

## Research into practice:

improving musculoskeletal care in general practice

### BACKGROUND

Musculoskeletal disorders such as back pain, neck pain, osteoarthritis, and rarer conditions like gout and inflammatory arthritis are the most common limiting long-term conditions in the UK.<sup>1</sup>

They represent a huge and growing burden on population health, accounting for 30% of all years lived with disability, and 7.5 million days lost from work each year. The challenge was recognised by the Chief Medical Officer and confirmed in the recent Global Burden of Disease report:

*'Although health-care cost and activity data confirm that these conditions consume massive UK health system resources, concerted public health and high-quality integrated medical care strategies are not implemented systematically. Interventions are available for musculoskeletal disorders, but to what extent the health system is delivering is unclear. Musculoskeletal disorders will only increase in importance in view of present trends and require more urgent policy attention.'*<sup>1</sup>

General practice and primary care more generally have a critical role in meeting these challenges. Of the 300 million general practice consultations that occur in England every year, approximately one in six are for arthritis and musculoskeletal problems. An important feature of primary care is its capacity to address the needs of patients with long-term conditions such as musculoskeletal complaints; this includes responsibility for anticipatory and preventive care across the life-course, supporting patients to self-manage their condition, and delivery of evidence-based clinical treatment.

Effective primary health care can improve the health and wellbeing of individual patients and their families, and reduce the health and economic impact of musculoskeletal disorders on the population as a whole.

### MUSCULOSKELETAL RESEARCH AT KEELE UNIVERSITY

The Research Institute for Primary Care and Health Sciences at Keele University is a multidisciplinary collaboration between academics from general practice, clinical rheumatology, epidemiology, physiotherapy, psychology, and health services research, and clinical partners across the West Midlands and Cheshire. Our mission has been to conduct high-quality research designed to improve the content and delivery of primary care and reduce the impact of chronic musculoskeletal pain and arthritis in individuals and populations. The Institute was awarded Primary Care Centre of Excellence status by Arthritis Research UK in 2008, renewed in 2013. This brief article provides examples of our epidemiological and applied research aimed at improving care for patients with back pain and osteoarthritis in general practice.

### OSTEOARTHRITIS

Osteoarthritis affects 8.5 million people in the UK and accounts for more than 1 million general practice consultations every year. The contribution of osteoarthritis to years lived with disability and reduced quality of life in the general population is substantial and growing due to a rise in risk factors such as obesity and an ageing population. Our programme of osteoarthritis research aims to improve the management of joint pain and osteoarthritis in primary care and provide a better understanding of the nature, causes, natural history, and consequences of osteoarthritis.

The key insights gained from our centre's research have led to a shift in the concept of osteoarthritis from a structural disease characterised by changes on an X-ray to a clinical syndrome of persistent joint pain and disability, and provided evidence on the effective contributions of a range of active non-pharmacological treatments. We have contributed to national (National Institute of Health and Care Excellence) and

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## Box 1. The Keele StarT Back Screening Tool<sup>2</sup>

Patient name: \_\_\_\_\_ Date: \_\_\_\_\_

Thinking about your back pain the last 2 weeks tick your response to the following questions:

	Yes 1	No 0		
1. Has your back pain spread down your leg(s) at some time in the last 2 weeks?	<input type="checkbox"/>	<input type="checkbox"/>		
2. Have you had pain in the shoulder or neck at some time in the last 2 weeks?	<input type="checkbox"/>	<input type="checkbox"/>		
3. Have you only walked short distances because of your back pain?	<input type="checkbox"/>	<input type="checkbox"/>		
4. In the last 2 weeks, have you dressed more slowly than usual because of back pain?	<input type="checkbox"/>	<input type="checkbox"/>		
5. Do you think it's not really safe for a person with a condition like yours to be physically active?	<input type="checkbox"/>	<input type="checkbox"/>		
6. Have worrying thoughts been going through your mind a lot of the time?	<input type="checkbox"/>	<input type="checkbox"/>		
7. Do you feel that your back pain is terrible and it's never going to get any better?	<input type="checkbox"/>	<input type="checkbox"/>		
8. In general have you stopped enjoying all the things you usually enjoy?	<input type="checkbox"/>	<input type="checkbox"/>		
9. Overall, how bothersome has your back pain been in the last 2 weeks?				
Not at all	Slightly	Moderately	Very much	Extremely
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
0	0	0	1	1

Total score (all 9): \_\_\_\_\_

Sub Score (Q5-9): \_\_\_\_\_

For further information please see: [www.keele.ac.uk/sbst/](http://www.keele.ac.uk/sbst/)

international (European League Against Rheumatism) osteoarthritis guidelines and produced a range of resources with partners including the Royal College of General Practitioners and Arthritis Research UK to support clinicians managing patients with osteoarthritis.

