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Long-term conditions and mental health

The cost of co-morbidities

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Key messages

- Many people with long-term physical health conditions also have mental health problems. These can lead to significantly poorer health outcomes and reduced quality of life.
- Costs to the health care system are also significant – by interacting with and exacerbating physical illness, co-morbid mental health problems raise total health care costs by at least 45 per cent for each person with a long-term condition and co-morbid mental health problem.
- This suggests that between 12 per cent and 18 per cent of all NHS expenditure on long-term conditions is linked to poor mental health and wellbeing – between £8 billion and £13 billion in England each year. The more conservative of these figures equates to around £1 in every £8 spent on long-term conditions.
- People with long-term conditions and co-morbid mental health problems disproportionately live in deprived areas and have access to fewer resources of all kinds. The interaction between co-morbidities and deprivation makes a significant contribution to generating and maintaining inequalities.
- Care for large numbers of people with long-term conditions could be improved by better integrating mental health support with primary care and chronic disease management programmes, with closer working between mental health specialists and other professionals.
- Collaborative care arrangements between primary care and mental health specialists can improve outcomes with no or limited additional net costs.
- Innovative forms of liaison psychiatry demonstrate that providing better support for co-morbid mental health needs can reduce physical health care costs in acute hospitals.
- Clinical commissioning groups should prioritise integrating mental and physical health care more closely as a key part of their strategies to improve quality and productivity in health care.
- Improved support for the emotional, behavioural and mental health aspects of physical illness could play an important role in helping the NHS to meet the Quality, Innovation, Productivity and Prevention (QIPP) challenge. This will require removal of policy barriers to integration, for example, through redesign of payment mechanisms.

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Introduction

People with long-term physical health conditions – the most frequent users of health care services – commonly experience mental health problems such as depression and anxiety, or dementia in the case of older people. As a result of these co-morbid problems, the prognosis for their long-term condition and the quality of life they experience can both deteriorate markedly. In addition, the costs of providing care to this group of people are increased as a result of less effective self-care and other complicating factors related to poor mental health.

Health and social care services in England are not currently organised in a way which supports an integrated response to the dual mental and physical health care needs of patients. The institutional and professional separation of mental and physical health care leads to fragmented approaches in which opportunities to improve quality and efficiency are often missed. Links between mental health professionals and primary care – where most people with mental health problems are supported – have been neglected in many areas. Increasing sub-specialisation and the decline of generalism in hospital settings can create a lack of co-ordination and oversight of patients' multiple needs (Finlay *et al* 2011).

The time is right to explore how patients with combined mental and physical health needs can be supported in a more integrated way. Several recent policy developments in England create an environment in which there are both strong imperatives and opportunities to improve services for this group of people.

- The government's mental health outcomes strategy *No Health Without Mental Health* places considerable emphasis on the connections between mental and physical health, and gives new responsibilities to Improving Access to Psychological Therapy (IAPT) services for supporting the psychological needs of people with long-term conditions or medically unexplained physical symptoms (Department of Health 2011a).
- Under the government's reform programme clinical commissioners have a duty to promote integrated services, as do other bodies such as Monitor and the NHS Commissioning Board. A number of clinical commissioning groups are known to have identified mental health as an early priority for service improvement.
- As a result of the Transforming Community Services programme, many mental health trusts have taken on new responsibilities for providing community services for people with physical health problems – to a total value of £2 billion. This creates opportunities for developing more integrated ways of working.
- The formation of academic health sciences centres, spanning mental health and acute trusts, creates an infrastructure for integrative research.
- The QIPP challenge creates an imperative to develop innovative ways of providing health services that deliver better outcomes and more value to patients within constrained resources.

The King's Fund has previously argued that developing more integrated forms of care for people with co-morbid mental and physical health problems should be one of the top 10 priorities for clinical commissioning groups (Imison *et al* 2011). This report builds on that argument, presenting the results of a review of research evidence and drawing on examples of innovative practice from within the United Kingdom and internationally. It is aimed at clinical commissioners and others involved in improving the quality and productivity of care for people with long-term conditions.

The focus of the report is on people with long-term conditions and co-morbid mental health problems. There are related issues concerning medically unexplained symptoms, the physical health of people with severe mental illnesses, and the impact of substance abuse and alcohol problems on physical and mental health. These issues are not discussed in depth here, but have been addressed elsewhere, both internationally (De Hert *et al* 2011b) and in the United Kingdom, for example through the work of the Disability Rights Commission (Disability Rights Commission 2006).

Long-term conditions – what are they and how many people do they affect?

More than 15 million people in England – 30 per cent of the population – have one or more long-term conditions (Department of Health 2011c). This includes people with a range of conditions that can be managed but often not cured, such as diabetes, arthritis and asthma, or a number of cardiovascular diseases. To this we can add conditions such as HIV/AIDs and certain cancers, which have not traditionally been considered long-term conditions but which are increasingly experienced and regarded as such. Many mental health problems can themselves be considered long-term conditions, but in this paper we use the term 'long-term conditions' to refer specifically to physical health conditions.

Co-morbid mental health problems are common

Mental health problems are the largest single source of disability in the United Kingdom, accounting for 23 per cent of the total 'burden of disease' (a composite measure of premature mortality and reduced quality of life) (Department of Health 2011b). Spending on mental health services accounts for 11 per cent of the NHS secondary health care budget (Department of Health 2011b), and the full cost to the NHS goes well beyond this as this figure does not include costs to primary care or increased costs elsewhere caused by poor mental health exacerbating other health problems and hindering their treatment. Nor does it take account of the wider economic impact of mental health problems through their effect on employment and workplace productivity (Centre for Mental Health 2010), or the substantial costs of informal care borne by family members and others (McCrone *et al* 2008)

Research evidence consistently demonstrates that people with long-term conditions are two to three times more likely to experience mental health problems than the general population. Much of the evidence relates specifically to affective disorders such as depression and anxiety, though co-morbidities are also common in dementia, cognitive decline and some other conditions. There is particularly strong evidence for a close association with cardiovascular diseases, diabetes, chronic obstructive pulmonary disease (COPD) and musculoskeletal disorders (see box overleaf). There is also evidence for higher than usual levels of mental health problems among people with other conditions, including asthma, arthritis, cancer and HIV/AIDs (Chapman *et al* 2005; Sederer *et al* 2006). In addition to the relationship with diagnosable mental health problems, there is an independent association between physical illness and emotional distress (Delahanty *et al* 2007).

