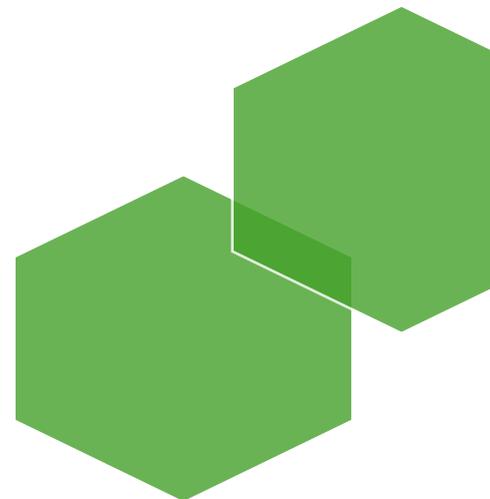




MAKING THE LONG-TERM ECONOMIC CASE FOR INVESTING IN MENTAL HEALTH TO CONTRIBUTE TO SUSTAINABILITY

**Written by David McDaid,
under the IMPACT contract to support the
European Pact for Mental Health and Well-being**



The information contained in this publication does not necessarily reflect the opinion or the position of the European Commission.

Neither the European Commission nor any person acting on its behalf is responsible for any use that might be made of the following information.



MAKING THE LONG-TERM ECONOMIC CASE FOR INVESTING IN MENTAL HEALTH TO CONTRIBUTE TO SUSTAINABILITY FROM A HEALTH, PUBLIC SECTOR AND SOCIETAL PERSPECTIVE

Written by David McDaid,
under the IMPACT contract to support the
European Pact for Mental Health and Well-being

MAKING THE LONG-TERM ECONOMIC CASE FOR INVESTING IN MENTAL HEALTH TO CONTRIBUTE TO SUSTAINABILITY FROM A HEALTH, PUBLIC SECTOR AND SOCIETAL PERSPECTIVE

Written by David McDaid,
under the IMPACT contract to support the European Pact for Mental Health and Well-being

Summary

Poor mental health has a significant economic impact on the health system and the wider economy in Europe, with implications for the potential achievement of the Europe 2020 strategy on economic growth. This brief primer considers what is known about the potential short, mid and longer term economic benefits of actions across the life course focused on mental health promotion, mental disorder prevention and early intervention. Actions that can be undertaken both within and external to the mental health system are highlighted, drawing on recent economic analyses prepared in a UK context, supplemented by data from other parts of Europe and elsewhere.

There is considerable variation in the strength of the evidence base and in the time period required to achieve a return on investment. The most attractive actions include early actions in childhood which can have substantial benefits that last well into adulthood, as well as interventions to promote health in workplaces. Improved job retention rates reduce the need to pay social welfare payments related to employment and disability. Workplace health promotion activities might also reduce the risk of early retirement due to poor mental health.

Economic restructuring is not just associated with the current economic climate it is a constant activity; there may also be interest in interventions to strengthen the mental health and resilience of those who have been made unemployed or are at risk of unemployment or enforced change of role at work. Loss of job, or downsizing of role have been associated with a reduction in mental health; again early actions can reduce the risks of these events and their resource consequences for health care systems.

Other activities examined here include tackling post natal depression, reducing the risk of suicide, early identification of psychosis, promoting the mental health of older people, the use of debt and financial advice services, tackling chronic co-morbid physical and mental health problems, and addressing the issue of medically unexplained systems.

1. Introduction

No-one is immune from the risk of poor mental health. At present one in four EU citizens can expect to experience a mental health problem during their lifetimes; with up to 10% of the European population experience some type of depressive or anxiety related disorder every year, with women experiencing much higher rates than men.

Poor mental health has a significant economic impact on both the health system and the wider economy in Europe, with implications for the potential achievement of the Europe 2020 strategy on economic growth. The total costs of depression alone in the European Economic Area have been estimated to be €136.3 billion (2007 prices). The majority of these costs, €99.3 billion per annum, are linked to productivity losses from employment^{1,2}, but around one third of costs fall on the health care system. Overall the economic costs associated with the many impacts of poor mental health,

excluding dementia and conditions affecting children, have been estimated to have a cost equivalent to more than € 2,200 per annum to every European household ¹. These estimates are conservative, they do not take into account all of the potential implications for the sustainability of not only health, but also social welfare systems in Europe.

Fiscal concerns on the sustainability of pension and social welfare systems have been a catalyst to encouraging individuals to remain at work beyond traditional retirement age; some countries are raising the age and/or eliminating mandatory retirement to counter these difficulties. Premature withdrawal and retirement from the labour force due to mental health problems may hinder the success of these measures.

In any event without action in future the broad impacts of poor mental health are likely to be even greater as depression in particular is predicted to become the leading cause of morbidity in high income countries by 2030 ³.

This brief primer considers what is known about the potential short, mid and longer term economic benefits of actions across the life course focused on mental health promotion, mental disorder prevention and early intervention. Actions that can be undertaken both within and external to the mental health system, drawing on recent economic analyses prepared in a UK context ⁴, supplemented by data from other parts of Europe and elsewhere. Some of the potential economic impacts both for health care systems, other public expenditure and society are also highlighted.

2. What do we know about the potential long term benefits of investing in mental health for health and non health systems?

In principle there are many benefits to be realised from better mental health. Good mental health implies that an individual is able to cope with the normal stresses of life, can work productively and fruitfully, and can make a contribution to the economic wellbeing of society. Children who experience better mental health and wellbeing may be more likely to do well at school, increasing the career prospects later in life. In contrast children who experience severe behavioural problems generate high demands on the education and social care systems as well as on health services, with adverse consequences that can persist into adulthood⁵⁻⁷. Positive mental health or mental capital allows for cognitive and emotional flexibility, which is the basis for social skills and resilience in the face of stress⁸. Better mental health has been associated with better creativity and innovation. In contrast workers with recurrent bouts of depression will have higher than average absenteeism rates, and may be relatively unproductive when at work⁹. Having a mentally healthy labour force is important if Europe is to achieve its 2020 Strategy goal of moving to 75% employment of people of working age. Older people may be at higher risk of depression and social exclusion, which in turn can have negative aspects on their physical health. New mothers can experience post natal depression which can have long term adverse consequences not only for their health, but also the health of their children.

Yet while work has been undertaken to support investment in health systems in general to help promote health and generate economic growth¹⁰, however less attention has been paid to the specific contribution of mental health; in fact this lack of attention has meant that the potential economic benefits of investment in health systems are probably underestimated. This is of concern, given that historically mental health services can be very vulnerable to cuts when economic conditions are tight¹¹

Strengthening the emphasis on mental health within the public health and health promotion functions of health systems could help avoid some of the economic burden of poor mental health and potentially be economic attractive. Focusing on population level interventions, even small improvements can translate into significant public health gains*.