### THE SIZE OF THE PROBLEM FOR PRIMARY CARE

Our descriptive epidemiological research combines evidence synthesis, analysis of routine recording of general practice consultations in a regional network of general practices (registered population of 100 000), and population cohorts of 36 000 residents of North Staffordshire funded by the Medical Research Council and Arthritis Research UK. This work has provided a comprehensive set of prevalence estimates, information on risk factors and prognosis, and patterns of care for persistent joint pain<sup>3-4</sup> and symptomatic osteoarthritis (confirmed by clinical and imaging assessments), including for specific phenotypes such as patellofemoral osteoarthritis,<sup>5</sup> erosive hand osteoarthritis,<sup>6</sup> and midfoot osteoarthritis.<sup>7</sup> Work from our Institute in estimating the frequency of general practice consultations for osteoarthritis has underpinned policy reports<sup>8</sup> and, in collaboration with colleagues in southern Sweden, to explore differences in occurrence and management between different countries.<sup>9</sup>

### IMPROVING PATIENT ASSESSMENT IN PRIMARY CARE

The value of diagnosing osteoarthritis pathology for effective management in primary care remains uncertain; however, the evaluation of pain and its impact on patients' activities has been repeatedly emphasised. Research by our Institute has confirmed that a small number of simple questions developed for assessing pain can usefully grade the clinical severity of osteoarthritis. We recently demonstrated that the use of such questions asked by the GP during the consultation can improve on their judgement of which patients are likely to have a less unfavourable prognosis.<sup>10</sup> The principle of simple pain and function assessment in the general practice consultation has been developed in new work identifying, implementing, and evaluating a set of 'quality indicators' for use in general practice.<sup>11</sup>

### EVALUATION AND IMPLEMENTATION OF NEW INTERVENTIONS

Care for people with osteoarthritis has traditionally focused on what the GP and the orthopaedic surgeon could offer. Our programme of clinical trials has highlighted the importance of exercise and multidisciplinary teamwork to improve outcomes for patients with osteoarthritis.

Our TOPIK trial<sup>12</sup> was undertaken in response to gaps in the evidence identified by local clinicians, and assessed the impact of an enhanced pharmacy review or physiotherapy compared with a control group. Short-term improvements in health outcomes, reduced use of anti-inflammatory drugs, and high patient satisfaction were achieved by giving patients with knee osteoarthritis greater access to community physiotherapy (individualised exercise programme; advice on activity and pacing) and pharmacists (face-to-face medication review and advice). In separate trials we have confirmed the benefits of advice and exercise for knee osteoarthritis, that acupuncture yields no additional benefit,<sup>13</sup> and that for hand osteoarthritis joint protection education offered by occupational therapists is beneficial.<sup>14</sup>

### SPINAL PAIN

Back pain is one of the commonest conditions managed in primary care, affecting around a third of all adults. Persistent back pain impacts negatively on a patient's quality of life, family and social relationships, and the ability to work, and has recently been highlighted by the Global

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Burden of Disease Project as the leading cause of years lived with disability.

Our multidisciplinary programme of back pain research has focused on identifying and targeting factors associated with a poor prognosis and has developed an approach of stratifying care to ensure that patients receive appropriate treatment for their specific problems.

### Implementing psychosocial approaches in primary care for back pain

We have developed the application of psychosocial approaches to chronic pain management on the basis of our findings that psychosocial factors (such as catastrophising and fear-avoidance) are predictors and consequences of chronic pain. These approaches were developed by specialist teams of psychologists and physiotherapists, and applied more broadly to primary care patients.

Our first back pain trial<sup>15</sup> showed that a training and mentoring programme safely enabled primary care physiotherapists to successfully deliver psychologically informed physiotherapy, encouraging patients to alter unhelpful attitudes and pain-related fears, increasing activity, and supporting self-management and return-to-work. By integrating these research findings into routine health services, we have ensured more immediate improvements in the care provided for back pain patients.

### Providing a novel cost-effective model of stratified care for back pain

In a more recent randomised trial and impact study, we have combined our expertise in prognostic stratification with matched evidence-based interventions to produce a new model of stratified care for back pain.<sup>2</sup>

By asking evidence-based questions (Box 1) in the consultation, clinicians can be guided to match the most appropriate treatment option to the right patient by classifying patients into the following risk groups: low (advice, reassurance, medication, and avoid over investigation); medium (evidence-based conservative approaches); and high (psychologically

informed physiotherapy). This approach has demonstrated improved patient outcomes and reduced work loss compared with current best care, together with significant cost savings for the NHS.

Our StarT Back approach has now been adopted by more than 20 healthcare organisations worldwide and this stratified approach to managing low back pain has been integrated into care pathways for many CCGs across the UK. Internationally, prognostic stratification in patients with back pain has been advocated on government websites, recommended in international guidelines, and several international healthcare organisations are adopting a stratified care approach for back pain.

### FUTURE DIRECTIONS

Providing high-quality care for patients with musculoskeletal problems in primary care has never been more important and the challenge of providing the very best clinical evidence to support practitioners caring for patients is ongoing. We are extending our portfolio of studies to include common inflammatory disorders (including gout, polymyalgia rheumatica, and rheumatoid arthritis) and have identified a number of important areas for future research. These include improving the uptake and maintenance of non-pharmacological interventions, enhancing our understanding of the role of musculoskeletal disease in patients with multimorbidity, and improving the phenotyping of patients to better target treatments.

### Provenance

Freely submitted; externally peer reviewed.

### Competing interests

The authors have declared no competing interests.

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