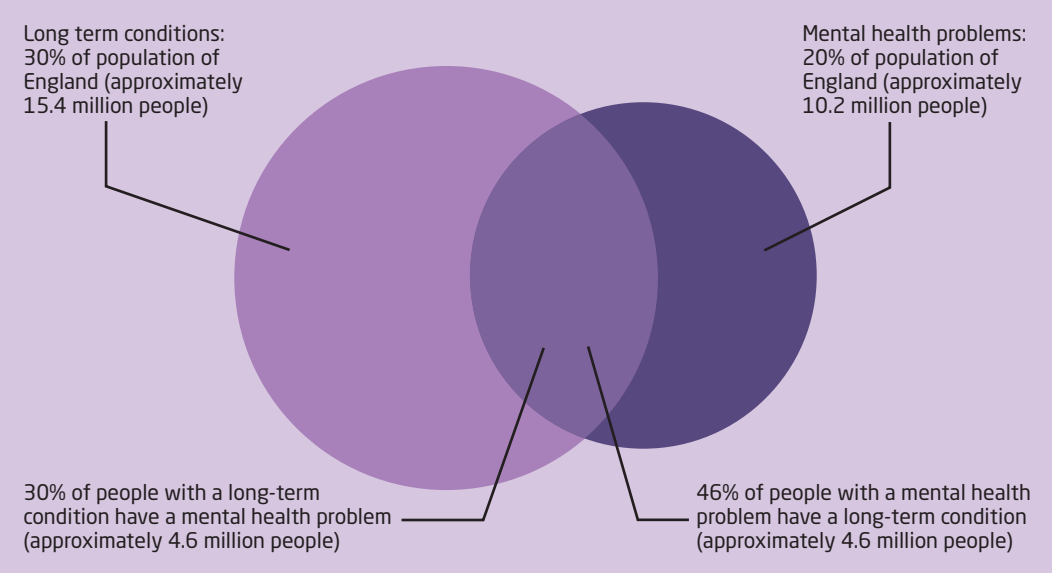
Research evidence on the prevalence of co-morbid mental health problems in cardiovascular disease, diabetes, COPD and chronic musculoskeletal disorders

- Depression is two to three times more common in a range of **cardiovascular diseases** including cardiac disease, coronary artery disease, stroke, angina, congestive heart failure, or following a heart attack (Fenton and Stover 2006; Benton *et al* 2007; Gunn *et al* 2010; Welch *et al* 2009). Prevalence estimates vary between around 20 per cent and 50 per cent depending on the conditions studied and the assessment approach used, but the two- to threefold increase compared with controls is consistent across studies. Anxiety problems are also common in cardiovascular disease (Goodwin *et al* 2009).
- People living with **diabetes** are two to three times more likely to have depression than the general population (Fenton and Stover 2006; Simon *et al* 2007; Vamos *et al* 2009). As observed for cardiovascular disease, prevalence estimates vary but the proportionate increase is consistent (Anderson *et al* 2001). There is also an independent association with anxiety.
- Mental health problems are around three times more prevalent among people with **chronic obstructive pulmonary disease** than in the general population (NICE 2009). Anxiety disorders are particularly common; for example panic disorder is up to 10 times more prevalent than in the general population (Livermore *et al* 2010).
- Depression is common in people with **chronic musculoskeletal disorders** (Sheehy *et al* 2006). Up to 33 per cent of women and more than 20 per cent of men with all types of arthritis may have co-morbid depression (Theis *et al* 2007). For example more than one in five people over the age of 55 with chronic arthritis of the knee have been reported to have co-morbid depression (Sale *et al* 2008).

Long-term conditions such as cardiovascular disease and diabetes are also risk factors for the development of mild cognitive impairment, as well as Alzheimer's disease and vascular dementia (Biessels *et al* 2006; Velayudhan *et al* 2010). Analysis of more than 13,000 twins in Sweden found that mid- and late-life onset of diabetes was associated with a respective 176 per cent and 63 per cent increase in the risk of dementia (Xu *et al* 2009). Another study in Japan reported that over an 11-year period 27 per cent of a group of people over 60 with diabetes developed dementia compared with 21 per cent of a matched cohort without diabetes (Ohara *et al* 2011). The risk of developing dementia is even higher among people who have depression as well as diabetes (Katon *et al* 2011).

Overall, the evidence suggests that at least 30 per cent of all people with a long-term condition also have a mental health problem (Cimpean and Drake 2011). This is a conservative estimate given the high prevalence of mental health problems in the general population; in the most recent psychiatric morbidity survey for England, 23 per cent of the adult population screened positive for one or more mental health problem, including 16 per cent meeting diagnostic criteria for depression or anxiety (McManus *et al* 2009). Taking into account the lower rates observed among children (Green *et al* 2005), the prevalence of mental health problems across the whole population is around 20 per cent. Figure 1 opposite illustrates the extent of the overlap between mental health problems and long-term conditions using these values.

Figure 1 The overlap between long-term conditions and mental health problems



What explains the link between mental and physical health?

The mechanisms underlying the relationship between mental and physical health are complex, and evidence suggests that a combination of biological, psychosocial, environmental and behavioural factors may all be involved (Prince *et al* 2007). It is worth noting that the causal relationship is likely to be two-way. While this report focuses on the implications of mental health problems for people who already have a long-term condition, there is strong evidence that having a mental health problem, including depression or anxiety disorders, increases the risk for onset of a range of physical illnesses (De Hert *et al* 2011a; Harris and Barraclough 1998). For example, an evidence review found that depression increases the risk for onset of coronary artery disease and ischaemic heart disease by between 50 per cent and 100 per cent (Benton *et al* 2007). Similarly, a growing evidence base suggests that chronic stress has a direct impact on the cardiovascular, nervous and immune systems, leading to increased susceptibility to a range of diseases (Contrada and Baum 2010). As a result of these associations, people with mental health problems are two to four times more likely to die prematurely, principally from 'natural' causes such as cardiovascular disease (Eaton *et al* 2008).

Which groups in the population experience co-morbidity most commonly?

Co-morbid mental health problems are particularly common among people with multiple long-term conditions. Data from the World Health Surveys indicate that people with two or more long-term conditions are seven times more likely to have depression than people without a long-term condition (Moussavi *et al* 2007). Mercer and Watt (2007) found that the prevalence of probable mental health problems among people in Glasgow with three or more long-term conditions was between 40 and 50 per cent. An Australian study found that the number of conditions was more predictive of depression than the presence of any particular condition (Gunn *et al* 2010).

There is evidence that the relationship between having multiple long-term conditions and experiencing psychological distress is exacerbated by socio-economic deprivation in two ways. First, a greater proportion of people in poorer areas have multiple long-term conditions. Second, the effect of this multi-morbidity on mental health is stronger when deprivation is also present. For example, Mercer and Watt (2007) found that among those with three or more long-term conditions living in highly deprived areas, more than half

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had signs of significant psychological distress. This points to a three-way interaction between social conditions, mental health, and physical health.

The prevalence of co-morbid mental health problems is higher still in inpatient settings. For example, studies have found that between 35 per cent and 70 per cent of chronic heart failure inpatients have depressive disorders (O'Connor and Joynt 2004).

There is some evidence that the prevalence of co-morbid mental health problems is also higher among women (Thomas *et al* 2003; Vamos *et al* 2009; Theis *et al* 2007).

Implications for patients

Co-morbid mental health problems have a number of serious implications for people with long-term conditions, including poorer clinical outcomes, lower quality of life and reduced ability to manage physical symptoms effectively. The evidence reviewed below focuses in particular on the impact on people with cardiovascular disease, diabetes or COPD.

Poorer clinical outcomes and prognosis

Outcomes from cardiovascular care are poorer for patients with co-morbid mental health problems, even after taking severity of cardiovascular disease and patient age into account. Cardiovascular patients with depression experience 50 per cent more acute exacerbations per year (Whooley *et al* 2008) and have higher mortality rates (Katon 2003). A meta-analysis suggested that depression leads to a two- to threefold increase in negative outcomes for people with acute coronary syndromes (Barth *et al* 2004). For example, one study found that depression increases mortality rates after heart attack by 3.5 times (Lesperance *et al* 2002), while another found a twofold increase in mortality after heart bypass surgery over an average follow-up period of five years (Blumenthal *et al* 2003). Patients with chronic heart failure are eight times more likely to die within 30 months if they have depression (Junger *et al* 2005).

