

# MUSCULOSKELETAL CONDITIONS AND MULTIMORBIDITY



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## ARTHRITIS RESEARCH UK

Arthritis Research UK is the charity dedicated to stopping the devastating impact that arthritis has on people's lives. Everything we do is focused on taking the pain away and keeping people active. Our remit covers all conditions which affect the joints, bones and muscles including osteoarthritis, rheumatoid arthritis, back pain and osteoporosis. We fund research into the cause, treatment and cure of arthritis, provide information on how to maintain healthy joints and bones and to live well with arthritis. We also champion the cause, influence policy change and work in partnership with others to achieve our aims. We depend on public support and the generosity of our donors to keep doing this vital work.





# FOREWORDS

**Professor Peter Kay**

National Clinical Director for  
Musculoskeletal Services  
NHS England

Increasing numbers of people are living with multiple long-term conditions. This, alongside an ageing population, will have a substantial impact on health and care services. With limited financial resources, we need to work differently to deliver good person-centred care.

Both the Five Year Forward View and the General Practice Forward View recognise the need for change. To move from a model which considers single diseases, to one which examines the holistic needs of a person with multiple long-term conditions.

But for such a change to occur, it is important that we understand more about the prevalence and impact of living with multiple long-term conditions. In this report, Arthritis Research UK examines the impact of living with a musculoskeletal condition and other long-term conditions, and makes recommendations on what can be done differently.

Among people living with multimorbidity, musculoskeletal conditions such as osteoarthritis and back pain are very common. They cause pain and functional limitations which can impact on overall wellbeing and independence. And if musculoskeletal conditions are present as one of multiple long-term conditions, then they make overall life harder.

As we build metrics and tools to understand and improve quality of services for people with multiple long-term conditions, it's important that we include domains such as pain and functional limitations, alongside capability to manage. We must also work across systems to ensure we have the appropriate data collected and available to understand the numbers and requirements of people living with multiple long-term conditions.

Finally, it's clear that the impact of living with multiple long-term conditions stretches beyond health and care, to other parts of life such as employment, benefits and housing. There is a powerful case for increased collaboration to ensure that we truly identify and support what matters most to the person living with multiple long-term conditions.

I hope you find this an informative document that aids understanding of how the presence of a musculoskeletal disease impacts on overall health and wellbeing, and independence.

## Professor Kevin Fenton

Director of Health and  
Wellbeing  
Public Health England

The Global Burden of Disease Report highlighted an increase in the prevalence of musculoskeletal (MSK) conditions in the UK along with the number of years lived with disability. Recent trends in life expectancy in England highlight people are living longer, though many are doing so in poor health than ever and that makes achieving a good quality of life in later years even more important.

Population trends and surveys identify rising levels of obesity and inactivity both of which can be a causal factor and exacerbate the impact of some musculoskeletal conditions. Musculoskeletal conditions can be painful and distressing, causing a loss of confidence, dignity and independence. In some cases it can have quite severe consequences to the life chances of an individual through the loss of work, dependence on the state, family and friends. An ageing population that is forced to retire early due to ill health will increasingly affect the economic status of individuals and society.

We need to focus our collaborative efforts on changing the burden of an MSK tide and act early to prevent, detect, treat and target public health interventions across the life course. Public Health England (PHE) has commissioned the development of economic tools to compare the return on investment of interventions for the prevention of major musculoskeletal conditions and the prevention of falls and fractures. There is a commitment to work with our partners to develop a systematic approach for the use of existing and new data that will help us to identify the prevalence of some MSK conditions across the different regions of the country in support of smarter commissioning and quality delivery outcome measures.

People and places are integral to how we live, work and spend our leisure time, therefore we need to invest in the future to create healthy places, building on the evidence to inform how the built environment and the wider social determinants impact on musculoskeletal health. We are responding to evidence and listening to people with complex needs and mobilising our efforts by working collaboratively with stakeholders. There is consensus across the sector for an upstream approach targeting early intervention and healthier ageing across the life course to protect future generations. PHE has delivered a number of key tools and resources that will impact on the nation's health going forward such as the 'One You' online self-assessment tool, the Falls and Fractures consensus statement and the commissioning of the health economics tool for MSK and falls and fractures.

The resources will be monitored and reviewed to evaluate the effectiveness, quality performance and achievement of public health outcomes. Employers and individuals will be supported to make informed decisions about how they can prevent, detect and access treatment at an early stage to achieve better health outcomes. PHE shares the commitment of partners to work collaboratively to influence and shape future policy, support opportunities to strengthen evidence and data to challenge the current landscape and change future practice.



# FOREWORDS

## Professor Chris Salisbury

Professor of Primary Health Care  
Centre for Academic Primary Care  
University of Bristol

As life expectancy increases, more people are living with long-term health conditions such as arthritis, heart disease or lung disease. Many people don't just have one of these conditions, they have several – a phenomenon known as multimorbidity.

Having multimorbidity has a big impact on people's lives. People with multimorbidity tend to have a worse quality of life, and often experience pain and disability. In particular, having multiple physical health problems can impact on mental health and also lead to social isolation.

Unsurprisingly, people with multimorbidity are frequent users of the health service, accounting for a high proportion of general practice consultations and hospital admissions. This high level of need for health care also has an impact on the patients themselves, since they may have to swallow numerous tablets, follow special exercise regimes, and attend numerous appointments.

Medicine has traditionally been organised around diseases, so we have services designed for patients with Alzheimer's disease, or arthritis, or angina. But this approach doesn't work well for patients with Alzheimer's and arthritis and angina. These patients with multimorbidity are now the norm rather than the exception, and we need to think about healthcare in a new and more holistic way.

So it is very good news that Arthritis Research UK, one of the major 'disease-based' charities, is leading the way in thinking about how the concept of multimorbidity impacts on their work with people with musculoskeletal conditions. These conditions are extremely common and can be the main cause of impaired quality of life in people with multimorbidity. Perhaps because they are so common, and because they are sometimes seen as a natural consequence of ageing, conditions such as arthritis have not received the attention they deserve.

This report presents useful, practical recommendations to policymakers at local and national levels. Acting on these recommendations would lead to huge benefits for the many people with multimorbidity including arthritis and other musculoskeletal problems.



## Dr Liam O'Toole

### Chief Executive Officer Arthritis Research UK

Arthritis attacks what it means to live. It causes pain, fatigue and often anxiety or depression. For over 8.75 million people living with the pain of osteoarthritis, and nine million with back pain, the limitations of arthritis and musculoskeletal conditions make simple activities a daily struggle. From going to work, and interacting with family, to socialising with friends, or popping to the shops, people with arthritis cannot take these moments for granted. On top of the effects to the individual, there is a major impact on health and care services, and the economy.

Arthritis Research UK is passionate about ensuring that people can live well with arthritis. But too often arthritis is misunderstood and not recognised. People with arthritis often hide their pain or their health and care professionals suggest nothing can be done. Six out of ten people with arthritis don't believe their condition is a high priority for the NHS. Arthritis is also overlooked in local areas, regularly being missed out from local needs assessments. These omissions waste opportunities to improve people's musculoskeletal health, preventing people from enjoying a good quality of life and remaining independent.

Musculoskeletal conditions are often found among people who live with other long-term conditions. For instance, by 65 years of age, almost five out of ten people with a heart, lung or mental health problem also have a musculoskeletal condition. With the numbers of people living with multiple long-term conditions projected to grow, it's important that we understand the changing needs of this group and ensure they are met effectively.

Over the last two years Arthritis Research UK has examined these issues in depth. We held a roundtable, spoke to people with arthritis and other long-term conditions, healthcare professionals and

researchers, conducted a literature review, and analysed the General Practice Patient Survey. All of this helped us understand more about the nature and impact of living with arthritis when combined with other long-term conditions. We reached three key observations:

Firstly, musculoskeletal conditions are very common and are often present where there are other long-term conditions. Secondly, they ruin quality of life. The presence of any long-term condition is associated with a drop in quality of life, but when arthritis or back pain is present as one of the long-term conditions, the drop is greater. Lastly, the pain and functional limitations of arthritis make it harder to cope when living with multiple long-term conditions. Simple everyday tasks such as grasping small objects, standing or sitting can be difficult with arthritis. As life with multiple long-term conditions normally means taking tablets, changing dressings, attending health appointments and undertaking exercise, this all becomes more challenging as arthritis limits a person's ability to walk, bend, sit, or often use their hands.

It's clear that good musculoskeletal health underpins people's ability to live well and independently with multiple long-term conditions. As systems change, and new collaborations develop to meet the needs of people with multiple long-term conditions, it's vital that the needs of people with arthritis are considered and included. Pain and functional abilities should also be included in metrics, tools and plans for people with multimorbidity.

Arthritis Research UK is keen to build on existing partnerships, and develop new collaborations. We wish to ensure that arthritis – whether it is present by itself or among other long-term conditions – does not limit people's lives.



**10** million people across the UK have musculoskeletal conditions such as arthritis or back pain.

# EXECUTIVE SUMMARY

Good musculoskeletal health means that the muscles, joints and bones work well together without pain. Musculoskeletal health is essential for overall health and wellbeing. Without it, it is impossible to live independently, or well.

Musculoskeletal conditions such as arthritis or back pain affect around 10 million people across the UK, causing pain, stiffness, loss of mobility and dexterity, and depression. These symptoms affect every aspect of life: family, work and social.

It is now common for people to live with two or more long-term conditions. This multimorbidity reduces quality of life, worsens health outcomes and increases mortality. People with multimorbidity rely more heavily on health and care services.

People living with multimorbidity often have a musculoskeletal condition as one of their health problems. Because health, care and public health systems often do not identify or prioritise these painful conditions, substantial opportunities to improve people's health are missed.

Without good musculoskeletal health, everyday life becomes harder. People are left living in pain. With reduced mobility and dexterity people struggle with everyday activities such as dressing or preparing food.

Living well with multimorbidity requires people to carry out a litany of complex tasks: monitoring symptoms, managing medications, coordinating carers and attending appointments. The onset, or worsening, of arthritis or back pain can completely undermine people's ability to cope with their health problems. Without intervention and support, people can reach a tipping point beyond which they can no longer manage their multimorbidity, leading to a spiralling decline in their physical and mental health.

This is neither acceptable nor necessary.

## **Good musculoskeletal health underpins living well and independently with multimorbidity.**

By recognising musculoskeletal health as part of multimorbidity, and ensuring that people receive appropriate advice, support and treatment for their musculoskeletal problems, we can prevent many people from losing their health and wellbeing, their independence and their dignity.

Policymakers should ensure that consideration and assessment of pain and functional abilities are included in tools and interventions to identify and support people with multimorbidity. Musculoskeletal data should be captured and its quality improved; this information should be used in multimorbidity analyses and planning. Healthcare professionals should consider and discuss pain and functional limitations in their care and support planning conversations. And other professionals and the public should be empowered to consider musculoskeletal health as part of multimorbidity through relevant public health resources.

The voluntary sector has a role to play in building partnerships to ensure the changing needs of their beneficiaries are met. And research funders have an opportunity to build a flourishing research agenda into multimorbidity.

This report articulates why policymakers, charities and research funders should include musculoskeletal health when making plans to support people living with multimorbidity. It considers the impact of musculoskeletal diseases and the importance of recognition of such conditions when they are one of many long-term conditions. It brings together learnings from a roundtable, a literature review, conversations with people with multimorbidity, healthcare professionals and researchers, and an analysis of the GP Patient Survey.

Arthritis Research UK would like this to be the beginning of new collaborations and partnerships to ensure the changing needs of people living with many long-term conditions including arthritis are met.

# RECOMMENDATIONS

- 1 Identification:** NHS England should ensure that any metrics and tools used in multimorbidity programmes include monitoring and measuring of pain and its impact, functional abilities and capability to manage.
- 2 Data collection:** Public Health England should work with other national bodies to ensure that data collection, analysis and publication raises awareness of multimorbidity and the relevance of its musculoskeletal component.
- 3 Planning and commissioning:** Local planners and commissioners of health and care services should identify, segment and understand the needs and requirements of people living with musculoskeletal conditions and multimorbidity in their population, and publish these in local documents such as their Joint Strategic Needs Assessments and Joint Health and Wellbeing Strategies.
- 4 Care and support planning:** Healthcare providers should ensure that people with multimorbidity can take part in a care and support planning process using standardised tools to explore and record pain, functional limitations and how these affect their daily activities.
- 5 Health promotion:** Public Health England should ensure that its information, programmes and campaigns reflect and address the needs of the growing numbers of people living with multimorbidity including musculoskeletal conditions.
- 6 Voluntary sector:** Disease-specific charities and their respective coalitions should collaborate in recognising that many people now live with multimorbidity and work together to develop resources, programmes, research and partnerships to meet the changing needs of people with multiple long-term conditions.
- 7 Research agenda:** Research funders, such as the National Institute for Health Research, should work with partners to ensure there is a flourishing research agenda covering multimorbidity, which includes common conditions such as musculoskeletal conditions.







# INTRODUCTION

1.0

# THE PURPOSE OF THIS REPORT IS TO EXPLORE WHY AND HOW MUSCULOSKELETAL HEALTH SHOULD BE CONSIDERED AS PART OF MULTIMORBIDITY.

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## 1.1

### Purpose of report

The purpose of this report is to explore why and how musculoskeletal health should be considered as part of multimorbidity. It examines why the presence of musculoskeletal disease – such as osteoarthritis or back pain – can have an overall impact on the health, wellbeing and independence of a person living with multimorbidity.

It explores why musculoskeletal conditions are often overlooked as part of multimorbidity and considers the implications of living with a musculoskeletal condition alongside other long-term conditions. This report suggests system changes so that individuals' situations can be recognised, and action can be taken to mitigate the impact of living with a musculoskeletal disease and multimorbidity.

## 1.2

### Scope of report

This report focuses on people living with two or more long-term conditions (conditions which are persistent and recurrent), a phenomenon known as 'multimorbidity'.<sup>1</sup> Case studies and data about people living with musculoskeletal conditions and other long-term conditions are included throughout, including a new analysis of the GP Patient Survey (GPPS) carried out by Arthritis Research UK.

This report does not consider the needs of people living with frailty. Best practice guidelines for the care and management of people living with frailty have been developed and there is a greater understanding of the concept of frailty.<sup>2</sup> However, the understanding of the need for good musculoskeletal health for people living with multimorbidity is underdeveloped.

## 1.3

### Musculoskeletal health

Musculoskeletal health means more than the absence of a musculoskeletal condition. Good musculoskeletal health means that the muscles, joints and bones work well together without pain. People with good musculoskeletal health can carry out the activities they want to with ease and without discomfort. It is possible to have poor musculoskeletal health without having a specific musculoskeletal condition.

Several factors come together to produce musculoskeletal health. The joints and spine need to be stable and supple in order to support the body and carry out a wide range of movements. Muscles need to be strong enough to provide the power to move. Bones need to be sturdy enough to withstand the normal knocks of everyday living without breaking. A healthy nervous system is needed to oversee all this activity, providing co-ordination and balance. Good mental health is required to provide energy and motivation to be physically active. What's more, all this should happen without pain, stiffness or fatigue.

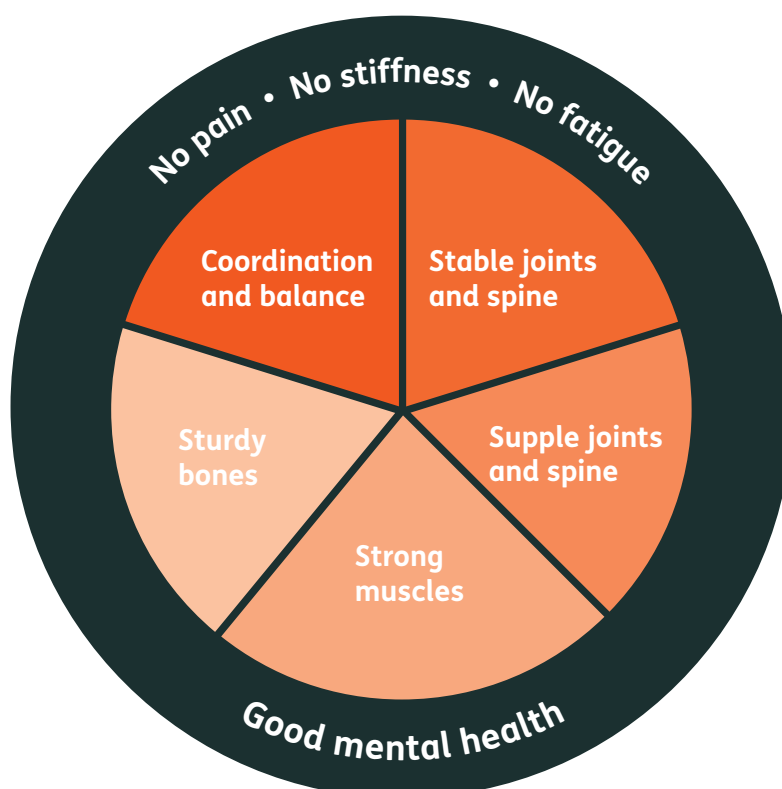
Ideally it should happen throughout someone's life, so people of all ages can enjoy good musculoskeletal health. For more information, please see Arthritis Research UK's guide *Musculoskeletal health: a public health approach*.

### Good musculoskeletal health is important throughout life

Good musculoskeletal health is an important component of maintaining a person's functional abilities throughout the life course. It is also fundamental to healthy ageing, which the World Health Organization (WHO) has characterised as 'the process of developing and maintaining the functional ability that enables wellbeing in older age'.<sup>3</sup>

Social perceptions of ageing are gradually changing. People increasingly expect to lead independent, active, pain-free lives in their older years. For many people this includes remaining part of the workforce. For most this includes an active retirement, without the fear of pain and falls.

**Figure 1** Factors comprising musculoskeletal health<sup>4</sup>





## 1.4

### Musculoskeletal conditions and their impact on health and wellbeing

Musculoskeletal conditions are disorders of the bones, muscles and spine, as well as autoimmune conditions such as lupus. Musculoskeletal conditions interfere with people's ability to carry out their normal daily activities. Common symptoms include pain, stiffness and a loss of mobility and dexterity. The symptoms can fluctuate over time. The pain, distress and functional limitations caused by these conditions ruin quality of life, robbing people of their independence and impairing their ability to participate in family, social and working life.

#### Figure 2 Three groups of musculoskeletal conditions

Broadly, there are three groups of musculoskeletal conditions: inflammatory conditions, conditions of musculoskeletal pain, and osteoporosis and fragility fractures. Figure two explores each of these groups in more detail.

