently withdraw from the labour force. These broader economic costs can make up as much as 80% of all cost of poor mental health [6], pointing again to the fact that mental ill health costs more to society at large than to health systems in particular. Other impacts outside the health system can include poor personal relationships and strain on families [7-9], a higher-than-average risk of homelessness [10] and increased contact with the criminal justice system [11]. Thus, promoting mental (and physical) well-being can help the European Union attain its Lisbon Agenda targets for economic growth and employment.

There are many common concerns about mental health across Europe. Among the most prevalent are: human rights abuses; the continued reliance in many countries on the old and discredited asylums; the difficulties of developing good community-based care to replace them; the perennial and controversial issue of compulsory treatment; the challenge of coordinating activity across health, social care, housing, criminal justice, employment and other systems; the search for effective treatments and support services; the question of how to prevent mental health problems arising in the first place; and the huge problems of stigma and discrimination.

The overarching goal of European health policy is to protect and ensure a high level of health for all of Europe's citizens. Much activity in respect of both physical and mental health is therefore concerned with the promotion and maintenance of physical and mental well-being as well as on measures to protect public health. Of course not all health problems are avoidable: another important area for action at a European level is the secondary prevention of co-morbid health problems. As explored in this paper, this can be fostered by further developing strategies and exchanging information on effective ways of reducing the risk of physical health problems in those already living with mental health problems (and vice versa).

The promotion of social inclusion and the reduction of inequalities in health outcomes are also key priorities for Europe's citizens. Given the level of stigma that still surrounds poor mental health, social inclusion might also be fostered if individuals with mental health problems more easily have an opportunity to receive advice and support in respect of any additional physical health needs. Moreover, actions intended to help support people with chronic long-term physical health conditions might also more directly consider ways of dealing with any mental health issues, which left unchecked may lead to social exclusion within their communities.

It is also in the context of these overarching goals and as a demonstration of its commitment to promoting well-being that the EU Commission is carrying out the 'European Pact for Mental Health and Well-Being'. The Pact looks primarily at promoting and preserving well-being and at preventing ill health, in particular on five key themes affecting mental health: Mental Health in Youth and Education; Prevention of Depression and Suicide; Mental Health in Older People; Mental Health in Workplace Settings; and Combating Stigma and Social Exclusion.

One area that has not received specific attention to date and that is worth exploring has been the interaction between physical and mental health. A growing body of evidence indicates that people with enduring mental health problems are at greater risk of developing physical health problems than the general population [12]. These physical health problems in turn compound the impact on European economies, again increasing the likelihood that individuals will not be able to participate in the labour force or in education nor will they be able to look after their families. Similarly, poor physical health, particularly serious and/or enduring conditions such as cancer, multiple sclerosis, musculoskeletal disorders and cardiovascular disease, has adverse health and economic impacts on mental health, which in turn add again to the adverse impacts of physical illness.

As indicated in section 2.4, conservatively the incremental costs of co-morbidities to the health system alone may be some €50 billion per annum in the EU. The addition impacts of co-morbidity were further acknowledged by the European Parliament in a recent resolution adopted on 19th February 2009 which among other things noted the increased risk of poor physical health and lower rate of health care service use than the general population [13]. Further to this, the links between mental health and physical health would also be well placed to be addressed as a horizontal theme in the European Pact for Mental Health and Well-Being, its implementation and recommendations for action.

It should be noted that throughout this document the term poor mental health is used in a very broad sense to cover mental health problems ranging from stress to psychotic disorders, although not considering the specificities of dementia or learning difficulties. The focus in this paper is solely on the health of adults.

2. Interactions between poor physical and mental health

The interactions between poor mental and physical health have been documented for many decades; yet this has perhaps only emerged as a major issue in the last ten years, as evidence on this relationship grows rapidly. People living with mental illness such as depression and anxiety disorders, bipolar disorder and schizophrenia have worse levels of physical health and reduced life expectancy compared to the general population [14] [15]. Many factors may contribute to these health inequalities including the greater risk of poverty and social exclusion, genetic and lifestyle factors, treatment effects, a lack of emphasis on the promotion of health and well-being and lower rates of contact with general medical services.

2.1 Premature death

Box 1: Key facts

- People living with severe mental illness including depression, schizophrenia and bipolar disorders are between one and a half and three times more likely to die in any one year compared to the general population.
- Approximately 60% of all excess mortality is due to physical health problems.
- The most common cause of death at all ages is cardiovascular disease; this is nearly twice that of the general population.
- Studies suggest that people with psychoses die at least 10 years younger than the general population. Some studies have evoked figures as high as a 25-30-year difference in the life expectancy as compared to the general population.
- The increased risk of mortality from depression is similar to that from smoking.
- People living with cancer have at least a 50% greater risk of suicide than the general population; this risk is considerably higher in the first year following diagnosis.
- Treating depression may also be associated with better life expectancy in people with physical health problems.

The most profound consequence of poor physical or mental health is premature death (Box 1). Studies have reported a significantly increased risk of death from natural causes for people living with depression and anxiety-related disorders, schizophrenia and other psychoses, substance misuse (including alcohol problems) and eating disorders [12] [14-23]. Approximately 60% of this excess mortality can be attributed to poor physical health (the remainder associated with accidents, injury and suicide) [16].

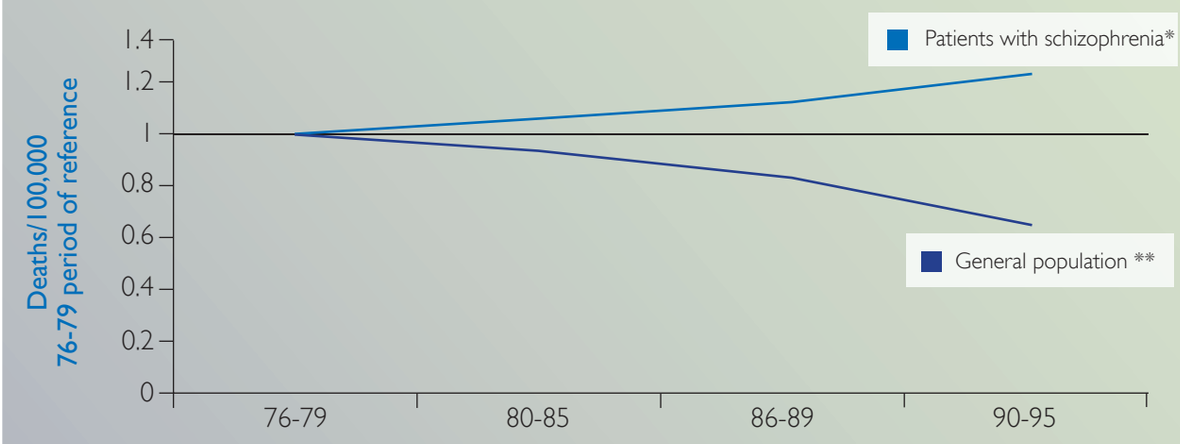
Depression is the most common severe mental health problem, impacting 9% of the European population in any one year. Meta-analyses indicate that overall, individuals with depression may have almost double the risk of dying compared to the general population [24, 25]. This increased risk of mortality in one recent study of 60,000 plus Norwegians was found to be similar to that seen for smokers compared to the general non-smoking population [26].

Around 2.5% of the European population live with a psychotic condition in any one year. Studies indicate that in the case of schizophrenia, individuals may die on average at least ten years earlier than the general population. Approximately two-thirds of this excess mortality is due to poor physical health, with the leading cause of death being cardiovascular disease. The gap in the risk of mortality for people with schizophrenia has steadily risen over the last thirty years. Even in countries where both access to and quality of the health care system is generally acknowledged to be good, such as Sweden, the risk of mortality from cardiovascular disease for men increased almost fivefold and women almost threefold in twenty years [27] (see also Figure 1).

The increased risk of death from heart disease is around twice that of the general population for people with depression (1.9) [28], bipolar disorder (1.9) [15] and schizophrenia (1.8) [21]. Risk varies by age groups: one large community-based English study of individuals with all severe mental illness reported a threefold and twofold increase risk in the risk of mortality from cardiovascular disease or stroke for those aged 18-49 and 50-75 respectively [19]. This finding remains robust even when confounding factors such as smoking rates and deprivation are taken into account [29].

Figure 1: Continued divergence in cardiovascular mortality [27]

Mortality trends in Stockholm County 1976-79 to 1990-95, cardiovascular causes of death



* Controlling for age at first diagnosis and years of follow-up
** Standardized by the sex and age distribution of the patients

Osby *et al. BMJ.* 2000;321(7259):483-4

Differences in life expectancy between those with mental health problems and the general population can be further exacerbated by local conditions both within and external to the health system. For instance, there is a nineteen-year difference in years of potential life lost for people with schizophrenia, major depressive disorders, bipolar disorders, delusional and psychotic disorders and attention deficit/hyperactivity disorders in six US states (range from 13 to 32 years) [30].

Poor mental health in people with physical health problems can also adversely impact on life expectancy, although much less is known about this. One controlled study looking at the implementation of a depression treatment initiative for older people in primary care settings in New York reported a significant decrease of about a third in the risk of death, nearly all of which could be attributed to a reduction of deaths in cancer patients. While the mechanism for an effect on deaths due to cancer is unclear and further research is needed [31], previous

research has suggested an association between depression and increased chance of late-stage cancer diagnosis [32]. Similarly, depression treatment has been associated with a significantly lower five-year mortality rate in older people with diabetes in the US [33].

Co-morbid depression has also been associated with increased risk of suicide in Europe, particularly for cancer patients. Looking at 65,000 people with cancer in Estonia over 15 years, the risk of suicide was 1.7 times higher for men than in the general population; no difference was observed for women [34]. Similarly in England, analysis of 400,000 cancer patients over a ten-year period observed that there was 45% greater risk of suicide in men and a small but still significant 19% increased risk for women [35]. Both studies reported that risk is at its greatest in the period immediately after diagnosis – in Estonia male cancer patients have a fourfold risk of suicide in the first 180 days after diagnosis, whereas in England it almost tripled for men and doubled for women in the first year after diagnosis. Similar results have been reported elsewhere [36].