Table 1 provides an overview of the magnitude of potential economic benefits relative to the investment in actions to promote mental health and prevent mental health problems. It is intended to be used for indicative purposes only. It reflects the strength of the evidence on the effectiveness of interventions, as well as looking at impacts on health and other sectors. In no case is there currently compiled evidence on the effectiveness and potential economic benefits of all these interventions across the entire European Union. Instead there is some good quality evidence of effect and cost effectiveness usually from a very small number of studies in some Member States, as well as in other high income countries. Thus caution must be exercised in interpretation, as contexts, settings and resource use vary considerably across the EU.

The Table seeks to give a sense both of the magnitude of return on investment, and on the time period that it will take to recover initial mental health promotion / mental health problem prevention investment. The overall level of return on investment is indicated by '+', '++' or '+++' where '+++'

* Our focus here is on prevention and promotion. However this should not however mean that there is not also a case for strengthening investment in appropriate mental health services that provide treatment and support for people with mental health problems; we have noted the variance in funding for mental health across Europe; community care services in particular remain weak in a number of countries.

indicates that net return on investment is more than five times greater than cost of investment. The time period to recover all costs of investment is also indicated – with A representing a recovery of investment costs within one year, B up to five years and C up to 10 ten years. In the table where no latter A, B or C is indicated, the full costs of the action are never recovered, but the intervention remains cost effective when taking improvements in health outcomes into account. Not all interventions have however been looked at over a ten year period; this is indicated in table where appropriate.

Table 1: Summary of evidence on potential return on investment across sectors and across different timeframes

Action and time frame if less than 10 years	Healthcare system	Other public expenditure	Non-public expenditure	Overall Impact
Mental health promotion and wellbeing of children	B +++	B +++	B +++	B +++
Prevention, identification and management of post-natal depression (1 year)	+		+	+
Workplace mental health promotion (1 year)	A +	A +	A +++ [†]	A +++
Mental health promotion and wellbeing of older people (5 years)	B ++	B ++	B ++	B ++
Protecting mental health of the unemployed / at risk of unemployment (2 years)	B +	A ++	A ++	A ++
Debt management and financial advice / counselling (2 years)	+	B +	B ++	B ++
Early identification and treatment of psychosis	A +++	+	B +++	A +++
Mental health promotion in people with chronic physical health problems (diabetes) (3 years)	+		+	
Early identification and treatment of medically unexplained symptoms (3 years)	B +		+	B +
Area based suicide prevention strategies	+	+	+++	A+++

Key To Table: + Return on investment less than or equal to cost of investment; ++ Return on investment up to five times greater than costs of investment; +++ Return on investment more than five times greater than costs of investment. A: Costs of investment recovered within 1 year; B: Costs of investment recovered between 1 and 5 years; C: Cost of investment recovered in 5-10 years.

[†] This will include benefits to public sector organisations as employers

As Table 1 indicates there is considerable variation in the strength of the evidence base and in the time period required to achieve a return on investment. The most attractive actions, in terms of a short period for a positive return on investment, include early identification and treatment of psychoses where there are substantial benefits within a one year time frame. However this intervention will only affect a very small proportion of the population, unlike workplace mental health promoting interventions which potentially generate positive impacts for employers (including those in the public sector) as well as reducing the need for some health care services through the prevention of serious mental health problems. In the current economic climate, there may also be interest in interventions to strengthen the mental health and resilience of those who have been made unemployed or are at risk of unemployment or enforced change of role at work. Even though interventions such as counselling and formalised psychotherapies do not work for everyone, they work for sufficient numbers to have a positive impact on willingness to actively seek work, increasing the likelihood of obtaining a job and thus reducing the need of the state to make social welfare payments.

Loss of job, or downsizing of role have been associated with a reduction in mental health; again early actions can reduce the risks of these events and their resource consequences for health care systems. The current economic downturn has also been linked with increased rates of suicide^{12 13}. Again population wide suicide prevention measures which focus on better training of front line professionals to identify those at risk of suicide can generate substantial short term benefits for the economy, although nearly all of these are linked to avoiding productivity losses. Indirectly, this will benefit the public purse through taxes and pension contributions paid when individuals are in work, even taking account of fact that suicides may be delayed for a period of time rather than completely prevented¹⁴.

There is also a robust evidence base suggesting that early years interventions to protect the mental health and wellbeing of children, as well as their parents, can generate substantive positive returns on investment not just for health, but for other sectors such as education, criminal justice and social welfare. Costs of investment can typically be recovered within three to four years, with benefits of action lasting well into adulthood. Improved performance in school increases lifetime earning potential with its consequent likely benefits in terms of greater amount of tax paid and increased contributions to pension funds and social security systems.

Subsequent sections look in at the costs and benefits of these actions. What implications might effective interventions have on future demands for health system use? What might they mean for future demands on other sectors, e.g. criminal justice and social welfare benefits?

3. Investing in the mental health and well-being of children

Key Points

A number of studies have looked at the long term economic benefits of promoting the mental health and wellbeing of children.

Nurse home visiting programmes for new mothers have been associated with a long term return on investment of between €2 and €5 for every €1 spent in a US context.

Programmes involving parenting initiatives and social/emotional support for children have been estimated to have a return on investment of up to €8 for every €1 spent in a UK context.

Most of the benefits of better mental health and wellbeing in childhood are seen outside the health sector: e.g. for criminal justice and education

One key area where there are long term benefits for health and other sectors concerns investment in the mental health and wellbeing of children and adolescents. There have been many studies looking at the cost effectiveness of interventions, particularly those that tackle/prevent emotional problems, violence and bullying in school aged children¹⁵⁻¹⁸. Much of this evidence base has been generated outside Europe so caution must be exercised in assessing potential economic returns, but many successful programmes originally developed in the United States or Australia are being implemented in some EU countries.¹⁹

Some interventions are delivered within the health care system, such as support from nurses and other staff for new mothers, with others being delivered within school based settings. Potentially early actions to counter the risk of long standing mental health problems can be very cost effective indeed, with only small levels of effect required to justify investment because of the substantial costs to health, crime, education and employment that endure in adulthood^{20 21 22}.

