



the work foundation

Body and Soul

Exploring the connection between physical and mental health conditions

Robin McGee and Katherine Ashby

September 2010



Acknowledgements

The authors would like foremost to thank the individuals who participated in the interviews for this project. We greatly appreciate them taking the time to share their experiences of working with a chronic health condition.

The experts who attended the focus group have also provided valuable information that has informed the content of the report. We appreciate the time they gave us in the first stages of the project.

We would also like to thank Professor Marc Suhrcke for reviewing an earlier draft and for his helpful feedback on making it a better and clearer report.

Thank you Tatiana Quadrello, Stephen Bevan, Laura Blazey and Penny Tamkin at The Work Foundation for your valuable feedback and to Ruth Holmes, Ann Hyams and David Shoesmith for your assistance in the production of this report.

Finally, thank you to Abbott, which sponsored this report.

The views expressed in this document are the authors' and do not necessarily reflect those of Abbott.

Executive summary	5
1. Setting the scene	9
1.1 The health of the UK workforce	9
1.2 The relationship between physical and mental health	10
1.3 Research questions	11
1.4 A multi-method approach	12
1.5 Structure of the report	13
2. The impact of co-morbidity	14
2.1 How common are co-morbid chronic physical and mental health conditions?	14
2.2 How does the relationship work?	15
2.3 Why is the connection between physical and mental health important?	20
2.4 A look into the relationship between mental health and some specific physical health conditions	22
2.5 Assessing the impact of chronic conditions on the workforce	34
2.6 Conclusion	38
3. Interventions to improve work outcomes	39
3.1 Introduction	39
3.2 What role can physical health play in the management of mental health?	41
3.3 What role can mental health play in the management of and recovery from chronic physical health conditions?	43
3.4 Workplace interventions	46
3.5 Health professionals' recognition of co-morbidity and its impact on return to work	50
3.6 Conclusion	54
4. Conclusion and recommendations	56
Bibliography	59
Appendix A: Case studies	69

List of Boxes, Figures and Tables

Box 1: Psoriasis and depression – Participant J	16
Box 2: Musculoskeletal disorders and Labour Force Survey data	23
Box 3: Rheumatoid arthritis – Participant C	24
Box 4: Cardiovascular diseases and Labour Force Survey data	28
Box 5: Chronic obstructive pulmonary disease and Labour Force Survey data	30
Box 6: Diabetes and Labour Force Survey data	32
Box 7: Definitions of prevention levels	39
Box 8: The benefits of a joint approach to improving health outcomes – diabetes	45
Box 9: Respiratory condition – Participant B	51
Figure 1: Employment rates by main health problem and with co-morbid mental health problem, 2009	37
Figure 2: Classifying intervention type by target audience	43
Table 1: Co-morbidity of depression and other conditions	14

- The burden of chronic health conditions is considerable. The World Health Organisation (WHO) estimates that chronic health conditions cause 86% of deaths and account for 77% of Europe's disease burden. These conditions include: respiratory conditions, cancer, diabetes, arthritis and heart disease – as well as mental health conditions. The incidence and prevalence of these conditions are expected to rise in the future, which means managing these conditions will become all the more important in the coming years – in both the employment and health care setting.
- We know that work, particularly good work, is good for health and good for recovery. Employers, as well as health professionals, have a role to play in reducing the economic burden of chronic health conditions. The costs to the economy are already high in terms of absence and sickness presence. For instance, musculoskeletal disorders (MSDs) cost an estimated £7 billion per year and mental health conditions an estimated £23.5 billion per year.
- What is lacking from the current discussion is the impact of co-morbid, or co-occurring, health conditions on individuals, employers and society. Co-morbidity is when an individual has more than one health condition. In particular, this report investigates the relationship between – and the impact of – chronic physical health conditions and mild to moderate mental health conditions in relation to the workplace and the wider labour market. To undertake this investigation we used a multi-method approach, which included conducting an expert focus group, exploring the literature, undertaking secondary data analysis and interviewing individuals with chronic health conditions about their experiences.
- Co-morbidity is common. The rate of mental health conditions is higher among those with a chronic physical health condition. For those with two or more physical health conditions the rate is even higher. However, this relationship is not fully understood. For some conditions the chronic physical health condition provokes a physiological response (bodily response), whereas in others the chronic physical health condition provokes a psychosocial response (adjustment) that impacts on mental health. Additionally, the causal relationship is unclear. Most researchers agree that the relationship between physical and mental health is bi-directional – meaning that physical health influences mental health and mental health influences physical health. Some research suggests that for arthritis the physical health condition precedes the development of a mental health condition. Yet other research suggests that mental health conditions precede the development of physical health conditions.

- Gaining a better understanding of the causal nature of the conditions could help to target interventions as well as reduce the impact of co-morbidity. Co-morbid physical and mental health conditions lead to worse health outcomes. For instance, some research suggests that functional disability is six times higher for individuals with co-morbid conditions. For those with just one condition, either physical or mental, functional disability was two or two-and-a-half times higher respectively.
- In addition to the inter-relationships between chronic physical and mental health conditions, the work environment can impact on individuals' health. Adding work stress to co-morbid health conditions can cause further problems, including more total disability days, partial disability days and extra effort days.
- The societal impact of co-morbid health conditions is unknown due to limited data. However, co-morbid health conditions often increase the number of days of absence taken and increase the number of days of arriving late or leaving work early because of ill health. In addition to this, co-morbid health conditions may increase the use of health care resources.
- To look in more depth at the relationship between physical and mental health we explored four groups of conditions:
 1. **Musculoskeletal disorders (MSDs)** comprise a group of conditions that affect the muscular and skeletal systems. This group includes chronic back pain and arthritis, such as rheumatoid arthritis and osteoarthritis. They are costly in terms of lost productivity and often co-occur with mental health conditions. For example, about 25% of people with arthritis report a co-morbid mental health condition. Co-morbidity can increase psychological barriers to functioning and increase the number of days out of role. Around 19% of individuals who were absent from work due to chronic pain were depressed, whereas only 8% who were not absent were depressed.
 2. **Cardiovascular diseases** refer to a group of conditions that impacts the heart and blood vessels and includes heart attacks and stroke. Cardiovascular disease is a major cause of disability and premature death and greatly contributes to the rising costs of health care. One in five individuals with coronary heart disease reports major depression. Additionally, poor mental health is a risk factor for cardiovascular disease. For example, women with coronary heart disease who lack social integration and have depressive symptoms are four times more likely to have a cardiac relapse within five years.

3. **Chronic obstructive pulmonary disease (COPD)** is a group of respiratory conditions that includes chronic bronchitis and emphysema. COPD is a significant cause of mortality and can be costly. Estimates suggest that COPD is responsible for 9% of certified sickness absence in the UK. Individuals with COPD are more likely to have mental health conditions such as depression and anxiety. The combination of COPD and anxiety can impact quality of life and lead to greater disability. Anxiety also increases the frequency of hospital admissions for COPD patients.
4. **Diabetes** is the umbrella term for the two types of diabetes: type 1 and type 2. Estimates suggest that diabetes deaths will double between 2005 and 2030. Individuals with diabetes are 50% more likely to suffer from common mental health conditions. A number of factors may contribute to the relationship. For example, individuals may experience psychological distress related to maintaining tight glycemic control. Co-morbidity can result in less adequate glycemic control, more complications, increased service use and lower medication adherence.

Interventions

- Various types of prevention and intervention activities are available to address the physical and mental health of the UK population. These range from increasing physical activity (primary prevention) to improving early identification and intervention (secondary prevention), to providing social support to individuals with chronic health conditions (tertiary prevention).
- Lowering the incidence of chronic health conditions as well as improving some of the social aspects, such as self-esteem and self-efficacy, may decrease at least some of the risk factors associated with mental health conditions. However, more research is needed to understand how this relationship works. Reducing the risk factors associated with chronic health conditions through increasing physical activity and reducing exposure to second-hand smoke, for example, and focusing on early identification and intervention can diminish the impact these conditions have on individuals.
- When focusing on individuals' mental health prevention activities centre on reducing the risk factors and increasing the protective factors associated with it. Individuals with chronic health conditions are at higher risk of having a mental health condition. Therefore, offering them support to adjust to their condition and diagnosing and treating mental health conditions in a timely manner are important priorities in reducing the impact of co-morbidity.

- Work can be good for health outcomes, particularly if this work is good work. Some of the factors associated with good work are that employees have some autonomy, control and flexibility over their work and that the workplace offers strong workplace relationships.
- In addition to promoting good work, the government and policymakers need to recognise that individuals need to receive appropriate health care, including timely diagnosis and intervention, as well as improve treatment of both physical and mental health conditions. By reducing the prevalence and incidence of physical and mental health conditions the negative interaction between conditions may be reduced, which would improve overall health and reduce the impact of health on work. Otherwise, sickness absence rates may fall while sickness presence rates rise, which could result in future sickness absence. Both sickness absence and health outcomes need to be addressed by coordinated efforts between employers and health professionals.

Recommendations

- The key recommendations from this report for all stakeholders include the following:
 1. Recognise the important impact chronic physical and mental health conditions have on individuals and work to reduce levels of stigma and discrimination associated with mental health and chronic physical health conditions.
 2. Continue focusing on and researching co-morbidity and its associated costs; increase the understanding of the causal relationships between chronic physical and mental health conditions.
 3. Identify, design and provide effective interventions that address chronic physical and mental health conditions, as well as effectively address co-morbidity; these interventions should be particularly geared to work outcomes and include promoting a good work environment.
 4. Seek to develop care pathways and national service frameworks that recognise mental health, quality of life and work as important outcomes for individuals with chronic physical health conditions; this improved, patient-centred care should incorporate the roles of various stakeholders.
 5. Address both the risk and protective factors associated with developing chronic physical and mental health conditions. Reducing risk factors and increasing protective factors will lower the impact of chronic physical and mental health conditions.

1. Setting the scene

1.1 Chronic health conditions cause 86% of deaths and 77% of the disease burden in the World Health Organization (WHO) European Region (WHO Europe, 2010). They include, among others, respiratory conditions, cancer, diabetes, arthritis and heart disease, as well as mental health conditions. The story of incidence, prevalence and future trends is different for each condition, as is the impact on individuals' mental wellbeing. For some conditions the advances in medicine mean an increase in the number of people who will make a full recovery. For other conditions there is no cure.

**The health of
the UK
workforce**

The incidence and prevalence rates for many chronic physical conditions are expected to rise in line with changing demographic trends. For example, rising obesity levels have been linked to a rise in conditions such as diabetes and cardiovascular diseases. Between 1996 and 2004 the number of people in the UK with diabetes alone increased from 1.4 million to 1.8 million and that number is set to rise further (Diabetes UK, 2004). An ageing population also has been linked to increases in arthritis and cardiovascular diseases, which predominantly affect people as they get older. Other conditions, such as Crohn's disease, are more likely to commence earlier in life. As such, for some conditions population change will have more impact on the labour market than others.

Chronic physical conditions also impact on the productivity of the UK economy and will continue to do so if action is not taken to assist those with these conditions. Employees will have to learn to manage these conditions while maintaining employment, while more employers will have to adapt workplace practices to support employees with chronic health conditions to enable individuals to continue working. Work, specifically good work, is good for health and often good for recovery, too (Coats and Lehki, 2008; Marmot, Allen, Goldblatt, Boyce, McNeish, Grady et al., 2010; Bartley, Sacker and Clarke, 2004). On the other hand, insecure and poor-quality employment is related to worse physical and mental health outcomes, which can lead to absence due to illness and eventually worklessness (Marmot et al., 2010). At an individual and national level investment in health can improve economic outcomes (Suhrcke, McKee, Sauto Arce, Tsova and Mortensen, 2006). Therefore, both employers and health professionals have a role to play in reducing the economic burden of chronic health conditions.

The costs of ill health to employers and the UK economy are already high and likely to increase in coming years. According to the CBI (2010) over 180 million days were lost to sickness absence in 2009. Within this number, more than a fifth of all time lost was due to long-term absence (20 days or more), which represents £3.7 billion. In addition to absence ill health contributes to presenteeism – when workers go in to work when they might have been too ill.

The TUC (2010) estimates that 57% of the workforce has gone to work when too ill during the last year. Research from The Work Foundation also finds that sickness presence is reported more often than sickness absence (Ashby and Mahdon, 2010).

The impact on the labour market of chronic physical diseases alone is dramatic. For example, musculoskeletal disorders have been estimated to cost the UK around £7 billion a year (Bevan, Passmore and Mahdon, 2007). The costs related to mental health conditions are also considerable. More specifically, the economic costs to society and business of absence from work and lost productivity in the UK are at least £23.5 billion each year (Sainsbury Centre for Mental Health, 2007). However, the costs of absence and benefits of treatment rarely take into account co-morbidity – when an individual has more than one health condition.

This report looks specifically at instances when both a chronic physical health condition and a mental health condition are present.¹ Research suggests that the costs associated with having physical and mental health conditions can be much greater than having solely one condition. As the prevalence of chronic physical health conditions as well as mental health conditions increases, these associated costs of co-morbid conditions are likely to escalate.

1.2
The relationship
between
physical and
mental health

The connection between physical and mental health conditions is infrequently discussed or recorded by public policymakers, employers or health professionals alike. While policy action is now increasingly geared towards prevention and early intervention it rarely takes sufficient account of the significant associations between the physical and mental aspects of wellbeing. However, this connection can be important to health and work outcomes.

Moreover, recognising the scale of co-morbidity, particularly for the workforce, is complex given that neither GPs nor employers record more than one cause of absence from work. Although there are rich bodies of work focused on the relationship of physical health to work and mental health to work these two bodies of literature are largely independent of each other. Literature explicitly linking the two types of conditions in the context of work is sparse (Kessler, White, Bimbaum, Qui, Kidolezi, Mallett et al., 2008) and what is often *not* considered is that workers with chronic physical health conditions often concurrently have mental health conditions.

Evidence does exist, however, of the co-morbidity between chronic physical health conditions and common mental health conditions such as anxiety and depression (Katon, Lin and Kroenke, 2007). Having a chronic physical condition can have a considerable impact on an individual's

¹ With the high cost and prevalence of mental health conditions and their impact on the lives of individuals with them we wanted to explore the role of physical health

mental wellbeing, affecting their psychological resilience, confidence and self-esteem. The mental wellbeing of an individual with a chronic physical health condition will impact on their ability to continue to play a role in the labour market. Existing literature suggests that the development of mental health conditions (including depression) in patients with chronic disorders can further impact on their wellbeing and recovery (and in cases of long-term absence, their eventual return to work). Indeed, research suggests that individuals have increased rates of sickness absence compared with those who are not depressed (Munce, Stansfield, Blackmore and Stewart, 2007).

To improve understanding of the issues identified above, particularly as they relate to the UK workforce, we explored the relationship between – and the impact of – chronic physical health conditions and mild to moderate mental health conditions in relation to the workplace and wider labour market.

1.3 To further investigate the relationship between chronic physical health conditions and mild to moderate mental health conditions and the impact on employees' participation in work we explored the following key questions with a focus on the UK:

Research questions

1. Impact of co-morbidity:
 - a. What evidence exists of the co-morbidity between chronic physical health conditions and mild to moderate mental health conditions?
 - b. How does the relationship between chronic physical and mental health conditions work?
 - c. To what extent does co-morbidity increase length and episodes of absence from work?
 - d. Can the costs to employers and society of the co-morbidity of these conditions be estimated?
2. Interventions:
 - a. What role can physical health play in the management of mental health?
 - b. What role can mental health play in the management of and recovery from chronic physical health conditions?
 - c. How, if at all, do workplace interventions recognise the links between physical and mental health?
 - d. Do health professionals recognise and take into account the issues surrounding co-morbidity and its impact on return to work?

1.4 In order to address the research questions above we employed a variety of methods, including the following:
A multi-method approach

- Expert focus group;
- Literature review;
- Secondary data analysis of the Labour Force Survey;
- Qualitative interviews with individuals who have chronic physical conditions.

Expert focus group

We invited a group of professionals from a wide range of backgrounds including research, policy, medical practice and the third sector to take part in a two-hour focus group discussion. Participants included specialists in chronic physical health conditions, such as musculoskeletal and cardiovascular conditions, mental health, public health and occupational health, among others.

Small and large group discussions focused on the chronic physical conditions participants felt impacted on the workforce in the UK, including criteria that should and could be used to assess the impact different conditions have on employers and employees. The criteria are discussed in Section 2. Participants' thoughts on actions required for employers and policymakers to address the links between chronic physical conditions and mental health were also discussed and will be outlined in Section 3.

Desk-based literature review: Co-morbidity and targeted interventions

A short, desk-based review was carried out to:

- Explore the relationship between chronic physical and mental health problems;
- Identify existing evidence on the co-morbidity of selected chronic physical conditions with mild to moderate mental health conditions, including where information was available on the impact on work outcomes and potential costs;
- Identify interventions that take account of the links between chronic physical conditions and mental health in the workplace.

Academic and grey literature were included in this short review. The articles were found by using PubMed, Google and Google Scholar and key words such as: chronic health, physical health (including musculoskeletal, arthritis, cardiovascular, respiratory and diabetes), mental health, co-morbidity, interventions and employment, among others. The findings from this review are presented in Sections 2 and 3 of this report.

Secondary data analysis: Labour Force Survey (LFS)

A secondary data analysis of the LFS (2009, Quarter 2) was undertaken to investigate levels of co-morbidity of broad categories of chronic physical health conditions with mental health conditions in the UK (as conditions were defined in the LFS). The findings from these analyses are presented in Section 2 of this report.

Qualitative interviews: Individuals' experiences of chronic physical conditions

Eleven qualitative interviews were conducted with employees who had a chronic physical condition to explore their experiences of their condition(s), including how (if at all) they felt it has affected their work and psychological health and wellbeing, and whether they received or would like to receive any support related to their conditions, especially via the workplace.

All of this information and data has been used to inform the content of this report, which is geared towards policymakers, employers and opinion leaders in the field of workplace health and employment.

1.5 Structure of the report

This report seeks to provide answers to the questions above. It focuses on chronic physical health conditions related to the musculoskeletal system and connective tissue, cardiovascular system and respiratory system, as well as to diabetes. This group of conditions were selected due to their high prevalence in the working-age population and through feedback received from the expert focus group. For each of these conditions we explore their relationship with mental health outcomes. A few other chronic health conditions are highlighted through short case studies. The outline of the report is as follows:

- Section 2 describes the impact of the co-morbidity of chronic health conditions and mild to moderate mental health conditions;
- Section 3 highlights the interventions available to improve work outcomes;
- Section 4 provides the conclusions from the project and recommendations for key stakeholders.

2. The impact of co-morbidity

2.1 Co-morbidity between chronic physical and mental health conditions, such as depression and anxiety, are common (Moussavi, Chatterji, Verdes, Tandon, Patel and Ustun, 2007; Carney and Freedland, 2000). While not everyone with a chronic physical health condition will have a mental health condition too, if an individual has one condition, then the likelihood of having another condition increases. More specifically, a worldwide study on the prevalence of physical and mental health conditions suggests that the rate of mental health conditions is higher among individuals with chronic physical health conditions; for individuals with two or more physical health conditions the rate of depression is even higher (Moussavi et al., 2007).

How common are co-morbid chronic physical and mental health conditions?

Studies have found increased prevalence of major depression among people with a number of conditions (see Table 1).

Table 1: Co-morbidity of depression and other conditions

<ul style="list-style-type: none">• Chronic fatigue syndrome• Fibromyalgia• Stomach or intestinal ulcers• Bowel disorders such as crohn's disease and colitis• Multiple sclerosis• Urinary incontinence• Epilepsy• Asthma• Food allergies• Back problems• Cancer• COPD or emphysema	<ul style="list-style-type: none">• Migraine• Thyroid conditions• Arthritis or rheumatism• Stroke• Parkinson's disease• Diabetes• Heart disease• High blood pressure or hypertension• Glaucoma• Cataracts• Rhinitis or allergies• Dermatological conditions
--	--

Sources: Patten, Williams, Lavorato and Eliasziw, 2009; Farmer, Korszun, Owen, Craddock, Jones, Jones et al., 2008; Picardi, Abeni, Melchi, Puddu and Pasquini, 2008; Moussavi et al., 2007; Patten, Beck, Kassam, Williams, Barbui and Metz, 2005; Sampogna, Picardi, Chren, Melchi, Pasquini, Masini et al., 2004.

Co-morbid physical and mental health conditions not only impact on mental wellbeing, but also general health (Moussavi et al., 2007). In other words, the health of an individual with a co-morbid mental health condition is often worse.

While under-studied and less prevalent anxiety is frequently associated with chronic physical health conditions and may even interact with depression. One study looking at a variety of physical health conditions suggests that anxiety may have an even greater impact on functional status than chronic depression or physical health (Surtees, Wainwright, Khaw and Day, 2003) or at least equals the impact that depression has on outcomes (Roy-Byrne, Davidson, Kessler, Asmundson, Goodwin, Kubzansky et al., 2008). Higher levels of anxiety have been found among individuals with gastrointestinal diseases, asthma, cardiovascular diseases, chronic pain and cancer (Roy-Byrne et al., 2008). While more research is needed to understand the varying prevalence rates of different health conditions and specific mental health conditions, it is widely acknowledged that both physical and mental health interact with each other.

2.2 Although many recognise the connection between physical and mental health the nature of the relationship is not fully understood. Some conditions may impact individuals through a physiological response whereas others may work through a psychosocial response. Evidence suggests that conditions, such as epilepsy or multiple sclerosis, may cause depression through physiological changes. This could be the case for some cardiovascular conditions too. For example, increased mortality in individuals with cardiovascular disease may be related to the relationship between depression and interruptions to the autonomic nervous system (Carney and Freedland, 2000).

How does the relationship work?

However, for other conditions, such as arthritis and diabetes, psychosocial factors play an important role in contributing to the development of depressive symptoms, such as adjustment to the condition. Some depressive symptoms may be the result of adjusting to changes related to physical dysfunction or discomfort associated with the physical health condition (Carney and Freedland, 2000). In both instances the psychosocial environment can play an important role in an individual's recovery or management of the condition. Individuals who are depressed following a stroke or acute myocardial infarction take longer to recover than non-depressed individuals (Carney and Freedland, 2000).