The risk of suicide may also increase for other patient groups – e.g. analysis of 200,000 gastric or duodenal ulcer patients in Sweden reported a 70% increased risk of suicide in those who had undergone surgical treatment [37]. Again the suicide risk was considerably higher – a fourfold increased risk – in the year following surgery. All of this supports greater emphasis being placed on the evaluation and management of suicidal ideation in people with some physical health problems [38].

2.2 Impacts of poor mental health on physical health and well-being

In addition to a severely shortened life expectancy, the quality of life of people with a mental illness is often further diminished by poor physical health (Box 2). They are more likely to be overweight, smoke and have diabetes, hypertension and dyslipidaemia [20].

Box 2: Key facts

- People with severe mental illness are more likely to be overweight, smoke and have a range of physical health problems.
- People with schizophrenia are three times more likely to have diabetes than the general population.
- People with schizophrenia are twice as likely to have cardiovascular disease compared with the general population.
- People with depression have a 50% greater risk of cardiovascular disease; this is equivalent to the risk associated with smoking.
- People with depression may have a 60% increased risk of diabetes.
- People with schizophrenia are twice as likely to be obese as the general population.
- Two-thirds of people with a mental illness are overweight.

Increasing evidence suggests that depressive disorders can be a trigger for cardiovascular disease [39, 40]. Reviews have indicated that the risk of developing cardiovascular disease, including stroke and heart attack, can be at least one and a half times that of the general population. This is equivalent to the risk of cardiovascular disease from smoking or diabetes [39, 41]. People with depression may also have a 60% greater risk of developing diabetes than their non-depressed counterparts [42], again with a potential further consequence on cardiovascular health. A systematic review of all English language articles over a 38-year period also reported that the prevalence of diabetes in people with bipolar disorders was up to three times greater than in the general population [43]. Recent longitudinal analysis of the experiences of people with major depression in Canada also reported a significantly greater risk of arthritis, hypertension and peptic ulcers compared to the general population [42].

Looking at schizophrenia, Table 1 providing information from one recent review illustrates that there is an increased risk of a wide range of physical health problems including cardiovascular disease, diabetes, sexual dysfunction, tuberculosis, osteoporosis and poor dental hygiene [17]. Data from England and Wales for instance indicates that the risks of diabetes and cardiovascular disease in people with psychotic disorders are approximately three times and almost double that of the general population respectively [20, 29]. Work in Belgium indicates that this increased risk of diabetes also increases with age – for those aged 15-25 the increase in prevalence is just 1.6% compared with 19.2% for those aged 55 to 65 [44]. Another large community-based English study of 46,000 individuals with all severe mental illness, including schizophrenia (46%), bipolar disorder (19%) and delusional disorder (19%), reported that individuals between 15 and 49 had almost one and a half times the rate of cardiovascular diseases as the general population; there was also an even higher incident rate of strokes for all age groups over 18 [19].

Table 1: Physical diseases reported in literature to occur with increased frequency in people with schizophrenia [17]

US National Library of Medicine Disease Category	Physical disease observed with increased frequency in people with schizophrenia
Bacterial infections and mycoses	Tuberculosis (†)
Virus diseases	HIV (††), hepatitis B/C (†)
Musculoskeletal diseases	Osteoporosis/decreased bone mineral density (†)
Stomatognathic diseases	Poor dental status (†)
Respiratory tract diseases	Impaired lung function (†)
Nervous system diseases	Extrapyramidal side effects of antipsychotic drugs (†), motor signs in antipsychotic naïve patients (†), altered (reduced) pain sensitivity (†)
Urological and male genital diseases	Sexual dysfunction (†)
Female genital diseases and pregnancy complications	Obstetric complications (††), sexual dysfunction (†), hyperprolactinemia-related side effects of antipsychotics (irregular menses, galactorrhea, etc.) (†)
Cardiovascular diseases	Cardiovascular problems (††)
Skin and connective tissue diseases	Hyperpigmentation (†)[1]
Nutritional and metabolic diseases	Obesity (††), diabetes (†), hyperlipidemia (†), metabolic syndrome including hyperlipidemia (†), polydipsia (†)
Endocrine system diseases	Thryroid dysfunction (†), hyperprolactinemia (†) (side effect of a number of antipsychotics)

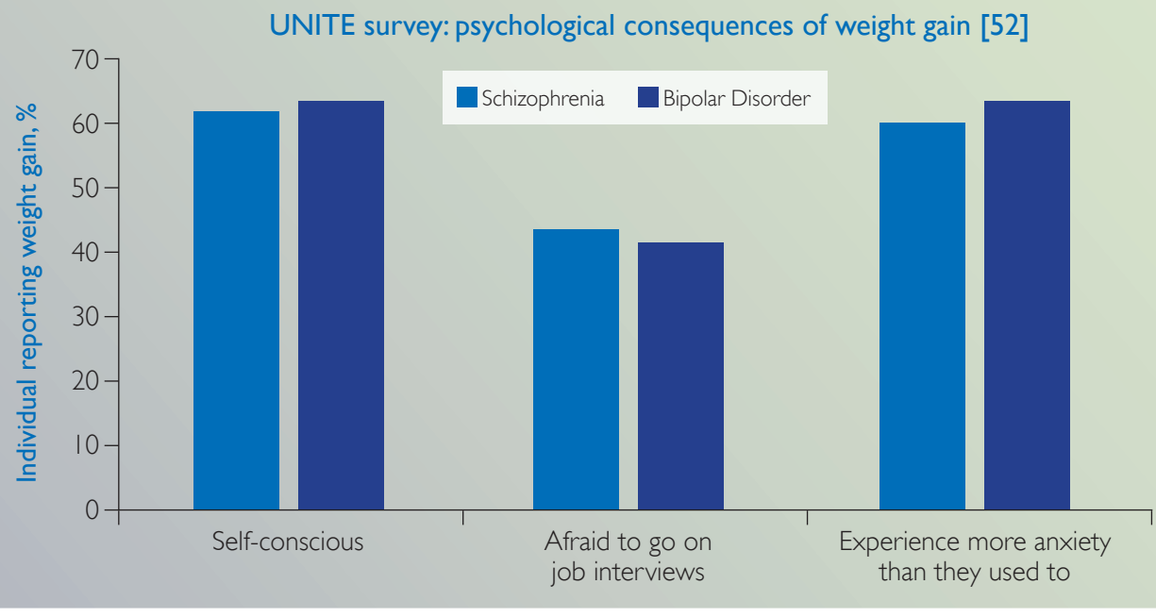
(†) good evidence for increased risk, (††) very good evidence for increased risk (e.g. population based studies),
[1]a side-effect of chlorpromazine, probably not a problem of most other antipsychotics
The table does not list physical diseases that have only been shown to be related to the etiology of schizophrenia (e.g. influenza virus). There were no clearly increased rates of physical diseases in the categories "parasitic diseases", "digestive system diseases", "otorhinolaryngological disease", "eye diseases", "hemic and lymphatic diseases", "congenital, hereditary, and neonatal diseases and abnormalities", "immune system diseases", "disorders of environmental origin", "animal diseases", "pathological conditions, signs and symptoms" or these diseases were listed in another category.

Although controversial, obesity can be considered not just as a risk factor for other diseases but also as a complex disease of its own, with numerous causes [45, 46]. People with obesity are at increased risk of conditions including cardiovascular disease, hypertension, diabetes and dyslipidaemia, and obesity is more prevalent in people with a mental illness than in the general population. One US study reported rates of obesity in patients with schizophrenia of up to 60% [47]. In Finland, people with schizophrenia have been shown to have almost double the risk of obesity compared to the general population [48]. The lifetime prevalence of obesity in people with mood or bipolar disorders has also been estimated to be significantly greater at 19% compared to obesity in the general population without mood or bipolar disorders (15%) [49]. Disorders related to obesity, such as sleep apnoea, may also negatively affect health status [50].

In addition to the physical health risks associated with obesity, obesity further exacerbates any mental health problem, increasing the risk not only of depression but also of panic attacks, social phobia and agoraphobia [51]. It can lead to social exclusion, potentially deterring an

individual from employment, educational opportunities and even from seeking care of any type. Self-report data obtained from people with bipolar disorder or schizophrenia in 11 countries, including seven in the EU, indicates a substantial number of individuals may be reluctant to attend job interviews and may become very self-conscious of any weight gain [52] (see Figure 2). Knowing that one prevalent side effect of many medications for mental illnesses is weight gain, it is imperative both to measure the risks and benefits of any treatment regimen and to monitor the individual regularly to adjust treatment as necessary to ensure that overall health is ameliorated and preserved.

Figure 2: Psychological impacts of weight gain [52]



2.3 Impacts of poor physical health on mental health and well-being

Physical ailments can also be contributory factors to mental health problems, and in particular they can increase the risk of depressive and anxiety disorders. As described above, individuals diagnosed with cancer are at increased risk of suicide. People with arthritis may also be twice as likely as general population in having a mood or anxiety-related disorder. In one US survey, 25% of people with arthritis had co-morbid mental disorders – mainly anxiety and depression. Co-morbidity from mental health problems also accounted for 17% of the total impact of arthritis measured as days out of normal role [58].

Co-morbid physical and mental health problems markedly reduce the quality of daily life, which again suggests the need for greater collaboration and dialogue between physical and mental health specialists. Some examples are illustrated in Box 3.

Box 3: Illustrations of physical illness as a contributory factor for poor mental health

- General population surveys across 38 countries indicate that people who are obese are between 20% and 50% more likely to have a depression or anxiety-related disorder [53].
- US population survey data indicates that people who are obese are 50% more likely to have bipolar disorder and 25% more likely to have panic disorder or agarophobia [54].
- A study of people aged 45+ in 38 US States reported that people with cardiovascular disease were 70% more likely to have a depression or anxiety disorders [55].
- A review of 51 studies worldwide reported that on average 33% of stroke survivors experience depression [56].
- A US study reported that 40% of people with chronic obstructive pulmonary disease were found to have depressive symptoms [57].
- People with arthritis may be twice as likely as the general population to have a mood or anxiety-related disorder.