People with diabetes who also have co-morbid mental health problems are at increased risk of poorer health outcomes and premature mortality (Molosankwe *et al* unpublished). For example, Katon *et al* (2004) reported that people with diabetes and co-morbid depression have 36–38 per cent increased risk of all-cause mortality over a two-year follow-up period. Co-morbid mental health problems are associated with poorer glycaemic control, more diabetic complications and lower medication adherence (Das-Munshi *et al* 2007), and children with type I diabetes are more likely to suffer from retinal damage if they also have depression (Kovacs *et al* 1995).

Mental health problems can also have a major impact on symptoms and outcomes for people with COPD. Independent of COPD severity, co-morbid mental disorders are associated with worse health status and breathlessness (Felker *et al* 2010). There is some evidence that depression increases mortality rates from COPD, though this is not observed in all studies (Wilson 2006). Furthermore, recent analysis of the United Kingdom General Practice Research Database reported that mortality rates for individuals with co-morbid asthma and depression were twice the level among those with asthma alone (Walters *et al* 2011).

Adverse health behaviours and poorer self-care

A significant part of the explanation for poorer clinical outcomes is that co-morbid mental health problems can reduce a person's ability to actively manage their own physical condition and are associated with unhealthy behaviours such as smoking. Self-management is at the core of effective treatment for long-term conditions – but this is

impeded significantly by poor mental health, which can reduce the motivation and energy needed for self-management, and lead to poorer adherence to treatment plans (DiMatteo *et al* 2000). For similar reasons mental health problems are also associated with low attendance rates for medical appointments.

For cardiac patients, depression has been shown to increase adverse health behaviours (eg physical inactivity) and decrease adherence to self-care regimens such as smoking cessation, dietary changes and cardiac rehabilitation programmes (Benton *et al* 2007; Katon 2003). One study found that adverse behaviours explained much of the increase in cardiovascular events among depressed patients (Whooley *et al* 2008).

Co-morbid mental health problems lead to greater difficulties with diabetes self-care (Das-Munshi *et al* 2007) and are associated with poorer dietary control and adherence to medication (Vamos *et al* 2009). Similarly, non-compliance with medication is higher among COPD patients with depression than those without. A review found that patients with a range of medical conditions are three times less likely to take medications as recommended if they also have depression (DiMatteo *et al* 2000).

Lower quality of life

There is evidence that quality of life for those with some co-morbid mental and physical health problems is considerably worse compared with the quality of life for people with two or more physical health problems. As Figure 2 below indicates, co-morbid depression with a range of long-term conditions was reported in the World Health Survey as having

Figure 2 Health-related quality of life scores associated with single and multiple long-term conditions (based on 245,404 participants in 60 countries, Mossavi *et al* 2007)



Source: Moussavi *et al* 2007
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a lower quality of life score than for two or more long-term physical health conditions (Moussavi *et al* 2007).

There is increasing evidence that co-morbid mental health problems can exacerbate the level of functional disability experienced by people with long-term conditions (Molosankwe *et al* in press). One major survey in Canada reported much higher risks of functional disability in people with long-term conditions and depression compared with people with depression or long-term conditions alone (Schmitz *et al* 2007).

Some studies indicate that the presence of co-morbid mental health problems can have a greater effect on the functional status and quality of life of people with long-term conditions than the level of severity of their physical illness. For example, the presence of depression or anxiety can have a larger impact than COPD severity on functional status and is correlated with impaired quality of life more closely than physiological markers such as lung function. (Yohannes *et al* 2010). Similarly in cardiovascular diseases, depressive symptoms can have a bigger impact on quality of life than severity of cardiac problems (de Jonge *et al* 2006).

Costs to the system of co-morbid mental health problems

Increased service use

Given the significant impact on prognosis, it is unsurprising that co-morbid mental health problems also substantially increase patients' use of health services for their physical problems. Depression, for example, is associated with an increase in rehospitalisation rates in cardiovascular disease – for patients with chronic heart failure the emergency admission rates are two to three times higher (Himelhoch *et al* 2004; Jiang *et al* 2001; Fenton and Stover 2006)

A UK survey found that people with co-morbid mental health problems and diabetes experienced more hospital admissions and GP consultations for physical complaints (Das-Munshi *et al* 2007). International studies report similar findings, for example that the presence of mental health problems increases risk of admission by 2.8 times, causes slight increases in length of stay, and doubles the use of outpatient services (Krein *et al* 2006; Vamos *et al* 2009).

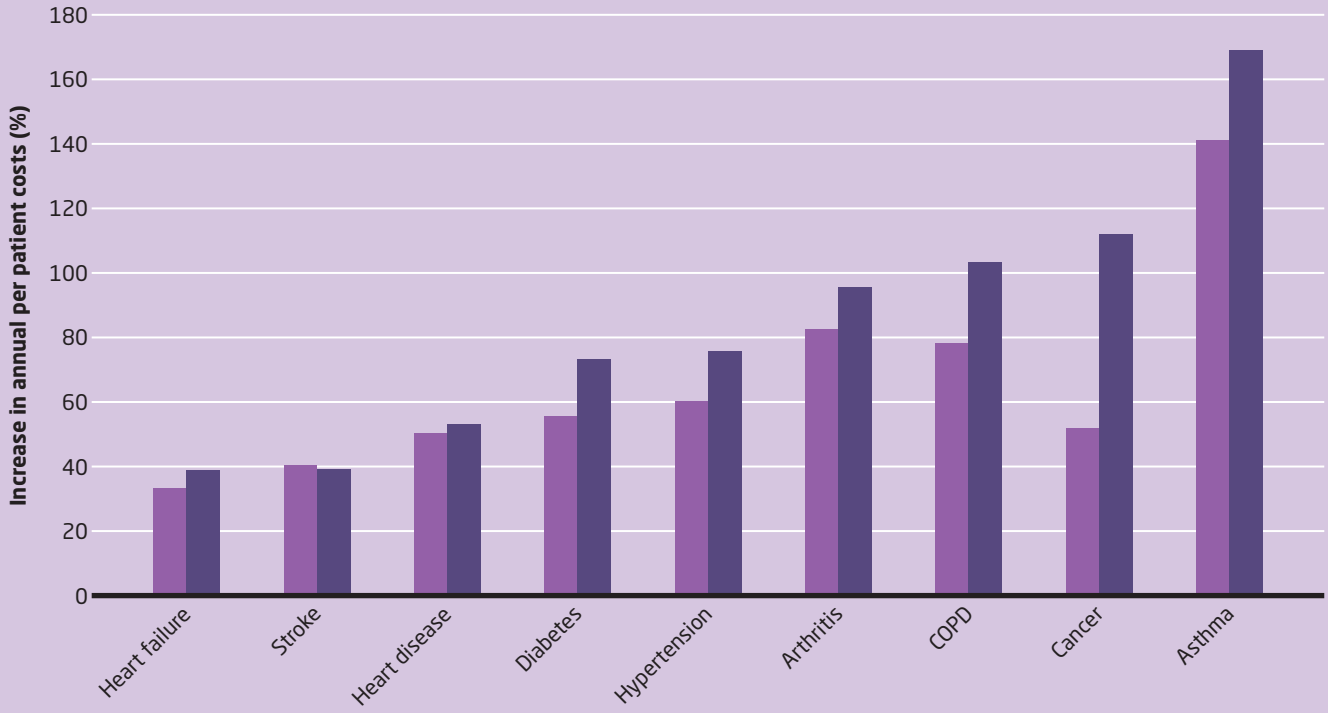
There is also evidence of increased service use in COPD. For example, COPD patients with co-morbid mental health problems have more than 50 per cent more acute exacerbations per year (Laurin *et al* 2009), experience higher rates of hospitalisation, and in one study spent twice as long in hospital as those without mental health problems (Yellowlees *et al* 1987).