Group	1: Inflammatory conditions	2: Conditions of musculoskeletal pain	3: Osteoporosis and fragility fractures
Example	Rheumatoid arthritis.	Osteoarthritis, back pain.	Fracture after a fall from a standing height. <sup>a</sup>
Age	Any.	More common with rising age.	Mainly affects older people.
Progression	Often rapid onset.	Gradual onset.	Osteoporosis is a gradual weakening of bone. Fragility fractures are sudden discrete events.
Prevalence	Common (e.g. around 400,000 adults in the UK have rheumatoid arthritis). <sup>5</sup>	Very common (e.g. 8.75 million people in the UK have sought treatment for osteoarthritis). <sup>6</sup>	Common (e.g. around 89,000 hip fragility fractures occur each year in the UK). <sup>7</sup>
Symptoms	Common musculoskeletal symptoms include pain, joint stiffness and limitation of movement. Symptoms often fluctuate in severity over time.		Osteoporosis itself is painless. Fragility fractures are painful and disabling.
Extent of disease	Can affect any part of the body including skin, eyes and internal organs.	Affects the joints, spine and pain system.	Hip, wrist and spinal bones are the most common sites of fractures.

<sup>a</sup> Osteoporosis is a condition of bone weakening which in itself is painless. Fragility fractures caused by osteoporosis happen when frail bones break, causing pain and disability. Bone fractures can also occur due to trauma or injury.

**Figure 2** Three groups of musculoskeletal conditions continued...

Group	1: Inflammatory conditions	2: Conditions of musculoskeletal pain	3: Osteoporosis and fragility fractures
Main treatment location	Urgent specialist treatment is needed, and usually provided in hospital outpatients.	Primary/community care for most people. Joint replacement requires hospital admission.	Primary care for prevention.  Hospital for treatment of fractures.
Medical treatment	Medication to suppress the immune system.	Pain management. Support to maintain healthy body weight. For severe cases joint replacement may be necessary.	Bone-strengthening drugs.  Fractures may require surgery.
Physical activity benefits	Generic, self-determined and prescribed exercises are important adjunct to medical therapy.	Generic, self-determined and prescribed exercises are main treatment approach.	Generic, self-determined and prescribed exercises prevent falls, strengthen bone and enhance recovery after a fracture.
Modifiable risk factors <sup>b</sup>	Smoking.	Injury, obesity, physical inactivity.	Smoking, alcohol intake, poor nutrition including insufficient vitamin D, physical inactivity.

<sup>b</sup> Non-modifiable risk factors include age, sex and genetics.

## 1.5

### Multimorbidity: living with two or more long-term conditions

Multimorbidity refers to the experience of two or more long-term conditions.<sup>1</sup> Multimorbidity encompasses physical and mental health. Overall, nearly four out of 10 people (36%) with multimorbidity are living with a physical and a mental health condition.<sup>8</sup> Sometimes people also use the term ‘comorbidity’ to refer to any additional conditions that people may have, beyond the main one being addressed.

Within multimorbidity there can be different relationships between conditions. People may develop two long-term conditions independently of each other, for example a person having both osteoarthritis and asthma. Sometimes, a health condition can increase the likelihood of developing another as in rheumatoid arthritis where there is an increased risk of cardiovascular disease.<sup>9</sup> In other cases, one long-term condition exacerbates the impact of another – this is seen with painful conditions such as back pain which lead to, and are worsened by, depression.<sup>10</sup> Finally, there are conditions which share causal factors, such as obesity which increases the risk of developing type 2 diabetes<sup>11</sup> and osteoarthritis.<sup>4</sup>

### Figure 3 Definitions of multimorbidity and comorbidity

#### MULTIMORBIDITY:

A person living with multimorbidity has two or more long-term chronic conditions such as osteoarthritis and asthma.

#### COMORBIDITY:

Comorbidity refers to any additional conditions that people may have, beyond the main one being addressed.

- Among people over 45 years of age who report living with a major long-term condition, more than 3 out of 10 also have a musculoskeletal condition.
- Four out of five people with osteoarthritis have at least one other long-term condition such as hypertension, cardiovascular disease or depression.

## 1.6

### Characteristics of frailty

Although there is no accepted clinical definition of frailty, unintentional weight loss, sarcopenia (loss of muscle mass and strength), self-reported exhaustion and loss of mental capacity are all recognised characteristics of frailty.<sup>12, 13</sup> Frailty is increasingly seen as a long-term condition.<sup>14</sup>

For people who are frail, even a minor event can trigger a rapid decline in health. For example, a person with frailty could live independently until a fall triggers a swift and ongoing deterioration in health.

Frailty is often, but not exclusively, linked to the ageing process. It is estimated that 10% of people over 65 are frail, and 25%–50% of those aged 85 or over experience frailty.<sup>2</sup>

People living with frailty have the highest rates of unplanned admissions to hospital among users of health and care services.<sup>15</sup> Geriatricians work closely with GPs and other healthcare professionals to support the holistic care and management of the health and wellbeing of people living with frailty.

## 1.7

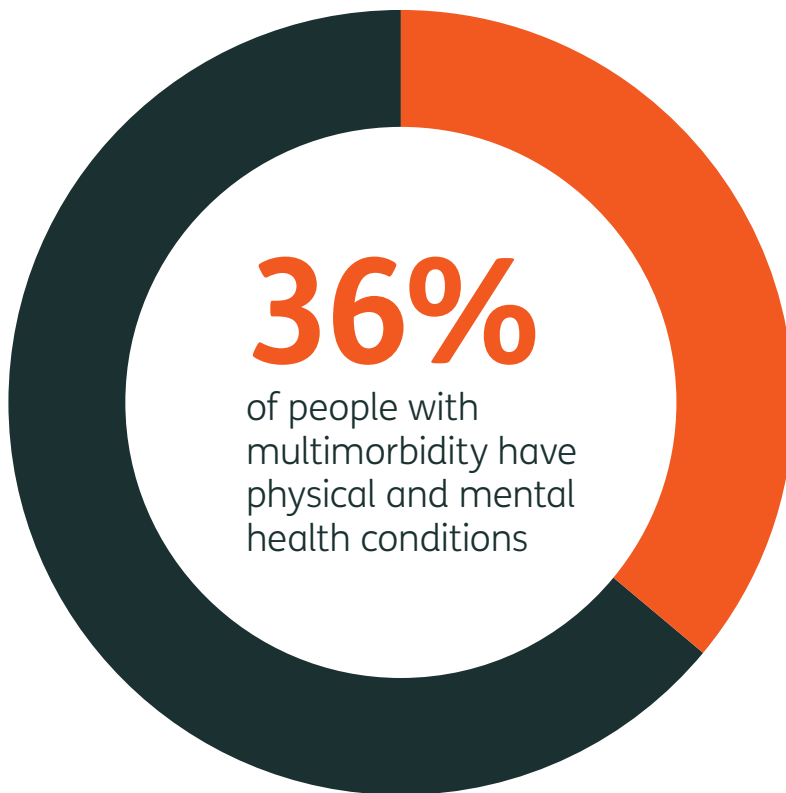
### Overlap between frailty and multimorbidity

Frailty and multimorbidity are two separate concepts and seek to describe two distinct phenomena.

There are overlaps: some people live with both frailty and multimorbidity. For example, an 80-year-old person may live with sarcopenia and incontinence (characteristics of frailty), and also live with the conditions of osteoarthritis, heart disease and type 2 diabetes (multimorbidity). As frailty and multimorbidity increase with age, healthcare systems will need to cope with increasing numbers of people with these conditions in an ageing population.

But there are cases where a person lives with multimorbidity but is not frail. For example, a 45-year-old person may have asthma, osteoarthritis and type 2 diabetes but does not experience frailty. This report focuses on the needs of non-frail people with multimorbidity, and the support and services they need.





## Musculoskeletal conditions and multimorbidity – in numbers

### Musculoskeletal conditions

- Among UK primary care patients living with 10 common long-term conditions, painful conditions are a frequent comorbidity.
- Four out of five people with osteoarthritis have at least one other long-term condition such as hypertension, cardiovascular disease or depression.
- Among people over 45 years of age who report living with a major long-term condition, more than three out of 10 also have a musculoskeletal condition.
- 36% of people with multimorbidity have physical and mental health conditions.
- The presence of any long-term condition is associated with a drop in quality of life (self-reported Quality of Life score of 0.79), but if arthritis or back pain is present as one of the long-term conditions the drop is greater (self-reported Quality of Life score of 0.71).
- By 2025 there will be an estimated 9.1 million people living with one or more long-term conditions in the UK.

### Multimorbidity

- By 65 years of age, most people have multimorbidity.
- Over half of the number of people who live with multimorbidity are under 65 years of age.
- Women have higher rates of multimorbidity than men.

# MUSCULOSKELETAL CONDITIONS

2.0

## 2.1

### Musculoskeletal conditions are very common

Musculoskeletal conditions affect millions of people in the UK. The prevalence is highest among women, older people and those from the most deprived communities. Painful musculoskeletal conditions are the largest single cause of years lived with disability (YLDs) and the third largest cause of disability adjusted life years (DALYs).<sup>16</sup>

**1 in 5 adults** over 45 in England have knee osteoarthritis



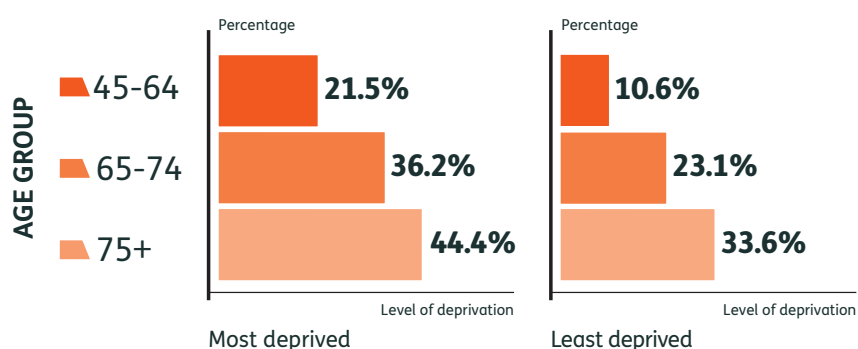
**Figure 4** Prevalence of musculoskeletal conditions

Inflammatory conditions	Conditions of musculoskeletal pain	Osteoporosis and fragility fractures
400,000 people live with rheumatoid arthritis in the UK. <sup>5</sup>	<p>8.75 million people have sought treatment for osteoarthritis, the most common form of arthritis, across the UK.</p> <p>Women account for almost six out of 10 people seeking treatment.<sup>6</sup></p> <p>One in five adults over 45 in England have knee osteoarthritis and one in nine adults have osteoarthritis of the hip.<sup>17</sup></p> <p>Around 9 million people in England have persistent back pain, of which around 5.5 million experience severe back pain.<sup>17</sup></p>	Each year, 89,000 people across the UK fracture their hip. <sup>7</sup>

### Relationship between deprivation, age and prevalence

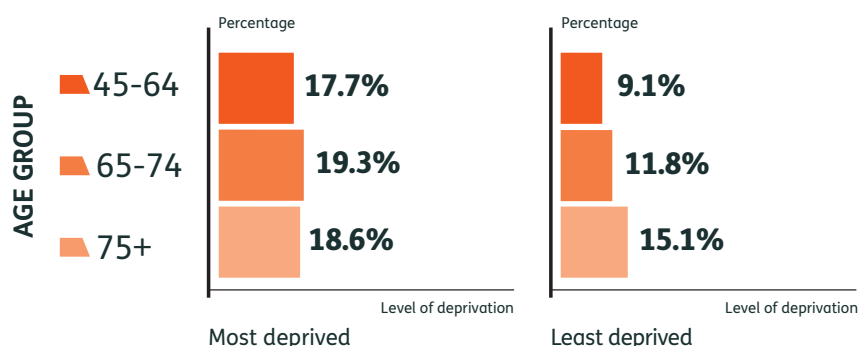
The prevalence of arthritis increases with rising age. There is also a significant relationship between deprivation and numbers of people living with chronic pain conditions including arthritis and back pain.<sup>18</sup>

**Figure 5** Impact of age and deprivation on prevalence of arthritis among people aged 45 years and over in England<sup>c,19</sup>



People in the most deprived areas are much more likely to report arthritis than people in equivalent age groups who live in less deprived areas.<sup>19</sup> Among people of working age (45–64 years), the prevalence is more than double in the most deprived areas (21.5%) compared to the least deprived areas (10.6%).<sup>19</sup>

**Figure 6** Impact of age and deprivation on prevalence of back pain among people aged 45 years and over in England<sup>19</sup>



People in the most deprived areas are more likely to report back pain at every age compared to the least deprived. Those people in the most deprived areas experience back pain at a relatively young age: people of working age (45–64 years) are almost twice as likely to report back pain (17.7%) as those from the least deprived areas (9.1%).<sup>19</sup>

### Future prevalence

The prevalence of musculoskeletal conditions will increase because of the ageing population, and growing levels of obesity and physical inactivity. These are all major risk factors in the development of a musculoskeletal condition.<sup>4</sup>

In 2010, there were 4.7 million people living with knee osteoarthritis, the most common site in the body for osteoarthritis to develop. Obesity is a significant risk factor for knee osteoarthritis. When the impact of the ageing population and a growing obese population is considered, by 2035 there are expected to be 8.3 million people living with knee osteoarthritis.<sup>6</sup>

<sup>c</sup> Data from the GP Patient Survey has been used to conduct these analyses. As musculoskeletal problems are often poorly coded in GP records and are therefore likely to be under-reported the GP Patient Survey is a useful alternative data source. See Section 7.0 for details about the methods used.



## 2.2

### Musculoskeletal conditions impact on all parts of a person's life

Arthritis affects all aspects of a person's life: home life, relationships, finances and work. The impact of musculoskeletal conditions is therefore best understood through a bio-psycho-social approach.

Musculoskeletal conditions cause pain, joint stiffness and limitations of movement. They fluctuate over time and can be unpredictable. They cause distress, not just because of the physical limitations they impose but because they alter a person's perception of themselves, of their ability to cope and of the world around them.

Musculoskeletal conditions can have a devastating impact on quality of life: they ruin it.

#### Impact on daily life

Pain is one of the main symptoms of arthritis. In a 2015 survey of people with arthritis<sup>d</sup>, eight out of 10 people living with arthritis (78%) said they experience pain most days, with nearly six out of 10 people (57%) with arthritis experiencing pain every day.<sup>20</sup>

Pain makes everyday activities more difficult to cope with. Arthritis limits a person's ability to do the essential tasks of daily life. Basic activities (activities of daily living or ADLs) such as bathing, dressing and getting out of bed or a chair can become a struggle. Instrumental activities of daily living (IADLs) such as housework, preparing meals and shopping are also affected. A person with arthritis may need to adapt their home or car to mitigate functional limitations.

#### Impact on family life

A person's pain will have an impact on their perceptions of their own vulnerability and desire for support. Such pain may result in people with arthritis hiding the extent of the pain from their loved ones. Five out of 10 (53%) people with

arthritis feel they are a nuisance to their family, which rises to eight out of 10 (81%) among those with the most severe arthritis.<sup>20</sup> Some people may need support from family, friends or carers (formal or informal) so they can remain independent.

#### Impact on mental health

Living with painful arthritis often causes fatigue and depression. A person's mood, energy levels, ability to sleep and daily routine can all be affected. As a person changes their schedule to cope, giving up hobbies and social time, and in severe cases their work, they can lose confidence and self-esteem. This, in turn, reduces their quality of life.

#### Lack of recognition and understanding by society

People with arthritis feel invisible and that their condition is not recognised or understood. Eight out of 10 people with arthritis (78%) agree that society does not understand their condition because it 'doesn't look' like they have a serious condition, and six out of 10 people with arthritis (62%) believe that arthritis is not a high priority for the NHS.<sup>20</sup>

Although arthritis can strike at any age, people with arthritis feel that society views their condition as one that only affects older people. Nine out of 10 people with arthritis (89%) agree that society views arthritis as an 'old person's disease'.<sup>20</sup>

Some people find the 'invisibility' of arthritis a challenge, because others cannot see why they are struggling with tasks of dexterity or movement. In other cases, a person's arthritis may be visible: for example, a person with severe knee osteoarthritis may limp or the shape of the hand of a person with hand osteoarthritis will visibly change. It might be assumed that they are unable to carry out certain activities, and the need to use a stick, for example, can make people feel stigmatised.

<sup>d</sup> For methods, please see Section 7.

“YOU CAN'T  
ELIMINATE THE  
PAIN. IT'S THERE  
ALL THE TIME.  
ALL I WANT TO  
DO IS GET OUT  
OF THE PAIN”

Damian, 59  
living with osteoarthritis<sup>20</sup>

## Work, income and finances

Arthritis has an impact on a person's ability to work and therefore affects their income. For example, people who find standing and walking painful can have difficulty travelling to work. Stiffness and pain in the arms or hands can make everyday tasks such as keyboard work or grasping tools difficult. Ongoing pain can lead to low mood, which affects self-esteem and leads to a reduced ability to carry out tasks. This in turn has a negative impact on a person's confidence and motivation, and therefore on the ability to work.

People with musculoskeletal conditions are less likely to be employed than people in good health, and are more likely to retire early.<sup>21</sup> Six out of 10 people (59.7%) with a musculoskeletal condition are in work, compared to seven out of 10 people (73.5%) without a long-term health problem or disability.<sup>22</sup> One in four people with arthritis (25%) give up work or take early retirement.<sup>20</sup> There is an arthritis work gap: the employment rate among people with arthritis is 20% lower than among people with no condition or disability. This means that 600,000 people with arthritis are currently missing out on the opportunity to work.<sup>23</sup>

But most people with arthritis want to work, and with the appropriate support from their employer and flexible working arrangements, they can. For more information, please see Arthritis Research UK's Working with arthritis report.<sup>24</sup>

## Entitlement to benefits

Some people with arthritis will be unable to work owing to the severity of their condition and its impact. However, there is low awareness among people with arthritis about the benefits to which they are entitled: nearly three out of 10 (27%) are not aware of their potential entitlements.<sup>20</sup> The fluctuating nature of arthritis creates an additional hurdle when people are being assessed for benefit entitlements. People's functional capabilities may vary over time, and therefore accurately capturing fitness to work through a stand-alone assessment is difficult.

## Additional costs

Overall, about seven in 10 (73%) people with severe arthritis struggle with their financial stability relative to their income, compared to only 6% of those with no functional limitations.<sup>20</sup> Nearly half of people with arthritis (48%) cannot afford all the treatments they want or need.<sup>20</sup> This rises to nearly eight out of 10 (78%) among those struggling with their income.<sup>20</sup> Many treatments for a musculoskeletal condition can incur a financial cost such as massage, physiotherapy and equipment around the home.<sup>e</sup> Overall, the additional cost of living with osteoarthritis is estimated to be £480 a year.<sup>25</sup>

<sup>e</sup> Physiotherapy is available on the NHS. Depending on availability and waiting times, many people with arthritis and back pain often supplement this with additional paid-for physiotherapy sessions.

### STACEY'S STORY

**“ I WAS DIAGNOSED WITH PSORIATIC ARTHRITIS 11 YEARS AGO...** The nature of the job meant chairing large meetings, which means standing for long periods of time. They allowed me to stop doing these meetings and I had no time off for over a year, but now the service cannot manage it. I have been given time to try my new medication and see if I can get back up to speed. I do not imagine I will ever get back to chairing two-hour meetings so it looks like early retirement. I am 46. I have huge experience and skills yet my inability to stand means I could lose the job I love. It is soul destroying. ”

Stacey works for a local council; she has psoriatic arthritis.<sup>24</sup>



## 2.3

### **Musculoskeletal conditions have a large impact on health and care services, society and the economy**

#### **Health and care services**

Musculoskeletal conditions have a considerable impact on health and care services owing to the large numbers affected and the complexity of their needs.