2.4 Additional costs of co-morbid physical and mental health problems

Box 4: The economic impact of co-morbid physical and mental illness

- The costs of poor mental health alone in the EU are in excess of €2,000 to every European household.
- Evidence on the incremental costs of co-morbid physical illness is limited but preliminary calculations show that costs to the health care system for people with co-morbid depression and physical illness may be increased by as much as 70%.
- Avoidable health care costs in the EU due to co-morbid physical illness in people with a primary diagnosis of a mental disorder conservatively may lie between ☐8 and ☐50 billion per annum.
- There may also be substantial avoidable health care costs for individuals with a primary physical illness diagnosis. Individuals with diabetes who also have depression may have costs that are between 1.7 and 4.5 times greater than those for individuals who have diabetes alone.

The costs of poor mental health alone in the EU have been estimated at some €436 billion per annum or a cost of €2,271 for every EU household (Mental Health Economics European Network 2007)[3]. More than two-thirds of these costs lie outside the health system and are associated with lost opportunities to engage in paid work and unpaid activities, e.g. voluntary activities, caring responsibilities, household tasks.

[3]The breakdown of costs by mental disorder would be approximately: Affective and Anxiety Disorders 46%; Addiction 18%; Dementia 17%; Psychotic Disorders 11%; Other Disorders 7%.

Comparatively little work has been done in Europe, or elsewhere, to estimate the incremental costs of co-morbid conditions in people with mental health problems. One study looked at the impact of co-morbidities on cost in people with depression in six cities worldwide, including Barcelona, Spain. Health care costs were shown to be 17% to 46% higher in people with co-morbid depression than in people with depression alone [59]. One US study found health care costs to be 70% higher in people with co-morbid depression than in people without depression [60]. Another US study also indicated higher health care costs for co-morbid conditions for people with bipolar disorder compared to those with other mental or physical health problems [61].

If this pattern were to be observed for all mental health problems, excluding dementia, then the potential additional health and social care costs due to co-morbidity in the EU might be in the order of €18 billion to €50 billion per annum. This would be sufficient to fund the 2012 Olympics Games four times over, or nearly half of the budget for the NHS in England in 2009 (€111 billion).

A Canadian survey of more than 130,000 people also found, even after adjusting for socio-demographic characteristics, alcohol dependence and chronic physical illness burden, that the presence of co-morbid major depressive disorders was associated with twice the likelihood of health care utilisation and increased functional disability and work absence compared to the presence of a chronic physical illness without co-morbid depression [62].

In another US study, patients with diabetes and depression had higher ambulatory care use (12 vs. 7, $P < 0.0001$) and filled more prescriptions (43 vs. 21, $P < 0.0001$) than their counterparts without depression. Total health care expenditure was also 4.5 times higher ($247 million vs. $55 million, $P < 0.0001$). Depression in individuals with diabetes was associated with increased health care use and expenditures, even after adjusting for differences in age, sex, race/ethnicity, health insurance, and co-morbidity [63]. More recently, another US study also confirmed substantial increased costs of depression in people with diabetes – suggesting that depression increased costs for diabetes patients between 50% to 75% [60]. Co-morbid anxiety, depression and psychosis also associated with increase in health system costs for people with lower back pain [64]. Co-morbid depression and chronic pain are also associated with significant increased absence from work compared to those with either depression or chronic pain alone [65]. Recent research in New Zealand also suggests that there are potential economic costs from strokes that can be avoided if emotional health is supported as part of a strategy to help younger individuals return to work [66].

3. Addressing the risk factors

Box 5: Key risk factors

- A worldwide review indicates that people with schizophrenia are twice as likely to smoke as the general population.
- Reviews indicate that people with severe mental health problems may take less exercise and have poorer nutritional habits than the general population.
- In some European countries, only one-third of those with depression and anxiety disorders access mental health services, regardless of the need for out of pocket payments.
- There is some evidence to suggest lower rates of participation in public screening programmes by people with severe mental illness.
- People with severe mental illness in Europe may not receive comparable care for physical health problems compared to the general population.
- While the progress of medications in treating the symptoms of poor mental health is substantial, their benefits must be balanced against the potential risks that they present to physical health.
- It is important to monitor the physical health status of people with mental health problems.
- It is important to assess the mental health status of people with physical health problems such as cancer, particularly in the first year following diagnosis.

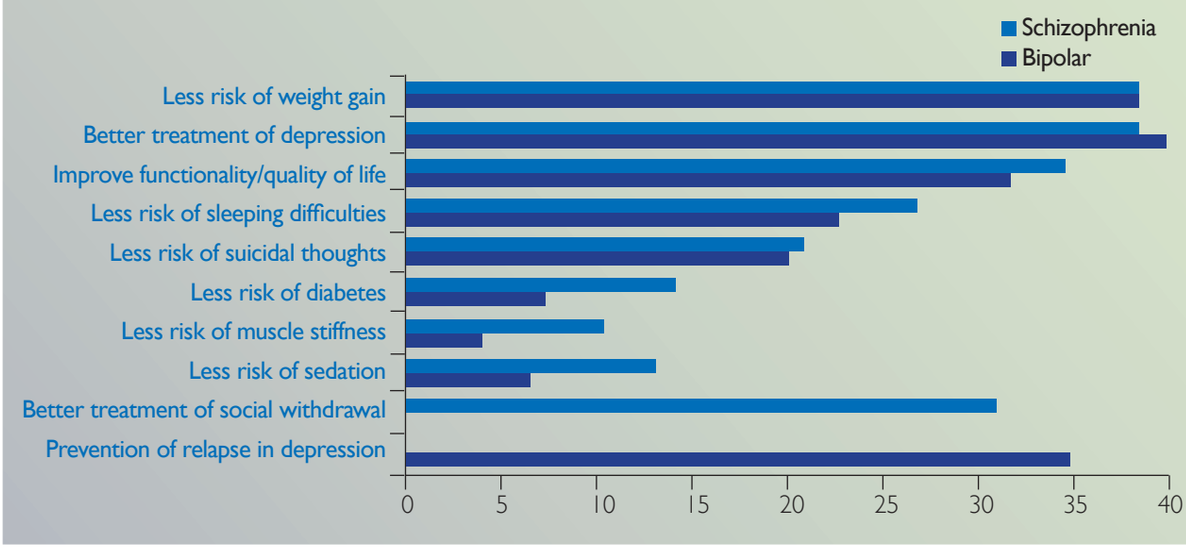
A range of factors may contribute to the higher rates of morbidity and mortality seen in people with co-morbid mental and physical health problems. Many of these are avoidable. Table 2, for example, illustrates modifiable risk factors for cardiovascular disease for a group of individuals with schizophrenia or bipolar disorder [68]. In addition to some of the factors such as diabetes and obesity that have previously been discussed, the table indicates that up to 80% of these individuals may be regular smokers; this is between two and three times the level of smoking seen in most European populations and is consistent with the results of a worldwide review of the association between smoking and schizophrenia [67].

Table 2: Estimated prevalence and relative risk of modifiable cardiovascular disease risk factors in schizophrenia and bipolar disorder compared to the general population [68]

	Estimated Prevalence and Relative Risk (RR)	
Modifiable Risk Factors	Schizophrenia	Bipolar Disorder
Obesity	45%–55% RR: 1.5–2	21%–49% RR: 1–2
Smoking	50%–80% RR: 2–3	54%–68% RR: 2–3
Diabetes	10%–15% RR: 2	8%–17% RR: 1.5–2
Hypertension	19%–58% RR: 2–3	35%–61% RR: 2–3
Dyslipidaemia	25%–69% RR: ≤5	23%–38% RR: ≤3
Metabolic Syndrome	37%–63% RR: 2–3	30%–49% RR: 1.5–2

Reducing some of the risks for poor health requires a multi-faceted and holistic approach that looks at ways in which to promote mental and physical well-being and reduce the risk of co-morbid conditions arising. In the case of people with severe mental health problems, one 11-country survey highlighted issues that they regarded as being of paramount importance for improvement in quality of life [52] (see Figure 3). Issues that gained the most support included measures to better treat depression and reduce risk of weight gain, but with comparatively little emphasis placed on reducing risk of diabetes. Lifestyle risk factors, access and coordination of services and medical management are all issues that need to be considered.

Figure 3: Survey of mental health service user priority areas of service improvement [52]



3.1 Implications of lifestyle risk factors

There is a strong link between poor mental and/or physical health, poverty and social exclusion. Individuals with severe mental health problems may be less inclined to engage in physical activity. The combination of socio-economic deprivation, unhealthy diets (and sometimes more limited access to healthy foods) and limited physical activity also markedly enhance the risk of obesity which then precipitate further problems of diabetes, high blood pressure and arthritis. For instance, people with bipolar disorders may be 33% more likely both to have poor exercise habits and eat only two meals a day [69]. An English study indicated that individuals with schizophrenia may eat more fat and less fibre than the general population [70]. Ensuing problems such as arthritis and progressive weight gain, with increasing backache and breathlessness, can create a vicious circle of disadvantage which is very difficult to reverse.

In addition to the obvious detrimental impacts to health of some lifestyle choices, such behaviours can also have more indirect adverse consequences. Smoking, for instance, reduces the level of disposable income individuals have, which in turn can have further consequences for their health status. In the UK, where excise duties on cigarettes are relatively high, people with schizophrenia who were not in employment were returning more than 30% of their weekly state benefits to the government because of their consumption of cigarettes [71]. With even less money to spend, they may be forced to opt for cheap, fatty and sugar-rich foods rather than comparatively more expensive fruit and vegetables.