Health service costs

Increased service use translates into substantial additional costs. There is strong evidence that by interacting with and exacerbating physical illnesses, co-morbid mental health problems significantly increase the costs of providing care to people with long-term conditions. Much of this evidence is from outside the United Kingdom, but it nonetheless provides relevant insights.

An analysis of USA national claims data for more than nine million people showed that patients with long-term conditions who were also receiving treatment for depression or anxiety had average monthly medical costs that were between 33 per cent and 169 per cent higher over a range of conditions (*see* Figure 3 opposite). Importantly, these costs excluded direct expenditure on mental health services (Melek and Norris 2008).

Figure 3 Proportionate increase in per patient medical costs associated with depression and anxiety relative to people without a mental health problem (based on US claims data for more than 9 million people, Melek and Norris 2008)



Note: direct mental health treatment costs are excluded

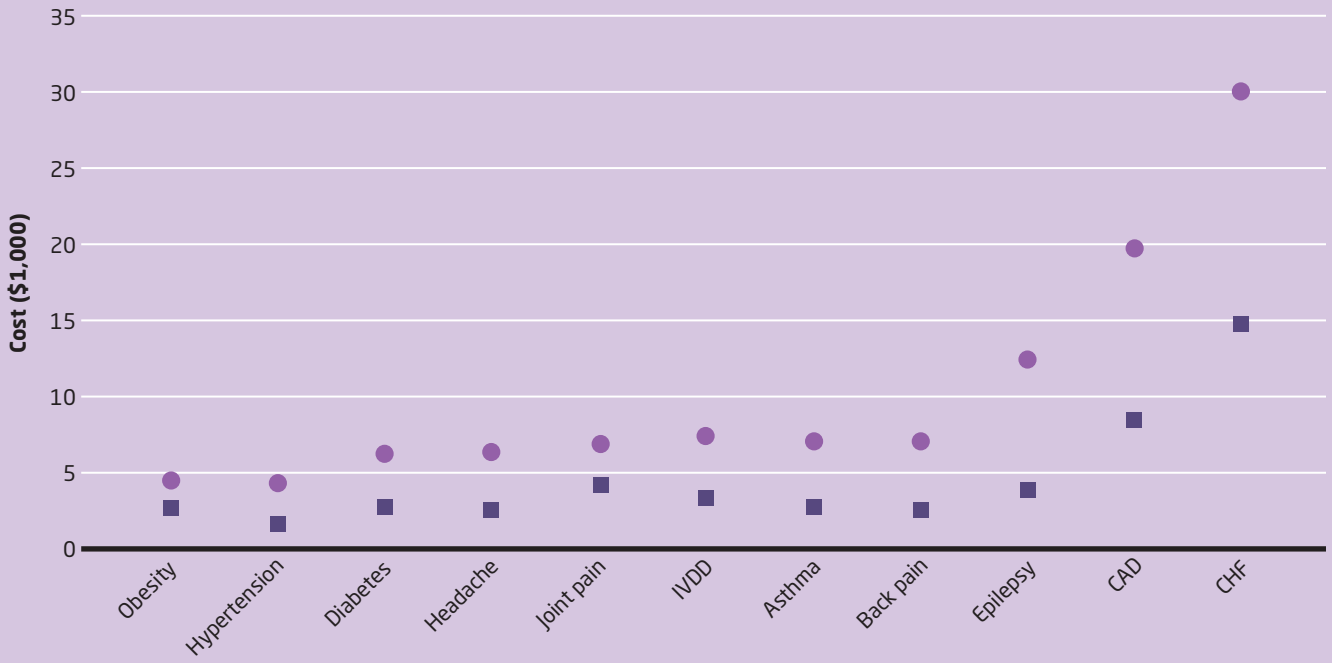
Source: Melek and Norris 2008

Similarly, claims data from Colorado Access (a not-for-profit Medicaid health plan) showed that depression was associated with increased total annual medical costs for people with diabetes, asthma and congestive heart failure by 103 per cent, 253 per cent and 37 per cent respectively (Thomas *et al* 2006), while another study based on insurance claims for more than 600,000 Texans and Californians showed that depression increased costs by between 50 per cent and 190 per cent across a wide range of conditions (*see* Figure 4 overleaf). In the latter study, the raised costs were accounted for by increased outpatient costs, pharmaceutical costs and, in some conditions, inpatient costs, but the costs of anti-depressant prescriptions and other mental health treatments were excluded.

This relationship persists in the case of people with multiple long-term conditions. Claims data from Beacon Health Strategies for around six million people show that costs increase with the number of long-term conditions, but for all groups the effect of mental health problems in addition is to roughly double total medical costs (*see* Figure 5 overleaf).

The association between poor mental health and higher costs could in part be accounted for by severity of physical disease – the sickest, most expensive patients being the most likely to experience mental health problems. While it is true that mental health problems are more common among the more severely ill, several studies have found that the relationship between poor mental health and costs is broadly consistent across all levels of medical severity, and persists after adjusting for clinical and demographic variables (Welch *et al* 2009; Unutzer *et al* 2009). For example, for USA patients on a Medicare programme for people with diabetes, congestive heart failure or both, depression was associated with 48 per cent higher annual healthcare costs after adjustment (compared to 68 per cent before adjustment). The proportionate increase in costs was similar – between 54 per cent and 81 per cent – for all quartiles of medical severity (Unutzer *et al* 2009).