The channel by which the relationship operates is also difficult to discern. However, improved understanding about the causal relationships between physical and mental health conditions could advance and target the interventions offered to individuals. Much of the research in this area is based on cross-sectional data, limiting the ability to identify cause and effect. With the information that is available most researchers agree that the relationship is bi-directional – meaning that both physical and mental health impact on each other.

A few studies have made some conclusions about the direction of the relationship for specific conditions. Arthritis preceded the development of a mental health condition in a longitudinal analysis of Dutch data (van 't Land, Verdurmen, ten Have, van Dorsselaer, Beekman and de Graaf, 2010). However, other research has found that depression preceded a range of chronic physical health conditions, including arthritis (Patten, Williams, Lavorato, Modgill, Jette and Eliasziw, 2008). Similarly, obesity – which is a major risk factor for a range of chronic health conditions – has been shown to follow common mental health conditions (Kivimaki, Lawlor, Singh-Manoux, Batty, Ferrier, Shipley et al., 2009).

One example of a situation where a mental health condition precedes a physical health condition is when someone who has undiagnosed depression begins eating poorly and stops exercising. As her weight increases she also experiences symptoms related to diabetes. Soon after this she is diagnosed by her GP with type 2 diabetes. However, she does not follow medical advice to control her diabetes. In this case the individual's depression affected her ability to maintain a healthy weight as well as follow medical advice that can prevent future complications.²

On the other hand, one of our interviewees highlighted his perception of how his physical health condition preceded his mental health condition. This case study and experience is reported in the box below.

Box 1: Psoriasis and depression – Participant J

Work

Participant J works in the health sector. His main role revolves around working with people, as well as managing programmes. Participant J's work varies depending on the day. Some of the work involves administrative responsibilities, but mostly he works directly with other people. He typically works longer days of around nine-and-a-half hours for four days a week.

The main reasons Participant J goes to work are because he loves his job and working with people. His job also provides a source of income.

Cont.

² Based on findings from Lin, E.H.B., Katon, W., von Korff, M., Rutter, C., Simon, G.E., Oliver, M. et al. (2004). Relationship of depression and diabetes self-care, medication adherence and preventive care. *Diabetes Care*, 27 (4), 2154-2160 and Mezuk, B., Eaton, W.W., Albrecht, S. and Golden, S. (2008). Depression and type 2 diabetes over the lifespan: A meta-analysis. *Diabetes Care*, 31 (12), 2383-2390

Cont.

Health conditions

Participant J's main health condition is psoriasis, which is a skin condition. He has had the condition for more than 10 years and was diagnosed in his late teens/early 20s. When Participant J was diagnosed it was really hard at such a young age to be told that he had a condition that had no cure. The symptoms related to his psoriasis are that his skin cells regenerate quicker than normal and he gets raised patches on his skin. At its worst it has affected a good portion of his body and it can lead to very sore, dry and flaky skin. Related to the psoriasis he has had some back pain and some problems with anxiety and depression.

He was in employment at the time he was diagnosed with the psoriasis. Participant J told his employer about his condition because it is not something he can hide. Although the psoriasis has had little effect on his physical ability to work the reactions of other people to his condition have been insensitive at times. Occasionally, the insensitivity of other people would frustrate him and if his psoriasis was particularly active or painful he may have reacted negatively to other people. Those occurrences were not frequent, however.

He has been lucky to have a supportive work environment, but when the psoriasis was active he did worry that if it got to the point when he had to go to occupational health he may have had to take time off from work:

'I think jobs now have become more sensitive to people with chronic conditions, but there was always this fear in the back of my head that if I ended up in occupational health because I had loads of time off, then they would tell me that I couldn't work any more and I'd be retired. And I think that would have been game over for me to be honest.'

The psoriasis also impacted on his day-to-day life when it was active:

'...[T]here's loads of things that people would take for granted that you wouldn't do. Like I wouldn't wear shorts, at its worst, when it was really bad. I didn't wear shorts for three years. I didn't go swimming for five years because you are just so conscious of the fact and because people are very insensitive. And even though the sun is very good for it I was very reluctant to expose it.'

Cont.

Cont.

Participant J feels his mental health deteriorated as his condition got worse, particularly because the psoriasis changed his body image and the way others saw him. Participant J does not 'think [he] would ever have had a mental health condition had [he] not had a skin condition.' However, he recognises that a number of factors may have contributed to this. His condition was getting worse and he was not sleeping. Then he was between jobs and right before he was scheduled to start his new job his mental health deteriorated. Around this time a family member was also diagnosed with a serious health condition. In the end he gave up the job that he was going to start to take a few months off.

He has not told his employers about his depression and anxiety because of the stigma and discrimination associated with mental health problems. However, Participant J tried to reduce the impact the psoriasis and depression had on his ability to continue working:

'I wouldn't allow the condition to beat me...I had really dark days of depression where, when I was clinically depressed, I would still drag myself to work because I just couldn't bear to sit at home...Work was always something that I suppose kept me going really.'

Treatment and interventions

Participant J feels lucky to have a good team of health care professionals and specialists to help him treat and manage his condition. He has received medication to control his psoriasis symptoms and has been symptom-free for a number of years now.

He also knows that he made a conscious choice to receive this medication in spite of some of the side effects because he 'could not live with [psoriasis] any more'. He feels lucky that the treatment worked. However, he still worries that it may come back someday and is not sure whether he would have the coping skills to deal with it.

He also receives medication for his depression. His current health professionals recognise and understand the connection with mental health and help him manage it. They have also provided support that Participant J feels goes beyond what other health professionals might do. For example, Participant J mentioned that going to see his health care professionals 'feels like going home to family'. However, when initially diagnosed he did not receive any additional support:

Cont.

Cont.

'When I was diagnosed I think people underplayed the psychological elements of it. So there was no counselling, no support, no talk therapy, there was none at all of that. It was just: 'You've got a condition; get on with it.' And I still think it's like that.'

To provide additional help with his mental health, particularly during his most difficult period, he saw a counsellor who was really supportive and 'got him out of the vicious cycle.' He received one-to-one counselling for about three to four months, which helped him to readjust his thinking about his condition and improve his confidence. Around that same time his psoriasis symptoms got better and he was ready to return to work. In order to go back to work Participant J started with a part-time job with just a day per week and then gradually increased his hours. He did this to get his 'confidence back'. Soon after that he went for an interview and got another job to go back into full employment.

What helped the return to work most was 'going through counselling, having medication, having support from health care workers...That allowed me to then have the confidence to [return].'

Work is really important to Participant J and provides an opportunity to focus on things other than his psoriasis:

'...[T]he fact that I had a job and I think maybe working with people who were less fortunate than me kind of made me think, well, this is bad, but it could be a lot worse.'

Participant J also feels that work helped with his recovery and his wellbeing:

'I think the thing about it as well, getting out of the house and interacting with other people and feeling that you have purpose, all of that is fundamental to getting over the mental health [aspect] and living with the condition. I couldn't think of anything worse than being stuck at home, I really couldn't. That's the thing for me. I go to work. I work with people I absolutely adore working with.'

His employers have been supportive in providing time off to attend appointments and arranged his schedule to minimise the amount of time off needed. Additionally, Participant J's family and partner have been really supportive in helping him deal with his conditions.

Understanding the relationship between physical and mental health, as well as the causal nature of various conditions, could improve the ability to provide appropriate and effective interventions. These interventions could improve health outcomes, quality of life and workability, in addition to providing other benefits.

2.3
Why is the connection between physical and mental health important?

Three prevailing theories have been used to explain the impact of co-morbid physical and mental health conditions: additive, synergistic effects and antagonistic.

Additive: Some research suggests that having both physical and mental health conditions have an additive effect on an individual's overall health status. That is to say that the effects of having both a mental and physical health condition are added together (Moussavi et al., 2007).

Synergistic: Other research suggests that the combination of physical and mental health conditions may be even greater than solely additive (Scott, Von Korff, Alonso, Angermeyer, Bromet, Fayyad et al., 2009; Schmitz, Wang, Malla and Lesage, 2007). Individuals with both physical and mental health conditions experience more disability (synergistic effects) than the sum of the disability associated with the single conditions combined (Scott et al., 2009; Schmitz et al., 2007).

Antagonistic: Antagonistic effects, where the overall impact is less than the sum, have also been found in the research (Merikangas, Ames, Cui, Stang, Ustun, Von Korff et al., 2007).

Schmitz et al. (2007) found that functional disability is six times higher for individuals with both chronic physical health conditions and major depression compared to individuals without either condition. For those with just a chronic physical health condition or major depression the rate of functional disability was two times higher or two-and-a-half times higher respectively when compared with healthy individuals (Schmitz et al., 2007). In this case if the effect was additive, then functional disability would be four-and-a-half times higher, as opposed to six. If the effects were antagonistic they might be four times greater. What this points to is that individuals with more than one condition experience greater morbidity than those with solely one condition.

In addition to the medical aspects, social aspects influence health outcomes for individuals. For many people work is an important part of their lives. However, some working conditions can be detrimental to health outcomes, particularly for those with chronic physical and mental

health conditions. Research on Canadian workers finds that individuals who had a mental health condition, physical health condition and work stress reported more total disability days, partial disability days and extra effort days compared to individuals without work stress (Dewa, Lin, Kooehoorn and Goldner, 2007). More or less, the researchers identified a dose-response relationship among the three factors – physical health, mental health and work stress. Having all three usually meant more disability than having just two and having two usually meant more disability than having just one.

Co-morbid conditions not only affect an individual's overall health status, but also have societal impacts. The indirect costs of disability are increasingly being recognised. However, few consider the role of co-morbidity (Merikangas et al., 2007).

The evidence suggests that common mental health problems cause the greatest number of days' sickness absence and contribute greatly to sickness presence. Couple mental health with physical health conditions and the indirect costs are likely to be even more substantial. For example, the number of days individuals with both conditions are unable to work increases (Baune, Adrian and Jacobi, 2007; Buist-Bouwman, De Graaf, Vollenbergh and Ormel, 2005; Sprangers, de Regt, Andries, van Agt, Bijl, de Boer et al., 2000). Individuals with both chronic pain and a mental health condition are more likely to be limited in their work because of health, to have missed more days of work and to have more days of arriving late or leaving work early because of ill health (Braden, Zhang, Zimmerman and Sullivan, 2008).

In addition to impacting work, co-morbid chronic physical and mental health conditions can lead to increased use of health care resources (Ciechanowski, Katon and Russo, 2000). For instance, individuals who are depressed are three times more likely not to follow recommendations for medical treatment (DiMatteo, Lepper and Croghan, 2000). Treatment adherence may also be lower for individuals with anxiety (Kuhl, Fauerbach, Bush and Ziegelstein, 2009).

The evidence above highlights the important role co-morbidity plays in overall health, work outcomes and health behaviours of individuals with both physical and mental health conditions. While the effects of co-morbid conditions are rarely accounted for when evaluating the direct and indirect costs of health conditions the evidence suggests that co-morbidity would at least increase the direct and indirect costs.

2.4
A look into the
relationship
between mental
health and some
specific physical
health conditions

About 30% of the UK population report having at least one health problem that lasts longer than one year (LFS, 2009 Quarter 2). Of those with a long-lasting health problem around 50% report that their health affects the *kind of* paid work that they can do and around 42% report that their health affects the *amount of* paid work that they can do (LFS, 2009 Quarter 2).

According to LFS data (2009, Quarter 2) respondents identified the following five conditions as their main health problem, in order of prevalence:

- Musculoskeletal disorders: 9.6%;
- Heart, blood pressure or blood circulation problems: 6.1%;
- Chest or breathing problems, asthma, bronchitis: 3.7%;
- Diabetes: 2.0%;
- Depression, bad nerves or anxiety or mental illness: 1.9%

Many with a health problem report more than one condition. LFS data (2009, Quarter 2) suggest that about 15.5% report at least two or more current conditions. Of those with a current physical health condition as their main health problem around 6.7% report a previous or current mental health problem. In the total population around 3.8% report a previous or current mental health problem. These figures seem low compared with the published literature, but this may be a reflection on the questionnaire used for the survey, which is not designed to assess health status.

As mentioned earlier the effects of and relationships between some physical health conditions with mental health conditions can vary. We looked in more depth at musculoskeletal disorders, cardiovascular conditions, respiratory conditions and diabetes to better understand how they relate to mental health and then how this subsequently impacts on work outcomes. The prevalence rate of co-morbid mental health problems is presented with each condition from the available LFS data. For each of these conditions mental health problems were significantly more likely to occur among those with the chronic health condition explored than those without the condition.

2.4.1 Musculoskeletal disorders

Musculoskeletal disorders (MSDs) are a group of over 200 conditions. Common MSDs include osteoarthritis, inflammatory arthritis (such as rheumatoid arthritis, ankylosing spondylitis and psoriatic arthritis, among others), fibromyalgia, back pain and musculoskeletal injuries. These disorders are common and pervasive and can result in severe long-term pain and physical disability (Woolf and Pfleger, 2003).

MSDs are the most common type of work-related illness (HSE, 2009). Estimates suggest that the prevalence of MSDs will only increase in the coming years – particularly with the growth of obesity and the ageing population (Vaughan-Jones and Barham, 2009). It is estimated that in the working-age population more than 6.5 million cases of MSDs are present and that by 2030 more than 7 million cases are estimated for the working-age population (Vaughan-Jones and Barham, 2009).

Box 2: Musculoskeletal disorders and Labour Force Survey data

According to the LFS data around 13.5% reported musculoskeletal-related problems or disabilities – 9.6% report it as their main health problem. Of respondents with musculoskeletal-related conditions around 14.5% also reported mental health problems. When MSDs were the main condition around 8.6% reported past or current mental health problems.

Not only are MSDs highly prevalent, but they can also be costly to the UK's society and economy. Both the direct costs of health care utilisation and the indirect costs associated with lost productivity, for example, increase the impact these disorders have on the UK.

One review of work productivity loss due to rheumatoid arthritis estimates that work loss is experienced by between 36% and 85% of people with rheumatoid arthritis and that this work loss is around 39 days in one year (Burton, Morrison, Maclean and Ruderman, 2006). In addition, MSDs can lead to work disability and early retirement (Dagenais, Caro and Haldeman, 2008). In the UK, after mental health conditions, MSDs comprise the largest percentage of cases of Incapacity Benefit claimants. As of November 2009, MSDs comprised 18.2% of claimants (DWP, 2010a). For Disability Living Allowance, people with MSDs account for the largest group of claimants. The Work Foundation's 2007 *Fit for Work?* UK report estimated that MSDs cost the UK economy £7 billion each year (Bevan, Passmore and Mahdon, 2007).

As the research suggests, arthritis is a significant cause of disability (Verbrugge and Juarez, 2008). MSDs can cause work-limiting pain and fatigue that many people feel unable to disclose. Up to 30% of workers with arthritis are reluctant to disclose their condition to colleagues and managers out of fear of discrimination (Gignac, Cao, Lacaille, Anis and Badley, 2008) and 22% of workers do not tell their employers about their condition (Gignac, Badley, Lacaille, Cott, Adam and Anis, 2004).

MSDs have a psychosocial dimension that affects individuals and their families and carers (Woolf and Pfleger, 2003). The pain and physical disability associated with these conditions can affect social functioning and mental health, which impacts on quality of life (Woolf and Pfleger, 2003) as well as on mobility and general health (Picavet and Hoeymans, 2004).

For individuals with more than one MSD health-related quality of life can be even lower (Picavet and Hoeymans, 2004). Often, reductions in quality of life occur near the onset of the condition, which affects the physical as well as mental and social aspects of functioning (Roux, Guillemin, Boini, Longuetaud, Arnault, Hercberg et al., 2005). The case study below highlights some of the experiences of adjusting to rheumatoid arthritis.

Box 3: Rheumatoid arthritis – Participant C

Work

Participant C works in human resources. Her main job responsibilities involve working with staff, providing advice, writing briefs and completing paperwork. Her days vary greatly. Some days consist of meetings all day long whereas others comprise desk work along with a mix of other activities.

Her main reasons for going to work are for the challenge and reward it brings to her life. She enjoys what she does and it helps pay the bills.

Health conditions

Participant C has rheumatoid arthritis (RA) and has had it since she was in her mid to late 20s. It took a number of months to be diagnosed and then to get the medication right. With RA 'your health isn't very robust in the sense that because you always feel rough you feel tired.' The most obvious impact of the RA is pain, which can be intense. In addition to the pain, fatigue also impacts her day-to-day life:

'I have to organise my social life. I can't have too many nights out. My job is demanding, and I know that, but on top of my job I can't do three or four late nights in a week. I have to think: "OK, I'm out two nights this week already, I'll have to do it next week." And then periodically I'll have days where I need to sleep and I will spend most of the day in bed.'

Participant C was relieved once she was diagnosed because it helped to explain her symptoms. However, it has been difficult to make the adjustment because she had a very active life. This included playing sports, which was then limited due to her condition. It took her a while to come to terms with her condition and to learn to balance her activities.

Cont.

Cont.

Before being diagnosed Participant C's mental health was good. Around the time of the diagnosis it took her a while to adjust. She lost touch with some people because she was not feeling well and was afraid about having an attack while being out. Participant C estimates that it took between 15 to 20 months to really 'get to grips with how to cope with it.' While she has more or less adjusted to her condition she is still affected some days by it and can still be angry about it.

Participant C also has another health condition. However, it does not affect her day-to-day life as much as the RA. The main symptom has been weight gain.

Treatment and interventions

All the treatment that is required for the other health condition is taking a pill in the morning. She also receives anti-TNF treatment for her RA, which she finds really helpful. Sometimes, the number of medical appointments needed to manage her RA can frustrate her because it can disrupt her life. Often the interaction with the doctor takes no longer than a few minutes. Participant C has received some occupational therapy as a result of a flare-up a few years ago. The advice from the occupational therapist about using specific types of equipment (eg a fat pen) and ways of holding objects or standing better was helpful. However, she wishes she had received that advice slightly earlier because it may have reduced subsequent pain.

Participant C has always declared her RA to her employer and has usually received support from her employers. For example, her employer offers flexibility around her regular medical appointments. Her line manager also works with her on her holiday schedule to ensure that she takes regular breaks throughout the year. She does have a tendency to take on too much work sometimes and she feels her manager tries to keep an eye on her. Participant C also schedules her working hours so she regularly has a day off every few weeks, which gives her a chance to catch up and have an easy day to run errands.

Participant C has tried to minimise the impact her condition has had on her work. In fact, there have been times when she has gone into work when she probably should have stayed at home. This is because she does not want people to think she is 'slacking'.

Cont.

Cont.

Her colleagues have been really supportive. For instance, when she has had difficulty getting a file out of the drawer a colleague will help to get it out:

'I get a huge amount of emotional support from my colleagues because they're the people I'm spending most of my time with so they know if I'm having a bad time. If I need a bit of help they'll lift and carry things when I really need [them to]. And laugh at me when I need to be laughed at if I'm feeling a bit precious! They're fantastic. That's where I get most of my support from, my friends.'

When Participant C was diagnosed and subsequently signed off from work she recognised that it was important for her to continue working. Therefore, she asked to work a few hours during this time period:

'When I was formally diagnosed I was signed off for four weeks and I thought if I stay at home for four weeks I will go out of my mind. As much as anything I'll just sit here dwelling on the whole thing and we agreed that I would work half time during that four weeks. In recognition, I mean they signed me off for a reason, I was overdoing it and needed to rest. So I did half time. I went in late and left early for that four weeks. And that was enough, I think, for me just to acknowledge it and rest and probably thinking about it that was important to the psychological adjustment to it.'

Individuals with arthritis may experience 'spillover' where stress from their job increases the level of stress related to dealing with and managing arthritis, and vice versa (Gignac, Sutton and Badley, 2006). Some psychosocial risk factors such as high job demands, time pressures and lack of control can make MSDs worse (HSE, 2010a).

Arthritis can be co-morbid with both physical and mental health conditions (Stang, Brandenburg, Lane, Merikangas, Von Korff and Kessler, 2006). For example, ischemic heart disease is the leading cause of death in RA. It reduces life expectancy by a median of 10 years in men and 11 years in women (Minaur, Jacoby, Cosh, Taylor and Rasker, 2004). About 25% of individuals with arthritis report a co-morbid mental health condition (Stang et al., 2006).

While the causal relationship between MSDs and mental health conditions is still unclear, some research suggests that the onset of arthritis precedes the onset of a mental health condition. More specifically, in a longitudinal analysis of Dutch data, pre-existing arthritis increased the risk of developing a mood disorder – and this was especially true for individuals aged under 45 (van 't Land et al., 2010). Other research shows that depression preceded a number of chronic conditions, including arthritis (Patten et al., 2008). More research into the causality and direction of the relationship between MSDs and mental health is required.

The burden of illness associated with MSDs and major depression is significant. Co-morbid mental health conditions can be particularly disabling to personal relationships and social life, as well as provide psychological barriers to functioning (Ormel, Petukhova, Chatterji, Aguilar-Gaxiola, Alonso, Angermeyer et al., 2008). Poor physical functioning is associated with higher rates of depression and anxiety for those with rheumatoid arthritis (Soderlin, Hakala and Nieminen, 2000). Co-morbidity accounts for the most days out of role, which includes being unable to work or carry out normal activities (Stang et al., 2006; Von Korff, Crane, Lane, Miglioretti, Simon, Saunders et al., 2005).

One study found that 19% of individuals who were absent from work due to chronic pain – including many MSDs – were depressed whereas only 8% who were not absent were depressed (Munce et al., 2007). In fact, among inflammatory arthritis patients, depression is a frequent co-morbid condition that predicts work disability (Löwe, Willand, Eich, Zipfel, Ho, Herzog et al., 2004) as well as impaired physical health and reduced quality of life (Strine, Hootman, Okoro, Balluz, Moriarty, Owens et al., 2004). Similarly, around 20% of individuals with chronic back pain reported major depression compared with around 6% for individuals without pain.

As the evidence above suggests MSDs are frequently co-morbid. Combine co-morbidity with the high prevalence of MSDs, the effect on functional capacity that these conditions can cause alone and the impact is substantial.