3.2 Barriers to access

Access to health care in the European Union is near universal, albeit there may be co-payments required to utilise some services. Despite this, there is evidence from some European countries to suggest that only one-third of those with depression and anxiety-related disorders who could benefit from access to mental health care services are likely to access such services, regardless of whether or not out of pocket payments are required. One survey of six European countries reported that no more than 50% of people with the most severe anxiety and depressive disorders made use of such services in the previous year [72]. This contrasts markedly with the use of services by people with physical health problems such as diabetes [73].

Some mental health problems might also reduce the willingness or impact on the capability of individuals in communicating their physical health needs. Social isolation may reduce the likelihood that these individuals will seek help for physical health problems. The stigma of mental

illness remains pervasive in society. Even when they do engage with services, mental health professionals may not give sufficient attention to the physical assessment of people presenting with psychiatric problems, wrongly assuming that any physical symptoms observed are psychosomatic. As mentioned above, there is some evidence of greater chance of late diagnosis for physical illness [32], which can mean less favourable outcomes, and in the case of cancer, can be synonymous with death. Studies have also indicated significantly lower rates of participation in free of charge cancer screening programmes, e.g. in Manitoba for both cervical and breast cancer screening by women with schizophrenia [74, 75].

Research in England has also indicated that even when cardiovascular risk factors are recorded in medical notes of people with chronic psychiatric illness, often little is done to intervene and improve their risk profiles [76]. Individuals with schizophrenia or bipolar disorder in England are 15% less likely to receive a statin prescription and 7% less likely to have a cholesterol test [77], however the quality of diabetes care was the same as that of the general population [78]. In Australia, one study looking at the experiences of people with schizophrenia who had cardiovascular disease over an eighteen-year period found that they rarely received revascularisation procedures compared with the general population [79].

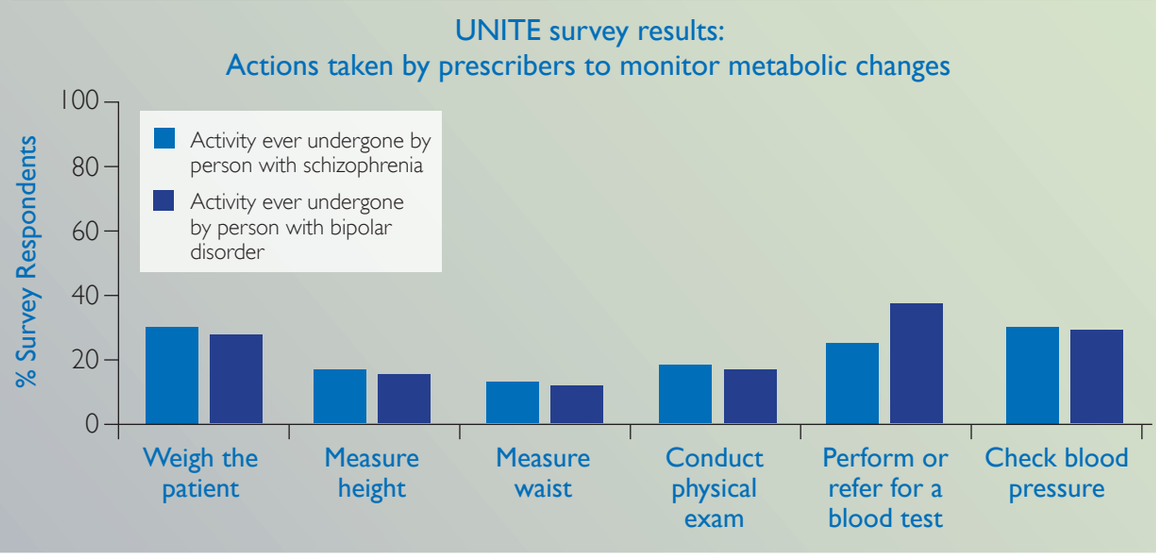
3.3 Pharmacological treatment and medical management

Pharmacological therapies are one element of treatment received by people with mental health problems. The effectiveness of such therapies and their side effects profiles continue to improve. However, the frequency and severity of side effects has to be managed. In the case of depression and anxiety-related disorders, there is some evidence to suggest that antidepressant medications can have such adverse effects as sexual dysfunction and weight gain, among others [22]. In the case of psychoses such as schizophrenia and bipolar disorder, the evidence is stronger: adverse effects of antipsychotic medications can include excessive weight gain, a worsening lipid profile and risk of developing diabetes [80-83]. In addition, other risk factors such as insulin resistance, abdominal obesity, hypertension and low levels of high-density lipoproteins are also often found in people with chronic psychoses. These risk factors are sometimes clustered under the term 'metabolic syndrome' [84], which is often a precursor to the development of diabetes and cardiovascular disease, a risk which has been shown to be much higher in people with severe mental health problems [44]. Assessing the causes of metabolic syndrome and preventing its onset could thus lead to lowering the risk for diabetes and cardiovascular diseases for people with mental health problems. This includes careful consideration of the potential treatments that they may be offered.

While the progress of medications in treating the symptoms of poor mental health is substantial, their benefits must be balanced against the potential risks that they present to physical health. This suggests a need for routine monitoring of physical health status, including assessment of metabolic abnormalities and the use of medications that minimise adverse impacts to individuals. This is of particular importance given the negative impacts on quality of life from excessive weight gain. Indeed, the fear of excessive weight gain from medications can also deter individuals from continuing with a course of therapy [85]. However, a survey of mental health service users in 11 countries, including seven in the EU, suggests that mental health professionals do not carry out basic physical health monitoring measures very often. Less than 20% of respondents indicated that they had ever undergone a physical examination [22].

Thus, careful choice and monitoring of medications, as well as non-pharmacological treatments, tailored to needs of the individual are required. This, however, will help limit, but not eliminate, the risks of metabolic syndrome, weight gain, subsequent ill health and premature death. In the longer term, further research may help to address some of these issues but in any event it is of course important to look also through the lens of lifestyle risk factors, many of which are amenable to action. In particular, key lifestyle factors include smoking (where rates are sometimes twice that of the general population even when accounting for socio-economic status), poor diet and a lack of exercise.

Figure 4: Service user report of actions taken by prescriber to monitor metabolic change [22]



Given the increased risk of suicide and depression, there is clearly also an important need to monitor the mental health status of people with physical health problems. In particular, primary care practitioners and specialists might undergo some training to help them better recognise potential warning signs of suicide as well as better detect the depression that can often be triggered by a deterioration in physical health.

There is a need to safeguard the rights of people with mental health needs to have the same opportunities to access effective health promotion, diseases prevention and treatment interventions, just as patients without mental health problems have.

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4. Promoting physical and mental health and well-being

Box 6: Key policy actions

- Actions addressing the broader social determinants of health.
- Strategies and action plans on health promotion and disease prevention could include some focus on reducing the risk of secondary health problems in high-risk groups such as those with severe mental or physical health problems.
- Raising awareness of the links between physical and mental health in policies and programmes.
- Improved training in both primary and specialist care to better detect and manage co-morbid conditions.
- Encouraging greater collaboration and co-operation between different professional groups.
- Protecting physical and mental health within long-term care facilities.
- Supporting family carers.
- Targeted awareness raising strategies.
- Encouraging routine monitoring and assessment of physical/mental health status.

The previous two sections have discussed some of the consequences of the bidirectional interaction between mental and physical ill health. It is also important to keep in mind the virtues of good mental health on physical health and vice versa, especially when developing health promotion activities, whose reach of action could be much wider and deeper through the recognition of a virtuous circle between mental and physical health.

For example, the EU can, and should, consider the interplay between mental and physical health in the European Pact for Mental Health and Well-Being, as this would serve to promote a broader approach to addressing mental health and related challenges and opportunities. The implementation of the Pact, including its thematic conferences and the collection of best practices, will provide an excellent opportunity to explore policy actions in different areas to improve mental and physical health promotion and management across Europe.

Targeted prevention activities should also be undertaken to reduce the risk of co-morbidities. The personal, social and economic benefits of such actions would be substantial. At EU level, investment in health can lead to significant benefits for European economies and help Europe move towards its twin Lisbon agenda goals of economic growth and higher rates of employment.

Policies to promote mental health and physical health can also help the EU move towards its Health Strategy objective of reducing inequalities in health status. Moreover, last year's signing of the Tallinn charter on health systems for health and wealth by the Member States of the WHO European region is yet further recognition of the importance of investing in promoting and protecting health and well-being.

At a personal level, promoting and protecting mental and physical health and well-being can help reduce the likelihood that individuals become excluded from society, and thus increase their chance of earning a wage and living independently. The benefits of help and support for people with mental and/or physical health problems can also have secondary positive consequences for family members who might otherwise have much reduced opportunities for work and leisure, which ultimately can also impact on their physical and mental health.

4.1 Actions directed at the social determinants of health

A starting point for all European public health policy is the promotion of good physical and mental health, as well as the prevention of the onset of illness. This can tie in not only to specific areas of work, e.g. European Platforms on cardiovascular disease and diabetes, but also contributes towards lifestyle-related objectives such as the Strategy on Nutrition, Overweight and Obesity-related issues. Strategies on prevention can also include a focus on reducing the risk of secondary health problems in high-risk groups such as those with enduring mental health problems.

The recently published work of the WHO Commission on Social Determinants in Health sets out a whole series of recommendations to tackle health inequalities [86]. Measures include civic society actions to promote physical activity through investment in active transport and steps to encourage healthy eating through retail planning to manage the availability of, and access to high-quality food, or through prohibitions on poor quality, high fat content foods, particularly in areas of socio-economic deprivation. Other actions to tackle some of the social determinants of health may, for example, focus on steps to reduce poverty, improved access to education, ensuring a better quality of housing stock, making neighbourhoods more attractive places to live in, encouraging community cohesiveness or improving the natural environment.

The socio-economic environment in which individuals live can also influence the extent to which they are willing to change their lifestyles or behaviour [86, 87]. Specific incentives might be needed to encourage behaviour changes, e.g. to increase consumption of fruit and vegetables, to augment physical activity, to stop smoking and to encourage better concordance with treatments (including by understanding reasons for non-concordance). While some of these will be specific to the needs of people with mental and/or physical health problems, others need to be embedded within general health promotion and public health strategies.