As musculoskeletal conditions are often life-long conditions, people with arthritis may use health and care services for many decades. Musculoskeletal conditions account for the third largest NHS programme budget, around £4.7 billion annually in England.<sup>26</sup>

In primary care, one in five of the general population consults their GP about a musculoskeletal problem each year.<sup>27</sup> Musculoskeletal problems are addressed in one in eight (12%) GP appointments.<sup>28</sup> Across the UK, 8.75 million people have sought treatment for osteoarthritis, the most common form of arthritis (this constitutes a third of all people over 45 years of age).<sup>6</sup> People with arthritis are substantial users of physiotherapy services, as physiotherapy can help to substantially reduce pain and restore movement and function.

Around £4 billion of the NHS musculoskeletal programme budget is spent on secondary care.<sup>29</sup> For people with severe osteoarthritis, an elective (planned) hip or knee replacement can reduce pain and give back a person's mobility and independence. More than 98,211 hip replacement procedures and 104,695 knee replacements were undertaken in the NHS in 2015 alone.<sup>30</sup>

Fragility fractures and osteoporosis are common and affect large numbers of people. Each year 89,000 people across the UK fracture their hip and will require emergency surgery.<sup>7</sup>

Social care can support people with musculoskeletal conditions to remain independent. Just over half (51%) of gross local authority expenditure on adult social care is on people over 65 years, a substantial number of whom will have a musculoskeletal condition.<sup>31</sup>

### The economy and society

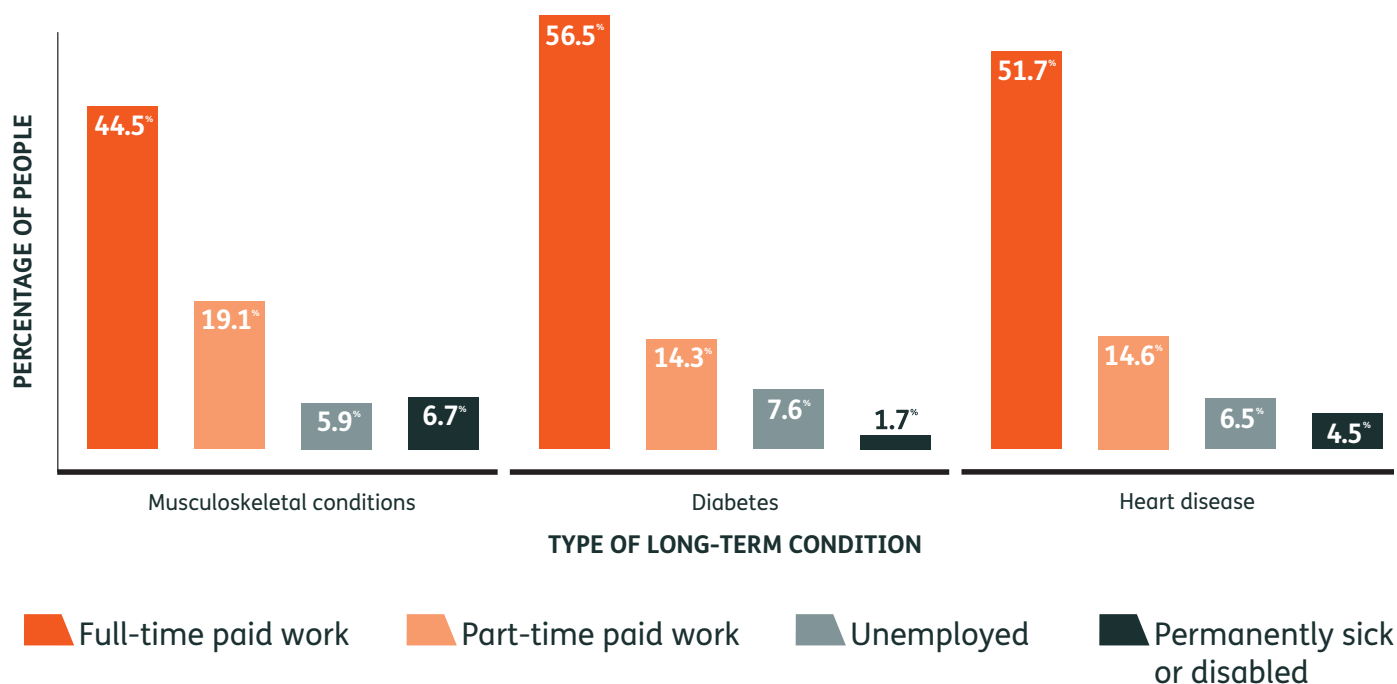
Musculoskeletal conditions have a massive direct impact on the working-age population. In 2015, 32.4 million working days were lost because of musculoskeletal conditions.<sup>32</sup>

People reporting a musculoskeletal condition are less likely to be in full-time paid work (44.5%) than those with any other long-term condition other than a mental health condition (28%) or a recent cancer experience (40.4%).<sup>19</sup> The presence of a musculoskeletal condition is the third-most common reason for people reporting being permanently sick or disabled (the most common reasons are because of a mental health condition or a recent cancer experience).<sup>19</sup>

The indirect costs (inability to work, absenteeism, reduced productivity and informal care) of rheumatoid arthritis and osteoarthritis combined are £14.8 billion each year.<sup>33</sup> Back pain is responsible for £10 billion of indirect costs to the economy in the UK each year.<sup>34</sup> Rheumatoid arthritis is estimated to cost the economy £3.8–4.8 billion.<sup>35</sup>

There are an estimated 2.4 million adults in the UK who have caring responsibilities for their children and for their parents (sometimes referred to as the 'sandwich generation').<sup>36</sup> Someone who is caring for a parent with severe osteoarthritis will experience a severe impact on their life as they try to balance family commitments with work.<sup>37</sup>

**Figure 7** Employment status by long-term condition among people 45–64 years of age in England<sup>19</sup>

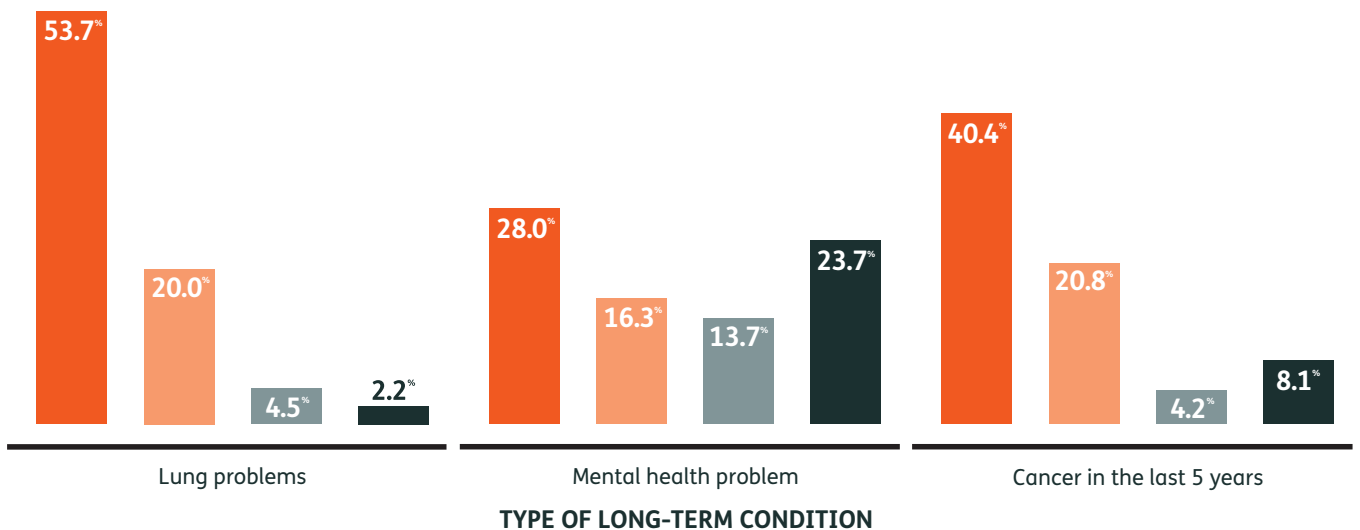


# 1 in 5

of the general population consults their GP about a musculoskeletal problem each year.<sup>27</sup>

# 8.75m

people have sought treatment for osteoarthritis across the UK.



## 2.4

### People with musculoskeletal conditions use many different treatments

The purpose of treatment is to maximise quality of life by reducing joint pain and stiffness, limiting progression of joint damage and enabling functional ability.<sup>38</sup> The treatment approach will vary depending on the person, the severity of their condition and their capability to manage independently.

#### Non-drug interventions

People with arthritis can benefit from a range of non-drug interventions:

- **Physical activity:** exercise generally reduces overall pain for people with a musculoskeletal condition.<sup>4</sup> Activities should include aerobic activity and muscle-strengthening exercises.
- **Physiotherapy:** physiotherapy aims to substantially reduce pain, and restore movement and function for people with a musculoskeletal condition.
- **Rehabilitation:** this personalised, interactive and collaborative process, including supported self-management, enables an individual to maximise their potential to live a full and active life.
- **Weight loss:** obesity directly damages weight-bearing joints. For people with osteoarthritis, relatively modest weight loss, particularly when combined with increased physical activity, reduces pain and disability.<sup>39,40,41,42</sup>
- **Talking therapies:** psychological interventions such as Cognitive Behavioural Therapy (CBT) and mindfulness-based approaches can help people with arthritis manage their pain and fatigue.
- **Information and support:** people with arthritis require accurate information about their conditions, symptom management and local self-management courses and support networks.

- **Modifications:** appropriate modifications to the home such as grab rails and support from social care can aid independent living.
- **Complementary therapies:** alongside conventional treatments, these can help alleviate pain.<sup>43</sup>

#### Medication

People with osteoarthritis and back pain may use topical or oral medication to ease joint pain and stiffness, and reduce inflammation. For some people, there may be a place for opioid-based treatments, or drugs to combat resulting nerve pain such as sciatica.

People diagnosed with osteoporosis should take vitamin D, calcium and bone-strengthening medication.<sup>44</sup>

People with inflammatory conditions such as rheumatoid arthritis generally need specialist continual drug treatment, and early diagnosis and intensive treatment can prevent lifelong pain and disability.

#### Surgery

For people living in constant pain from arthritis, joint replacement surgery is a highly effective treatment which can restore quality of life. Severe osteoarthritis is the cause of the majority of initial hip and knee joint replacements.

A fragility fracture requires prompt assessment in A&E and may need rapid surgery, particularly for hip fractures, which can be life-threatening without surgery.



## 2.5

### People with musculoskeletal conditions experience barriers accessing treatments

People with a musculoskeletal condition may not be readily able to access treatments which benefit their condition owing to non-clinical reasons.

#### Non-drug interventions

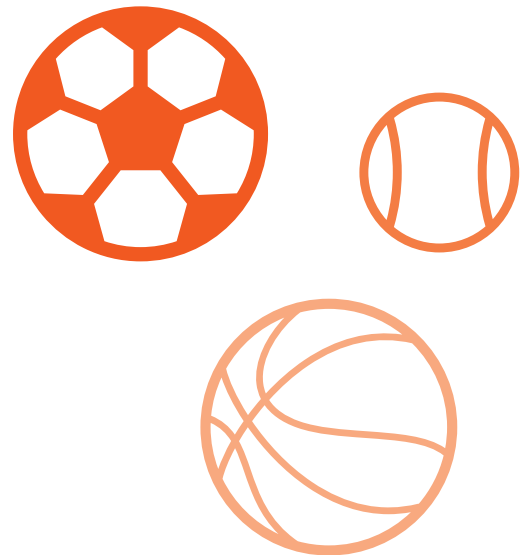
There is an inbuilt bias towards accessing drug-based treatment via the health system. When NICE recommends a non-drug intervention for people with arthritis, such as a physiotherapy review, the NHS is under no obligation to provide this. This means that ensuring access and provision of local non-drug interventions and services may vary depending on local priorities.

#### Medication

People with inflammatory arthritis often experience delays accessing treatments. Currently, only 37% of people diagnosed with inflammatory arthritis are seen in rheumatology services within the recommended time of three weeks from referral.<sup>45,46</sup> There is considerable variation in length of time to access specialist care across England and Wales.<sup>46</sup>

#### Surgery

Financial restraints in the health service have led to non-clinical restrictions being proposed for elective surgery including joint replacements.<sup>47,48</sup> Best practice guidelines from the National Institute for Health and Care Excellence (NICE) makes clear that people experiencing joint pain which has a substantial impact on quality of life should be considered for referral for a joint replacement. A decision to delay such an operation should be based on clinical need and a person's preferences.



**EXERCISE GENERALLY  
REDUCES PAIN FOR  
PEOPLE WITH A  
MUSCULOSKELETAL  
CONDITION.**

**MULTIMORBIDITY**

**3.0**

### 3.1

#### The number of people living with multimorbidity is growing

Currently, the majority of people aged over 65 years of age are living with multimorbidity.<sup>8</sup> But multimorbidity is not exclusively an issue of ageing. The number of people living with multimorbidity is greater among those under 65 years: over half of the number of people with multimorbidity are under the age of 65 years.<sup>8</sup>

In Scotland, the prevalence of people with multimorbidity increases from 64.9% among those aged 65–84 years to 81.5% among those aged 85 years or over.<sup>8</sup>

The GP Patient Survey found that just over two out of 10 adults (23%) has multimorbidity, rising to five out of 10 (51%) of over 65 year olds.<sup>49</sup> An analysis of the Quality and Outcomes Framework (QoF) in primary care found that 16% of adults has multimorbidity,<sup>9</sup> which rises to nearly six out of 10 (58%) when a broader list of long-term conditions was used.<sup>50</sup>

A number of risk factors have an impact on the prevalence of multimorbidity including age, socioeconomic class and gender.<sup>51</sup> There is limited data available, but generally the prevalence of multimorbidity is higher in:

- Women
- People living in deprived areas
- Older people<sup>49, 50</sup>

The impact of multimorbidity falls disproportionately on those from poorer backgrounds. There is a strong association between multimorbidity and deprivation: people in the most deprived areas develop multimorbidity 10–15 years earlier compared to those in the least deprived.<sup>8</sup> Furthermore, multimorbidity that includes a mental health condition is particularly associated with people in the most deprived areas (11% prevalence of physical and mental health conditions) compared to the least deprived (5.9%).<sup>8</sup>

**Figure 8** Prevalence of multimorbidity in the Scottish population<sup>f 8</sup>

Age (in years)	Number of people	Percentage of population with multimorbidity	Mean number of morbidities
0–24	479, 156	1.9%	0.16
25–44	508, 389	11.3%	0.50
45–64	473, 127	30.4%	1.18
65–84	254, 600	64.9%	2.60
≥85	36, 569	81.5%	3.62

<sup>f</sup> The data used was extracted from 314 medical practices in Scotland in March 2007.

<sup>g</sup> Whilst rheumatoid arthritis and osteoporosis are part of the QoF, osteoarthritis and back pain are not. An analysis of multimorbidity using QoF data alone – as the authors recognise – underestimates the prevalence of multimorbidity.

### Future prevalence

Over the next decade, the number of people with a long-term condition is expected to remain relatively constant at around 15 million in England, but the number of people living with more than one long-term condition is predicted to increase.<sup>52</sup> There will also be greater numbers of older people: by 2035/36, the numbers of people over 65 is estimated to grow by 48.9%, with the over 85 year olds expected to be the fastest growing group by 113.9% (from nearly 1.3 million currently to 2.8 million in 2035/36).<sup>53</sup>

By 2018, it is expected there will be 2.9 million people living with multimorbidity, compared to 1.9 million in 2008.<sup>52</sup> An analysis by the Royal College of General Practitioners has estimated that by 2025 the number of people living with 'one or more serious long-term conditions' in the UK will have increased to 9.1 million.<sup>54</sup>

### Multimorbidity – in numbers

- By 65 years of age, most people have multimorbidity.
- By 85 years of age, eight out of ten people have multimorbidity.
- Over half of the number of people with multimorbidity are under 65 years of age.
- Women have higher rates of multimorbidity than men.
- By 2025 there will be an estimated 9.1 million people living with one or more serious long-term conditions.



## 3.2

### Multimorbidity impacts on quality of life and health outcomes

Multimorbidity is associated with a poorer quality of life, reduced health outcomes and higher mortality rates.<sup>8, 55</sup> People with multimorbidity use more treatments, more health and care services,<sup>55, 56</sup> and are typically less able to perform everyday tasks.<sup>57</sup>

People with multimorbidity have complex needs that are best addressed with a biopsychosocial approach. This is because people with multimorbidity have many needs, stretching beyond healthcare.<sup>58</sup> People living with multimorbidity need to manage their health while also managing their various appointments, prescriptions and life beyond healthcare.

**Figure 9** Management of tasks associated with multimorbidity

Tasks to be managed when living with multimorbidity	Example of items for a person with osteoarthritis and depression
1 The symptoms	Pain, joint stiffness, fatigue, anxiety and depression.
2 The treatments	Exercise, painkillers, anti-inflammatories, antidepressants, physiotherapy, counselling and hydrotherapy.
3 The administration of healthcare	Face-to-face appointments to check on health status (but no treatment occurs). Travelling to and waiting for appointments. Coordination of picking up and managing multiple repeat prescriptions.
4 The administration beyond healthcare	Social care, and adaptations to the home, care and working environments. Management of impact on finances such as applications for benefits and additional resources. Mitigating the impact on work.

“IF I’D KNOWN 20 YEARS AGO, I’D HAVE BEEN MORE CAREFUL WITH MY DIET AND LIFESTYLE”

**Peter, 65**

Lives with undiagnosed musculoskeletal pain and angina

### Peter’s story

Peter lives with joint pain in his hand, which is often accompanied by numbness. The cause of pain remains undiagnosed as Peter feels he already takes up a lot of his GP’s time. Along with joint pain, he also manages angina. These conditions have developed over the last five years.

Peter is keen to do all he can to manage these long-term conditions himself and he follows a strict diet. However, the interaction between Peter’s conditions can impact on his ability to self-manage, particularly in terms of exercise. Peter enjoys cycling, but the joint pain and the numbness in his hands make cycling difficult. Peter also has to be mindful of undertaking strenuous exercise because of his angina.

He is concerned about the interaction between the medications he is taking for both conditions.

To improve the situation of people living with multimorbidity, Peter would like to see the following changes to the health system.

“I wish there were screenings much earlier

around heart disease and musculoskeletal health, and monitoring to assess changes in conditions related to changes in lifestyle and diet.”

He also says that more needs to be done to empower people to manage their conditions, such as the provision of good information about different conditions and better information around physical activity, particularly information that considers multimorbidity.