Looking first at support for new mothers, 400 mothers and their children receiving support from family nurses were then followed up over a 15 year period²³. The long term economic case for home visiting for all women, regardless of their social status was strong, given the impacts the programme had in terms of reducing abuse, violence, the need for social welfare benefits and improved employment prospects^{24 25}. Benefits outweighed costs by a factor of 5.7 to 1 for high risk women and 1.26 to 1 for low risk women. Analysis of other home visiting programmes in the US targeting high risk mothers had a 2:1 return on investment, with net benefits per mother of \$6,077 (2003 prices).²⁶

One review looking at interventions in primary schools (for children aged 7–11) found robust evidence in the US to support the implementation of multi-component programmes which include significant teacher training and development and support for parenting²⁷. For instance, look at the multi-component, manualised multi-level *Triple P-Positive Parenting Programme*. The long term potential benefits of the universal application of Triple P to the Queensland child population aged 2-12 have been modelled, suggesting an average cost per child of A\$34 (2003 prices). It would appear to offer very good value for money when assumed to reduce the prevalence of conduct disorder by up to 4%, generating net cost-savings of A\$6 million^{28 29}. In a US context, an economic model predicted that the costs of Triple P could be recovered in one year through a modest 10% reduction in the rate of child abuse and neglect³⁰. While there would be long term benefits to health care

systems, the majority of costs avoided would have been incurred by the criminal justice and special education systems. Another programme that has been targeted at parents of children at risk of developing behavioural interventions is *Incredible Years*. It has been suggested to be cost effective in studies conducted in Wales³¹ and the US context³².

Recent modelling work has been done in an English context to assess the costs and benefits of parenting programmes to prevent conduct disorders³³. Over a ten year period it reported a return on investment of nearly €8 for every €1 spent on parenting programmes. While returns to the health system would be modest at €1.08, benefits to other public sectors including criminal justice would be €1.78, with a further €5.03 due to broader benefits to society including a reduction in the impacts of violent crime on individuals.

4. Investing in the prevention / early identification and management of post-natal depression

Key Points

Moderate to severe postnatal depression is a common condition that affects approximately 13% of women in the early months following childbirth

In the short term investing in universal screening followed by psychological interventions for women at high risk of post natal depression appears both effective and cost effective.

Long term studies suggest there may also be longer term health and education benefits for children.

Moderate to severe postnatal depression is a common condition that affects approximately 13% of women in the early months following childbirth³⁴. Left untreated, a significant proportion of these women are still ill one year after giving birth. The health and wellbeing impacts on the whole family are known to be detrimental, including a substantial reduction in a mother's quality of life, and negative outcomes in the behavioural, emotional and intellectual development of children³⁵⁻³⁷. Increasingly, research suggests that PND also acts as a risk factor for paternal postnatal depression³⁸. The economic costs of postnatal depression can be conservatively estimated at £45 million for England and Wales at 2009/10 prices³⁹.

Early identification of mothers who are affected by postnatal depression and the provision of psychologically informed interventions can improve outcomes for mothers and children. It also has a good chance of being cost effective. One randomised controlled trial of health visitor delivered psychological therapies for women at high risk of post-natal depression improved outcomes at lower costs compared to health visitor usual care. There was a 90% chance that the cost per Quality Adjusted Life Year (QALY) gained would be less than £30,000; a level generally considered to be cost effective in a high income country context⁴⁰.

Recent modelling work undertaken in England suggest that universally applied screening followed by the provision of cognitive therapy sessions to women with postnatal depression provided by trained health visitors is a cost-effective alternative to routine care alone, with a cost per QALY gained of £4,900 per quality-adjusted life year³⁹. The current costs of identification and treatment in routine care were estimated at £35 per mother, while the additional costs associated with intervention were just under £160. Using a net benefit approach if a conservative willingness-to-pay threshold of £20,000 was applied to monetise quality of life improvements, then these findings translate to a net benefit of £640 per mother. Extrapolated to a national level this amounts to an imputed net benefit of approximately £300 million for England. These potential benefits are conservative – the impacts beyond one year for mothers as well as the impacts on the mental and physical health of their children and spouses were not taken into account.

5. Investing in workplace mental health promotion

Key Points

Poor mental health is one of the principal contributors to absenteeism and presenteeism

There is a business case for investing in mental health promotion; the costs of mental health promotion programmes can (in some settings) be more than outweighed by reductions in absenteeism and improved productivity.

Some studies looking at white collar workers suggest a return on investment of up to €9 for every €1 spent.

The health system will benefit from maintenance of good health as a result of workplace measures.

The health system could consider supporting small and medium sized enterprises to invest in workplace mental health promotion.

Workplace mental health interventions can have significant economic payoffs for health systems as employers of health care workers. In England potential to reduce costs equivalent to 15,000 additional full time staff per annum.

Poor mental health and musculoskeletal disorders are the principal contributors to absenteeism and presenteeism; co-morbidity increases these costs⁴¹. A healthy working environment can mean less staff absenteeism and staff turnover. It can help avoid interpersonal conflicts and causes for complaints by workers.

Europe needs to maintain a well educated and productive workforce to help maintain the region's competitiveness. A better working environment can help motivate workers, which may have benefits for employers in terms of productivity, staff morale and external perceptions of the business as a good place to work.

In private sector organisations where health and well-being has been perceived by their employees to be well managed organisational performance was more than 2.5 times greater than in those organisations where health and well-being were poorly managed^{42 43}. In the private sector, companies where health and well-being were poorly managed were also four times less likely to retain staff talent within a 12 month period compared to companies with a good approach to health and well-being⁴².

In England, the Department of Health has set out the business case for promoting health and wellbeing within the English National Health Service⁴⁴. More generally actions to promote mental health at work could reduce productivity losses to employers by 30%; overall for a 1,000 employee company there would be a net reduction in costs in excess of €300,000⁴⁵.

The UK Foresight study on Mental Capital and Well-being also reported substantial economic benefits that could arise from investment in stress and well-being audits, better integration of occupational and primary health care systems and an extension in flexible working hours arrangements which in turn can help individuals maintain a balance between work and family life⁸.

These savings would equate to almost €900 million per annum. General well-being programmes can also have benefits for mental health and generate a substantial return on investment of up to €9 for every € invested. In addition there would be further economic benefits to the health and social security systems from a reduction in health problems (mental and physical developing in the workplace) ⁴⁶.

The economic impacts of poor mental health in the health care workforce

Many people in the health workforce are at risk of experiencing poor mental health. Doctors, for example, are at higher risk of having mental health problems than the general population, and in particular problems with depression, alcohol and drug abuse ^{47 48}. Suicide rates are also increased, particularly in female doctors, anaesthetists, primary care physicians and psychiatrists ^{49 50}.

There are thus multiple consequences for the health care system of poor mental health: not only is there a need to provide support to alleviate problems; at the same time there may consequences for the available health workforce if health care professionals have to take time off work or are less productive when at work.

A recent review of the health and well-being of health care employees in England reported that if absence levels might be reduced to those seen in the private sector, then more than 15,000 additional staff would be available every day to treat patients. This it was estimated would amount to an annual cost saving to the English National Health Service of £500 million per annum ⁴⁴.

6. Protecting the mental health of older people

Key Points

Individuals can be at increased risk of poor mental health as they age; around 9% of people over 65 are likely to have depression alone.