4.2 Linking physical and mental health in public health policies and programmes

There is some consensus that improving the physical health and well-being for people with chronic health problems should be embedded within existing health improvement policies and practice. In the case of people with severe mental health problems, this is of particular importance given the shift in the balance of care so that today in most of Europe people living with mental health problems are treated primarily within the community and live independently rather than within long-term care facilities. Positive public health initiatives of benefit might include tighter restrictions on access to alcohol, prohibitions on recreational drugs, a ban on smoking in workplaces, including health and social care facilities and limiting the fat and salt content of food products.

4.2.1 Improving health literacy

Health literacy is the relationship between a person's literacy, language and numeracy levels and their ability to receive, understand and process health information. Low levels of health literacy impact negatively on an individual's ability to take action to improve their health. Improving health literacy can thus help addressing health inequalities.

Self-help guides and easily accessible information and advice on how to lead a healthy lifestyle produced for health service users, families, carers and the general population can help improve health literacy. One recent example is a guide produced for people with long-standing mental health needs which provides information on the physical health risks associated with poor mental health, as well as information on diet, food labelling, weight management and exercise [88]. Literacy can also be improved through use of new electronic media, but it is important that this is again accessible to all, including those with learning difficulties and/or visual impairments (Figure 5).

Figure 5: Making a website accessible

http://www.inclusion-europe.org. Reproduced with permission from Inclusion Europe.

4.2.2 Raising awareness among specific at-risk groups

The routine provision of advice and information alone on lifestyle, diet and exercise is unlikely on its own to lead to behaviour change. Vulnerable population groups such as those with mental health needs may be even less likely to make use of messages in contrast to other sections of the population, thus widening health inequalities. Much more active approaches, which might for instance involve regular dialogue and monitoring by health and social care professionals or peer advocates might help increase uptake of lifestyle advice. Financial incentives can also help: these might include the prescription of access to gym or sports facilities, as well as subsidies to help purchase healthy foods. Carers and families can also play a critical role in helping individuals to stay physically healthy: this is particularly the case where the carer has principle responsibility for food shopping.

4.3 Improved training in primary and specialist care

Another issue relates to the current discussion at EU level over how to sustain the future European health workforce. Will there be enough incentive to ensure that the workforce has sufficient professionals with some skills in respect of both physical and mental aspects of health? To improve further our understandings of the links between poor physical and mental health, and perhaps more importantly on the implementation of evaluation of different approaches to tackle the issue in a range of contexts and settings across Europe could be an element of future work under both the EU public health and seventh research framework programmes.

Primary care practitioners and ancillary professions, e.g. community nurses, health visitors and social workers, typically are the first points of contact with health care systems for individuals in Europe, albeit in some EU countries individuals can also directly seek advice from specialists. Ensuring that primary care practitioners, as well as mental and physical health specialists, including those based in long-term care facilities, have sufficient skills at least to diagnose co-morbid problems is essential to the development of an integrated and holistic health care system [89].

Many countries have guidelines on the recognition and management of mental health problems in primary care, but the recognition, accurate diagnosis and management of mental health problems remain poor in many settings. For instance, in one analysis of primary care practitioners in five European countries, only 60% of all individuals with an anxiety disorder who attended primary care centres were correctly diagnosed [90]. Basic and continuing training programmes might place greater attention on identification of mental health problems and co-morbidities. However, evidence to date indicates that training alone, even coupled with guidelines, is unlikely to lead to better outcomes for service users [91, 92]. Collaborative care models, which ensure that primary care practitioners may undertake joint consultations and have access to specialists in mental health services, may be one way forward. Families and carers, where appropriate, should also be involved in such collaborative care models since they can provide very pertinent insight derived from their unique relationship with the individual.

Given the increased risk of suicide and depression in the case of people diagnosed with a severe physical illness (such as cancer), there is clearly also an important need to monitor the mental health status of people with physical health problems. In particular, primary care practitioners and specialists might undergo some training to help them better recognise potential warning signs of suicide as well as to detect the depression that can often be triggered by a deterioration in physical health.

Other incentives, for instance related to policy targets and goals or the use of financial incentives might be used to help different health professionals focus greater attention to specific health risks (see Section 5). Improving the quality of communication between some primary care professionals with long-standing negative attitudes towards people with mental health problems is one factor to be addressed [93]. Another critical factor to the success of primary care-led approaches may be to ensure that individuals and their families also receive help and support to facilitate the self-management of their physical and/or mental health needs.

Primary care practitioners, as well as health promotion and mental health specialists, might be members of community mental health teams that have been developed in some countries to help support people with mental health problems (see Box 7).

Box 7: Early intervention teams

One way of helping to prevent the onset of physical health problems may be through community-based early intervention teams that are seen in some European countries. These are multi-disciplinary teams that provide help to people aged between 16 and 30 experiencing psychoses for the first time. Teams take a holistic approach to health promotion, including monitoring physical health needs, providing and monitoring medication (with an intention of minimising dose size and any weight gain or glucose irregularities) and providing advice and help on healthy living.

4.4 Encouraging greater collaboration and co-operation

Although we have demonstrated a wealth of information on co-morbid physical and mental health problems, specialist care tends not to focus on any potential risk of co-morbidity. Psychiatrists have focused mainly on treating psychiatric symptoms at the risk of neglecting common physical health needs [17, 94, 95]. There is a scope to understand better how the psychiatrist can act to help promote physical health (see Box 8), and conversely to understand how certain specialists (e.g. oncologists, diabetologists, cardiologists) might think about the mental health status of the people they treat.

The delivery of cost-effective intervention and strategies requires collaboration and co-operation between mental health professionals and other sectors, notably primary care, within the health care system [14]. Collaboration might be required, for instance, on the appropriate baseline screening and ongoing monitoring of people with mental health problems receiving anti-psychotic medication. Referrals and communication between specialists and primary care practitioners, as appropriate, can help tailor care and health promotion interventions to best meet the needs of the individual. Previous studies have suggested that this does indeed increase the use of preventive services [96]. Primary care practitioners may be well placed to coordinate actions to promote health and well-being across sectors, liaising with other local services such as housing and education as appropriate. Multi-disciplinary care teams may also offer a way forward.

Box 8: Liaison psychiatry

The concept of liaison psychiatry, a type of integrated care pathway whereby psychiatrists work with other specialities in respect of physical health issues, might be expanded to include greater collaboration with the primary care sector [97].

The inclusion of family consultation should also be considered in order to bring another dimension to the collaboration.

4.5 Assessing and monitoring physical and mental health status for at-risk populations

Actions might also involve active monitoring of the physical and mental health of at-risk populations. Well-developed clinical guidelines on the early identification of physical health problems that have been associated with poor mental health are increasingly available. One such example is the recent publication by the National Institute for Health and Clinical Excellence of a protocol for the identification through screening and genetic testing of people with familial hypercholesterolaemia [98]. Similarly, recognising that people living with enduring mental illnesses are an at-risk group for certain physical illnesses is leading to guidelines [82, 99-101], which, if put into practice (see Section 4.2), could enable the early detection, prevention and, if necessary, treatment of what otherwise are becoming severe somatic co-morbidities.

4.5.1 Targeted approaches for different population groups

Different approaches to assessment and monitoring may be required for different segments of the population. Sexual dysfunction has been linked to some medications; again individuals receiving drug treatments with the potential for causing sexual dysfunction may need to be followed up. People over 65 with both physical and mental health problems may be more prone to falls and confusion regarding medication regimens and nutritional neglect. They may also find it geographically more difficult to access services, particularly if living in rural isolated communities. Social care services may need to provide additional support for these individuals. Ethnic minority populations might also have specific needs; some may be genetically more prone to conditions such as diabetes, whilst for others there is a need to ensure that the interventions are culture and gender-sensitive.

4.6 Protecting physical and mental health within long-term care facilities

While most people with physical or mental health problems live in the community, it is important not to ignore the needs of those who may be in hospitals and other long-term care facilities including rehabilitation centres, long-stay psychiatric wards and nursing homes. Health and other professionals working in these facilities again need to be aware of the increased risk of co-morbid conditions and consider measures to help counter these risks. Adopting a set of standards on maintaining and monitoring physical and mental health within these facilities might be one way of raising awareness of this issue. For instance, a recent position statement issued by the European Psychiatric Association with support from the European Association for the

Study of Diabetes and the European Society of Cardiology to reduce cardiovascular risk and improve diabetes care recommends that cardiovascular risk is determined when an individual first comes into a residential facility, with their physical health status, then subsequently followed up both in the short term and on an annual basis [22].

4.7 Supporting families and carers

Throughout the EU, there are more than 100 million family members providing care and support to a loved one with a physical or mental health problem [102]. Not only must the reliance on these carers be acknowledged and the impacts recognised, but the role of carers may be pivotal in helping to promote positive health for people with physical and/or mental health problems.

Many carers have expressed a feeling of powerlessness to influence the level of physical health care that their loved one receives. If carers are indeed to have a pivotal role in the lives of people with a mental illness, caring for the carers must also be considered. Policy interventions are crucial: caring for anyone with a physical or mental health problem can be very onerous and can place significant constraints – personal, social, and financial – as carers may have to give up or reduce time spent at work. The impacts of caring on both the physical and mental health of family carers have been well-documented problems [9, 103-106]. Carers of people with chronic physical illness, terminal health care conditions or permanent disabilities in particular, are at increased risk of developing mental health problems [107-110] and caring has been seen to have long-term impacts on quality of life. One Swedish study comparing the parents of people with schizophrenia to the general population reported that they were significantly less satisfied with their quality of life. Moreover, there was a correlation between lower overall quality of life and higher perceived caring burden [111]. This must be taken into consideration when any measures have implications for the role of families and carers.