Peter’s final ask is for shorter waiting times for referrals to specialist services which he feels would be helpful for managing his conditions.



### Simon, 23

Has juvenile idiopathic arthritis, fibromyalgia, Crohn's disease and hypermobility.

“IT'S LIKE HAVING ANOTHER FULL-TIME JOB ON TOP OF YOUR LIFE”

is how Simon describes living with multiple long-term conditions.

### Simon's story

Simon developed joint problems when he was 18 months old, and he was diagnosed with juvenile idiopathic arthritis when he was three. While moving to high school, Simon found out he also had Crohn's disease. He has now been diagnosed with fibromyalgia too.

Simon experiences hypersensitivity and extreme fatigue, and constant daily pain leaves him unable to stand for long periods of time.

He worries that the invisible nature of the conditions he lives with means they are often not recognised or understood by other people. Simon feels that attitudes are slowly changing, but a daily challenge he faces is the misunderstanding that arthritis only affects older people. Simon has endured his juvenile idiopathic arthritis and fibromyalgia for so long that he can manage them more easily than his Crohn's which requires him to constantly plan every aspect of his life.

Simon has a hugely positive attitude to managing multimorbidity, even though he is no longer able to take part in contact sports. However, he feels that more could be done to improve continuity of care, particularly around the transition from child to adult services which can cause great upheaval.

Simon believes that a few changes in the healthcare system could make life managing multimorbidity much easier. Interdisciplinary teams with open communication channels would lead to greater continuity of care across all conditions, fostering empowerment in self-management and truly person-centred care. Building strong relationships with consultants would also support patient empowerment, but Simon notes he has met his own consultant only once in four years, and seen a multitude of registrars. Finally, he feels that person-centred care that looks beyond health services and liaises with education and work services would improve his experiences and those of others immeasurably.

### 3.3

## Multimorbidity is having a growing impact on health and care services, society and the economy

### Health and care services

Multimorbidity has a large impact on health and care services owing to the growing numbers of people affected, the complexity of care and the demands of the administration of multiple health needs.

In primary care, people with multimorbidity are frequent users of services: six out of 10 (58%) patients have multimorbidity, but account for eight out of 10 (78%) GP consultations.<sup>50</sup> People with multimorbidity<sup>h</sup> have nine consultations each year compared to four consultations for those without multimorbidity.<sup>50</sup> The Royal College of General Practitioners (RCGP) has identified multimorbidity as a particular challenge of 21st century healthcare and that multimorbidity means ‘more people are sicker for longer and present more complex problems to their GPs and primary care teams’.<sup>59</sup>

In secondary care, there will be increasing demands on specialist older people’s services, as older people already have the highest rates of unplanned admissions to hospital.<sup>15</sup> Also, people will be treated for one condition (or episode) who have other long-term conditions which may directly impact on their health outcomes. For example, the presence of comorbidities of other morbidities<sup>i</sup> can affect a person’s risk of mortality at 30 days following hip fracture surgery.<sup>60</sup>

Social care services will experience increased demand. This will include providing support after acute events, which may include delivering rehabilitation and preventing delayed discharge. Social care also encompasses support for people living with chronic multimorbidity who require help in the home.

There are also funding implications for the health and care services. On average, a person living with three or more long-term conditions incurs costs of nearly £8,000 a year compared to a cost of £3,000 for a person living with one long-term condition.<sup>52</sup> To meet the additional costs of multimorbidity, the NHS will need to find an additional £5 billion more in 2018 compared to in 2011.<sup>52</sup>

### Society and the economy

Owing to the growing numbers of people with multimorbidity, this phenomenon will have a considerable social and economic impact.

Musculoskeletal conditions and mental health problems are the causes of the greatest number of working days lost<sup>61</sup> and frequently occur together. Around three in 10 (32%) people of working age who have a musculoskeletal condition also have depression.<sup>62</sup> People with a mental health problem alongside a musculoskeletal condition are less likely to be in work.<sup>62</sup>

As discussed in section 3.1, people from deprived areas develop multimorbidity 10–15 years earlier compared to those from the least deprived.<sup>8</sup> They also face an increased risk of having a mental health condition or pain disorder as a comorbidity.<sup>8</sup> This could result in a disproportionate burden of ill health falling on people from deprived areas.

<sup>h</sup> Please note the precise numbers were 9.35 consultations and 3.75 consultations whose condition is part of the Quality and Outcomes Framework (QoF).

<sup>i</sup> The Nottingham Hip Fracture Score is a risk prediction tool for surgeons. The presence of comorbidities is one of the categories that is assessed to establish mortality risk ahead of surgery

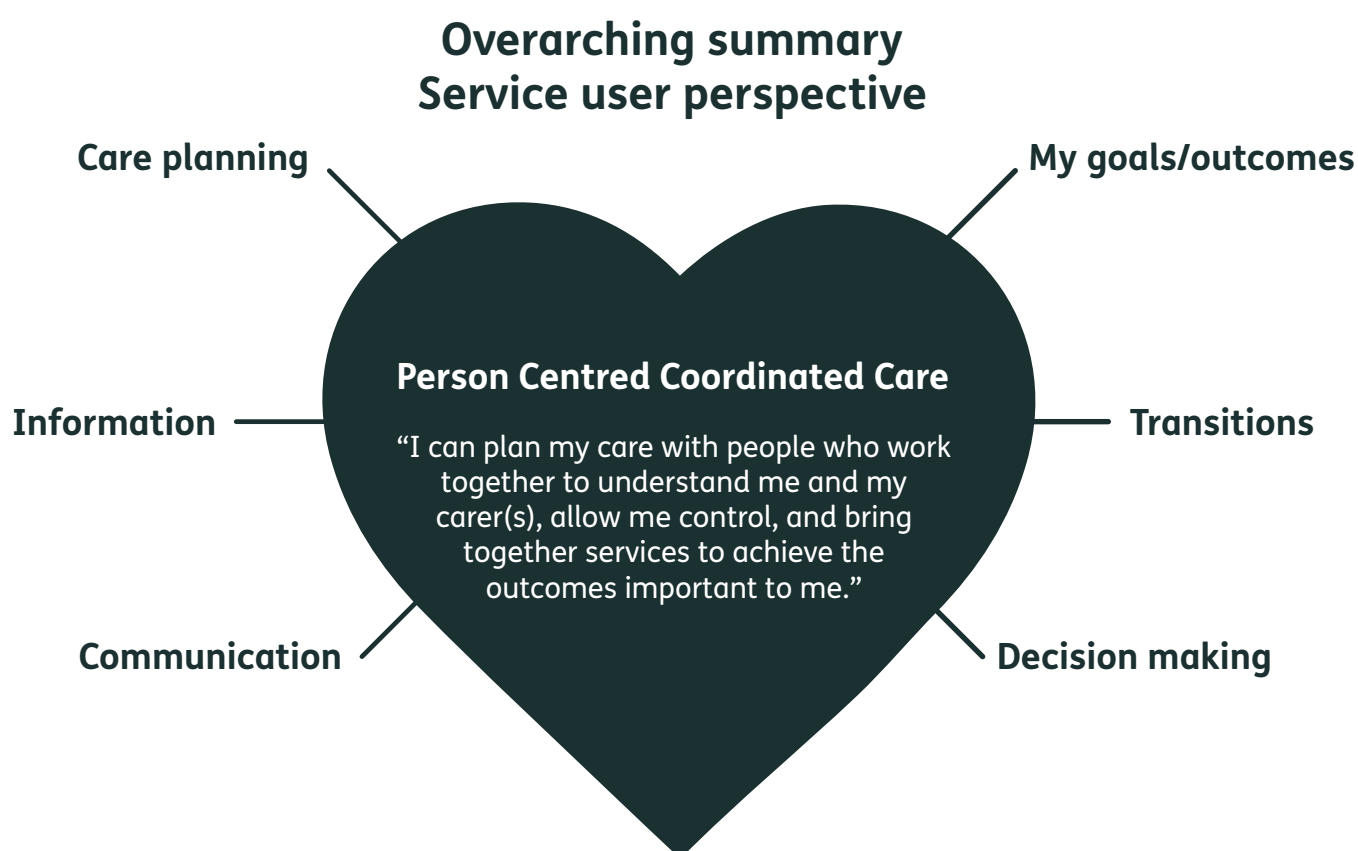


### 3.4

#### A person-centred approach to multimorbidity

People with long-term conditions say they need person-centred and coordinated care, with services brought together to achieve an outcome which is important to them.<sup>j</sup> Six key elements have been identified (see Figure 10 below).<sup>63</sup>

**Figure 10** A narrative for person-centred coordinated care



People living with multimorbidity need to be able to manage their own health and wellbeing.

A person's ability to manage independently will be shaped by their symptoms, treatments and the administration needed. Confidence, knowledge and capability to manage also play a critical role: an assessment of this capability is known as 'patient activation'.<sup>64</sup>

Three key factors have been identified by people with multimorbidity and healthcare professionals which affect engagement in self-management:

- capacity to manage: this includes having the time, knowledge, access to resources and energy to manage the tasks of multimorbidity independently
- responsibility: which areas of disease management will be led by the healthcare professional and which by the individual
- motivation: the readiness to self-manage.<sup>65</sup>

Social deprivation, or the combination of living with physical and mental health conditions, have a negative impact on all three factors.<sup>65</sup>

<sup>j</sup> The long-term conditions coalition, National Voices, worked with people with long-term conditions, service users, representatives from service user organisations, and leaders of health and social care services to design this narrative.

### Care and support planning

Care and support planning is an approach that people living with long-term conditions can use to manage their health and wellbeing. At the heart of care and support planning is a collaborative, personalised care planning conversation, usually between a person with one or more long-term conditions and a healthcare professional.

The conversation brings together information gathered by the healthcare professional and the perspective of the person with the condition, allowing time for shared goal-setting and to develop and record a care and support plan. Rather than a single appointment, a multi-stage process enables information such as test results to be shared in advance so the person has time to consider their priorities, and to consult their family or carers if they wish to.

Uptake of care plans remains low. Only 12% of people with a musculoskeletal condition or with a heart and circulatory condition and 28% of people with a mental health condition have a care plan.<sup>66</sup>

### Shared decision-making

Shared decision-making is a collaborative process that occurs between a person with a health condition and their healthcare professional to enable them to reach a healthcare decision together. During such a conversation, a Patient Decision Aid may be used to help the person make a choice about their healthcare. Such an aid can enable a conversation about different options and can help the person and the healthcare professional explore the best choices for the individual.

A range of decision aids are available for different conditions such as the NHS Shared Decision Making website. For more information:

<http://sdm.rightcare.nhs.uk/>

### 3.5

#### Barriers to good person-centred care for people with multimorbidity

##### Barriers identified by people with multimorbidity

People with multimorbidity have identified barriers to good person-centred care. One in two people with multimorbidity<sup>k</sup> report a lack of information about conditions or treatments, poor communication between healthcare professionals, and waiting times to see a specialist.<sup>67</sup> People with more long-term conditions, those who are in employment, and those reporting anxiety and depression experience more of these problems.<sup>67</sup>

On average, more than seven barriers to self-management have been identified by people living with multimorbidity<sup>l</sup> including:

- limitations to finance and knowledge
- limitations to physical capabilities
- obtaining care logistics
- interactions between the symptoms and treatments for conditions
- the need for both emotional and social support
- managing multiple medications.<sup>68</sup>

Participants' responses revealed barriers to self-care, including physical limitations, lack of knowledge, financial constraints, logistics of obtaining care, a need for social and emotional support, aggravation of one condition by symptoms of or treatment of another, multiple problems with medications, and overwhelming effects of dominant individual conditions. Many of these barriers were directly related to having comorbidities.

Older people (65–84 years of age) with multimorbidity want continuity of care, clear communication of personalised care plans, a single contact and care co-ordinator, and convenient access to healthcare providers (by phone, email or in person).<sup>69</sup> In particular, it is important to older people that they are recognised and listened to: participants expressed concerns about **how** they are told information, not just what they are told.<sup>69</sup>

No consistent impact of multimorbidity on a patient's attitude to managing their health or on their experience of healthcare has yet been identified.<sup>70</sup>

## 1 in 2

people with multimorbidity report a lack of information about conditions or treatments, poor communication between healthcare professionals, and waiting times to see a specialist.

<sup>k</sup> 31–91 years.

<sup>l</sup> People 31–70 years with multimorbidity.

### Barriers identified by healthcare professionals

GPs have identified four areas of difficulty in managing people with multimorbidity:<sup>71</sup>

- 1 Disjointed healthcare:** this includes too-short consultation times, and inadequate communication between multimorbidity care providers.
- 2 Inadequate guidelines and evidence-based medicine:** there are concerns that clinical guidelines are geared towards single conditions and there is uncertainty whether they still hold true for people with multimorbidity.
- 3 Problems delivering person-centred care:** some GPs enjoy taking a broader view of patient care including non-medical and psychosocial issues, while other GPs believe such an approach increases the level of complexity further.
- 4 Barriers to shared decision-making:** GPs recognise the importance of drawing out a person's preferences, but in practice find this difficult because of the complexity of multimorbidity, for example, when discussing the risks of treatment options. Enhanced communication skills are seen as important to enable clear discussion with patients about the interaction between their diseases.

GPs and nurses report tensions between delivering quality of care which meet targets and dealing with an individual's priorities, and this tension is exacerbated when multimorbidity is present.<sup>72</sup> Healthcare professionals find that consultations are too short, often meaning that clinical issues are dealt with in order of priority (as defined by the healthcare professional) rather than examining the holistic problems being experienced by the individual.<sup>72</sup> A review of five NICE disease-based clinical guidelines<sup>m</sup> concluded that implementation of such best practice for a person with multimorbidity would encourage polypharmacy and that guidance isn't provided about how to prioritise recommendations in order to avoid a treatment burden.<sup>n 73</sup>

Many of these difficulties in delivering care are familiar in managing long-term conditions. The presence of multimorbidity adds to the complexity. Continuity of relationships is more difficult to enable when care and responsibility is shared across multiple settings. This poses a particular challenge in primary care, where continuity of care – triggered in part by the large numbers of consultations required for people with multimorbidity – can be difficult.<sup>50</sup>

<sup>m</sup> The disease guidelines examined were for the following conditions: diabetes (type two), myocardial infarction (secondary prevention), osteoarthritis, chronic obstructive pulmonary disease and depression.

<sup>n</sup> NICE has since published the 'Multimorbidity: clinical assessment and treatment' clinical guideline which gives guidance on polypharmacy. Please see Section 8 for more information.







## 3.6

### Elements of a person-centred approach to multimorbidity

People with multimorbidity have diverse needs and therefore a person-centred approach is as much about **how** problems are addressed alongside **what** is done. It's important to put the appropriate ethos in place with a focus not on 'What is the matter?' but rather 'What matters to you?'<sup>74</sup>

Multimorbidity affects people's care in different ways and therefore a range of approaches will be needed to improve care, all underpinned by a person-centred ethos.

**Figure 11** A high-quality approach to person-centred care for people with multimorbidity

Roles	Activities	Information and documentation
<ul style="list-style-type: none"> <li>• <b>Transparency over responsibilities</b> held by healthcare and other professionals for various tasks.</li> <li>• <b>Clarity over the affected person's own role</b> in managing their symptoms, treatments and administration of healthcare and beyond.</li> <li>• <b>Continuity of care</b> with one named professional having clear responsibility for overseeing a person's care, particularly within general practice.</li> </ul>	<ul style="list-style-type: none"> <li>• <b>Holistic, person-centred care</b> using a biopsychosocial approach to consider together all of a person's long-term conditions, including mental health, pain, physical function and quality of life, identifying those issues most important to the person.</li> <li>• <b>Attention to treatment burden</b>, including polypharmacy and medication adherence.</li> <li>• <b>Recognition of changing needs</b>, with regular review of the care and support plan at a frequency determined by need.</li> <li>• <b>Coordinated care</b>, which encompasses the person being connected with relevant local facilities and services.</li> </ul>	<ul style="list-style-type: none"> <li>• <b>Recording of information</b> about shared decisions in a mutually agreed written care and support plan.</li> <li>• <b>Information flowing</b> seamlessly around health and care systems.</li> </ul>

For this to work effectively, a set of activities needs to occur at different levels:

	Tools and systems	National policy	Local policy
	<ul style="list-style-type: none"> <li>• <b>Data:</b> High-quality and accurate data is collected across settings and is anchored around the NHS number as a unique identifier.</li> <li>• <b>Outcome measures:</b> Relevant tools are identified to capture and regularly collect health outcomes.</li> <li>• <b>Capability measure:</b> Relevant tool to identify knowledge, confidence and capability to self-manage.</li> <li>• <b>Care and support plan and process:</b> Systems and tools in place to support identification of problems and goals.</li> <li>• <b>Shared decision-making tools:</b> These enhance decision-making.</li> </ul>	<ul style="list-style-type: none"> <li>• National standards for data collection.</li> <li>• National clinical guidelines for multimorbidity.</li> <li>• Accreditation.</li> <li>• Qualifications and training.</li> <li>• An ongoing workforce commitment to change working practices.</li> <li>• National programme to identify multimorbidity as part of a downstream health assessment (NHS Health Check).</li> <li>• Health promotion campaigns to target shared risk factors and living well with multiple conditions.</li> <li>• A research agenda which reflects the reality of its beneficiaries.</li> <li>• A quality improvement agenda.</li> <li>• Audits on multimorbidity in primary care.</li> <li>• Pathways of care.</li> </ul>	<ul style="list-style-type: none"> <li>• <b>Local health needs:</b> Identification and characterisation of the needs of people living with multimorbidity in the Joint Health Needs Assessment.</li> <li>• <b>Local assets:</b> Funding and provision of facilities, programmes and services for people.</li> <li>• <b>Clinical engagement in quality improvement:</b> Segmentation of people with multimorbidity into groups with targeted interventions.</li> </ul>

**MUSCULOSKELETAL  
HEALTH IS AN  
IMPORTANT  
PART OF  
MULTIMORBIDITY**

**4.0**

## GOOD MUSCULOSKELETAL HEALTH UNDERPINS LIVING WELL AND INDEPENDENTLY WITH MULTIMORBIDITY.

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Good musculoskeletal health is an important part of living well with multiple long-term conditions. If a musculoskeletal condition is present – such as osteoarthritis or back pain – it has an overall impact on a person's health and wellbeing.