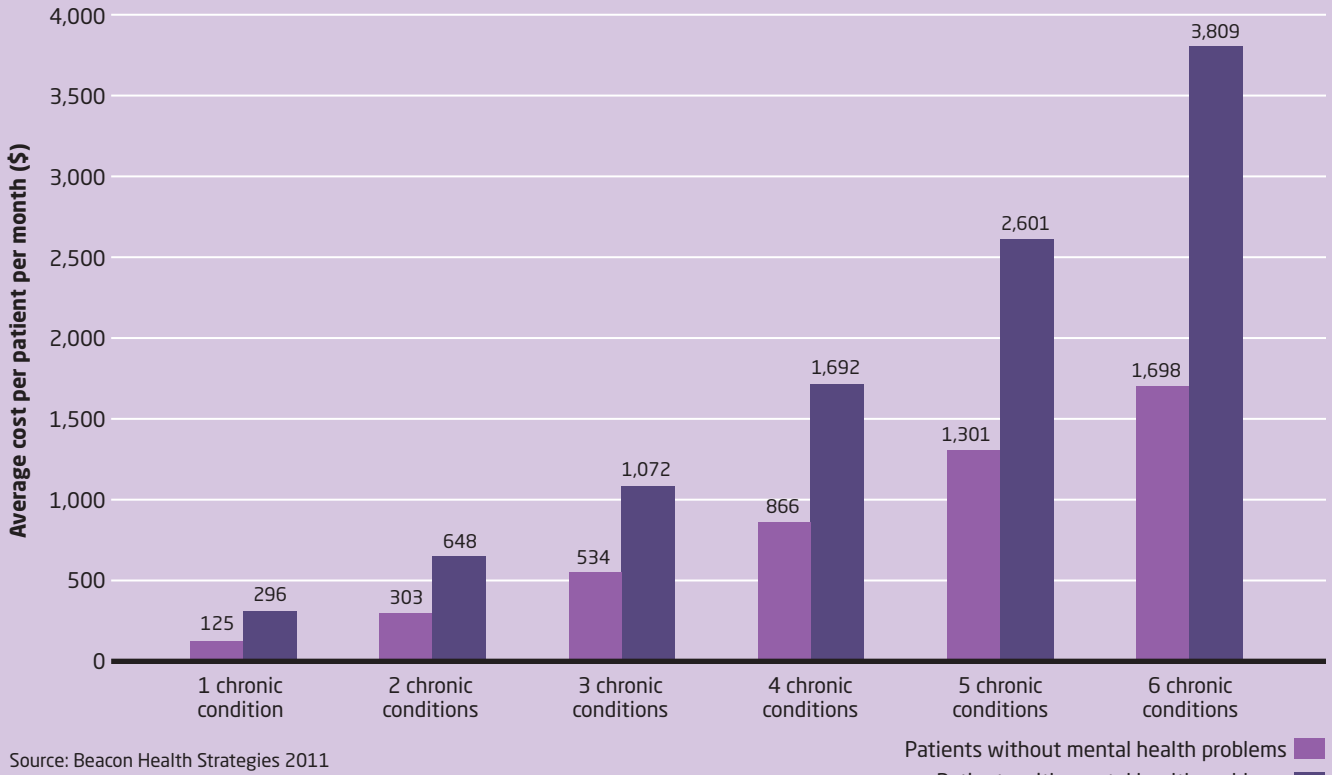
Figure 4 Annual per patient costs with and without depression (based on US claims data from Colorado Access, Welch *et al* 2009)



Costs of antidepressant prescriptions and mental health treatment are excluded.
CHF: congestive heart failure; CAD: coronary artery disease; IVDD: intervertebral disc disease.

Source: Welch *et al* 2009
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Figure 5 Monthly costs per patient with and without mental health problems (based on client claims data from Beacon Health Strategies, prior to Beacon engagement)



Source: Beacon Health Strategies 2011
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While association cannot prove causation, the finding that the relationship persists after this kind of adjustment is highly suggestive that the presence of mental health problems is causally responsible for a significant part of the excess costs.

It is important to note that the increased costs observed in the studies cited are largely or wholly related to physical health care costs, rather than the additional costs of mental health treatment. For example, in the study by Unutzer *et al* (2009) less than 4 per cent of the increased costs were accounted for by mental health care. This demonstrates that the costs of co-morbidity are greater than the combined costs of having the individual conditions alone – it is the interaction between the mental and physical health problems that is important (Unutzer *et al* 2009).

Several other international studies have found that after controlling for severity of physical illness, co-morbid mental health problems are associated with an increase in medical costs of at least 45 per cent (*see* box below). This includes increased costs from use of primary care, A&E, pharmacy, laboratory and x-ray examinations, outpatients and inpatients (Katon 2003).

International evidence on the impact of co-morbid mental health problems on costs

International studies have found that the presence of mental health problems increased the costs of care for long-term conditions by at least 45 per cent after controlling for severity of physical illness.

- For cardiovascular inpatients in Germany, psychiatric co-morbidity increased average length of stay from 8.9 days to 13.2 days, with total costs increasing by 49 per cent (Hochlehnert *et al* 2011).
- In the USA, average Medicare costs in 2000 for people with heart failure and dementia were 49 per cent higher than for those with CHF alone (Maslow 2004).
- A systematic review found consistent evidence that co-morbid depression is associated with increased costs in diabetes (Hutter *et al* 2010). Gilmer *et al* (2005) found that costs over a three-year period were 48 per cent higher, while Simon *et al* (2005) found that costs over six months were 70 per cent higher. Ciechanowski *et al* (2000) found that depression increased total costs over six months by between 54 and 88 per cent, depending on severity of depressive symptoms. In each of these cases these measurements controlled for diabetes severity and other variables.

How much do co-morbid mental health problems cost the NHS in England?

Overall, the international research shows that co-morbid mental health problems are a major determinant of overall costs, typically associated with a 45–75 per cent increase in service costs for long-term physical health conditions. Increases of this order are observed in a number of studies and across a wide range of very different long-term conditions, from asthma to chronic heart failure. Importantly, these estimates are based on costs increases observed *after* adjusting for severity of physical disease.

Taking these figures along with the 30 per cent prevalence estimate given previously, it can be calculated that between 12 per cent and 18 per cent of all expenditure on long-term conditions is linked to poor mental health and wellbeing. The more conservative of these figures equates to around **£1 in every £8 spent on long-term conditions**.

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The Department of Health estimates that long-term conditions account for around 70 per cent of total health spending (Department of Health 2010). After subtracting expenditure on research and training, this means that **between £8 billion and £13 billion of NHS spending in England is attributable to co-morbid mental health problems among people with long-term conditions**.

To put this in terms of individual patient costs, the presence of poor mental health increases the average cost of NHS service use by each person with a long-term condition from approximately £3,910 to £5,670 a year (using the more conservative 45 per cent estimate for excess costs).

International evidence suggests that the bulk of these excess costs will be associated with the most complex patients whose long-term conditions are most severe or who have multiple co-morbidities (Unutzer *et al* 2009).

Wider costs

In addition to increasing health service costs, co-morbid mental health problems have wider economic costs. There is good evidence that people with long-term conditions and mental health needs are less likely to be in employment than those with physical illness alone, and the productivity of those in employment is reduced. For example, a systematic review found evidence from the USA, Canada, Singapore and Hungary that absence from work was consistently higher among people with diabetes and co-morbid mental health problems than in people with diabetes alone (Hutter *et al* 2010). Studies show a clear interaction between mental and physical health status on employment, for example people with severe diabetic complications plus poor mental health show very high levels of work disability (Von Korff *et al* 2005).

In a USA study employees with a medical condition and depression took twice as many sickness absence days as those without a co-morbid mental health problem (Druss *et al* 2000). Co-morbidities also reduce economic output through their impact on premature mortality among people of working age, and can increase the likelihood that other family members have to take time off work to provide informal care and support.

Delivering effective care and support

There is growing evidence that supporting the psychological and mental health needs of people with long-term conditions more effectively can lead to improvements in both mental and physical health. For example, addressing the psychological needs of people with diabetes can improve clinical outcomes, quality of life, relationships with health care professionals and carers, dietary control and overall prognosis (NHS Diabetes and Diabetes UK 2010; Alum *et al* 2008). If done right, it can also reduce the excess costs associated with co-morbidity.

Existing health care provision often fails to realise these opportunities. A separation of mental and physical health is hard-wired into institutional arrangements, payment systems and professional training curricula. As a result, co-morbid mental health problems commonly go undetected among people with long-term conditions, and where problems are detected the support provided is often not effectively linked or co-ordinated with care provided for physical problems. This section describes how care and support should be provided differently to meet the challenge of co-morbidity.

Prevention

Research suggests it may be possible to reduce the number of people with long-term conditions who go on to develop mental health problems. A number of cost-effective

interventions exist for promoting mental health and preventing the development of mental illness. Several approaches, including promoting wellbeing in the workplace, providing debt advice and befriending interventions aimed at older people, can be effective and can also deliver a financial return on investment by reducing mental health needs (Knapp *et al* 2011). People with long-term conditions should be particular targets for public health approaches towards mental health such as these. For those in employment, the workplace should not be overlooked as a place in which to protect and promote mental health. Long-term conditions may be one indicator used to identify those at high risk of poor mental health who may benefit from specific workplace-based help and support.