5. Implementing effective strategies: towards a holistic approach to care and support

Box 9: Measures to support implementation

- Ensuring national disease-specific policies and strategies account for risk of co-morbidity.
- Establishing benchmarks and performance assessment.
- Making use of clinical guidelines.
- Adopting incentive mechanisms to encourage behaviour change.
- Strengthening links with the public health community.
- Better enforcement of anti-discrimination legislation.

There is scope at European level for the Commission to help facilitate greater collaboration across stakeholders within the Member States to help promote a more holistic approach to health and well-being. In this context, the implementation of the European Pact for Mental Health and Well-Being will play a key role in looking into relevant policies, good practices and possible common tools and actions. This might, for instance, include the facilitation of the development of a common set of guidelines on managing the physical health of people with mental health problems, as well as the provision of tools and information on how best to facilitate the implementation of evidence-based practice. Actions to promote better social inclusion, as well as to implement and (re-)enforce existing anti-discriminatory legislation might be undertaken at a European level.

5.1 Ensuring national disease-specific policies and strategies account for risk of co-morbidity

National plans in areas such as cardiovascular disease, diabetes and mental health are critical in helping to facilitate strategies to tackle these health problems. Ensuring that the increased risk of co-morbid health problems is acknowledged in these policies is a first step to the development of strategies that will include measures intended to prevent and or treat such co-morbidities. For instance in England the National (Health) Service Framework on Diabetes made plain that mental health problems occur more commonly in people with diabetes [112].

5.2 Establishing benchmarks and performance assessment

European health systems are increasingly being assessed to ensure optimisation of resource use. This firstly requires the development of an appropriate set of indicators against which to judge performance; secondly, surveillance systems to monitor performance need to be in place. Having indicators on the prevention and alleviation of co-morbidities in physical and mental health problems, backed up by concrete targets that can be easily measured could be effective in promoting a more evidence-based and high-quality approach to countering these health problems. Unfortunately, systems to assess performance of mental health services, in particular in Europe, lag behind the equivalents for other areas of the health system, although systems are being put in place in a number of countries [113]. Publishing comparative information on how different services perform compared to benchmarks both within and across countries can also be an incentive for improved performance, with service providers not wishing to be seen near the bottom of any comparative list.

While one key aspect of this involves better training for professionals, how can collaboration and coordination across sectors be improved? How can all stakeholders, including critically ill people with physical and/or mental health problems, be better linked into the policy-making process? Better informing and involving service users and family groups, both from the mental health and various physical health interest groups, in the development of strategies to promote health holistically may encourage uptake of effective lifestyle and public health interventions.

5.3 Making use of clinical guidelines

Studies have suggested that assessments of physical health by psychiatrists can be poor while the knowledge of physical health and health promotion programmes by community-based mental health staff can be limited. Clinical guidelines that focus on the screening and monitoring of the physical health of people with mental health problems have been developed [82, 99-101].

For such guidelines to be effective, they need to be rolled out as part of an active implementation strategy which includes measures such as audit and feedback of health care professionals and monitoring of practice through target setting [114-116]. They also can be integrated into the policy-making process, as in Scotland (Box 10).

Box 10: Guidelines to promote physical health of people with mental health problems in Scotland

Six recommendations on how to improve the physical health of people with a range of mental health problems including both psychoses and depressive disorders were put forward for public consultation [117]. These include measures to improve awareness in health care professionals, service users, partner organisations and families on the increased rate of poor physical health and poorer outcomes in people with mental health problems. They also include recommendations for the annual review of health promotion, prevention and physical care needs by primary care practitioners, or other suitably trained individuals in the case of people in residential care facilities. The guidelines also emphasise the need for health care and other services to remove barriers to the access to care and to ensure non-discriminatory delivery of care. Importantly, they also emphasise the importance of the prevention of depression in people with conditions such as diabetes, cardiovascular disease and cancer.

Guidelines need not only to deal with community-based individuals but also those who are living in long-stay health or social care facilities. Measures here might include steps to promote access to high-quality food or exercise facilities. A new European Commission study, the HELPS (European Network for Promoting the Health of Residents in Psychiatric and Social Care Institutions) study (see http://www.helps-net.eu/index.htm) aims to identify best practices for physical health promotion in mental health and social care. Subsequently, it will develop a health promoting tool intended to empower residents and staff to identify the most relevant risk factors in their specific context and subsequently select the most appropriate action out of a range of defined health promoting interventions. Psychiatrists, diabetologists and cardiologists in Europe have also come together to develop a joint statement on how people with severe mental health problems should be monitored for risk of hyperglycaemia/diabetes and cardiovascular disease [22].

5.4 Adopting incentive mechanisms to encourage behaviour change

Financial incentives and other rewards might be used to promote better management of concurrent physical and mental health problems. One example of this can be seen in the UK where a mechanism, known as the Quality and Outcomes Framework (QOF), encourages quality improvements within the primary care system. This includes additional financial payments to general practitioners who meet targets in screening the physical health needs of their practice list members who have mental health problems. While it is still too early to assess whether this will have a positive impact on health, work undertaken in the US does indicate that structured assessments of the physical health of people with severe mental health problems does help in identifying and improving poor physical health.

5.5 Building links with the public health community

Public health strategies often place the emphasis solely on their physical health benefits, with much less attention given to the benefits they can bring to mental health and well-being. In convincing funders to provide resources for services, it may be prudent to begin with interventions that are likely to be highly effective, cost-effective and non-controversial. For any organisation charged with managing a public health strategy, it can help establish presence and credibility, allowing relationships to be built with a range of stakeholders. Vital to this may be demonstrating that many potential strategies may be a win-win for those interested in either physical or mental well-being. Regular check ups on heart and emotional health for at-risk groups, may help individuals safeguard and protect their cardiovascular health which in turn safeguards their mental health.

5.6 Effective implementation of anti-discriminatory legislation

There is now a substantial body of evidence suggesting significant differences in the utilisation of health services between people living with mental health problems and the general population. Some of these differences will be due to self-exclusion by individuals believing that they will not be treated fairly or who do not want to make public their mental health state. It is also, in part, due to unfavourable attitudes and discriminatory behaviour within health and social care systems. There is a role to be played by existing legislative instruments to counteract and deal with discrimination on the grounds of disability, including mental health problems. However, they can only promote access to services and social inclusion if they are effectively monitored with adequate sanctions where required to effect change.

Conclusion

It is clear that there is a strong association between poor physical and poor mental health. They have substantial personal and economic costs – perhaps an additional €50 billion per annum in health care costs for people with mental health problems who also develop a physical health problem. The health care costs of people with chronic disease are also exacerbated by poor mental health: in the case of depression associated with diabetes, costs may be between 1.5 and 4.5 times greater. Many of these impacts are avoidable both through better primary promotion and prevention strategies, as well as better monitoring and management of individuals in high-risk groups. A holistic approach is required to facilitate better collaboration and/or integration between physical and mental health services.

Policies and strategies at national level should, first through a population wide approach, seek to tackle some of the underlying determinants of poor health that affect the entire European population. Building alliances across public health, emphasising the win-win benefits of health promotion can be emphasised. These broad actions can be complemented by specific steps to help people with physical or mental health problems make informed choices as regards protective factors for health (e.g. diet, exercise, smoking, etc.). Communication between service users, families and professionals can be improved. This may be aided by a series of actions intended to improve knowledge and awareness by health care professionals and in particular the adoption of standards to monitor the physical and mental well-being of individuals with mental health problems, as well monitoring the emotional well-being of those who have recently been diagnosed as having a serious physical illness.

A range of guidelines have been developed at both European and national levels; the challenge now is to help facilitate their implementation. Better coordination and co-operation between primary care professionals, and both mental and physical health specialists is vital. Just having the skills to recognise co-morbid conditions and referring individuals to appropriate services can make a big difference.

Effective implementation of actions can be aided by highlighting the issue of co-morbidity in national disease specific policies as well as in public health strategies, the use of targets, benchmarks and publication of comparative performance tables, facilitating increased collaboration and making use of tailored dissemination strategies and use of incentive mechanisms to influence behaviour and practice. While many of these actions are the responsibility of the Member States, it is clear that reducing the risk of co-morbid physical or mental health problems can help the EU achieve a number of goals in respect of reducing the impact of specific health problems, as well as helping to counter health inequalities.

The case for action is increasingly strong; doing nothing does not represent value for money. Actions to reduce the risk of co-morbid physical and mental health problems can promote better health, avoid the need for some health care services, promote social inclusion and further economic growth in the European Union.