2.4.2 Cardiovascular diseases

Cardiovascular diseases include a group of conditions that involve the heart and blood vessels. Examples include coronary heart disease (heart attacks), cerebrovascular disease (stroke), peripheral arterial disease, congenital heart disease, deep vein thrombosis and pulmonary embolism. The major causes of cardiovascular disease are tobacco use, physical inactivity and an unhealthy diet (WHO, 2009a). Cardiovascular diseases are major causes of disability and premature death and greatly contribute to the rising cost of health care.

Box 4: Cardiovascular diseases and Labour Force Survey data

LFS data suggest that around 11.2% of respondents reported heart, blood pressure or blood circulation problems as one of their health problems. As mentioned earlier, these conditions are reported by around 6.1% as their main health problem. Of those reporting heart problems as one of their health problems around 11.2% reported mental health problems. When heart problems were reported as the main health condition around 4.3% reported previous or current mental health problems.

Coronary heart disease is the leading cause of death globally (WHO, 2005). In the UK the prevalence of coronary heart disease was 6.5% for males and 4.0% for females in 2006 (NHS, 2009). The prevalence rate for stroke in the UK was 2.4% and 2.2% for males and females respectively. For both males and females the prevalence rate of coronary heart disease or stroke for individuals between the ages of 55 and 64 was 8.7% (NHS, 2009). By 2030, over 1 million working-age people will have coronary heart disease (Vaughan-Jones and Barham, 2009). For strokes there were around 335,000 cases in 2008. By 2030 it is estimated that stroke will affect more than 367,000 of the working-age population (NHS, 2009). Estimates suggest that coronary heart disease alone costs £7.9 billion (Vaughan-Jones and Barham, 2009).

As with other conditions the majority of the costs relate to indirect costs such as lost productivity and the costs associated with informal care. More specifically, for coronary heart diseases health care costs comprise around 45% of the overall cost, whereas lost productivity due to mortality and morbidity and informal carer costs comprise around 55% of the overall bill (Vaughan-Jones and Barham, 2009).

Around one in five coronary heart disease patients report major depression (Rutledge, Reis, Linke, Greenberg and Mills, 2006). In fact, research suggests that poor mental health is a risk factor for cardiovascular disease (Friedli, 2009; Surtees, Wainwright, Khaw and Day, 2003). Depression in individuals with cardiovascular diseases is linked to increased mortality rates (Barth, Schumacher and Herrman-Lingren, 2004; Rutledge, Reis, Linke, Greenberg and Mills, 2006), increased general health care use and clinical events (Rutledge et al., 2006), as well as lower medication adherence rates (Carney and Freedland, 2000). In the immediate three years after a stroke, post-stroke depression is associated with an increased risk of death by more than 10% (Williams, Ghose and Swindle, 2004). Depression is associated with worse prognosis in patients with unstable angina (Lesperance, Frasure-Smith, Juneau and Theroux, 2000) and heart failure (Vaccarino, Kasl, Abramson and Krumholz, 2001).

For women in particular the relationship between cardiovascular disease and mental health can be even more costly. Some researchers hypothesise that the psychosocial factors, including social isolation and depression, may explain the higher mortality rate for women following a heart attack (Carney and Freedland, 2000). More specifically, women with coronary heart disease aged 65 or younger who lack social integration and have depressive symptoms are four times more likely to have a relapse within five years compared with women who do not have these symptoms (Horsten, Mittleman, Wamala, Schenck-Gustafsson and Orth-Gomer, 2000). Other research (Lesperance et al., 2000) looking at both men and women who had heart attacks also found a four-fold increase in subsequent fatal or non-fatal events for those with depressive symptoms (note that individuals did not necessarily experience major depression here).

A dearth of research exists examining the relationship between cardiovascular conditions and anxiety (Lane, Carroll and Lip, 2003; MacMahon and Lip, 2002). However, one study suggests that while depression and anxiety account for an increased risk of cardiac events, it was anxiety that accounted for the relationship with depressive symptoms, as well as the increased health care utilisation among individuals who have had a heart attack (Strik, Denollet, Lousberg and Honig, 2003).

Not only do increased health-related problems affect individuals with co-morbid mental health conditions, but also quality of life is often lower too. The relationship appears to be strong and supports the recognition of and interventions to address co-morbidity (Lane, Carroll and Lip, 2003). The causal relationship between cardiovascular conditions and mental health is hard to identify however (Lane, Carroll and Lip, 2003).

With the rising prevalence of cardiovascular conditions and the impact on morbidity and mortality these conditions already significantly burden the UK's working-age population. Couple this with co-morbid mental health conditions and health outcomes – as well as productivity – appear to be worse.

2.4.3 Chronic obstructive pulmonary disease (COPD)

Chronic obstructive pulmonary disease (COPD) is an umbrella term used to describe a number of conditions, including chronic bronchitis and emphysema. The symptoms, which include shortness of breath and difficulty breathing, can seem similar to those of asthma and research has found that people with asthma are at an increased risk of COPD (Silva, Sherrill, Guerra and Barbee, 2004).³ Smoking is a leading cause of COPD. Other risk factors include aspects of

³ Silva, Sherrill, Guerra and Barbee (2004) found that among a US population having asthma made people up to 12.5 times more likely to develop COPD

social deprivation, diet, occupational exposure to dust and indoor pollution such as smoke from wood and coal fires (British Lung Foundation, 2009).

Box 5: Chronic obstructive pulmonary disease and Labour Force Survey data

According to LFS data around 6.2% reported chest or breathing problems, asthma or bronchitis as one of their health problems; 3.7% reported it as their main health problem. Of those reporting chest problems as one of their health problems around 14.4% reported mental health problems. When respiratory conditions were reported as the main health problem around 4.6% reported previous or current mental health problems.

An estimated 3.7 million people in the UK have COPD, but it is thought that only 900,000 of these people are currently diagnosed and receiving treatment and care (British Lung Foundation, 2009). This means that an estimated 2.8 million people are unaware they have a disease that if left untreated could severely restrict their lives and potentially kill them (Lopez, 2006; Stang, Lydick and Silberman, 2000).

The incidence of COPD is increasing and it is expected to be the third leading cause of death worldwide by 2020, exceeded only by heart disease and stroke (WHO, 2009b). COPD has been increasing nearly three times faster amongst women than men in the UK (British Lung Foundation, 2009).

COPD is the fifth biggest cause of mortality (British Lung Foundation, 2009). COPD is also one of the most costly inpatient conditions treated by the NHS as the second most common cause of emergency admission to hospital. The direct cost of providing care in the NHS for people with COPD is almost £500 million a year – more than half of which relates to hospital care. The estimated annual cost of treating people with mild COPD is £149 per COPD patient; it is £1,307 for a person with severe COPD (British Lung Foundation, 2009).

Additional COPD costs are related to lost productivity. COPD is responsible for 9% of certified sickness absence in the UK and in 1998 the cost of lost productivity was £1.5 billion per year (Vaughan-Jones and Barham, 2009). For asthma, in 2002 lost output cost the UK around £1.2 billion (Vaughan-Jones and Barham, 2009). In total the likely costs of COPD are even higher because so many people are not properly diagnosed.

A number of research studies have investigated the work-related causes of COPD linked to air pollution, but less work has examined COPD's impact on work disability. To this end, Eisner, Yelin, Trupin and Blanc (2002) explored the relationships between work-related disability and COPD in the USA. They found that in 2002 one in 17 cases of non-participation in the labour force could be attributed to COPD or asthma. Additionally, compared with adults with no chronic health conditions, adults with COPD or asthma had a greater risk of self-reported diminished general health – in addition to worse mental health status. The prevalence of depression (Schane, Woodruff, Dinno, Covinsky and Walter, 2008) and anxiety (Brenes, 2003) is higher among individuals with COPD compared with the general population.

Brenes (2003) has explored the relationships between anxiety and COPD and reports that rates of anxiety disorder are much higher in patients with COPD than in the general population. Moreover, generalised anxiety disorder (GAD) is around three times more prevalent in COPD patients than the general population: the prevalence of GAD among patients with COPD is 10% to 15.8% compared with lifetime rates for GAD of 3.6% to 5.1% in the general public (Brenes, 2003). It has also been reported that the prevalence of panic disorders in patients with COPD is 8%, which is almost five times higher than the prevalence in the general population (Brenes, 2003).

As highlighted throughout this report establishing the direction of causality between chronic physical diseases, including COPD and mental health conditions, is complex. Whilst anxiety is common amongst COPD patients it is also true that the lifetime prevalence of respiratory disease is higher in people with panic disorders compared with the general population (Brenes, 2003).

Anxiety is associated with a number of negative outcomes for COPD patients. It has been found to have an adverse effect on quality of life, is associated with greater disability and impaired general health and social functioning, increased bodily pain and reduced vitality. Moreover, Brenes (2003) reports that even after controlling for the effects of overall health status, including other diseases and COPD severity, anxiety remains significantly associated with decreased functioning in COPD patients. Anxiety is also a predictor of hospital admission frequency for COPD patients. The long-term effects of anxiety treatment on the quality of life among COPD patients require investigation (Brenes, 2003).

As the incidence of COPD increases addressing its connection with mental health conditions will become even more important to reducing its impact on quality of life, functioning and productivity.

2.4.4 Diabetes

Diabetes is a lifelong health condition. There are two main types of diabetes – type 1 and type 2.⁴ Type 1 diabetes is less common and accounts for between 5% and 15% of all cases. Type 2 diabetes is highly prevalent and develops when the body does not produce enough insulin or the insulin produced does not work properly. Type 2 diabetes is usually diagnosed later in life (Diabetes UK, 2010).

According to the WHO (2009c) diabetes is a 'growing epidemic' with estimates suggesting that diabetes deaths will double between 2005 and 2030. Environmental and lifestyle changes, including a more sedentary lifestyle and overeating, have contributed to the rise in type 2 diabetes in particular (Wild, Roglic, Green, Sicree and King, 2004).

Type 2 diabetes is associated with a number of risk factors including: having a close family member with type 2 diabetes, being overweight or obese, having high blood pressure and having had a heart attack or stroke. The more risk factors that apply the greater the risk of having diabetes (Diabetes UK, 2010).

Box 6: Diabetes and Labour Force Survey data

LFS data suggest that around 3.5% reported diabetes as one of their health problems; 2.0% reported it as a main health problem. Of those with diabetes as a health problem around 10.6% reported a mental health problem, which is significantly more than those without diabetes. When diabetes was reported as the main health problem around 5.1% reported previous or current mental health problems.

According to estimates from the WHO (2009c) over 220 million people worldwide, including 2.6 million people in the UK, have diabetes. In the UK it is estimated that over 500,000 people unknowingly have the condition (Diabetes UK, 2010). A further 7 million have pre-diabetes, which is when blood glucose is higher than normal (Diabetes UK, 2010). The WHO (2009c) reports that diabetes causes 5% of all deaths globally each year; half of these deaths include people aged under 70 and 55% are women.

It has been argued that due to the fact diabetes is a complex lifelong condition with varied complications that can affect almost every part of the body, the true economic impact remains

⁴ See Diabetes UK. (2010). *What is Diabetes?* From: http://www.diabetes.org.uk/Guide-to-diabetes/Introduction-to-diabetes/What_is_diabetes/

unclear. Indeed, a recent report assessing the likely health of the working-age population in 2030 highlights that relatively less is known about the costs of diabetes in comparison to other chronic conditions affecting the workforce, such as MSDs and mental health (Vaughan-Jones and Barham, 2009). No data is currently collected centrally about how many working days have been lost due to diabetes and its effects, making it impossible to accurately estimate the number of working days lost (Parliament, 2010). However, there is some evidence that people with diabetes have two to three times the rate of sickness absence as other workers (Bramley-Harker and Barham, 2004). Additionally, in 2009 it was recorded that approximately 21,000 people with diabetes were claiming Incapacity Benefit (House of Commons, 2010).

Diabetes is associated with a number of other short- and long-term complications, including short-term complications such as hypoglycemia and long-term complications related to vision (retinopathy), heart, kidney (nephropathy), nerve (neuropathy) and feet problems.

Diabetes can affect the mental health of individuals with the condition. Tuncay, Musabak, Gok and Kutlu (2008) point out that the constant stress of maintaining tight glycemic control for people with diabetes on insulin in particular can result in psychological distress and diagnosable psychological disorders. However, as with other physical health conditions, the relationship with mental health conditions is complex. Mental health conditions can occur independently without being a consequence of diabetes (Tuncay, Musabak, Gok and Kutlu, 2008). Experiencing a mental health condition can affect an individual's ability to effectively manage their diabetes and therefore their quality of life (Das-Munshi, Stewart, Ismail, Bebbington, Jenkins and Prince, 2007).

Other research has shown that patients with diabetes have a two-fold increased prevalence of depressive disorders (Anderson, Freedland, Clouse and Lustman, 2001). Analysis from a large national population sample in the UK suggests that people with diabetes are 50% more likely to suffer from common mental health conditions than people without diabetes (Das-Munshi et al., 2007). Additionally, the analysis showed that people who suffer from both diabetes and depressive or anxiety disorders have:

- Less adequate glycemic control;
- More diabetic complications;
- Increased service use;
- Lower medication adherence.

According to Vijan and Langa (2003), who explored the impact of diabetes on workforce participation in the USA, the indirect costs of diabetes through lost productivity are largely related to the disability resulting from complications of the disease, rather than the diabetes itself. Thus, initially less urgent than type 1, type 2 diabetes has multiple complications that make it expensive to treat because patients need specialist care. Serious complications from diabetes can be costly in terms of health care and to patients' families, who may also need to take time out of work to care for the patient.

Diabetes has become a growing concern for a number of stakeholders. Dealing with the mental health-related aspects of diabetes could help to reduce the impact on individuals and families, as well as on society.

2.5
Assessing the
impact of chronic
conditions on the
workforce

As already highlighted throughout the report the cost of chronic physical and mental health problems to the UK economy is substantial. These conditions affect individuals, families, workplaces, health care and society. Dame Carol Black's review (2008) of the health of the working-age population estimated the cost of ill health in the UK to be £100 billion a year – the equivalent of Portugal's GDP.

A key question we addressed in the expert focus group was what criteria should and could be used to explore the extent to which different chronic physical health conditions impact on the workforce?

The subsequent discussions raised a number of criteria that could be used including:

- **Prevalence:** the proportion of the working-age population affected;
- **Economic and productivity impacts:**
 - Costs, direct and indirect, associated with sickness absence and sickness presence related to different conditions, as well as the impact on retention, service quality and customer satisfaction;
 - Cost of disability benefits associated with conditions;
 - Costs related to loss of productive years;
 - Costs associated with carers, including informal carers.
- **Workability/functional capability:** the impact conditions have on people's ability to work in different types of roles and whether work can be adjusted to accommodate an individual's chronic condition; whether the symptoms are constant or occasionally flare up and become worse;

- **Potential for intervention:** the availability of effective interventions, as well as availability of interventions that assist with multiple conditions;
- **Co-morbidity between conditions:** the likelihood of chronic conditions co-occurring with others.

The expert focus group's discussions highlighted that the ability to assess this information and explore the impact of chronic conditions is very much constrained by the quality, nature and extent of data available.

Depending on the type of condition the criteria used to assess the impact may be different. For example, hypertension is highly prevalent throughout the population, which contributes greatly to the costs associated with the condition (Druss, Marcus, Olfson, Tanielain, Elinson and Pincus, 2001). Functional capacity for individuals with MSDs can be severely limited, driving up costs related to those conditions, and mental health problems are associated with increased levels of sickness presence, which increases the costs associated with them.

The availability of data to look at the impact of co-morbid conditions on the UK economy is even more limited than the data available for individual chronic health conditions. Part of the problem is that many questionnaires only allow for respondents to identify one health condition. While estimates provide figures for the impact of certain chronic conditions, many do not take into account the additive and synergistic effects described earlier of co-morbid conditions. However, the costs associated with mental health conditions are often greater – especially in terms of indirect costs – than physical health conditions. Therefore, the combined costs of co-morbid chronic physical and mental health conditions are likely to be quite burdensome.

What we do know for the UK is that poor health can lead to sickness absence, as well as sickness presence, incapacity benefits, unemployment and underemployment, in addition to increased costs to the NHS. As mentioned earlier, chronic conditions are the main cause of disability and death. Therefore, reducing the prevalence and incidence, as well as the impact of these conditions on the UK population, will reduce their burden on the economy and society, as well as to individuals.

The LFS annual report for 2008/2009 provides figures for the number of working days lost. For those with musculoskeletal-related conditions, on average around 17 days were lost per case and in total there were around 9 million lost days in total. For mental health-related conditions, stress, depression or anxiety resulted in around 28 days lost per case and more than 11 million

lost days in total (HSE, 2010b). The CBI suggests long-term absence costs £3.7 billion (CBI, 2010).

Less is known about the costs associated with sickness presence. For mental health conditions, sickness presence is estimated to cost around £15 billion each year, which is 1.5 times more than sickness absence (Sainsbury Centre for Mental Health, 2007). Recent research from The Work Foundation shows that up to 45% of workers report sickness presence compared to 18% reporting absence in the same organisation (Ashby and Mahdon, 2010).

Increased sickness absence, sickness presence and disability are often associated with increased rates of incapacity benefits, unemployment, underemployment and early retirement too. People with chronic health problems have a harder time gaining and maintaining employment (Schuring, Burdorf, Kunst and Mackenbach, 2007). One interviewee highlighted the impact her health conditions – particularly depression – have had on her career, but how having a job has helped:

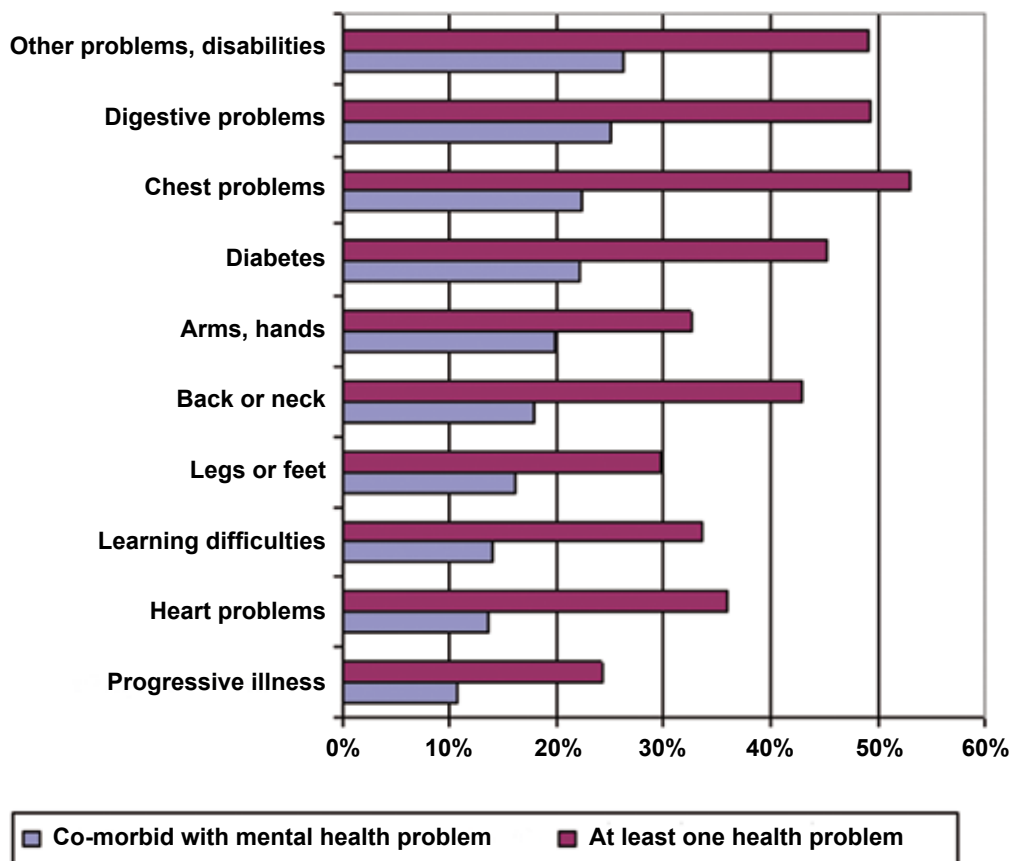
'I think it actually does help my self-esteem and although it's stressful and making mistakes dents my self-esteem, actually saying I can do this and I can go to a party and say this is what my job is. And sometimes I feel a bit embarrassed that it's not high powered or it's not what it would be if I wasn't, if I hadn't been, ill. But it's better than saying I'm unemployed and I think yes – just doing something and having something to force me to get up in the morning, which is difficult enough as it is...[I]f I didn't have a job to go to I probably wouldn't get up until midday.'

Unemployment and job loss have serious financial and health consequences for individuals. Studies have shown widespread deterioration in aspects of physical and mental wellbeing among those who lose their jobs, which can persist for many months (Armstrong, 2006; Brinkley, Clayton, Coats, Hutton and Overell, 2008; Strully, 2009).

Data from the LFS (2009, Quarter 2) allow us to look at employment rates for those with physical health conditions and those with both physical health conditions and co-morbid mental health problems. The figure below shows the differences in employment rates once mental health conditions⁵ are taken into account for those with chronic physical health conditions.

⁵ As defined by the LFS questionnaire

Figure 1: Employment rates by main health problem and with co-morbid mental health problem, 2009



Source: Analysis from The Work Foundation of Labour Force Survey data (2009, Quarter 2)

As this graph highlights employment outcomes for individuals with chronic physical health conditions and co-morbid mental health conditions are substantially worse.

Some individuals also may end up on incapacity benefits or Employment Support Allowance, which already cost the UK greatly. As of November 2009, 2.62 million claimed Employment Support Allowance or incapacity benefits (DWP, 2010b). The pending changes to the welfare system may place even more pressure on employers, employees themselves and the NHS to maintain a healthy workforce.

Unfortunately, with the data available it is not possible to estimate the costs attributable to co-morbid chronic physical and mental health conditions. The evidence above suggests, however,

co-morbid conditions are more costly – in terms of employment outcomes – than individual conditions alone.