Detecting co-morbid mental health problems

Detection is the first step in providing effective support for those who do have mental health needs. At present this is not done to a consistently high standard, and there is evidence that the presence of physical illness makes detection of mental health problems more difficult. For example, one study found that while more than 90 per cent of people with depression alone were diagnosed in primary care, depression was detected in less than a quarter of cases among people who also had a long-term condition (Bridges and Goldberg 1985). More recent evidence confirms that the majority of cases of depression among people with physical illnesses go undetected and untreated (Cepoiu *et al* 2008; Katon 2003). Qualitative evidence suggests that both patients and practitioners tend to focus on physical symptoms during consultations (Coventry *et al* 2011). Active case-finding among people with long-term conditions may therefore be needed to improve detection, in line with NICE guidelines (for example *see* NICE 2010).

Integrating mental health into chronic disease management programmes

For those identified as having symptoms of poor mental health, standard interventions such as antidepressants or cognitive behavioural therapy (CBT) can be effective (Fenton and Stover 2006; Yohannes *et al* 2010, Ciechanowski *et al* 2000). This can lead to reduced use of other services. For example, recent research in the United Kingdom found that referral to psychological therapy was associated with reduced emergency department attendance (de Lusigman *et al* 2011), while a meta-analysis found that psychological interventions in hospitals and other settings reduced length of stay by 2.5 days and overall health care costs per patient by about 20 per cent (Chiles *et al* 1999).

However, treating a co-morbid mental health problem by itself does not always translate into improved physical symptoms or lower mortality from physical illness (Cimpean and Drake 2011; Benton *et al* 2007; Perez-Parada 2011). More significant effects can be gained by integrating treatment for mental health and physical health needs, rather than overlaying mental health interventions on top of existing treatment protocols.

Interventions from mental health can be adapted and integrated within chronic disease management frameworks or rehabilitation programmes designed to support people in managing their condition. A growing evidence base suggests that more integrated ways of working with collaboration between mental health and other professionals offer the best chance of improving outcomes for both mental health and physical conditions (Fenton and Stover 2006; Yohannes *et al* 2010). There is also evidence that the costs of including psychological or mental health initiatives within disease management or rehabilitation programmes can be more than outweighed by the savings arising from improved physical health and decreased service use (Howard *et al* 2010; Moore *et al* 2007). The box overleaf summarises some of the research evidence.

Integrating mental health support into chronic disease management frameworks – the evidence

The impact on outcomes

- The impact of pulmonary rehabilitation programmes for COPD can be increased by adding a psychological component, improving completion rates and reducing re-admission for COPD (Abell *et al* 2008). Tailored CBT packages delivered by a CBT-trained respiratory nurse can reduce anxiety in COPD, improving self-management and reducing exacerbations and unnecessary admissions (NICE 2009).
- A disease management programme designed to allow people with cardiovascular disease and bipolar disorder to self-manage their psychiatric and medical condition was more effective than standard care in slowing the decline in physical health (Kilbourne *et al* 2008). Similarly, psycho-educational interventions have been shown to be effective in reducing angina frequency and medication use (McGillon *et al* 2008).
- CBT-based interventions can improve treatment adherence, psychosocial adjustment, coping skills and quality of life for people with co-morbid long-term conditions, as well as reducing use of health care services (Thompson *et al* 2011; Spurgeon *et al* 2005). Evidence-based computerised CBT packages are available and can be included as a component of self-management protocols for long-term conditions (NICE 2006). These may have the advantage of being attractive to individuals more reluctant to accept they have mental health needs, as well as for those with limited mobility, such as those with COPD.

The impact on costs

- Including a psychological component in a breathlessness clinic for COPD in Hillingdon Hospital led to 1.17 fewer A&E presentations and 1.93 fewer hospital bed days per person in the six months after intervention (Howard *et al* 2010). This translated into savings of £837 per person – around four times the upfront cost.
- In the year following a CBT-based disease management programme for angina, patients needed 33 per cent fewer hospital admissions – saving £1,337 per person (Moore *et al* 2007).

These forms of integrated treatment can exploit the synergies between mental and physical health care – for example the commonality that exists between behavioural treatments for depression and self-management approaches for long-term conditions (Egede and Ellis 2010) – and avoid the tensions between different treatments. Without this there is a risk that treatments for one disease may worsen a co-morbid condition; for example, use of some psychotropic medications can lead to significant weight gain and further cardiometabolic complications.

Despite the evidence supporting their use, integrated approaches are currently the exception rather than the norm. For example, the British Heart Foundation's 2011 National Audit of Cardiac Rehabilitation indicates that 42 per cent of cardiac patients are currently provided with rehabilitation, and only 16 per cent of these programmes have a psychological component, despite 31 per cent of patients experiencing significant anxiety problems and 19 per cent having depression (British Heart Foundation 2011).

Support for self-management

Self-management is a key element of the prevailing approach towards chronic disease management. Co-morbid mental health problems can reduce ability and motivation to self-manage, and people with these forms of co-morbidities may need particular support if they are to do so effectively. Recent evidence indicates that people with co-morbid mental health problems can gain particularly large benefits from inclusion in self-management support programmes, suggesting that they should be targets for referral (Harrison *et al* 2011). Peer support may also play an important role in empowering people with co-morbid mental health problems to manage their own condition.

Integrating mental health into primary care

Improving support for the mental health and psychological aspects of physical illness cannot mean treating a large number of additional people within specialist mental health services; an expansion along these lines would be both unaffordable and undesirable. What is needed is a primary care-based approach.

Primary care is a key area where steps to promote the mental wellbeing of individuals with long-term conditions can be initiated. It is also the main source of formal support for those individuals identified as having mental health problems – only 10 per cent receive a referral to specialist mental health services.

There is a strong argument for much closer working between mental health specialists and primary care. Enhanced forms of primary care provision, with closer input from mental health specialists where necessary, offer the potential to support patients' multiple needs in a more integrated way. USA examples such as Intermountain's mental health integration programme suggest that integrating mental health provision for people with mild to moderate problems into primary care can improve quality of care while reducing costs in other parts of the system (*see* box below).

Intermountain's mental health integration programme

Intermountain Healthcare is a non-profit health system providing care to patients in Utah and Idaho. Intermountain's mental health integration programme demonstrates an innovative model for improving the interface between mental health specialists and primary care. It is aimed at all patients with mental health problems rather than those with co-morbid long-term conditions specifically. Key elements of the approach include:

- integrating mental health specialists within primary care teams
- using shared electronic medical records
- screening for mental health problems among high-risk groups
- using disease registries and evidence-based guidelines
- exploiting new technologies, eg telehealth and telecare
- making maximum use of extended community resources and peer support.

(Stanton and Lee unpublished)

A controlled evaluation found that the programme reduced total medical costs per patient by 48 per cent relative to standard clinics in the 12 months following diagnosis of depression. This included reduced medical inpatient and emergency department expenditure; for example, patients in the programme were 54 per cent less likely to use emergency department services than those receiving usual mental health care (Reiss-Brennan *et al* 2010)

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A number of approaches could be taken towards integrating mental health and primary care in the United Kingdom. The collaborative care model provides an evidence-based framework for sharing responsibilities between GPs and specialists (*see* box below). UK-based examples of innovative service delivery include the primary-care-based approach to mental health adopted in Sandwell (*see* box opposite), which focuses on wellbeing and delivery of upstream and psychosocial interventions; and the Primary Care Psychological Health service in Kensington and Chelsea (*see* box opposite), which aims to provide a continuum of support bridging GPs and specialist mental health care.