References

1. Commission of the European Communities. Improving the mental health of the population: Towards a strategy on mental health for the European Union. Green Paper. 2005, Health and Consumer Protection Directorate, European Commission: Brussels.
2. World Health Organization. Mental Health Action Plan for Europe. Facing the Challenges, Building Solutions. 2005, World Health Organization: Copenhagen.
3. McDaid D. Mental health reform: Europe at the crossroads. *Health Economics, Policy and Law*. 2008. **3**(3): p. 219-228.
4. World Health Organization. Global burden of disease estimates. 2004, World Health Organization: Geneva.
5. Andlin-Sobocki P. *et al*. Cost of disorders of the brain in Europe. *Eur J Neurol*. 2005. **12 Suppl 1**: p. 1-27.
6. Knapp M. Hidden costs of mental illness. *Br J Psychiatry*. 2003. **183**: p. 477-8.
7. Thornicroft G. *et al*. The personal impact of schizophrenia in Europe. *Schizophr Res*. 2004. **69**(2-3): p. 125-32.
8. Van Wijngaarden B., Schene A.H. and Koeter M.W. Family caregiving in depression: impact on caregivers' daily life, distress, and help seeking. *J Affect Disord*. 2004. **81**(3): p. 211-22.
9. Ostman M. and Hansson L. Appraisal of caregiving, burden and psychological distress in relatives of psychiatric inpatients. *Eur Psychiatry*. 2004. **19**(7): p. 402-7.
10. Anderson R., Wynne R. and McDaid D. Housing and employment, in Mental Health Policy and Practice Across Europe. Knapp M. *et al*., Editors. 2007, Open University Press: Buckingham.
11. All Party Parliamentary Group on Prison Health. The mental health problem in UK HM Prisons. 2006, House of Commons: London.
12. Harris E.C. and Barraclough B. Excess mortality of mental disorder. *Br J Psychiatry*. 1998. **173**: p. 11-53.
13. European Parliament. Mental Health. European Parliament resolution of 19 February 2009 on Mental Health. 2009, European Parliament: Brussels.
14. Fleischhacker W.W. *et al*. Comorbid somatic illnesses in patients with severe mental disorders: clinical, policy, and research challenges. *J Clin Psychiatry*. 2008. 69(4): p. 514-9.
15. Osby U. *et al*. Excess mortality in bipolar and unipolar disorder in Sweden. *Arch Gen Psychiatr*. 2001. **58**(9): p. 844-50.
16. Brown S. Excess mortality of schizophrenia. A meta-analysis. *Br J Psychiatry*. 1997. **171**: p. 502-8.
17. Leucht S. *et al*. Physical illness and schizophrenia: a review of the literature. *Acta Psychiatr Scand*. 2007. **116**(5): p. 317-33.
18. Osborn D.P. The poor physical health of people with mental illness. *West J Med*. 2001. **175**(5): p. 329-32.
19. Osborn D.P. *et al*. Relative risk of cardiovascular and cancer mortality in people with severe mental illness from the United Kingdom's General Practice Research Database. *Arch Gen Psychiatry*. 2007. **64**(2): p. 242-9.
20. Osborn D.P., Nazareth I. and King M.B. Risk for coronary heart disease in people with severe mental illness: cross-sectional comparative study in primary care. *Br J Psychiatry*. 2006. **188**: p. 271-7.

21. Saha S., Chant D. and McGrath, J. A systematic review of mortality in schizophrenia: is the differential mortality gap worsening over time? *Arch Gen Psychiatry*. 2007. **64**(10): p. 1123-31.
22. De Hert M. *et al*. Cardiovascular Disease and Diabetes in People with Severe Mental Illness position statement from the European Psychiatric Association (EPA) supported by the European Association for the Study of Diabetes (EASD) and the European Society of Cardiology (ESC). *European Psychiatry*. 2009. In press.
23. Tidemalm D. *et al*. Excess mortality in persons with severe mental disorder in Sweden: a cohort study of 12 103 individuals with and without contact with psychiatric services. *Clin Pract Epidemol Ment Health*. 2008. **4**: p. 23.
24. Cuijpers P. and Schoevers R.A. Increased mortality in depressive disorders: a review. *Curr Psychiatry Rep*. 2004. **6**(6): p. 430-7.
25. Cuijpers P. and Smit F. Excess mortality in depression: a meta-analysis of community studies. *J Affect Disord*. 2002. **72**(3): p. 227-36.
26. Mykletun A. *et al*. Levels of anxiety and depression as predictors of mortality: the HUNT study. *Br J Psychiatry*. 2009. **195**(2): p. 118-25.
27. Osby U. *et al*. Time trends in schizophrenia mortality in Stockholm county, Sweden: cohort study. *BMJ*. 2000. **321**(7259): p. 483-4.
28. Angst F. *et al*. Mortality of patients with mood disorders: follow-up over 34-38 years. *J Affect Disord*. 2002. **68**(2-3): p. 167-81.
29. Disability Rights Commission. Equal Treatment: Closing the Gap. A formal investigation into physical health inequalities experienced by people with learning disabilities and/or mental health problems. 2006, Disability Rights Commission: London.
30. Colton C.W. and Manderscheid R.W. Congruencies in increased mortality rates, years of potential life lost, and causes of death among public mental health clients in eight states. *Prev Chronic Dis*. 2006. **3**(2): p. A42.
31. Gallo J.J. *et al*. The effect of a primary care practice-based depression intervention on mortality in older adults: a randomized trial. *Ann Intern Med*. 2007. **146**(10): p. 689-98.
32. Desai M.M., Bruce M.L. and Kasl S.V. The effects of major depression and phobia on stage at diagnosis of breast cancer. *Int J Psychiatry Med*. 1999. **29**(1): p. 29-45.
33. Bogner H.R. *et al*. Diabetes, depression, and death: a randomized controlled trial of a depression treatment program for older adults based in primary care (PROSPECT). *Diabetes Care*. 2007. **30**(12): p. 3005-10.
34. Innos K. *et al*. Suicides among cancer patients in Estonia: a population-based study. *Eur J Cancer*. 2003. **39**(15): p. 2223-8.
35. Robinson D. *et al*. Suicide in cancer patients in South East England from 1996 to 2005: a population-based study. *Br J Cancer*. 2009. **101**(1): p. 198-201.
36. Misono S. *et al*. Incidence of suicide in persons with cancer. *J Clin Oncol*. 2008. **26**(29): p. 4731-8.
37. Bahmanyar S. *et al*. Risk of suicide among operated and non-operated patients hospitalized for peptic ulcers. *J Epidemiol Community Health*. 2009.
38. Pasquini M. and Biondi M. Depression in cancer patients: a critical review. *Clin Pract Epidemol Ment Health*. 2007. **3**: p. 2.

References (continued)

39. Brown A.D., Barton D.A. and Lambert G.W. Cardiovascular abnormalities in patients with major depressive disorder: autonomic mechanisms and implications for treatment. *CNS Drugs*. 2009. **23**(7): p. 583-602.
40. Carney R.M., Freedland K.E. and Veith R.C. Depression, the autonomic nervous system, and coronary heart disease. *Psychosom Med*. 2005. **67 Suppl 1**: p. S29-33.
41. Van der Kooy K. *et al*. Depression and the risk for cardiovascular diseases: systematic review and meta analysis. *Int J Geriatr Psychiatry*. 2007. **22**(7): p. 613-26.
42. Carnethon M.R. *et al*. Longitudinal association between depressive symptoms and incident type 2 diabetes mellitus in older adults: the cardiovascular health study. *Arch Intern Med*. 2007. **167**(8): p. 802-7.
43. McIntyre R.S. *et al*. Bipolar disorder and diabetes mellitus: epidemiology, etiology, and treatment implications. *Ann Clin Psychiatry*. 2005. **17**(2): p. 83-93.
44. De Hert M. *et al*. Prevalence of diabetes, metabolic syndrome and metabolic abnormalities in schizophrenia over the course of the illness: a cross-sectional study. *Clin Pract Epidemol Ment Health*. 2006. **2**: p. 14.
45. Obesity as a disease: the Obesity Society Council resolution. *Obesity* (Silver Spring). 2008. **16**(6): p. 1151.
46. Allison D.B. *et al*. Obesity as a disease: a white paper on evidence and arguments commissioned by the Council of the Obesity Society. *Obesity* (Silver Spring). 2008. **16**(6): p. 1161-77.
47. McElroy S.L., Guerdjikova A. and R. Kotwal. Severe mental illness and obesity, in Managing metabolic abnormalities in the psychiatrically ill: a clinical guide for psychiatrists. Bermudes R.A., Keck P.E. and McElroy S.L. Editors. 2006, American Psychiatric Publishing: Arlington. p. 55-119.
48. Saarni S.E. *et al*. Body composition in psychotic disorders: a general population survey. *Psychol Med*. 2009. **39**(5): p. 801-10.
49. McIntyre R.S. *et al*. Obesity in bipolar disorder and major depressive disorder: results from a national community health survey on mental health and well-being. *Can J Psychiatry*. 2006. **51**(5): p. 274-80.
50. Fagiolini A. and Goracci A. The effects of undertreated chronic medical illnesses in patients with severe mental disorders. *J Clin Psychiatry*. 2009. **70 Suppl 3**: p. 22-9.
51. Mather A., Cox B. and Sareen J. Associations of obesity with psychiatric disorders and suicidal behaviors in a nationally representative sample. *Journal of Psychosomatic Research*. 2008. **66**(4): p. 277-285.
52. McIntyre R.S. Understanding needs, interactions, treatment, and expectations among individuals affected by bipolar disorder or schizophrenia: the UNITE global survey. *J Clin Psychiatry*. 2009. **70 Suppl 3**: p. 5-11.
53. Scott K.M. *et al*. Obesity and mental disorders in the general population: results from the world mental health surveys. *Int J Obes* (Lond). 2008. **32**(1): p. 192-200.
54. Simon G.E. *et al*. Association between obesity and psychiatric disorders in the US adult population. *Arch Gen Psychiatry*. 2006. **63**(7): p. 824-30.