There are three reasons for being aware of the impact of musculoskeletal conditions. This is because they:

- 1 are very common and are often present in multimorbidity
- 2 ruin quality of life for the person affected
- 3 cause pain and functional limitations which make it harder to cope with multimorbidity

### 4.1

#### **Musculoskeletal conditions are very common in multimorbidity**

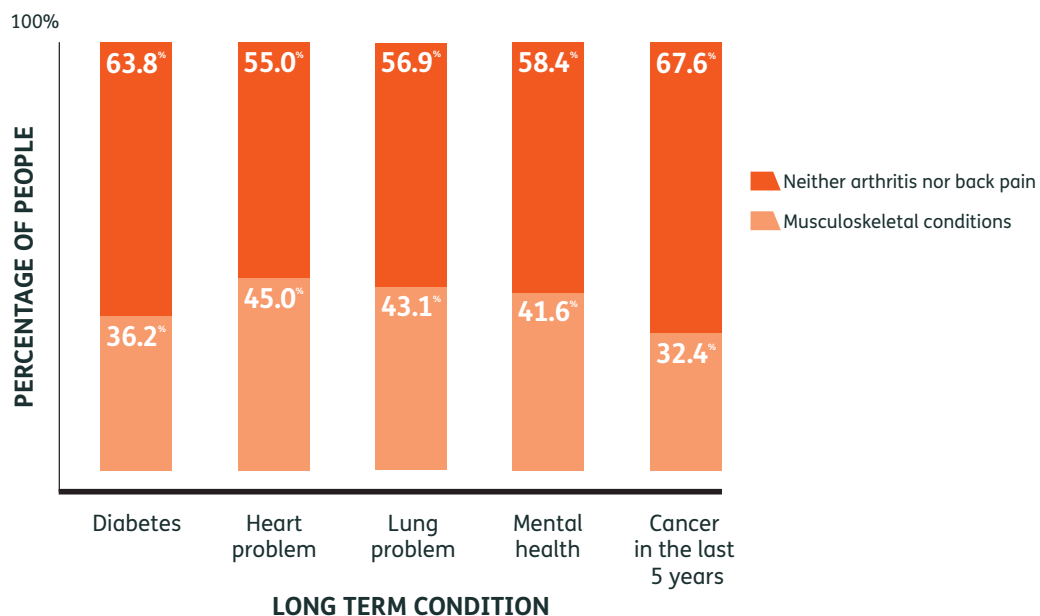
Because musculoskeletal conditions are very common, they are often found in people with other long-term conditions. Among UK primary care patients living with 10 common long-term conditions, painful conditions are a frequent comorbidity.<sup>75</sup>

#### **Osteoarthritis, back pain and multimorbidity**

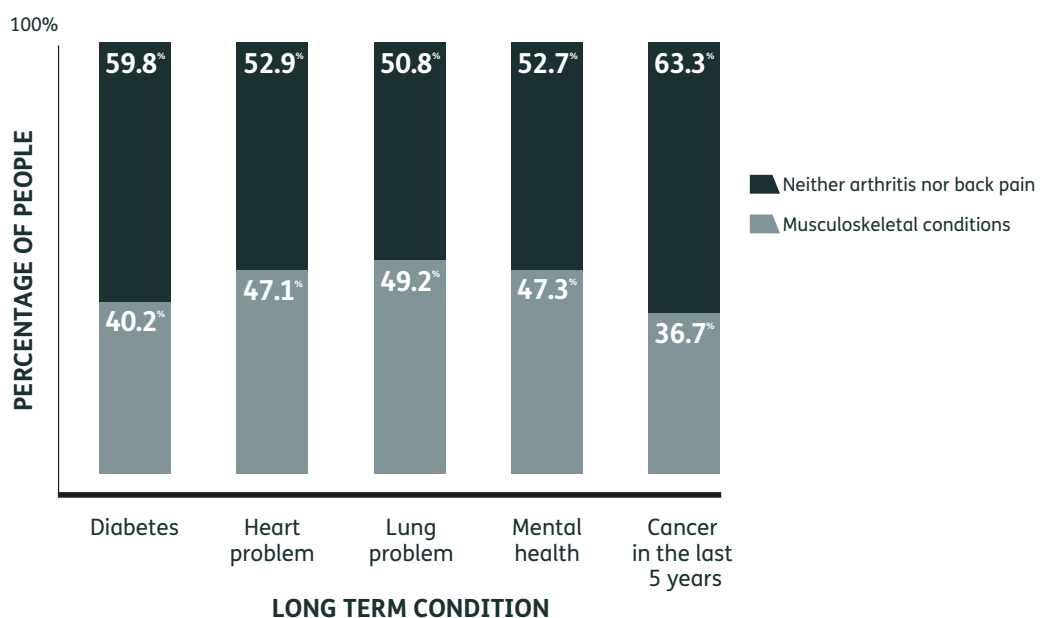
People living with a long-term condition are likely to have osteoarthritis. This is partly because the prevalence of long-term conditions increases with rising age, and also because osteoarthritis shares common risk factors such as obesity with other long-term conditions. For example, among people over 45 years who report living with a major long-term condition,<sup>o</sup> more than three out of 10 also have a musculoskeletal condition.<sup>19</sup> By age 65 years, almost five out of 10 people with a heart, lung or mental health problem also have a musculoskeletal condition.<sup>19</sup> The converse is also true, so people with a musculoskeletal condition are more likely to have another long-term condition. Four out of five people with osteoarthritis have at least one other long-term condition such as hypertension or cardiovascular disease.<sup>76</sup>

<sup>o</sup> The major long-term conditions included in this analysis are: musculoskeletal conditions, diabetes, heart disease, lung problems, mental health and cancer in the last five years. This analysis includes people who have arthritis, back pain or both conditions. Please see Section 7.0 for methods.

**Figure 12** Prevalence of musculoskeletal conditions among people aged 45 years and over reporting other long-term conditions<sup>19</sup>



**Figure 13** Prevalence of musculoskeletal conditions among people aged 65 years and over reporting other long-term conditions<sup>19</sup>





### Rheumatoid arthritis and multimorbidity

People with rheumatoid arthritis are at increased risk of developing another health condition, such as cardiovascular disease which affects around one in 20 (6%) people with rheumatoid arthritis.<sup>77,78</sup>

### Osteoporosis and multimorbidity

People with osteoporosis are at increased risk of fragility fractures.<sup>79</sup> Many long-term conditions, such as thyroid disease or rheumatoid arthritis, increase the risk of osteoporosis.<sup>80</sup> Some treatments, including steroids or anti-hormone therapies for cancer, can also cause weakening of bone.<sup>81,82</sup> Some people with multimorbidity are at greater risk of a fragility fracture. This risk rises further if people with multimorbidity develop frailty and are at risk of falls. Multimorbidity also affects recovery after a fracture.

### Mental health, musculoskeletal conditions and multimorbidity

Musculoskeletal conditions and mental health have a complex and reciprocal relationship, each exacerbating the other. Living with a painful condition can lead to depression and anxiety. Conversely, psychological distress and depression worsen pain. A cycle can therefore develop, with ever-worsening pain and low mood leading to social withdrawal and isolation.

People with mental health conditions may delay seeking treatment, and clinicians may overlook physical symptoms, attributing these to an individual's mental health condition. Musculoskeletal conditions are exacerbated by weight gain which is a common side effect of many medications used to treat mental health problems.<sup>83</sup>

Depression is the most common comorbidity among people with rheumatoid arthritis, affecting one in six people.<sup>77,84</sup> The presence of depression alongside rheumatoid arthritis can also lead to a person's pain and overall disability being worse.<sup>85</sup>

### Deprivation, musculoskeletal conditions and multimorbidity

The burden of ill health falls disproportionately on those from the most deprived areas. Musculoskeletal conditions and multimorbidity are more prevalent in more deprived populations compared to the least deprived populations.<sup>8,19</sup> In the most deprived populations, painful conditions are the most common multimorbidity among those already living with heart disease, diabetes, chronic obstructive pulmonary disease (COPD) and cancer.<sup>8</sup>

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### Musculoskeletal conditions as part of multimorbidity – in numbers

- Painful conditions are frequently found as a comorbidity in 10 common conditions in UK primary care patients.
- Four out of five people with osteoarthritis have at least one other long-term condition such as hypertension, cardiovascular disease or depression.
- Among people over 45 years who report living with a major long-term condition, more than three out of 10 also have a musculoskeletal condition.
- By age 65 years, almost 5 out of 10 people with heart, lung or mental health problem also have a musculoskeletal condition.'
- The presence of any long-term condition is associated with a drop in quality of life (self-reported Quality of Life score of 0.79), but if arthritis or back pain is present as one of the long-term conditions the drop is greater (self-reported Quality of Life score of 0.71).

## 4.2

### Musculoskeletal conditions ruin quality of life

People with arthritis often live with pain, fatigue, depression and functional limitations, all of which reduce quality of life, limiting the ability to cope and undertake everyday activities.

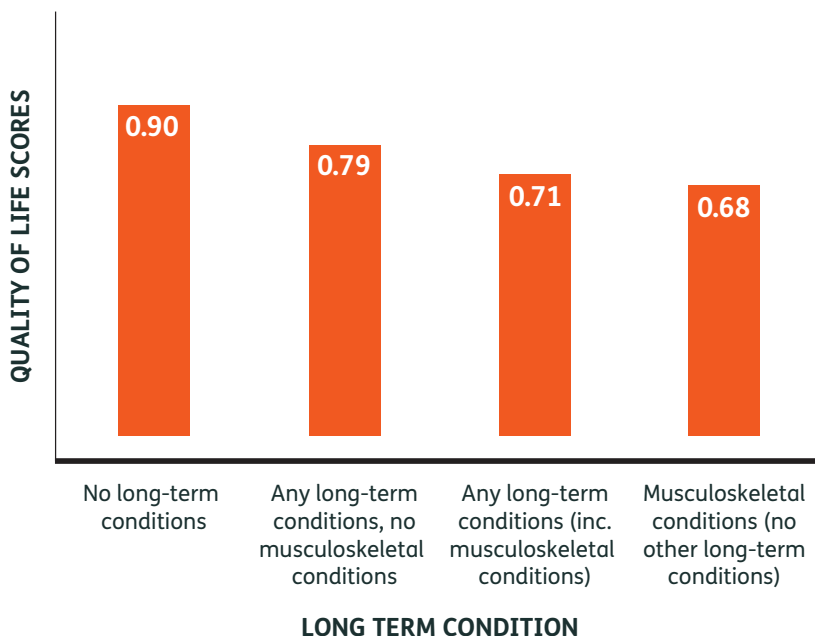
Self-reported Quality of Life (QoL) scores can measure the personal impact of long-term conditions. Compared with those without a long-term condition (QoL score 0.90), people living with one or more non-musculoskeletal long-term conditions report substantially lower quality of life (QoL score 0.79).

There is a further reduction in quality of life (QoL score 0.71) among those who have a musculoskeletal condition (arthritis or back pain)

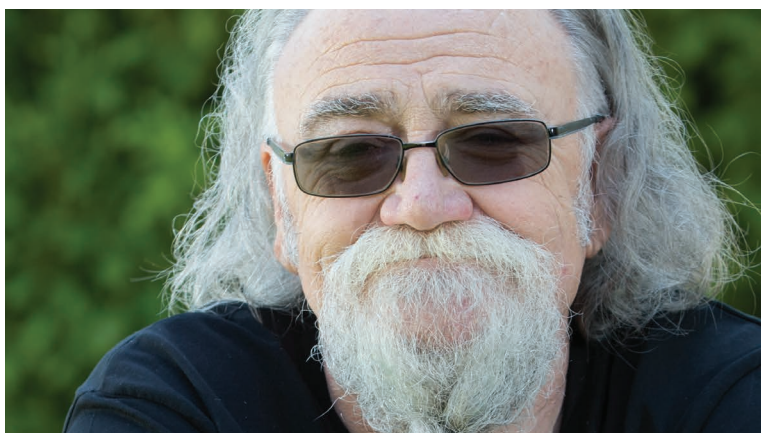
as part of their long-term multimorbidity. Indeed, the impact of musculoskeletal conditions is so great that people living with arthritis or back pain report a similarly reduced quality of life irrespective of whether arthritis or back pain is their only condition (QoL score 0.68) or is one among multimorbidity (QoL score 0.71).<sup>19</sup>

Arthritis, back pain, neurological problems and mental health conditions have the greatest impact on health-related quality of life at an individual level.<sup>49,86</sup> Due to the high prevalence of arthritis, back pain and depression, these conditions have the largest impact on health-related quality of life at a population level.<sup>49,86</sup>

**Figure 14** Average Quality of Life scores<sup>p</sup> for people aged 45 years and over who live with long-term conditions<sup>19</sup>



<sup>p</sup> The EQ-5D was used. It is a questionnaire that can be used to measure health-related quality of life. It can be used as a measure of health status and provides a value between 0–1, with a higher score indicating a better health-related quality of life.



### Jack, 65

Lives with asthma, osteoarthritis, depression, carpal tunnel syndrome, a colostomy bag as the result of surgery for colon cancer, an underactive thyroid, diabetes, cataracts, an enlarged prostate and problems with his gall bladder.

“IF I DID IT  
YESTERDAY I CAN  
DO IT TODAY. IF I  
DID IT TODAY I CAN  
DO IT TOMORROW.”

This is Jack's attitude in the face of his gruelling daily routine.

### Jack's story

Jack was diagnosed with asthma at five months old; now 65, he is managing a number of conditions, including osteoarthritis, depression, carpal tunnel syndrome, an underactive thyroid, diabetes, cataracts, an enlarged prostate and problems with his gall bladder. He has a colostomy bag as the result of surgery for colon cancer.

He has a high level of motivation when managing his many conditions, but his quality of life is affected by his mobility and independence: “It is the arthritis, the carpal tunnel and the bladder control... they are the things that really affect my quality of life.”

Getting up and staying mobile each day are constant challenges for Jack, and his routine consists of physiotherapy exercises, multiple medications and dealing with personal care.

Jack is motivated by having short-, medium- and long-term goals. Jack's short-term goals include nights out with friends and his longer-term goals involve studying and going abroad: these goals and aspirations provide daily inspiration for Jack to improve his mobility and stability.

As Jack's relationship with the health system began at a young age, he has become an expert in self-management: “I've been self-managing my asthma for 50-odd years.” But he thinks the current system doesn't support people

as much as it could. Jack emphasises the lack of coordination within the healthcare system. Over the course of one month, Jack had 13 medical appointments including routine engagements with his GP and physiotherapist, a pre-surgery appointment and group talking therapy. He finds the burden of appointments time consuming and wearing even in retirement, and he acknowledges it must be extremely difficult for people who also have to work. Coordinating the management of medication is also an issue for Jack. “I've got four pages of repeat prescriptions, of about 13 different medications, plus non-pharmacological items to help manage blood sugars and my colostomy. The trouble is they all get out of sync, so I am in and out of the GPs ordering repeat prescriptions and picking stuff up from the pharmacy virtually every week.”

Jack says it would help if there were a single person who had an overview of all his conditions who he could go to for advice. “The only thing you need with self-management is someone to approach if you do have a problem.”

Jack is able to approach his stoma nurse, who he sees in connection with his colostomy bag, for advice and this is a healthcare professional whom he can't praise highly enough. Being able to build strong ongoing relationships with healthcare professionals, such as physiotherapists, is also important to Jack because they can understand and support him to self-manage.

## LIVING WITH MULTIMORBIDITY IS COMPLEX AND DEMANDING.

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### 4.3

#### **The pain and limitations of arthritis make it harder to cope with multimorbidity**

Typically, people with multiple long-term conditions must carry out numerous administrative tasks to manage their health. Different tablets need to be taken at specific times of day, and others need to be taken only once a week. Some medications must be taken regularly, others only occasionally – including treatments to manage the side-effects of other tablets. People need to keep stock of their pills, creams, inhalers and injections, requesting repeat prescriptions on time from their GP, and visiting the pharmacy to collect items. Beyond this, some conditions and treatments need regular blood tests or blood pressure measurement and monitoring, some of which can be done at home, some at the GP and some only at the hospital.

People living with multimorbidity often see an array of health and care professionals at home, in the community and in hospitals. A typical week could include visits to the GP surgery and to one or more hospitals to see specialists; home visits from a district nurse, a social worker and formal and informal carers; and physiotherapy and podiatry appointments. Often there are no shared care records, so the person receiving care becomes responsible for updating each professional on what the others are doing. Receipt of benefits requires further paperwork, meetings and assessments.

Beyond all this, to stay healthy, people with multimorbidity need to find time to shop for and prepare nutritious food, make time for regular physical activity, maintain social networks of family and friends, and often themselves act as carers for parents, partners and children.

People's ability to cope with these tasks is influenced by their confidence, knowledge and capability. It is also affected by whether arthritis is one of their long-term conditions.

People with arthritis have physical limitations which make everyday tasks harder,<sup>87</sup> summarised in the box on the following page. Arthritis makes multimorbidity much more difficult to cope with. Comorbid arthritis and back problems are responsible for a substantial proportion of restrictions in activity among people living with cardiovascular disease, diabetes and respiratory disease.<sup>88</sup>

People with arthritis experience fluctuations in their condition which make planning ahead difficult. This directly affects their ability to manage and cope with other long-term conditions. A person living with diabetes and severe hand arthritis may not know if they will be able to inject insulin tomorrow. Or a cancer survivor living with severe hip arthritis may not know if they will be able to take the bus to hospital appointments the following week. Knowing which tasks they can do on their own and for which they need support will vary from week to week.

For a person who is just about managing in spite of their multiple long-term conditions, developing arthritis can take away their ability to cope. The painful, disabling and often unpredictable nature of these conditions can therefore lead to a worsening of all their other long-term conditions. Their overall life with multimorbidity becomes more difficult.

The onset of arthritis can be a tipping point for people with multimorbidity, depriving them of their ability to maintain their health and independence, leading to a spiral of decline.



### The impact of arthritis on basic tasks

The Centers for Disease Control and Prevention's (CDC) Arthritis Program in the USA has identified nine functional limitations that people with arthritis report as being 'very difficult' or that they 'cannot do'.<sup>89</sup>

- Grasping small objects
- Sitting for more than two hours
- Climbing a flight of stairs
- Walking ¼ mile
- Stooping, bending or kneeling.
- Reaching above the head
- Lifting or carrying 10 pounds
- Pushing a heavy object
- Standing for more than two hours




In 2010–2012, more than four in 10 people with arthritis (43%) in the USA found it 'very difficult' or 'cannot do' at least one of the nine important functional activities of daily life.<sup>90</sup>

# 4 in 10

people with arthritis (43%) in the USA find it 'very difficult' or 'cannot do' at least one of the nine important functional activities of daily life.<sup>90</sup>

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**Figure 15** Examples of the impact of arthritis on management of other long-term conditions

Functional limitation of arthritis	Task associated with management of long-term conditions	Condition	Type of activity
 <p><b>Grasp small objects</b></p>	<p>Give injections. Take tablets. Change bandages.</p>	<p>Diabetes; multiple long-term conditions.</p>	<p>Treatment.</p>
 <p><b>Walk a ¼ mile; stoop, bend or kneel</b></p>	<p>Undertake exercise. Get to health and other appointments.</p>	<p>Diabetes; multiple long-term conditions.</p>	<p>Treatment and administration of healthcare, and beyond.</p>
 <p><b>Reach above one's head</b></p>	<p>Ability to get dressed independently.</p>	<p>Multiple long-term conditions.</p>	<p>Administration beyond healthcare (personal care).</p>

## 4.4

### Interventions of care and support for people with multimorbidity

The research agenda about which specific models of care are effective for people with multimorbidity is in its early days.<sup>1, 67</sup>

Case studies from overseas and other health areas, such as end-of-life care, illustrate a needs-based approach.