2.6 Co-morbidity or co-existing chronic physical and mental health conditions are common and
Conclusion burdensome. The prevalence and impact of chronic physical health conditions and their associated co-morbidity with mental health conditions is substantial. Many chronic physical health conditions are associated with higher rates of mental health conditions. This includes the specific conditions highlighted in this section: musculoskeletal disorders, cardiovascular diseases, respiratory conditions and diabetes, as well as a number of other conditions.

The relationship between chronic physical and mental health conditions is not very well understood, however. For some conditions the cause may be physiological – meaning that body functions change as a result of the chronic physical health condition. For others the cause may be psychosocial – meaning that adjustment to the condition may increase the likelihood of developing a mental health condition. For others still the mental health condition may have preceded the chronic physical health condition. The relationship between physical and mental health is widely regarded as bi-directional.

The impact that these co-morbid conditions have on health outcomes and the costs associated with them is also under debate. For example, no consensus has been reached on whether co-morbid conditions result in additive ($1+1=2$), synergistic ($1+1>2$) or antagonistic effects ($1+1<2$). However, all the research suggests that co-morbid health conditions worsen health outcomes and increases the burden associated with the conditions.

With the limited data available we cannot provide exact estimates for the attributable burden of co-morbidity on the UK's society and economy. These costs may likely already be accounted for in the estimates provided for the total cost of ill health to the UK, with Dame Carol Black's review putting the figure at around £100 billion. Of the £100 billion, it is likely that co-morbidity comprises a substantial portion of the number. It is also possible considering the high probability of undiagnosed and underreported cases of physical and mental health conditions that the costs are even greater.

3. Interventions to improve work outcomes

3.1 Introduction In order to reduce the burden of the chronic conditions discussed, prevention and early intervention need to be prioritised. Levels of prevention can be divided into three groups: primary, secondary and tertiary.⁶ The definitions of these levels are highlighted in the box below (WHO, 2004).

Box 7: Definitions of prevention levels

Primary: reducing the risk factors associated with cases of the disorder or illness in the population to prevent the disorder or illness from occurring.

Secondary: lowering the case rate of the disorder or illness in the population through early detection and treatment of diagnosable diseases.

Tertiary: reducing disability, enhancing rehabilitation and preventing relapses and recurrences of the illness, as well as promoting quality of life.

Source: WHO, 2004

Depending on the type of chronic physical health condition the most effective type of prevention may differ. In particular, chronic conditions such as heart disease and diabetes can benefit from primary prevention which focuses on reducing the risk factors associated with the diseases at the population level. The risk factors here are known and include poor diet, physical inactivity and tobacco use, among others. The WHO (2005) suggests that if risk factors were eliminated then at least 80% of all heart disease, stroke and type 2 diabetes would be prevented and over 40% of cancer would be prevented.

In order to address obesity, which is one of the intermediate risk factors that can occur as a result of an unhealthy diet and physical inactivity, NICE has developed guidelines for promoting physical activity in the workplace (NICE, 2008). These guidelines call for employers, health professionals, trade unions or employee representatives and employees to plan an organisation-wide policy and implement it. Some suggested activities include flexible working policies and policies to encourage employees to walk, cycle or use other modes of transport to travel to and from work.

Reducing physical inactivity has the potential to improve symptoms related to physical and mental health conditions. Exercise is also a protective factor for mental health conditions (WHO, 2004). One study found that physical inactivity explained the association between depressive

⁶ This categorisation was discussed during the expert focus group discussion

symptoms and cardiovascular events (Whooley, de Jonge, Vittinghoff, Otte, Moos, Carney et al., 2008).

Another example of primary prevention is the enactment of the smoke-free legislation in England and Wales. Research suggests that this intervention has provided significant public health benefits through the reduction of heart attack rates by reducing exposure to second-hand smoke in the workplace (Sims, Maxwell, Bauld and Gilmore, 2010).

Of course, it is not possible to prevent some conditions either because of genetic factors or because the cause is unknown. It is these conditions that may benefit from secondary or tertiary prevention. Secondary prevention focuses on reducing the prevalence or progression of the condition through early identification and intervention. Some examples of conditions that benefit from secondary prevention are inflammatory arthritis, COPD and diabetes. These conditions are often incurable, but with early diagnosis and appropriate care the progression of the disease can be slowed, allowing people to live healthy and active lives for longer.

When the disease has progressed tertiary prevention may be needed to help manage the impact of the condition on quality of life. This is often the case with MSDs because unfortunately not all types of MSDs are preventable. The HSE recommends early reporting of symptoms, proper treatment and suitable rehabilitation to reduce the effects of MSDs (HSE, 2010a).

Numerous studies have been completed looking at the impact of successful early interventions on MSDs (Bevan, Quadrello, McGee, Mahdon, Vavrovsky and Barham, 2009). These interventions include going to regular medical examinations that monitor risk factors and taking medication to reduce the condition's progression. The UK National Audit Office (2009) has estimated that increasing by 10% the proportion of rheumatoid arthritis patients who access DMARD therapy within three months of diagnosis could lead to an initial increase of costs by £11 million over five years in the NHS, but that productivity gains of £31 million could accrue over the same period. Moreover, there is a 4% gain in quality of life over five years.

Tertiary interventions include activities that help manage complications and improve quality of life, such as patient support groups for individuals with diabetes or COPD. Tertiary interventions may also help address co-morbid conditions associated with the primary diagnosis. However, the lines between the levels of intervention are not always clear-cut.

Importantly, interventions that address risk factors for multiple conditions may be particularly helpful in reducing the population burden, which was highlighted by the expert focus group. Stang et al. (2006) suggests that with co-morbid conditions treating any one or more of the conditions effectively could reduce morbidity associated with the other condition/s, but this would only be the case in a causal relationship. They call for more randomised clinical trials of prevention and intervention studies to better understand how this relationship might work. Reducing the burden, whether by preventing fully or improving quality of life, can help to improve the health of the UK's working-age population.

3.2 **What role can physical health play in the management of mental health?** Recognising this link between chronic physical and mental health conditions is an important first step to designing and providing interventions that can reduce the impact of both conditions. As mentioned earlier, chronic physical and mental health conditions have a bi-directional relationship, meaning that physical health impacts mental health and mental health impacts physical health. Additionally, other factors can independently impact on mental and physical health.

The academic literature on preventing mental health conditions is relatively young and limited (Cuijpers, van Straten, Smit, Mihalopoulos and Beekman, 2008). However, some evidence suggests that reducing the risk factors and increasing the protective factors associated with mental health could help to prevent mental health conditions (WHO, 2004). Many of these risk and protective factors have an impact on physical health as well. Protective factors include (WHO, 2004):

- Feeling respected, valued and supported;
- Having a sense of hopefulness;
- Feeling secure and a sense of control;
- Having autonomy;
- Being in a supportive social environment and experiencing positive interpersonal interactions.

Some of the risk factors for mental health conditions highlighted by the WHO include:

- Caring for chronically ill or dementia patients;
- Chronic pain;
- Loneliness;
- Medical illness;
- Poor work skills and habits;
- Stressful life events.

For depression, five specific risk factors are likely to be associated with its onset (Mrazek, and Haggerty, 1994):

- Having a parent or other close biological relative with a mood disorder;
- Having a severe stressor such as a loss, divorce, marital separation, unemployment, job dissatisfaction, a physical disorder such as a chronic medical condition, a traumatic experience;
- Having low self-esteem, a sense of low self-efficacy and a sense of helplessness and hopelessness;
- Being female;
- Living in poverty.

Being diagnosed with a medical condition can be a severe stressor that, when combined with other risk factors, could lead to the development (or worsening) of a mental health condition. As highlighted in the previous case study, one interviewee recalled how the combination of his physical health condition, a diagnosis of a serious health condition for another family member and loss of work could have all contributed to the development of a mental health condition. Therefore, reducing the incidence of chronic health conditions, as well as improving some of the social aspects such as self-esteem and self-efficacy, may reduce at least some of the risk factors associated with depression, as well as other mental health conditions. Additionally, a number of interviewees highlighted the importance of effective treatment for their physical health conditions. A few quotes are highlighted below:

'When I finally got the intervention that I needed it was just the most incredible relief.'

'And from that moment on [it] changed my life [and made a] staggering, staggering difference. Just to be free of pain [was] really, really quite amazing and the fact that it didn't set off the bleeds.'

Chronic physical health conditions not only impact on wellbeing and mental health, but also on quality of life, which can feed back to further adversely impact mental health. For example, one of our interviewees mentioned how her rheumatoid arthritis limits her ability to socialise with family and friends:

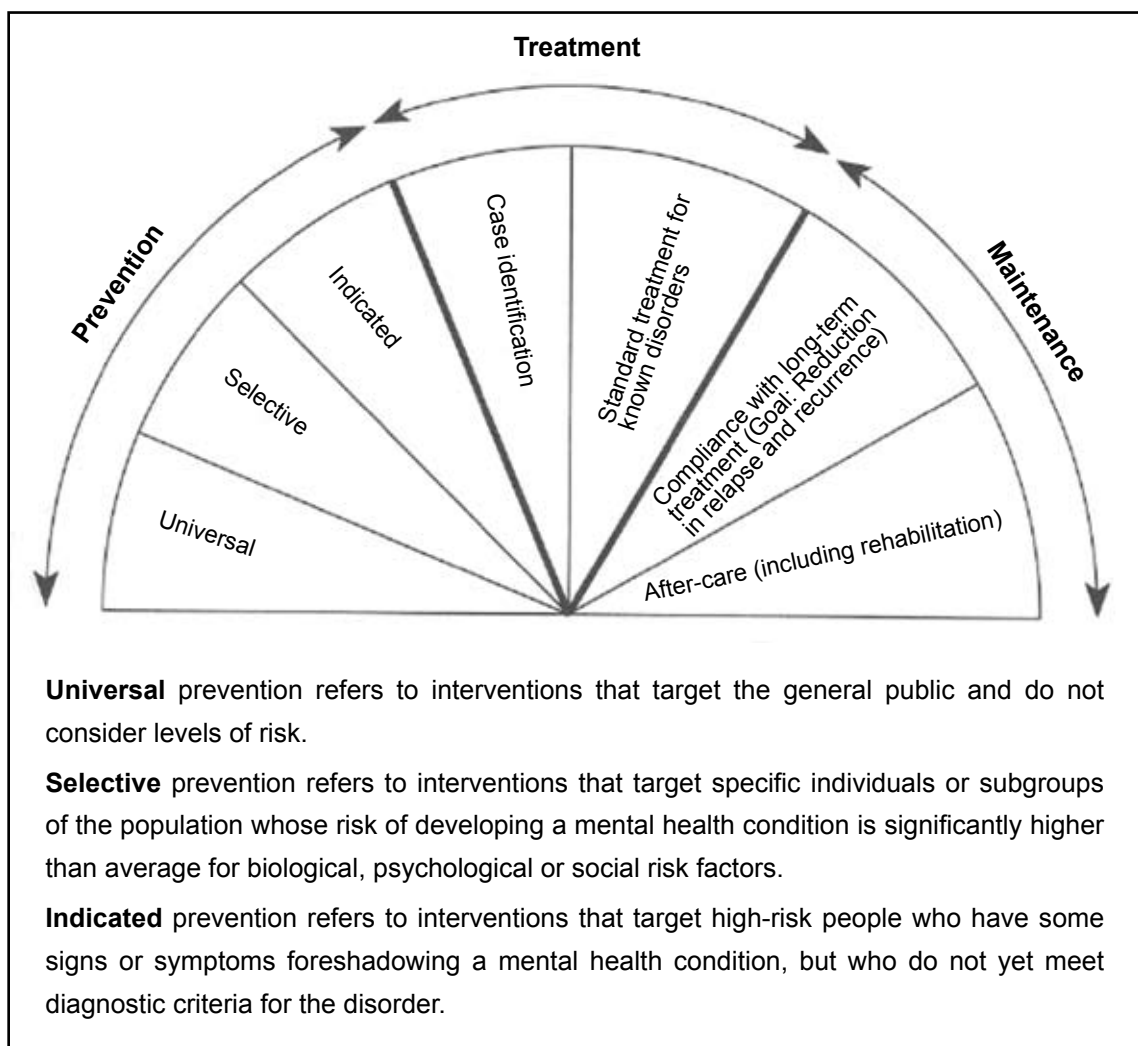
'Sometimes I do feel very low if I can't go out and I can't see people, and I've lost touch with people. I can't have the social kind of whirl that I would have liked and [am] used to.'

Interventions that address the physical, mental and quality of life aspects of health conditions may be particularly helpful for improving health outcomes and psychosocial adjustment to the condition.

3.3
What role can mental health play in the management of and recovery from chronic physical health conditions?

In the mental health literature the classification system illustrated in Figure 2 is often used to highlight the various groups of people that may benefit from specific types of interventions.

Figure 2: Classifying intervention type by target audience



Source: Mrazek and Haggerty, 1994

The 'Selective' and 'Indicated' populations are most relevant when seeking to address mental health conditions for individuals who already have chronic health problems. However, it could be argued that preventing chronic physical health problems contributes to 'Universal' prevention for mental health conditions. Two of the risk factors for developing a mental health condition are stressful life events and diagnosis of a chronic physical health condition. Therefore, individuals with chronic health conditions are at higher risk of having a mental health condition and would benefit from selective and indicated prevention activities to reduce the incidence and prevalence of mental health conditions within this population.

Interventions aimed at reducing depressive symptoms among individuals with chronic health conditions could be particularly useful because the evidence suggests that treating mental health conditions in individuals with co-morbid conditions could help reduce health care utilisation, as well as the number of days of lost work productivity (Baune, Adrian and Jacobi, 2007). However, recognising and addressing mental health conditions as part of the treatment of chronic physical health conditions has not been standard practice. Indeed, the Black review (2008) suggests that recognition of mental health conditions in individuals with physical symptoms and the treatment of mental health conditions are inadequate.

Many advocate the timely diagnosis and treatment of mental health conditions in helping to reduce the burden on the individual, as well as on society (Moussavi et al., 2007). Numerous programmes and interventions have been investigated to address the psychosocial aspects of chronic health conditions, including mental health. Evidence suggests that for arthritis such interventions have reduced pain and symptoms of depression and anxiety, in addition to improving patients' self-management of their conditions (Hammond, Bryan and Hardy, 2008; Barlow, Turner and Wright, 2000). Additionally, a programme to reduce distress improved long-term prognosis as well as psychological status for patients following recovery from a heart attack (Cossette, Frasure-Smith and Lesperance, 2001). Another intervention for diabetes is highlighted in Box 8 on the next page (Davies, Heller, Skinner, Campbell, Carey, Craddock et al., 2008).

On the other hand, one review of interventions looking specifically at diabetes and mental health did not find consistent benefits to both physical and mental health (Harkness, Macdonald, Valderas, Coventry, Gask and Bower, 2010). Nevertheless, the authors call for more research to develop these important interventions.

Box 8: The benefits of a joint approach to improving health outcomes – diabetes

One intervention aimed at addressing the physical and mental health of individuals with diabetes was effective in improving health outcomes.

The intervention offered participants a group education programme based on a number of psychological theories of learning and patient empowerment. The participants followed a written curriculum covering lifestyle factors – food choices, physical activity and cardiovascular risk factors – that was delivered in a community setting by a registered health care professional. In total, the programme lasted six hours and was delivered over one to two days.

The results of the intervention were positive with participants in the intervention having lower depression scores compared with the control group at 12 months. However, changes in haemoglobin levels were not significantly different, but participants in the intervention group were more likely to have stopped smoking and to have reduced their weight. Additionally, the intervention group's health beliefs were improved.

A recent meta-analysis found that preventative interventions for depression reduced the incidence of depressive disorders (Cuijpers et al., 2008). These interventions were most effective for targeted (selective and indicated) populations, which include those with chronic physical health conditions. One example of an intervention aimed at preventing depression in Dutch primary care patients involved a cognitive-behavioural minimal contact psychotherapy programme that included a self-help manual with instructions on mood management (Smit, Willemse, Koopmanschap, Onrust, Cuijpers and Beekman, 2006). The intervention was guided by six short telephone calls with prevention workers and targeted individuals with sub-threshold depression. When compared with a control group the individuals who received the intervention had significantly lower rates of depression. The economic evaluation indicated that the intervention was preferable to usual care, particularly once productivity costs were included (Smit et al., 2006).

The long-term benefit of these interventions, however, is still unknown; rather than prevent, the interventions could just delay the onset of depression. Regardless of whether the interventions prevent or delay onset, both the individual and society benefit. Some degree of prevention, as well as treatment, will help reduce the burden of depression that is likely to increase over the next two decades if more is not done to address it (Cuijpers et al., 2008). More research on interventions needs to be conducted to identify effective practices.

3.4 Workplace interventions Work has a key role to play in assisting the recovery or rehabilitation of people with chronic physical and mental health conditions. Good work is associated with good health outcomes. Moreover, unemployment is related to a number of negative health outcomes and associated with reduced psychological wellbeing and social isolation. Not only has evidence shown that work is good for you, but returning to modified work can actually help recovery (Feuerstein, Shaw, Lincoln, Miller and Wood, 2003; van Duijn and Burdorf, 2008). This was highlighted consistently throughout our interviews. For example:

'Work keeps you sane and makes you feel that you're part of society and that you're contributing to it. If you have a job that you enjoy then it's another reason to get up in the morning. For me it really fills my life. I love what I do and I can't really imagine, I think it would be awful, if I couldn't work.'

The added social interaction and support offered through work can help individuals to cope with their health conditions. However, a number of participants reported that they felt they had to 'fight' to stay in work and were actually encouraged to take longer periods of sick leave, which they did not accept because work was integral to their sense of wellbeing and recovery. Self-awareness about the health condition can help individuals manage not only their condition, but also the impact it has on work. One interviewee highlighted how his condition may have made him a better manager because he learned to delegate to his team and offer them opportunities:

'For example, if I had been feeling ill recently I would have sent someone else to meet the client rather than myself because the risk of being ill while over there, especially if it was a fairly important meeting, was just probably too great and therefore I would make pre-emptive decisions about how my illness may impact my work. And sometimes that was done subconsciously...I think because it's been so active and for such a long part of my life now it no longer feels like I'm prioritising in making these kind of choices based on my disease, even though I am sure I am. It just feels fairly normal for me to say it's probably best if I haven't been feeling very well recently. So rather than go off to speak to this conference maybe so and so will do it.'

Being honest and up front about the condition can help people to manage it better; employees and employers can work to make adjustments. The success with which both employee and employer manage re-adjusting work requires employers to recognise that sickness absence management, effective return-to-work programmes and rehabilitation are principles for effective management (Waddell and Burton, 2006). This often requires good, clear communication from

the employee and employer. The expert focus group also reiterated the importance of good management and organisational factors to the health of the UK's working-age population.

In the same way that early intervention is important in the context of health care, using the workplace as a source of early intervention is also crucial. Once individuals go off from work and the longer they are away from work the more difficult it is for them to return. This was echoed by one of the interviewees when speaking about why she wanted to continue working: 'I think the more you don't do it the harder it gets to actually do it.'

Nevertheless, the working conditions must be 'good'. A number of psychosocial aspects related to work can affect health outcomes. Dame Carol Black's review of the working-age population highlighted the relationship between work and health outcomes,⁷ but in recent years little meaningful change has occurred related to psychosocial working conditions (Packham and Webster, 2009).

While a paucity of workplace interventions explicitly address chronic physical health and mental health conditions together (Vaughan-Jones and Barham, 2009; Hassan, Austin, Cella, Disley, Hunt, Marjanovic et al., 2009), evidence suggests that good working conditions positively affect physical and mental health. Indeed, 'good work' has been characterised (Coats and Lehki, 2008) as work where there is:

- Autonomy, control and task discretion;
- Balance between effort and reward;
- Employment security;
- A match between skills and work demands;
- Procedural justice;
- Strong workplace relationships (social capital);
- Work that is not characterised by monotony and repetition.

Some research suggests that when an individual has a chronic physical health condition the additional presence of chronic work stress increases sickness absence and disability. This is also the case for individuals with mental health conditions as well as co-morbid conditions (Dewa et al., 2007). The researchers recommend a two-pronged approach that treats the symptoms as well as assists workers to develop effective coping mechanisms at work. They

⁷ After the review some increased attention has been paid to the health of the working-age population. For example, the Boorman Review and the NICE *Guidance for Employers on Promoting Mental Wellbeing Through Productive and Healthy Working Conditions* (2009)

further recommend that physicians and workplaces work collaboratively to find innovative ways of assisting workers with chronic physical and mental health conditions (Dewa et al., 2007).

A recent review of flexible working conditions and the impact they have on health and wellbeing provides support for this type of intervention that specifically provides employees with some choice and control over their working hours (Joyce, Pabayo, Critchley and Bambra, 2001). Other reviews have found support for improving the psychosocial work environment to improve the health of the working-age population (Bambra, Gibson, Sowden, Wright, Whitehead and Petticrew, 2009; Michie and Williams, 2003). Given the impact of chronic physical and mental health conditions and the importance of psychosocial factors in determining whether employees remain in or return to work managers need to have the skills to work with staff who have these conditions or the costs to their organisations may be significant.

Evidence suggests that working conditions that place high levels of strain on employees, where employees have low levels of control and limited reward based on effort can be detrimental to employees' health. High levels of job strain lead to increased rates of depression (Wang, Lesage, Schmitz and Drapeau, 2008), cardiovascular diseases (Kuper and Marmot, 2003), as well as sickness absence (Vahtera, Kivimaki, Pentti and Theorell, 2000; Gimeno, Benavides, Amick, Benach and Martinez, 2004). In Finland high-strain jobs have also been associated with increases in early retirement and disability pensions (Laine, Gimeno, Virtanen, Oksanen, Vahtera, Elovainio et al., 2009). With the consequences of poor job design on health, and subsequently sickness absence, employers and managers need to focus on providing jobs that allow for increased control over workload and develop creative opportunities for reward when bonuses and promotions may be difficult. Line managers play an important role in job design that can assist individuals with chronic physical and mental health problems.