Workplace interventions can help extend participation of older people in the workforce

Early identification and treatment for older people at risk of depression can be cost effective

Low cost group-based interventions for older people can be cost effective;

Evaluation is needed to look at the impact of improved mental health in older people on the risk of fall-related injuries, a major cause of health, social care and long-term care use.

Individuals can be at increased risk of poor mental health as they age. Risks of depression due to isolation, bereavement and loss of role can be substantial and around 9% of older people have depression⁵¹. Individuals might also be at risk due to having to care for a partner or aged parent. It is also the case that unexpected changes in the work status of older people, i.e. either because they have to retire earlier than expected, or because they have to work longer against their choice or without support, can adversely impact on their mental health.

Potentially there are a range of actions that can help promote the health of older people, including workers nearing retirement age¹⁹. Approaches highlighted in section 5 for workplace health promotion are as valid for older workers as they are for younger cohorts of employees. Good mental health promotion for older workers, including measures like flexible working and part time working can help to extend time at work whilst protecting mental health^{52 53}.

For people beyond retirement age, early interventions to prevent depression can be cost effective. One controlled trial of a stepped care approach (with increasingly aggressive actions to tackle depression as appropriate) for the prevention of depression in older people in the Netherlands was found to be highly cost effective at €4,367 per depression/anxiety free year gained⁵⁴. Economic analyses also support investment in some different types of group activities. Regular participation in exercise classes by older people has been found to have some mental health benefits and be cost effective from a health system perspective in England with a cost per QALY gained of €17,172⁵⁵. In Finland, a trial of psychosocial group therapy for older people identified to be lonely was also reported to be effective with a net mean reduction in health care costs per participant of €943⁵⁶.

Potentially improved mental health in older people may also be associated with a reduction in the risk of fall-related injuries⁵⁷. The evidence base in this area is however limited and needs careful evaluation. The economic costs of these falls are substantial. About 20% of all falls require what can often be highly expensive medical attention to deal with injuries such as fractures, head trauma and skin lacerations. For example, in Ireland for example, in 2004, 85% of all older people admitted to hospital with a fracture stated that this resulted from a fall; hip fractures accounted for approximately 50% of all these admissions⁵⁸.

7. Protecting the mental health of the unemployed and those at risk of unemployment

Key Points

Individuals at risk of unemployment or change in job role, as well as those who are unemployed, are at increased risk of poor mental health.

Measures, including counselling, can strengthen individual resilience and reduce the loss of motivation to seek reemployment.

Some programmes in Europe and the US have shown reductions in the need for social welfare payments, which outweigh costs of programmes.

Negative impacts on mental health are not fully countered by better social welfare safety nets.

Measures might also be taken to protect the mental health of employees experiencing the impacts of restructuring or an economic downturn, building up their coping skills, providing training and support to find future employment. It is also important to provide support to those who do find alternative employment, but at a different level or fulfilling a very different role to that which they are used to. Simple steps that can also make a difference include better communication and transparency in the restructuring process ⁵⁹.

For the long term unemployed it can also be cost effective to invest in measures to help prevent poor mental health, strengthening individual resilience and reducing the loss of motivation to seek reemployment. Controlled long term evaluation of one such programme in the US reported substantial net monetary benefits to social welfare payers and employers alike, with costs more than outweighed through the extra revenue generated through increased rates of employment, higher earnings and fewer job changes ^{60 61}. The programme has been implemented with some success in a number of European countries, including Finland and Ireland ⁶².

The Individual Access to Psychological Therapies (IAPT) programme for the unemployed is now being implemented in England. This provides individuals in the target group with access to a number of cognitive behaviour therapy sessions over a fixed time period, with the aim of strengthening resilience and confidence to help re-enter the labour market. A key argument in the recent decision to expand the programme has been the demonstration of economic benefits. Evaluation of two demonstration sites suggests an increase in rate of return to employment of around 5% ⁶³. This means that the costs of the programme are more than outweighed by a reduction in welfare benefits that have to be paid.

8. Investing in debt management and counselling services

Key Points

Unmanageable debt can increase the risk of developing stress and anxiety related disorders by up to 33%.

There is some evidence that well managed not for profit debt management and counselling services can help to reduce the risk of depression and reduce level of contact with health care services.

Funding models for debt management services vary. In many cases no cost would have to be borne by health care systems.

For every €1 invested in debt management services overall there may be a return on investment of more than €3.5 due to in part to health and legal care costs avoided, but also an avoidance of impacts on employment as a result of depression.

Only about half of all people with debt problems seek advice ⁶⁴. Without intervention, 63% of people with unmanageable debt problems will still face such problems after a 12-month period. Moreover these individuals have a 33% increased risk of developing depression and anxiety related problems compared to the population without financial problems ⁶⁵. These conditions are associated with significant health and non-health system costs. It has also been estimated that as many as one in four people with mental health problems may be in debt.

Not for profit debt advice services can be an attractive option as by protecting mental they can reduce the need for health services, while the costs of legal proceedings can also be avoided. One study suggested that those using counselling services have a 56% that their debts become manageable compared with 33% of those who do not make use of services. ^{66 67}. Some models of not-for-profit services are funded through creditors who are willing to pay a fee to recover a portion of outstanding debts which otherwise would probably not be paid back ⁶⁸. Potentially this means that there may be no direct cost of debt service provision to the health system, although health systems could consider investing resources in awareness raising, particularly at primary care level and in specialist mental health services of the availability of non-commercial debt counselling services.

Even under conservative assumptions, investment in debt advice services can both lower expected costs and reduce the risk of developing mental health problems compared with no intervention. Work to model the costs and benefits of investing in debt management services suggests that for every €1 invested there is a return of more than €3.5. Around 10% of cost savings will accrue to health services; much of the benefits will be due to the avoidance of time off work as a result of depression and anxiety disorders.

9. Investing in measures for the early detection / early identification and treatment of psychosis

Key Points

Psychosis often develops in adolescence or early adulthood; the longer it is untreated the more impact it can have on quality of life and increase costs associated with health, social care, and criminal justice and lost employment.

Early detection services aim to identify the early symptoms of psychosis, reduce the risk of transition to full psychosis and shorten the duration of untreated psychosis for those who do develop it

Early intervention services have been established to provide care soon after a diagnosis of psychosis has been recognised and prevent some of the more adverse consequences.

Evidence to date suggests that early intervention services they can be highly cost effective from a health service perspective. Costs avoided through earlier intervention more than outweigh the implementation costs of early intervention services. Less is known about the economic case for early detection services.

Recent work in England suggests that over ten years for every €1 invested in early intervention for psychosis services there would be a return of nearly €18. More than half of all these gains (€9.7) accruing to health system. There would also be a net return on investment in early detection services with every €1 invested generating a return of more than €10, of which €2.6 would accrue to the health system.