Collaborative care for people with co-morbid mental health problems

Collaborative care is the approach recommended by NICE for supporting people with long-term conditions and co-morbid depression in primary care (NICE 2009). Key elements of the collaborative care model include:

- a case manager responsible for co-ordination of different components of care
- a structured care management plan, shared with the patient
- systematic follow-up
- a multi-professional approach with mechanisms to enable closer working between primary care and specialists
- patient education and support for self-management
- a stepped care approach limiting more intensive interventions to those who do not respond to initial care.

Research suggests approaches based on this model can improve outcomes without additional costs and can potentially deliver net savings (Unutzer *et al* 2009). For example:

- collaborative care for people with diabetes and co-morbid depression improved depression outcomes in USA-based studies and led to slight reductions in total medical costs over a two-year period, with cost increases in year one being outweighed by returns in year two (Simon *et al* 2007; Katon *et al* 2006). A longer-term study found a 14 per cent reduction in total costs per patient over five years (Katon *et al* 2008)
- collaborative case management by a medically supervised nurse, with the goal of controlling risk factors associated with multiple diseases, improved control of medical illness and depression outcomes in patients with depression and diabetes and/or coronary heart disease (Katon *et al* 2010).

Collaborative care could be supported through a variety of organisational approaches (Druss and Walker 2011):

- a single integrated care organisation providing both primary care and specialist mental health services
- shared care arrangements between a primary care provider and a mental health provider, with mental health staff embedded in primary care settings
- a facilitated referral approach where a care manager ensures co-ordination of care delivered by primary care and mental health professionals, but without physical co-location of staff.

Mental health and wellbeing in Sandwell

Sandwell Primary Care Trust has moved towards a primary-care-based, upstream model for mental health. The approach is a federated one, including Improving Access to Psychological Therapies (IAPT) but also extending beyond this to include a range of other service providers. Key components include:

- a single point of mental health referral for GPs, health visitors, midwives and other professionals, which asks patients which of a menu of services they would like to access
- a tiered approach – people are assigned to one of five different levels of severity, with a different menu of services available at each
- a focus on wellbeing throughout all services – with success defined in terms of meeting a person's self-defined emotional and social needs more than in terms of clinical symptoms and definitions. This is driven by measuring wellbeing and mental health outcomes using standardised tools
- bottom-up service redesign based on extensive community engagement
- systematically mapping community and public service assets and building capacity in local charities and community groups, so that these are increasingly organising into a more federated entity able to provide a range of services
- building a culture of independence, by teaching problem-solving and self-management skills, and through use of peer support and social prescribing
- transforming libraries into community hubs providing a range of health and wellbeing services and self-help resources
- care management for people with complex needs.

Primary Care Psychological Health in Kensington and Chelsea

The Primary Care Psychological Health service in the London borough of Kensington and Chelsea provides a continuum of support bridging GPs and specialist mental health care. The service includes the local Improving Access to Psychological Therapies (IAPT) team, community psychiatric nurses and a primary care liaison psychiatrist within a single integrated structure. The aim is to reduce the need for referral to secondary care by providing case management, a range of psychological interventions, and medicines review where necessary. The service is able to support people with more complex needs than would be seen by typical IAPT services, including people with severe but stable mental illnesses, but has a lower-intensity approach than secondary care services. It also acts as a point of interface with social care where there are unmet social needs.

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Integrated support in acute settings: the importance of liaison psychiatry

Co-morbid mental health problems are known to be highly prevalent in hospital settings. For example, approximately one in four acute hospital beds are occupied by people with dementia (Lakey 2009). Liaison psychiatry services perform a crucial role in identifying mental health problems and supporting people's mental health needs while in hospital, including for people with long-term conditions experiencing acute exacerbations. Despite the importance of this function, provision of liaison services in the United Kingdom is highly variable, with some areas having little or no capacity.

Liaison psychiatry will need to play a key part in efforts to overcome the divide between mental and physical health care. The role of liaison psychiatry may need to expand and transform over time. Innovative service models such as the Rapid Assessment Interface and Discharge (RAID) service in Birmingham demonstrate that there is scope for liaison teams to play a greater role in hospitals. In addition to direct assessment and treatment of patients, an important function performed by the RAID team is training acute hospital staff in mental health skills and spreading psychological literacy across the workforce.

There is growing evidence of a good economic as well as clinical case for liaison psychiatry. For example, a recent evaluation of the RAID service has found that, even on conservative assumptions, benefits in terms of reduced inpatient bed use within the acute hospital exceeded the costs of the service by a factor of more than 4:1. The reduction in bed use, which very largely occurred among elderly patients, reflected the ability of the RAID team both to promote quicker discharge from hospital and to reduce rates of re-admission. There was also some evidence that more elderly people were discharged to independent living rather than to institutional settings, leading to savings in social care as well as in NHS budgets (Parsonage and Fossey 2011).

There is a need to ensure liaison teams are better integrated with the hospital teams they support. There are currently significant practical barriers that impede the effectiveness of liaison teams, often arising from their being employed by a mental health trust, but working in a hospital run by an acute trust. Communication and co-ordination can be compromised by IT systems that are not inter-operable, and by a high degree of caution with regard to information sharing. There is, however, an argument for liaison teams to continue to be provided by mental health trusts rather than acute trusts, to preserve the connection with mental health teams in the community.

The role of social support and the voluntary sector

As described above, social deprivation strengthens the association between mental and physical ill health (Mercer and Watt 2007). Improving care for people with long-term conditions and co-morbid mental health problems may therefore require closer working not only between mental and physical health care services, but also with social care, public health and a range of other social support services. For example, there is evidence that debt advice can reduce the risk of unmanageable debt and prevent the onset of mental health problems (Knapp *et al* 2011). People with long-term conditions could be particular targets for these forms of interventions.

Voluntary sector organisations are often well placed to work at the intersection between individuals' mental, physical and social needs, including through the provision of support groups and peer-delivered services. An example of collaboration between the third sector and statutory services to improve psychological and social support for people with a long-term condition is given in the box opposite.

Psychosocial support for young people with HIV

Body & Soul is a London-based voluntary sector organisation working with young people living with or closely affected by HIV. The organisation provides a number of services that address the interaction between mental and physical health:

- through the in-clinic peer mentor programme, trained HIV+ peer mentors provide one-to-one and group support to young people accessing HIV services at St George's Hospital. During its pilot year, this programme has resulted in an almost 50 per cent reduction in missed appointments
- Body & Soul's counselling service gives young people timely access to the psychological support they need, without the waiting period often associated with statutory services. Body & Soul exclusively employs counsellors with extensive specialist HIV knowledge to ensure that HIV-related mental health needs are appropriately addressed
- teenagers accessing Body & Soul's weekly *Teen Spirit* support programme credit the programme with helping them feel happier and more connected to HIV-specific support. A major aim of the programme is to reduce long-term risk for the co-morbidities commonly associated with HIV including depression, anxiety and addiction.