## ENHANCE: A HOLISTIC APPROACH TO MANAGING LONG-TERM CONDITIONS

Osteoarthritis, anxiety and depression tend to be under-recognised and under-managed in primary care, but these conditions can exacerbate other long-term conditions. Long-term conditions such as diabetes and asthma are often treated by nurses in primary care, but nurses often focus solely on one condition and the opportunity to provide holistic care is lost.

The Research Institute for Primary Care and Health Sciences and the Arthritis Research UK Primary Care Centre (Keele University) in partnership with North Staffordshire Clinical Partners, funded by the NIHR Collaborations for Leadership in Applied Health Research and Care West Midlands, is piloting ENHANCE. This trial is investigating the feasibility and acceptability of assessing and managing osteoarthritis-related pain, anxiety and depression during enhanced nurse-led routine reviews for people with long-term conditions.<sup>91</sup>

The ENHANCE intervention recognises that patients often see nurses more regularly than other clinicians for long-term conditions. The pilot study introduces mechanisms for recognition and initial management of joint pain, anxiety and depression into pre-existing interactions for patients. It entails a more holistic approach to

long-term condition management by widening conversations around lifestyle, diet and exercise, and medication for joint pain, anxiety and depression at the same time as discussing other long-term conditions, and signposting to other services e.g. physiotherapy and psychological services. Nurses complete an EMIS template during the review and the nurse and patient fill in a summary card to record the next steps. The review was designed through co-production, using patient advisory groups, practice nurse advisory groups and stakeholder workshops where participants discussed and agreed the questions that should be asked in the review, using evidence from previous studies and guidelines.<sup>92, 93</sup>

The trial recruited 319 participants and questionnaires were completed just after the review and at six weeks and six months. The researchers audio recorded 24 consultations<sup>94</sup> and interviewed 20 patients who received the review, eight practices delivering the review and one GP. Analysis is ongoing and results of the pilot study will soon be available.

# THE 3D STUDY:

## IMPROVING WHOLE-PERSON CARE

The 3D study aims to develop and test a new approach to how GP practices manage people with multimorbidity.<sup>95</sup> Instead of focussing on each disease in isolation, the aim is to treat the whole person in a consistent, joined-up manner in order to improve their overall quality of life. GP practices testing this new management system (intervention group) will be compared with GP practices following the current treatment system (usual care or control group).

People with multimorbidity in general practices who are allocated to the intervention group will be identified and flagged on their GP's computer system. A named nurse and doctor will be allocated to them to manage their care. These people will be given a card to identify them to reception staff who will offer longer appointment times. They will also be invited for a comprehensive '3D' health review every six months which is designed to cover all of their health issues. The person with multimorbidity will first see their named nurse who will identify their concerns and priorities (**Dimensions of health**), and will perform any routine checks required by the person's conditions. Their **Drugs** will be reviewed to check they are being correctly prescribed (without dangerous interactions) and taken properly: where possible, the person's prescriptions will be simplified, for example by arranging for all of them to be taken once a day. The named GP will check for and treat symptoms of **Depression**. The practice will also have a linked 'general physician' at the local hospital whom they can contact easily for advice about people with complex problems.

People with multimorbidity in general practices allocated to the usual care group will continue having their care managed by their GPs and practice nurses using current management practices of multiple appointments and clinics for each separate condition.

The 3D research team first tried the new approach in three practices and used this experience to improve it. The team then recruited 33 GP practices in and around Bristol, Manchester and Glasgow to take part in the main study. These practices were randomly assigned to the intervention or usual care group. About 1,400 people with multimorbidity from these practices will be followed up over a period of 15 months.

As part of this trial, participants from both groups will be asked to fill in questionnaires about their wellbeing, illnesses and treatments, their experience of their care, and what health resources they use at nine and 15 months. The research team will review the notes of people with multimorbidity in both groups to record the number, type, duration and quality of consultations within general practice as well as their use of other health and social services.

The study will compare the cost of the old and new approaches (both the cost to the NHS and the cost to the person with multimorbidity) and relate this to the benefit in a cost-effectiveness analysis. It will also interview people with multimorbidity and health care staff to explore how well the approach was implemented and identify potential areas for improvement.

# **PERSONALISED INTEGRATED CARE: DELIVERING PERSON-CENTRED CARE FOR OLDER PEOPLE WITH LONG-TERM CONDITIONS**

The Age UK Personalised Integrated Care pathway is a person-centred approach that embeds the local voluntary sector with health and care organisations to support older people with long-term conditions.<sup>96</sup> Every older person is matched with an Age UK Personal Independence Co-ordinator who works with the older person to develop an innovative combination of medical and non-medical support designed to enable them to achieve their personal goals and aspirations, improve their wellbeing, and manage their conditions effectively. Age UK works with a local partnership of commissioners, GPs, the local authority and the hospital trust to keep people well and to avoid unnecessary and costly hospital admissions.

A predictive risk stratification model is used within primary care to identify a specific cohort of older people with multiple long-term conditions who are at risk of unplanned admission to hospital. These conditions include angina, diabetes, stroke and dementia. Using a 'guided conversation', the Age UK Personal Independence Co-ordinator meets the older person at home and draws out the goals most important to them based on improving their overall wellbeing. They work with the older person to create a care plan which brings together services from health, social care and the community and support to help the older person to improve their confidence, social connections and wellbeing over a twelve-week period. This sometimes involves accessing services too. Regular monitoring of their wellbeing takes place before, during and after the service.

Each older person's care plan is reviewed regularly by primary care based multidisciplinary teams, of which the Age UK Personal Independence Co-ordinator is an active member.

Age UK is currently evaluating phase 2 of this programme to understand the experiences of older people, volunteers and the partnerships who work together to embed the service. The evaluation will give indications about the effectiveness of the programme on improving wellbeing, in reducing unplanned hospital admissions, and activity in primary care.



# EMPOWERED LIVING TEAM: PERSON-CENTRED REHABILITATIVE PALLIATIVE CARE

The Empowered Living Team (ELT) at St Joseph's Hospice in Newham is focused on tackling the challenges of an ageing population with increasing immobility through person-centred rehabilitative palliative care.<sup>97</sup>

The ELT intervention aims to empower people managing their conditions with a focus on living well alongside debilitating conditions. The ELT utilises training and volunteers so that patients can be supported in their own homes.

The ELT offers support through rehabilitation programmes alongside complementary therapy, emotional support and befriending. This encourages patients to be empowered in managing their conditions, through promoting understanding and independence as much as possible.

In the pilot phase, most participants benefited from improved health outcomes and improved levels of engagement and empowerment:

- 12 out of 19 patients saw improvements in their mobility status and level of function
- 10 out of 19 patients showed an increased confidence to self-manage their main symptoms
- 11 out of 16 patients showed an increase in their personal wellbeing scores.

This model offers a new dynamic for how people can be in control of their conditions, as well as a model for demonstrating how person-centred care can be achieved across different areas of care.

# THE HEALTH AND EMPLOYMENT AFTER FIFTY STUDY:

## UNDERSTANDING BARRIERS TO WORKING

The Health and Employment After Fifty (HEAF) study comprises 8,000 people aged 50–64 years from 24 general practices across England.<sup>98</sup> Each person answers a baseline questionnaire covering demographics, health, wellbeing, retirement aspirations, employment history, current work status and health-related job loss as well as other areas. Participants will repeat the questionnaire at regular intervals, initially over a five-year period.

Set against the context of ageing populations, declining birth rates and slowing economic growth, many European governments are finding fiscal incentives to encourage workers to work into older age. This raises many questions around whether it is healthy for people to work longer. The HEAF study seeks to address core questions relating to this, including the impact of common health conditions on work capability and work participation at older age; the social, occupational, personal and medical co-factors which influence vocational outcomes among older people; and the impact of job loss (age related or health related) on the subsequent physical and psychological health of people aged over 50 years.

The HEAF study is funded by Arthritis Research UK, the Medical Research Council and the Economic and Social Research Council. The data collected includes variables that could influence work participation including sense of achievement, job satisfaction, feeling appreciated, friendship at work and worry over work. It also gathered personal factors such as finances and savings, pensions entitlement, retirement expectations, and caring responsibilities. One part of the questionnaire looks at the Fried frailty criteria, and captures frailty and participation in the workplace as part of its data.

Findings so far include that at least two of the five components of frailty were reported by one in three adults between 50 and 64 years of age. Frailty is highly associated with inability to work in the 50–64 years of age group, particularly for a health-related reason. The conclusion was that interventions that are successful in maintaining muscle strength, function and minimising frailty could have important effects on economic productivity as well as on health and wellbeing in later life.

# RECOGNITION OF MUSCULOSKELETAL HEALTH AS PART OF MULTIMORBIDITY

# 5.0

## 5.1

### Musculoskeletal conditions fail to be recognised at many levels

Arthritis and musculoskeletal conditions have been missed on many occasions, despite their great impact. This was acknowledged by the Chief Medical Officer for England who described osteoarthritis as ‘an unrecognised public health priority’.<sup>99</sup> People with arthritis have noticed the lack of recognition of their condition within the health service and across society.<sup>20</sup>

**Figure 16** Examples of areas in which musculoskeletal conditions have not been recognised

Level	Description
<b>Individual</b>	<p>Six out of 10 people (62%) with arthritis do not believe their condition is a high priority for the NHS.<sup>20</sup></p> <p>Nine out of 10 people with arthritis (89%) agree that society views arthritis as an ‘old person’s disease’.<sup>20</sup></p> <p>Only 12% of people with a musculoskeletal condition have a care and support plan.<sup>66</sup></p>
<b>Healthcare professionals and other professionals</b>	<p>Musculoskeletal conditions are under-recognised in undergraduate curricula in medical schools, postgraduate medical training<sup>100</sup> and pre-registration training for nurses.</p> <p>Only rheumatoid arthritis and osteoporosis are included in the incentive scheme Quality and Outcomes Framework.<sup>q</sup></p> <p>Healthcare professionals may not see musculoskeletal conditions as a priority in clinical consultations, or may experience uncertainty about how to manage and support self-management of these conditions.</p> <p>Healthcare and other professionals may perceive osteoarthritis as an inevitable part of becoming older and therefore nothing can be done.</p>

<sup>q</sup> Only measures relating to osteoporosis and rheumatoid arthritis are included in the Quality and Outcomes Framework.

Level	Description
<b>Local level</b>	<p>Local prevalence data for major musculoskeletal conditions has not been routinely published and therefore communities have struggled to identify the health needs of their local population.<sup>r</sup></p> <p>One out of four local authorities has missed arthritis from its Joint Strategic Needs Assessment in England.<sup>s,101</sup></p> <p>Only one local authority in England has mentioned osteoarthritis in its Joint Health and Wellbeing Strategy.<sup>101</sup></p> <p>Only 37% of hospitals are linked to a Fracture Liaison Service in England, Wales or Northern Ireland.<sup>102</sup></p> <p>Access to physiotherapy and number of sessions offered varies. Only an estimated one-third of Clinical Commissioning Groups offer self-referral to physiotherapy.<sup>103</sup></p>
<b>Tools and systems</b>	<p>Musculoskeletal conditions were missed out the first extract of primary care data for the multi-condition Care.data programme.</p> <p>Clinical audits taking place are in rheumatoid and early inflammatory arthritis, and falls and fragility fractures.</p>
<b>National level</b>	<p>No national strategy for musculoskeletal conditions, since the 2006 Musculoskeletal Services Framework.</p> <p>No national public health campaigns.</p> <p>Musculoskeletal conditions are not included in the NHS Health Check.</p> <p>Local areas are not obliged to implement NICE-recommended physical activity interventions for osteoarthritis, despite clear clinical and cost effectiveness.</p>

<sup>r</sup> Arthritis Research UK in partnership with Imperial College London has produced prevalence estimates for knee and hip osteoarthritis, back pain, rheumatoid arthritis and fragility fractures.

<sup>s</sup> Only 36% of Joint Strategic Needs Assessments have specifically included osteoarthritis and only 38% have included back pain.



## THERE ARE A NUMBER OF UNDERLYING REASONS FOR THE LACK OF RECOGNITION.

Firstly, national policy has given a greater focus to conditions resulting in early death (mortality) rather than those which reduce quality of life (morbidity). Such a focus alongside other measures has had an impact: over the last 15 years, outcomes for cardiovascular disease and cancer have improved.<sup>104</sup>

Secondly, musculoskeletal conditions have experienced the nihilistic perception that nothing can be done, that arthritis is an inevitable part of ageing, and that people should just put up with their joint pain.<sup>20</sup>

Finally, the nature of musculoskeletal conditions means there are no biomarkers or simple tests to capture a person's musculoskeletal health. The lack of simple outcome measures<sup>t</sup> means a lack of data about people with these conditions. Because measurement drives activity, policy focus is often on surgical and orthopaedic services for people with severe arthritis, with a relative neglect of primary and community care, where the majority of musculoskeletal conditions are dealt with.

Recognition of musculoskeletal health as part of multimorbidity is important because good musculoskeletal health underpins independent living with multiple long-term conditions. Without such recognition, musculoskeletal conditions will exacerbate and help accelerate a number of trends.

### 5.2

#### Ways to recognise musculoskeletal health as part of multimorbidity

People are living longer, but also living longer with ill health.<sup>105</sup> Policymakers will therefore need to consider how to prolong healthy life expectancy and to work with partners to create a positive vision of meaningful, fulfilling older life.

Financial restraints continue to exert pressures on health and social care. An ageing population, combined with growing levels of obesity and physical inactivity, will trigger an increase in the numbers of people living with arthritis.

If the impact of musculoskeletal conditions continues to be unaddressed, then poor musculoskeletal health will reduce people's ability to live independently. This, alongside multimorbidity, may overwhelm health and care systems.

But, this lack of recognition is not inevitable.

Positive steps can be taken to recognise and address musculoskeletal conditions when they are present as part of multimorbidity. Such recognition should occur at many levels.

<sup>t</sup> The Musculoskeletal Health Questionnaire (the MSK-HQ), a patient-reported outcome measure, became available in 2016. For more information please see: <http://www.arthritisresearchuk.org>







**Figure 17** Overview of levels of recognition needed of musculoskeletal health as part of multimorbidity

Level	Description
<b>Individual</b>	<p>People with multimorbidity need to be aware of the impact of musculoskeletal health on their wellbeing and independence.</p> <p>People should know how to take care of their joints, bones and muscles.</p>
<b>Healthcare professional and other professionals</b>	<p>When assessing the needs of a person with multimorbidity, professionals should have the competencies to:</p> <ul style="list-style-type: none"> <li>• be able to identify that a person has a musculoskeletal condition</li> <li>• understand the bio-psycho-social impact</li> <li>• be aware of how a musculoskeletal condition impacts on activities of daily living, instrumental activities of daily living and ability to live independently.</li> </ul> <p>Healthcare professionals should know how to support the person to change their behaviour and how to support them into sustained self-management.</p>
<b>Local planners</b>	<p>Able to identify the needs of the local population.</p> <p>Ensure appropriate services are provided.</p> <p>Voluntary sector in local area needs to be aware of the impact of pain on people's functional abilities.</p>
<b>Tools and systems</b>	<p>Tools and systems used to collect and manage information and data about people with multimorbidity should include musculoskeletal conditions.</p>
<b>National level</b>	<p>Policymakers should consider how they can support healthy ageing, identification of pain, and living independently with multimorbidity.</p>

## Individual level

### Tackling misconceptions about arthritis

People with multimorbidity should have access to high-quality information and support. These should address common misconceptions about arthritis: for example, it must be made clear that arthritis is not an inevitable part of getting older and that there are self-management steps that people can take. In particular, they should be encouraged to use physical activity to manage pain. Information and advice should be made available through public health campaigns, and through initiatives such as Making Every Contact Count<sup>u</sup> using face-to-face and online methods. People can share their experiences directly with others through peer support. Personalised support from professionals can be delivered through care and support planning. All of these can be supported through partnerships between health and care services and the third sector.

### Health, care professionals and other professionals

#### Identifying pain and appropriate signposting

Healthcare and other professionals should be alert to the presence of chronic pain among people with multimorbidity.<sup>106</sup> Curriculum and training systems should enable healthcare professionals (including GPs, nurses and physiotherapists) to consider and assess the impact of 'the physical, psychological, social, occupational and financial impact' of painful arthritis.<sup>107</sup> Other professionals, including those working in social care or community pharmacy, should be able to provide appropriate brief advice and signposting for people with multimorbidity who also have arthritis.

## Supporting health and care decisions

People's problems and goals should be assessed using a biopsychosocial approach, captured in a care and support plan. The assessment should include screening for musculoskeletal symptoms, including consideration of the impact of arthritis pain and disability. When supporting people to identify their health goals, health and care professionals should ensure people have the information they need to make decisions about improving their musculoskeletal health. There must be clarity about who will be responsible for carrying out the different actions outlined on the plan.

<sup>u</sup> A PHE resource for allied health professionals has been developed in partnership with the Arthritis Research UK Primary Care Centre at Keele University for Making Every Contact Count for back pain. The resource is available at <http://meccback.co.uk/back-pain-the-facts/>

## CASE STUDY: THE ROLE OF HEALTHCARE AND OTHER PROFESSIONALS IN IDENTIFYING PAIN

Living with pain reduces quality of life. Healthcare and other professionals have a role to play in its identification, assessment and treatment.

The Absent Healthcare Professional published by Arthritis Research UK,<sup>108</sup> proposes a way of working for healthcare professionals whereby there are 'three Es' of basic advice which should be given in relation to the care of people when arthritis is present:

- education
- exercise
- easing pain.

The Royal College of Nursing has published a pain knowledge and skills framework for the nursing team in which it recognises that 'assessing and managing pain are essential components of nursing practice'.<sup>109</sup>

The Royal College of General Practitioners' curriculum on care of people with musculoskeletal conditions stresses 'understanding that reducing pain and disability rather than achieving a complete cure could be the goal of treatment.'<sup>107</sup>

NICE's 'Multimorbidity: clinical assessment and management' clinical guideline stresses that healthcare professionals should 'be alert to the possibility... of chronic pain and the need to assess this and the adequacy of pain management.'<sup>106</sup> NICE also recently published social care guidance which recommends that health and social care practitioners should be able to 'recognise, consider the impact of, and respond' to a number of conditions including chronic pain.<sup>128</sup>

There is the potential to ensure that all workers who come into contact with the public are aware of the impact of pain. Such an approach could include the ability to identify if a person is in pain; awareness that pain can act as a barrier to being physically active; and signposting to appropriate information and support. Such an approach should be included in the Making Every Contact Count resources and within the Career Framework for those working at levels 1–3.