The incidence of schizophrenia has been estimated at 15.2 per 100 000 people and affective psychosis at 9.2 per 100 000 ⁶⁹. Psychosis often develops in adolescence or early adulthood; the longer it is untreated the more impact it can have on quality of life and increase costs associated with health, social care, and criminal justice and lost employment.

Early detection services aim to identify the early symptoms of psychosis, reduce the risk of transition to full psychosis and shorten the duration of untreated psychosis for those who do develop it. Early intervention services have been established to provide care soon after a diagnosis of psychosis has been recognised and prevent some of the more adverse consequences. In general evaluations of early intervention services suggest that they have a positive impact on readmission rates and are associated with improved clinical and social outcomes, although much less is known about early detection services ^{70 71}. Economic studies in England, Australia and Italy all suggest that the additional initial costs of early detection and intervention services are more than outweighed by a reduction in future costs to the health care system ⁷²⁻⁷⁴. For instance, over eight years in the case of services in Australia costs of usual care were three times higher than those for people receiving early intervention services. Moreover almost twice as many people were in paid employment ⁷⁵. Recent work has also been undertaken in England to estimate the long term return on investment related to early detection and early intervention services for psychosis.

Over ten years for every €1 invested in early detection services there would be a return of more than €10 to society, of which €2.6 would accrue to the health system ⁷⁶. For early intervention services, modelling suggests that the intervention is cost saving even after just one year from a health system perspective alone. Overall over ten years for every €1 there would be a return of nearly €18 with more than half of all these gains (€9.7) accruing to the health system ⁷⁷.

10. Investing in better mental health promotion for individuals experiencing chronic physical health problems

Key Points

Poor mental health is associated with significantly higher health system costs and more adverse events for many people living with chronic illness such as depression or cardiovascular disease.

Better collaborative care appears to be a cost effective approach

There is potential to avoid some of the long term adverse consequences of complications of conditions.

In the case of diabetes if adverse events and complications costing €180 per annum could be avoided then collaborative care to prevent/treat depression in people with Type II diabetes would be cost saving within two years.

Research is needed however to map out some of the longer term economic benefits of collaborative care.

Better mental health can help improve chronic physical disease management. Poor management of the mental health needs of people living with chronic conditions such as cancer, musculoskeletal problems, diabetes and cardiovascular disorders can increase the costs and health related consequences of these illnesses. Costs to the health care system alone for people with co-morbid depression and physical illness may be increased by almost 50%⁷⁸. For individuals with co-morbid diabetes and depression may be between 1.7 and 4.5 times greater than those for individuals with diabetes alone^{79 80}. The costs of managing diabetes and the risk of diabetes-related complications such as amputations and sight problems can increase dramatically in people who develop co-morbid depression^{81 82}. The additional costs of co-morbid cardiovascular disease and poor mental health may be 15% to 40% higher⁸³.

There is some evidence to support better collaborative care to manage/prevent depression in people with chronic physical health problems. Economic modelling work published by NICE in England reported a cost per QALY gained of £4,043 – a value that would be considered highly cost effective in high income countries. On average collaborative care would cost an additional £116 compared to usual care, but was associated with better QALY outcomes⁸⁴. The analysis was conservative as it did not take account of longer term benefits to the health system as a result of delaying/avoiding adverse consequences of chronic physical illness as well as economic impacts outside the health system, such as participation in the labour market. Recent work undertaken for the English Department of Health also found that better collaborative care for the early identification and treatment of depression in people with Type II diabetes was cost effective at £3,614 per QALY gained. From the second year of treatment onwards there would be net savings to the health care system as a result of treatment⁸⁵. Overall if, on average, £150 per year in costs of adverse events could be avoided then investment in collaborative care would overall be cost-saving from a health and social care system perspective within two years. More work is however needed to demonstrate these longer term potential benefits.

There is also a case to be made for better promotion of the physical health of people with mental health problems. Overall it has been estimated that between €18 billion and €50 billion per annum in

economic costs might be avoided in the EU alone, through greater better continued and integrated care for individuals with a primary diagnosis of a mental disorder⁸⁶.

11. Investing in actions to tackle medically unexplained symptoms

Key points

Medically unexplained symptoms (MUS) (somatoform disorders) represent a major cost to primary and secondary health systems – equivalent to 11% of total health care costs for the working age population.

They account for as many as one in five new consultations in primary care in studies in the Netherlands and the UK.

They can lead to many repeat visits to primary care doctors, as well as diagnostic tests and procedures in secondary care. Up to 70% of people with MUS will also have depression and/or anxiety disorders.

There would be a positive return to health systems on investment from investing in measures to better identify and treat MUS through a stepped care which would eventually involve psychological intervention. If psychological interventions could be targeted at people with severe MUS then €2.75 would be gained for every €1 invested in stepped care.

Medically unexplained symptoms (MUS) (somatoform disorders) represent a major cost to primary and secondary health systems, equivalent to 11% of total health care costs for the working age population⁸⁷. They are physical symptoms that have no currently known physical pathological cause and account for as many as one in five new consultations in primary care. They can lead to many repeat visits to primary care doctors, as well as diagnostic tests and procedures in secondary care. Up to 70% of people with MUS will also have depression and/or anxiety disorders.

There is a strong economic case for investment in measures to better identify people as having MUS, followed by a stepped care approach which could include the offer and subsequent completion of psychological therapies to help deal with their mental health problems. Conservatively the return on investment to the health system would be as much as €1.75 for every €1 spent.

If psychological therapies could be targeted at people with severe MUS alone then the net payoff would be €2.28 for every €1 invested, because this group in particular have much heavier use of accident and emergency and secondary care services than the general population⁸⁸.

12. Investing in suicide prevention

Key points

The economic impacts of suicide are profound, impacting across many different sectors

Population wide interventions that improve ability of front line professionals to first identify those at increased risk of suicide can be effective if followed by use of appropriate treatment

Investment in improved training interventions for front line professionals can also be cost effective, even when assuming that a proportion of suicides are delayed rather than prevented.

Most of the potential economic benefits are due to the avoidance of productivity losses that arise from premature death.

The current economic crisis has been associated with an increased risk of suicide in some European countries ¹³. The economic impacts of suicide are profound, they include costs to health care systems, the police and other emergency services, losses of productivity due to premature death, and unimaginable levels of grief and shock experienced by relative ⁸⁹. Systematic reviews for population level interventions to prevent suicide have reported that the most robust evidence exists for suicide prevention initiatives concern general practitioner and other front line gatekeeper education (e.g. A & E doctors, social workers, the police, teachers, university lecturers and religious personnel), as well as restrictions on lethal access to means ⁹⁰⁻⁹².