A number of our interviewees and the expert focus group highlighted the role of stigma and discrimination. The interviewees shared how they felt about some of the reactions they received from co-workers and others about their health condition. Therefore, reducing the stigma associated with a variety of health conditions – this includes chronic physical conditions, as well as mental health conditions – is still much needed:

'There's been a lot of work done on disability, equal opportunities, disability access and nobody would ever say, dream of saying, we can't consider putting a ramp in for you or a special computer or telephone. People don't seem to have got their head around flexible working and the different ways that people with mental health conditions need to work. I

think it always would have limited me, even if society had been different, but I do think it could have limited me less if there had been more adaptations and there had been less stigma. But having said that, when I have spoken about it, I have got mixed but generally positive responses.'

Not only would reducing stigma and discrimination improve quality of life for individuals with chronic physical and mental health conditions, but it could also assist in recovery by increasing opportunities for employment and improving the dialogue amongst all stakeholders about the true impact these conditions have on individuals.

Many employers remain unaware of the prevalence and impact of mental health conditions – let alone their relationship with chronic physical health conditions. Changing attitudes and raising awareness about the management of these conditions is an important part of reducing their burden to employers and society. In talking about what would have made a difference at work one participant who had episodes of depression in addition to a physical condition highlighted how she wished line managers had greater awareness of mental health conditions and their impact:

'I'd have wanted the line manager to know and understand what it was about, how it comes about, what support there can be. Yes, that line managers had a better understanding, either through me or through an occupational health provider, of what effect depression had on me and what to look out for coming back to work.'

For another participant this was linked with her experiences of managers lacking the skills to talk to employees with mental health conditions:

'But to start with [when the participant returned after time off for depression] my line manager was mortified and they didn't want to talk to me in case I burst out crying. So I don't know whether it was their discomfort about talking about it, but it wasn't in their nature to just say to you 'how are you?' In fact they were the sort who said: 'Well, personal issues are outside of work.' It wasn't their style.'

Throughout the interviews participants consistently cited how important flexibility and understanding were in helping them remain in work with their chronic health conditions. Line managers are key players in providing work environments that value the health and wellbeing of their employees. Providing information on where and how to seek help could

allow for timely intervention – whether through occupational health or employee assistance programmes. Most importantly, it appears that work environments that provide flexibility around medical appointments and supportive and respectful interactions can be helpful in maintaining employment for individuals with chronic health conditions.

Maintaining employment is an important outcome for individuals with chronic physical and mental health conditions. Work not only has the opportunity to offer financial stability, but also a sense of purpose and social connection.

3.5 In addition to addressing health in the workplace, coordination and cooperation with health professionals can help to improve health outcomes. While 2009 NICE guidance advises health professionals to monitor and take into account the mental health of individuals with chronic physical health problems the availability of timely interventions and the likelihood of patients receiving advice and care for their mental health is lacking. A number of interviewees mentioned that their GP or specialist had not asked about their mental health:

Health professionals' recognition of co-morbidity and its impact on return to work

'As soon as you get referred to a specialist though they will put you in that silo. For example, when I had the stroke it affects your cognitive ability and [I] got referred to a neurologist, behavioural neurologist, and they do all sorts of psychological assessments with you. And they very much put you into a silo and I don't see that always they see the whole picture. They don't see the importance of work. They don't see it linked with health conditions and mental health.'

As mentioned earlier, mental health conditions can often be more disabling than physical health conditions. Therefore, coordinated care from general practitioners, specialists and mental health professionals may help reduce the impact of mental health conditions for individuals with chronic physical health problems. According to the Black Review (2008) only about half of those affected are diagnosed as having a mental disorder at the first consultation with their GP. This can often be even more difficult when the symptoms for mental health problems present as physical symptoms or when people with physical illnesses also have co-morbid mental health conditions. Furthermore, in the case of depression or anxiety, the treatment that patients receive is often sub-optimal (Black, 2008).

Currently, mental health conditions are undertreated, especially when compared with physical health conditions (Ormel et al., 2008). Mental health conditions can be particularly disabling to personal relationships and social life. They can reinforce psychological barriers to functioning

such as limiting cognitive capacity and amplifying physical symptoms among others (Ormel et al., 2008; Buist-Bouwman et al., 2005). Therefore, improving the ability of health professionals to recognise mental health conditions and improving the availability of effective interventions need to be prioritised.

The acute time period around diagnosis of a physical health condition may be the best opportunity to provide an early intervention that limits and perhaps prevents a mental health condition from developing. However, the NHS may not be appropriately resourced to provide this type of intervention in a timely manner. A recent survey of GPs showed many patients are not receiving the psychological services they need (Royal College of General Practitioners, 2010; Wilkinson, 2007). For adults only 15% of GPs thought that treatment involving psychological services would usually be available within two months. One of our interviewees highlighted how it would have helped to have some support in the weeks following diagnosis and this is highlighted in the case study below.

Box 9: Respiratory condition – Participant B

Work

Participant B works in the education sector. Her work involves teaching, researching and some management responsibilities. A typical work day for Participant B begins later in the morning, either in her office on campus or at home, and continues for around six hours. She then spends some time with her family for a few hours before returning to work for a few hours later in the evening. Participant B has a lot of freedom in her schedule. The only times she is committed to being in a specific place at a specific time is when she has specific appointments or commitments. Her job is very autonomous.

The main reasons she goes to work are for interest, balance, being with other people and developing her professional career and status. She also goes to work to have her own income.

Health condition

Participant B has Lymphangioleiomyomatosis (LAM), which is a rare and progressive lung disease where normal lung tissue is gradually replaced by cysts. The symptoms initially begin with some breathlessness with exertion and eventually lead to needing to use oxygen. If it gets very bad patients need to be put on the list for a lung transplant.

Cont.

Cont.

Currently, Participant B has to use oxygen because she can get breathless quite easily. The oxygen, however, does not affect her job or daily life too badly. She does 'all the normal stuff anyone else would do.' She does not feel fatigued and has not had to take any more sickness absence days compared with anyone else.

When Participant B was diagnosed she was very surprised because she did not expect that it would be such a severe disease or that she was already badly affected by it. It is a disease that does not have treatment so she can only manage the symptoms to some extent. Now, she has come to terms with the condition and actually feels very happy to be alive and tries to continue doing the same things as before. She tries not to let her condition limit her too much.

Participant B's condition has little impact on her mental health beyond the time period around the initial diagnosis. In fact, she thinks that she may be happier now because she is able to keep things in perspective:

'I would say you have a natural sort of substantial period [...] a bit like grief. I didn't take antidepressants or anything because it wasn't sort of depression as such. It was more [...] like] somebody dies or you get divorced or something. It was a really traumatic period, but I think now it kind of made me, I don't know, [a] more thoughtful person and a more grateful person. So I think I'm probably happier than I was before because I think before I used to get upset about things that don't really matter. Like not being promoted at work or something like that. Now I feel I have more of a sense of proportion.'

Participant B's partner has also provided support by being optimistic. When she was initially diagnosed he helped to offer a sense of perspective and helped her recognise that the condition was not going to ruin their lives.

Treatment and interventions

In addition to using oxygen and inhalers, Participant B has received experimental drug treatment that has possibly slowed down the progression of the disease. She feels very thankful that she has benefited from this:

Cont.

Cont.

'I just got really super lucky that the limited research they do on LAM has reached the point where they can tentatively point towards some sort of therapeutic intervention. So I was delighted that it existed and that it worked. So even though I'm far from healthy, I'm still well enough to have a normal life and do everything with the oxygen as anyone else would.'

In terms of adjustments at work, her co-workers have been really supportive. She has also asked for regular meeting rooms to be close to her office or to have a lift so she does not have to rush around too much. Her employer was able to accommodate her requests. Additionally, she feels that she wants to accomplish more now because of her condition: 'There's a sense of urgency.'

In addition to the treatment and support she has received more support right around the time of diagnosis would have probably helped her to adjust. She asked to see a therapist, but there was a three-month waiting list. By the time she went to see him, she was fine again. This type of intervention has to be timely in order to be effective.

'It is not enough to just have the intervention. It has to be there in real time so I think the worst moment was just leaving the doctor's office and thinking: "Yes, oh God, I've got to face [this]; where do I start facing this?" And there I think would have been really helpful to talk to [someone] but there wasn't anyone.'

In addition to often failing to take into account the relationship between physical and mental health conditions the delivery of care often does not prioritise work as an outcome. While the recent implementation of the fit note will re-focus attention on capacity rather than incapacity a number of barriers exist to changing health professionals' behaviours. First, knowledge about the occupational aspects related to health is lacking. To address this the Royal College of General Practitioners has created a website to make it easier for GPs to find information to support their assessments and many GPs have taken part in workshops designed to improve their knowledge in this area.⁸

The delivery of care goes beyond recognising how work plays a role in individuals' health outcomes. Individuals with chronic physical and mental health conditions that need

⁸ See <http://www.healthyworkinguk.co.uk/aboutus>

management and regularly scheduled appointments have frequent contact with GPs, specialists and other health professionals within the NHS. The relationships between these health professionals and individuals with chronic health conditions can play an important role in recovery and quality of life, as well as in the management of health conditions. Health professionals can positively influence the lives of their patients by not only providing treatments to improve their health outcomes, but by also providing support to help them manage their condition.

On the other hand, frequent interaction with the health care system can be difficult to manage. For example, one interviewee explained how some specialists do not appreciate the effect attending regular appointments has on her working life:

'I don't know whether it's because I was very young when it started and I was in work and I wanted to carry on working and they were used to an older population who if an appointment was at two o'clock in the afternoon, if you're not working, if you sit there for an hour it doesn't really make a lot of difference. Whereas if you're working, if you work a long way away from home, like an hour commute for me, so if my appointment was at eleven, I don't get to work until twelve, that's a whole morning wasted. I've still got a morning's work to do at some point. Unfortunately, we don't have a huge department [where] someone else can pick it up. It has to be [me] and the nature of what I do means that it's not easy for someone else to pick up in the short term...'

'And they're not necessarily focused on you as an individual patient. They don't have that kind of customer awareness that you get from other types [of] roles. At other places I've worked, if you keep someone waiting for 15 minutes, you at least say 'sorry to keep you waiting'. Whereas they don't have that sense, that's not – you're fairly privileged to go and see them, that they've deigned to see you. That's the impression they give and they certainly have no concept of what it means to work in the real world.'

That said, not only does the NHS need to consider work as a beneficial outcome for patients with chronic physical and mental health problems, but they also need to find efficient and innovative ways to deliver care. This means improving access to interventions, especially in a timely manner, as well as re-orientating care to be patient centred.

3.6 Conclusion A number of considerations about the connections between physical and mental health and how to mitigate their impact are highlighted throughout this section. Various types of prevention

and intervention activities are available to address the physical and mental health of the UK population. These range from increasing physical activity (primary prevention) to improving early identification and intervention (secondary prevention) to providing social support to individuals with chronic health conditions (tertiary prevention).

When focusing on the mental health of individuals prevention activities centre on reducing risk factors and increasing protective factors associated with mental health. Individuals with chronic health conditions are at higher risk of having a mental health condition. Therefore offering them support to adjust to their condition and diagnosing and treating mental health conditions in a timely manner are important priorities needed to reduce the impact of co-morbidity.

Interventions need to be made available that help to reduce the impact of physical and mental health conditions. Ideally, these interventions should address both through coordinated activities. However, we found few examples that sought explicitly to address co-morbidity. The majority of interventions seek to improve outcomes for one condition rather than holistically addressing the health of individuals. Yet preventing and intervening early for specific health conditions may have consequences for other conditions too.

A number of stakeholders have roles to play in reducing the impact health has on individuals and society. These interventions can occur in a number settings. For example, individuals can reduce the incidence and prevalence of health conditions by increasing their physical activity and reducing other risky health behaviours. Work too can be good for health outcomes – particularly if this work is good work. Some of the factors associated with good work are that employees have some autonomy, control and flexibility over their work and that the workplace offers strong workplace relationships. Employers and line managers can offer good work environments that reduce the impact work has on health, as well as help individuals with chronic health conditions maintain employment. Health professionals can recognise the important relationship between physical and mental health and seek to provide effective interventions, as well as recognise the importance of work and of the quality and efficiency of the care they provide to their patients.

Work plays an important role in the overall health of individuals, particularly good work. In addition to good work individuals also need to receive appropriate health care. Otherwise, sickness absence rates may fall while sickness presence rates rise, which could result in future sickness absence. Therefore, both sickness absence and health outcomes need to be addressed by coordinated efforts between employers and health professionals.

4. Conclusion and recommendations

Co-morbidity – when individuals have co-existing health conditions – is common. A large proportion of the working-age population will be affected by a chronic health condition and the likelihood of having a mental health condition increases for individuals with chronic physical health problems. Co-morbidity can increase levels of disability, worsen health outcomes and reduce productivity. Yet prevention and early intervention is possible. Time and time again interviewees highlighted how important maintaining employment and a sense of normalcy helped them to cope with their condition, as illustrated by the following quote:

'I felt that one thing that would really help was if I could keep on doing the stuff I did before as much as possible so my life wouldn't be limited by the condition.'

Interventions that reduce the burden of chronic physical and mental health conditions should be prioritised. Two main stakeholders who interact with workers who have chronic physical health conditions are employers and health professionals.

Employers

For employers specifically we recommend prioritising good working environments. This means offering employees some flexibility in their work schedule. Flexibility will make managing their chronic physical and mental health conditions easier, as well as managing their workload. Additionally, employers should work with employees with chronic health conditions to manage the amount of pressure they feel. While work is good for health, some work can be detrimental to health by adding work stress. Employers need to recognise the value work plays in the lives of individuals with chronic health conditions and how work can contribute to their health outcomes. A good working environment also means providing support to employees with chronic health conditions; this is most effective when line managers and employers value and genuinely care about the health and wellbeing of their employees.

Health professionals

Health professionals need to acknowledge both the physical and mental health of their patients. As mentioned throughout the report the relationship between physical and mental health is bi-directional. Therefore, individuals with mental health conditions need to be monitored for physical health conditions and individuals with physical health conditions need to be monitored for mental health conditions. We recommend that they follow the NICE guidelines for addressing depression amongst individuals with chronic physical health conditions.

Providing good quality service that focuses on patients and prioritises work as an outcome and as an important part of many patients' lives can help individuals remain in work with a chronic health problem. Care should be patient-centred and personalised, as well as allow for flexibility and choice in treatment options. Care pathways and national service frameworks need to encourage cooperation between various health professionals and stakeholders, prioritise quality of life and address mental health.

Both employers and health professionals need to communicate with each other so that there is an increased understanding about health amongst employers and about the work environment among health professionals. By working together, with the assistance of occupational health services, employers and health professionals can help employees with chronic health conditions continue to make a valuable contribution to the workplace. A few small adjustments, whether related to the medical services received or to the work environment, may make an important difference.

In addition to these two main stakeholders, policymakers, as well as the general population, including those with chronic health conditions, have a role to play in reducing the impact of health conditions and co-morbidity on the UK. This includes working to lower risk factors at the population level through to prevention activities and addressing the stigma associated with many conditions.

Furthermore, policymakers – the government and NHS commissioners – need to recognise the impact physical health can have on mental health and vice versa, provide support to health professionals who need to manage these difficult and complex conditions and prioritise the health of the working-age population. With the need to increase the retirement age and the desire to reduce the number of individuals on Employment Support Allowance or incapacity benefits, maintaining a healthy working-age population becomes all the more important. Delays in treatment, whether for chronic physical or mental health conditions, can often exacerbate symptoms. Therefore, timely access to interventions and specialist services are needed. This is particularly the case when addressing mental health conditions in individuals with chronic physical health conditions. Continued efforts to improve access to psychological therapies along the care pathway should be prioritised.

The government and NHS commissioners also need to prioritise physical health conditions that affect the mental health of an individual. By identifying early and appropriately managing these individuals' health the negative feedback loop of a physical health condition exacerbating a

Conclusion and recommendations

mental health condition could be lessened. This could allow greater opportunity for the individual to positively contribute to the economy and reduce the risk of losing employment.

In order to implement effective interventions more needs to be done to understand the relationship between chronic physical and mental health as well as the costs associated and attributable to co-morbidity. Improved understanding about the causal relationships between physical and mental health conditions could advance and target the interventions offered to individuals.

In sum, we recommend that employers, health professionals and policymakers, as well as the public, join their efforts towards the same agenda of improving the health of the UK working-age population by doing the following:

1. Recognise the important impact chronic physical and mental health conditions have on individuals and reduce the levels of stigma and discrimination associated with mental health and chronic physical health conditions.
2. Continue focusing on and researching co-morbidity and its associated costs, increasing the understanding of the causal relationships between chronic physical and mental health conditions.
3. Identify, design and provide effective interventions that address chronic physical and mental health conditions, as well as effectively address co-morbidity; these interventions should be particularly geared to work outcomes and include promoting a good work environment.
4. Work to develop care pathways and national service frameworks that recognise mental health, quality of life and work as important outcomes for individuals with chronic physical health conditions; this improved, patient-centred care should incorporate the roles of various stakeholders.
5. Address the risk factors and protective factors associated with developing chronic physical and mental health conditions. Reducing risk factors and increasing protective factors will lower the impact of chronic physical and mental health conditions.

Bibliography

- Anderson, R. J., Freedland, K.E., Clouse, R. E. and Lustman, P. J. (2001). The prevalence of co-morbid depression in adults with diabetes. *Diabetes Care*, 24 (6), 1069-1078
- Armstrong, K. (2006). *Life After Rover*. London: The Work Foundation
- Ashby, K. and Mahdon, M. (2010). *Why Do Employees Come to Work Ill? An investigation into sickness presence in the workplace*. London: The Work Foundation
- Bambra, C., Gibson, M., Sowden, A. J., Wright, K., Whitehead, M. and Petticrew, M. (2009). Working for health? Evidence from systematic reviews on the effects on health and health inequalities of organisational changes to the psychosocial work environment. *Preventive Medicine*, 48, 5, 454-461
- Barlow, J. H., Turner, A. P. and Wright C. C. (2000). A randomised controlled study of the arthritis self-management programme in the UK. *Health Education Research*, 15(6), 665-680
- Barth, J., Schumacher, M. and Herrman-Lingren, C. (2004). Depression as a risk factor for mortality in patients with coronary heart disease: A meta-analysis. *Psychosomatic medicine*, 66, 802-813
- Bartley, M., Sacker, A. and Clarke, P. (2004). Employment status, employment conditions, and limiting illness: Prospective evidence from the British Household Panel Survey 1991-2001. *Journal of Epidemiology and Community Health*, 58, 501-506
- Baune, B. T., Adrian, I and Jacobi, F. (2007). Medical disorders affect health outcome and general functioning depending on comorbid major depression in the general population. *Journal of psychosomatic research*, 62, 109-118
- Bevan, S., Passmore, E. and Mahdon, M. (2007). *Fit for Work? UK report*. London: The Work Foundation
- Bevan, S., Quadrello, T., McGee, R., Mahdon, M., Vavrovsky, A. and Barham, L. (2009). *Fit for Work? Musculoskeletal disorders in the European workforce*. London: The Work Foundation
- Black, C. (2008). *Working for a Healthier Tomorrow*, London: The Stationery Office
- Braden, J. B., Zhang, L., Zimmerman, F. J. and Sullivan, M. D. (2008). Employment outcomes of persons with a mental disorder and comorbid chronic pain. *Psychiatric Services*, 59, 8, 878-885
- Bramley-Harker E. and Barham, L. (2004). *The Human and Economic Value of Innovation and Opportunities for the NHS*. London: NERA
- Brenes, G. A. (2003). Anxiety and chronic obstructive pulmonary disease: Prevalence, impact and treatment. *Psychosomatic Medicine*, 65, 963-970
- Brinkley I., Clayton, N., Coats D., Hutton W. and Overell, S. (2008). *Hard Labour: Jobs, unemployment and the recession*. London: The Work Foundation

- British Lung Foundation. (2009) *Invisible Lives: Chronic obstructive pulmonary disease (COPD) – finding the missing millions*. Retrieved from: <http://www.lunguk.org/Resources/British%20Lung%20Foundation/Migrated%20Resources/Documents/Invisible%20Lives%20report.pdf>
- Buist-Bouwman, M. A., De Graaf, R., Vollenbergh, W. A. M. and Ormel, J. (2005). Co-morbidity of physical and mental disorders and the effect on work loss days. *Acta Psychiatrica Scandinavica*, 111, 436-443
- Burton, W., Morrison, A., Maclean, R. and Ruderman, E. (2006). Systematic review of studies of productivity loss due to rheumatoid arthritis. *Occupational Medicine*, 56, 18-27
- Carney, R. M. and Freedland, K. E. (2000). Depression and medical illness. *Social Epidemiology*. Eds Berkman, L.F. and Kawachi, I. Oxford: Oxford University Press
- CBI. (2010). *On the Path to Recovery: Absence and workplace health survey 2010*. London: CBI
- Ciechanowski, P. S., Katon, W. J. and Russo, J. E. (2000). Depression and diabetes: Impact of depressive symptoms on adherence. *Archives of Internal Medicine*, 160, 3278-3285
- Coats, D. and Lehki, R. (2008). *Good Work: Job quality in a changing economy*. London: The Work Foundation
- Cossette, S., Frasure-Smith, N. and Lesperance, F. (2001). Clinical implications of a reduction in psychological distress on cardiac prognosis in patients participating in a psychosocial intervention program. *Psychosomatic medicine*, 63, 257-266
- Cuijpers, P., van Straten, A., Smit, F., Mihalopoulos, C. and Beekman, A. (2008). Preventing the onset of depressive disorders: A meta-analytic review of psychological interventions. *American Journal of Psychiatry*, 165 (10), 1272-1280
- Currie, S. R. and Wang, J. L. (2004). Chronic back pain and major depression in the general Canadian population. *Pain*, 107, 54-60
- Dagenais, S., Caro, J. and Haldeman, S. (2008). A systematic review of low back pain cost of illness studies in the United States and internationally. *The Spine Journal*, 8, 8-20
- Das-Munshi, J., Stewart, R., Ismail, K., Bebbington, P. E., Jenkins, R. and Prince, M. J. (2007). Diabetes, common mental disorders and disability: Findings from the UK National Psychiatric Morbidity survey. *Psychosomatic Medicine*, 69, 543-550
- Davies, M. J., Heller, S., Skinner, T. C., Campbell, M. J., Carey, M. E., Cradock, S. et al. (2008). Effectiveness of the diabetes education and self-management for ongoing and newly diagnosed (DESMOND) programme for people with newly diagnosed type 2 diabetes: Cluster randomised controlled trial. *British Medical Journal*, 336 (7642), 491-495
- Dewa, C. S., Lin, E., Kooehoorn, M. and Goldner, E. (2007). Association of chronic work stress, psychiatric disorders and chronic physical conditions with disability among workers. *Psychiatric Services*, 58, 5, 652-658