## CASE STUDY: CONNECTING PEOPLE FROM IN THE HEALTH SERVICE TO LOCAL SERVICES

The Scottish Government is funding the National Links Worker Programme in which 'links workers' based in GP surgeries support and connect people with complex needs to local information, services and support. The programme is being delivered by the Health and Social Care Alliance and GPs at the Deep End, with partners including the Royal College of General Practitioners and the Scottish Association for Mental Health.<sup>110</sup>

Age UK, with support from the Big Lottery Fund, is supporting Care Navigators in the Isle of Wight who support people to identify their goals and to access appropriate services to meet their needs.<sup>111</sup>

In Tower Hamlets, the Bromley-by-Bow Centre has a well-established programme of social prescribing to support people living with chronic illness to improve their confidence, learn new skills, find work and transform their lives.<sup>112</sup>



## National level

### Improving quality, coverage and flow of data

High-quality data on musculoskeletal conditions and multimorbidity should be routinely obtained and used across public health, health and care, and other related systems. Such data should enable commissioners to identify the scale and needs of people with multimorbidity. Clinical activity, outcome and patient activation data can support service delivery and quality improvement activities. Improving the flow of patient information and data between services, alongside good governance, should be prioritised. Data on musculoskeletal conditions should be included and then published in relevant analyses of multimorbidity.

### Public health

Public health information, programmes and campaigns should recognise and address the needs of the growing numbers of people living with multimorbidity and musculoskeletal conditions. The impact of pain and functional limitations on physical activity and independence should be taken into consideration when designing, implementing and evaluating public health information, programmes and campaigns. For example, the One You campaign, which focuses on healthy living in adult life<sup>v</sup>, provides a platform from which the changing nature of the UK's population and their public health needs can be addressed.

## Local health and care system

### Local services and programmes

Local authorities and clinical commissioning groups should identify, segment and understand the needs and requirements of people living with musculoskeletal conditions and multimorbidity in their population. Barriers should be identified that could limit the access of people with arthritis and musculoskeletal conditions to local programmes. Physical barriers need to be considered – such as the ease of entering and navigating buildings – along with other barriers, such as a person being unaware of the facilities available. Local data and the agreed approach should be captured in Joint Strategic Needs Assessments and Joint Health and Wellbeing Strategies.

Ensuring connectivity between health and local services should be given particular attention. Many people with multimorbidity will have needs which range beyond their health, such as a wish to access benefits and work-training programmes. Social prescribing (building links between patients and community support) should be harnessed by the Clinical Commissioning Group and its Local Authority counterpart(s) by identifying and enabling signposting and connecting services.

<sup>v</sup> This campaign is targeted at 40–60 year olds.

### Role of the third sector

Disease-specific charities and their respective coalitions should recognise that many people now live with multimorbidity and should develop relevant resources, programmes, research and partnerships to meet the changing needs of their beneficiaries. The charity sector is a substantial contributor to health and care support: there are nearly 36,000 health and social care charities in the UK, spending around £4,522 million on health in 2013/14.<sup>113</sup> Many of these organisations support individuals directly, and/or support the health and care system.<sup>114</sup> As health and care services start to contend with the implications of multimorbidity, leading coalitions such as National Voices and the Richmond Group of Charities have opportunities to bring charities together to identify ways of working, including developing policy, providing information and support, and delivering models of care which reflect the needs of people living with multimorbidity.

### Multimorbidity research agenda

Researchers should develop a framework so that the phenomenon of multimorbidity can be analysed. Areas of research should include prevalence, models and pathways of care, outcome measures, and the attitudes of people and healthcare professionals towards multimorbidity; such analyses should seek to include musculoskeletal diseases, where possible. Multimorbidity research should reflect the prevalence and impact of diseases and conditions, including musculoskeletal conditions, and emphasise the goal of healthy life expectancy.

The National Institute for Health Research (NIHR) has already issued a research call for evaluation of interventions or services for older people with multimorbidity.<sup>115</sup> Along with sector bodies such as the Association of Medical Research Charities, research funders such as the NIHR should play a role in facilitating cross-sector conversations to enable the multimorbidity research agenda to flourish.

### Sharing best practice

Innovations and new models of care, which include consideration of a person's musculoskeletal health, should be widely and systematically shared to improve health outcomes for people with multimorbidity. Effective interventions should be brought together, curated and disseminated at a national level. For example, NHS England and the Coalition for Collaborative Care have launched a handbook to support personalised care and support planning.<sup>116</sup> There are opportunities for regional Academic Health Science Networks to spread their knowledge and showcase interventions beyond their locality. Particular attention should be given to bring together evidence which satisfies local decision-makers: for example, local commissioners may require evidence relating to the development of their business case and improvements in health outcomes in relation to cost savings.





**RECOMMENDATIONS**

**6.00**



## A NUMBER OF CHANGES SHOULD BE MADE TO ENSURE RECOGNITION OF MUSCULOSKELETAL HEALTH AS PART OF MULTIMORBIDITY:

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### 1/ Identification:

NHS England should ensure that any metrics and tools used in multimorbidity programmes include monitoring and measuring of pain and its impact, functional abilities and capability to manage.



### 2/ Data Collection:

Public Health England should work with other national bodies to ensure that data collection, analysis and publication raises awareness of multimorbidity and the relevance of its musculoskeletal component.



### 3/ Planning and Commissioning:

Local planners and commissioners of health and care services should identify, segment and understand the needs and requirements of people living with musculoskeletal conditions and multimorbidity in their population, and publish these in local documents such as their Joint Strategic Needs Assessments and Joint Health and Wellbeing Strategies.





#### **4/ Care and Support Planning:**

Healthcare providers should ensure that people with multimorbidity can take part in a care and support planning process using standardised tools to explore and record pain, functional limitations and how these affect their daily activities.



#### **5/ Health Promotion:**

Public Health England should ensure that its information, programmes and campaigns reflect and address the needs of the growing numbers of people living with multimorbidity including musculoskeletal conditions.



#### **6/ Voluntary Sector:**

Disease-specific charities and their respective coalitions should collaborate in recognising that many people now live with multimorbidity and work together to develop resources, programmes, research and partnerships to meet the changing needs of people with multiple long-term conditions.



#### **7/ Research Agenda:**

Research funders, such as the National Institute for Health Research, should work with partners to ensure there is a flourishing research agenda covering multimorbidity, which includes common conditions such as musculoskeletal conditions.

**METHODS**

**70**

## The GP Patient Survey

The GP Patient Survey (GPPS) assesses patients' experiences of access to and quality of care received from local GPs, dentists, out-of-hours doctor services and NHS primary care services in England. Patients' general state of health is also recorded. The survey is sent twice a year (in January and July) across two waves of fieldwork to approximately 2.7 million randomly selected adult patients registered with a GP in England; participation is voluntary.

The GPPS includes questions for patients to self-report whether they have been diagnosed with 'arthritis or long-term joint problem' (referred to in our analysis as 'arthritis') and 'long-term back pain' (referred to in our analysis as 'back pain'). This data can be used to provide an estimate of the prevalence of these conditions. However, it should be noted that such estimates should be treated with care, since they rely on patient reports of doctor-diagnosed conditions and not directly on medical records. All data is weighted to the English population.<sup>117</sup>

Our current findings are from wave 2 (W2) of the eighth year of the survey (June–September 2014). There were 903,357 respondents in the set, out of whom 812,168 (89.91%) gave valid responses to the questions about arthritis or back pain. All the results in our analyses include 95% confidence intervals.

## National survey of people with arthritis

A nationally representative online survey of 2,540 people with arthritis from across the UK was carried out during September 2015. The survey included people living with inflammatory conditions such as rheumatoid arthritis, musculoskeletal pain such as osteoarthritis, and osteoporosis.

For more information, please see the report *Living well with arthritis: identifying the unmet needs of people with arthritis* (2015 unpublished), commissioned by Arthritis Research UK and delivered by Revealing Reality (ESRO).

# NICE GUIDELINES

8.0

## THERE ARE A NUMBER OF RELEVANT NICE GUIDELINES ON MANAGEMENT AND CARE OF PEOPLE WITH MUSCULOSKELETAL CONDITIONS AND/OR MULTIMORBIDITY:

**Table 1** Relevant NICE guidance in relation to musculoskeletal conditions and multimorbidity

Title	Date	Ref	Type	Content relevant to musculoskeletal conditions and multimorbidity
<b>Hip fracture:</b> the management of hip fracture in adults <sup>118</sup>	June 2011	CG124	Clinical guideline	<ul style="list-style-type: none"> <li>• This guideline recognises that around 10% of people with a hip fracture die within one month and that around one-third of people die within 12 months. The majority of these deaths are owing to an associated condition rather than the fracture itself. This is a reflection on the numbers of comorbidities among people experiencing a hip fracture.</li> <li>• Immediately identify comorbidities to ensure that surgery is not delayed. (1.2.2)</li> </ul>
<b>Low back pain and sciatica in over 16s:</b> assessment and management <sup>119</sup>	Nov 2016	NG59	Clinical guideline	<ul style="list-style-type: none"> <li>• No specific mention of multimorbidity.</li> </ul>
<b>Low back pain</b> <sup>120</sup>	Exp pub. Jul 2017	QSD	Quality standard	Under development.



Title	Date	Ref	Type	Content relevant to musculoskeletal conditions and multimorbidity
<b>Osteoarthritis: care and management in adults</b> <sup>121</sup>	Feb 2014	CG177	Clinical guideline	<ul style="list-style-type: none"> <li>• If a person has more than one comorbidity, consider an annual review.</li> <li>• When developing a management plan, take into consideration comorbidities which compound the impact of osteoarthritis. (1.2.3)</li> <li>• Discuss risks and benefits of different treatments, taking into account any comorbidities. (1.2.4)</li> <li>• Exercise for osteoarthritis should be considered a core treatment irrespective of age, comorbidity, pain severity or disability. (1.2.5)</li> <li>• Factors specific to the patient, including comorbidities, should not be barriers for referral for joint replacement surgery. (1.6.5)</li> </ul>
<b>Osteoarthritis</b> <sup>122</sup>	June 2015	QS87	Quality standard	<ul style="list-style-type: none"> <li>• Stresses the importance of a holistic assessment which includes consideration of the impact of comorbidities.</li> <li>• Exercise is a core treatment for adults: if comorbidities are perceived as a barrier to this, then specific advice and encouragement should be given.</li> <li>• When considering a person's BMI, it's important to understand comorbidity risk in older people.</li> <li>• Comorbidities should not be a barrier to referral for consideration of joint replacement surgery.</li> </ul>
<b>Osteoporosis: assessing the risk of fragility fracture</b> <sup>123</sup>	Aug 2012	CG146	Clinical guideline	<ul style="list-style-type: none"> <li>• Residents in care homes have a high risk of fragility fractures. Reasons for this include age and fragility with multimorbidities.</li> </ul>

Title	Date	Ref	Type	Content relevant to musculoskeletal conditions and multimorbidity
<b>Rheumatoid arthritis:</b> the management of rheumatoid arthritis in adults <sup>124</sup>	Apr 2009	CG79	Clinical guideline	<ul style="list-style-type: none"> <li>• Offer an annual review, including checking other comorbidities. (1.5.1.4)</li> <li>• For newly diagnosed people with comorbidities, combination disease-modifying anti-rheumatic (DMARD) therapy may not be appropriate. (1.4.1.4)</li> </ul>
<b>Rheumatoid arthritis in over 16s</b> <sup>45</sup>	June 2013	QS33	Quality standard	<ul style="list-style-type: none"> <li>• Medical management with drugs reduces the risk of developing comorbidities.</li> <li>• Monotherapy should be used for people with newly diagnosed rheumatoid arthritis where combination disease-modifying drug therapy is not possible owing to comorbidities.</li> <li>• An annual review should encompass checking for the development of comorbidities such as heart disease, depression, osteoporosis and hypertension (some aspects of which can occur in primary care).</li> </ul>

**Table 2** Relevant NICE guidance in relation to multimorbidity

Title	Date	Ref	Type	Content relevant to musculoskeletal conditions and multimorbidity
<b>Medicines optimisation</b> <sup>125</sup>	March 2016	QS120	Quality standard	<p>This Quality Standard highlights the safe and effective use of medicine across:</p> <ul style="list-style-type: none"> <li>• shared decision-making.</li> <li>• patient involvement in reporting medicines-related patient safety incidents.</li> <li>• learning from medicines-related patient safety incidents.</li> <li>• medicines reconciliation in acute settings.</li> <li>• medicines reconciliation in primary care.</li> <li>• structured medication review.</li> </ul>
<b>Multimorbidity: clinical assessment and management</b> <sup>106</sup>	Sept 2016	NG56	Clinical guideline	<p>This guideline is targeted at the clinical assessment and management of people with multimorbidity. The guideline encompasses:</p> <ul style="list-style-type: none"> <li>• General principles. (1.1)</li> <li>• Identifying, principles and tailoring an approach to care which considers multimorbidity. (1.2, 1.3, 1.5) Such an approach would include consideration of: <ul style="list-style-type: none"> <li>• disease and treatment burden</li> <li>• patient goals, values and priorities</li> <li>• review of medicines and other treatments</li> <li>• an individualised management plan.</li> </ul> </li> <li>• Assessment of frailty. (1.4)</li> <li>• The guideline encourages healthcare professionals to be alert to the possibility of: (1.6.5)</li> <li>• depression and anxiety.</li> <li>• chronic pain and the need to assess this and the adequacy of pain management.</li> </ul>
<b>Multimorbidity</b> <sup>126</sup>	Draft available	GID–QS10023 (Draft)	Quality standard	<p>The draft Quality Standard focuses on adults with multimorbidity:</p> <ul style="list-style-type: none"> <li>• being identified by their GP practices.</li> <li>• being assessed for frailty with specific tools.</li> <li>• being asked about their goals, values and priorities.</li> <li>• knowing who is responsible for their care.</li> <li>• having a review of their medicines and other treatments, and a discussion about whether treatments can be stopped or changed.</li> </ul>

**Table 2** Relevant NICE guidance in relation to multimorbidity continued

Title	Date	Ref	Type	Content relevant to musculoskeletal conditions and multimorbidity
<b>Multimorbidities:</b> system integration to meet population needs	Topic deferred until further notice	Under development	Public health guidance	Scope: to be confirmed.
<b>Older people:</b> independence and mental wellbeing <sup>127</sup>	Dec 2015	NG32	NICE guideline	This guideline made a series of recommendations encompassing: <ul style="list-style-type: none"> <li>• principles of good practice.</li> <li>• group-based activities.</li> <li>• one-to-one activities.</li> <li>• volunteering.</li> <li>• identifying those most at risk of a decline in their independence and mental wellbeing.</li> </ul>
<b>Older people with social care needs and multiple long-term conditions</b> <sup>128</sup>	Nov 2015	NG22	NICE guideline	This guideline made a series of recommendations encompassing: <ul style="list-style-type: none"> <li>• identifying and addressing social care needs.</li> <li>• care planning.</li> <li>• supporting carers.</li> <li>• integrating health and social care planning.</li> <li>• delivering care.</li> <li>• preventing social isolation.</li> <li>• training health and social care practitioners.</li> </ul>
<b>Social care for older people with needs and multiple long-term conditions</b> <sup>129</sup>	Sept 2016	QS132	Quality standard	Scope: the planning and delivery of coordinated social care and support for people over 65 with multimorbidities.
<b>Workplace health:</b> support for employees with disabilities and long-term conditions	Tbc	Under development	NICE Public health guideline	A call for evidence has been issued with a particular focus on obtaining evidence on the most effective workplace interventions to support employees with disabilities and long-term conditions.

# ROUNDTABLE ON MUSCULOSKELETAL CONDITIONS AND MULTIMORBIDITY

# 9.0



# 15 OCTOBER 2015, 12PM – 5.30PM

## THE WESLEY HOTEL, LONDON NW1 2EZ

### Programme

Agenda item		Speaker
	Chairs' welcome	Chairs: <b>Benjamin Ellis</b> , Senior Clinical Policy Advisor, Arthritis Research UK <b>and</b> <b>Tom Margham</b> , Primary Care Lead, Arthritis Research UK
	Short introduction to Arthritis Research UK and why this area is of interest	<b>Liam O'Toole</b> , Chief Executive, Arthritis Research UK
Dimensions and burden of multimorbidities	Introduction to three groups of musculoskeletal conditions model	<b>Tracey Loftis</b> , Head of Policy and Public Affairs, Arthritis Research UK
	Dimensions of multimorbidities	<b>Alan Silman</b> , Professor of Musculoskeletal Health, University of Oxford
	Highlights of GP Patient Survey data	<b>Benjamin Ellis</b>
People's needs and priorities	A first-person perspective of living with multimorbidities	<b>Jack Chisnall</b> : person living with arthritis, diabetes, asthma and experience of bowel cancer
	Putting people's priorities first	<b>Jeremy Taylor</b> , Chief Executive, National Voices
	Discussion	<b>All</b>
Interventions and approaches of relevance to multimorbidities	<b>Chair's introduction:</b> Focus on a number of different types of interventions	<b>Chair</b>
	Managing multimorbidities in Tower Hamlets	<b>Victoria Tzortziou-Brown</b> : GP, Research Fellow, Tower Hamlets CCG Board Member
	A public health perspective on multimorbidities	<b>Nuzhat Ali</b> , National Health and Well Being Lead, Public Health England
	<b>Discussion</b>	<b>All</b>

Agenda item		Speaker
Interventions and approaches of relevance to multimorbidities	<b>Tea and coffee break</b>	
	Supporting people to improve quality of life	<b>Matthew Wheatley,</b> Empowered Living team, St Joseph's Hospice
	Age UK's pilot of integrated care pathway in Cornwall	<b>Chris Commerford,</b> Programme Manager, Integrated Care – Services Division, Age UK
	<b>Discussion</b>	<b>All</b>
	Piloting of the Enhance study in primary care	<b>Dr Claire Jinks,</b> Senior Lecturer in Health Service Research, Keele Primary Care Centre
	NHS England: a person-centred approach	<b>Martin McShane,</b> Director for Long Term Conditions, NHS England
	<b>Discussion</b>	<b>All</b>
	Discussion: what are the implications for policymakers?	<b>All</b>
	<b>Chair's summary and close</b>	<b>Chair: close of event</b>

## Participants

<b>Jack Chisnall</b>	Patient representative	<b>Duleep Allirajah</b>	MacMillan Cancer Support
<b>Peter Cordiner</b>	Patient representative	<b>Melanie Harakis</b>	MIND
<b>Chris Commerford</b>	Age UK	<b>Edward Smith</b>	National Osteoporosis Society
<b>Tom Gentry</b>	Age UK	<b>Caroline Sangar</b>	National Osteoporosis Society
<b>Federico Mosconi</b>	ARMA	<b>Jeremy Taylor</b>	National Voices
<b>Nikki Hill</b>	Arthritis Care	<b>Sarah Marsh</b>	NHS England
<b>Benjamin Ellis</b>	Arthritis Research UK	<b>Martin McShane</b>	NHS England
<b>Tracey Loftis</b>	Arthritis Research UK	<b>Peter Kay</b>	NHS England
<b>Dr Liam O'Toole</b>	Arthritis Research UK	<b>Sue Bintley Bagot</b>	Physiotherapist
<b>Tom Margham</b>	Arthritis Research UK	<b>Nuzhat Ali</b>	Public Health England
<b>Olivia Belle</b>	Arthritis Research UK	<b>David Paynton</b>	RCGP Centre for Commissioning
<b>Tracy Elliott</b>	Arthritis Research UK	<b>David Terrace</b>	Richmond Group
<b>Adrienne Skelton</b>	Arthritis Research UK	<b>Samantha Rosindale</b>	Royal College of Nursing
<b>Katherine Stevenson</b>	Arthritis Research UK	<b>Matthew Wheatley</b>	St Joseph's Hospice
<b>Clare Jinks</b>	Arthritis Research UK Primary Care Centre	<b>Victoria Tzortziou-Brown</b>	Tower Hamlets CCG
<b>Chris Annus</b>	British Heart Foundation	<b>Phil Conaghan</b>	University of Leeds
<b>Robin Hewings</b>	Diabetes UK	<b>Alan Silman</b>	University of Oxford
<b>Michael Fertleman</b>	Consultant Geriatrician, St Mary's Hospital, Imperial College London	<b>Maja Begovic</b>	Whittington Hospital
<b>Sarah Johnson</b>	Juvenile Diabetes Research Foundation		