Multi-component interventions targeted at the general public, as well as health care professionals and other groups such as social workers and teachers, have been associated within a reduction in rates of suicide, although the evidence base is limited. Other than measures to reduce access to lethal means, the most effective interventions appear to be specialist training for health care professionals and other front line workers, to be better aware of the signs and risk factors for depression, followed by appropriate counselling and pharmacological treatments ⁹³.

Focusing solely on suicide risk due to depression or anxiety related disorders, the primary contributors to suicide in the general population⁹⁴, one recent economic analysis found that the additional treatment and support costs for individuals who do not complete suicide are to some extent offset by a reduction in the costs to the health care system of dealing with completed suicides and serious self harm events. When modest cost impacts on police investigations are factored in the case to the public purse becomes even stronger, and overall there is a net positive return on investment if productivity losses are included. Overall over a 10 year period this would generate a positive return of €43 for every € invested, but most of these benefits would be outside the health care sector ¹⁴.

References

1. McDaid D, Zechmeister I, Kilian R, Medeiros H, Knapp M, Kennelly B, et al. *Making the economic case for the promotion of mental well-being and the prevention of mental health problems*. London: London School of Economics and Political Science, 2008.
2. Andlin-Sobocki P, Jonsson B, Wittchen HU, Olesen J. Cost of disorders of the brain in Europe. *Eur J Neurol* 2005;12 Suppl 1:1-27.
3. Mathers CD, Loncar D. Projections of global mortality and burden of disease from 2002 to 2030. *PLoS Med* 2006;3(11):e442.
4. Knapp M, McDaid D, Parsonage M, editors. *Mental health promotion and mental illness prevention: the economic case*. London: Department of Health, 2011.
5. Scott S, Knapp M, Henderson J, Maughan B. Financial cost of social exclusion: follow up study of antisocial children into adulthood. *BMJ* 2001;323(7306):191.
6. Fergusson DM, Horwood LJ, Ridder EM. Show me the child at seven: the consequences of conduct problems in childhood for psychosocial functioning in adulthood. *J Child Psychol Psychiatry* 2005;46(8):837-49.
7. Fergusson DM, Boden JM, Horwood LJ. Exposure to single parenthood in childhood and later mental health, educational, economic, and criminal behavior outcomes. *Arch Gen Psychiatry* 2007;64(9):1089-95.
8. Foresight Mental Capital and Wellbeing Project. *Final project report*. London: Government Science Office, 2008.
9. Knapp M. Hidden costs of mental illness. *Br J Psychiatry* 2003;183:477-8.
10. Suhrcke M, McKee M, Stuckler D, Sauto Arce R, Tsovala S, Mortensen J. The contribution of health to the economy in the European Union. *Public Health* 2006;120(11):994-1001.
11. McDaid D, Knapp M. Black-skies planning? Prioritising mental health services in times of austerity. *British Journal of Psychiatry* 2010;196(6):423-424.
12. Stuckler D, Basu S, McDaid D. *Depression amidst depression: Mental health effects of the ongoing recession*. London: PSSRU, 2011.
13. Stuckler D, Basu S, Suhrcke M, Coutts A, McKee M. Effects of the 2008 recession on health: a first look at European data. *Lancet* 2011;378(9786):124-5.
14. McDaid D, Park A, Bonin E. Population-level suicide awareness training and intervention. In: Knapp M, McDaid D, Parsonage M, editors. *Mental health promotion and mental illness prevention: the economic case*. London: Department of Health, 2011.
15. McDaid D, Park A. *Investing in mental health and wellbeing: findings from the DataPREV project*. London: London School of Economics, 2011.
16. Kilian R, Losert C, Park A, McDaid D, Knapp M. Cost-effectiveness analysis in child and adolescent mental health problems: an updated review of literature. *International Journal of Mental Health Promotion* 2010;12(4):45-57.
17. Zechmeister I, Kilian R, McDaid D. Is it worth investing in mental health promotion and prevention of mental illness? A systematic review of the evidence from economic evaluations. *BMC Public Health* 2008;8:20.
18. Beecham J, Byford S, Kwok C, Parsonage M. School-based interventions to reduce bullying. In: Knapp M, McDaid D, Parsonage M, editors. *Mental Health Promotion and Prevention: the Economic Case*. London: Department of Health, 2011.

19. McDaid D, Park A. Investing in mental health and wellbeing: findings from the DataPREV project. *Health Promotion International*, in press,.
20. Dretzke J, Frew E, Davenport C, Barlow J, Stewart-Brown S, Sandercock J, et al. The effectiveness and cost-effectiveness of parent training/education programmes for the treatment of conduct disorder, including oppositional defiant disorder, in children. *Health Technol Assess* 2005;9(50):iii, ix-x, 1-233.
21. Sainsbury Centre for Mental Health. The chance of a lifetime: preventing early conduct problems and reducing crime. London: Sainsbury Centre for Mental Health, 2009.
22. Allen G. *Early intervention: the next steps*. London, 2011.
23. Olds DL, Eckenrode J, Henderson CR, Jr., Kitzman H, Powers J, Cole R, et al. Long-term effects of home visitation on maternal life course and child abuse and neglect. Fifteen-year follow-up of a randomized trial. *Journal of the American Medical Association* 1997;278(8):637-43.
24. Karoly LA, Greenwood PW, Everingham SS, Houbé J, Kilburn MR, Rydell CP, et al. *Investing in Our Children: What We Know and Don't Know About the Costs and Benefits of Early Childhood Interventions*. Santa Monica: RAND Corporation, 1998.
25. Karoly LA, Kilburn MR, Cannon JS. *Early Childhood Interventions. Proven Results, Future Promise*. Santa Monica: RAND Corporation, 2005.
26. Aos S, Lieb R, Mayfield J, Miller M, Pennucci A. *Benefits and Costs of Prevention and Early Intervention Programs for Youth*. Olympia: Washington State Institute for Public Policy, 2004.
27. Adi Y, Kiloran A, Janmohamed K, Stewart-Brown S. *Systematic Review of the Effectiveness of Interventions to Promote Mental Wellbeing in Primary Schools. Report 1: Universal approaches which do not focus on violence or bullying*. London National Institute for Health and Clinical Excellence, 2007.
28. Mihalopoulos C, Sanders MR, Turner KM, Murphy-Brennan M, Carter R. Does the triple P-Positive Parenting Program provide value for money? *Australian and New Zealand Journal of Psychiatry* 2007;41(3):239-46.
29. Turner KM, Mihalopoulos C, Murphy-Brennan M, Sanders M. Triple-P Positive Parenting Program. Brisbane: University of Queensland, 2004.
30. Foster EM, Prinz RJ, Sanders M, Shapiro CJ. The costs of a public health infrastructure for delivering parenting and family support. *Children and Youth Services Review* 2008;30:493-501.
31. Edwards RT, Ceilleachair A, Bywater T, Hughes DA, Hutchings J. Parenting programme for parents of children at risk of developing conduct disorder: cost effectiveness analysis. *BMJ* 2007;334(7595):682.
32. Foster EM, Olchowski AE, Webster-Stratton CH. Is stacking intervention components cost-effective? An analysis of the Incredible Years program. *J Am Acad Child Adolesc Psychiatry* 2007;46(11):1414-24.
33. Bonin E, Stevens M, Beecham J, Byford S, Parsonage M. Parenting interventions for the prevention of persistent conduct disorders. In: Knapp M, McDaid D, Parsonage M, editors. *Mental Health Promotion and Prevention: the Economic Case*. London Department of Health, 2011.
34. Petrou S, Cooper P, Murray L, Davidson LL. Cost-effectiveness of a preventive counseling and support package for postnatal depression. *International Journal of Technology Assessment in Health Care* 2006;22(4):443-53.
35. Fihrer I, McMahan CA, Taylor AJ. The impact of postnatal and concurrent maternal depression on child behaviour during the early school years. *J Affect Disord* 2009;119(1-3):116-23.
36. Halligan SL, Murray L, Martins C, Cooper PJ. Maternal depression and psychiatric outcomes in adolescent offspring: a 13-year longitudinal study. *J Affect Disord* 2007;97(1-3):145-54.