- Diabetes UK. (2010). *Guide to Diabetes*. Retrieved 13 August 2010 from <http://www.diabetes.org.uk/Guide-to-diabetes/>
- Diabetes UK. (2010). *What is Diabetes?* Retrieved 13 August 2010 from http://www.diabetes.org.uk/Guide-to-diabetes/Introduction-to-diabetes/What_is_diabetes/
- Diabetes UK. (2004). *Diabetes in the UK 2004: A report from Diabetes UK*. Retrieved 27 July 2010 from www.diabetes.org.uk/Documents/Reports/in_the_UK_2004.doc
- DiMatteo M. R., Lepper, H. S. and Croghan, T. W. (2000). Depression is a risk factor for noncompliance with medical treatment: Meta-analysis of the effects of anxiety and depression on patient adherence. *Archives of Internal Medicine*, 160, 2101-2107
- Druss, B. G., Marcus, S. C., Olfson, M., Tanielain, T., Elinson, L. and Pincus, H. A. (2001). Comparing the national economic burden of five chronic conditions: One-quarter of the U.S. population has one or more of these chronic conditions, which cost \$62.3 billion in 1996. *Health Affairs*, 20 (6)
- DWP. (2010a). Incapacity Benefit Caseload (Thousands): IB ICD (disease) code by claimant/beneficiary. November 2009. Retrieved 4 August 2010 from http://83.244.183.180/100pc/ib/icdgp/ccsex/a_carate_r_icdgp_c_ccsex_nov09.html
- DWP. (2010b). DWP Statistical Release. 14 July 2010. Retrieved 3 August 2010 from http://research.dwp.gov.uk/asd/asd1/stats_summary/stats_summary_jul2010.pdf
- Eisner, M. D., Yelin, E., Trupin, L. and Blanc, P. D. (2002). The influence of chronic respiratory conditions on health status and work disability. *American Journal of Public Health*, 92, 1506-1513
- Farmer, A., Korszun, A., Owen, M. J., Craddock, N., Jones, L., Jones, I. et al. (2008). Medical disorders in people with recurrent depression. *The British Journal of Psychiatry*, 192, 351-355
- Feuerstein, M., Shaw, W. S., Lincoln, A. E., Miller, V. I. and Wood, P. M. (2003). Clinical and workplace factors associated with a return to modified duty in work-related upper extremity disorders. *Pain*, 102, 51-61
- Friedli, L. (2009). *Mental health, Resilience and Inequalities*. Retrieved 19 June 2010 from www.euro.who.int/_data/assets/pdf_file/0012/100821/E92227.pdf
- Gignac, M. A., Cao, X., Lacaille, D., Anis, A. H. and Badley, E. M. (2008). Arthritis-related work transitions: A prospective analysis of reported productivity losses, work changes and leaving the labor force. *Arthritis and Rheumatism*, 59 (12), 1805-1813
- Gignac, M. A. M., Badley, E. M., Lacaille, D., Cott, C. C., Adam, P. and Anis, A. H. (2004). Managing arthritis and employment: Making arthritis-related work changes as a means of adaptation. *Arthritis and Rheumatism*, 51 (6), 909-916
- Gignac, M. A. M., Sutton, D. and Badley, E. M. (2006). Re-examining the arthritis-employment interface: Perceptions of arthritis-work spillover among employed adults. *Arthritis and Rheumatism*, 55 (2), 233-240

- Gimeno, D., Benavides, F. G., Amick, B. C., Benach, J. and Martinez, J. M. (2004). Psychosocial factors and work related sickness absence among permanent and non-permanent employees. *Journal of Epidemiology and Community Health*, 58, 870-876
- Hammond, A., Bryan, J. and Hardy, A. (2008). Effects of a modular behavioural arthritis education programme: A pragmatic parallel-group randomized controlled trial. *Rheumatology*, 47, 1712-1718
- Harkness, E., Macdonald, W., Valderas, J., Coventry, P., Gask, L. and Bower, P. (2010). Identifying psychosocial interventions that improve both physical and mental health in patients with diabetes. A systematic review and meta-analysis. *Diabetes Care*, 33 (4), 926-930
- Hassan, E., Austin, C., Cella, C., Disley, E., Hunt, P., Marjanovic, S. et al. (2009). *Health and Wellbeing at Work in the United Kingdom*. Prepared for the Department of Health
- Horsten, M., Mittleman, M. A., Wamala, S. P., Schenck-Gustafsson, K. and Orth-Gomer, K. (2000). Depressive symptoms and lack of social integration in relation to prognosis of CHD in middle-aged women: The Stockholm female coronary risk study. *European Heart Journal*, 21, 1072-1080
- House of Commons. (2001). *Hansard Written Answer* to a parliamentary question from Mr George Howarth MP by the Secretary of State for Work and Pensions, section 'Incapacity Benefit'. Retrieved 10 February 2010 from <http://www.publications.parliament.uk/pa/cm200102/cmhansrd/vo010717/text/10717w27.htm>
- HSE. (2010a). *Musculoskeletal Disorders – Why tackle them?* Retrieved 3 August 2010 from <http://www.hse.gov.uk/healthservices/msd/whytackle.htm>
- HSE. (2010b). Table Typesex3 – 2008/09. Estimated days (full-day equivalent) off work and associated average days lost per case due to a self-reported illness caused or made worse by work, by type of complaint and gender. Retrieved 3 August 2010 from <http://www.hse.gov.uk/statistics/lfs/0809/typesex3.htm>
- HSE. (2009). *Statistics 2008/2009*. A National Statistics publication
- Joyce, K., Pabayo, R., Critchley, J. A. and Bambra, C. (2001). Flexible working conditions and their effects on employee health and wellbeing. *Cochrane Database of Systematic Reviews*, 2
- Katon, W., Lin, E. H. and Kroenke, K. (2007). The association of depression and anxiety with medical symptom burden in patients with chronic medical illness. *General Hospital Psychiatry*, 29, 147-155
- Kessler, R., White, L. A., Bimbaum, H., Qui, Y., Kidolezi, Y., Mallett, D. et al. (2008). Comparative and interactive effects of depression relative to other health problems on work performance in the workforce of a large employer. *Journal of Occupational and Environmental Medicine*, 50, 7, 809-816

- Kivimaki, M., Lawlor, D. A., Singh-Manoux, A., Batty, G. D., Ferrier, J. E., Shipley, M. J. et al. (2009). Common mental disorder and obesity: Insight from four repeat measures over 19 years: Prospective Whitehall II cohort study. *British Medical Journal*, 339: b3765. doi: 10.1136/bmj/b3765
- Kuhl, E. A., Fauerbach, J. A., Bush, D. E. and Ziegelstein, R. C. (2009). Relation of anxiety and adherence to risk-reducing recommendations following myocardial infarction. *American Journal of Cardiology*, 103 (12), 1629-1634
- Kuper, H. and Marmot, M. (2003). Job strain, job demands, decision latitude, and risk of coronary heart disease within the Whitehall II study. *Journal of Epidemiology and Community Health*, 57, 147-153
- Labour Force Survey. 2nd Quarter 2009 (2009) [Data file]. United Kingdom: Office of National Statistics
- Laine, S., Gimeno, D., Virtanen, M., Oksanen, T., Vahtera, J., Elovainio, M. et al. (2009). Job strain as a predictor of disability pension: The Finnish public sector study. *Journal of Epidemiology and Community Health*, 63, 24-30
- Lane, D., Carroll, D. and Lip, G. Y. H. (2003). Anxiety, depression and prognosis after myocardial infarction: Is there a causal association? Editorial comment. *Journal of the American College of Cardiology*, 42 (10), 1808-1810
- Lesperance, F., Frasere-Smith, N., Juneau, M. and Theroux, P. (2000). Depression and 1-year prognosis in unstable angina. *Archives of Internal Medicine*, 160, 1354-1360
- Lin, E. H. B., Katon, W., von Korff, M., Rutter, C., Simon, G. E., Oliver, M. et al. (2004). Relationship of depression and diabetes self-care, medication adherence and preventive care. *Diabetes Care*, 27 (4), 2154-2160
- Lopez, A. D. (2006). Chronic obstructive pulmonary disease: Current burden and future projections. *European Respiratory Journal*, 27, 397-412
- Löwe, B., Willand, L., Eich, W., Zipfel, S., Ho, A. D., Herzog, W. et al. (2004). Psychiatric co-morbidity and work disability in patients with inflammatory rheumatic diseases. *Psychosomatic Medicine*, 66, 395-402
- MacMahon, K. M. A. and Lip, G. Y. H. (2002). Psychological factors in heart failure: A review of the literature. *Archives of internal medicine*, 162, 509-516
- Marmot, M., Allen, J., Goldblatt, R., Boyce, T., McNeish, D., Grady, M. et al. (2010). *Fair Society, Healthy Lives: The Marmot review*. Strategic Review of Health Inequalities in England Post-2010
- Merikangas, K. R., Ames, M., Cui, L., Stang, P. E., Ustun, B., Von Korff, M. et al. (2007). The impact of co-morbidity of mental and physical conditions on role disability in the US adult household population. *Archives of General Psychiatry*, 64 (10), 1180-1188

- Mezuk, B., Eaton, W. W., Albrecht, S. and Golden, S. (2008). Depression and type 2 diabetes over the lifespan: A meta-analysis. *Diabetes Care*, 31 (12), 2383-2390
- Michie, S. and Williams, S. (2003). Reducing work related psychological ill health and sickness absence: A systematic literature review. *Occupational and Environmental Medicine*, 60, 3-9
- Minaur, N. J., Jacoby, R. K., Cosh, J. A., Taylor, G. and Rasker, J. J. (2004). Outcome after 40 years with rheumatoid arthritis: A prospective study of function, disease activity and mortality. *The Journal of Rheumatology*, 31 (Suppl 69), 3-8
- Moussavi, S., Chatterji, S., Verdes, E., Tandon, A., Patel, V. and Ustun, B. (2007). Depression, chronic diseases, and decrements in health: Results from the World Health Surveys. *The Lancet*, 370, 851-858
- Mrazek, P. J. and Haggerty, R. J. (1994). *Reducing Risks for Mental Disorders: Frontiers for Preventive Intervention Research*. Washington, D.C.: Committee on Prevention of Mental Disorders, Institute of Medicine
- Munce, S. E. P., Stansfield, S. A., Blackmore, E. R. and Stewart, D. E. (2007). The role of depression and chronic pain conditions in absenteeism: Results from a national epidemiologic survey. *Journal of Occupational and Environmental Medicine*, 49 (11), 1206-1211
- National Audit Office. (2009). *Services for People with Rheumatoid Arthritis*. London: NAO
- NHS. (2009). *Health Survey for England 2008: Trend tables*. The Information Centre for Health and Social Care. Retrieved 13 August 2010 from http://www.ic.nhs.uk/webfiles/publications/HSE/HSE08trends/Health_Survey_for_england_trend_tables_2008.pdf
- NICE. (2009). *Guidance for Employers on Promoting Mental Wellbeing Through Productive and Healthy Working Conditions*. Retrieved 6 September from <http://www.nice.org.uk/PH22>
- NICE. (2008). *Promoting Physical Activity in the Workplace*. Retrieved 6 September 2010 from <http://www.nice.org.uk/PH013>
- Ormel, J., Petukhova, M., Chatterji, S., Aguilar-Gaxiola, S., Alonso, J., Angermeyer, M. C. et al. (2008). Disability and treatment of specific mental and physical disorders across the world. *The British Journal of Psychiatry*, 192, 368-375
- Packham, C. and Webster, S. (2009). *Psychosocial Working Conditions in Britain in 2009*. Health and Safety Executive
- Parliament. (2010). *Health: Diabetes*. Retrieved 13 August 2010 from <http://services.parliament.uk/hansard/Lords/ByDate/20100406/writtenanswers/part042.html>
- Patten, S. B., Beck, C. A., Kassam, A., Williams, J. V. A., Barbui, C. and Metz, L. M. (2005). Long-term medical conditions and major depression: Strength of association for specific conditions in the general population. *The Canadian Journal of Psychiatry*, 50 (4), 195-202

- Patten, S. B., Williams, J. V. A., Lavorato, D. H. and Eliasziw, M. (2009). Allergies and major depression: A longitudinal community study. *BioPsychoSocial Medicine*, 3, 3
- Patten, S. B., Williams, J. V., Lavorato, D. H., Modgill, G., Jette, N. and Eliasziw, M. (2008). Major depression as a risk factor for chronic disease incidence: Longitudinal analyses in a general population cohort. *General Hospital Psychiatry*, 30 (5), 407-413
- Picardi, A., Abeni, D., Melchi, C. F., Puddu, P. and Pasquini, P. (2008). Psychiatric morbidity in dermatological outpatients: An issue to be recognised. *British Journal of Dermatology*, 143 (5), 983-991
- Picavet, H. S. J. and Hoeymans, N. (2004). Health related quality of life in multiple musculoskeletal diseases: SF-36 and EQ-5D in the DMC3 study. *Annals of the Rheumatic Diseases*, 63, 723-729
- Roux, C. H., Guillemin, F., Boini, S., Longuetaud, F., Arnault, N., Hercberg, S. et al. (2005). Impact of musculoskeletal disorders on quality of life: An inception cohort study. *Annals of the Rheumatic Diseases*, 64, 606-611
- Roy-Byrne, P., Davidson, K. W., Kessler, R. C., Asmundson, G. J. G., Goodwin, R. D., Kubzansky, L. et al. (2008). Anxiety disorders and comorbid medical illness. *General Hospital Psychiatry*, 30, 208-225
- Royal College of General Practitioners. (2010). *The Survey*. Retrieved 4 August 2010 from http://www.rcgp.org.uk/news_and_events/news_room/news_2010/gps_demand_better_psychologica/the_survey.aspx
- Rutledge, T., Reis, V. A., Linke, S. E., Greenberg, B. H. and Mills, P. J. (2006). Depression in heart failure: A meta-analytic review of prevalence, intervention effects and associations with clinical outcomes. *Journal of the American College of Cardiology*, 48, 1527-1537
- Sainsbury Centre for Mental Health. (2007). *Mental Health at Work: Developing the business case*. Policy Paper 8: London
- Sampogna, F., Picardi, A., Chren, M-M., Melchi, F., Pasquini, P., Masini, C. et al. (2004). Association between poorer quality of life and psychiatric morbidity in patients with different dermatological conditions. *Psychosomatic Medicine*, 66, 620-640
- Schane, R. E., Woodruff, P. G., Dinno, A., Covinsky, K. E. and Walter, L. C. (2008). Prevalence and risk factors for depressive symptoms in persons with chronic obstructive pulmonary disease. *Journal of General Internal Medicine*, 23 (11), 1757-1762
- Schmitz, N., Wang, J., Malla, A. and Lesage, A. (2007). Joint effect of depression and chronic conditions on disability: Results from a population-based study. *Psychosomatic Medicine*, 69, 332-338
- Schuring, M., Burdorf, L, Kunst, A., and Mackenbach, J. (2007). The effects of ill health on entering and maintaining paid employment: Evidence in European countries. *Journal of Epidemiology and Community Health*, 61, 597-604

- Scott, K. M., Von Korff, M., Alonso, J., Angermeyer, M. C., Bromet, E., Fayyad, J. et al. (2009). Mental-physical co-morbidity and its relationship with disability: Results from the World Mental Health Surveys. *Psychological Medicine*, 39, 33-43
- Silva, G. E., Sherrill, D. L., Guerra, S. and Barbee, R. A. (2004). Asthma as a risk factor for COPD in a longitudinal study. *Chest*, 126, 59-65
- Sims, M., Maxwell, R., Bauld, L. and Gilmore, A. (2010). Short term impact of smoke-free legislation in England: Retrospective analysis of hospital admissions for myocardial infarction. *British Medical Journal*, 340:c2161
- Smit, F., Willemse, G., Koopmanschap, M., Onrust, S., Cuijpers, P. and Beekman, A. (2006). Cost-effectiveness of preventing depression in primary care patients: Randomised trial. *British Journal of Psychiatry*, 188, 330-336
- Soderlin, M. K., Hakala, M. and Nieminen, P. (2000). Anxiety and depression in a community-based rheumatoid arthritis population. *Scandinavian Journal of Rheumatology*, 29, 3, 177-183
- Sprangers, M. A. G., de Regt, E., Andries, F., van Agt, H. M. E., Bijl, R. V., de Boer, J. B. et al. (2000). Which chronic conditions are associated with better or poorer quality of life? *Journal of Clinical Epidemiology*, 53, 895-907
- Stang, P. E., Brandenburg, N. A., Lane, M. C., Merikangas, K. R., Von Korff, M. R. and Kessler, R. C. (2006). Mental and physical comorbid conditions and days in role among persons with arthritis. *Psychosomatic Medicine*, 68, 152-158
- Stang, P., Lydick E. and Silberman C. (2000). The prevalence of COPD: Using smoking rates to estimate disease frequency in the general population. *Chest*, 117, 354-359
- Strik, J. J. M. H., Denollet, J., Lousberg, R. and Honig, A. (2003). Comparing symptoms of depression and anxiety as predictors of cardiac events and increased health care consumption after myocardial infarction. *Journal of the American College of Cardiology*, 42, 1801-1807. Retrieved 19 June 2010 from <http://content.onlinejacc.org/cgi/content/full/42/10/1801>
- Strine, T. W., Hootman, J. M., Okoro, C. A., Balluz, L., Moriarty, D. G., Owens, M. et al. (2004). Frequent mental distress status among adults with arthritis age 40 years and older, 2001. *Arthritis and Rheumatism*, 51 (4), 533-537
- Strully, K. W. (2009). Job loss and health in the U.S. labour market. *Demography*, 46, 2, 221-246
- Suhrcke, M., McKee, M., Sauto Arce, R., Tsova, S. and Mortensen, J. (2006). Investment in health could be good for Europe's economies. *British Medical Journal*, 333, 1017-1019
- Surtees, P. G., Wainwright, N. W. J., Khaw, K. and Day, N. E. (2003). Functional health status, chronic medical conditions and disorders of mood. *British Journal of Psychiatry*, 183, 299-303

- Surtees, P. G., Wainwright, N. W. J., Luben, R. N., Wareham, N. J., Bingham, S. A. and Khaw, K-T. (2008). Depression and ischemic heart disease mortality: Evidence from the EPIC-Norfolk United Kingdom Prospective Cohort Study. *American Journal of Psychiatry*, 165, 515-523
- TUC. (2010). *In Sickness and in Health: Good work – and how to achieve it*. London: TUC
- Tuncay, T., Musabak, I., Gok, D. E. and Kutlu, M. (2008). The relationship between anxiety, coping strategies and characteristics of patients with diabetes. *Health and Quality of Life Outcomes*, 6, 79. Doi: 10.1186/1477-7525-6-79
- Vaccarino, V., Kasl, S. V., Abramson, J. and Krumholz, H. M. (2001). Depressive symptoms and risk of functional decline and death in patients with heart failure. *Journal of the American College of Cardiology*, 38, 199-205
- Vahtera, J., Kivimaki, M., Pentti, J. and Theorell, T. (2000). Effect of change in psychosocial work environment on sickness absence: A seven-year follow up of initially health employees. *Journal of Epidemiology and Community Health*, 54, 484–93
- van Duijn, M. and Burdorf, A. (2008). Influence of modified work on recurrence of sick leave due to musculoskeletal complaints. *Journal of Rehabilitation Medicine*, 40, 576-581
- van 't Land, H., Verdurmen, J., ten Have, M., van Dorsselaer, S., Beekman, A. and de Graaf, R. (2010). The association between arthritis and psychiatric disorders: Results from a longitudinal population-based study. *Journal of Psychosomatic Research*, 68 (2), 187-193
- Vaughan-Jones, H. and Barham, L. (2009). *Healthy Work: Challenges and opportunities to 2030*. Bupa: London. Retrieved 3 August 2010 from http://www.theworkfoundation.com/assets/docs/publications/216_Bupa_report.pdf
- Verbrugge, L. M. and Juarez, L. (2008). Arthritis disability and heart disease disability. *Arthritis and Rheumatism*, 59 (10), 1445-1457
- Vijan, S. and Langa, K. M. (2003). The impact of diabetes on work-force participation: Results from a national household sample. MRRC Working Paper No. 2003-034. Ann Arbor: Michigan Retirement Research Center, University of Michigan
- Von Korff, M., Crane, P., Lane, M., Miglioretti, D. L., Simon, G., Saunders, K. et al. (2005). Chronic spinal pain and physical-mental co-morbidity in the United States: results from the national co-morbidity survey replication. *Pain*, 113 (3), 331-339
- Waddell, G. and Burton, A. K. (2006). Principles of rehabilitation for common health problems, in O'Donnell, M. *Rehabilitation: Keeping people in work*. Chief Medical Officer's Report 2006. Dorking: UnumProvident
- Wang, J. L., Lesage, A., Schmitz, N. and Drapeau, A. (2008). The relationship between work stress and mental disorders in men and women: Findings from a population-based study. *Journal of Epidemiology and Community Health*, 62, 42-47

Bibliography

- WHO. (2010). *Disease Prevention. What are noncommunicable diseases?* Retrieved 27 July 2010 from <http://www.euro.who.int/en/what-we-do/health-topics/disease-prevention/what-are-noncommunicable-diseases>
- WHO. (2009a). *Cardiovascular Diseases*. Fact sheet N°. 317. Retrieved 3 August 2010 from <http://www.who.int/mediacentre/factsheets/fs317/en/index.html>
- WHO. (2009b). *Chronic Obstructive Pulmonary Disease (COPD)*. Fact sheet N°. 315. Retrieved 3 August 2010 from <http://www.who.int/mediacentre/factsheets/fs315/en/index.html>
- WHO. (2009c). *Diabetes*. Fact sheet N°. 312. Retrieved 3 August 2010 from <http://www.who.int/mediacentre/factsheets/fs312/en/index.html>
- WHO. (2005). *Preventing Chronic Diseases: A vital investment*. Retrieved 3 August 2010 from http://www.who.int/chp/chronic_disease_report/contents/en/index.html
- WHO. (2004). *Prevention of Mental Disorders: Effective interventions and policy options*. Retrieved 3 August 2010 from http://www.who.int/mental_health/evidence/en/Prevention_of_Mental_Disorders.pdf
- Whooley, M. A., de Jonge, P., Vittinghoff, E., Otte, C., Moos, R., Carney, R. et al. (2008). Depressive symptoms, health behaviors and risk of cardiovascular events in patients with coronary heart disease. *The Journal of the American Medical Association*, 300(20), 2379-2388
- Wild, S., Roglic, G., Green, A., Sicree, R. and King, H. (2004). Global prevalence of diabetes: Estimates for the year 2000 and projects for 2030. *Diabetes Care*, 27(5), 1047-1053.
- Wilkinson, E. (2007). Access to psychological therapies almost non-existent. *The Lancet*, 370, 9582, 121-122
- Williams, L. S., Ghose, S. S. and Swindle, R. W. (2004). Depression and other mental health diagnoses increase mortality risk after ischemic stroke. *American Journal of Psychiatry*, 161, 1090-1095
- Woolf, A. D. and Pfleger, B. (2003). Burden of major musculoskeletal conditions. *Bulletin of the World Health Organisation: Policy and Practice*, 81 (9), 646-656

Appendix A: Case studies

**Atopic eczema
and depression:
Participant A**

Work

Participant A works in the public sector. Her main work responsibilities include completing paperwork and spending a good amount of time on the telephone, as well as making home visits to clients. Throughout her working day she experiences frequent interruptions.