# REFERENCES

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- 1 Smith SM et al. (2012). Managing patients with multimorbidity: systematic review of interventions in primary care and community settings. *BMJ* 345: e5205.
- 2 British Geriatrics Society in association with the Royal College of General Practitioners and Age UK (2014). *Fit for frailty*.
- 3 World Health Organisation (2015). *World report on ageing and health*.
- 4 Arthritis Research UK (2014). *Musculoskeletal health. A public health approach*.
- 5 Symmons D et al. (2002). The prevalence of rheumatoid arthritis in the United Kingdom: new estimates for a new century. *Rheumatology (Oxford)* 41(7): 793–800.
- 6 Arthritis Research UK (2013). *Osteoarthritis in general practice: data and perspectives*.
- 7 National Osteoporosis Society (2011). *A fragile future: 25th anniversary report*.
- 8 Barnett K et al. (2012). Epidemiology of multimorbidity and implications for health care, research, and medical education: a cross-sectional study. *Lancet* 380(9836): 37–43.
- 9 Choy E et al. (2014). Cardiovascular risk in rheumatoid arthritis: recent advances in the understanding of the pivotal role of inflammation, risk predictors and the impact of treatment. *Rheumatology (Oxford)* 53(12): 2143–2154.
- 10 Currie SR et al. (2004). Chronic back pain and major depression in the general Canadian population. *Pain* 107(1–2): 54–60.
- 11 Public Health England (2014). *Adult obesity and type 2 diabetes*.
- 12 Fried LP et al. (2001). Frailty in older adults: evidence for a phenotype. *J Gerontol A Biol Sci Med Sci* 56(3): M146–M156.
- 13 Rockwood K et al. (2005). A global clinical measure of fitness and frailty in elderly people. *CMAJ* 173(5): 489–495.
- 14 (2014). [www.england.nhs.uk/2014/05/john-young/](http://www.england.nhs.uk/2014/05/john-young/).
- 15 NHS England (2014). *Toolkit for general practice in supporting older people with frailty and achieving the requirements of the Unplanned Admissions Enhanced Service*.
- 16 Murray CJ et al. (2013). UK health performance: findings of the Global Burden of Disease Study 2010. *Lancet* 381(9871): 997–1020.
- 17 Arthritis Research UK (2015). *The musculoskeletal calculator*. Online at [www.arthritisresearchuk.org/mskcalculator](http://www.arthritisresearchuk.org/mskcalculator).
- 18 Health Survey for England (2011). *Health, social care and lifestyles. Chapter 9 – Chronic pain*.
- 19 (2014). *GP Patient Survey. Analysis conducted by Arthritis Research UK*.
- 20 ESRO – Revealing Reality (2015). *Living well with arthritis: identifying the unmet needs of people with arthritis (unpublished)*.
- 21 Schofield DJ et al. (2013). The personal and national costs of lost labour force participation due to arthritis: an economic study. *BMC Public Health* 13: 188.
- 22 Department for Work and Pensions (2015). *Labour Force Survey analysis of disabled people by region and main health problem*.
- 23 Arthritis Research UK (2016). *Internal calculations*.
- 24 Arthritis Research UK (2016). *Working with arthritis*.
- 25 Arthritis Care (2012). *OA Nation 2012*.
- 26 (2016). *2013/14 CCG programme budgeting benchmarking tool*. [www.england.nhs.uk/resources/resources-for-ccgs/prog-budgeting/](http://www.england.nhs.uk/resources/resources-for-ccgs/prog-budgeting/).
- 27 Arthritis Research UK National Primary Care Centre Keele University (2009). *Musculoskeletal matters: Bulletin 1*.
- 28 Arthritis Research UK National Primary Care Centre Keele University (2010). *Musculoskeletal matters: Bulletin 2*.
- 29 Department of Health (2014). *2012–13 Programme budgeting benchmarking tool*.
- 30 National Joint Registry (2016). *13th annual report 2016*.
- 31 The King's Fund (2014). *Making our health and care systems fit for an ageing population*.
- 32 Office of National Statistics (2016). *Estimate of the number of days of sickness absence taken: by reason, UK, 2013 to 2015*.
- 33 Oxford Economics (2010). *The economic costs of arthritis for the UK economy*.
- 34 Maniadakis N et al. (2000). The economic burden of back pain in the UK. *Pain* 84(1): 95–103.
- 35 National Audit Office (2009). *Services for people with rheumatoid arthritis*.
- 36 Carers UK (2012). *Sandwich Caring. Combining childcare with caring for older or disabled relatives*.
- 37 Barker KL et al. (2016). 'It is a big thing': Exploring the impact of osteoarthritis from the perspective of adults caring for parents – the sandwich generation. *Musculoskeletal Care* Apr 14. doi: 10.1002/msc.1139. [Epub ahead of print].
- 38 Zhang W et al. (2008). OARSI recommendations for the management of hip and knee osteoarthritis, Part II: OARSI evidence-based, expert consensus guidelines. *Osteoarthritis Cartilage* 16(2): 137–162.
- 39 Wluka AE et al. (2013). Tackling obesity in knee osteoarthritis. *Nat Rev Rheumatol* 9(4): 225–235.



- 40 Messier SP et al. (2004). Exercise and dietary weight loss in overweight and obese older adults with knee osteoarthritis: the Arthritis, Diet, and Activity Promotion Trial. *Arthritis Rheum* 50(5): 1501–1510.
- 41 Messier SP et al. (2013). Effects of intensive diet and exercise on knee joint loads, inflammation, and clinical outcomes among overweight and obese adults with knee osteoarthritis: the IDEA randomized clinical trial. *JAMA* 310(12): 1263–1273.
- 42 Foy CG et al. (2011). Intensive lifestyle intervention improves physical function among obese adults with knee pain: findings from the Look AHEAD trial. *Obesity (Silver Spring)* 19(1): 83–93.
- 43 Arthritis Research UK (2012). Complementary and alternative therapies report.
- 44 National Osteoporosis Guideline Group (2014). Guideline for the diagnosis and management of osteoporosis in postmenopausal women and men from the age of 50 years in the UK.
- 45 National Institute for Health and Care Excellence (2013). Rheumatoid arthritis in over 16s. Quality standard QS33.
- 46 British Society for Rheumatology (2016). National clinical audit for rheumatoid and early inflammatory arthritis. 2nd annual report.
- 47 (2016). [www.telegraph.co.uk/news/2016/04/05/health-rationing-row-as-nhs-hospitals-set-out-rules-preventing-t/](http://www.telegraph.co.uk/news/2016/04/05/health-rationing-row-as-nhs-hospitals-set-out-rules-preventing-t/).
- 48 Royal College of Surgeons (2016). Smokers and overweight patients: Soft targets for NHS savings?
- 49 Mujica-Mota RE et al. (2015). Common patterns of morbidity and multi-morbidity and their impact on health-related quality of life: evidence from a national survey. *Qual Life Res* 24(4): 909–918.
- 50 Salisbury C et al. (2011). Epidemiology and impact of multimorbidity in primary care: a retrospective cohort study. *Br J Gen Pract* 61(582): e12–e21.
- 51 Violan C et al. (2014). Prevalence, determinants and patterns of multimorbidity in primary care: a systematic review of observational studies. *PLoS One* 9(7): e102149.
- 52 Department of Health (2012). Long-term conditions compendium of information: third edition.
- 53 Age UK (2017). The health and care of older people in England 2017.
- 54 Royal College of General Practitioners (2016). Responding to the needs of patients with multimorbidity. A vision for general practice.
- 55 Gijzen R et al. (2001). Causes and consequences of comorbidity. *J Clin Epidemiol* 54(7): 661–674.
- 56 Mair FS et al. (2014). Thinking about the burden of treatment. *BMJ* 349: g6680.
- 57 Ryan A et al. (2015). Multimorbidity and functional decline in community-dwelling adults: a systematic review. *Health Qual Life Outcomes* 13: 168.
- 58 The Scottish Government (2016). A national clinical strategy for Scotland.
- 59 Royal College of General Practitioners (2013). The 2022 GP. Compendium of evidence.
- 60 Royal College of Physicians (2015). National Hip Fracture Database (NHFD) annual report.
- 61 Health and Safety Executive (2017). [www.hse.gov.uk/statistics/dayslost.htm](http://www.hse.gov.uk/statistics/dayslost.htm).
- 62 Bevan, S (2015). Data taken from the Work Foundation's analysis of the Health Survey for England, 2015. Presentation to the symposium.
- 63 National Voices (2012). Narrative for person-centred care.
- 64 The King's Fund (2014). Supporting people to manage their health. An introduction to patient activation.
- 65 Coventry PA et al. (2014). Capacity, responsibility, and motivation: a critical qualitative evaluation of patient and practitioner views about barriers to self-management in people with multimorbidity. *BMC Health Serv Res* 14: 536.
- 66 Arthritis Research UK (2014). Care planning and musculoskeletal health.
- 67 Adeniji C et al. (2015). What are the core predictors of 'hassles' among patients with multimorbidity in primary care? A cross sectional study. *BMC Health Serv Res* 15: 255.
- 68 Bayliss EA et al. (2003). Descriptions of barriers to self-care by persons with comorbid chronic diseases. *Ann Fam Med* 1(1): 15–21.
- 69 Bayliss EA et al. (2008). Processes of care desired by elderly patients with multimorbidities. *Fam Pract* 25(4): 287–293.
- 70 Bower P et al. (2013). Multimorbidity and delivery of care for long-term conditions in the English National Health Service: baseline data from a cohort study. *J Health Serv Res Policy* 18(2 Suppl): 29–37.

- 71 Sinnott C et al. (2013). GPs' perspectives on the management of patients with multimorbidity: systematic review and synthesis of qualitative research. *BMJ Open* 3(9): e003610.
- 72 Bower P et al. (2011). Multimorbidity, service organization and clinical decision making in primary care: a qualitative study. *Fam Pract* 28(5): 579–587.
- 73 Hughes LD et al. (2013). Guidelines for people not for diseases: the challenges of applying UK clinical guidelines to people with multimorbidity. *Age Ageing* 42(1): 62–69.
- 74 Kebede S (2016). Ask patients “What matters to you?” rather than “What’s the matter?”. *BMJ* 354: i4045.
- 75 Guthrie B et al. (2012). Adapting clinical guidelines to take account of multimorbidity. *BMJ* 345: e6341.
- 76 Breedveld FC (2004). Osteoarthritis – the impact of a serious disease. *Rheumatology (Oxford)* 43 Suppl 1: i4–i8.
- 77 Dougados M et al. (2014). Prevalence of comorbidities in rheumatoid arthritis and evaluation of their monitoring: results of an international, cross-sectional study (COMORA). *Ann Rheum Dis* 73(1): 62–68.
- 78 Norton S et al. (2013). A study of baseline prevalence and cumulative incidence of comorbidity and extra-articular manifestations in RA and their impact on outcome. *Rheumatology (Oxford)* 52(1): 99–110.
- 79 Kanis JA (2002). Diagnosis of osteoporosis and assessment of fracture risk. *Lancet* 359(9321): 1929–1936.
- 80 Walker-Bone K (2012). Recognizing and treating secondary osteoporosis. *Nat Rev Rheumatol* 8(8): 480–492.
- 81 Seibel MJ et al. (2013). Glucocorticoid-induced osteoporosis: mechanisms, management, and future perspectives. *Lancet Diabetes Endocrinol* 1(1): 59–70.
- 82 Khan MN et al. (2008). Cancer treatment-related bone loss: a review and synthesis of the literature. *Curr Oncol* 15(Suppl 1): S30–S40.
- 83 Mental Health Taskforce to the NHS in England (2016). The five year forward view for mental health.
- 84 Matcham F et al. (2013). The prevalence of depression in rheumatoid arthritis: a systematic review and meta-analysis. *Rheumatology (Oxford)* 52(12): 2136–2148.
- 85 Sheehy C et al. (2006). Depression in rheumatoid arthritis-underscoring the problem. *Rheumatology (Oxford)* 45(11): 1325–1327.
- 86 Saarni SI et al. (2006). The impact of 29 chronic conditions on health-related quality of life: a general population survey in Finland using 15D and EQ-5D. *Qual Life Res* 15(8): 1403–1414.
- 87 Wilkie R et al. (2013). Reasons why multimorbidity increases the risk of participation restriction in older adults with lower extremity osteoarthritis: a prospective cohort study in primary care. *Arthritis Care Res (Hoboken)* 65(6): 910–919.
- 88 Slater M et al. (2011). Musculoskeletal comorbidities in cardiovascular disease, diabetes and respiratory disease: the impact on activity limitations; a representative population-based study. *BMC Public Health* 11: 77.
- 89 Centers for Disease Control and Prevention's Arthritis Programme. (2016). [https://www.cdc.gov/arthritis/data\\_statistics/disabilities-limitations.htm](https://www.cdc.gov/arthritis/data_statistics/disabilities-limitations.htm).
- 90 Centers for Disease Control and Prevention (2013). Prevalence of doctor-diagnosed arthritis and arthritis-attributable activity limitation—United States, 2010–2012. *MMWR Morb Mortal Wkly Rep* 62(44): 869–873.
- 91 Healey EL et al. (2015). Improving the care of people with long-term conditions in primary care: protocol for the ENHANCE pilot trial. *J Comorb* 5: 135–149.
- 92 Jinks C et al. (2015). Integrating care for joint pain and anxiety and depression into reviews for long-term conditions: The Enhance Study. *Rheumatology* 54(suppl\_1): i67–i67.
- 93 Jinks C et al. (2017). AB0843 Case-finding for joint pain and anxiety and depression: the Enhance Study. *Ann Rheum Dis* 74: 1182.
- 94 Jinks C et al. (2016). P02 “It’s just a little bit of add-on to the end, you know” Integrating joint pain, anxiety and depression in primary care long-term condition reviews: analysis of audio-recorded consultations. *J Epidemiol Community Health* 70: A54–A55.
- 95 Man MS et al. (2016). Improving the management of multimorbidity in general practice: protocol of a cluster randomised controlled trial (The 3D Study). *BMJ Open* 6(4): e011261.
- 96 (2016). [www.ageuk.org.uk/professional-resources-home/services-and-practice/integrated-care/integrated-care-model/](http://www.ageuk.org.uk/professional-resources-home/services-and-practice/integrated-care/integrated-care-model/).
- 97 (2017). [www.stjh.org.uk](http://www.stjh.org.uk).
- 98 Palmer KT et al. (2015). Health and Employment after Fifty (HEAF): a new prospective cohort study. *BMC Public Health* 15: 1071.
- 99 Department of Health (2012). Annual report of the Chief Medical Officer. On the state of the public's health.
- 100 Akesson K et al. (2003). Improved education in musculoskeletal conditions is necessary for all doctors. *Bull World Health Organ* 81(9): 677–683.

- 101 Arthritis Research UK (2015). A fair assessment? Musculoskeletal conditions: the need for local prioritisation.
- 102 Royal College of Physicians (2013). Falling standards, broken promises: report of the national audit of falls and bone health in older people 2010.
- 103 Chartered Society of Physiotherapists. (2015). National map of availability to self-referral to physiotherapy based on FOI requests. Accessed December 2015.
- 104 NHS England (2014). Five year forward view.
- 105 Office of National Statistics (2016). Statistical bulletin: health state life expectancies, UK: 2013 to 2015.
- 106 National Institute for Health and Care Excellence (2016). Multimorbidity: clinical assessment and management. NICE guideline NG56.
- 107 Royal College of General Practitioners (2016). RCGP curriculum. Clinical modules. 3.20 Care of people with musculoskeletal problems.
- 108 Arthritis Research UK (2013). The absent healthcare professional. The educational needs of nurses, allied healthcare professionals and associate practitioners working with people with osteoarthritis or rheumatoid arthritis.
- 109 Royal College of Nursing (2015). Pain knowledge and skills framework for the nursing team.
- 110 (2017). [links.alliance-scotland.org.uk/about/](https://links.alliance-scotland.org.uk/about/).
- 111 (2017). [www.ageuk.org.uk/isleofwight/our-services1/care-navigators1/](http://www.ageuk.org.uk/isleofwight/our-services1/care-navigators1/).
- 112 (2017). [www.bbbc.org.uk/bbbc-social-prescribing](http://www.bbbc.org.uk/bbbc-social-prescribing).
- 113 NCVO (2016). Almanac 2016 <https://data.ncvo.org.uk/a/almanac16/scope-5/>.
- 114 NPC (2016). Untapped potential: Bringing the voluntary sector's strengths to health and care transformation.
- 115 National Institute for Health Research (2015). Multimorbidities in older people themed call.
- 116 NHS England (2015). Personalised care and support planning handbook: the journey to person-centred care.
- 117 (2017). <https://gp-patient.co.uk/faq/weighted-data>.
- 118 National Institute for Health and Care Excellence (2011). Hip fracture: management. Clinical guideline CG124.
- 119 National Institute for Health and Care Excellence (2016). Low back pain and sciatica in over 16s: assessment and management. NICE guideline NG59.
- 120 National Institute for Health and Care Excellence (2017). Low back pain. Quality standard. In development.
- 121 National Institute for Health and Care Excellence (2014). Osteoarthritis: care and management. Clinical guideline CG177.
- 122 National Institute for Health and Care Excellence (2015). Osteoarthritis. Quality standard QS87.
- 123 National Institute for Health and Care Excellence (2017). Osteoporosis: assessing the risk of fragility fracture. Clinical guideline CG146.
- 124 National Institute for Health and Care Excellence (2009). Rheumatoid arthritis: The management of rheumatoid arthritis in adults. Clinical guideline CG79.
- 125 National Institute for Health and Care Excellence (2016). Medicines optimisation. Quality standard QS120.
- 126 National Institute for Health and Care Excellence (2017). Multimorbidity: Quality standard. In consultation.
- 127 National Institute for Health and Care Excellence (2015). Older people: independence and mental wellbeing. NICE guideline NG32.
- 128 National Institute for Health and Care Excellence (2015). Older people with social care needs and multiple long-term conditions. NICE guideline NG22.
- 129 National Institute for Health and Care Excellence (2016). Social care for older people with multiple long-term conditions. Quality standard QS132.



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