55. Fan A.Z. *et al*. Depression and anxiety associated with cardiovascular disease among persons aged 45 years and older in 38 states of the United States, 2006. *Prev Med*. 2008. **46**(5): p. 445-50.
56. Hackett M.L. *et al*. Frequency of depression after stroke: a systematic review of observational studies. *Stroke*. 2005. **36**(6): p. 1330-40.
57. Bruce T.O. Comorbid depression in rheumatoid arthritis: pathophysiology and clinical implications. *Curr Psychiatry Rep*. 2008. **10**(3): p. 258-64.
58. Stang P.E. *et al*. Mental and physical comorbid conditions and days in role among persons with arthritis. *Psychosom Med*. 2006. **68**(1): p. 152-8.
59. Chisholm D. *et al*. Depression status, medical comorbidity and resource costs. Evidence from an international study of major depression in primary care (LIDO). *Br J Psychiatry*. 2003. **183**: p. 121-31.
60. Simon G.E. *et al*. Diabetes complications and depression as predictors of health service costs. *Gen Hosp Psychiatry*. 2005. **27**(5): p. 344-51.
61. Rajagopalan K. *et al*. Costs of physical and mental comorbidities among employees: a comparison of those with and without bipolar disorder. *Curr Med Res Opin*. 2006. **22**(3): p. 443-52.
62. Stein M.B. *et al*. Does co-morbid depressive illness magnify the impact of chronic physical illness? A population-based perspective. *Psychol Med*. 2006. **36**(5): p. 587-96.
63. Egede L.E., Zheng D. and Simpson K. Comorbid depression is associated with increased health care use and expenditures in individuals with diabetes. *Diabetes Care*. 2002. **25**(3): p. 464-70.
64. Ritzwoller D.P. *et al*. The association of comorbidities, utilization and costs for patients identified with low back pain. *BMC Musculoskelet Disord*. 2006. **7**: p. 72.
65. Braden J.B. *et al*. Employment outcomes of persons with a mental disorder and comorbid chronic pain. *Psychiatr Serv*. 2008. **59**(8): p. 878-85.
66. Glozier N. *et al*. The influence of psychiatric morbidity on return to paid work after stroke in younger adults: the Auckland Regional Community Stroke (ARCOS) Study, 2002 to 2003. *Stroke*. 2008. **39**(5): p. 1526-32.
67. de Leon J. and Diaz F.J. A meta-analysis of worldwide studies demonstrates an association between schizophrenia and tobacco smoking behaviors. *Schizophr Res*. 2005. **76**(2-3): p. 135-57.
68. Correll C.U. Balancing efficacy and safety in treatment with antipsychotics. *CNS Spectr*. 2007. **12**(10 Suppl 17): p. 12-20, 35.
69. Kilbourne A.M. *et al*. Nutrition and exercise behavior among patients with bipolar disorder. *Bipolar Disord*. 2007. **9**(5): p. 443-52.
70. Brown S. *et al*. The unhealthy lifestyle of people with schizophrenia. *Psychol Med*. 1999. **29**(3): p. 697-701.
71. McCreadie R.G. and Kelly C. Patients with schizophrenia who smoke. Private disaster, public resource. *Br J Psychiatry*. 2000. **176**: p. 109.
72. World Health Organisation World Mental Health Survey Consortium. Prevalence, severity, and unmet need for treatment of mental disorders in the World Health Organisation world mental health surveys. *Journal of the American Medical Association*. 2004. **291**: p. 2581-2590.

References (continued)

73. Alonso J. *et al*. Population level of unmet need for mental healthcare in Europe. *Br J Psychiatry*. 2007. **190**: p. 299-306.
74. Chochinov H.M. *et al*. Does a diagnosis of schizophrenia reduce rates of mammography screening? A Manitoba population-based study. *Schizophr Res*. 2009. **113**(1): p. 95-100.
75. Martens P.J. *et al*. Are cervical cancer screening rates different for women with schizophrenia? A Manitoba population-based study. *Schizophr Res*. 2009. **113**(1): p. 101-6.
76. Kendrick T. Cardiovascular and respiratory risk factors and symptoms among general practice patients with long-term mental illness. *Br J Psychiatry*. 1996. **169**(6): p. 733-9.
77. Hippisley-Cox J. *et al*. Inequalities in the primary care of patients with coronary heart disease and serious mental health problems: a cross-sectional study. *Heart*. 2007. **93**(10): p. 1256-62.
78. Whyte S. *et al*. Quality of diabetes care in patients with schizophrenia and bipolar disorder: cross-sectional study. *Diabet Med*. 2007. **24**(12): p. 1442-8.
79. Lawrence D.M. *et al*. Death rate from ischaemic heart disease in Western Australian psychiatric patients 1980-1998. *Br J Psychiatry*. 2003. **182**: p. 31-6.
80. Allison D.B. *et al*. Antipsychotic-induced weight gain: a comprehensive research synthesis. *Am J Psychiatry*. 1999. **156**(11): p. 1686-96.
81. Newcomer J.W. Second-generation (atypical) antipsychotics and metabolic effects: a comprehensive literature review. *CNS Drugs*. 2005. **19 Suppl 1**: p. 1-93.
82. American Diabetes Association. Consensus development conference on antipsychotic drugs and obesity and diabetes. *J Clin Psychiatry*. 2004. **65**(2): p. 267-72.
83. Le Noury J. *et al*. The incidence and prevalence of diabetes in patients with serious mental illness in North West Wales: two cohorts, 1875-1924 & 1994-2006 compared. *BMC Psychiatry*. 2008. **8**: p. 67.
84. Khunti K. and Davies M. Metabolic syndrome. *BMJ*. 2005. 331(7526): p. 1153-4.
85. De Hert M. *et al*. Body weight and self-esteem in patients with schizophrenia evaluated with B-WISE. *Schizophr Res*. 2006. **88**(1-3): p. 222-6.
86. Commission on Social Determinants of Health. Closing the gap in a generation. Health equity through action on social determinants of health. 2008, World Health Organization: Geneva.
87. Foresight. Tackling Obesities: Future Choices - Project Report. 2007, Government Office for Science: London.
88. Canas F. *et al*. Taking control of physical health: a short guide. 2009, EUFAMI and Gamian: Europe: Brussels.
89. Funk M. *et al*. Integrating mental health into primary care: a global perspective. 2009, World Health Organization and World Organization of Family Doctors: Geneva. p. 224.
90. Weiller E. *et al*. Prevalence and recognition of anxiety syndromes in five European primary care settings. A report from the WHO study on Psychological Problems in General Health. *Br J Psychiatry*. 1998. **34**: p. 18-23.
91. Barbui C. and Tansella M. Identification and management of depression in primary care settings. A meta-review of evidence. *Epidemiol Psichiatr Soc*. 2006. **15**(4): p. 276-83.
92. Griffiths K.M. and Christensen H. Depression in primary health care: from evidence to policy. *Med J Aust*. 2008. **188**(8 Suppl): p. S81-3.

93. Maj M. Physical health care in persons with severe mental illness: a public health and ethical priority. *World Psychiatry*. 2009. **8**(1): p. 1-2.
94. Sernyak M.J. Implementation of monitoring and management guidelines for second-generation antipsychotics. *J Clin Psychiatry*. 2007. **68 Suppl 4**: p. 14-8.
95. RANZP. Royal Australian and New Zealand College of Psychiatrists clinical practice guidelines for the treatment of schizophrenia and related disorders. *Aust N Z J Psychiatry*. 2005. **39**(1-2): p. 1-30.
96. Druss B.G. *et al*. Integrated medical care for patients with serious psychiatric illness: a randomized trial. *Arch Gen Psychiatry*. 2001. **58**(9): p. 861-8.
97. Kisely S. and Campbell L.A. Taking consultation-liaison psychiatry into primary care. *Int J Psychiatry Med*. 2007. **37**(4): p. 383-91.
98. National Institute for Health and Clinical Excellence. Identification and management of familial hypercholesterolaemia. NICE Clinical Guideline 71. 2008, NICE: London.
99. Barnett A.H. *et al*. Minimising metabolic and cardiovascular risk in schizophrenia: diabetes, obesity and dyslipidaemia. *J Psychopharmacol*. 2007. **21**(4): p. 357-73.
100. Cohn T.A. and Sernyak M.J. Metabolic monitoring for patients treated with antipsychotic medications. *Can J Psychiatry*. 2006. **51**(8): p. 492-501.
101. De Hert M., van Eyck D. and De Nayer A. Metabolic abnormalities associated with second generation antipsychotics: fact or fiction? Development of guidelines for screening and monitoring. *Int Clin Psychopharmacol*. 2006. **21 Suppl 2**: p. S11-5.
102. Alber J. and Kohler U. Health and care in an enlarged Europe. 2004, European Foundation for Living and Working Conditions: Dublin.
103. Magliano L. *et al*. Carers and families of people with mental health problems, in Mental Health Policy and Practice Across Europe. Knapp M. *et al*. Editors. 2007, Open University Press: Buckingham.
104. Jungbauer J. *et al*. The disregarded caregivers: subjective burden in spouses of schizophrenia patients. *Schizophr Bull*. 2004. **30**(3): p. 665-75.
105. Lowyck B. *et al*. A study of the family burden of 150 family members of schizophrenic patients. *Eur Psychiatry*. 2004. **19**(7): p. 395-401.
106. Perlick D.A. *et al*. Prevalence and correlates of burden among caregivers of patients with bipolar disorder enrolled in the Systematic Treatment Enhancement Program for Bipolar Disorder. *Bipolar Disord*. 2007. **9**(3): p. 262-73.
107. Raina P. *et al*. The health and well-being of caregivers of children with cerebral palsy. *Pediatrics*. 2005. **115**(6): p. e626-36.
108. Walsh K. *et al*. Reducing emotional distress in people caring for patients receiving specialist palliative care. Randomised trial. *Br J Psychiatry*. 2007. **190**: p. 142-7.
109. Blake H., Lincoln N.B. and Clarke D.D. Caregiver strain in spouses of stroke patients. *Clin Rehabil*. 2003. **17**(3): p. 312-7.
110. Forbes A., While A. and Mathes L. Informal carer activities, carer burden and health status in multiple sclerosis. *Clin Rehabil*. 2007. **21**(6): p. 563-75.
111. Foldemo A. *et al*. Quality of life and burden in parents of outpatients with schizophrenia. *Soc Psychiatry Psychiatr Epidemiol*. 2005. **40**(2): p. 133-8.

References (continued)

112. Department of Health. National Service Framework for Diabetes. 2000, Department of Health: London. p. 48.
113. Jacobs R. and McDaid D. Performance assessment in mental health services, in Performance measurement for health system improvement: experiences, challenges and prospects. Smith P. *et al*. Editors. Forthcoming, Cambridge University Press: Cambridge.
114. Gilbody S. *et al*. Educational and organizational interventions to improve the management of depression in primary care: a systematic review. *JAMA*. 2003. **289**(23): p. 3145-51.
115. Bero L.A. *et al*. Closing the gap between research and practice: an overview of systematic reviews of interventions to promote the implementation of research findings. The Cochrane Effective Practice and Organization of Care Review Group. *BMJ*. 1998. **317**(7156): p. 465-8.
116. Grol R. and Grimshaw J. From best evidence to best practice: effective implementation of change in patients' care. *Lancet*. 2003. **362**(9391): p. 1225-30.
117. Scottish Government. Improving the physical health of those with mental illness. 2008, Scottish Government: Edinburgh.

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