The main reason Participant A attends work is for a 'sense of purpose and social contact.' Participant A never really wanted to stay at home because she knew that would make everything worse. Even during a period of time when she could not undertake paid employment Participant A did voluntary work to feel that she was contributing something and engaging with people. Money is not the main reason Participant A goes to work because due to her health she is not able to work full time and the type of work she can do is limited. Therefore, she is not much better off financially when working compared to being on benefits.

Health conditions

Participant A has a number of health conditions. Participant A has had atopic eczema since childhood, which was not well controlled until her 20s. Since Participant A saw a specialist and got some treatment for the condition – including an experimental treatment – the atopic eczema has been controlled. She still has some minor occasional flare-ups, however.

At the same time as being treated for atopic eczema Participant A saw an allergy specialist who told her she was allergic to dogs and that may contribute to respiratory symptoms, including asthma. Now, if Participant A goes to someone's home where there is a dog her health can be affected.

Since her teens Participant A has had depression, which has greatly impacted the amount of work that she has been able to do in her life and her ability to progress her career.

The last condition Participant A mentioned was musculoskeletal-related pain, which could have been related to poor posture as a result of her depression and to the large amount of time on the phone at work. With some physiotherapy Participant A has been able to control the pain.

Participant A feels that when her eczema was active it exacerbated her depression. Now, with the treatment she receives, the only way that it impacts her mental health is through the amount of energy she has to put into controlling her eczema. This can reduce the amount of energy and time she has for other things. Participant A does not feel that her eczema gets worse in response to depression or stress. Additionally, Participant A does not think that her eczema was the primary cause of her depression. She does not think that it helped, though.

Participant A feels that her conditions do affect her work. The allergies are a particular concern when it comes to home visits. Most of the time she is able to work with clients who do not have dogs, but occasionally a client will have a dog, which can be difficult depending on the situation.

Her depression also impacts on her work. For instance, getting up in the morning can require a lot of effort. So, actually getting into work is a big issue before she has even started any work. It has also played a role in her career progression. Participant A works fewer hours because of her depression. However, some of her colleagues feel that working full time would be needed for career progression. For Participant A: 'It's not about wanting to; it's about being able to.'

Treatment and interventions

The treatment of the atopic eczema requires a fairly strict regime each day and 'there is no question of skipping that routine.' It is a regime that Participant A will have for the rest of her life. She treats the depression with medication. If Participant A forgets to take her medication she can feel nauseous and dizzy. Other than that an occupational health counsellor has provided support for treating Participant A's depression by guiding her through some principles related to cognitive behavioural therapy.

For work, the condition that really affects Participant A is her depression. For her current job she disclosed her mental health condition on her application form because she wanted to explain the gap in her employment history. Once the GP signed a note saying she was fit for work everything was set for her to start work.

Participant A has spoken with her manager about her depression throughout her employment. She has had a relapse related to work. This occurred during a time of change within the office, which resulted in increased work hours, workload and pressure, and was coupled with a few unsupportive interactions with co-workers.

The office where Participant A works can be very busy, frantic and stressful. Reasonable adaptations to change this environment are difficult because she needs to be accessible to other people. However, during the period of change, more support could have been provided initially. After the relapse her employer reduced her working hours and then gradually increased them over time. An occupational health nurse helped to ensure the working hours were adhered to. On returning to work Participant A met a couple of extra times with her manager.

Respiratory**Work****condition:
Participant B**

Participant B works in the education sector. Her work involves teaching, researching and some management responsibilities. A typical work day for Participant B begins later in the morning, either in her office on campus or at home, and continues for around six hours. She then spends some time with her family for a few hours before returning to work for a few hours later in the evening. Participant B has a lot of freedom in her schedule. The only times she is committed to being in a specific place at a specific time is when she has specific appointments or commitments. Her job is very autonomous.

The main reasons she goes to work are for interest, balance, being with other people and developing her professional career and status. She also goes to work to have her own income.

Health condition

Participant B has Lymphangioleiomyomatosis (LAM), which is a rare and progressive lung disease where normal lung tissue is gradually replaced by cysts. The symptoms initially begin with some breathlessness with exertion and eventually lead to needing to use oxygen. If it gets very bad patients need to be put on the list for a lung transplant.

Currently, Participant B has to use oxygen because she can get breathless quite easily. The oxygen, however, does not affect her job or daily life too badly. She does 'all the normal stuff anyone else would do.' She does not feel fatigued and has not had to take any more sickness absence days compared with anyone else.

When Participant B was diagnosed she was very surprised because she did not expect that it would be such a severe disease or that she was already badly affected by it. It is a disease that does not have treatment so she can only manage the symptoms to some extent. Now, she has come to terms with the condition and actually feels very happy to be alive and tries to continue doing the same things as before. She tries not to let her condition limit her too much.

Participant B's condition has little impact on her mental health beyond the time period around the initial diagnosis. In fact, she thinks that she may be happier now because she is able to keep things in perspective:

'I would say you have a natural sort of substantial period [...] a bit like grief. I didn't take antidepressants or anything because it wasn't sort of depression as such. It was more [...] like] somebody dies or you get divorced or something. It was a really traumatic period,

but I think now it kind of made me, I don't know, [a] more thoughtful person and a more grateful person. So I think I'm probably happier than I was before because I think before I used to get upset about things that don't really matter. Like not being promoted at work or something like that. Now I feel I have more of a sense of proportion.'

Participant B's partner has also provided support by being optimistic. When she was initially diagnosed he helped to offer a sense of perspective and helped her recognise that the condition was not going to ruin their lives.

Treatment and interventions

In addition to using oxygen and inhalers, Participant B has received experimental drug treatment that has possibly slowed down the progression of the disease. She feels very thankful that she has benefited from this:

'I just got really super lucky that the limited research they do on LAM has reached the point where they can tentatively point towards some sort of therapeutic intervention. So I was delighted that it existed and that it worked. So even though I'm far from healthy, I'm still well enough to have a normal life and do everything with the oxygen as anyone else would.'

In terms of adjustments at work, her co-workers have been really supportive. She has also asked for regular meeting rooms to be close to her office or to have a lift so she does not have to rush around too much. Her employer was able to accommodate her requests. Additionally, she feels that she wants to accomplish more now because of her condition: 'There's a sense of urgency.'

In addition to the treatment and support she has received more support right around the time of diagnosis would have probably helped her to adjust. She asked to see a therapist, but there was a three-month waiting list. By the time she went to see him, she was fine again. This type of intervention has to be timely in order to be effective.

'It is not enough to just have the intervention. It has to be there in real time so I think the worst moment was just leaving the doctor's office and thinking: "Yes, oh God, I've got to face [this]; where do I start facing this?" And there I think would have been really helpful to talk to [someone] but there wasn't anyone.'

Rheumatoid Work

arthritis: Participant C works in human resources. Her main job responsibilities involve working with staff, providing advice, writing briefs and completing paperwork. Her days vary greatly. Some days consist of meetings all day long whereas others comprise desk work along with a mix of other activities.

Participant C

Her main reasons for going to work are for the challenge and reward it brings to her life. She enjoys what she does and it helps pay the bills.

Health conditions

Participant C has rheumatoid arthritis (RA) and has had it since she was in her mid to late 20s. It took a number of months to be diagnosed and then to get the medication right. With RA 'your health isn't very robust in the sense that because you always feel rough you feel tired.' The most obvious impact of the RA is pain, which can be intense. In addition to the pain, fatigue also impacts her day-to-day life:

'I have to organise my social life. I can't have too many nights out. My job is demanding, and I know that, but on top of my job I can't do three or four late nights in a week. I have to think: 'OK, I'm out two nights this week already, I'll have to do it next week.' And then periodically I'll have days where I need to sleep and I will spend most of the day in bed.'

Participant C was relieved once she was diagnosed because it helped to explain her symptoms. However, it has been difficult to make the adjustment because she had a very active life. This included playing sports, which was then limited due to her condition. It took her a while to come to terms with her condition and to learn to balance her activities.

Before being diagnosed Participant C's mental health was good. Around the time of the diagnosis it took her a while to adjust. She lost touch with some people because she was not feeling well and was afraid about having an attack while being out. Participant C estimates that it took between 15 to 20 months to really 'get to grips with how to cope with it.' While she has more or less adjusted to her condition she is still affected some days by it and can still be angry about it.

Participant C also has another health condition. However, it does not affect her day-to-day life as much as the RA. The main symptom has been weight gain.

Treatment and interventions

All the treatment that is required for the other health condition is taking a pill in the morning. She also receives anti-TNF treatment for her RA, which she finds really helpful. Sometimes, the number of medical appointments needed to manage her RA can frustrate her because it can disrupt her life. Often the interaction with the doctor takes no longer than a few minutes. Participant C has received some occupational therapy as a result of a flare-up a few years ago. The advice from the occupational therapist about using specific types of equipment (eg a fat pen) and ways of holding objects or standing better was helpful. However, she wishes she had received that advice slightly earlier because it may have reduced subsequent pain.

Participant C has always declared her RA to her employer and has usually received support from her employers. For example, her employer offers flexibility around her regular medical appointments. Her line manager also works with her on her holiday schedule to ensure that she takes regular breaks throughout the year. She does have a tendency to take on too much work sometimes and she feels her manager tries to keep an eye on her. Participant C also schedules her working hours so she regularly has a day off every few weeks, which gives her a chance to catch up and have an easy day to run errands.

Participant C has tried to minimise the impact her condition has had on her work. In fact, there have been times when she has gone into work when she probably should have stayed at home. This is because she does not want people to think she is 'slacking'.

Her colleagues have been really supportive. For instance, when she has had difficulty getting a file out of the drawer a colleague will help to get it out:

'I get a huge amount of emotional support from my colleagues because they're the people I'm spending most of my time with so they know if I'm having a bad time. If I need a bit of help they'll lift and carry things when I really need [them to]. And laugh at me when I need to be laughed at if I'm feeling a bit precious! They're fantastic. That's where I get most of my support from, my friends.'

When Participant C was diagnosed and subsequently signed off from work she recognised that it was important for her to continue working. Therefore, she asked to work a few hours during this time period:

'When I was formally diagnosed I was signed off for four weeks and I thought if I stay at home for four weeks I will go out of my mind. As much as anything I'll just sit here dwelling

on the whole thing and we agreed that I would work half time during that four weeks. In recognition, I mean they signed me off for a reason, I was overdoing it and needed to rest. So I did half time. I went in late and left early for that four weeks. And that was enough, I think, for me just to acknowledge it and rest and probably thinking about it that was important to the psychological adjustment to it.'

**Ulcerative colitis
and ankylosing
spondylitis:
Participant D**

Work

Participant D had to retire early as a result of his condition. Before retiring he owned his own family business and was the company director. The role was very busy, requiring long working hours from five in the morning until nine at night, seven days a week. A typical working day would be spent on a range of activities, including working on the phone, processing paperwork and making site visits.

The main reason for being self-employed was for family reasons. He really appreciated the opportunity to work with his family so closely and to teach his children the values of hard work and independence. The alternative for him would have been to work in a large city where the commute would have been very long and severely limited his interaction with his children.

Health conditions

Participant D had fairly good health for most of his lifetime. It was when he gave up smoking that within a few months he developed ulcerative colitis, which runs in his family. This condition severely limited his ability to work. Through the increased medical attention he found out that the back pain he had experienced at various points throughout his life was ankylosing spondylitis. Prior to his diagnosis he would manage the back pain by sitting in high-backed chairs, going to physiotherapists and taking exercise. Participant D also feels pain in his neck, ribs and feet.

The ulcerative colitis is the more difficult condition for him to manage because it can be really disruptive to his life:

'You can't function normally when you're going to the loo 10–20 times a day. It's just impossible. It ruins your life. It ruins anything and any aspirations you might have, any bits of travel. Everything becomes an impossibility.'

The condition can be very draining and has affected his quality of life. The business became unsustainable and he retired before the age of 50.

The ankylosing spondylitis also has affected his life, but he had already retired before the diagnosis was made so the limitations to work were minimal. However, he has to be very careful about the manual work he does at home because some stances can cause great pain days and weeks later. Participant D also described a situation where he was accidentally bumped in the street that resulted in a fortnight of pain and a heavy dose of painkillers. He recognises he has to be very careful in what he does. He has had to employ people to do things that he would have otherwise done himself as a result of the ankylosing spondylitis. He sometimes feels pain, particularly when he is lying down at night trying to sleep and there are instances where he can only sleep for two hours at a time before having to get out of bed to walk around. He mentioned that when he was working with his undiagnosed ankylosing spondylitis the interruptions in sleep likely contributed to his tiredness.

Before his condition he had always been fairly optimistic and currently he feels he is incredibly optimistic. In fact, he may be 'more optimistic now than certainly over the last 12 years since being forced into early retirement.' The only time his mental health was not as strong was during the years he was trying to get his medication right and seeking proper help. He was not clinically depressed, but did feel some hopelessness during that time period. His family has provided him with a great deal of support in helping him deal with and manage his condition.

Treatment and interventions

With the two conditions that he has treatment can be tricky. Some medication can cause bleeding so he was unable to use those. However, he found a medication that allowed him to be pain-free and did not trigger bleeding. This has really improved his quality of life and has made a 'staggering difference'. The treatment he has received has been really beneficial to reducing the symptoms of his conditions. He still has occasional flare-ups for both the ulcerative colitis and ankylosing spondylitis, but he has learned to cope with them and knows when he needs to visit the hospital. In addition, he has attended a treatment centre that has provided information about other types of treatment and has taught his partner how to help relieve some of the ankylosing spondylitis-related pain through massage. The centre has been really supportive and helpful to them both. Participant D feels that if he was able to get a quicker diagnosis and better treatment earlier he may not have had to give up his family business so early in life.

Cancer: Participant E

Work

Participant E works in the engineering and science field for a medium-sized organisation in a role she has had for many years. She is aged 40–50. Her role is intellectually challenging and also requires physical activity and standing for long periods of up to seven hours a day.

Participant E works as part of a team, but also spends time working independently. She is skilled at her job and has control over the order and pace at which she works, although there are set tasks that have to be completed within a specified time period.

Participant E views work as central to her identity: 'I like work. I enjoy it. Work is part of my self-concept and I do see myself as a worker.' Moreover, she believes that continuing to work as much as possible through her treatment for cancer has been key to maintaining normality and her sense of self:

'I liked going to work between chemo appointments as it shows life is about more than medical appointments. It allows you to escape the cancer world otherwise you have appointments for cancer, talk about cancer – but at work people are pleased to see you and you get to chat about other things and be normal.'

Health conditions

Participant E was diagnosed with breast cancer and had a single mastectomy in addition to chemotherapy and radiotherapy. Psychologically she found the diagnosis and mastectomy very draining and distressing, although she has tried to remain positive throughout the experience. The mastectomy affected her perceptions of herself as a woman and her self-esteem. She was initially intensely anxious about her appearance and how others would perceive her, especially at work. She talked about 'feeling very visible when you want to be invisible and coming to terms with it personally' and pointed out 'it can be hard being at work and being normal when everything is so abnormal.'

She has experienced other health problems unrelated to the cancer, which have affected her quality of life since the treatment, but the interview focused on her experiences of cancer at work. Participant E is still being monitored in relation to the cancer, but is not currently receiving treatment although she may have reconstructive surgery in the future.

Treatment and interventions

Throughout her diagnosis and treatment her manager has been very supportive. This positive, open and supportive relationship with her line manager has been important to her for staying in work as much as possible.

She talked about how losing her hair and going into work for the first time without a wig was a very scary experience and how her manager was central in helping her through this. Participant

E described going in very early so no one would see her arrive and then working in a quiet room and phoning her manager very distressed to say that she had come in for the first time without her wig and was very worried about coming out into the shared areas. Her manager came to collect her and they went out together and all the men and women were very supportive and kind. She then felt the more she came in without her wig the easier it got, although to start with it was a nerve-wracking experience. Participant E joked that she had maybe been too open for her line manager's liking at times: 'I am sure my manager would prefer not to hear all [the] symptoms, but it is helpful for them to understand how I am affected.'

In addition to her relationship with her line manager her colleagues have been supportive. This was important when she returned to work following her mastectomy. Again, she mentioned that she is able to have a giggle with her colleagues about things like losing her hair and she described how some of her balding male colleagues joked she should give it to them! Overall, she has viewed spending time with people at work as very important to her psychological wellbeing as it allows her to have familiar social interactions rather than 'being at home alone worried.'

In terms of support from occupational health she said her experiences have been mixed, but in many cases she has felt they have not lived up to her expectations and not provided the support she needed. She felt that she had to 'battle' to stay in work throughout her treatment and return to work. She also talked about how the negative attitudes of some of the occupational health professionals she has encountered have made her wonder if they really wanted her back at work. However, Participant E did encounter standout individuals who had gone out of their way to help her, including one physiotherapist who ensured she was able to use exercise equipment during her breaks at work to help the pain and stiffness she had in her arms and chest after the operations and skin grafts necessary for her mastectomy. However, other experiences have not been so positive. She talked about how returning from work from her mastectomy one member of the occupational health team had expected her to return full time to her role (including seven hours of standing). It was only after she showed her the extensive scars and described the operation that she allowed her to have a phased return. She described this experience as 'demeaning' and wished the members of the occupational health team had more understanding of the effects of operations such as hers on individuals.

In terms of interventions and what could have been done better, especially through the workplace, Participant E said she wished there had been better signposting through occupational health and HR to support services such as employee assistance programmes

and counselling helplines. She found these herself through the website, but said they were ‘very hidden’ and she wished someone could have just told her about them. She also felt she should not have to battle with occupational health to return to work and wished they had been more welcoming to her returning. Participant E also found that having access in her breaks to exercise equipment to strengthen her muscles and stretch was paramount and she really valued having this open to her to use.

**Spinal
osteoarthritis:
Participant F**

Work

Participant F is aged 50–60 and could be described as a senior knowledge worker with a high level of responsibility. She works long hours in a desk-based job to tight deadlines and in an increasingly pressured environment. Participant F was diagnosed two years ago with spinal osteoarthritis and is in constant pain.

She describes herself as very committed to doing a good job at work, but given that her condition is related to, and exacerbated by, sitting for long periods she recognises she is maybe ‘too conscientious’ for her own good. Recently, Participant F started working four rather than five days a week for her health to try and ensure she has less time at her desk. However, in practice this has not translated into a significant difference in hours as she now works for less pay and finds herself working four or five hours at the weekend. This is because her workload is high and she feels that she is the type of person who cannot relax when they know they will be ‘manic’ the minute they come in on a Monday. She feels she is her own worst enemy. Her boss is very supportive and has told her she does not want her to be doing these weekend hours, but she herself just cannot relax if it is not done and it helps her stress level to do it.

Participant F felt conflicted between getting the job done and acting in ways that allow her to better manage the pain from her spinal osteoarthritis. The advice she has received in terms of starting work later in the day when she is less stiff and taking frequent breaks is not compatible for her with her job and the way she likes to work. She works straight through from 8.30 to 6.30 with minimal breaks because she does not like to break her train of thought writing to take the posture and rest breaks suggested:

‘The reality is it doesn’t work with the job. It doesn’t stop the deadlines coming and the work coming in. The reality is when you’ve got a thought process going you can’t just stop and keep interrupting it. Real life is not like that – so I am still huddled over my desk.’

This is one of the reasons she felt the four-day week may force her to do less – although this still is not perfect because the workload is so high. Participant F hopes with time her new objectives will reflect the fact she is not full time, which will allow her to better work within these hours. However, she recognises businesses and employers are under so much pressure to deliver a great deal, cutting costs and staff numbers, which results in the remaining staff inevitably having a high workload.

Health condition

As already mentioned Participant F suffers from spinal osteoarthritis. She described the pain as:

'...[A]wful and worse at night as the pain [is] worse when I lie down and the sheer pain is hard to manage. So I very rarely get a full night's sleep and when I do I wake up in the morning very stiff and it takes me a while to get going. By mid morning I have usually loosened up a bit, but the pain is constant. And living with constant pain is hard because nobody can see your pain and it's not that you want them to see it, but nobody makes allowances... You're more irritable because you're constantly in pain and it's hard to explain to people how it feels. It just gets to you and makes life that much harder.'

After a number of years visiting her GP with the feeling 'something wasn't right and not getting anywhere' she asked to be referred through work and had an MRI scan, which confirmed the arthritis in her spine between her shoulder blades and neck. In terms of the causal factors Participant F very much sees work as the cause, having worked in desk jobs since 16 years of age:

'Put it like this: for 40 years I've sat at a desk in very stressed conditions hunched over, you know, meeting deadlines and things and I think 40 years of sitting at a desk is the cause of my condition.'