37. Murray L, Arteche A, Fearon P, Halligan S, Croudace T, Cooper P. The effects of maternal postnatal depression and child sex on academic performance at age 16 years: a developmental approach. *J Child Psychol Psychiatry* 2010;51(10):1150-9.
38. Paulson JF, Bazemore SD. Prenatal and postpartum depression in fathers and its association with maternal depression: a meta-analysis. *JAMA* 2010;303(19):1961-9.
39. Bauer A, Knapp M, McDaid D. *Assessing the economic pay-off of low-level interventions in reducing postnatal depression*. London: PSSRU, London School of Economics, 2011.
40. Morrell CJ, Warner R, Slade P, Dixon S, Walters S, Paley G, et al. Psychological interventions for postnatal depression: cluster randomised trial and economic evaluation. The PoNDER trial. *Health Technology Assessment* 2009;13(30):iii-iv, xi-xiii, 1-153.
41. Bevan S, Quadrello T, McGee R, Mahdon M, Vavrovsky A, Barham L. *Fit For Work? Musculoskeletal Disorders in the European Workforce*. London: The Work Foundation, 2009.
42. Wang H, Samson K. *Wellness and productivity management: a new approach to increasing performance*. Philadelphia: Right Management Inc, 2009.
43. Dornan A, Jane-Llopis E. *The Wellness Imperative: creating more effective organisations* Geneva: World Economic Forum, 2010:20.
44. Boorman S. *NHS Health and Wellbeing. Final report*. London: Department of Health, 2009.
45. National Institute for Health and Clinical Excellence. *Promoting mental wellbeing at work: business case*. Available at <http://www.nice.org.uk/nicemedia/live/12331/46023/46023.PDF>. London: NICE., 2009.
46. McDaid D, King D, Park A, Parsonage M. Promoting wellbeing in the workplace. In: Knapp M, McDaid D, Parsonage M, editors. *Mental Health Promotion and Prevention: the Economic Case*. London: Department of Health, 2011.
47. Department of Health. *Mental health and ill-health in doctors*. London: Department of Health, 2008.
48. Ramirez AJ, Graham J, Richards MA, Cull A, Gregory WM. Mental health of hospital consultants: the effects of stress and satisfaction at work. *Lancet* 1996;347(9003):724-8.
49. Hawton K, Clements A, Sakarovitch C, Simkin S, Deeks JJ. Suicide in doctors: a study of risk according to gender, seniority and specialty in medical practitioners in England and Wales, 1979-1995. *J Epidemiol Community Health* 2001;55(5):296-300.
50. Lindeman S, Laara E, Hirvonen J, Lonnqvist J. Suicide mortality among medical doctors in Finland: are females more prone to suicide than their male colleagues? *Psychol Med* 1997;27(5):1219-22.
51. McDougall FA, Kvaal K, Matthews FE, Paykel E, Jones PB, Dewey ME, et al. Prevalence of depression in older people in England and Wales: the MRC CFA Study. *Psychol Med* 2007;37(12):1787-95.
52. van den Berg TI, Elders LA, Burdorf A. Influence of health and work on early retirement. *J Occup Environ Med* 2010;52(6):576-83.
53. Falba TA, Sindelar JL, Gallo WT. Work expectations, realizations, and depression in older workers. *J Ment Health Policy Econ* 2009;12(4):175-86.
54. Van't Veer-Tazelaar P, Smit F, van Hout H, van Oppen P, van der Horst H, Beekman A, et al. Cost-effectiveness of a stepped care intervention to prevent depression and anxiety in late life: randomised trial. *British Journal of Psychiatry* 2010;196:319-25.
55. Munro JF, Nicholl JP, Brazier JE, Davey R, Cochrane T. Cost effectiveness of a community based exercise programme in over 65 year olds: cluster randomised trial. *Journal of Epidemiology and Community Health* 2004;58(12):1004-10.