Making it happen

A priority for clinical commissioning groups

The scale of the impact of co-morbid mental health problems on service costs and clinical outcomes suggests that developing services that respond more effectively to these needs should be a priority for all clinical commissioning groups. This has the potential to be a key component of clinical commissioning groups' strategies to improve the quality and productivity of care.

Mental health services are generally commissioned separately from services for physical health conditions, and the needs of co-morbid patients are often not considered in either process. Clinical commissioning groups can play an important role in working with local providers to encourage the growth of more integrated forms of care. In developing care pathways for people with long-term conditions, commissioners will need to consider how the emotional, behavioural and mental health aspects of physical illness can be supported as a standard component of care. In doing so they will need to draw on expert mental health advice, for example from clinical senates or networks.

Commissioners should explore the use of quality incentives such as Commissioning for Quality and Innovation (CQUIN) payments to encourage providers to develop new models of care, for example innovative forms of liaison psychiatry. Such incentives may be needed only as a temporary stimulus, as the evidence reported above suggests these services should deliver a significant return on investment once established.

Data systems will need to be improved to give clinical commissioning groups a more detailed understanding of the nature of the problem and where the costs fall. This could be done through extension of disease registries for long-term conditions to include information on co-morbid mental health problems.

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Recommendations for clinical commissioning groups

- Include support for mental health needs in care pathways for long-term conditions.
- Commission services that improve the interface between primary care, mental health specialists and professionals involved in supporting people with long-term conditions, for example based on collaborative care models.
- Use CQUINs and other targeted quality incentives to encourage providers to develop innovative forms of liaison psychiatry within acute hospitals.

Implications for service providers

There is a compelling financial and quality case for service providers to make mental health assessment among people with long-term conditions mainstream, and to improve the support provided to those identified as having mental health needs. Professionals in both primary and secondary care need to be given the opportunity to develop basic mental health skills appropriate to the setting they work in. A number of training programmes and consultation tools are available to support this, and the provision of such training should become a standard responsibility of liaison psychiatry services and other mental health teams that come into regular contact with non-mental health professionals.

It is critical that the responsibility for integrating mental and physical health care is not left to the mental health community alone. The potential benefits stretch well beyond the specialist mental health sector, and the changes needed will require the active involvement of those working with physical illness – particularly GPs and other professionals involved in supporting people with long-term conditions. Social care professionals will also need to play a part in providing integrated support to people with complex and overlapping needs, particularly for those with dementia in addition to long-term physical health conditions.

IAPT services will have an important new role in supporting people with long-term conditions and co-morbid mental health problems, under plans announced as part of the government's mental health outcomes strategy (Department of Health 2011a). Existing IAPT services vary widely and many will need to evolve significantly to meet the current policy direction. Undertaking psycho-therapeutic work with people with co-morbid long-term conditions requires particular skills, and IAPT workers will need training and on-going supervision by relevant professionals with experience of working with physically ill patients, such as clinical health psychologists. IAPT teams will need to accept referrals from long-term conditions teams as well as GPs, and where they have not already done so will need to expand their referral criteria to include older people, among whom co-morbidities are particularly common.

Recommendations for service providers

- Strengthen disease management and rehabilitation programmes through inclusion of psychological or mental health input.
- Consider the business case for investing in liaison psychiatry in acute hospital settings.
- Build mental health skills in primary care and other settings, using training programmes developed specifically for physical health care professionals.
- Make use of clinical tools and consultation techniques that normalise the discussion of mental and emotional aspects of physical illness, such as Wellness and Recovery Action Planning (WRAP).
- Target people with long-term conditions and co-morbid mental health problems for referral to self-management support programmes.
- Provide people with long-term conditions with advice and interventions to prevent the onset of mental health problems.

Developing a supportive policy framework

The major role that mental health problems play in exacerbating physical illness and driving up service costs needs to be taken into account at a number of levels. It should, for example, feature prominently in any future outcomes strategies or guidance relating to care for people with long-term conditions, as well as in the relevant NICE quality standards. It may also be possible to develop suitable indicators for inclusion within the NHS Outcomes Framework, to complement the existing indicator on premature mortality among people with severe mental illness.

There are several policy barriers that will need to be addressed to enable commissioners and providers to redesign services at the local level. A key issue is that the potential savings associated with integrated service models can be challenging to achieve in practice, as a result of the separation of budgets for mental and physical health care, and the incentive created by the Payment by Results system to maintain or increase activity levels in secondary care.

To design payment mechanisms that provide a better platform for the service changes described in this report it will be necessary to first develop a more detailed understanding of the costs associated with co-morbid mental health problems, based on routinely collected United Kingdom data rather than the international research findings reported here. To build this understanding, incentives may be needed to encourage professionals to record co-morbid mental health problems more systematically than is currently the case, for example within disease registries.

Payments to GPs under the Quality and Outcomes Framework (QOF) could be used to drive this kind of change in clinical and recording practices. Similarly, the Commissioning Outcomes Framework (COF) could be used to ensure clinical commissioning groups are held to account for making progress in improving care for people with long-term conditions and co-morbid mental health problems. There also needs to be adequate reimbursement for mental health professionals spending time building capacity in primary care and other parts of the system.

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A significant challenge for commissioning integrated mental health care is the need for robust outcome measurement in mental health. Commissioners need to be able to measure the value patients receive from different forms of mental health care to assess which service models offer the greatest opportunities. Although outcome measurement in mental health has improved in recent years, further work is needed.

Another development that could support local service redesign is the planned expansion in the role of clinical networks. Survey research has pointed to an acute shortage of mental health commissioning skills in primary care (Rethink 2010). Given this, there may be a case for establishing mental health networks to provide advice to clinical commissioning groups. A related issue is the role that clinical networks in other clinical areas can play in mainstreaming mental health assessment across the system; cancer networks report some success in doing this within oncology teams.

Recommendations for decision-makers at the national level

- Consider the impact of co-morbid mental health problems within all guidance and policy tools aimed at improving care for people with long-term conditions, including outcomes strategies, NICE quality standards and the NHS Outcomes Framework.
- Create incentives to promote collection of routine data on co-morbid mental health problems.
- Redesign payment mechanisms to support the development of more integrated services for people with long-term conditions and mental health problems. Explore opportunities to use QOF and/or COF to encourage this.
- Conduct or commission further work to improve outcome measurement in mental health.
- Consider what role clinical networks for long-term conditions can play in mainstreaming mental health skills across the system.

Conclusion

The evidence presented here suggests that the prevailing approach to dealing with long-term conditions – shifting towards self-management and reducing demands on formal care – is at risk of failing unless we recognise that many of the people affected have co-morbid emotional or mental health problems that can reduce their ability and motivation to self-manage.

The costs of co-morbid mental health problems are large, in both human and economic terms. In terms of NHS spending, at least £1 in every £8 spent on long-term conditions is linked to poor mental health and wellbeing. There are further costs to individuals and the economy. Developing more integrated support for people with mental and physical health problems could improve outcomes and play a significant part in helping the NHS meet the QIPP challenge.

The challenges of responding effectively to combined mental and physical health needs are part of a larger problem regarding supporting people with co-morbidities of any kind. Current service models are often orientated around single diseases and fail to

provide well-co-ordinated care to the large and growing number of people with multiple health problems.

To rise to this challenge, commissioners and providers need to strengthen the interface between mental and physical health care, and health professionals of all kinds will need to be equipped with basic mental health knowledge and skills. Finally, national bodies need to create a more enabling policy framework that rewards and values improved outcomes for people with combined mental and physical health problems.

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