She feels she was basically told she has to just learn to live with the condition because:

'...[T]here is nothing they can do. There are no new joints like if you had it in your knee and the pain relief is anti-inflammatory, which you can't take long term because it rips your stomach apart. They asked me to [do] Pilates, think about posture, walk and [take] gentle exercise – but basically learn to live with it, which is depressing.'

Participant F takes very strong anti-inflammatory tablets, but this is not a long-term solution.

Participant F felt her condition influenced her mental health:

'The effect it has on me mentally is huge because you know when you are in a stressful job and you are in pain it does get to you and it makes you short and you know it just makes me feel like an old woman sometimes because I'm just exhausted – mentally and physically – totally exhausted. But you know we've got to work longer now so you're told – and the perception is as long as you're not doing a manual job, because you obviously lose physical strength when you're older – there's no reason people can't work until you're 67–70. I am here to tell you it is balderdash because if you sit at a desk all day that can be as much stress and strain on you as manual work. I am one of the first lot of women who will not get a state pension until I am 65 and I have been at work since I was 16 and I can't see I'm going to survive doing this for another nine years.'

Participant F feels that in order to cope she will have to take a lesser job with no responsibility where she can just come in and do her job and then leave. She does not believe it would be possible to share a higher-level job with another team member or work fewer hours in a more challenging role because of the cuts and high demands she believes businesses currently place on people:

'I don't think people of a certain age, or certainly people of a certain age in constant pain, can keep up with the demands business makes of you these days because the pressure is just relentless.'

Treatment and interventions

None of the medical experts she has seen have talked to her about the psychological impact of pain and how she could manage this, including both her own GP and occupational health. However, she said 'this is personal' and the emotional side of the pain is something she keeps to herself, believing she is of the generation that 'just gets on'. She points out that whilst her boss knows about the physical side of the pain she has not talked about the emotional side. When asked whether she would like more information on other types of support Participant F says it is not that she necessarily prefers to deal with the emotional side of the pain on her own, but she just doesn't see how any amount of talking about her problems could help as she still has her work and family responsibilities to deal with.

In terms of support from work Participant F said her line manager has been extremely sympathetic and willing to let her work in different ways. Occupational health has assessed her

and recommended adjustments, but the challenge is as previously mentioned: she does not feel they would allow her to work in the way she wants and needs to work to meet the challenges of the role. She believes it is too late for her to change her ways, but that there needs to be more serious education for younger workers about the real potential risks of desk-based work in terms of MSDs and arthritis as she believes sitting correctly and getting into the practice of taking breaks is not taken seriously by most people as they don't realise the pain and suffering associated with conditions such as hers.

Stroke: **Work**

Participant G

Participant G is aged 45–55 and could be described as a senior knowledge worker. She works independently in a large organisation with a broad area of responsibility. Her work is intellectually challenging and requires her to work to tight deadlines in an increasingly pressurised environment. Her work is principally desk-based. Participant G views her work as central to her identity, as she explains:

'[F]or me [work is] one of the most important relationships in my life, so it equates I spend more time at work than I do being married or being a parent or whatever.'

Health conditions

Participant G suffered from a stroke and other health complications, which had an impact on her cognitive abilities, a number of years ago when she worked for a different company. Unrelated to the stroke she also has suffered from clinical depression and had two episodes she identifies, but feels this is now not something that affects her life. She still suffers from another health complication, which has to be closely monitored and was related to her stroke.

In terms of the impact of the conditions on her mental health Participant G believes the stroke has had both negative and positive effects. On the negative side she believes it has made her self-critical because her cognitive abilities were affected and it can make her question herself. However, she believes surviving and dealing with a life-threatening situation makes her feel she can deal with anything and also means she has to now dedicate time to ensure she is well mentally.

Treatment and interventions

Participant G talked about her experiences in her former company during her stroke and separate periods of depression and how support was very much lacking from all those she would have hoped would support her, including occupational health, HR and her line manager.

She described feeling she had to battle with HR and occupational health to stay in work or return to work following her periods of ill health.

She also described a lack of understanding from some colleagues at the time she was suffering from depression:

'I had comments like 'I think you can get a degree of scepticism from colleagues' and 'I know when I was off with depression – yes, a lot of us are coping with lots of pressures at the moment' and things like that. And that's even with people who supposedly know about mental health.'

Participant G highlights that she does not have any formal adjustments made because of her health problems, but makes her own by using flexible working to work around her condition:

'Flexible working, which is acknowledging when I'm tired and I can't do things, because particularly with me, I suppose my brain has a different way of doing things because I'm not as sharp as I used to be. So I have to be very aware of if I'm tired and that I am actually not functioning. And some of it, because my work is so cognitive, that can be quite difficult. And I suppose that's something I don't communicate with my line manager. They just think: "Oh, she's had a stroke, she's fine, [she] can walk around fine.'"

Participant G views her current line manager as supportive and feels able to discuss personal problems with him. She says he is aware of her medical history in relation to the stroke and other health complications because she sometimes adjusts her hours around her health appointments to monitor her conditions and receive further therapy. She has not discussed her episodes of depression as she does not feel it is relevant at the moment, but feels she could if she needed to: 'He's quite sensitive and he's quite perceptive and I think that I could approach him with anything.'

In terms of interventions Participant G feels a more joined-up approach between line managers, HR and occupational health and better signposting of information and advice would be very useful:

'I think if line managers knew more about using occupational health effectively because in my past company I wasn't referred although I did ask to be. That line managers had a better understanding, either through me or through an occupational health provider, of

what effect depression had on me and what to look out for coming back to work – I think that would have been very helpful. Also, I think better use of interventions and information through the EAP and occupational health service would be helpful.'

Participant G also felt it was important to focus on people's capabilities when they return to work following ill health:

'Being aware of the strengths people have...so taking people through it that way, but also then being aware of times of vulnerability and what to look out for, definitely. There's awareness then of how to help people and the fact that people do need reasonable adjustments.'

Following her negative experiences with former line managers Participant G also said she benefited in her new position from being very honest and open about her condition and what she could and could not do:

'This time, with my new manager, I've said: 'Well, actually, I've got – I know this sounds really complex, but this is the position – and every now and again I'll get this. I don't want to go off sick, but I want to work from home. I might not be performing to top level, but this is why.' And yes, fine. So, again there's always that feeling in your mind, thinking I don't want to be one of those whingers. I don't want to be seen to be using a health condition as an excuse or whatever. So I think that is very difficult. I think you know you've got to be upfront and you will have times where you aren't going to be able to perform the way you want to, but you want to be at work. Or actually, you can't – and that's the other thing, is when you know you're not fit to work.'

Asthma: Work

Participant H

Participant H is aged 25–35 and works in the third sector in a job that involves engaging with other organisations and the general public as well as some desk-based work.

Participant H could not imagine not working:

'Well, firstly it's essential for, just to live, particularly in London. But secondly, I sort of thrive on, almost, stress – a little bit I have to be doing things. I couldn't not work really.'

Health condition

Participant H was first diagnosed with asthma at a young age:

'I've had it since before I remember. I think the doctors first suspected it when I was less than a year old or something. And it was fairly bad when I was young, but not, I was never hospitalised or anything. It was just not very well managed and simple things like going up the stairs to my bedroom I had to sit at the top of the stairs sometimes to catch my breath. So it was never terrible, but it was just a daily bit of a struggle sometimes.'

She highlighted that her doctors had told her she may grow out of the condition in her early twenties, but this has not happened. However, she described how she felt she better managed her condition now so it had less impact on her life:

'But I've got it well under control over the past few years. I was a bit inconsistent with my medication. But now I'm pretty regular with it and it's a lot better...and over the past, I'd say over the past maybe 10 years, I've sort of gone more regularly to the asthma clinic.'

Treatment and interventions

As Participant H felt she had greater control over her asthma and use of inhalers now her asthma only has a minimal effect on her life as she knows how to cope with any changes in her symptoms. However, she does not like being dependent on medication:

'I don't feel like, well, the actual asthma itself, I don't feel it infringes on my life too much. I'm annoyed that I have to take medication every day – that does annoy me and I do feel frustrated that in some ways I'm kind of dependent on it. I know that I won't be rushed off to hospital if I came off it, but it's just, getting the coughing and starting wheezing again if I was to come off it. That side of it frustrated me, but I don't curtail anything that I do because of it.'

However, she did highlight that perhaps as a result of the asthma she has recently been more susceptible to chest infections, which have impacted on her ability to work and meant she has had to take time off.

Participant H said no one has talked to her before about the potential impact of asthma on her mental wellbeing. She does sometimes worry about her health and the impact of taking medication on her long-term outcomes, but felt this was more linked to witnessing family

members suffering with other conditions than the asthma per se. Her employer has always been supportive and not questioned her time off for chest infections. She informed them about her asthma when she started and she did not usually take time off.

In terms of interventions that would be helpful Participant H felt she would like more information to reassure herself on the long-term effects of using her inhalers every day.

Diabetes:
Participant I

Work

Participant I works in the education sector as an administrator. A typical day consists of working on the computer, answering emails, processing data and answering the phone. The main reasons Participant I goes to work are to interact with others and be part of a team, as well as to help others.

Health condition

Participant I has diabetes. She started experiencing symptoms related to her diabetes a number of years before she was diagnosed. Now, she has lived with the condition for a few decades. Her condition has not affected her life too much. If she takes care by watching what and when she eats and exercises it only affects her in minor ways. Participant I has to carry her medication and remedies with her at all times.

When she received her diagnosis she was relieved to know what was causing her symptoms. She was also relieved that with regular medication and care she would be able to manage her condition. She feels more or less the same way now about the condition. However, it can be a slight inconvenience at times.

Her health condition has little impact on her work. It also has had no impact on her mental health.

Treatment and interventions

Participant I has received treatment for her diabetes, which is ongoing. She views it as 'a way of life, just like brushing your teeth in the morning.' The medication has been very helpful because it has helped to keep her alive.

When she was first diagnosed she told her manager, who was very supportive. She provided her colleagues with a list of key indicators for when her condition might have been unstable so that they would know what to do to assist her. However, she was able to manage the

condition more or less on her own. Although no additional support was needed to adjust her working conditions her manager was flexible about her working hours when she had a medical appointment. She did mention how she wanted to maintain a sense of normality: 'I don't want to be treated any different to anybody else and having a normal job keeps me active and healthy.'

Participant I did not think that there was any additional support that she would have liked to have received.

**Psoriasis and
depression:
Participant J**

Work

Participant J works in the health sector. His main role revolves around working with people, as well as managing programmes. Participant J's work varies depending on the day. Some of the work involves administrative responsibilities, but mostly he works directly with other people. He typically works longer days of around nine-and-a-half hours for four days a week.

The main reasons Participant J goes to work are because he loves his job and working with people. His job also provides a source of income.

Health conditions

Participant J's main health condition is psoriasis, which is a skin condition. He has had the condition for more than 10 years and was diagnosed in his late teens/early 20s. When Participant J was diagnosed it was really hard at such a young age to be told that he had a condition that had no cure. The symptoms related to his psoriasis are that his skin cells regenerate quicker than normal and he gets raised patches on his skin. At its worst it has affected a good portion of his body and it can lead to very sore, dry and flaky skin. Related to the psoriasis he has had some back pain and some problems with anxiety and depression.

He was in employment at the time he was diagnosed with the psoriasis. Participant J told his employer about his condition because it is not something he can hide. Although the psoriasis has had little effect on his physical ability to work the reactions of other people to his condition have been insensitive at times. Occasionally, the insensitivity of other people would frustrate him and if his psoriasis was particularly active or painful he may have reacted negatively to other people. Those occurrences were not frequent, however.

He has been lucky to have a supportive work environment, but when the psoriasis was active he did worry that if it got to the point when he had to go to occupational health he may have had to take time off from work:

'I think jobs now have become more sensitive to people with chronic conditions, but there was always this fear in the back of my head that if I ended up in occupational health because I had loads of time off, then they would tell me that I couldn't work any more and I'd be retired. And I think that would have been game over for me to be honest.'

The psoriasis also impacted on his day-to-day life when it was active:

'...[T]here's loads of things that people would take for granted that you wouldn't do. Like I wouldn't wear shorts, at its worst, when it was really bad. I didn't wear shorts for three years. I didn't go swimming for five years because you are just so conscious of the fact and because people are very insensitive. And even though the sun is very good for it I was very reluctant to expose it.'

Participant J feels his mental health deteriorated as his condition got worse, particularly because the psoriasis changed his body image and the way others saw him. Participant J does not 'think [he] would ever have had a mental health condition had [he] not had a skin condition.' However, he recognises that a number of factors may have contributed to this. His condition was getting worse and he was not sleeping. Then he was between jobs and right before he was scheduled to start his new job his mental health deteriorated. Around this time a family member was also diagnosed with a serious health condition. In the end he gave up the job that he was going to start to take a few months off.

He has not told his employers about his depression and anxiety because of the stigma and discrimination associated with mental health problems. However, Participant J tried to reduce the impact the psoriasis and depression had on his ability to continue working:

'I wouldn't allow the condition to beat me...I had really dark days of depression where, when I was clinically depressed, I would still drag myself to work because I just couldn't bear to sit at home...Work was always something that I suppose kept me going really.'

Treatment and interventions

Participant J feels lucky to have a good team of health care professionals and specialists to help him treat and manage his condition. He has received medication to control his psoriasis symptoms and has been symptom-free for a number of years now.

He also knows that he made a conscious choice to receive this medication in spite of some of the side effects because he 'could not live with [psoriasis] any more'. He feels lucky that the

treatment worked. However, he still worries that it may come back someday and is not sure whether he would have the coping skills to deal with it.

He also receives medication for his depression. His current health professionals recognise and understand the connection with mental health and help him manage it. They have also provided support that Participant J feels goes beyond what other health professionals might do. For example, Participant J mentioned that going to see his health care professionals 'feels like going home to family'. However, when initially diagnosed he did not receive any additional support:

'When I was diagnosed I think people underplayed the psychological elements of it. So there was no counselling, no support, no talk therapy, there was none at all of that. It was just: "You've got a condition; get on with it." And I still think it's like that.'

To provide additional help with his mental health, particularly during his most difficult period, he saw a counsellor who was really supportive and 'got him out of the vicious cycle.' He received one-to-one counselling for about three to four months, which helped him to readjust his thinking about his condition and improve his confidence. Around that same time his psoriasis symptoms got better and he was ready to return to work. In order to go back to work Participant J started with a part-time job with just a day per week and then gradually increased his hours. He did this to get his 'confidence back'. Soon after that he went for an interview and got another job to go back into full employment.

What helped the return to work most was 'going through counselling, having medication, having support from health care workers... That allowed me to then have the confidence to [return].'

Work is really important to Participant J and provides an opportunity to focus on things other than his psoriasis:

'...[T]he fact that I had a job and I think maybe working with people who were less fortunate than me kind of made me think, well, this is bad, but it could be a lot worse.'

Participant J also feels that work helped with his recovery and his wellbeing:

'I think the thing about it as well, getting out of the house and interacting with other people and feeling that you have purpose, all of that is fundamental to getting over the mental health [aspect] and living with the condition. I couldn't think of anything worse than being stuck at home, I really couldn't. That's the thing for me. I go to work. I work with people I absolutely adore working with.'

His employers have been supportive in providing time off to attend appointments and arranged his schedule to minimise the amount of time off needed. Additionally, Participant J's family and partner have been really supportive in helping him deal with his conditions.

Crohn's disease:

Work

Participant K

Participant K is aged 30–40. He recently left his job to start his own company. In his previous role he worked as a manager for a large knowledge-based organisation. Participant K's typical day was long and varied with frequent meetings and regular project management tasks. Now that Participant K has started his own company the days are less formal and require juggling a number of different roles. He is starting his own company because it is something he has been thinking about doing for a number of years and the timing seemed to be perfect. Participant K finds his work very interesting and challenging.

Health condition

Participant K has Crohn's disease, which he has had since he was around nine or 10 years old. His symptoms include stomach aches and pains, as well as nausea. Participant K lost a lot of weight as a result of the symptoms. At one point he had really bad stomach pains and vomiting that brought him to the hospital. The physician thought it might be appendicitis so they decided to operate. During the operation they noticed that nothing was wrong with his appendix, but they were able to see that he had fairly intensive Crohn's disease in his small intestine. He was put on steroids and began to gain weight. He has had a number of operations to remove the worst parts of his intestine. The operations required him to miss large chunks of school. Participant K has also tried a liquid diet to lessen the symptoms. At times when he was eating less because of the symptoms he would become very tired and sometimes anaemic because of the lack of nutrients. Unlike others with Crohn's disease Participant K does not need to go to the bathroom frequently.

Participant K feels that his Crohn's disease has 'very much defined who [he is] and what [he] has chosen to do.'

'I look at my Crohn's disease as very much defining part of the choices that I've made and where I am currently. I am not bitter at all towards it or in any way angry. And to a degree would I change my life now for one that didn't have Crohn's disease? I am not even sure I would do that. Maybe because I am quite happy with the way that my life is now.'

Participant K does not feel his condition really affected the work that he was able to do. Sometimes he would cancel meetings, but it did not 'necessarily change fundamentally what

[he] could do.' Participant K has learned to live with his condition and is very aware of it. He would sometimes say it influenced his decisions though. Participant K feels that this may have made him a better manager because he has learned to delegate to his team members and give them opportunities for growth.

'For example, if I had been feeling ill recently I would have sent someone else to meet the client rather than myself because the risk of being ill while over there, especially if it was a fairly important meeting, was just probably too great and therefore I would make pre-emptive decisions about how my illness may impact my work. And sometimes that was done subconsciously...I think because it's been so active and for such a long part of my life now it no longer feels like I'm prioritising in making these kind of choices based on my disease, even though I am sure I am. It just feels fairly normal for me to say it's probably best if I haven't been feeling very well recently. So rather than go off to speak to this conference maybe so and so will do it.'

When Participant K was younger he did feel that he was missing out on most things and that he could not do a lot of things that his friends were doing. During this time he did feel sad and had some 'pretty dark days'. However, he also feels that he may have benefited from being diagnosed at a younger age:

'I think maybe that actually stood me in better stead for later on in my life...I find it difficult to remember a time when I did not have Crohn's disease therefore I think when I do become ill again I think because of my experiences when I was younger [I'm] better adjusted towards it.'

Now, he can feel down when he experiences a flare-up, but appreciates the times when he is feeling well. 'When you are well I think you appreciate it more and you are probably happier.' Participant K thinks that the repeated nature of his condition can affect him, but he tries to not let it affect him.

Treatment and interventions

Participant K feels that the company he used to work for gave him a 'significant career breakthrough' during one of the periods when he was feeling well enough to work. He feels fortunate for this time because being 'able to work in those initial periods of your career is really quite important to establish yourself.' He had one more surgery during this time, but then started some new medication that has made a 'huge difference to both [his] quality of life and [his]

weight.’ Participant K also feels that the improvements from his new treatment have ‘allowed [him] to say maybe I’m well enough and capable [of starting] my own venture.’

Participant K told his employer about his condition – in part to explain some of the gaps in his CV. He feels that his employer was very good about accommodating his health. ‘They were always very keen for [him] to put [his] health first’ and Participant K feels very lucky to have had that support. He has also been very open with his co-workers about his condition.

Participant K did not really receive any structured support to deal with his condition, but they were accommodating in allowing him to work from home if he needed to or to call off meetings because he was not feeling well.

‘I think the support they gave was flexibility more than any kind of structured support... The colleagues and my team shuffled around and made sure that my absence wasn’t a big deal.’

They were also flexible when he had to have surgery and take time off as a result of it. He felt that his employer was very supportive:

“Whatever was the best for you then we will find a way of making it work here; don’t worry about us – just make sure that you fix yourself properly.” And then when I was off my team and my boss came to see me in the hospital and when I was recovering. And they sent cards and it always seemed that you don’t need to worry about work. I never felt anxious that they were going to get sick and tired of this and they’d find a reason to change my position or get rid of me completely. That never crossed my mind.’

His colleagues also helped out and this actually led to some changes within his team.

‘The guy who is my right-hand man in my team got more responsibilities. Then when I came back it became apparent that he was more than capable of doing most elements of that, which freed me up to do more, other interesting stuff...I think some of my bosses and my employer saw it as an opportunity to employ a good team and see which one of them can step up and help out and then when he does come back he can do other things as well...I never saw that as a threat. I always saw it as an opportunity – to give someone else [the opportunity to] potentially do my job. It meant that I could go away and do other things.’

Participant K feels that a combination of things helped him to continue working and that 'it would be difficult to pinpoint one thing and say exactly that's the thing.' His family and friends have been supportive. Additionally, the new medication he has received has been really helpful and if it had been around earlier he feels he may not have lost so much of his small intestine to surgery. He also has had supportive interactions through the health care system. However, no health professionals have spoken to Participant K about mental health. He could not remember anyone asking about his mental health. Lastly, he also feels that his work has been helpful, particularly because 'there's something going on that's bigger than just you and your illnesses.'

Participant K mentioned that it would have been helpful to consider his mental health throughout his treatment. He recognises he may not have needed a specific intervention, but that it would have been good to at least acknowledge his mental health.

All rights reserved. No part of this publication may be reproduced, stored in a retrieval system or transmitted, in any form or by any means, electronic, mechanical, photocopying, recording and/or otherwise without the prior written permission of the publishers. This publication may not be lent, resold, hired out or otherwise disposed of by way of trade in any form, binding or cover other than that in which it is published, without the prior consent of the publishers.

We provide:

Research

Advisory Consulting

Policy and Voice

Partnership

The Work Foundation is the leading independent authority on work and its future. It aims to improve the quality of working life and the effectiveness of organisations by equipping leaders, policymakers and opinion-formers with evidence, advice, new thinking and networks.

© The Work Foundation

Registered as a charity no: 290003

First published: September 2010

The Work Foundation
21 Palmer Street
London
SW1H 0AD

Robin McGee
Email: rmcgee@theworkfoundation.com
Telephone: 020 7976 3538

Website: www.theworkfoundation.com