56. Pitkala KH, Routasalo P, Kautiainen H, Tilvis RS. Effects of psychosocial group rehabilitation on health, use of health care services, and mortality of older persons suffering from loneliness: a randomized, controlled trial. *Journals of Gerontology. Series A. Biological Sciences and Medical Sciences* 2009;64(7):792-800.
57. Giles LC, Glonek GF, Luszcz MA, Andrews GR. Do social networks affect the use of residential aged care among older Australians? *BMC Geriatr* 2007;7:24.
58. Gannon B, O'Shea E, Hudson E. Economic consequences of falls and fractures among older people. *Ir Med J* 2008;101(6):170-3.
59. Brenner H. *Health impact of economic restructuring and unemployment in Europe. Presentation at Belgian Presidency conference on psychosocial stress in the workplace.* Brussels, 2010.
60. Vinokur AD, Schul Y, Vuori J, Price RH. Two years after a job loss: long-term impact of the JOBS program on reemployment and mental health. *J Occup Health Psychol* 2000;5(1):32-47.
61. Vinokur AD, van Ryn M, Gramlich EM, Price RH. Long-term follow-up and benefit-cost analysis of the Jobs Program: a preventive intervention for the unemployed. *J Appl Psychol* 1991;76(2):213-9.
62. Vuori J, Silvonen J, Vinokur AD, Price RH. The Tyohon Job Search Program in Finland: benefits for the unemployed with risk of depression or discouragement. *J Occup Health Psychol* 2002;7(1):5-19.
63. Layard R, Clark D, Knapp M, Mayraz G. Annex D: Cost-benefit analysis of psychological therapy. *Improving access to psychological therapies (IAPT) programme: An outline business case for the national rollout of local psychological therapy services.* London: Department of Health, 2007.
64. Pleasence P, Buck A, Balmer NJ, O'Grady A, Genn H, Smith M. *Causes of Action: Civil Law and Social Justice.* London: Legal Services Commission, 2004.
65. Skapinakis P, Weich S, Lewis G, Singleton N, Araya R. Socio-economic position and common mental disorders. Longitudinal study in the general population in the UK. *Br J Psychiatry* 2006;189:109-17.
66. Williams K, Sansom A. Twelve months later: does advice help? The impact of debt advice - advice agency client study. London: Ministry of Justice, 2007.
67. Pleasence P, Balmer NJ. Changing Fortunes: Results from a Randomized Trial of the Offer of Debt Advice in England and Wales *Journal of Empirical Legal Studies* 2007;4(3):465-475.
68. Knapp M, McDaid D, Evans-Lacko S, Fitch C, King D. Debt and Mental Health. In: Knapp M, McDaid D, Parsonage M, editors. *Mental Health Promotion and Prevention: the Economic Case.* London Department of Health, 2011.
69. McGrath J, Saha S, Chant D, Welham J. Schizophrenia: a concise overview of incidence, prevalence, and mortality. *Epidemiol Rev* 2008;30:67-76.
70. McGorry PD, Killackey E, Yung AR. Early intervention in psychotic disorders: detection and treatment of the first episode and the critical early stages. *Med J Aust* 2007;187(7 Suppl):S8-10.
71. Ricciardi A, McAllister V, Dazzan P. Is early intervention in psychosis effective? *Epidemiol Psychiatr Soc* 2008;17(3):227-35.
72. Serretti A, Mandelli L, Bajo E, Cevenini N, Papili P, Mori E, et al. The socio-economical burden of schizophrenia: a simulation of cost-offset of early intervention program in Italy. *Eur Psychiatry* 2009;24(1):11-6.
73. Valmaggia LR, McCrone P, Knapp M, Woolley JB, Broome MR, Tabraham P, et al. Economic impact of early intervention in people at high risk of psychosis. *Psychol Med* 2009;39(10):1617-26.
74. McCrone P, Craig TK, Power P, Garety PA. Cost-effectiveness of an early intervention service for people with psychosis. *Br J Psychiatry* 2010;196(5):377-82.

75. Mihalopoulos C, Harris M, Henry L, Harrigan S, McGorry P. Is early intervention in psychosis cost-effective over the long term? *Schizophr Bull* 2009;35(5):909-18.
76. McCrone P, Park A, Knapp M. Early detection for psychosis. In: Knapp M, McDaid D, Parsonage M, editors. *Mental Health Promotion and Prevention: the Economic Case*. London Department of Health, 2011.
77. McCrone P, Park A, Knapp M. Early intervention for psychosis. In: Knapp M, McDaid D, Parsonage M, editors. *Mental Health Promotion and Prevention: the Economic Case*. London Department of Health, 2011.
78. Chisholm D, Diehr P, Knapp M, Patrick D, Treglia M, Simon G. Depression status, medical comorbidity and resource costs. Evidence from an international study of major depression in primary care (LIDO). *Br J Psychiatry* 2003;183:121-31.
79. Egede LE, Zheng D, Simpson K. Comorbid depression is associated with increased health care use and expenditures in individuals with diabetes. *Diabetes Care* 2002;25(3):464-70.
80. Simon GE, Katon WJ, Lin EH, Ludman E, VonKorff M, Ciechanowski P, et al. Diabetes complications and depression as predictors of health service costs. *Gen Hosp Psychiatry* 2005;27(5):344-51.
81. Vamos EP, Mucsi I, Keszei A, Kopp MS, Novak M. Comorbid depression is associated with increased healthcare utilization and lost productivity in persons with diabetes: a large nationally representative Hungarian population survey. *Psychosom Med* 2009;71(5):501-7.
82. Egede LE, Ellis C. Diabetes and depression: global perspectives. *Diabetes Res Clin Pract*;87(3):302-12.
83. Rutledge T, Vaccarino V, Johnson BD, Bittner V, Olson MB, Linke SE, et al. Depression and cardiovascular health care costs among women with suspected myocardial ischemia: prospective results from the WISE (Women's Ischemia Syndrome Evaluation) Study. *J Am Coll Cardiol* 2009;53(2):176-83.
84. Goldberg D, Pilling S, Andrews N, Bird V, Creed F, Dowrick C, et al. *Depression in Adults with a Chronic Physical Health Problem: treatment and management*. London: NICE, 2009.
85. King D, Molosankwe I, McDaid D. Collaborative care for depression in individuals with Type II diabetes. In: Knapp M, McDaid D, Parsonage M, editors. *Mental Health Promotion and Prevention: the Economic Case*. London Department of Health, 2011.
86. McDaid D. *Bridging the gap between physical and mental health*. Brussels: Mental and Physical Health Platform, 2009.
87. Bermingham S, Cohen A, Hague J, Parsonage M. The cost of somatisation among the working-age population in England for the year 2008/09. *Mental Health in Family Medicine* 2011.
88. McDaid D, Parsonage M, Park A. Tackling medically unexplained symptoms. In: Knapp M, McDaid D, Parsonage M, editors. *Mental Health Promotion and Prevention: the Economic Case*. London Department of Health, 2011.
89. Platt S, Halliday E, Maxwell M, McCollam A, McLean J, Woodhouse A, et al. Evaluation of the First Phase of Choose Life. Final Report. . Edinburgh: Scottish Executive, 2006.
90. Mann JJ, Apter A, Bertolote J, Beautrais A, Currier D, Haas A, et al. Suicide prevention strategies: a systematic review. *JAMA* 2005;294(16):2064-74.
91. Beautrais A, Fergusson D, Coggan C, Collings C, Doughty C, Ellis P, et al. Effective strategies for suicide prevention in New Zealand: a review of the evidence. *N Z Med J* 2007;120(1251):U2459.
92. Hawton K, van Heeringen K. Suicide. *Lancet* 2009;373(9672):1372-81.

93. Appleby L, Morriss R, Gask L, Roland M, Perry B, Lewis A, et al. An educational intervention for front-line health professionals in the assessment and management of suicidal patients (The STORM Project). *Psychol Med* 2000;30(4):805-12.
94. Hegerl U, Althaus D, Schmidtke A, Niklewski G. The alliance against depression: 2-year evaluation of a community-based intervention to reduce suicidality. *Psychol Med* 2006;36(9):1225-33.

